SECTION AV

AUDIO, VISUAL & NAVIGATION SYSTEM

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PRECAUTION

PRECAUTIONS

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

INFOID:0000000013615468

Risk of injury

There is a risk of injury caused by parts becoming projectiles if uncontrolled deployment of air bag or seat belt pre-tensioner occurs, or by storing air bag with the deployment side facing downwards. When scrapping air bag or seat belt pre-tensioner by means of controlled deployment, there is also a danger present if a sufficiently safe distance is not maintained, or if opening using cutting torches or other cutting tools, or due to smelting or if parts that are not yet triggered are exposed to a blaze or a smoldering fire at landfills.

Safety instructions/precautions

- Removed air bag must always be stored with deployment side facing up.
- Acquisition, transportation, storage, testing and assembly work should only be performed or supervised by properly trained personnel.
- Install air bag or seat belt pre-tensioner immediately following retrieval from storage.
- Air bag and seat belt pre-tensioner must be protected from flying sparks, open fires and temperature exceeding 100°C (212°F).
- Never transport air bag and seat belt pre-tensioner in the passenger compartment. Store them securely in the luggage room of the vehicle in their original replacement part packaging and secure them so that they cannot slip around.
- Never allow air bag and seat belt pre-tensioner to come into contact with grease, oil, or cleaning agents.
- Perform system tests using approved testing equipment only, and only when the units are properly installed and the vehicle is unoccupied.
- Before the initial hookup of the battery or an external power supply, the ignition must be switched on and the vehicle unoccupied.
- Air bag and seat belt pre-tensioner that fall from a height of more than 0.5 m must be replaced.
- When scrapping by means of controlled deployment of air bag and seat belt pre-tensioner, a safe distance of at least 10 m must be maintained.
- Before starting work on air bag and seat belt pre-tensioner and work on components that are connected to air bag and seat belt pre-tensioner or require and intervention in their electric circuit (e.g. when removing the steering wheel):
- Disconnect any external power sources (e.g. charger).
- Disconnect and insulate ground line of battery
- Before starting bodywork in combination with welding or retrofitting, during which work is performed on uninsulated, current-carrying lines or require an intervention in their electric circuit (e.g. when removing the steering wheel):
- Disconnect any external power sources (e.g. charger).
- Disconnect and insulate ground line of battery.
- During welding, disconnect plug connection and from control unit of air bag.
- When the air bag deploys, the pyrofuse activates and the power source from the battery is disconnected. This prevents possible fires caused by electric leakage after an accident occurs.

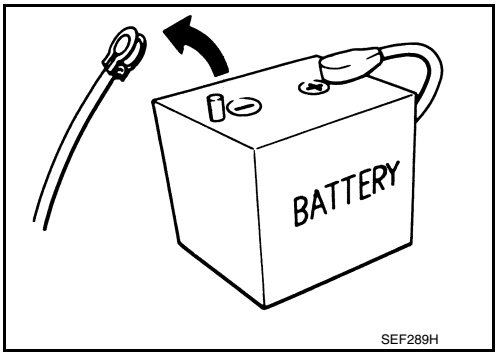
Precautions for Removing Battery Terminal

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When disconnecting the battery terminal, pay attention to the following.

- Always use a 12V battery as power source.
- Never disconnect battery terminal while engine is running.

- When removing the 12V battery terminal, turn OFF the ignition switch and wait at least 30 seconds.
- For vehicles with the engine listed below, remove the battery terminal after a lapse of the specified time:



BR08DE	: 4 minutes	YD25DDTi	: 2 minutes
D4D engine	: 20 minutes	YS23DDT	: 4 minutes
HRA2DDT	: 12 minutes	YS23DDTT	: 4 minutes
K9K engine	: 4 minutes	ZD30DDTi	: 60 seconds
M9R engine	: 4 minutes	ZD30DDTT	: 60 seconds
R9M engine	: 4 minutes		
V9X engine	: 4 minutes		

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.

- After high-load driving, if the vehicle is equipped with the V9X engine, turn the ignition switch OFF and wait for at least 15 minutes to remove the battery terminal.

NOTE:
- Turbocharger cooling pump may operate in a few minutes after the ignition switch is turned OFF.
- Example of high-load driving
  - Driving for 30 minutes or more at 140 km/h (86 MPH) or more.
  - Driving for 30 minutes or more on a steep slope.

- 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.

Precaution for Trouble Diagnosis

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AV COMMUNICATION SYSTEM

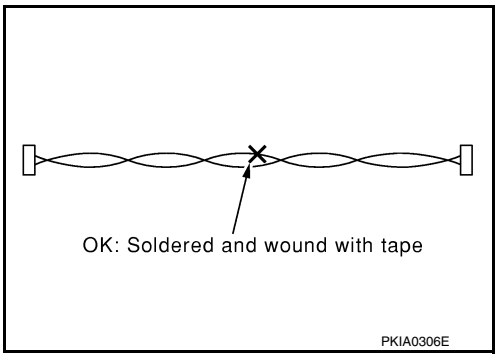
- Do not apply voltage of 7.0 V or higher to the measurement terminals.
- Use the tester with its open terminal voltage being 7.0 V or less.
- Be sure to turn ignition switch OFF and disconnect the battery cable from the negative terminal before checking the circuit.

Precaution for Harness Repair

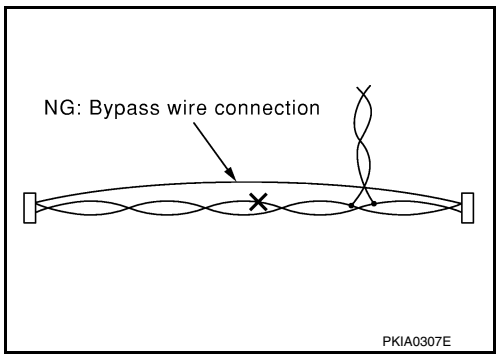
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AV COMMUNICATION SYSTEM

- 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.)

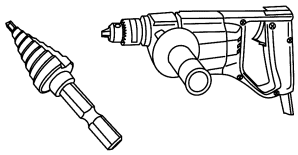
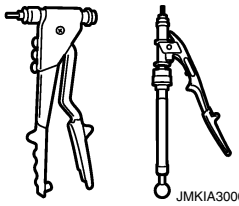
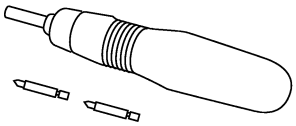


PREPARATION

PREPARATION

Commercial Service Tools

INFOID:0000000013615472

Tool name	Description
Drill  JMKIB1809ZZ	Remove front/rear door speaker
Hand nut rivet setter  JMKIA3000ZZ	Install front/rear door speaker
Power tool  PBIC0191E	Loosening screws

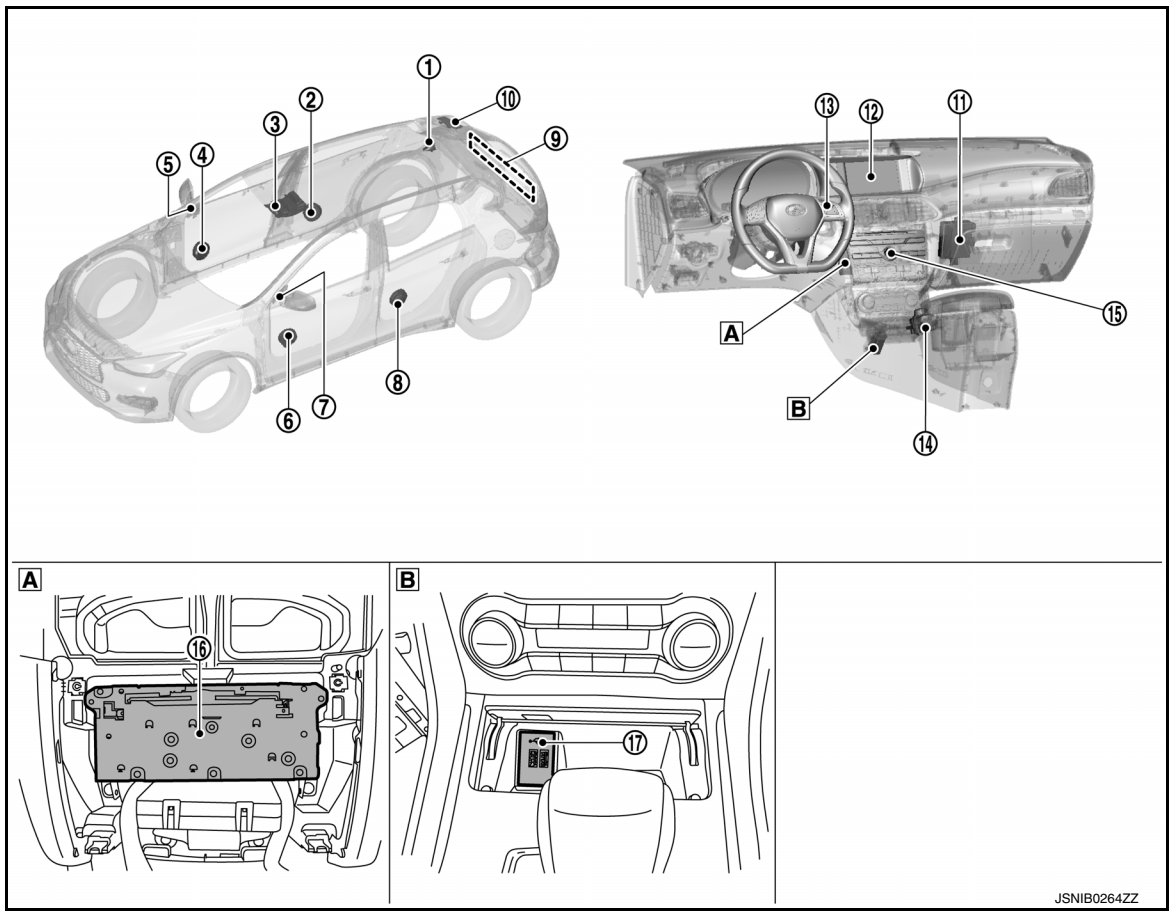
SYSTEM DESCRIPTION

COMPONENT PARTS

WITHOUT BOSE SYSTEM

WITHOUT BOSE SYSTEM : Component Parts Location

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A Instrument panel center

B Within center console pocket

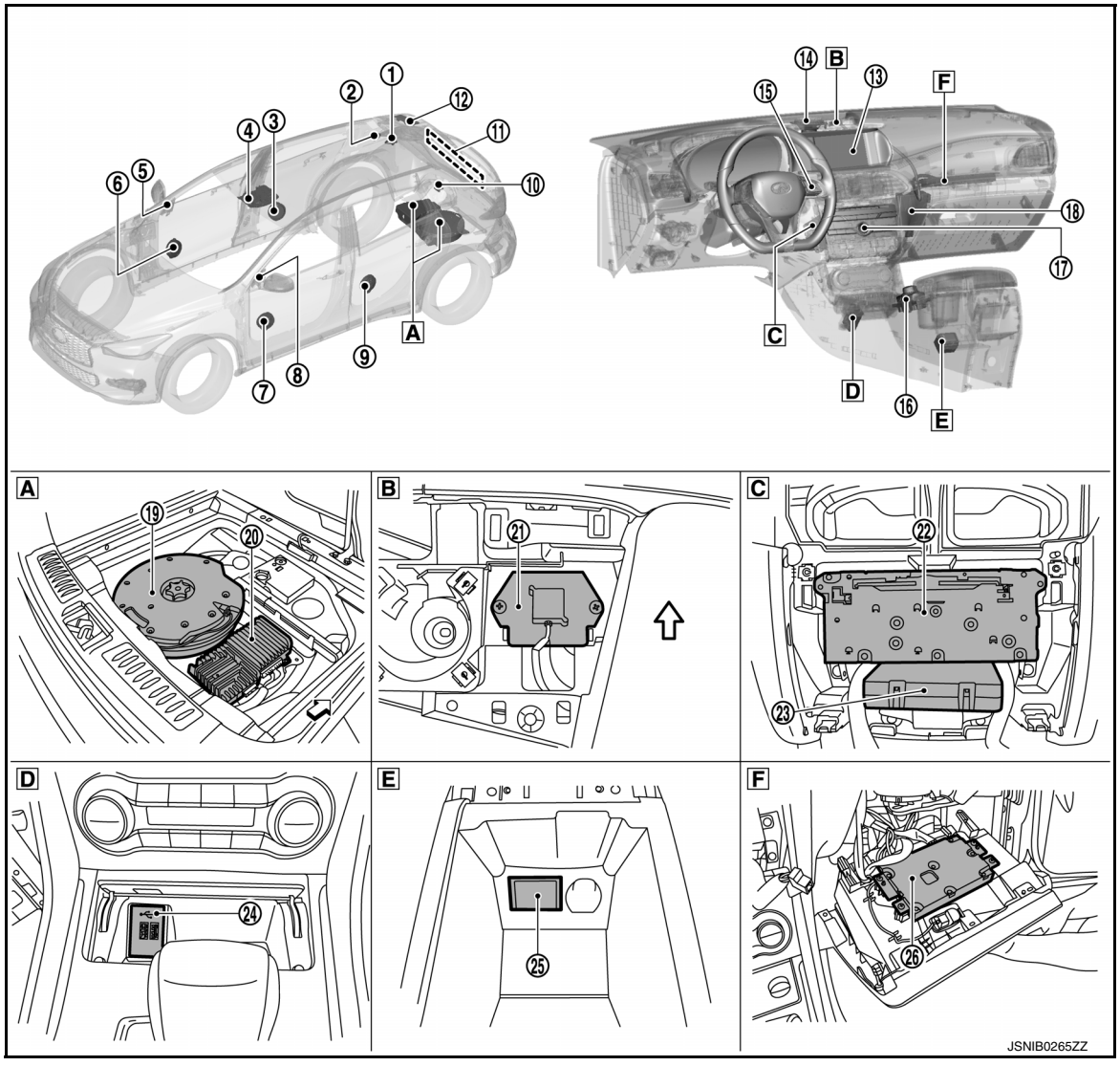
No.	Component	Function
①	Satellite radio antenna	AV-21, "Antenna and Antenna Feeder"
②	Rear door speaker RH	AV-18, "WITHOUT BOSE SYSTEM : Speaker"
③	Microphone	AV-20, "Microphone"
④	Front door speaker RH	AV-18, "WITHOUT BOSE SYSTEM : Speaker"
⑤	Front tweeter RH	AV-18, "WITHOUT BOSE SYSTEM : Speaker"
⑥	Front door speaker LH	AV-18, "WITHOUT BOSE SYSTEM : Speaker"
⑦	Front tweeter LH	AV-18, "WITHOUT BOSE SYSTEM : Speaker"
⑧	Rear door speaker LH	AV-18, "WITHOUT BOSE SYSTEM : Speaker"
⑨	Window glass antenna (FM sub antenna)	AV-21, "Antenna and Antenna Feeder"
⑩	AM/FM main antenna	AV-21, "Antenna and Antenna Feeder"

No.	Component	Function
⑪	CAN gateway	• Transmits the CAN communication signals to the display control unit. • CAN gateway receives each signal via CAN communication. And it converts the signal to Digital/PWM and outputs it to control unit of AV system. Refer to LAN-150, "Component Parts Location", for detailed installation location.
⑫	Display control unit	AV-15, "Display Control Unit"
⑬	Steering switch	AV-21, "Steering Switch"
⑭	Multifunction switch	AV-17, "Multifunction Switch"
⑮	Preset switch	AV-17, "Preset Switch"
⑯	AV control unit	AV-16, "AV Control Unit"
⑰	External data input box (USB)	AV-17, "External Data Input Box (USB)"

WITH BOSE SYSTEM

WITH BOSE SYSTEM : Component Parts Location

INFOID:0000000013615474



A Luggage floor
B Instrument panel upper
C Instrument panel center
D Within center console pocket
E Within center console box
F On the glove box
⇦ : Vehicle front

No.	Component	Function
①	Satellite radio antenna	AV-21, "Antenna and Antenna Feeder"
②	Rear pillar squawker RH	AV-19, "WITH BOSE SYSTEM : Speaker"
③	Rear door speaker RH	AV-19, "WITH BOSE SYSTEM : Speaker"
④	Microphone	AV-20, "Microphone"
⑤	Front tweeter RH	AV-19, "WITH BOSE SYSTEM : Speaker"
⑥	Front door speaker RH	AV-19, "WITH BOSE SYSTEM : Speaker"
⑦	Front door speaker LH	AV-19, "WITH BOSE SYSTEM : Speaker"
⑧	Front tweeter LH	AV-19, "WITH BOSE SYSTEM : Speaker"
⑨	Rear door speaker LH	AV-19, "WITH BOSE SYSTEM : Speaker"
⑩	Rear pillar squawker LH	AV-19, "WITH BOSE SYSTEM : Speaker"
⑪	Window glass antenna (FM sub antenna)	AV-21, "Antenna and Antenna Feeder"
⑫	AM/FM main antenna	AV-21, "Antenna and Antenna Feeder"
⑬	Display control unit	AV-15, "Display Control Unit"
⑭	Center squawker	AV-19, "WITH BOSE SYSTEM : Speaker"
⑮	Steering switch	AV-21, "Steering Switch"
⑯	Multifunction switch	AV-17, "Multifunction Switch"
⑰	Preset switch	AV-17, "Preset Switch"
⑱	CAN gateway	• Transmits the CAN communication signals to the display control unit. • CAN gateway receives each signal via CAN communication. And it converts the signal to Digital/PWM and outputs it to control unit of AV system. Refer to LAN-150, "Component Parts Location", for detailed installation location.
⑲	Woofer	AV-19, "WITH BOSE SYSTEM : Speaker"
⑳	BOSE amp.	AV-18, "BOSE Amp."
㉑	GPS antenna	AV-21, "Antenna and Antenna Feeder"
㉒	AV control unit	AV-16, "AV Control Unit"
㉓	TCU	Transmits the microphone signal to the display control unit. Refer to AV-407, "Component Parts Location", for detailed installation location.
㉔	External data input box (USB)	AV-17, "External Data Input Box (USB)"
㉕	External data input box (SD card)	AV-17, "External Data Input Box (SD Card)"
㉖	NAVI control unit	AV-16, "NAVI Control Unit"

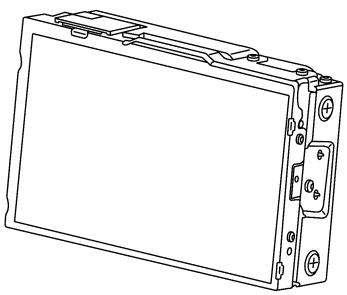
Display Control Unit

INFOID:0000000013615475

- Display control unit controls the Infiniti InTouch using the master unit that integrates the following functions.

Unit equipped
Display
Bluetooth® module

- Display control unit can store applications in the built-in memory by connecting a cell phone via Bluetooth® communication or USB communication [through external data input box (USB)].


JSNIA9271ZZ

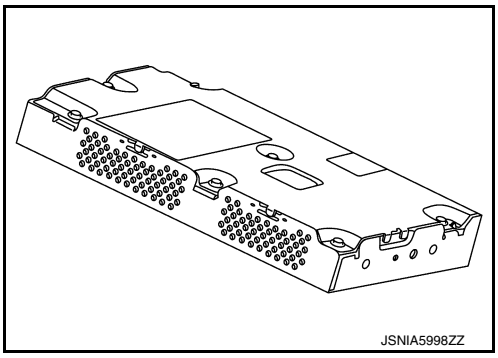
SPECIFICATION

Display		Screen size (mm)		8-inch wide VGA (152.4 × 91.44)
		Number of pixels		800 × 480 pixels
		Drive type		TFT active matrix method
		Touch panel detection		Firm/glass capacitive
Capacity (for application software)				512 MB
Bluetooth® module	Bluetooth® audio	Compliant communication type	Wireless connection	Bluetooth® communication
	Hands-free phone			
Other functions				Voice recognition function

NAVI Control Unit

INFOID:0000000013615476

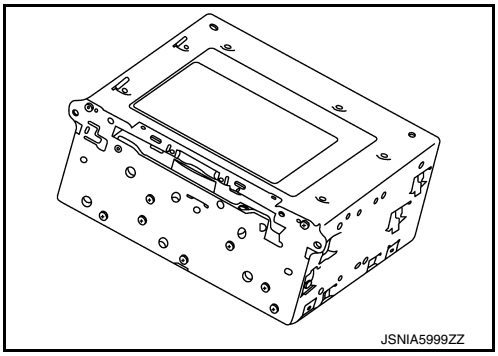
- NAVI control unit controls the navigation system of Infiniti InTouch.
- It integrates a gyro sensor and acceleration sensor and calculates the vehicle position by combining the vehicle speed signal, reverse signal, and location information received from GPS antenna.
- Map data is obtained from the SD card that is inserted in external data input box (SD card).



AV Control Unit

INFOID:0000000013615477

AV control unit controls the audio system of Infiniti InTouch.



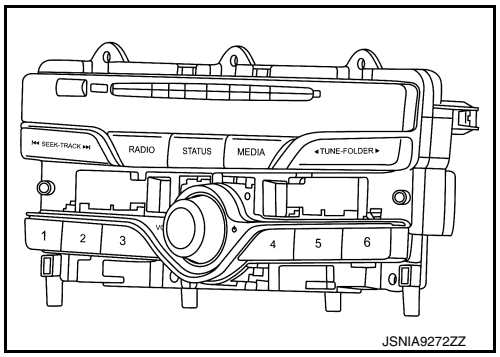
SPECIFICATION

Amplifier output (models without BOSE)			40 W × 4ch
CD drive	Playable disc		CD-ROM (CD-DA)
			CD-R
			CD-RW
	Playable format		MP3
			WMA
			AAC
	Text display function	ID3/WMA/AAC tag	Artist name
			Album title
			Song title

Preset Switch

INFOID:0000000013615478

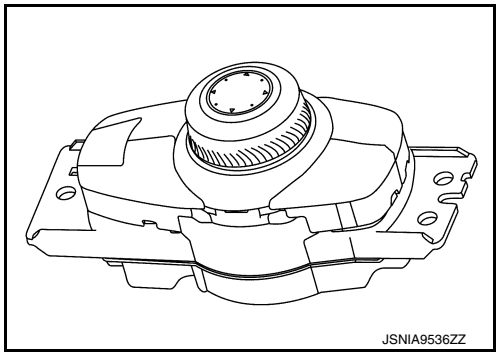
Infiniti InTouch operation can be performed pressing the hard switch.



Multifunction Switch

INFOID:0000000013615479

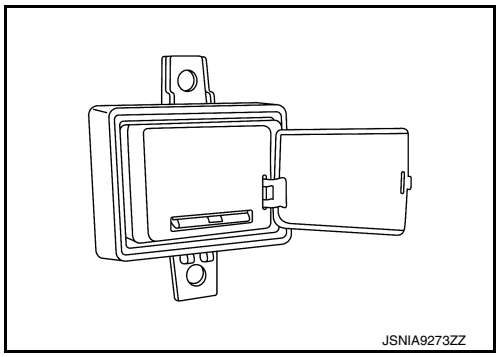
- Display of the display control unit can be operated.
- The multifunction switch is connected to the preset switch and a switch operation signal is transmitted to the display control unit by way of the preset switch via AV communication.



External Data Input Box (SD Card)

INFOID:0000000013615480

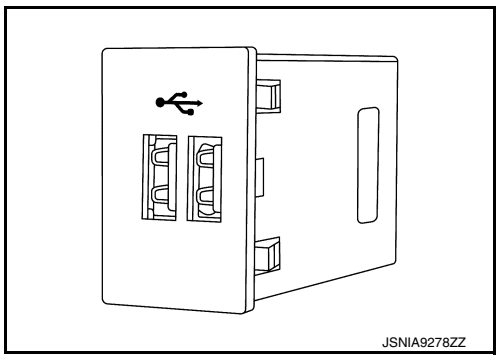
External data input box (SD card) records the map data from SD card, and is used by navigation system.



External Data Input Box (USB)

INFOID:0000000013615481

External data input box (USB) comprises 2 USB ports. External device can be connected and send signal to display control unit via USB communication.



SD Card

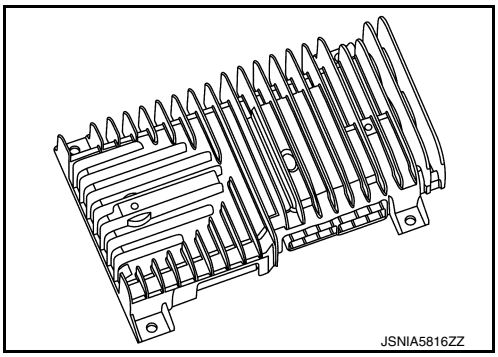
INFOID:0000000013615482

Map data is sent to the NAVI control unit from the external data input box (SD card) via USB communication.

BOSE Amp.

INFOID:0000000013615483

Receives sound signal from AV control unit, and outputs sound signal to each speaker, squawker, and woofer.


JSNIA5816ZZ

WITHOUT BOSE SYSTEM

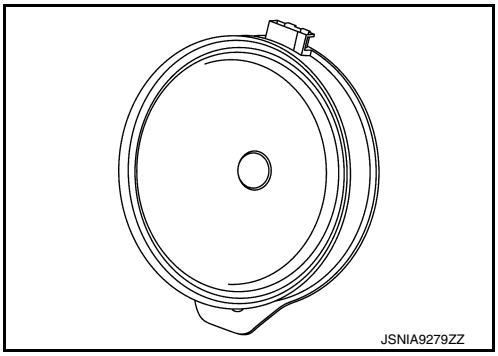
WITHOUT BOSE SYSTEM : Speaker

INFOID:0000000013615484

FRONT DOOR SPEAKER

- ϕ16.5 cm (6.5 in) speaker is installed to the bottom of the front door.
- Sound signal is input from the AV control unit to output low range sound.

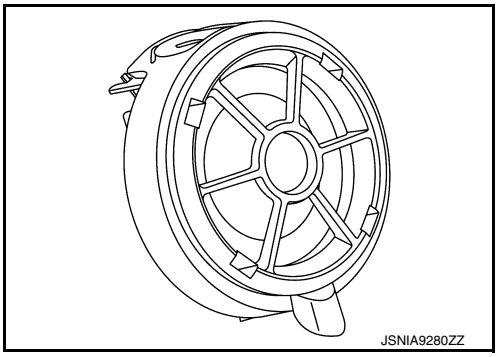
Maximum input	: 38.5 W
Rated input	: 12.9 W
Impedance	: 2.1 Ω


JSNIA9279ZZ

FRONT TWEETER

- ϕ2.5 cm (1.0 in) speaker is installed to the door mirror corner cover.
- Sound signal is input from the AV control unit to output high range sound.

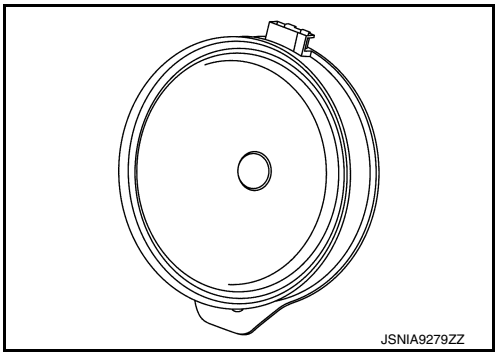
Maximum input	: 22.5 W
Rated input	: 7.5 W
Impedance	: 3.6 Ω


JSNIA9280ZZ

REAR DOOR SPEAKER

- ϕ16.5 cm (6.5 in) speaker is installed to the bottom of the rear door.
- Sound signal is input from the AV control unit to output high, mid and low range sound.

Maximum input	: 38.5 W
Rated input	: 12.9 W
Impedance	: 2.1 Ω


JSNIA9279ZZ

WITH BOSE SYSTEM

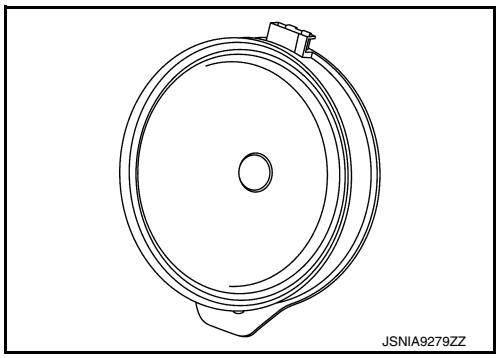
WITH BOSE SYSTEM : Speaker

INFOID:0000000013615485

FRONT DOOR SPEAKER

- ϕ16.5 cm (6.5 in) speaker is installed to the bottom of the front door.
- Sound signal is input from the BOSE amp. to output low range sound.

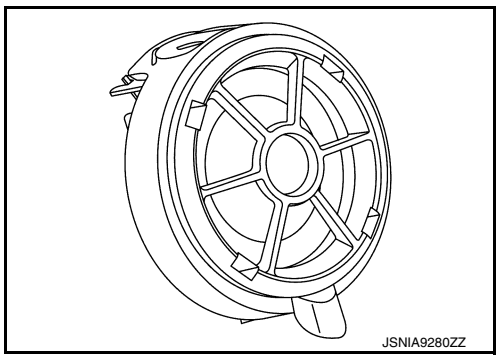
Maximum input	: 38.5 W
Rated input	: 12.9 W
Impedance	: 2.1 Ω



FRONT TWEETER

- ϕ2.5 cm (1.0 in) speaker is installed to the door mirror corner cover.
- Sound signal is input from the BOSE amp. to output high range sound.

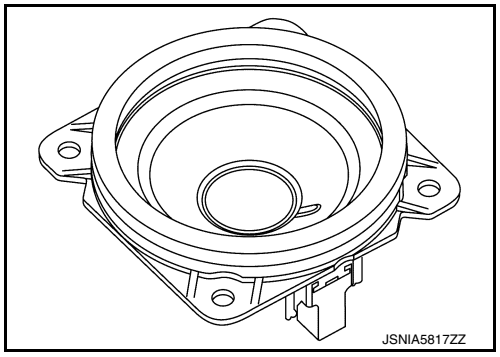
Maximum input	: 22.5 W
Rated input	: 7.5 W
Impedance	: 3.6 Ω



CENTER SQUAWKER

- ϕ7.6 cm (3.0 in) squawker is installed to the center of instrument panel.
- Sound signal is input from the BOSE amp. to output high, and mid range sound.

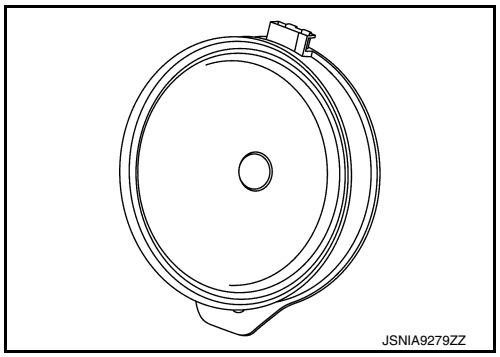
Maximum input	: 22.5 W
Rated input	: 7.6 W
Impedance	: 3.6 Ω



REAR DOOR SPEAKER

- ϕ16.5 cm (6.5 in) speaker is installed to the bottom of the rear door.
- Sound signal is input from the BOSE amp. to output high, mid and low range sound.

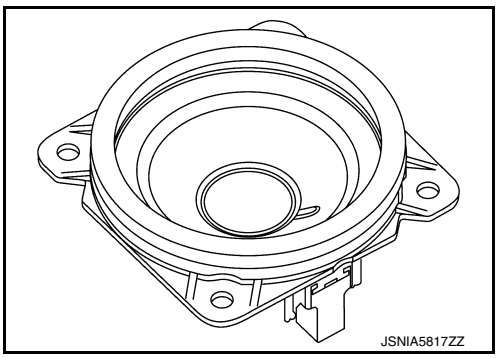
Maximum input	: 38.5 W
Rated input	: 12.9 W
Impedance	: 2.1 Ω



REAR PILLAR SQUAWKER

- ϕ7.6 cm (3.0 in) squawker is installed to the side of the rear pillar garnish.
- Sound signal is input from the BOSE amp. to output mid range sound.

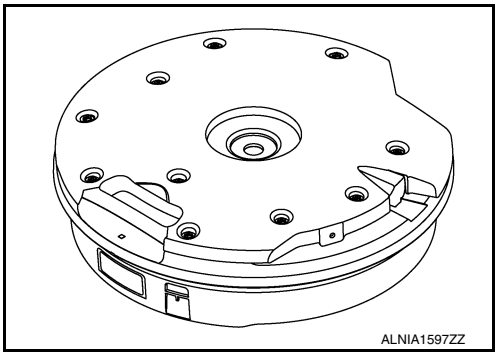
Maximum input	: 22.5 W
Rated input	: 7.6 W
Impedance	: 3.6 Ω


JSNIA5817ZZ

WOOFER

- ϕ25.0 cm (10 in) woofer is installed to the luggage floor.
- Sound signal is input from the BOSE amp. to output low range sound.

Maximum input	: 40.5 W
Rated input	: 13.6 W
Impedance	: 2.0 Ω

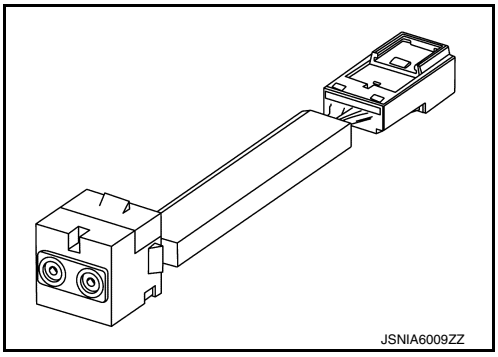

ALNIA1597ZZ

Microphone

INFOID:0000000013615486

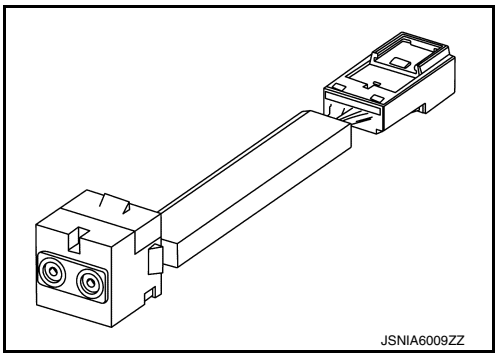
WITHOUT TELEMATICS SYSTEM

The power is supplied from the display control unit to the microphone, transmitting sound signals to the display control unit at the during hands-free phone communication, or voice recognition.


JSNIA6009ZZ

WITH TELEMATICS SYSTEM

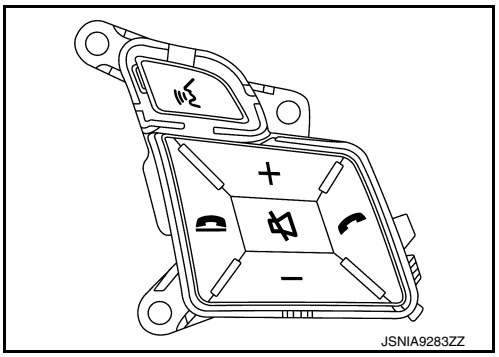
- The microphone is used for the operator system, hands-free phone system, voice recognition function.
- The power is supplied from the TCU to the microphone, transmitting sound signals to the TCU at the during operator system, hands-free phone communication, and voice recognition.


JSNIA6009ZZ

Steering Switch

INFOID:0000000013615487

- Hands-free phone, navigation, and audio operations can be performed.
- CAN gateway transmits steering switch signal to display control unit via AV communication.

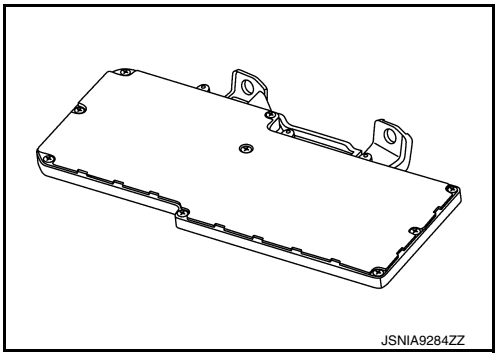


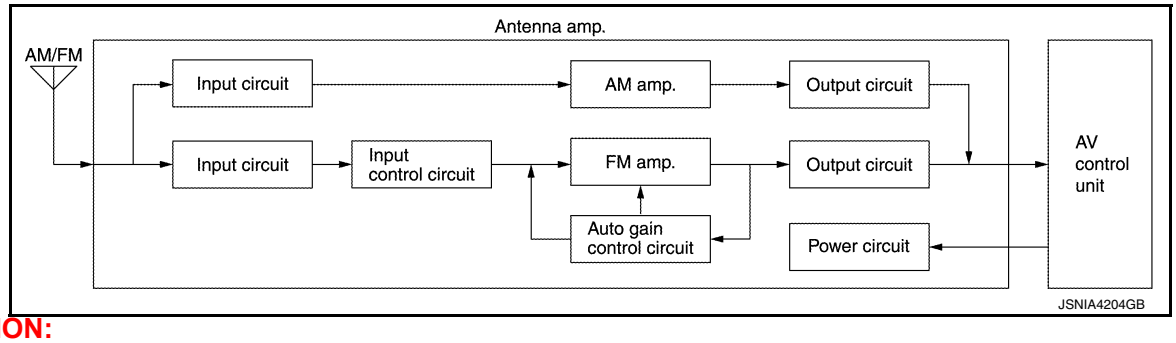
Antenna and Antenna Feeder

INFOID:0000000013615488

ANTENNA AMP. AND RADIO ANTENNA

- AM/FM radio main antenna is located into the rear spoiler.
- FM radio sub antenna on the rear window glass.
- Antenna amp. is built into the AM/FM radio main antenna.
- AM/FM radio main antenna path has an antenna amp. to obtain sufficient reception power.





CAUTION:

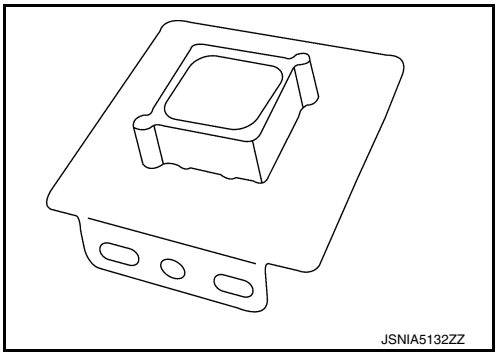
Affixing any mirror-type window films or metallic items (e.g. commercial antenna) on the rear window glass causes a reduction in the radio receiver sensitivity.

GPS ANTENNA

- Power is supplied from the NAVI control unit.
- This antenna amplifies radio waves received from the GPS satellite and transmits the GPS signal to the NAVI control unit.

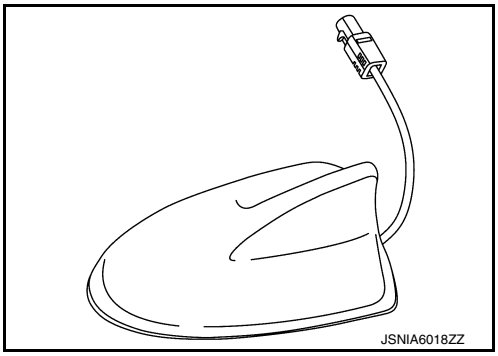
NOTE:

An object on the instrument panel may cause the reception sensitivity to be decreased.

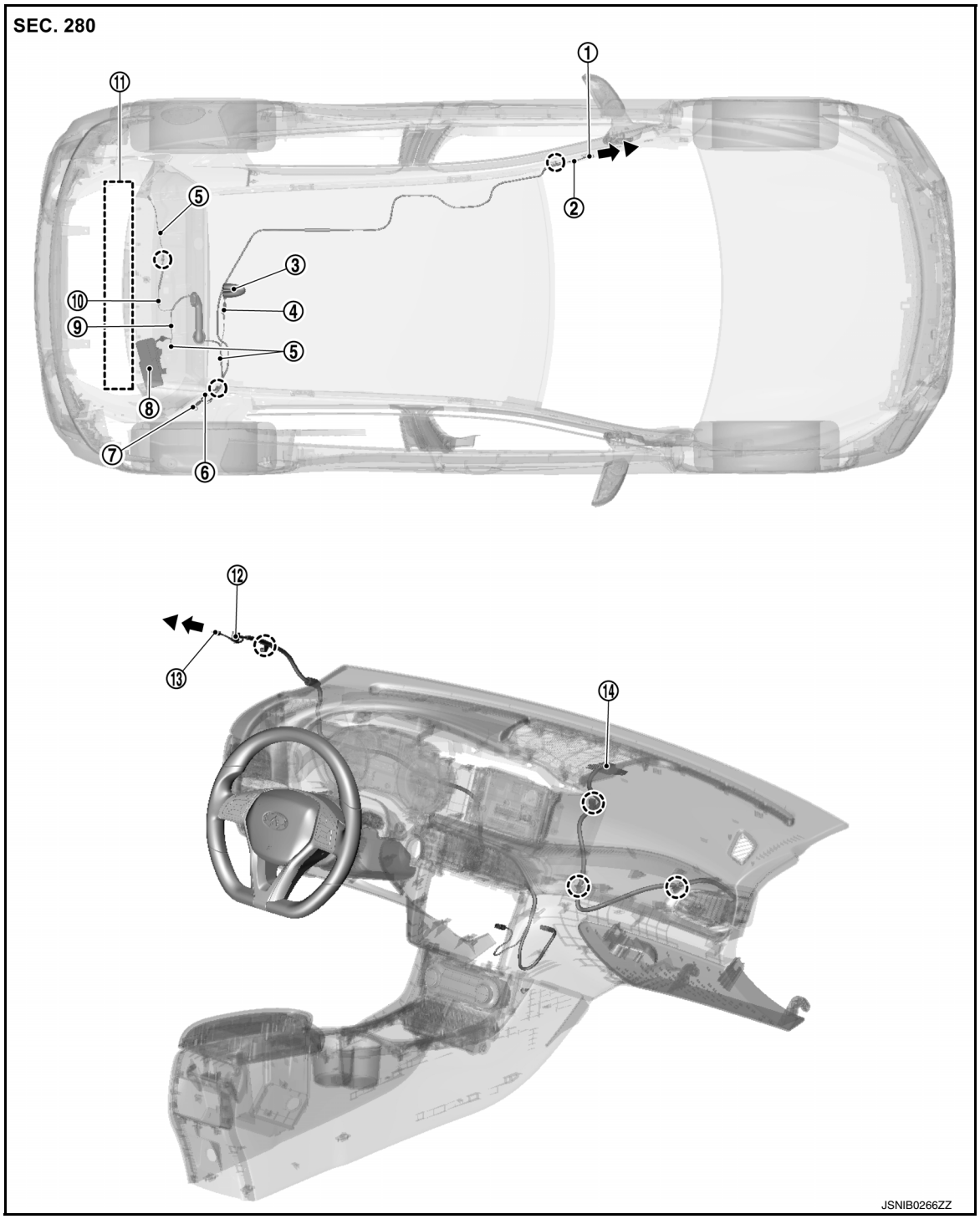


SATELLITE RADIO ANTENNA

Receives satellite radio waves and outputs it to AV control unit.



ANTENNA FEEDER



① With clip connector (M376) ② Connector (M802) ③ Satellite radio antenna
④ With clip connector (M805) ⑤ Mounting bolts ⑥ With clip connector (M386)
⑦ With clip connector (M804/803) ⑧ AM/FM main antenna ⑨ With clip connector (M387)
⑩ With clip connector (M389) ⑪ Window glass antenna ⑫ Connector (M375)
⑬ Connector (M801) ⑭ GPS antenna

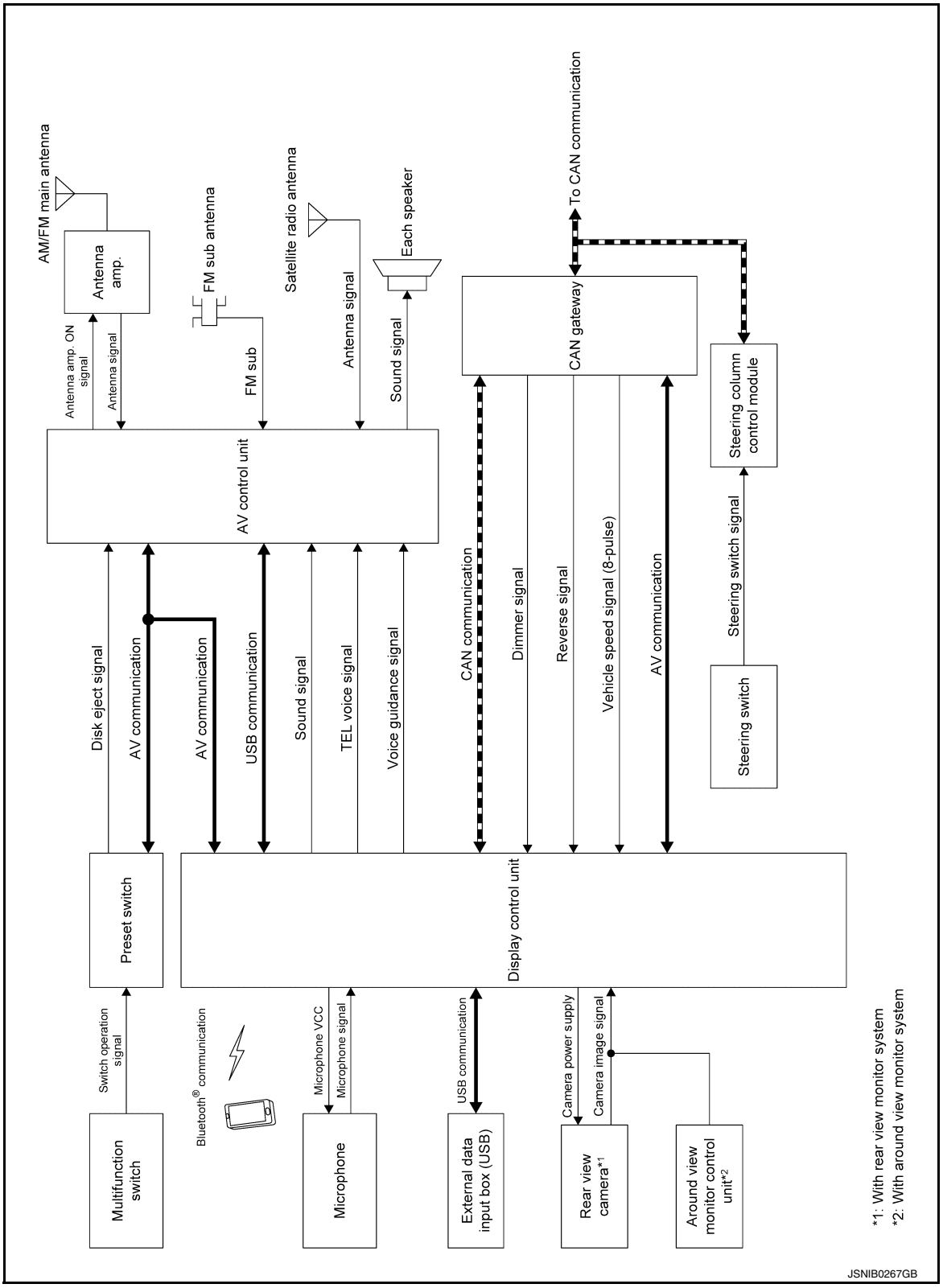
◌ : Clips

▲ : Indicates that the part is connected at points with same symbol in actual vehicle.

INFINITI INTOUCH
BASE AUDIO WITHOUT NAVIGATION
BASE AUDIO WITHOUT NAVIGATION : System Description

INFOID:0000000013615492

SYSTEM DIAGRAM



Display Control Unit Input Signal (CAN Communication)

Transmit unit	Signal name
CAN gateway	Vehicle speed signal
	Distance to empty signal
	Fuel level low warning signal
	Vehicle setting signal
	Engine status signal
	Fuel consumption monitor signal
	Shift position signal

DESCRIPTION

- Refer to Owner's Manual for Infiniti InTouch operating instructions.
- Display control unit controls the Infiniti InTouch.
- Infiniti InTouch consists of the systems listed in the following table.

System	Refer to
Audio	AV-45, "WITHOUT BOSE SYSTEM : System Description"
Hands-free phone	AV-55, "WITHOUT BOSE SYSTEM : System Description"

NOTE:
For camera system, refer to AV-267, "System Description" (around view monitor) or AV-357, "System Description" (rear view monitor).

VOICE RECOGNITION

- By speaking a command, operations of hands-free phone can be performed.
- To perform the voice control, press the VR switch ( ) of the steering switch. The system changes to the speech reception status. When a command is spoken, the speech recognition result is displayed, and the operation is executed.
- The voice control cannot be performed under the conditions listed below.

- When the camera image is displayed
- When the hand-free phone is used

NOTE:
DTMF can be sent via audio during a telephone call.
DTMF: Dual-tone multi-frequency signaling (DTMF) is an in-band telecommunication signaling system using the voice-frequency band over telephone lines between telephone equipment and other communications devices and switching centers.

Major Functions

With this function, the list of commands used for telephone operation can be checked.

COMMUNICATION SIGNAL

CAN Communication

CAN communication signal of display control unit is communicated to each unit via CAN gateway.
For details of description, refer to LAN-151, "CAN COMMUNICATION SYSTEM : System Description".

USB Communication

Each unit is connected by USB communication and used according to the descriptions in the following table.

Connecting unit	Description
Display control unit ⇔ AV control unit	Text information (the CD album title, artist name, and song title) is transmitted from AV control unit to display control unit.
Display control unit ⇔ External data input box (USB)	Music information stored in the iPod or USB memory that is connected to external data input box (USB) is transmitted from external data input box (USB) to display control unit.

AV Communication

Display control unit is connected to each unit via AV communication and used according to the descriptions in the following table.

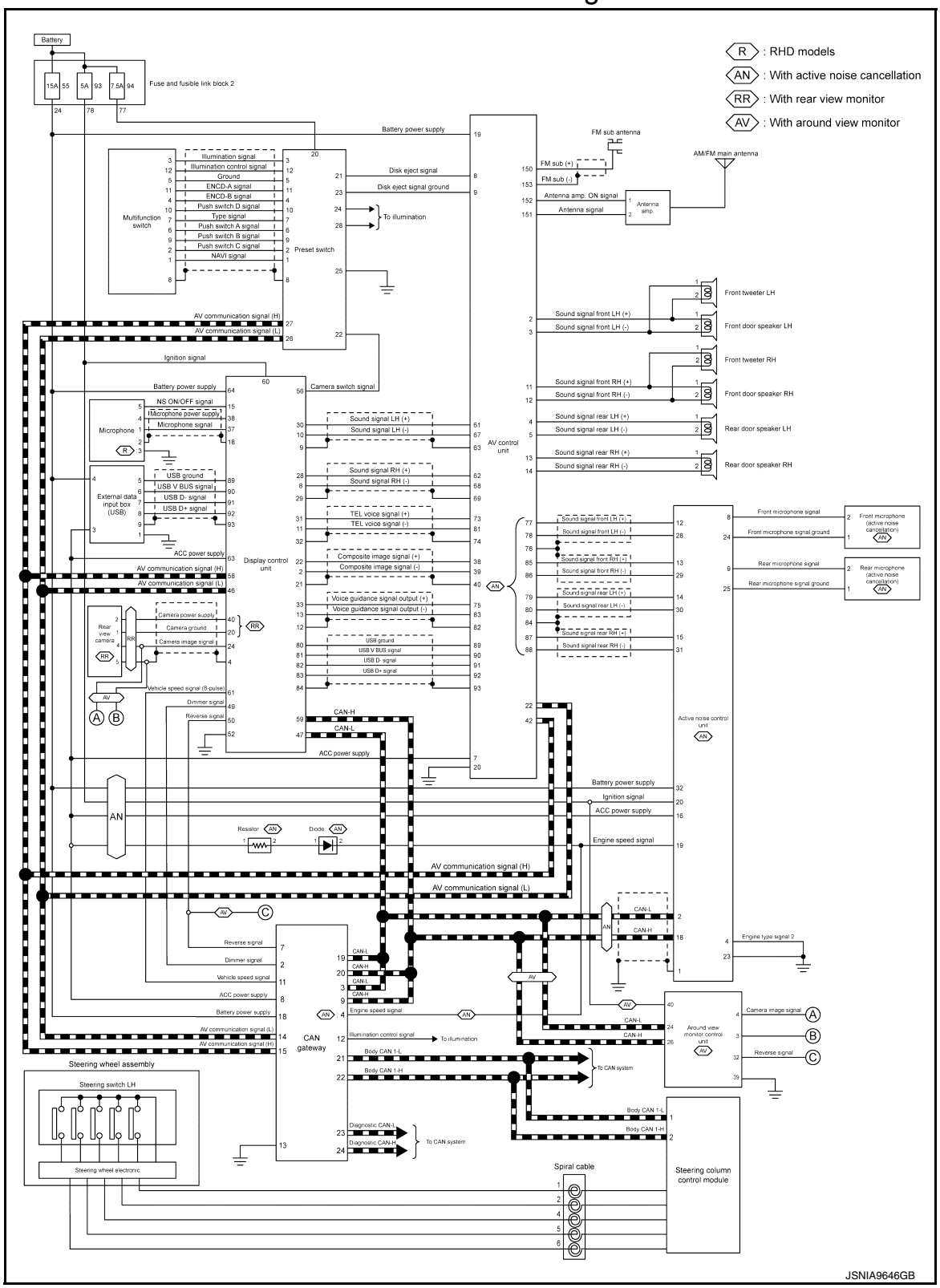
Connecting unit	Description
AV control unit	The display control unit transmits a source switching signal to the AV control unit.
Preset switch	Preset switch transmits the operation signals of multifunction switch and preset switch to display control unit.
CAN gateway	Display control unit transmits the information that is displayed on the information display of combination meter to combination meter.

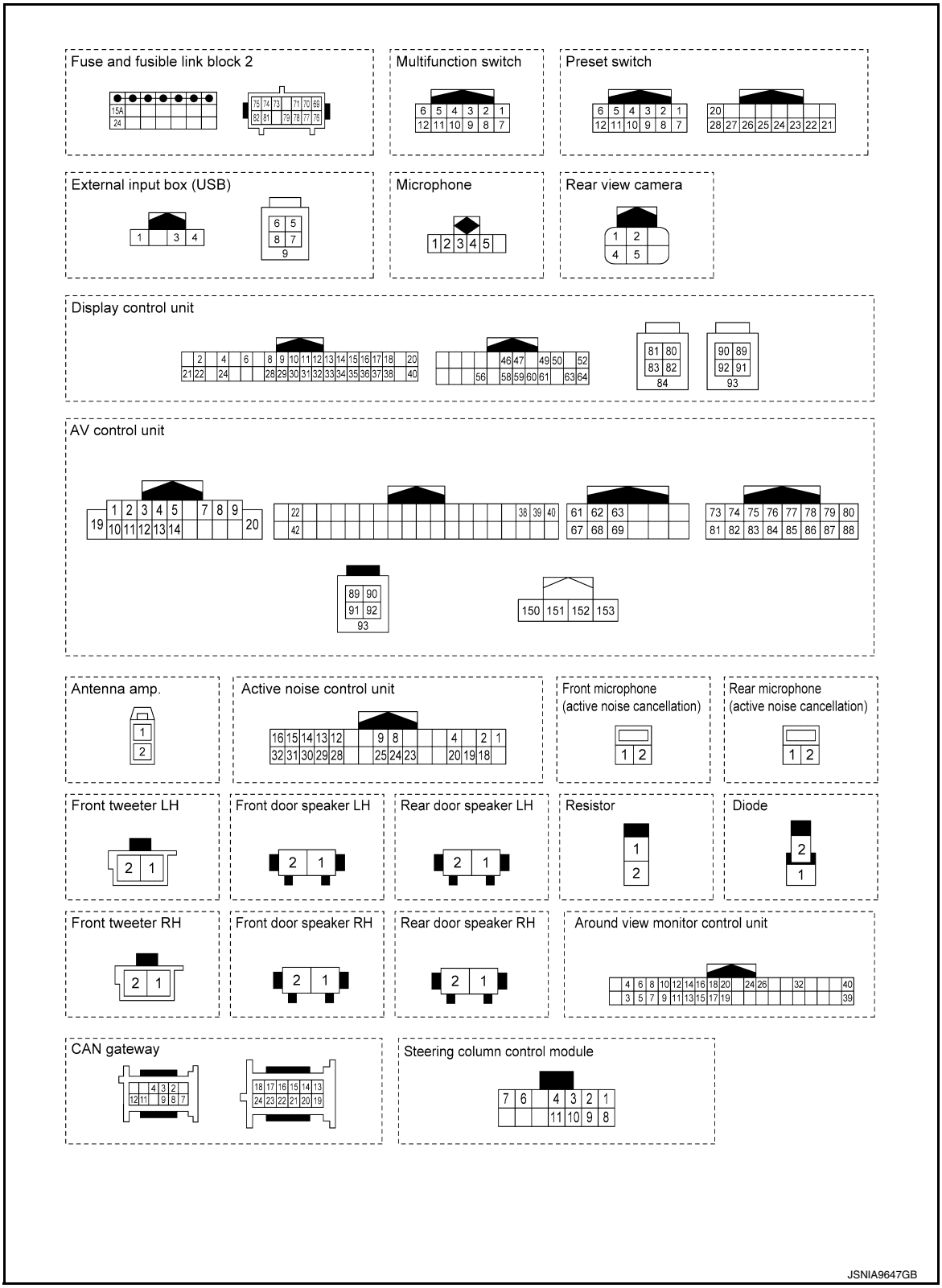
Bluetooth® Communication

Bluetooth® module is integrated in the display control unit, and a cell phone and a portable audio device can be connected by wireless communication using Bluetooth®.

BASE AUDIO WITHOUT NAVIGATION : Circuit Diagram

INFOID:0000000013615493





BASE AUDIO WITHOUT NAVIGATION : Fail-Safe (Display Control Unit)

INFOID:0000000013615494

If a malfunction occurs in the Infiniti InTouch, display control unit performs fail-safe activation according to the detected malfunction.

Detection item	Infiniti InTouch operation in fail-safe mode		DTC
Engine speed signal	Active sound enhancement function are deactivated.		B1F01
CAN communication	The system using the CAN communication signal from control unit which cannot communicate does not function.		U1000
	The system using the CAN communication signal does not function.		U1010
Display control unit	• Display is not displayed. • Display control unit restart. • Display control unit freezes. **NOTE:** Symptom other than an item may occur.		U121F
Configuration	A function of display control unit becomes mismatched with a vehicle specification and destination.		U1223
BOSE amp.	BOSE system does not function.		U1231
Steering angle sensor	Predictive course line is not displayed.		U1232
NAVI control unit	• Map is not displayed. • Navigation screen does not operate. **NOTE:** Symptom other than an item may occur.		U1233
AV control unit	• Sound is not output by a speaker. • CD is not played. • Radio does not operate. **NOTE:** Symptom other than an item may occur.		U1234
GPS antenna	The vehicle positions of a navigation screen differ.		U1244
AV communication	AV control unit	• Sound is not output by a speaker. • CD is not played. • Radio does not operate. **NOTE:** Symptom other than an item may occur.	U1249
	BOSE amp.	Sound is not output by a speaker.	U124E
	Preset switch	Switch operation does not operate. **NOTE:** Symptom other than an item may occur.	U1240
	CAN gateway	• Audio information is not displayed by the information display in the combination meter. • Navigation indicator is not displayed by the information display in the combination meter. • Steering switch does not operate.	U1267
	Display control unit	The system of ECU which detected abnormalities does not operate.	U1300
		The system which is using AV communication does not operate.	U1310
USB communication	NAVI control unit	A navigation menu cannot be selected (hatching display).	U125D
	TCU	Telematics system does not function.	U1266
Multifunction switch	Multifunction switch operation does not operate.		U12BA
Satellite radio antenna	Satellite radio is not received.		U1258

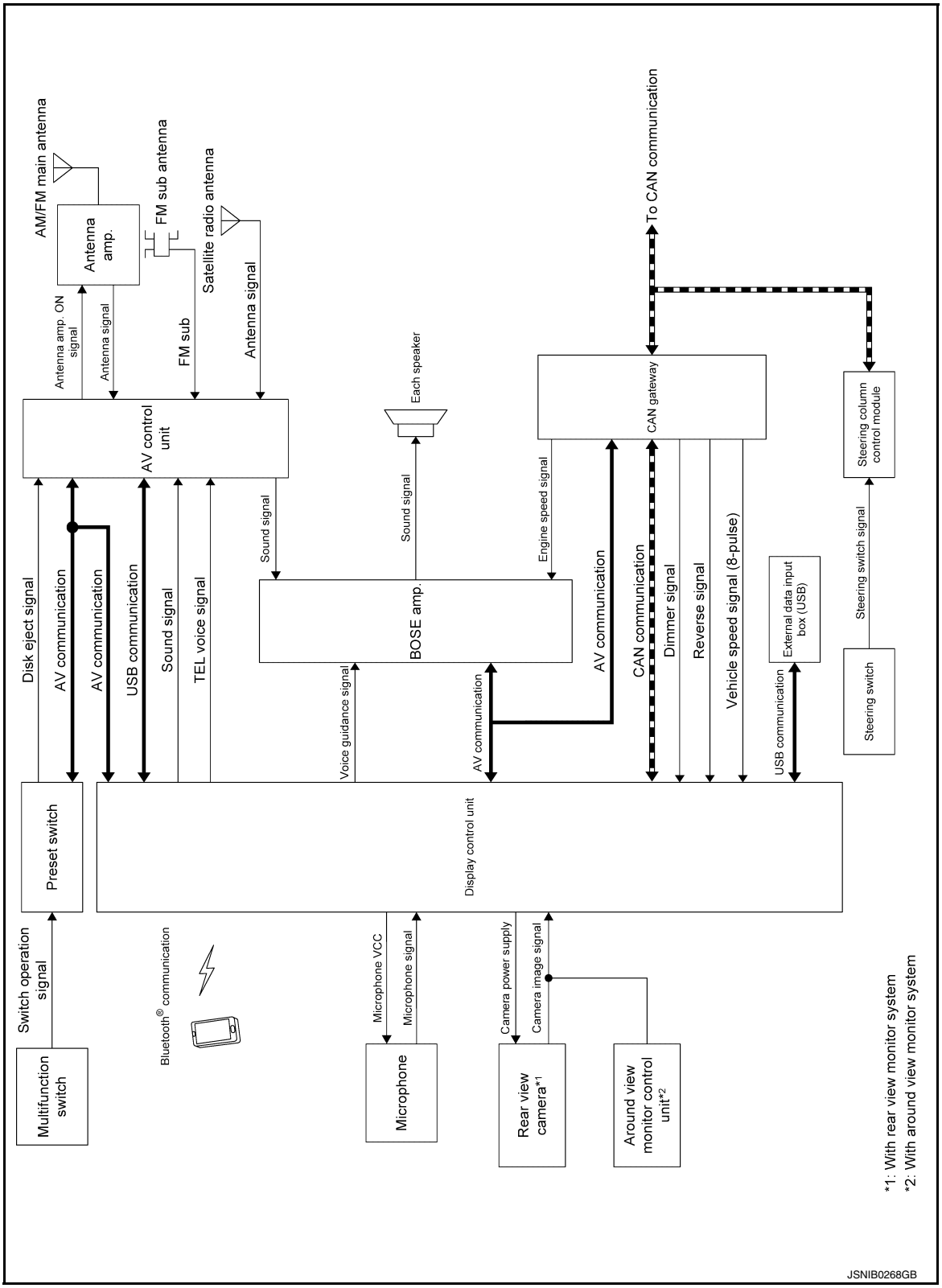
Detection item	Infiniti InTouch operation in fail-safe mode	DTC
Radio antenna	Radio is not received.	U12BE
Speaker/squawker/tweeter/ woofer	No sound from malfunction speaker	U1601 U1603 U1609 U160B U162A U1708 U1710 U1752 U175A U175D U1765

BOSE AUDIO WITHOUT NAVIGATION

BOSE AUDIO WITHOUT NAVIGATION : System Description

INFOID:0000000013615500

SYSTEM DIAGRAM



Display Control Unit Input Signal (CAN Communication)

Transmit unit	Signal name
CAN gateway	Vehicle speed signal
	Distance to empty signal
	Fuel level low warning signal
	Vehicle setting signal
	Engine torque signal
	Accelerator pedal position signal
	Door switch signal
	Drive mode signal
	Engine status signal
	Fuel consumption monitor signal
	Shift position signal

DESCRIPTION

- Refer to Owner's Manual for Infiniti InTouch operating instructions.
- Display control unit controls the Infiniti InTouch.
- Infiniti InTouch consists of the systems listed in the following table.

System	Refer to
Audio	AV-47, "WITH BOSE SYSTEM : System Description"
Hands-free phone	AV-56, "WITH BOSE SYSTEM : System Description"
Active sound enhancement	AV-57, "WITH BOSE SYSTEM : System Description"

NOTE:
For camera system, refer to AV-267, "System Description" (around view monitor) or AV-357, "System Description" (rear view monitor).

VOICE RECOGNITION

- By speaking a command, operations of hands-free phone can be performed.
- To perform the voice control, press the VR switch ( ) of the steering switch. The system changes to the speech reception status. When a command is spoken, the speech recognition result is displayed, and the operation is executed.
- The voice control cannot be performed under the conditions listed below.

- When the camera image is displayed
- When the hand-free phone is used

NOTE:
DTMF can be sent via audio during a telephone call.
DTMF: Dual-tone multi-frequency signaling (DTMF) is an in-band telecommunication signaling system using the voice-frequency band over telephone lines between telephone equipment and other communications devices and switching centers.

Major Functions
With this function, the list of commands used for telephone operation can be checked.

COMMUNICATION SIGNAL

CAN Communication
CAN communication signal of display control unit is communicated to each unit via CAN gateway.
For details of description, refer to LAN-151, "CAN COMMUNICATION SYSTEM : System Description".

USB Communication
Each unit is connected by USB communication and used according to the descriptions in the following table.

Connecting unit	Description
Display control unit ⇔ AV control unit	Text information (the CD album title, artist name, and song title) is transmitted from AV control unit to display control unit.
Display control unit ⇔ External data input box (USB)	Music information stored in the iPod or USB memory that is connected to external data input box (USB) is transmitted from external data input box (USB) to display control unit.

AV Communication

Display control unit is connected to each unit via AV communication and used according to the descriptions in the following table.

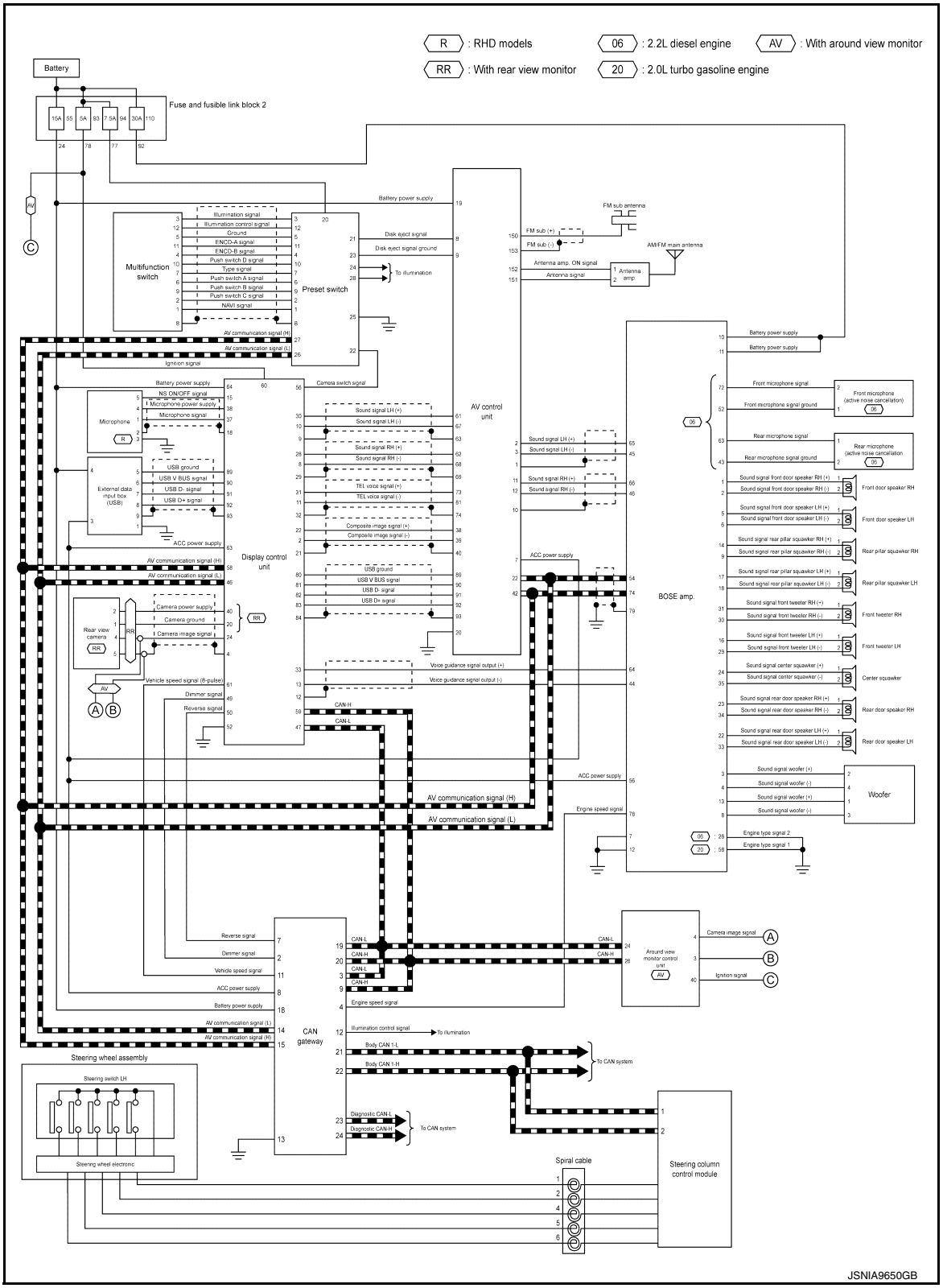
Connecting unit	Description
AV control unit	The display control unit transmits a source switching signal to the AV control unit.
Preset switch	Preset switch transmits the operation signals of multifunction switch and preset switch to display control unit.
BOSE amp.	Display control unit transmits the BOSE amp. ON signal to BOSE amp.
CAN gateway	Display control unit transmits the information that is displayed on the information display of combination meter to combination meter.

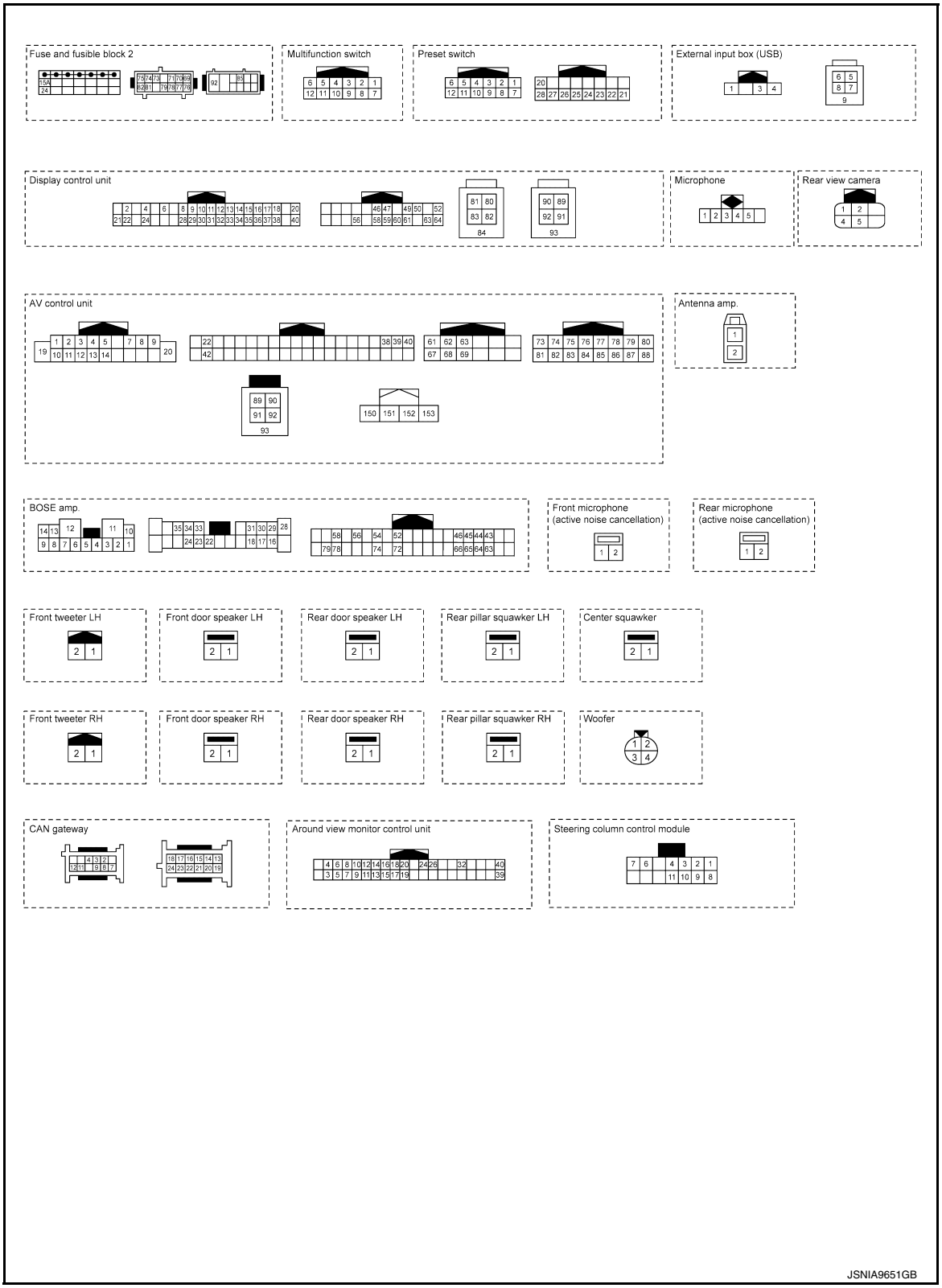
Bluetooth® Communication

Bluetooth® module is integrated in the display control unit, and a cell phone and a portable audio device can be connected by wireless communication using Bluetooth®.

BOSE AUDIO WITHOUT NAVIGATION : Circuit Diagram

INFOID:0000000013615501





BOSE AUDIO WITHOUT NAVIGATION : Fail-Safe (Display Control Unit)

INFOID:0000000013615502

If a malfunction occurs in the Infiniti InTouch, display control unit performs fail-safe activation according to the detected malfunction.

Detection item	Infiniti InTouch operation in fail-safe mode		DTC
Engine speed signal	Active sound enhancement function are deactivated.		B1F01
CAN communication	The system using the CAN communication signal from control unit which cannot communicate does not function.		U1000
	The system using the CAN communication signal does not function.		U1010
Display control unit	• Display is not displayed. • Display control unit restart. • Display control unit freezes. **NOTE:** Symptom other than an item may occur.		U121F
Configuration	A function of display control unit becomes mismatched with a vehicle specification and destination.		U1223
BOSE amp.	BOSE system does not function.		U1231
Steering angle sensor	Predictive course line is not displayed.		U1232
NAVI control unit	• Map is not displayed. • Navigation screen does not operate. **NOTE:** Symptom other than an item may occur.		U1233
AV control unit	• Sound is not output by a speaker. • CD is not played. • Radio does not operate. **NOTE:** Symptom other than an item may occur.		U1234
GPS antenna	The vehicle positions of a navigation screen differ.		U1244
AV communication	AV control unit	• Sound is not output by a speaker. • CD is not played. • Radio does not operate. **NOTE:** Symptom other than an item may occur.	U1249
	BOSE amp.	Sound is not output by a speaker.	U124E
	Preset switch	Switch operation does not operate. **NOTE:** Symptom other than an item may occur.	U1240
	CAN gateway	• Audio information is not displayed by the information display in the combination meter. • Navigation indicator is not displayed by the information display in the combination meter. • Steering switch does not operate.	U1267
	Display control unit	The system of ECU which detected abnormalities does not operate.	U1300
		The system which is using AV communication does not operate.	U1310
USB communication	NAVI control unit	A navigation menu cannot be selected (hatching display).	U125D
	TCU	Telematics system does not function.	U1266
Multifunction switch	Multifunction switch operation does not operate.		U12BA
Satellite radio antenna	Satellite radio is not received.		U1258

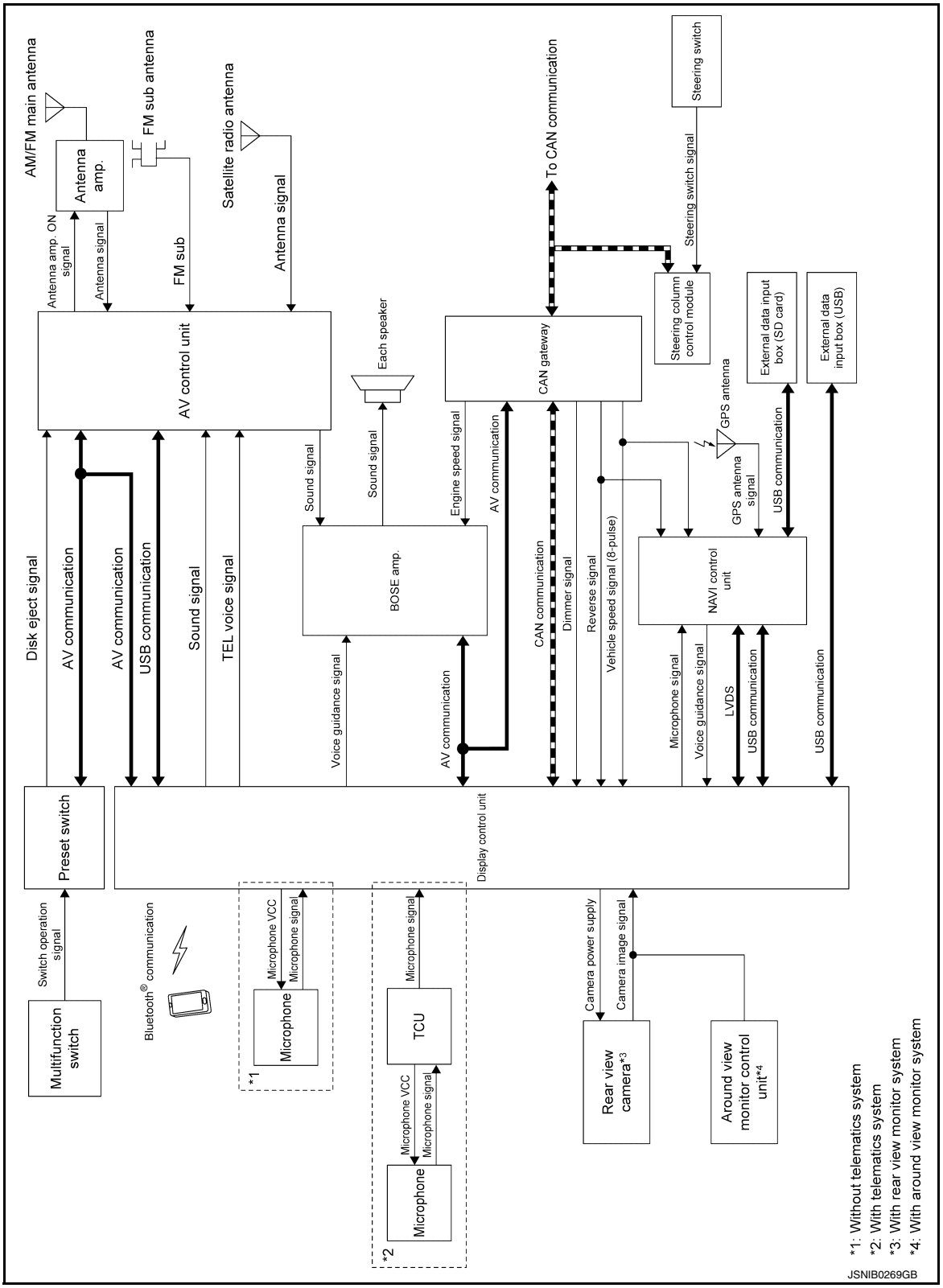
Detection item	Infiniti InTouch operation in fail-safe mode	DTC
Radio antenna	Radio is not received.	U12BE
Speaker/squawker/tweeter/ woofer	No sound from malfunction speaker	U1601 U1603 U1609 U160B U162A U1708 U1710 U1752 U175A U175D U1765

BOSE AUDIO WITH NAVIGATION

BOSE AUDIO WITH NAVIGATION : System Description

INFOID:0000000013615503

SYSTEM DIAGRAM



Display Control Unit Input Signal (CAN Communication)

Transmit unit	Signal name
CAN gateway	Vehicle speed signal
	Distance to empty signal
	Fuel level low warning signal
	Parking brake switch signal
	Vehicle setting signal
	Engine torque signal
	Accelerator pedal position signal
	Door switch signal
	Drive mode signal
	Engine status signal
	Fuel consumption monitor signal
	Shift position signal

DESCRIPTION

- Refer to Owner's Manual for Infiniti InTouch operating instructions.
- Display control unit controls the Infiniti InTouch.
- Infiniti InTouch consists of the systems listed in the following table.

System	Refer to
Audio	AV-47, "WITH BOSE SYSTEM : System Description"
Hands-free phone	AV-56, "WITH BOSE SYSTEM : System Description"
Navigation	AV-52, "WITH BOSE SYSTEM : System Description"
Active sound enhancement	AV-57, "WITH BOSE SYSTEM : System Description"

NOTE:
For camera system, refer to AV-267, "System Description" (around view monitor) or AV-357, "System Description" (rear view monitor).

VOICE RECOGNITION

- By speaking a command, operations of navigation and hands-free phone can be performed.
- To perform the voice control, press the VR switch ( ) of the steering switch. The system changes to the speech reception status. When a command is spoken, the speech recognition result is displayed, and the operation is executed.
- The voice control cannot be performed under the conditions listed below.

- When the camera image is displayed
- When the hand-free phone is used

NOTE:
DTMF can be sent via audio during a telephone call.
DTMF: Dual-tone multi-frequency signaling (DTMF) is an in-band telecommunication signaling system using the voice-frequency band over telephone lines between telephone equipment and other communications devices and switching centers.

Major Functions

With this function, the list of commands used for telephone, and navigation operation can be checked.

COMMUNICATION SIGNAL

CAN Communication

CAN communication signal of display control unit is communicated to each unit via CAN gateway.
For details of description, refer to LAN-151, "CAN COMMUNICATION SYSTEM : System Description".

USB Communication

Each unit is connected by USB communication and used according to the descriptions in the following table.

Connecting unit	Description
Display control unit ⇔ AV control unit	Text information (the CD album title, artist name, and song title) is transmitted from AV control unit to display control unit.
Display control unit ⇔ NAVI control unit	• The NAVI control unit transmits map data to the display control unit. • USB communication is used for operating navigation.
Display control unit ⇔ External data input box (USB)	Music information stored in the iPod or USB memory that is connected to external data input box (USB) is transmitted from external data input box (USB) to display control unit.
NAVI control unit ⇔ External data input box (SD card)	The external data input box (SD card) sends map data stored in map SD card to the NAVI control unit.

AV Communication

Display control unit is connected to each unit via AV communication and used according to the descriptions in the following table.

Connecting unit	Description
AV control unit	The display control unit transmits a source switching signal to the AV control unit.
Preset switch	Preset switch transmits the operation signals of multifunction switch and preset switch to display control unit.
BOSE amp.	Display control unit transmits the BOSE amp. ON signal to BOSE amp.
CAN gateway	Display control unit transmits the information that is displayed on the information display of combination meter to combination meter.

LVDS

Display control unit is connected to NAVI control unit via LVDS and used according to the descriptions in the following table.

Connecting unit	Description
NAVI control unit	Map image displayed on the NAVI control unit display is output from NAVI control unit to display control unit.

NOTE:

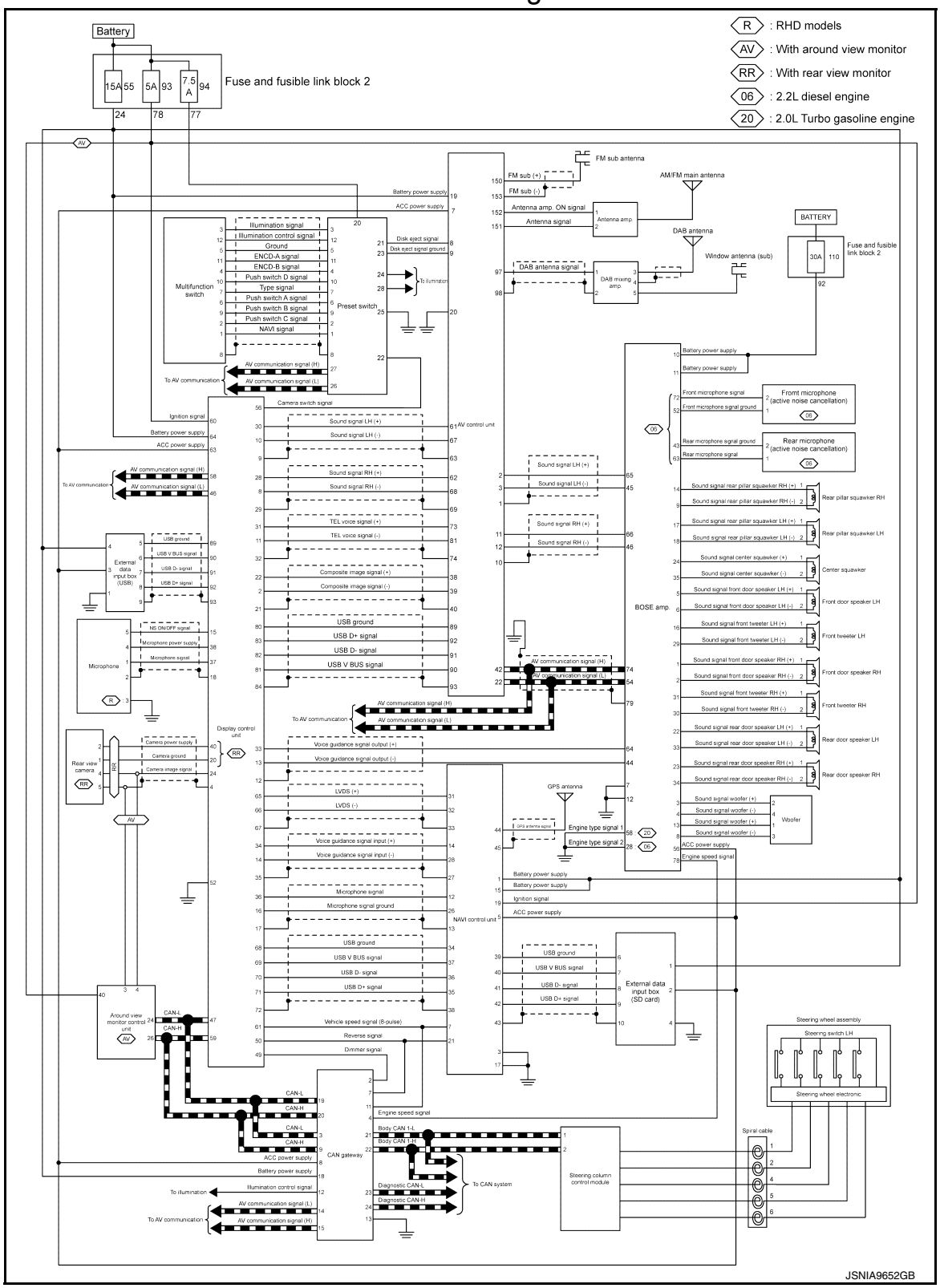
LVDS (Low Voltage Differential Signaling): LVDS is differential signaling system, meaning that it transmits information as the difference between the voltages on a pair of wire, the two wire voltages are compared at the receiver.

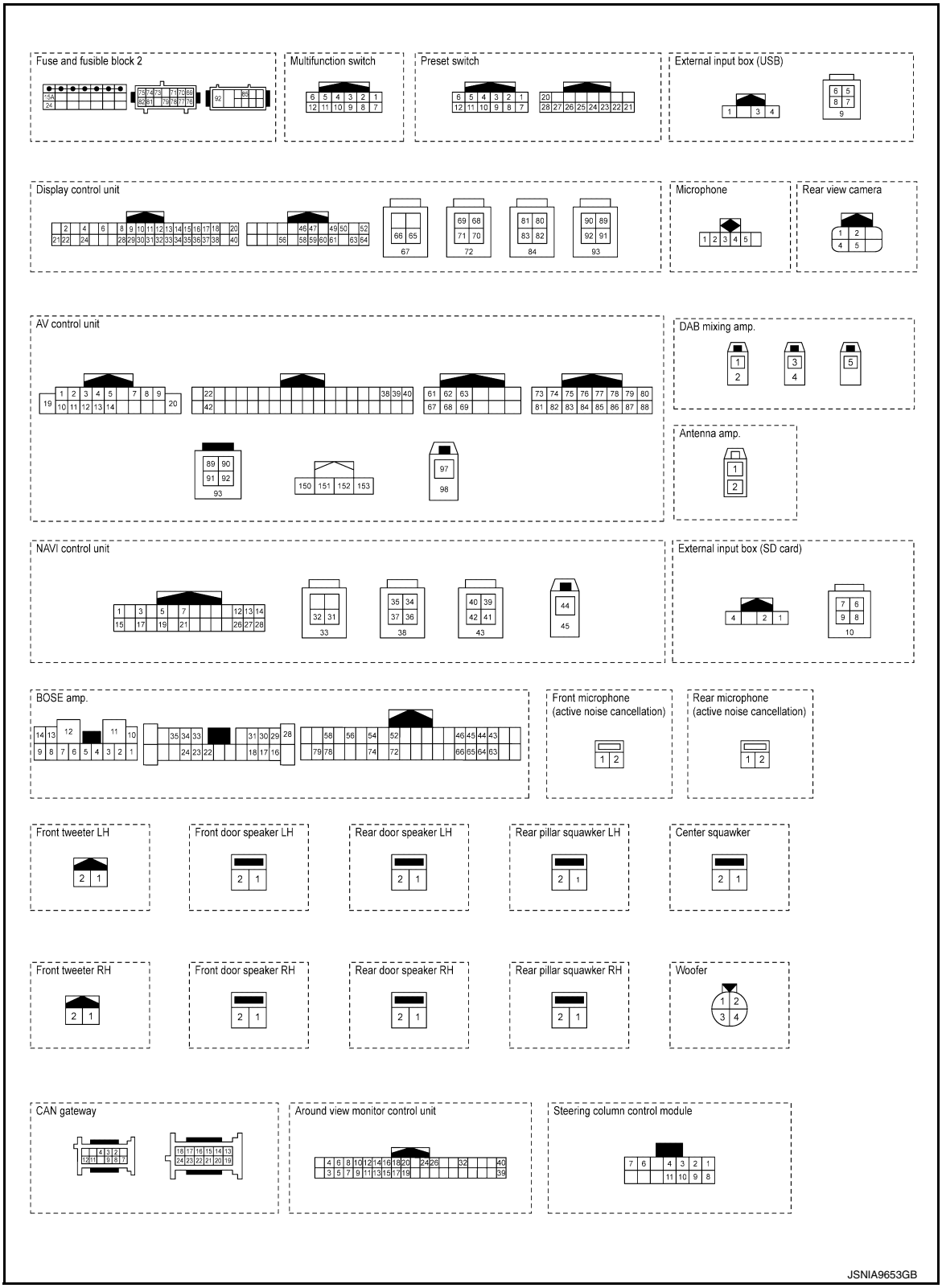
Bluetooth® Communication

Bluetooth® module is integrated in the display control unit, and a cell phone and a portable audio device can be connected by wireless communication using Bluetooth®.

BOSE AUDIO WITH NAVIGATION : Circuit Diagram

INFOID:0000000013615504





BOSE AUDIO WITH NAVIGATION : Fail-Safe (Display Control Unit)

INFOID:0000000013615505

If a malfunction occurs in the Infiniti InTouch, display control unit performs fail-safe activation according to the detected malfunction.

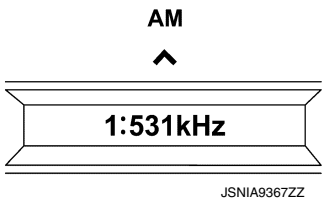
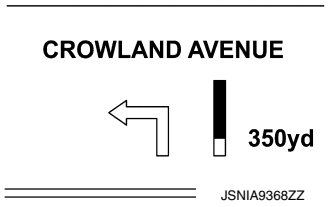
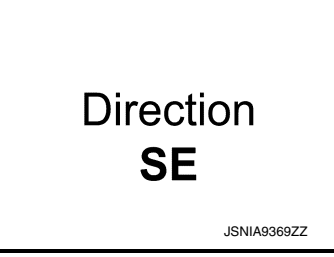
Detection item	Infiniti InTouch operation in fail-safe mode		DTC
Engine speed signal	Active sound enhancement function are deactivated.		B1F01
CAN communication	The system using the CAN communication signal from control unit which cannot communicate does not function.		U1000
	The system using the CAN communication signal does not function.		U1010
Display control unit	• Display is not displayed. • Display control unit restart. • Display control unit freezes. **NOTE:** Symptom other than an item may occur.		U121F
Configuration	A function of display control unit becomes mismatched with a vehicle specification and destination.		U1223
BOSE amp.	BOSE system does not function.		U1231
Steering angle sensor	Predictive course line is not displayed.		U1232
NAVI control unit	• Map is not displayed. • Navigation screen does not operate. **NOTE:** Symptom other than an item may occur.		U1233
AV control unit	• Sound is not output by a speaker. • CD is not played. • Radio does not operate. **NOTE:** Symptom other than an item may occur.		U1234
GPS antenna	The vehicle positions of a navigation screen differ.		U1244
AV communication	AV control unit	• Sound is not output by a speaker. • CD is not played. • Radio does not operate. **NOTE:** Symptom other than an item may occur.	U1249
	BOSE amp.	Sound is not output by a speaker.	U124E
	Preset switch	Switch operation does not operate. **NOTE:** Symptom other than an item may occur.	U1240
	CAN gateway	• Audio information is not displayed by the information display in the combination meter. • Navigation indicator is not displayed by the information display in the combination meter. • Steering switch does not operate.	U1267
	Display control unit	The system of ECU which detected abnormalities does not operate.	U1300
		The system which is using AV communication does not operate.	U1310
USB communication	NAVI control unit	A navigation menu cannot be selected (hatching display).	U125D
	TCU	Telematics system does not function.	U1266
Multifunction switch	Multifunction switch operation does not operate.		U12BA
Satellite radio antenna	Satellite radio is not received.		U1258

Detection item	Infiniti InTouch operation in fail-safe mode	DTC
Radio antenna	Radio is not received.	U12BE
Speaker/squawker/tweeter/ woofer	No sound from malfunction speaker	U1601 U1603 U1609 U160B U162A U1708 U1710 U1752 U175A U175D U1765

INFORMATION DISPLAY (COMBINATION METER)

INFORMATION DISPLAY (COMBINATION METER) : Display/Information

INFOID:0000000013615506

Name	Design	Description
Audio indicator	 JSNIA9367ZZ	Display state of the audio system to an information display • Display control unit transmits a meter display signal to a CAN gateway via AV communication. • CAN gateway transmits a meter display signal to a combination meter via CAN communication. • The combination meter which received a signal displays a state of the audio system to an information display. **NOTE:** The audio warning is displayed. (“No signal” etc.)
Navigation indicator	 JSNIA9368ZZ  JSNIA9369ZZ	In a route guide, display the distance to the lines of intersections and the next turning point to an information display by an icon. • Display control unit transmits a meter display signal to a CAN gateway via AV communication. • CAN gateway transmits a meter display signal to a combination meter via CAN communication. • The combination meter which received a signal displays a state of the navigation to an information display. **NOTE:** • When a destination is not set, display progress direction of the vehicle. • The indication displays a blank when GPS signal non-reception or deviates from the route during route guidance.

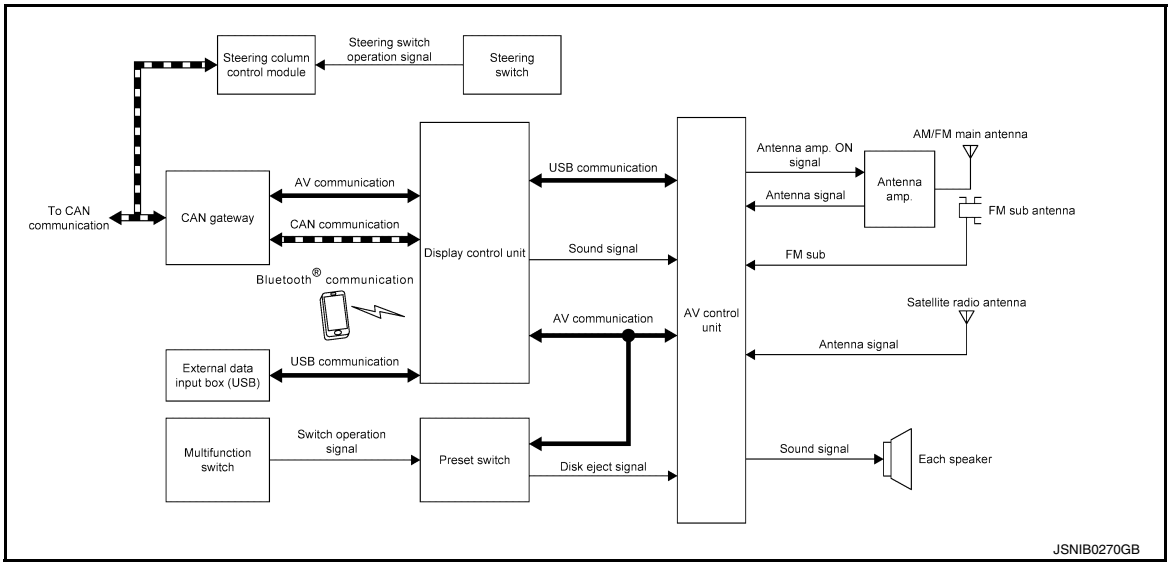
NOTE:

The design is reference.

AUDIO SYSTEM
WITHOUT BOSE SYSTEM
WITHOUT BOSE SYSTEM : System Description

INFOID:0000000013615507

SYSTEM DIAGRAM



Display Control Unit Input Signal (CAN Communication)

Transmit unit	Signal name
CAN gateway	Vehicle speed signal

DESCRIPTION

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

- Audio system consists of the following functions.

Function
Radio
CD
USB connection
Bluetooth® audio
Speed Sensitive Volume
Audio indicator

- Audio system is controlled by display control unit and AV control unit.
- Audio system can be operated with steering switch and preset switch.

RADIO

AM/FM radio

- Radio signal for AM/FM radio is received by the AM/FM main antenna.
- AM/FM main antenna is built into the rear spoiler. FM sub antenna is print of rear window glass. Main is used for AM and FM, and sub is used for FM.
  NOTE:
  For FM radio with FM diversity function, AV control unit selects from main or sub the antenna that receives the higher signal strength.
- Antenna amp. is built into the AM/FM main antenna, which receives the antenna amp. ON signal from the AV control unit and transmits the antenna signal to the AV control unit after amplifying the signal received from the antenna (main or sub).
- AV control unit transmits the sound signal to the each speaker when the antenna signal is received from the antenna (main or sub).

Satellite Radio
- Satellite radio tuner is built into AV control unit.
- Sound signal (satellite radio) is received by satellite radio antenna and is transmitted to AV control unit. AV control unit outputs sound signal to each speaker.

CD
AV control unit integrates the mechanism for reading the data stored in CD.

Music playback
- When AV control unit reads the music data from CD, it transmits the sound signal to each speaker.

Display of artist, album and song title
- When AV control unit reads the text data from CD, it transmits text information to the display control unit via USB communication.
- Display control unit displays the text data (artist, album, and song title) that is received from the AV control unit.

NOTE:
For the types of disc and music data format available for replay, refer to AV-16, "AV Control Unit".

USB CONNECTION
- USB port is located in the external data input box.
- When iPod or USB memory is connected to the USB port, the external data input box transmits the music data and text data in iPod or USB memory device to the display control unit via USB communication.
- When display control unit receives the music data from the external data input box, it transmits the sound signal to the AV control unit.
- When AV control unit transmits the sound signal from the display control unit, it transmits the sound signal to each speaker.
- When display control unit receives the text data from external data input box, it displays the text data (artist, album, and song title) on the display.

Bluetooth® AUDIO
- Bluetooth® module is integrated in the display control unit.
- Music data, artist, album, and song title in a portable audio device can be played/displayed via Bluetooth® communication.
- When display control unit receives the music data from a portable audio device via Bluetooth® communication, it transmits the sound signal to AV control unit.
- When AV control unit transmits the sound signal from the display control unit, it transmits the sound signal to each speaker.
- When display control unit receives the text data from a portable audio device via Bluetooth® communication, it displays the text data (artist, album, and song title) on the display.
- For further information about Bluetooth® compliant profile, refer to AV-15, "Display Control Unit".

SPEED SENSITIVE VOLUME
- Display control unit receives the vehicle speed signal from ABS actuator and electric unit (control unit) via CAN communication and transmits the vehicle speed signal to AV control unit via AV communication.
- AV control unit determines the volume level according to the vehicle speed signal received from display control unit, and transmits the sound signal to each speaker.
- The display control unit receives the vehicle speed signal from the combination meter and changes the sound volume in conjunction with the vehicle speed.
- The control level can be selected by the customer.

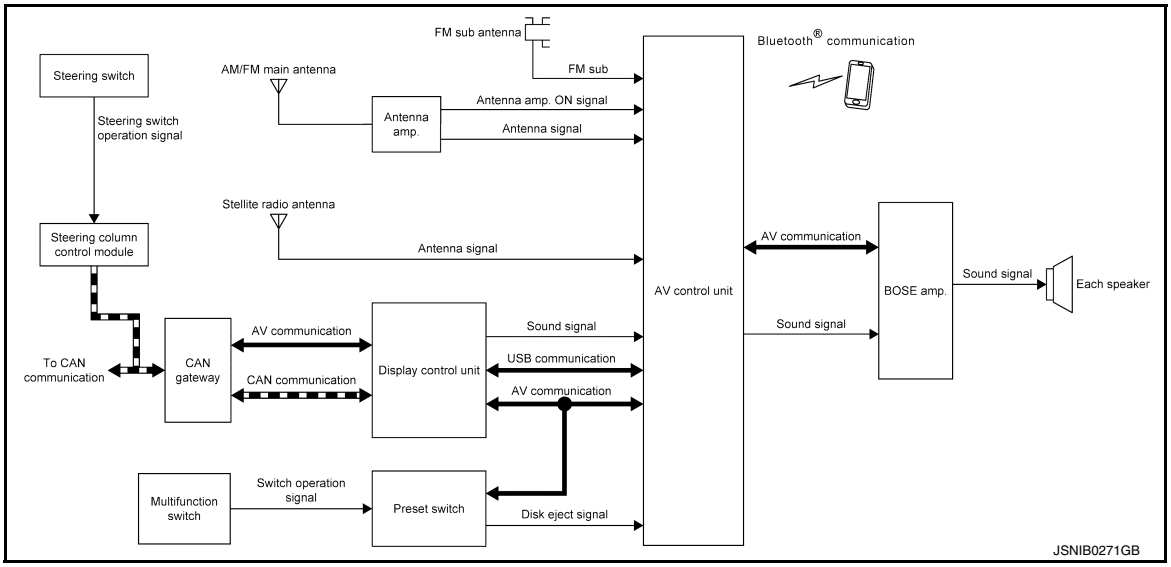
AUDIO INDICATOR
Audio system condition can be confirmed on the information display. Refer to AV-44, "INFORMATION DISPLAY (COMBINATION METER) : Display/Information".

WITH BOSE SYSTEM

WITH BOSE SYSTEM : System Description

INFOID:0000000013615508

SYSTEM DIAGRAM



DESCRIPTION

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

- Audio system consists of the following functions.

Function
Radio
CD
USB connection
Bluetooth® audio
BOSE® Centerpoint®
Audio indicator

- Audio system is controlled by display control unit, AV control unit, and BOSE amp.
- Audio system can be operated with steering switch and preset switch.

RADIO

AM/FM Radio

- Radio signal for AM/FM radio is received by the AM/FM main antenna.
- AM/FM main antenna is built into the rear spoiler. FM sub antenna is print of rear window glass. Main is used for AM and FM, and sub is used for FM.
  NOTE:
  For FM radio with FM diversity function, AV control unit selects from main or sub the antenna that receives the higher signal strength.
- Antenna amp. is built into the AM/FM main antenna, which receives the antenna amp. ON signal from the AV control unit and transmits the antenna signal to the AV control unit after amplifying the signal received from the AM and FM antennas.
- AV control unit transmits the sound signal to the BOSE amp when the antenna signal is received from the antenna (main or sub).
- BOSE amp. transmits the sound signal received from AV control unit to each speaker.

Satellite Radio

- Satellite radio tuner is built into AV control unit.
- Sound signal (satellite radio) is received by satellite radio antenna and is 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

AV control unit integrates the mechanism for reading the data stored in CD.

Music playback
- When AV control unit reads the music data from CD, it transmits the sound signal to BOSE amp.
- BOSE amp. transmits the sound signal received from AV control unit to each speaker.

Display of artist, album and song title
- When AV control unit reads the text data from CD, it transmits text information to the display control unit via USB communication.
- Display control unit displays the text data (artist, album, and song title) that is received from the AV control unit.

NOTE:
For the types of disc and music data format available for replay, refer to AV-16, "AV Control Unit".

USB CONNECTION
- USB port is located in the external data input box (USB).
- When iPod or USB memory is connected to the USB port, the external data input box (USB) transmits the music data and text data in iPod or USB memory device to the display control unit via USB communication.
- When display control unit receives the music data from the external data input box (USB), it transmits the sound signal to the AV control unit.
- When AV control unit transmits the sound signal from the display control unit, it transmits the sound signal to BOSE amp.
- BOSE amp. transmits the sound signal received from AV control unit to each speaker.
- When display control unit receives the text data from external data input box (USB), it displays the text data (artist, album, and song title) on the display.

Bluetooth® AUDIO
- Bluetooth® module is integrated in the display control unit.
- Music data, artist, album, and song title in a portable audio device can be played/displayed via Bluetooth® communication.
- When display control unit receives the music data from a portable audio device via Bluetooth® communication, it transmits the sound signal to AV control unit.
- When AV control unit transmits the sound signal from the display control unit, it transmits the sound signal to BOSE amp.
- BOSE amp. transmits the sound signal received from AV control unit to each speaker.
- When display control unit receives the text data from a portable audio device via Bluetooth® communication, it displays the text data (artist, album, and song title) on the display.
- For further information about Bluetooth® compliant profile, refer to AV-15, "Display Control Unit".

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

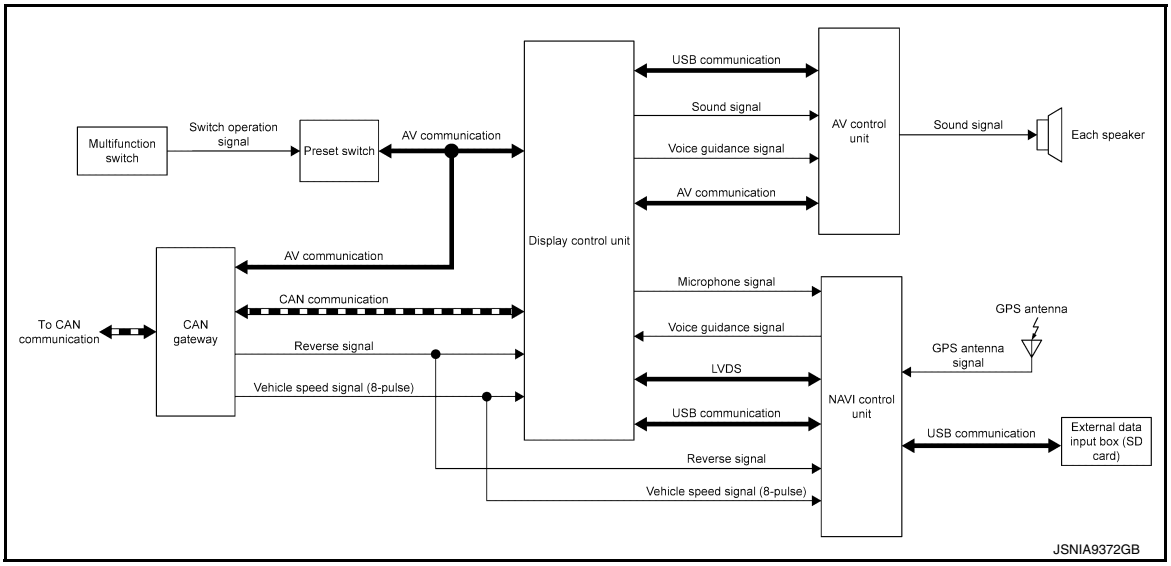
AUDIO INDICATOR
Audio system condition can be confirmed on the information display. Refer to AV-44, "INFORMATION DISPLAY (COMBINATION METER) : Display/Information".

NAVIGATION SYSTEM
WITHOUT BOSE SYSTEM

WITHOUT BOSE SYSTEM : System Description

INFOID:0000000013615509

SYSTEM DIAGRAM



Display Control Unit Input Signal (CAN Communication)

Transmit unit	Signal name
CAN gateway	Parking brake switch signal
	Shift position signal (Reverse signal)

DESCRIPTION

- Refer to Owner's Manual for navigation system operating instructions.
- Navigation system can be operated with the preset switch, multifunction switch, and display control unit.
- Guidance voice is output from the NAVI control unit, via display control unit and AV control unit, to the front speaker.
- NAVI control unit calculates the vehicle location based on the signals from GYRO (angle speed sensor), vehicle sensor, and GPS satellite, as well as the map data from map SD card. It is displayed on display of the display control unit.

POSITION DETECTION PRINCIPLE

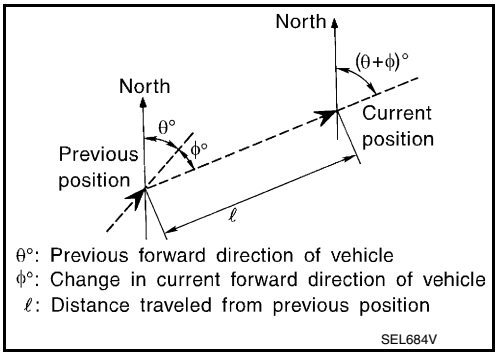
The navigation system periodically calculates the vehicle's current position according to the following three signals:

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

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

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

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



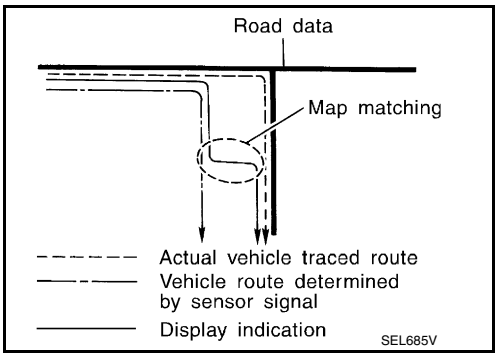
Type	Advantage	Disadvantage
Gyroscope (angular velocity sensor)	Can detect the vehicle's turning angle quite accurately.	Direction errors may accumulate when vehicle is driven for long distances without stopping.
GPS antenna (GPS information)	Can detect the vehicle's travel direction (North/South/East/West).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

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

MAP-MATCHING

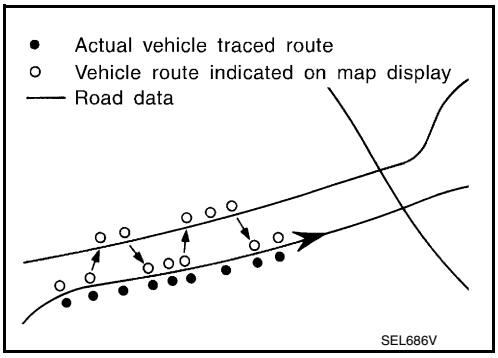
Map-matching compares a current location detected by the method in the “Location Detection Principle” with a road map data from map SD card.

NOTE:
The road map data is based on data stored in the map SD card.

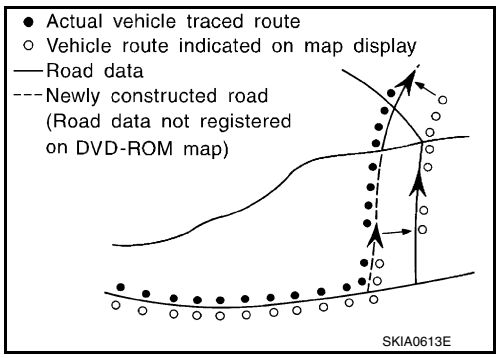


The vehicle position may not be corrected under the following circumstances and after driving for a certain time when GPS information is difficult to receive.

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

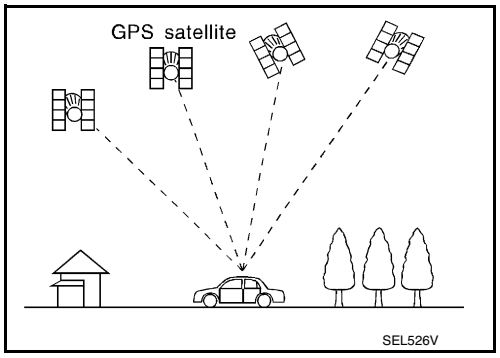


- Map-matching does not function correctly when a road on which the vehicle is driving is new and not recorded in the map SD card, or when road pattern stored in the map data and the actual road pattern are different due to repair.
  The map-matching function may find another road and position the vehicle mark on it when driving on a road not present in the map. Then, the vehicle mark may change to it when 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 read from the map SD card 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.

NAVIGATION INDICATOR

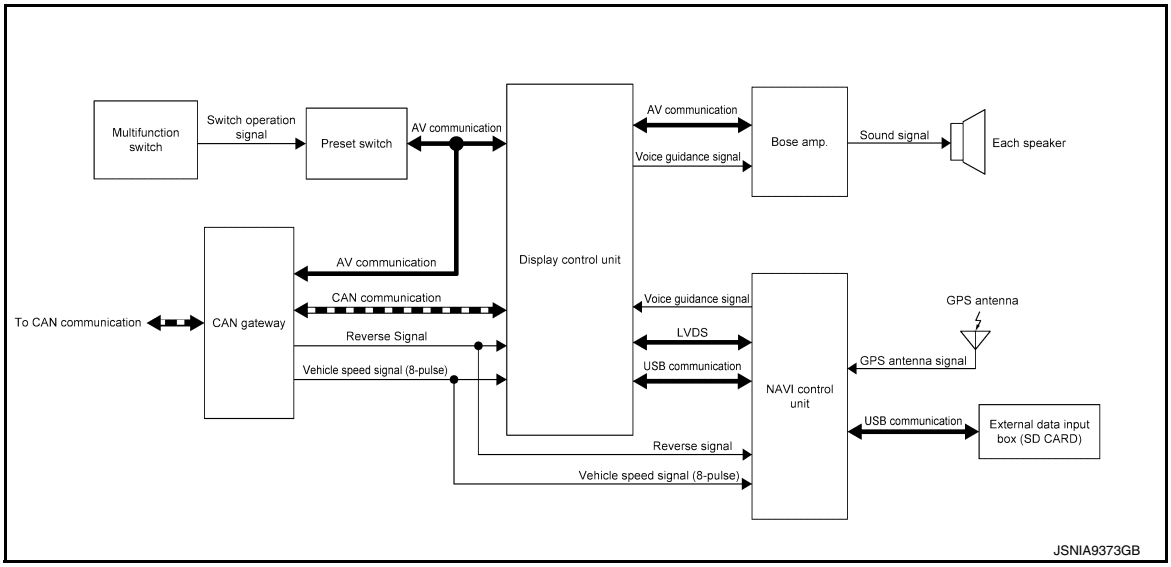
Navigation status can be confirmed on the information display. Refer to AV-44, "INFORMATION DISPLAY (COMBINATION METER) : Display/Information".

WITH BOSE SYSTEM

WITH BOSE SYSTEM : System Description

INFOID:0000000013615510

SYSTEM DIAGRAM



Display Control Unit Input Signal (CAN Communication)

Transmit unit	Signal name
CAN gateway	Parking brake switch signal
	Shift position signal (Reverse signal)

DESCRIPTION

- Refer to Owner's Manual for navigation system operating instructions.
- Navigation system can be operated with the preset switch, multifunction switch, and display control unit.
- Guidance voice is output from the NAVI control unit, via display control unit and BOSE amp., to the front speaker.
- NAVI control unit calculates the vehicle location based on the signals from GYRO (angle speed sensor), vehicle sensor, and GPS satellite, as well as the map data from map SD card. It is displayed on display of the display control unit.

POSITION DETECTION PRINCIPLE

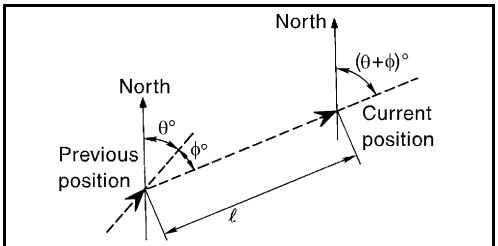
The navigation system periodically calculates the vehicle's current position according to the following three signals:

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

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

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

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



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

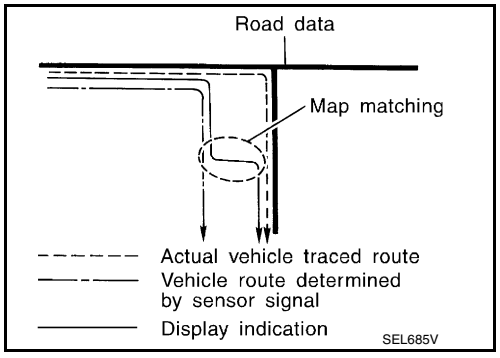
More accurate traveling direction is detected because priorities are set for the signals from these two devices according to the situation.

MAP-MATCHING

Map-matching compares a current location detected by the method in the “Location Detection Principle” with a road map data from map SD card.

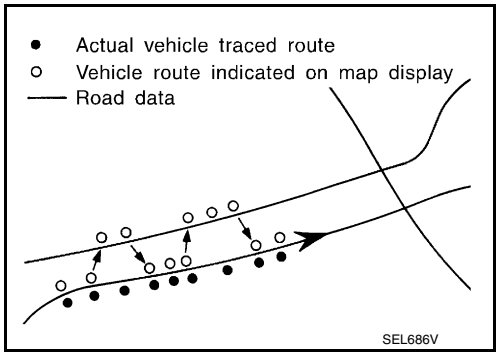
NOTE:

The road map data is based on data stored in the map SD card.

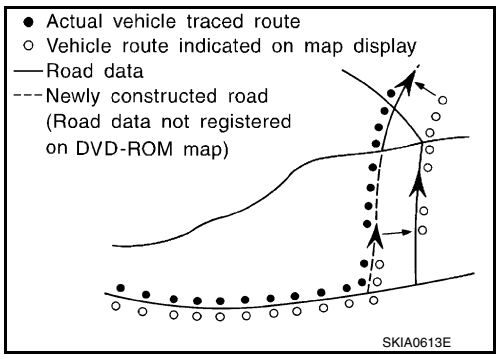


The vehicle position may not be corrected under the following circumstances and after driving for a certain time when GPS information is difficult to receive.

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

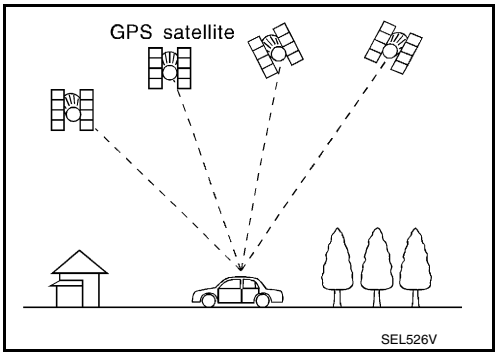


- Map-matching does not function correctly when a road on which the vehicle is driving is new and not recorded in the map SD card, or when road pattern stored in the map data and the actual road pattern are different due to repair.
  The map-matching function may find another road and position the vehicle mark on it when driving on a road not present in the map. Then, the vehicle mark may change to it when 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 read from the map SD card 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.



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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.

NAVIGATION INDICATOR

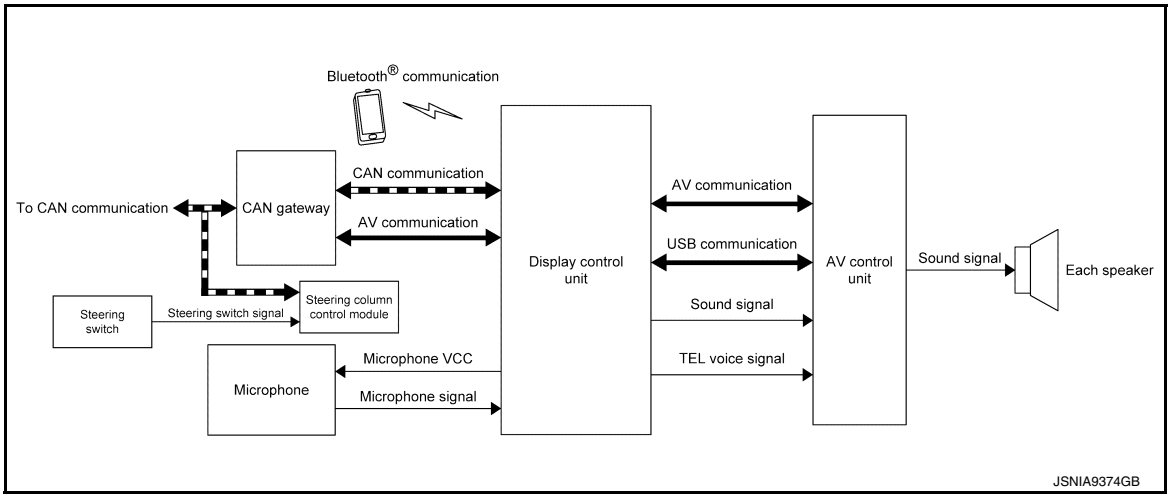
Navigation status can be confirmed on the information display. Refer to AV-44, "INFORMATION DISPLAY (COMBINATION METER) : Display/Information".

HANDS-FREE PHONE SYSTEM
WITHOUT BOSE SYSTEM

WITHOUT BOSE SYSTEM : System Description

INFOID:0000000013615511

SYSTEM DIAGRAM



DESCRIPTION

- Refer to Owner's Manual for hands-free phone system operating instructions.
- Simply operating the steering switch without releasing hands from the steering wheel allows the driver to receive a phone call.
- When a Bluetooth® communication compliant phone is registered to the display control unit, hands-free phone communication can be performed. Five units of Bluetooth® communication devices including audio devices and cellular phones can be registered to the display control unit.
- The content of the memory (telephone book) of the cellular phone can be recorded in the display control unit.

When Receiving a Call

- When display control unit receives the voice of the other party from a cell phone via Bluetooth® communication, it transmits the TEL voice signal to AV control unit.
- When AV control unit transmits the TEL voice signal, it received the sound signal to each speaker.

When a Call Is Originated

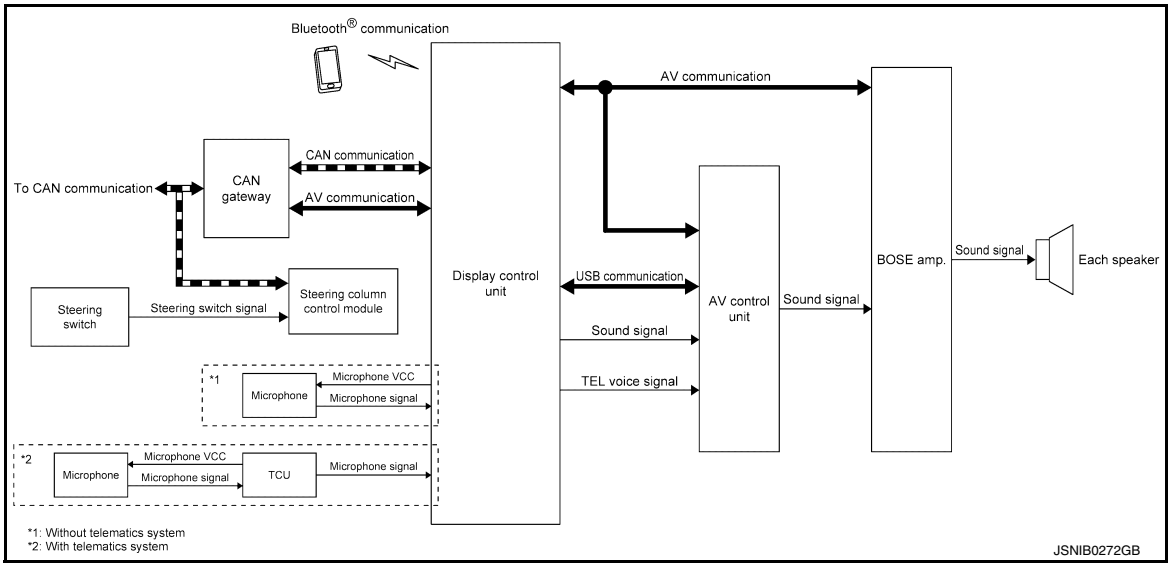
When display control unit receives the microphone signal from microphone, it transmits the sound signal to a cell phone via Bluetooth® communication.

WITH BOSE SYSTEM

WITH BOSE SYSTEM : System Description

INFOID:0000000013615512

SYSTEM DIAGRAM



DESCRIPTION

- Refer to Owner's Manual for hands-free phone system operating instructions.
- Simply operating the steering switch without releasing hands from the steering wheel allows the driver to receive a phone call.
- When a Bluetooth® communication compliant phone is registered to the display control unit, hands-free phone communication can be performed. Five units of Bluetooth® communication devices including audio devices and cellular phones can be registered to the display control unit.
- The content of the memory (telephone book) of the cellular phone can be recorded in the display control unit.

When Receiving a Call

- When display control unit receives the voice of the other party from a cell phone via Bluetooth® communication, it transmits the TEL voice signal to AV control unit.
- When AV control unit transmits the TEL voice signal, it transmits the sound signal to BOSE amp.
- BOSE amp. transmits the sound signal received from AV control unit to each speaker.

When a Call Is Originated

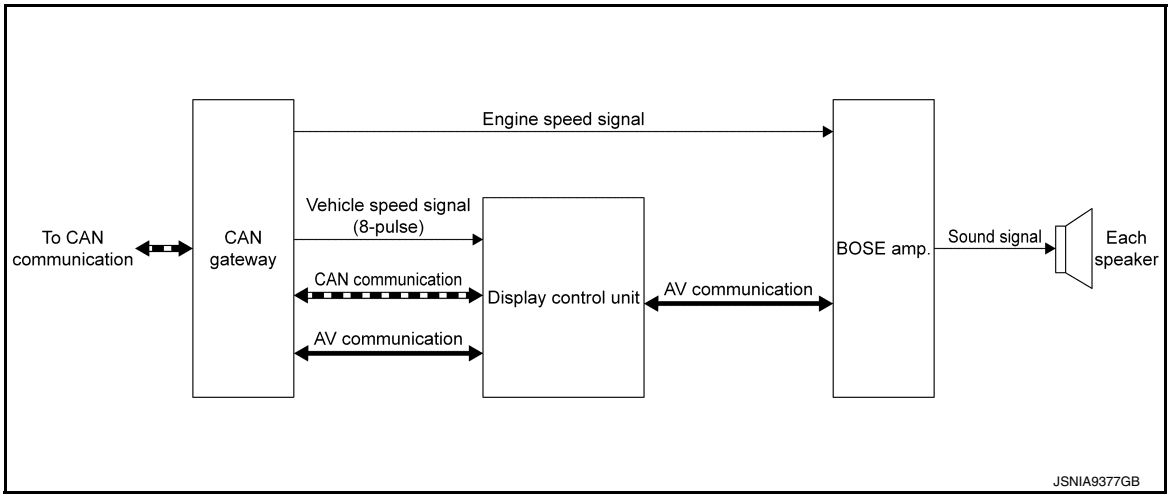
When display control unit receives the microphone signal from microphone [via TCU (with telematics system)], it transmits the sound signal to a cell phone via Bluetooth® communication.

ACTIVE SOUND ENHANCEMENT WITH BOSE SYSTEM

WITH BOSE SYSTEM : System Description

INFOID:0000000013615516

SYSTEM DIAGRAM



Display Control Unit Input Signal (CAN Communication)

Transmit unit	Signal name
CAN gateway	Engine torque signal
	Accelerator pedal position signal
	Vehicle speed signal
	Door switch signal
	Drive mode signal

DESCRIPTION

- During driving, the active sound enhancement improves the quality of engine sound heard in the vehicle by producing a sound via the speakers according to engine speeds.
- Display control unit receives the engine torque signal, accelerator pedal position signal and vehicle speed signal via CAN communication, and transmits them to BOSE amp. via AV communication.
- BOSE amp. calculates the frequency of sound adding to engine sound, sound quality, and sound volume from engine speed signal, engine torque signal, accelerator pedal position signal, and vehicle speed signal, and transmits the sound signal to each speaker.

  NOTE:
  BOSE amp. mixes the sound signal received from AV control unit with the engine sound that is generated in BOSE amp., and transmits the sound signal to each speaker.

HANDLING PRECAUTION

Display

INFOID:0000000013615517

- When the compartment temperature is low, the display images may look slower because the LCD response is deteriorated. The system will recover its normal operation when the cabin temperature increases to an appropriate level.
- When the compartment temperature is low [0°C (32°F) or less], the display images may look slower. It is characteristic of the LCD monitor and should not be considered to be a malfunction. When the temperature is at the operating temperature [0°C (32°F) to 50°C (122°F)], the display returns to normal.
- There may be small dark or bright dots in the screen or remaining display content may be found (image lag). These are inherent symptoms to any LCD monitor and should not be considered to be a malfunction.
- The image may look bright or dark when viewed obliquely from the rear. It is inherent to any LCD monitor and should not be considered to be a malfunction.
- Do not apply pressure on the LCD monitor. Doing so may cause irregularities in the screen image or render it inoperative.
- Do not use hard cloth, organic solvent (alcohol, benzine, and thinner), or chemical wipe to clean the LCD monitor. Doing so may affect the panel surface. When cleaning the LCD monitor, always wipe it with a soft cloth after shutting off the power. For severe contamination, use a soft cloth dampened with mild detergent (no droplets can be present).

Audio

INFOID:0000000013615518

- When an MP3, WMA, or AAC disc is replayed, it may take some time to start the playback after the disc is inserted, because the contents of the disc files must be analyzed.
- The extensions for MP3, WMA, and AAC files are ".MP3", ".WMA", ".mp3", ".wma", and “.aac”. Any file with a different extension or no extension cannot be played back.
- If trying to play a music CD (CD-DA) containing MP3, WMA, or AAC file, MP3, WMA, or AAC file is not played.
- The compatibility of a CD–R depends on the combination of the writing software/hardware and the writing rate. The disc has digital pulse signals written on it. If the specifications for writing depth and width (area) are not compatible, these signals may not be played back correctly or the sounds may be lost or skipped.
- The file recorded with high bit rate* may have sound skipping.
- The playback order of MP3, WMA, or AAC files may differ from the intended order because the writing software could change the folder and file positions when writing data to a CD-R/CD-RW disc.
- For an MP3 file, the folder name and file name can be displayed as the title on the condition that each name string consists of up to 16 alphanumeric letters (except for the extension). Any MP3 file with a name containing other letters or that is longer than the maximum length cannot be displayed correctly.
- Some MP3, WMA, or AAC making software, text information editing software, writing software, or software configurations may create files and discs in a format different from the proper specifications. In such a case, the text information display or the playback function may not be available.
- A disc for which no session close or disc close process has been finished may not be played back.
- Some files may have incorrect playback time displays and therefore a part of the music cannot be played back.
- 8 cm disc cannot be used.
- When playing back a Bluetooth® audio data, the sound may be interrupted for a moment. This is due to data communication and should not be considered to be a malfunction. After the data communication finishes, the playback will restart normally.
- If incoming call takes place during Bluetooth® audio playback, the screen changes to the relevant mode and the audio playback is interrupted.
- Sound skipping may occur depending on the location where the Bluetooth audio device is installed.
- If any operation for traffic information reception is performed during Bluetooth® audio playback, the audio playback is interrupted.
- Music data stored in a Bluetooth® audio device at low bit rate has poor sound quality.
- Radio reception may decrease in performance during charge.

NOTE:

*: Bit rate means how many bits of data are processed or transmitted per the unit time.

iPod

INFOID:0000000013615519

- If a headphone is connected to the iPod, the iPod may not be controlled.
- Some iPod may not be compliant with connection. It is necessary to check compliant models of iPod.
- If a USB extension cable is used for iPod connection, iPod may not be recognized or sound skipping may occur in playback.
- In playing back iPod audio, if the EQ function (equalizer function) of the iPod is ON, sound may be distorted.
- If the number of music in one category is increased to a large number, response may be poor. If the number of music is large and shuffle is ON, operation of the iPod itself may be slower.

RESTRICTIONS ON iPod

The following symptoms may occur, but the functions are not compliant and they should not be considered to be a malfunction.

- When a Podcast divided into chapters is played back with iPod nano 3G, the play time may be displayed incorrectly.
- The number of Audiobook is not displayed normally. When iPod is disconnected and reset, it is displayed.
- When jacket photos are played with iPod nano 3G and iPod Classic, iPod may be frozen or reset.

USB Connection

INFOID:0000000013615520

If a USB-HUB or USB extension cable is used when a USB is connected, USB is not recognized.

SD Card

INFOID:0000000013615521

To remove the SD card, wait for 15 seconds or more after turning the ignition switch OFF.

DIAGNOSIS SYSTEM (DISPLAY CONTROL UNIT)

Description

INFOID:0000000013615522

- The display control unit diagnosis function starts up with preset switch operation and the display 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 preset switch does not function, etc.

On Board Diagnosis Function

INFOID:0000000013615523

ON BOARD DIAGNOSIS ITEM

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 display control unit, connections between system components. 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

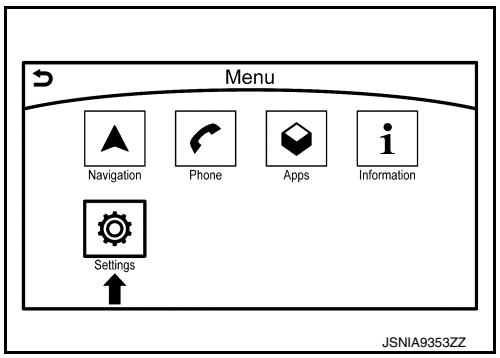
Mode	Description
Self Diagnosis	• Display control unit diagnosis. • Diagnoses the connections across system components.

Mode		Description
Confirmation/ Adjustment	Display Diagnosis	The following check functions are available: • Color tone check by color bar display, white display and black display • Light and shade check by gray scale display • Touch panel check • Sensor sensitivity settings
	Vehicle Signals	Diagnosis of signals can be performed .
	Speaker Test	The connection of a speaker can be confirmed by test tone.
	Navigation*1	The reception status of GPS can be confirmed. Display On/Off of the simulation menu of navigation.
	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.
	AV COMM Diagnosis	The communication condition of each unit of Infiniti InTouch can be monitored.
	Clock Setting*1	The date and time information can be adjusted.
	Camera Control	The signal connected to camera control unit can be checked and the guiding line position that overlaps rear view camera image can be adjusted.
	Delete Unit Connection Log	Erase the connection history of unit and error history.
	Reset Settings	Initializes the each data.
	Version Information	Version information of the following items is displayed. • Display control unit • NAVI control unit • AV control unit • BOSE amp. • Preset switch • Around view monitor control unit
	Program Update	Version of the display control unit can be update.
	SXM	Display the information related to satellite radio.
	Switch Information	Display each switch information.
	ANC/ASC Diagnosis*2	Display the information related to active noise cancellation and active sound enhancement.
	Hands-free Phone	The received volume adjustment of hands-free phone and microphone speaker check can be performed.

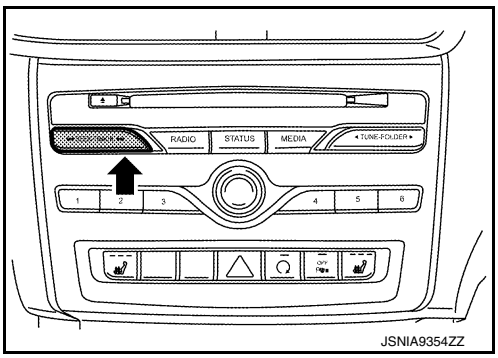
*1: Only models with navigation system
*2: Models with BOSE audio system

METHOD OF STARTING

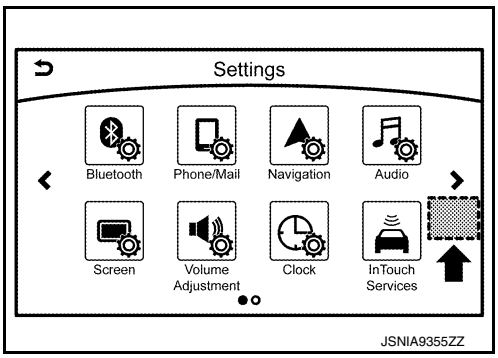
1. Start the engine.
2. Turn the audio system OFF.
3. Touch the “SETTINGS” icon and display a settings menu screen.



4. Press the “SEEK/TRACK UP” switch (⏭) at least 3 times. (Within 15 seconds after the settings menu screen display.)
NOTE:
When press the “SEEK/TRACK Up” switch (⏭) more than 4 times, a self-diagnosis mode is not started. press the “MENU” switch again.



5. Touch the screen (area of the figure) for 3 seconds.



6. The trouble diagnosis initial screen is displayed, and then the items of “Self Diagnosis” and “Confirmation/ Adjustment” can be selected.

NOTE:
When a diagnostic screen is not displayed, press the “MENU” switch. And then, restart from the procedure of Step 3.

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 (display control unit), BOSE® Amp., Audio Head Unit and Navigation unit are displayed in red.
- Replace display control unit if “Self-Diagnosis did not run because of a control unit malfunction” is indicated. The symptom is display control unit internal error. Refer to AV-239, "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 display control unit and each unit and the internal operation of the display 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 display control unit and preset 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
DCU	Malfunction is detected in display control unit power supply and ground circuits.	Check display control unit power supply and ground circuits. Refer to AV-202, "DISPLAY CONTROL UNIT : Diagnosis Procedure". When detecting no malfunction in those components, replace display control unit. Refer to AV-239, "Removal and Installation".
Audio Head Unit	Malfunction is detected in AV control unit power supply and ground circuits.	Check AV control unit power supply and ground circuits. Refer to AV-203, "AV CONTROL UNIT : Diagnosis Procedure". When detecting no malfunction in those components, replace AV control unit. Refer to AV-240, "Removal and Installation".
Navigation unit	Malfunction is detected in NAVI control unit power supply and ground circuits.	Check NAVI control unit power supply and ground circuits. Refer to AV-204, "NAVI CONTROL UNIT : Diagnosis Procedure". When detecting no malfunction in those components, replace NAVI control unit. Refer to AV-241, "Removal and Installation".
BOSE® Amp.	When either one of the following items are detected: • Sound signal circuits between BOSE amp. and each speaker are malfunctioning. • Sound signal circuits between BOSE amp. and either front or rear microphone is malfunctioning. • BOSE amp. malfunction is detected.	• Malfunctioning speaker circuits. • Malfunctioning front or rear microphone circuits. • Replace BOSE amp. Refer to AV-246, "Removal and Installation".

A Connecting Cable Between Units Is Displayed In Yellow.

Area with yellow connection lines	Description	Possible malfunction location / Action to take
DCU ⇔ Audio Head Unit	When either one of the following items are detected: • AV control unit power supply and ground circuits are malfunctioning. • AV communication circuits between display control unit and AV control unit are malfunctioning. • USB communication circuits between display control unit and AV control unit are malfunctioning.	• AV control unit power supply and ground circuits. Refer to AV-203, "AV CONTROL UNIT : Diagnosis Procedure". • AV communication circuits between display control unit and AV control unit are malfunctioning. • USB communication circuits between display control unit and AV control unit are malfunctioning.
DCU ⇔ BOSE® Amp	When either one of the following items are detected: • BOSE amp. power supply and ground circuits are malfunctioning. • AV communication circuits between display control unit and BOSE amp. are malfunctioning.	• BOSE amp. power supply and ground circuits. Refer to AV-205, "BOSE AMP. : Diagnosis Procedure". • AV communication circuits between display control unit and BOSE amp. are malfunctioning.
DCU ⇔ TGW	When either one of the following items are detected: • CAN gateway power supply and ground circuits are malfunctioning. • AV communication circuits between display control unit and CAN gateway are malfunctioning.	• CAN gateway power supply and ground circuits are malfunctioning. Refer to LAN-217, "Diagnosis Procedure". • AV communication circuits between display control unit and CAN gateway are malfunctioning.
DCU ⇔ Switches	When either one of the following items are detected: • Preset switch power supply and ground circuits are malfunctioning. • AV communication circuits between display control unit and preset switch are malfunctioning.	• Preset switch power supply and ground circuits are malfunctioning. Refer to AV-162, "Diagnosis Procedure". • AV communication circuits between display control unit and preset switch are malfunctioning.
DCU ⇔ Rear Camera	Malfunction is detected in rear view camera circuit between display control unit and rear view camera.	Rear view camera power supply and ground circuits. Refer to AV-394, "Diagnosis Procedure".
DCU ⇔ Navigation unit	USB communication circuits between display control unit and NAVI control unit are malfunctioning.	• Check NAVI control unit power supply and ground circuits. Refer to AV-204, "NAVI CONTROL UNIT : Diagnosis Procedure". • USB communication circuits between display control unit and NAVI control unit are malfunctioning.
DCU ⇔ TCU	USB communication circuits between display control unit and TCU are malfunctioning.	• Check TCU power supply and ground circuits. Refer to AV-455, "TCU : Diagnosis Procedure". • USB communication circuits between display control unit and TCU are malfunctioning.
Navigation unit ⇔ GPS Antenna	GPS antenna connection malfunctions detected.	GPS antenna Refer to AV-164, "Diagnosis Procedure".
Audio Head Unit ⇔ XM Antenna	Satellite radio antenna connection malfunctions detected.	Satellite radio antenna Refer to AV-170, "Diagnosis Procedure".
Audio Head Unit ⇔ Radio Antenna	AM/FM main antenna connection malfunctions detected.	AM/FM main antenna Refer to AV-179, "Diagnosis Procedure".

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. Touch the “Back” to return to the initial Confirmation/Adjustment Mode screen.

Display Diagnosis

Confirmation of the display control unit screen.

Item		Description
Display Settings	Color Spectrum Bar	• Display 7 colors of following bars. - White - Yellow - Cyan (Close to light blue) - Green - Magenta (Close to purplish red) - Red - Blue
	Gradation Bar	Display 64 gradation gray-scale image to a screen.
	White Display	Display white screen.
	Black Display	Display black screen.
Touch Panel		• The function can check the presence of a “+” indication and deviation from where it should be while touching the touch panel. • Display coordinates and gesture operation name (Drag, Tap, Double Tap, Spread, etc.) of the screen which touched.
Sensor Sensitivity Settings		• Display a current touch panel sensor sensitivity set value. • Can change the touch panel sensor sensitivity set value with 1 (Low) - 5 (high) phases.

Vehicle Signals

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

Display control unit

Diagnosis item	Display	Vehicle status	Remarks
Vehicle Speed	ON	Vehicle speed > 0 km/h (0 MPH)	Changes in indication may be delayed. This is normal.
	OFF	Vehicle speed = 0 km/h (0 MPH)	
Parking Brake Signal	ON	Parking brake is applied.	
	OFF	Parking brake is released.	
Light Signal	ON	Block the light beam from the auto light optical sensor when the light switch is ON.	—
	OFF	Either of the following conditions • Lighting switch OFF. • Expose the auto light optical sensor to light when the light switch is ON.	
Ignition Signal	ON	Ignition switch ON.	—
	OFF	Ignition switch in ACC position.	
Reverse Signal	ON	Shift the selector lever to “R” position.	Changes in indication may be delayed. This is normal.
	OFF	Shift the selector lever other than “R” position.	

NAVI control unit

Diagnosis item	Display	Vehicle status	Remarks
Vehicle Speed	ON	Vehicle speed > 0 km/h (0 MPH)	Changes in indication may be delayed. This is normal.
	OFF	Vehicle speed = 0 km/h (0 MPH)	
Ignition Signal	ON	Ignition switch ON.	—
	OFF	Ignition switch in ACC position.	

Diagnosis item	Display	Vehicle status	Remarks
Reverse Signal	ON	Shift the selector lever to “R” position.	Changes in indication may be delayed. This is normal.
	OFF	Shift the selector lever other than “R” position.	

NOTE:
Only models with navigation system.

Speaker Test
Select “Speaker Test” to display the speaker diagnosis screen. Touch “Start” to generate a test tone in a speaker. Touch “Next” to generate a test tone in the next speaker. Touch “End” to stop the test tones.

Speaker Name
Front Instr. Panel Center Squawker
Front Door Left Sub Woofer
Front Door Right Sub Woofer
Front Door Left Tweeter
Front Door Right Tweeter
Rear Door Left Speaker
Rear Door Right Speaker
Rear Pillar Left Squawker
Rear Pillar Right Squawker
Rear Luggage Left Sub Woofer
Rear Luggage Right Sub Woofer

Navigation

Item	Description
Sensor Information	The reception status of GPS can be confirmed.
Route Simulation	Set the display ON/OFF of the “simulation” menu of the navigation.

NOTE:
Only models with navigation system.

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.
- Place of the error occurrence is represented by the longitude and latitude 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 up-and-down manner.

Count up method
- 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.

Display type of occurrence frequency	Error history display item
Count up method	CAN communication line, control unit (CAN), AV communication line, control unit (AV)

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	Applicable DTC	Reference
TACHO signal failure	B1F01	AV-151
CAN COMM CIRCUIT	U1000	AV-153
CONTROL UNIT (CAN)	U1010	AV-155
Control unit internal error	U121F	AV-156
Mismatched configuration data stored	U1223	AV-157
Amplifier temperature error	U1231	AV-158
Steer. Angle Sensor calibration	U1232	AV-159
Navi unit internal error	U1233	AV-160
Audio unit internal error	U1234	AV-161
Switches connection error	U1240	AV-162
GPS Antenna error	U1244	AV-164
Audio unit connection error	U1249	AV-166
Bose AMP connection error	U124E	AV-168
XM Antenna connection error : open	U1258	AV-170
XM Antenna connection error : short		
Navi unit connection error	U125D	AV-172
TCU connection error	U1266	AV-173
TGW connection error	U1267	AV-175
IT Comander connection error	U12BA	AV-177
Radio Antenna error : open	U12BE	AV-179
Radio Antenna error : short		
AV COMM CIRCUIT	U1300	AV-181
CONTROL UNIT (AV)	U1310	AV-183
FL-DOOR WOOFER	U1601	AV-184
FL-DOOR TWEETER	U1603	AV-184
FR-DOOR WOOFER	U1609	AV-184
FR-DOOR TWEETER	U160B	AV-184
F-INST C-SQUAWKER	U162A	AV-190
RL-DOOR SPEAKER	U1708	AV-192
RR-DOOR SPEAKER	U1710	AV-192
RL-PILLAR SQUAWKER	U1752	AV-196
RR-PILLAR SQUAWKER	U175A	AV-196
R-LUGGAGE L-WOOFER	U175D	AV-199
R-LUGGAGE R-WOOFER	U1765	AV-199

AV COMM Diagnosis

AV COMM Monitor

- Displays the communication status between display 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)
CMF Send Switch	OK / UNKW	OK / 0 – 39 / —
CMF Receive Switch	OK / UNKW	OK / 0 – 39 / —
CMF Receive Bose® AMP	OK / UNKW	OK / 0 – 39 / —
CMF Receive TGW	OK / UNKW	OK / 0 – 39 / —
CMF Receive Audio	OK / UNKW	OK / 0 – 39 / —

Clock Setting
The date and time information can be adjusted.
NOTE:
Only models with navigation system.

Camera Cont. (With Rear View Monitor)

Item	Description
Adjust Guide Line of Rear View Camera	The guiding lines in the rear view monitor can be adjusted.
Check/Change Configuration	Displays the current configuration data. **NOTE:** Refer to the following list for the items of the configuration adjustment function.
Reset Configuration	Initializes the camera system configuration.
Camera System Type	Sets the type of camera that is connected.

Configuration list

Setting item	Setting (Default value)
Predictive Course Lines	With (No SBW)
Rear Coeff. K	1.49591
Rear Coeff. F	0.14104
Rear Coeff. P1	−0.65196
Rear Coeff. P2	0.2805
Rear Coeff. C1	−0.03754
Rear Coeff. C2	−0.00001
Rear Coeff. D1	130.3
Rear Coeff. D2	−46.18
Car Width	1808.7
Rear Offset	3421.41
Rear Height	570.96
Rear L/R Angle	0
Rear Up/Dn Angle	0
Rear Roll Angle	0
Bumper Rear Dist.	0
Bumper Rear Axle Dist	0
Max. Steering Angle	32
Min. Turning Radius	1.39
Wheelbase	2699
Total Length	4425.9
Steering Gear Ratio	0.0403492

Camera Cont. (With Around View Monitor)

Item	Description
Adjust Guide Line of Rear View Camera	**NOTE:** This item displayed, but it is not used.
Check/Change Configuration	
Reset Configuration	
Camera System Type	Sets the type of camera that is connected.

Delete Unit Connection Log

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

Reset Settings

Item	Description
Reset User Data	Initializes the display control unit, NAVI control unit and AV control unit memory.
Reset Configuration	Initializes the configuration data.

Version Information

Version information of the each control unit and switch is displayed.

Program Update

Version of the display control unit can be update.

SXM

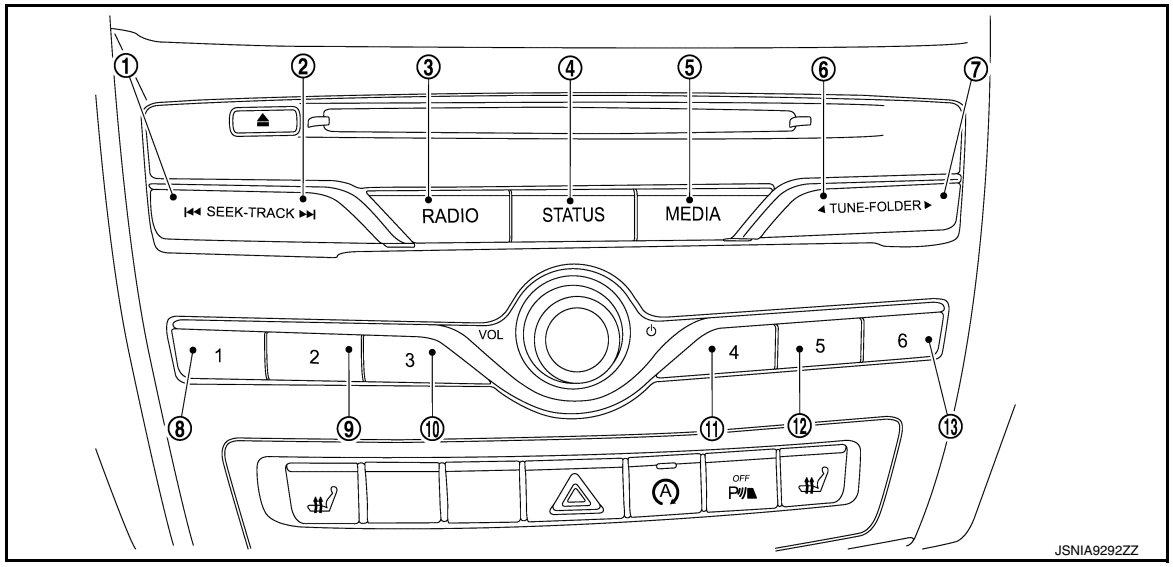
XM Mode Diagnosis

Item	Description
Show XM Diagnosis	Display adjustment items to test satellite radio function.
External Connection Mode	Set in external diagnostic mode.

Switch Information

Preset switch, multifunction switch and steering switch information can be checked.
Switch name and ID are displayed when press each switch.

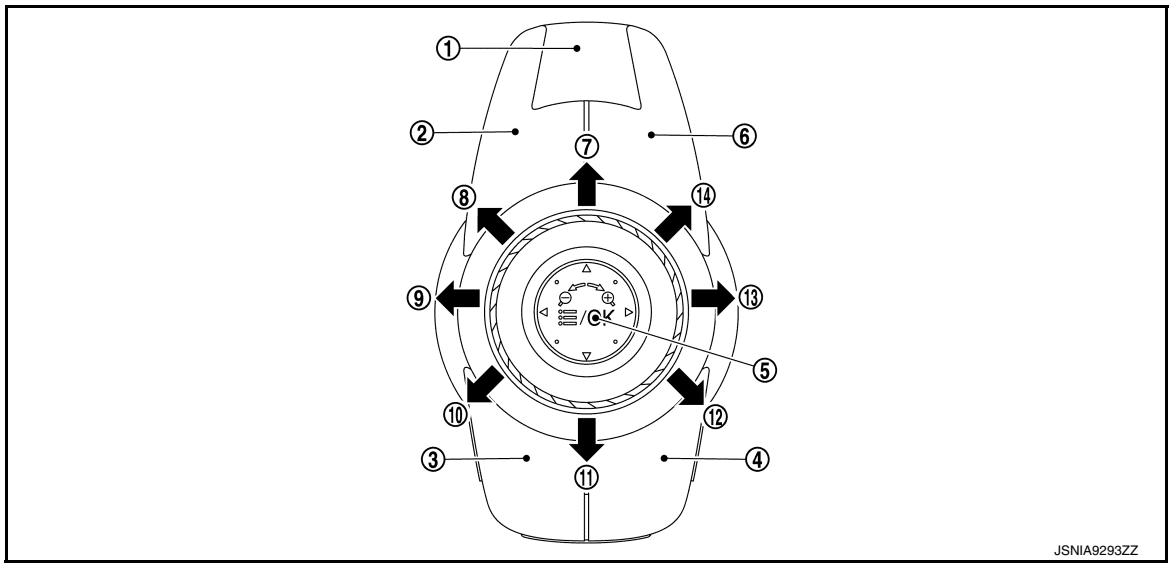
- Preset switch



No.	Display (Panel Name)
①	⏮
②	⏭
③	Radio

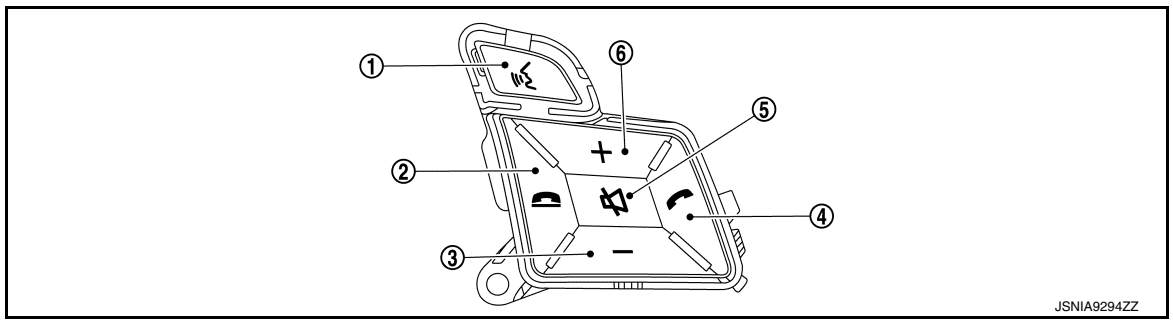
No.	Display (Panel Name)
④	Status
⑤	DISC/AUX
⑥	<TUNE/CH/FOLDER
⑦	TUNE/CH/FULDER>
⑧	Preset 1
⑨	Preset 2
⑩	Preset 3
⑪	Preset 4
⑫	Preset 5
⑬	Preset 6

- Multifunction switch



No.	Display (Panel Name)
①	Map
②	MENU
③	Camera or Back
④	Back or Camera
⑤	OK
⑥	Audio
⑦	Up
⑧	Up/Left
⑨	Left
⑩	Down/Left
⑪	Down
⑫	Down/Right
⑬	Right
⑭	Up/Right

• Steering switch



No.	Display (STRG SW)
①	Voice Recognition Engine
②	TEL_Off
③	VOL DOWN/Left
④	TEL_On
⑤	Audio ON/OFF
⑥	VOL UP/Right

ANC/ASC Diagnosis

Item	Description
Show Settings	Following items can be confirmed. • Part Number • Software Version • Config Result • ASC ON/OFF status [Enabled: ON/OFF]
Connection Diagnosis	Display a state of wiring connected with in BOSE amp.
Active Test	ANC function can be confirmed by test tone. **NOTE:** This item is displayed, but not used.
Version	Version information of the each parts is displayed.

Hands-Free Phone

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

Item	Description
Handsfree Volume	The reception volume can be set in 3 steps: “Low”, “Mid” and “High”.
Voice Microphone Test	The microphone audio can be directly connected to the speakers to perform a microphone test.

CONSULT Function

INFOID:0000000013615524

APPLICATION ITEMS

CONSULT performs the following functions via the communication with the display control unit

Diagnosis mode	Description
Self Diagnostic Result	Performs a diagnosis on the display 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 display control unit can be performed.
Work Support	Steering angle sensor can be adjusted.

Diagnosis mode	Description
ECU Identification	The part number of display control unit can be checked.
Configuration	• Read and save the vehicle specification. • Write the vehicle specification when replacing display 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 display control unit to each unit as well as the error counter.
	AUDIO	Displays the display control unit communication status and the error counter.

SELF DIAGNOSIS RESULT

- 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.
- Refer to AV-81, "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.

- Displays the status of the following vehicle signals inputted into the display 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 > 0 km/h (0 MPH)	Changes in indication may be delayed. This is normal.
	Off	Vehicle speed = 0 km/h (0 MPH)	
PKB SIG	On	Parking brake is applied.	
	Off	Parking brake is released.	
ILLUM SIG	On	Block the light beam from the auto light optical sensor when the light switch is ON.	—
	Off	Either of the following conditions • Lighting switch OFF. • Expose the auto light optical sensor to light when the light switch is ON.	
IGN SIG	On	Ignition switch ON.	
	Off	Ignition switch in ACC position.	
REV SIG	On	Selector lever in R position.	Changes in indication may be delayed. This is normal.
	Off	Selector lever in any position other than R.	

WORK SUPPORT

Adjusts the neutral position of the steering angle sensor.

Item	Description
ST ANGLE SENSOR ADJUSTMENT	**NOTE:** This item is displayed, but it is not used.

ECU IDENTIFICATION

The part number of display control unit is displayed.

CONFIGURATION

Configuration has three functions as follows.

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

CAUTION:

- **When replacing display control unit, you must perform “Read / Write Configuration” or “Manual Configuration” with CONSULT.**
- **Complete the procedure of “Read / Write Configuration” or “Manual Configuration” in order.**
- **If you set incorrect “Read / Write Configuration” or “Manual Configuration”, incidents might occur.**
- **Configuration is different for each vehicle model. Confirm configuration of each vehicle model.**

DIAGNOSIS SYSTEM (STEERING COLUMN CONTROL MODULE)

CONSULT Function (Steering Column Control Module)

INFOID:0000000013795713

APPLICATION ITEM

CONSULT performs the following functions via CAN communication with steering column control module.

Diagnosis mode	Description
ECU Identification	Allows confirmation of steering column control module part number.
Self Diagnostic Result	Displays the diagnosis results judged by steering column control module.
Data Monitor	Displays the real-time input/output data from steering column control module input/output data.
Active Test	Steering column control module can provide a drive signal to electronic components to check their operations.

SELF DIAGNOSTIC RESULT

Refer to BCS-61, "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.

Monitor	Item Contents
STRG SW CRRNT	—
Current Limitation	—
STEERING SENSOR	—
STEERING ANGLE	—
STEERING ANGLE SENSOR STATUS	—
HIGH BEAM STATUS	Display the status of combination switch (High beam)
FRONT WIPER	Display the status of combination switch (Front wiper)
FR WASHER SW	Display the status of combination switch (Front washer)
RR WIPER	Display the status of combination switch (Rear wiper)
IND SIG	—
HEATED STEERING WHEEL	—
CRUISE CONTROL FUNCTION	Display the status of cruise control lever
UP SW	Display the status of steering switch
DOWN SW	Display the status of steering switch
VOLUME “+” BUTTON	Display the status of steering switch
VOLUME “-” BUTTON	Display the status of steering switch
REPEAT KEY	—
MUTE BUTTON	—
GEAR POSITION	Display the status of paddle shifter
SUPPLY VOLTAGE	—

ACTIVE TEST

Monitor	Item Contents
Speedtronic light emitting diode	—
Steering wheel heater	—

ECU DIAGNOSIS INFORMATION

DISPLAY CONTROL UNIT

Reference Value

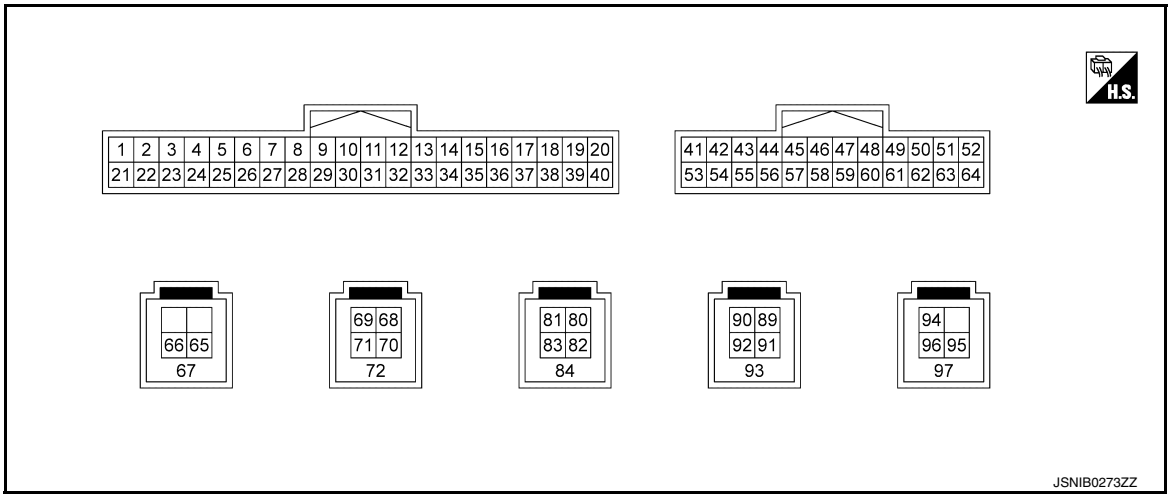
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VALUES ON THE DIAGNOSIS TOOL

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

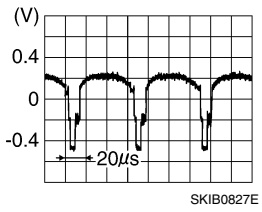
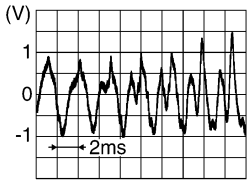
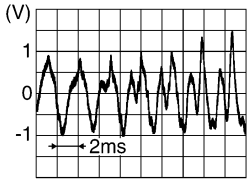
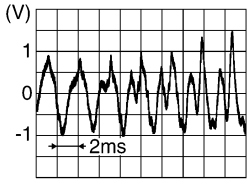
Monitor Item	Condition		Value/Status
VHCL SPD SIG	Ignition switch ON	Vehicle speed > 0 km/h (0 MPH)	On
		Vehicle speed = 0 km/h (0 MPH)	Off
PKB SIG	Ignition switch ON	Parking brake is applied	On
		Parking brake is released	Off
ILLUM SIG	Ignition switch ON	Block the light beam from the auto light optical sensor when the light switch is ON	On
		Either of the following conditions • Lighting switch OFF • Expose the auto light optical sensor to light when the light switch is ON	Off
IGN SIG	Ignition switch ON		On
	Ignition switch in ACC position		Off
REV SIG	Ignition switch ON	Selector lever in R position	On
		Selector lever in any position other than R	Off

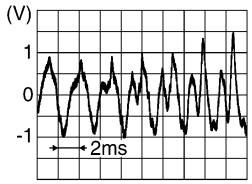
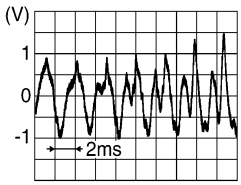
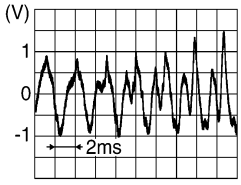
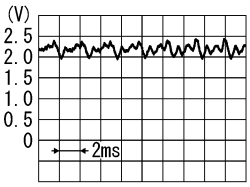
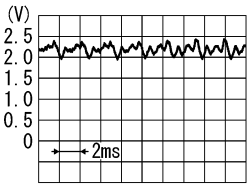
TERMINAL LAYOUT

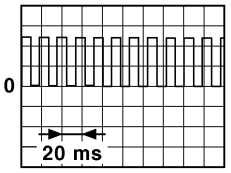


PHYSICAL VALUES

Terminal (Wire color)		Description		Condition	Standard value	Reference value (Approx.)
+	–	Signal name	Input/ Output			
4	—	Shield	—	—	—	—
6	—	Shield	—	—	—	—
8 (G)	—	Sound signal RH (–)	—	—	—	—
9	—	Shield	—	—	—	—

Terminal (Wire color)		Description		Condition	Standard value	Reference value (Approx.)
+	–	Signal name	Input/ Output			
10 (L)	—	Sound signal LH (–)	—	—	—	—
11 (W)	—	TEL voice signal (–)	—	—	—	—
12	—	Shield	—	—	—	—
13 (R)	—	Voice guidance signal output (–)	—	—	—	—
14 (B)	—	Voice guidance signal input (–)	—	—	—	—
15 (W)	—	NS ON/OFF signal	—	—	—	—
16 (R)	—	Microphone signal ground	—	[Ignition switch ON]	—	0 V
17	—	Shield	—	—	—	—
18	—	Shield	—	—	—	—
20 (B)	—	Camera ground	—	[Ignition switch ON]	—	0 V
24 (O)	4	Camera image signal	Input	[Ignition switch ON] • Image is displayed.	Waveform according to rear view camera image is input.	 SKIB0827E
26 (W)	—	Sound signal (–)	—	—	—	—
27 (B)	26 (W)	Sound signal (+)	Output	[Ignition switch ON] • Sound output	Outputs waveform synchronized with sound.	 SKIB3609E
28 (R)	8 (G)	Sound signal RH (+)	Output	[Ignition switch ON] • Sound output	Outputs waveform synchronized with sound.	 SKIB3609E
29	—	Shield	—	—	—	—
30 (P)	10 (L)	Sound signal LH (+)	Output	[Ignition switch ON] • Sound output	Outputs waveform synchronized with sound.	 SKIB3609E

Terminal (Wire color)		Description		Condition	Standard value	Reference value (Approx.)
+	–	Signal name	Input/ Output			
31 (B)	11 (W)	TEL voice signal (+)	Output	[Ignition switch ON] • During voice guide output	Waveform according to voice is input.	 SKIB3609E
32	—	Shield	—	—	—	—
33 (G)	13 (R)	Voice guidance signal output (+)	Output	[Ignition switch ON] • Sound output	Outputs waveform synchronized with sound.	 SKIB3609E
34 (W)	14 (B)	Voice guidance signal input (+)	Input	[Ignition switch ON] • Sound output	Waveform according to sound is input.	 SKIB3609E
35	—	Shield	—	—	—	—
36 (G)	16 (R)	Microphone signal	Output	[Ignition switch ON] • Give a voice	Outputs waveform synchronized with voice.	 PKIB5037J
37 (O)* (R)*	18	Microphone signal	Input	[Ignition switch ON] • Give a voice	Waveform according to sound is input.	 PKIB5037J
38 (L)	18	Microphone power supply	Output	[Ignition switch ON]	4.7 – 5.3 V	5.0 V
40 (Y)	20 (B)	Camera power supply	Output	[Ignition switch ON] • At rear view camera image is displayed	5.9 - 6.5 V	6.0 V
				[Ignition switch ON] • Except for above	1.0 V or more	0 V
46 (G)	—	AV communication signal (L)	Input/ Output	—	—	—
47 (P)	—	CAN-L	Input/ Output	—	—	—

Terminal (Wire color)		Description		Condition	Standard value	Reference value (Approx.)
+	–	Signal name	Input/ Output			
49 (R)	52 (B)	Dimmer signal	Input	[Ignition switch ON] • Either of the following conditions - Lighting switch OFF - Expose the auto light optical sensor to light when the light switch is ON.	3.0 V or less	0 V
				[Ignition switch ON] • Block the light beam from the auto light optical sensor when the light switch is ON.	7.0 V or more	12.0 V
50 (BR)	52 (B)	Reverse signal	Input	[Ignition switch ON] • R position	7.0 V or more	12.0 V
				[Ignition switch ON] • Other than R position	3.0 V or less	0 V
52 (B)	—	Ground	—	[Ignition switch ON]	—	0 V
56 (BR)	52 (B)	Camera switch signal	Input	[Ignition switch ON] • Camera switch: ON	3.0 V or less	0 - 2.5 V
				[Ignition switch ON] • Camera switch: OFF	3.0 V or more	3.0 V
58 (Y)	—	AV communication signal (H)	Input/ Output	—	—	—
59 (L)	—	CAN-H	Input/ Output	—	—	—
60 (W)	52 (B)	Ignition signal	Input	[Ignition switch ON]	7.0 - 16.0 V	Battery voltage
61 (R)	52 (B)	Vehicle speed signal (8-pulse)	Input	[Ignition switch ON] • When vehicle speed is approx. 40 km/h (25 MPH)	Waveform according to vehicle speed is input.	**NOTE:** The maximum voltage varies depending on the specification (destination unit).  JSNIA0012GB
63 (L)	52 (B)	ACC power supply	Input	[Ignition switch ACC]	4.5 - 16.0 V	Battery voltage
64 (Y)	52 (B)	Battery power supply	Input	[Ignition switch OFF]	9.0 - 16.0 V	Battery voltage
65 (W)	66 (B)	LVDS (+)	Input/ Output	—	—	—
66 (B)	—	LVDS (–)	Input/ Output	—	—	—
67	—	Shield	—	—	—	—
68 (G)	—	USB ground	—	—	—	—

Terminal (Wire color)		Description		Condition	Standard value	Reference value (Approx.)
+	–	Signal name	Input/ Output			
69 (W)	—	USB V BUS signal	Output	—	—	—
70 (R)	—	USB D- signal	Input/ Output	—	—	—
71 (L)	—	USB D+ signal	Input/ Output	—	—	—
72	—	Shield	—	—	—	—
80 (G)	—	USB ground	—	—	—	—
81 (W)	—	USB V BUS signal	Output	—	—	—
82 (R)	—	USB D- signal	Input/ Output	—	—	—
83 (L)	—	USB D+ signal	Input/ Output	—	—	—
84	—	Shield	—	—	—	—
89 (G)	—	USB ground	—	—	—	—
90 (W)	—	USB V BUS signal	Output	—	—	—
91 (R)	—	USB D- signal	Input/ Output	—	—	—
92 (L)	—	USB D+ signal	Input/ Output	—	—	—
93	—	Shield	—	—	—	—
94 (W)	—	USB V BUS signal	Output	—	—	—
95 (R)	—	USB D- signal	Input/ Output	—	—	—
96 (L)	—	USB D+ signal	Input/ Output	—	—	—
97	—	Shield	—	—	—	—

*: Color of wire differs depending on production.

Fail-Safe (Display Control Unit)

INFOID:0000000013615528

If a malfunction occurs in the Infiniti InTouch, display control unit performs fail-safe activation according to the detected malfunction.

Detection item	Infiniti InTouch operation in fail-safe mode	DTC
Engine speed signal	Active sound enhancement function are deactivated.	B1F01
CAN communication	The system using the CAN communication signal from control unit which cannot communicate does not function.	U1000
	The system using the CAN communication signal does not function.	U1010
Display control unit	• Display is not displayed. • Display control unit restart. • Display control unit freezes. **NOTE:** Symptom other than an item may occur.	U121F

Detection item	Infiniti InTouch operation in fail-safe mode		DTC
Configuration	A function of display control unit becomes mismatched with a vehicle specification and destination.		U1223
BOSE amp.	BOSE system does not function.		U1231
Steering angle sensor	Predictive course line is not displayed.		U1232
NAVI control unit	• Map is not displayed. • Navigation screen does not operate. **NOTE:** Symptom other than an item may occur.		U1233
AV control unit	• Sound is not output by a speaker. • CD is not played. • Radio does not operate. **NOTE:** Symptom other than an item may occur.		U1234
GPS antenna	The vehicle positions of a navigation screen differ.		U1244
AV communication	AV control unit	• Sound is not output by a speaker. • CD is not played. • Radio does not operate. **NOTE:** Symptom other than an item may occur.	U1249
	BOSE amp.	Sound is not output by a speaker.	U124E
	Preset switch	Switch operation does not operate. **NOTE:** Symptom other than an item may occur.	U1240
	CAN gateway	• Audio information is not displayed by the information display in the combination meter. • Navigation indicator is not displayed by the information display in the combination meter. • Steering switch does not operate.	U1267
	Display control unit	The system of ECU which detected abnormalities does not operate.	U1300
		The system which is using AV communication does not operate.	U1310
USB communication	NAVI control unit	A navigation menu cannot be selected (hatching display).	U125D
	TCU	Telematics system does not function.	U1266
Multifunction switch	Multifunction switch operation does not operate.		U12BA
Satellite radio antenna	Satellite radio is not received.		U1258
Radio antenna	Radio is not received.		U12BE
Speaker/squawker/tweeter/ woofer	No sound from malfunction speaker		U1601 U1603 U1609 U160B U162A U1708 U1710 U1752 U175A U175D U1765

DTC Inspection Priority Chart

INFOID:0000000013615529

If multiple DTCs are detected simultaneously, check them one by one depending on the following DTC inspection priority chart.

Priority	Detected items (DTC)
1	U1223: CONFIG UNFINISH
2	• U1000: CAN COMM CIRCUIT • U1010: CONTROL UNIT (CAN)
3	• B1F01: ENG SPEED SIG ERROR • U1240: SWITCH CONN • U1249: AUDIO H/U CONN • U124E: AMP CONN • U1267: CGW connection
4	• U121F: DISPLAY CONTROL UNIT • U1233: NAVI CONTROL UNIT • U1234: AV CONTROL UNIT • U1300: AV COMM CIRCUIT • U1310: CONTROL UNIT (AV)
5	• U1231: AMP TEMP • U1232: ST ANGLE SEN CALIB • U1244: GPS ANTENNA CONN • U1258: XM ANTENNA CONN • U125D: DVD NAVI CONN • U1266: TCU CONN • U12BA: MULTIFUNCTION SWITCH CONN • U12BE: RADIO ANTENA CONN • U1601: FL-DOOR WOOFER • U1603: FL-DOOR TWEETER • U1609: FR-DOOR WOOFER • U160B: FR-DOOR TWEETER • U162A: F-INST C-SQUAWK • U1708: RL-DOOR SPEAKER • U1710: RR-DOOR SPEAKER • U1752: RL-PILLAR SQUAWK • U175A: RR-PILLAR SQUAWK • U175D: R-LUGGAGE L-WOOFER • U1765: R-LUGGAGE R-WOOFER

DTC Index

INFOID:0000000013615530

SELF-DIAGNOSIS RESULTS DISPLAY ITEM

DTC	CONSULT display	Reference
B1F01	ENG SPEED SIG ERROR	AV-151, "DTC Description"
U1000	CAN COMM CIRCUIT	AV-153, "DISPLAY CONTROL UNIT : DTC Description"
U1010	CONTROL UNIT (CAN)	AV-155, "DISPLAY CONTROL UNIT : DTC Description"
U121F	DISPLAY CONTROL UNIT	AV-156, "DTC Description"
U1223	CONFIG UNFINISH	AV-157, "DTC Description"
U1231	AMP TEMP	AV-158, "DTC Description"
U1232	ST ANGLE SEN CALIB	AV-159, "DTC Description"
U1233	NAVI CONTROL UNIT	AV-160, "DTC Description"
U1234	AV CONTROL UNIT	AV-161, "DTC Description"
U1240	SWITCH CONN	AV-162, "DTC Description"
U1244	GPS ANTENNA CONN	AV-164, "DTC Description"
U1249	AUDIO H/U CONN	AV-166, "DTC Description"
U124E	AMP CONN	AV-168, "DTC Description"

DTC	CONSULT display		Reference
U1258	XM ANTENNA CONN	GND-SHORT	AV-170, "DTC Description"
		OPEN	
U125D	DVD NAVI CONN		AV-172, "DTC Description"
U1266	TCU CONN		AV-173, "DTC Description"
U1267	CGW connection		AV-175, "DTC Description"
U12BA	MULTIFUNCTION SWITCH CONN		AV-177, "DTC Description"
U12BE	RADIO ANTENA CONN	GND-SHORT	AV-179, "DTC Description"
		OPEN	
U1300	AV COMM CIRCUIT		AV-181, "DTC Description"
U1310	CONTROL UNIT (AV)		AV-183, "DTC Description"
U1601	FL-DOOR WOOFER	OPEN	AV-184, "DTC Description"
		SHORT	
		GND-SHORT	
		VB-SHORT	
U1603	FL-DOOR TWEETER	OPEN	AV-184, "DTC Description"
		SHORT	
		GND-SHORT	
		VB-SHORT	
U1609	FR-DOOR WOOFER	OPEN	AV-184, "DTC Description"
		SHORT	
		GND-SHORT	
		VB-SHORT	
U160B	FR-DOOR TWEETER	OPEN	AV-184, "DTC Description"
		SHORT	
		GND-SHORT	
		VB-SHORT	
U162A	F-INST C-SQUAWK	OPEN	AV-190, "DTC Description"
		SHORT	
		GND-SHORT	
		VB-SHORT	
U1708	RL-DOOR SPEAKER	OPEN	AV-192, "DTC Description"
		SHORT	
		GND-SHORT	
		VB-SHORT	
U1710	RR-DOOR SPEAKER	OPEN	AV-192, "DTC Description"
		SHORT	
		GND-SHORT	
		VB-SHORT	
U1752	RL-PILLAR SQUAWK	OPEN	AV-196, "DTC Description"
		SHORT	
		GND-SHORT	
		VB-SHORT	

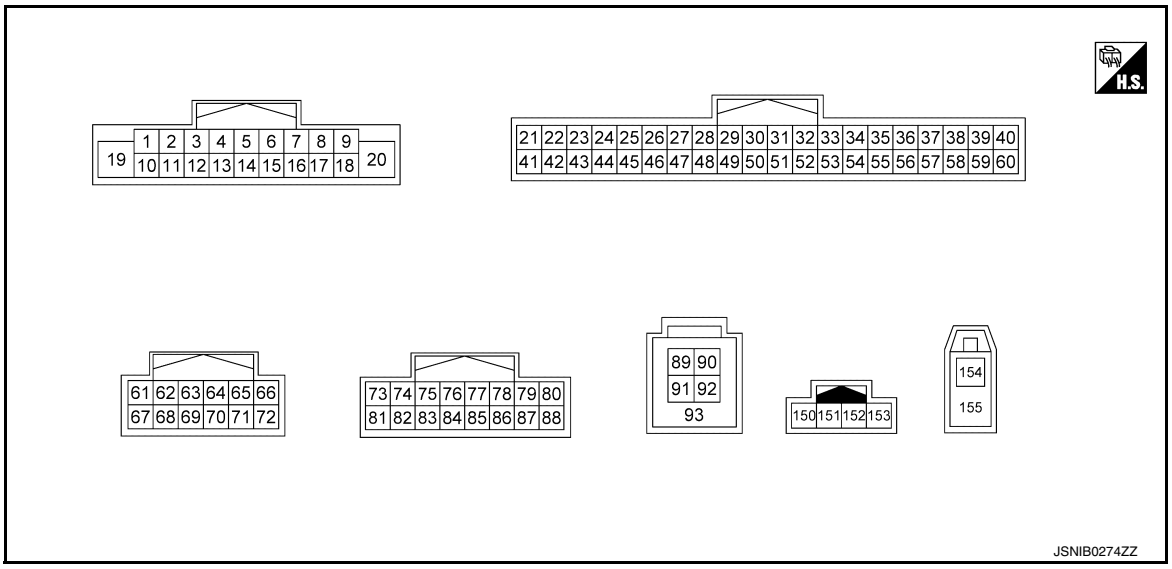
DTC	CONSULT display		Reference
U175A	RR-PILLAR SQUAWK	OPEN	AV-196, "DTC Description"
		SHORT	
		GND-SHORT	
		VB-SHORT	
U175D	R-LUGGAGE L-WOOFER	OPEN	AV-199, "DTC Description"
		SHORT	
		GND-SHORT	
		VB-SHORT	
U1765	R-LUGGAGE R-WOOFER	OPEN	AV-199, "DTC Description"
		SHORT	
		GND-SHORT	
		VB-SHORT	

AV CONTROL UNIT

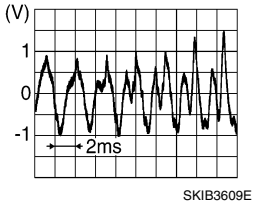
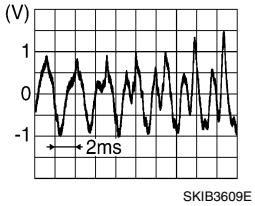
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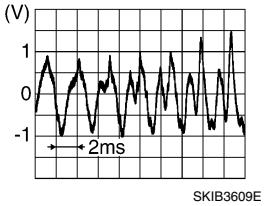
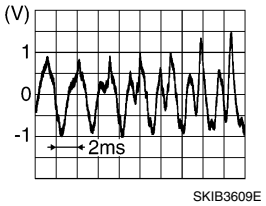
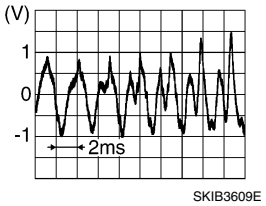
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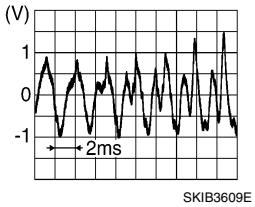
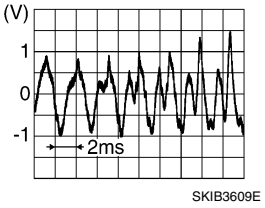
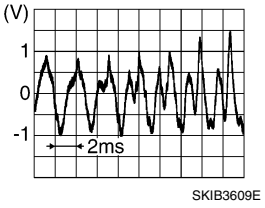
TERMINAL LAYOUT



PHYSICAL VALUES

Terminal (Wire color)		Description		Condition	Standard value	Reference value (Approx.)
+	–	Signal name	Input/ Output			
1	—	Shield	—	—	—	—
2 (L)	3 (W)*1 (P)*2	Sound signal front LH (+)*1	Output	[Ignition switch ON] • Sound output	Outputs waveform synchronized with sound.	 SKIB3609E
		Sound signal LH (+)*2				
3 (W)*1 (P)*2	—	Sound signal front LH (–)*1	—	—	—	—
		Sound signal LH (–)*2				
4 (LG)	5 (SB)	Sound signal rear LH (+)	Output	[Ignition switch ON] • Sound output	Outputs waveform synchronized with sound.	 SKIB3609E
5 (SB)	—	Sound signal rear LH (–)	—	—	—	—
7 (L)	20 (B)	ACC power supply	Input	[Ignition switch ACC]	8.8 - 16 V	Battery voltage

Terminal (Wire color)		Description		Condition	Standard value	Reference value (Approx.)
+	–	Signal name	Input/ Output			
8 (W)	9 (G)	Disk eject signal	Input	[Ignition switch ON] • Pressing the eject switch	1.5 V or less	0 V
				[Ignition switch ON] • Except for above	1.5 - 3.3 V	3.3 V
9 (G)	—	Disk eject signal ground	—	[Ignition switch ON]	—	0 V
10	—	Shield	—	—	—	—
11 (BR)*1 (LG)*2	12 (Y)*1 (P)*2	Sound signal front RH (+)*1	Output	[Ignition switch ON] • Sound output	Outputs waveform synchronized with sound.	 SKIB3609E
		Sound signal RH (+)*2				
12 (Y)*1 (P)*2	—	Sound signal front RH (–)*1	—	—	—	—
		Sound signal RH (–)*2				
19 (Y)	20 (B)	Battery power supply	Input	[Ignition switch OFF]	9.0 - 16 V	Battery voltage
20 (B)	—	Ground	—	[Ignition switch ON]	—	0 V
22 (G)	—	AV communication signal (L)	Input/ output	—	—	—
42 (L)	—	AV communication signal (H)	Input/ output	—	—	—
61 (P)	67 (L)	Sound signal LH (+)	Input	[Ignition switch ON] • Sound output	Waveform according to sound is input.	 SKIB3609E
62 (R)	68 (G)	Sound signal RH (+)	Input	[Ignition switch ON] • Sound output	Waveform according to sound is input.	 SKIB3609E
63	—	Shield	—	—	—	—
67 (L)	—	Sound signal LH (–)	—	—	—	—
68 (G)	—	Sound signal RH (–)	—	—	—	—
69	—	Shield	—	—	—	—

Terminal (Wire color)		Description		Condition	Standard value	Reference value (Approx.)
+	–	Signal name	Input/ Output			
73 (B)	81 (W)	TEL voice signal (+)	Input	[Ignition switch ON] • During voice guide output	Waveform according to voice is input.	 SKIB3609E
74	—	Shield	—	—	—	—
75 (G)	83 (R)	Voice guidance signal output (+)	Input	[Ignition switch ON] • Sound output	Waveform according to sound is input.	 SKIB3609E
76 (B)	—	Shield	—	—	—	—
77 (G)	78 (R)	Sound signal front LH (+)	Input	[Ignition switch ON] • Sound output	Waveform according to sound is input.	 SKIB3609E
78 (R)	—	Sound signal front LH (–)	—	—	—	—
81 (W)	—	TEL voice signal (–)	—	—	—	—
82	—	Shield	—	—	—	—
83 (R)	—	Voice guidance signal output (–)	—	—	—	—
89 (G)	—	USB ground	—	—	—	—
90 (W)	—	USB V BUS signal	—	—	—	—
91 (R)	—	USB D- signal	—	—	—	—
92 (L)	—	USB D+ signal	—	—	—	—
93	—	Shield	—	—	—	—
150 (—)	—	FM sub (+)	Input	—	—	—
151 (—)	—	Antenna signal	Input	—	—	—
152 (—)	20 (B)	Antenna amp. ON signal	Output	[Ignition switch ACC]	7.0 V or more	12.0 V
153 (—)	—	FM sub (-)	Input	—	—	—

Terminal (Wire color)		Description		Condition	Standard value	Reference value (Approx.)
+	–	Signal name	Input/ Output			
154 (—)	20 (B)	Satellite radio antenna signal	Input	[Ignition switch ON] • Not connected satellite radio antenna connector.	4.0 - 5.5 V	5.0 V
155	—	Shield	—	—	—	—

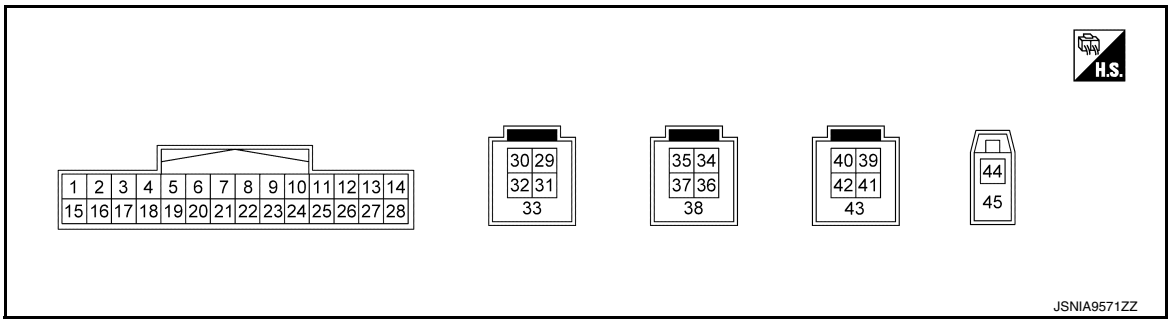
*1: Without BOSE audio
*2: With BOSE audio

NAVI CONTROL UNIT

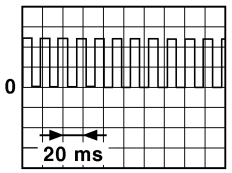
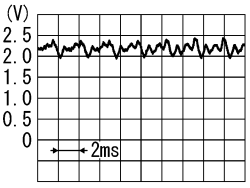
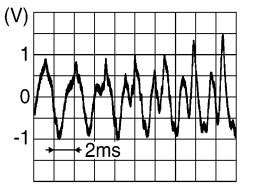
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TERMINAL LAYOUT



PHYSICAL VALUES

Terminal (Wire color)		Description		Condition	Standard value	Reference value (Approx.)
+	–	Signal name	Input/ Output			
1 (Y)	3 (B)	Battery power supply	Input	[Ignition switch OFF]	9.0 - 16 V	Battery voltage
3 (B)	—	Ground	—	[Ignition switch ON]	—	0 V
5 (L)	3 (B)	Acc power supply	Input	[Ignition switch ACC]	7.0 - 16 V	Battery voltage
7 (O)	3 (B)	Vehicle speed signal (8-pulse)	Input	[Ignition switch ON] • When vehicle speed is approx. 40 km/h (25 MPH)	Waveform according to vehicle speed is input.	**NOTE:** The maximum voltage varies depending on the specification (destination unit).  JSNIA0012GB
12 (G)	26 (R)	Microphone signal	Input	[Ignition switch ON] • Give a voice	Waveform according to voice is input.	 PKIB5037J
13	—	Shield	—	—	—	—
14 (W)	28 (B)	Voice guidance signal (+)	Output	[Ignition switch ON] • Sound output	Outputs waveform synchronized with sound.	 SKIB3609E
15 (P)	3 (B)	Battery power supply	Input	[Ignition switch OFF]	7.0 - 16 V	Battery voltage

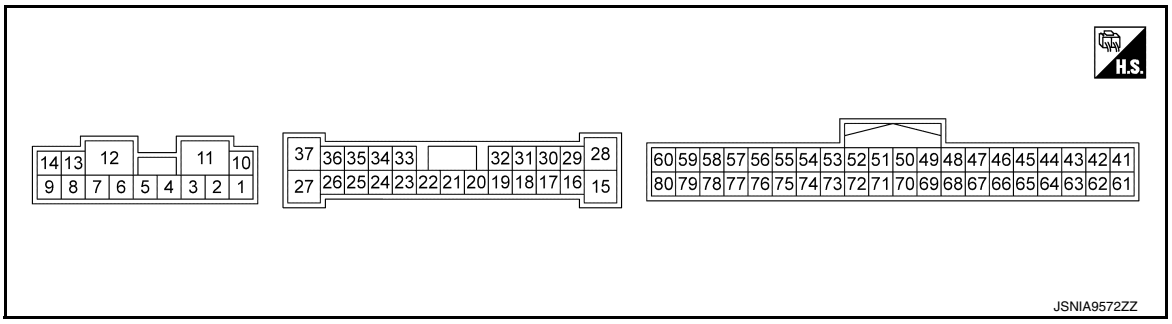
Terminal (Wire color)		Description		Condition	Standard value	Reference value (Approx.)
+	–	Signal name	Input/ Output			
17 (B)	—	Ground	—	[Ignition switch ON]	—	0 V
19 (V)	3 (B)	Ignition signal	Input	[Ignition switch ON]	7.0 - 16 V	Battery voltage
21 (BR)	3 (B)	Reverse signal	Input	[Ignition switch ON] • R position	7.0 V or more	12.0 V
				[Ignition switch ON] • Other than R position	3.0 V or less	0 V
26 (R)	—	Microphone signal ground	—	—	—	—
27	—	Shield	—	—	—	—
28 (B)	—	Voice guidance signal (–)	—	—	—	—
31 (W)	—	LVDS (+)	Input/ output	—	—	—
32 (B)	—	LVDS (–)	Input/ output	—	—	—
33	—	Shield	—	—	—	—
34 (G)	—	USB ground	—	—	—	—
35 (W)	—	USB D+ signal	—	—	—	—
36 (R)	—	USB D- signal	—	—	—	—
37 (L)	—	USB V BUS signal	—	—	—	—
38	—	Shield	—	—	—	—
39 (G)	—	USB ground	—	—	—	—
40 (W)	—	USB V BUS signal	—	—	—	—
41 (R)	—	USB D- signal	—	—	—	—
42 (L)	—	USB D+ signal	—	—	—	—
43	—	Shield	—	—	—	—
44 (—)	3 (B)	GPS antenna signal	Input	[Ignition switch ON] • Not connected GPS antenna connector	4.0 - 5.0 V	5.0 V
45 (—)	—	Shield	—	—	—	—

BOSE AMP.

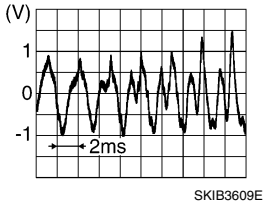
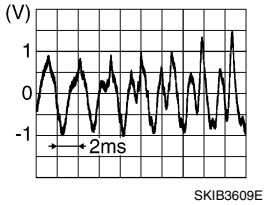
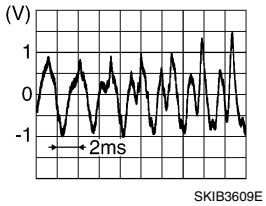
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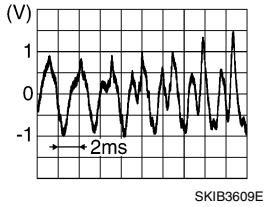
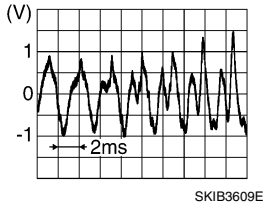
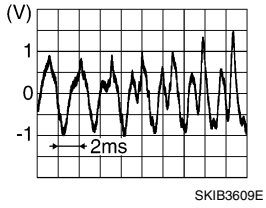
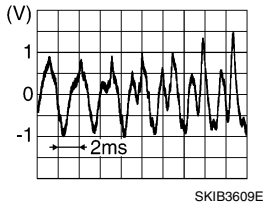
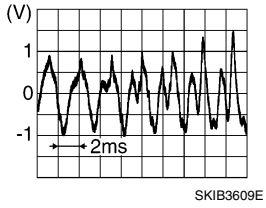
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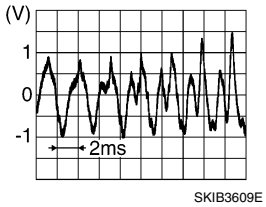
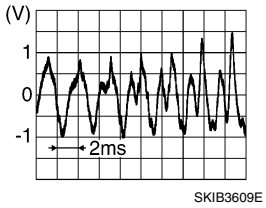
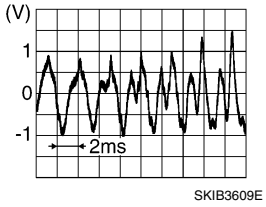
TERMINAL LAYOUT

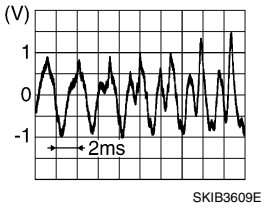
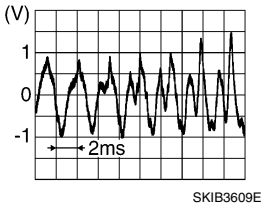
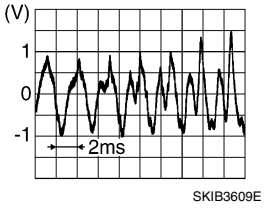
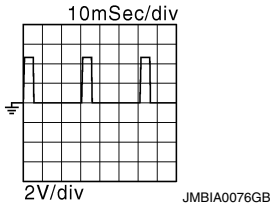


PHYSICAL VALUES

Terminal (Wire color)		Description		Condition	Standard value	Reference value (Approx.)
+	–	Signal name	Input/ Output			
1 (R)	2 (W)	Sound signal front door speaker RH (+)	Output	[Ignition switch ON] • Sound output	Outputs waveform synchronized with sound.	 SKIB3609E
2 (W)	—	Sound signal front door speaker RH (–)	—	—	—	—
3 (L)	4 (Y)	Sound signal woofer (+)	Output	[Ignition switch ON] • Sound output	Outputs waveform synchronized with sound.	 SKIB3609E
4 (Y)	—	Sound signal woofer (–)	—	—	—	—
5 (BR)	6 (R)	Sound signal front door speaker LH (+)	Output	[Ignition switch ON] • Sound output	Outputs waveform synchronized with sound.	 SKIB3609E
6 (R)	—	Sound signal front door speaker LH (–)	—	—	—	—
7 (B)	—	Ground	—	[Ignition switch ON]	1.0 V or less	0 V
8 (V)	—	Sound signal woofer (–)	—	—	—	—
9 (BR)	—	Sound signal rear pillar squawker RH (–)	—	—	—	—

Terminal (Wire color)		Description		Condition	Standard value	Reference value (Approx.)
+	–	Signal name	Input/ Output			
10 (BR)	7 (B)	Battery power supply	Input	[Ignition switch OFF]	9.0 - 16.0 V	Battery voltage
11 (GR)	7 (B)	Battery power supply	Input	[Ignition switch OFF]	9.0 - 16.0 V	Battery voltage
12 (B)	—	Ground	—	[Ignition switch ON]	—	0 V
13 (O)	8 (V)	Sound signal woofer (+)	Output	[Ignition switch ON] • Sound output	Outputs waveform synchronized with sound.	 SKIB3609E
14 (P)	9 (BR)	Sound signal rear pillar squawker RH (+)	Output	[Ignition switch ON] • Sound output	Outputs waveform synchronized with sound.	 SKIB3609E
16 (P)	29 (V)	Sound signal front tweeter LH (+)	Output	[Ignition switch ON] • Sound output	Outputs waveform synchronized with sound.	 SKIB3609E
17 (BR)	18 (GR)	Sound signal rear pillar squawker LH (+)	Output	[Ignition switch ON] • Sound output	Outputs waveform synchronized with sound.	 SKIB3609E
18 (GR)	—	Sound signal rear pillar squawker LH (–)	—	—	—	—
22 (W)	33 (B)	Sound signal rear door speaker LH (+)	Output	[Ignition switch ON] • Sound output	Outputs waveform synchronized with sound.	 SKIB3609E

Terminal (Wire color)		Description		Condition	Standard value	Reference value (Approx.)
+	–	Signal name	Input/ Output			
23 (L)	34 (P)	Sound signal rear door speaker RH (+)	Output	[Ignition switch ON] • Sound output	Outputs waveform synchronized with sound.	 SKIB3609E
24 (G)	35 (R)	Sound signal center squawker (+)	Output	[Ignition switch ON] • Sound output	Outputs waveform synchronized with sound.	 SKIB3609E
29 (V)	—	Sound signal front tweeter LH (–)	—	—	—	—
30 (L)	—	Sound signal front tweeter RH (–)	—	—	—	—
31 (G)	30 (L)	Sound signal front tweeter RH (+)	Output	[Ignition switch ON] • Sound output	Outputs waveform synchronized with sound.	 SKIB3609E
33 (B)	—	Sound signal rear door speaker LH (–)	—	—	—	—
34 (P)	—	Sound signal rear door speaker RH (–)	—	—	—	—
35 (R)	—	Sound signal center squawker (–)	—	—	—	—
44 (R)	—	Voice guidance signal (–)	—	—	—	—
45 (P)	—	Sound signal LH (–)	—	—	—	—
46 (B)	—	Sound signal RH (–)	—	—	—	—
54 (W)	—	AV communication signal (L)	Input/ Output	—	—	—
56 (V)	7 (B)	ACC power supply	Input	[Ignition switch ACC]	6.5 V or more	Battery voltage
58 (B)	Ground	Engine type signal 1	Input	[Ignition switch ON]	—	0 V

Terminal (Wire color)		Description		Condition	Standard value	Reference value (Approx.)
+	–	Signal name	Input/ Output			
64 (G)	44 (R)	Voice guidance signal (+)	Input	[Ignition switch ON] • Sound output	Waveform according to sound signal is input.	 SKIB3609E
65 (L)	45 (P)	Sound signal LH (+)	Input	[Ignition switch ON] • Sound output	Waveform according to sound signal is input.	 SKIB3609E
66 (W)	46 (B)	Sound signal RH (+)	Input	[Ignition switch ON] • Sound output	Waveform according to sound signal is input.	 SKIB3609E
74 (B)	—	AV communication signal (H)	Input/ Output	—	—	—
78 (O)	7 (B)	Engine speed signal	Input	[Engine running] • Idle speed **NOTE:** The pulse cycle changes depending on engine type.	—	 JMBIA0076GB
79	—	Shield	—	—	—	—

STEERING COLUMN CONTROL MODULE

List of ECU Reference

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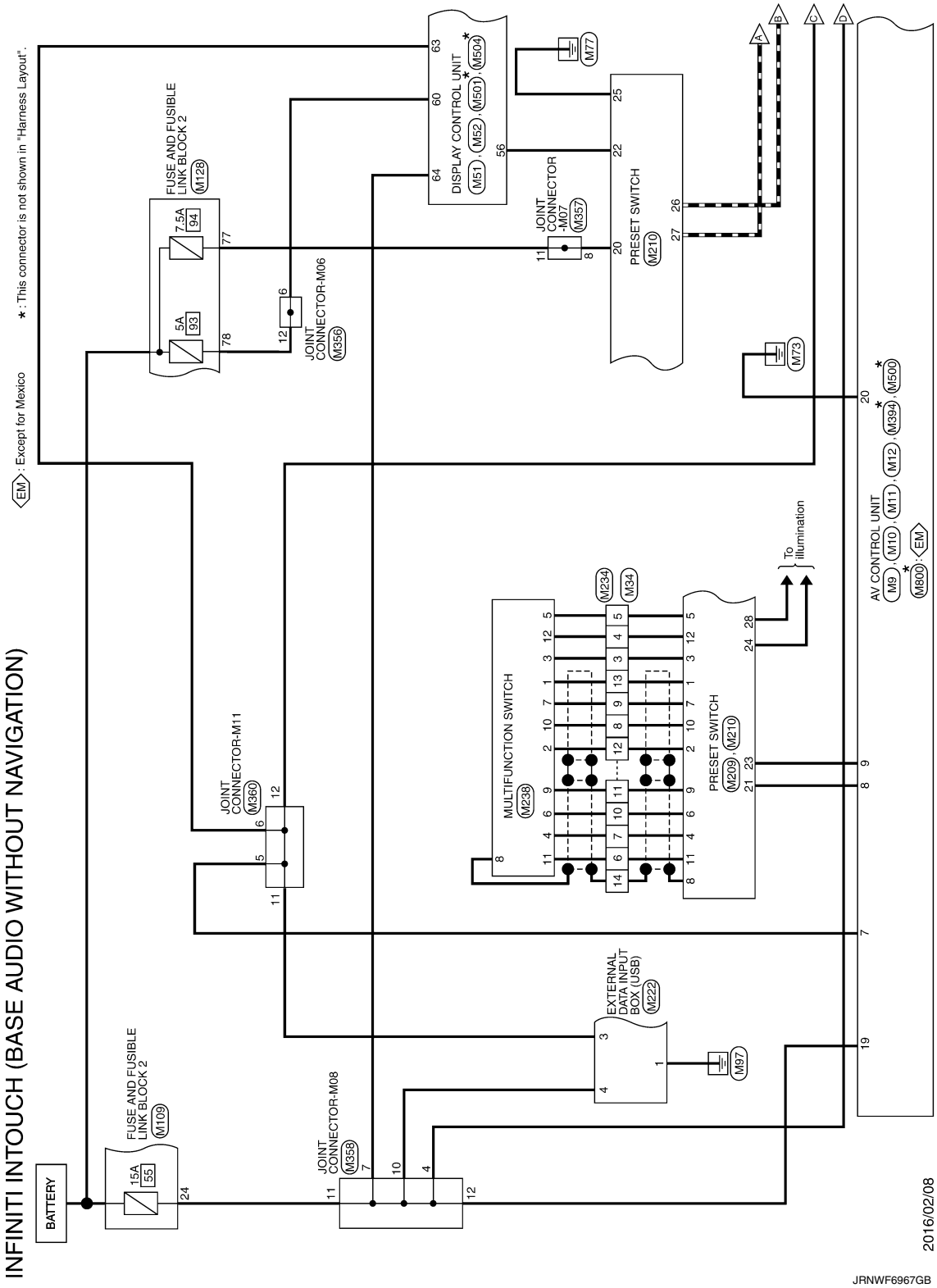
ECU name	Refer to
Steering column control module	BCS-59, "Reference Value"
	BCS-61, "DTC Index"

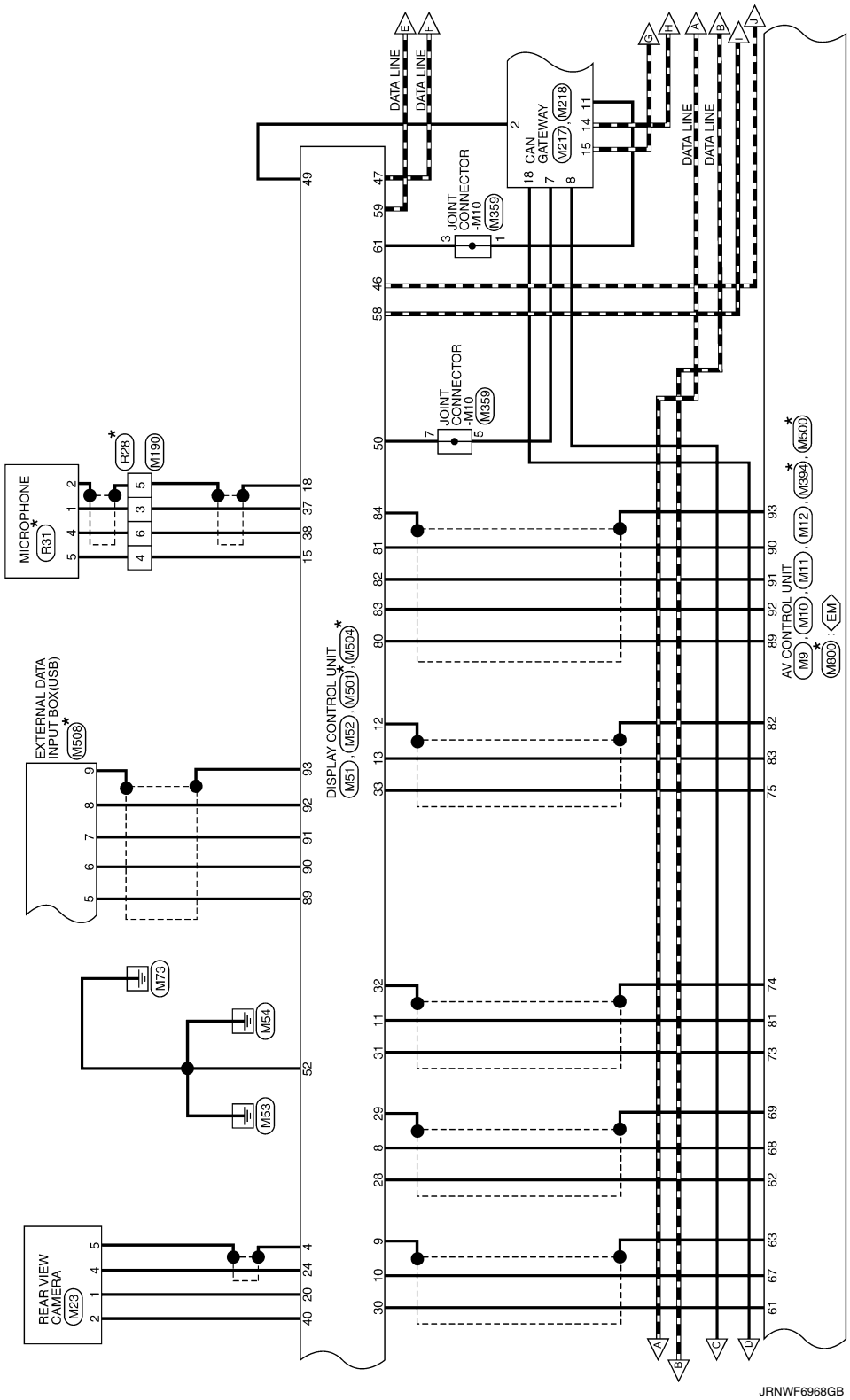
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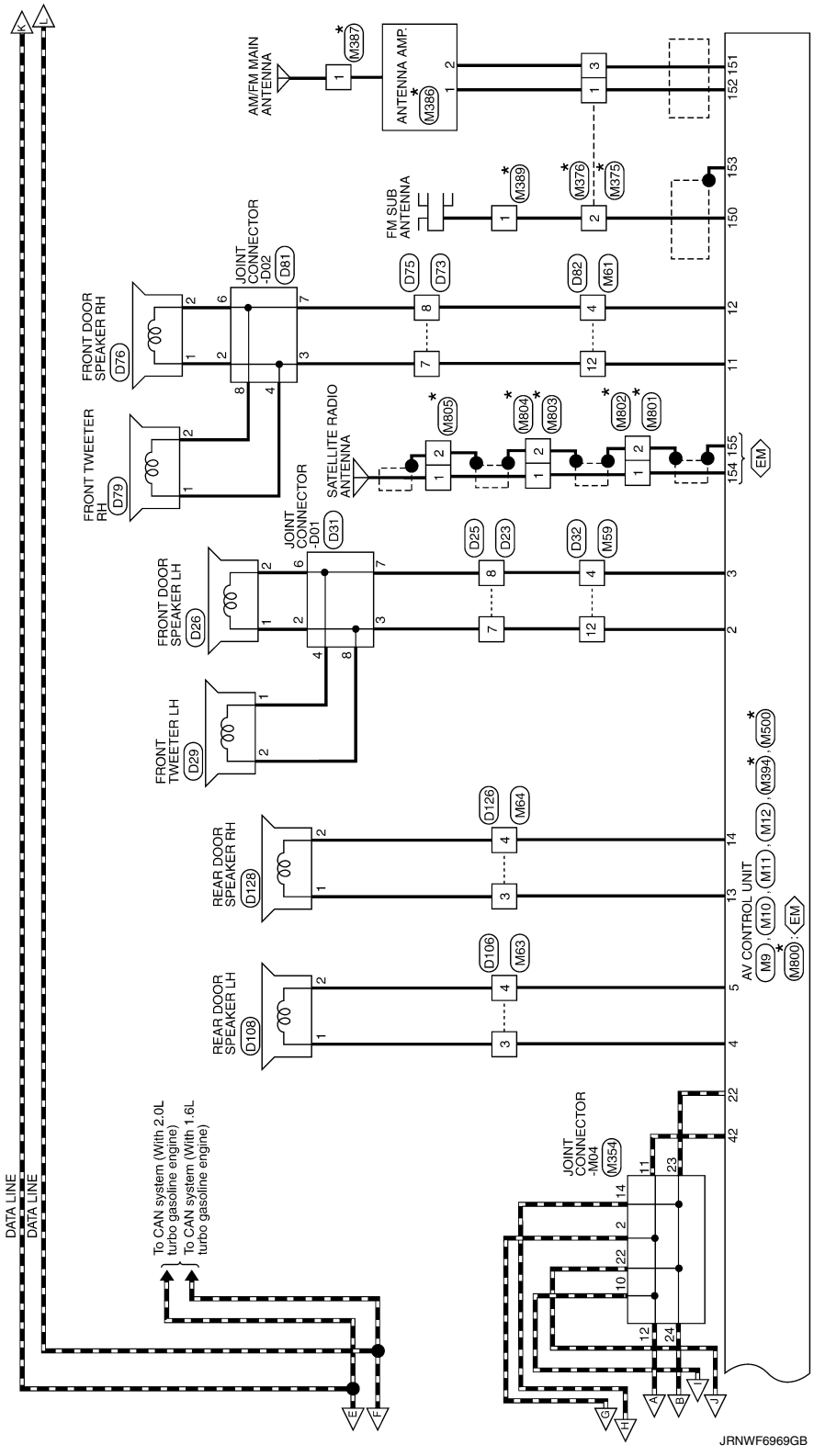
INFINITI INTOUCH (BASE AUDIO WITHOUT NAVIGATION)

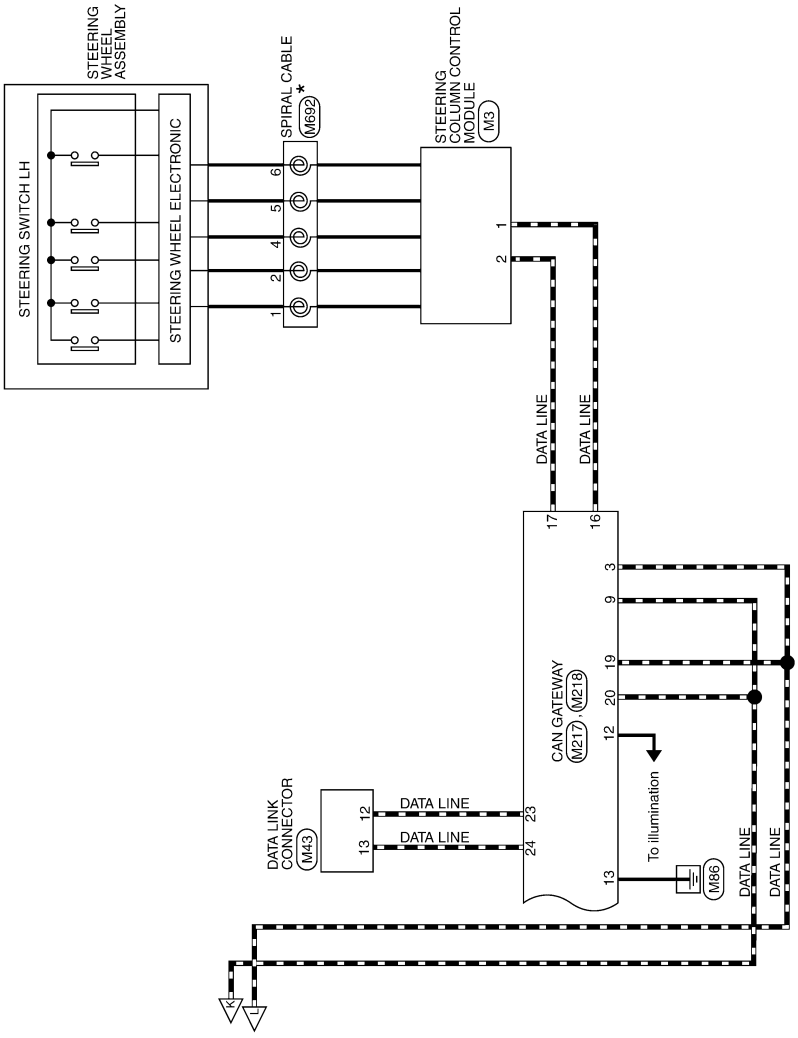
Wiring Diagram

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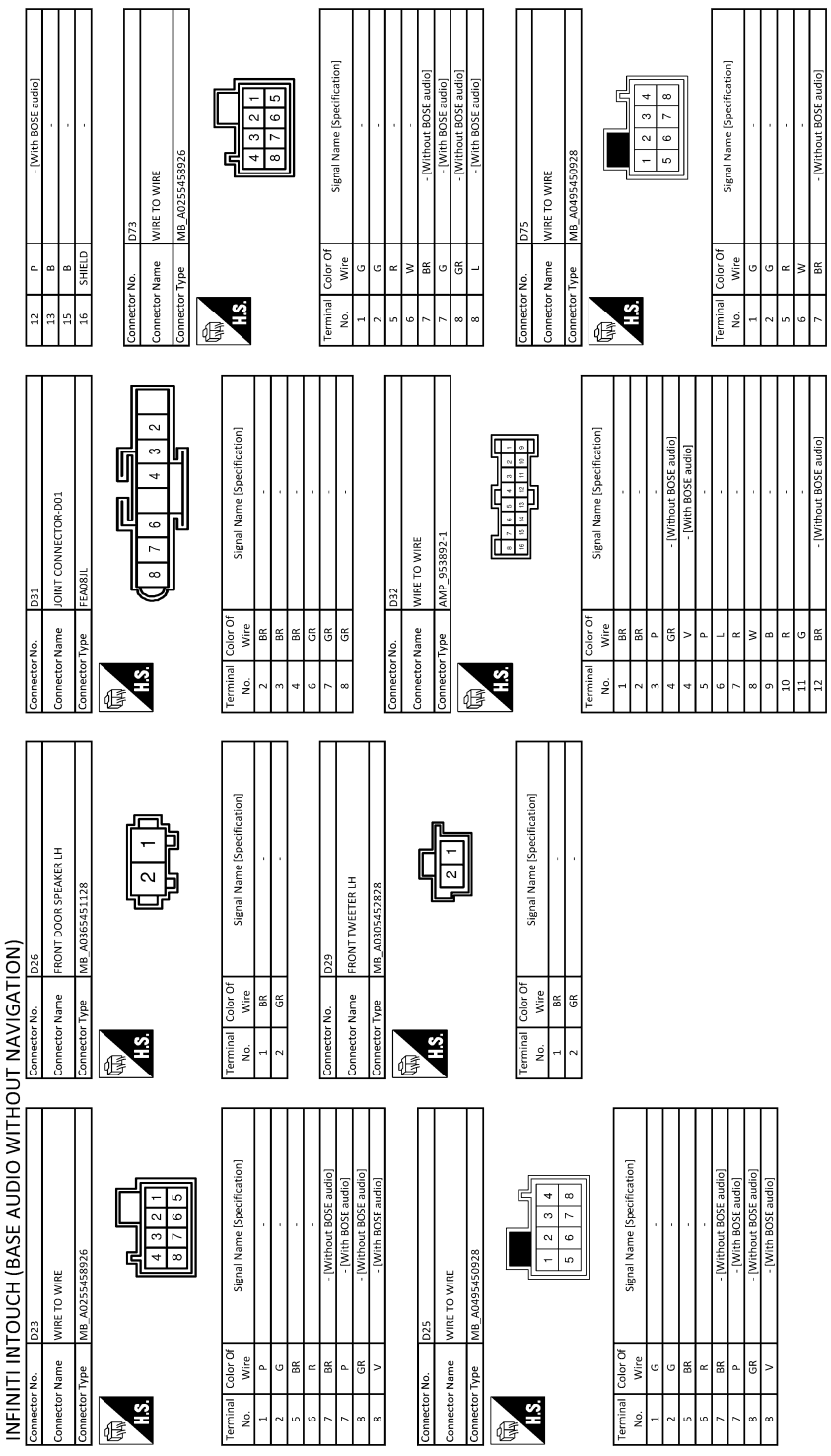

DATA LINE
DATA LINE
CAN GATEWAY (M217), (M218)
JOINT CONNECTOR -M10 (M359)
JOINT CONNECTOR -M10 (M359)
DATA LINE
DATA LINE
MICROPHONE (R31)*
R28* (M190)
EXTERNAL DATA INPUT BOX(USB) (M508)*
DISPLAY CONTROL UNIT (M51), (M52), (M501)*, (M504)*
AV CONTROL UNIT (M9), (M10), (M11), (M12), (M394)*, (M500)*, (M800)*, EM
M73
M54
M53
REAR VIEW CAMERA (M23)
JRNWF6968GB


AM/FM MAIN ANTENNA
ANTENNA AMP.
FM SUB ANTENNA
JOINT CONNECTOR -D02
FRONT DOOR SPEAKER RH
FRONT TWEETER RH
SATELLITE RADIO ANTENNA
JOINT CONNECTOR -D01
FRONT DOOR SPEAKER LH
FRONT TWEETER LH
REAR DOOR SPEAKER RH
REAR DOOR SPEAKER LH
AV CONTROL UNIT
JOINT CONNECTOR -M04
DATA LINE
DATA LINE
To CAN system (With 2.0L turbo gasoline engine)
To CAN system (With 1.6L turbo gasoline engine)
JRNWF6969GB



JRNWF6970GB

INFINITI INTOUCH (BASE AUDIO WITHOUT NAVIGATION)



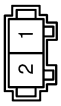
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INFINITI INTOUCH (BASE AUDIO WITHOUT NAVIGATION)

7	G	- [With BOSE audio]
8	GR	- [Without BOSE audio]
8	L	- [With BOSE audio]

Connector No.	D76
Connector Name	FRONT DOOR SPEAKER RH
Connector Type	MB_A0365451128

H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
1	BR	-
2	GR	-

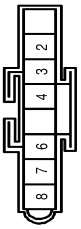
Connector No.	D79
Connector Name	FRONT TWEETER RH
Connector Type	MB_A0305452828

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	BR	-
2	GR	-

Connector No.	D81
Connector Name	JOINT CONNECTOR-D02
Connector Type	FEA08JL

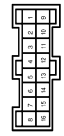
H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
2	BR	-
3	BR	-
4	BR	-
6	GR	-
7	GR	-
8	GR	-

Connector No.	D82
Connector Name	WIRE TO WIRE
Connector Type	AMP_953892-1

H.S.



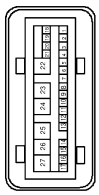
Terminal No.	Color Of Wire	Signal Name [Specification]
1	B	-
2	BR	-
3	G	-
4	GR	- [Without BOSE audio]
4	L	- [With BOSE audio]
5	Y	-
7	R	-
8	W	-
9	BR	-
10	R	-
11	G	-
12	BR	- [Without BOSE audio]
12	G	- [With BOSE audio]
13	GR	-

15	B
16	SHIELD

-	
-	

Connector No.	D106
Connector Name	WIRE TO WIRE
Connector Type	MB_A0085408981

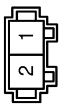
H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	-
2	B	-
3	G	- [Without BOSE audio]
3	W	- [With BOSE audio]
4	B	- [With BOSE audio]
4	L	- [Without BOSE audio]
5	G	-
6	V	-
8	W	-
9	P	-
10	L	-
11	G	-
12	W	-
13	O	-
14	W	-
15	R	-
16	Y	-
17	BR	-
19	GR	-
20	W	-
21	R	-
26	G	-
27	L	-

Connector No.	D108
Connector Name	REAR DOOR SPEAKER LH
Connector Type	MB_A0365451128

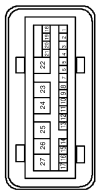
H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
1	G	-
2	L	-

Connector No.	D126
Connector Name	WIRE TO WIRE
Connector Type	MB_A0085408981

H.S.



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

JRNWF6972GB

INFINITI INTOUCH (BASE AUDIO WITHOUT NAVIGATION)

21	R	-
26	G	-
27	L	-

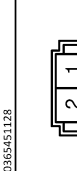
Connector No.	D128
Connector Name	REAR DOOR SPEAKER RH
Connector Type	MB_A0365451128

H.S.

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

Connector No.	M3
Connector Name	STEERING COLUMN CONTROL MODULE
Connector Type	MB_A2045401281

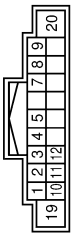
H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
1	G	CAN-L (CHASIS)
2	W	CAN-H (CHASIS)
3	BR	GND
4	R	K-LINE
6	R	K-LIN
7	BR	GND
8	L	AB1+
9	Y	AB1-
10	V	AB2+
11	G	AB2-

Connector No.	M9
Connector Name	AV CONTROL UNIT
Connector Type	TH18FW-CS2

H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
1	SHIELD	SHIELD
2	L	SOUND SIGNAL FRONT LH (+) [Without BOSE audio]
2	L	SOUND SIGNAL LH (+) [With BOSE audio]
3	P	SOUND SIGNAL LH (-) [With BOSE audio]
3	W	SOUND SIGNAL FRONT LH (-) [Without BOSE audio]
4	LG	SOUND SIGNAL REAR LH (+)
5	SB	SOUND SIGNAL REAR LH (-)
7	L	ACC POWER SUPPLY
8	W	DISK EJECT SIGNAL
9	G	DISK EJECT SIGNAL GROUND
10	SHIELD	SHIELD
11	BR	SOUND SIGNAL FRONT RH (+) [Without BOSE audio]
11	LG	SOUND SIGNAL RH (+) [With BOSE audio]
12	P	SOUND SIGNAL RH (-) [With BOSE audio]
12	Y	SOUND SIGNAL FRONT RH (-) [Without BOSE audio]
19	Y	BATTERY POWER SUPPLY
20	B	GROUND

Connector No.	M10
Connector Name	AV CONTROL UNIT
Connector Type	TH40FW-NH

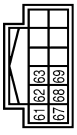
H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
22	G	AV COMMUNICATION SIGNAL (L)
42	L	AV COMMUNICATION SIGNAL (H)

Connector No.	M11
Connector Name	AV CONTROL UNIT
Connector Type	TH12FW-NH

H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
61	P	SOUND SIGNAL LH (+)
62	R	SOUND SIGNAL RH (+)
63	SHIELD	SHIELD
67	L	SOUND SIGNAL LH (-)
68	G	SOUND SIGNAL RH (-)
69	SHIELD	SHIELD

Connector No.	M12
Connector Name	AV CONTROL UNIT
Connector Type	TH16FW-NH

H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
73	B	TEL VOICE SIGNAL (+)
74	SHIELD	SHIELD
75	G	VOICE GUIDANCE SIGNAL (+)
76	B	SHIELD
77	G	SOUND SIGNAL FRONT LH (+)
78	R	SOUND SIGNAL FRONT LH (-)
81	W	TEL VOICE SIGNAL (-)
82	SHIELD	SHIELD
83	R	VOICE GUIDANCE SIGNAL (-)

Connector No.	M23
Connector Name	REAR VIEW CAMERA
Connector Type	RH06FB-1V

H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
1	B	GND
2	Y	POWER
4	O	CAMERA+
5	P	-

Connector No.	M34
Connector Name	WIRE TO WIRE
Connector Type	MB_A2205459228

H.S.



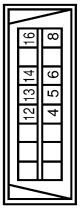
Terminal No.	Color Of Wire	Signal Name [Specification]
3	BR	-
4	V	-
5	L	-
6	W	-
7	R	-
8	Y	-
9	L	-
10	G	-
11	B	-
12	R	-
13	B	-
14	GR	-

JRNWF6973GB

INFINITI INTOUCH (BASE AUDIO WITHOUT NAVIGATION)

Connector No.	M43
Connector Name	DATA LINK CONNECTOR
Connector Type	BD16FW

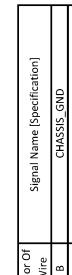
H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
4	B	CHASSIS_GND
5	B	ELECTRONICS_GND
6	GR	DIAGNOSTICS-CAN_H_DAI
8	W	IGN_SW
12	L	DIAGNOSTIC-CAN-L_NIS
13	V	DIAGNOSTIC-CAN_H_NIS
14	GR	DIAGNOSTICS-CAN_L_DAI
16	R	BATTERY

Connector No.	M51
Connector Name	DISPLAY CONTROL UNIT
Connector Type	TH40FW-NH

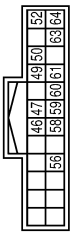
H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
4	SHIELD	SHIELD
6	SHIELD	SHIELD
8	G	SOUND SIGNAL RH (-)
9	SHIELD	SHIELD
10	L	SOUND SIGNAL LH (-)
11	W	TEL VOICE SIGNAL (-)
12	SHIELD	SHIELD
13	R	VOICE GUIDANCE SIGNAL (-)
14	B	VOICE GUIDANCE SIGNAL (-)
15	W	NS ON/OFF SIGNAL
16	R	MICROPHONE SIGNAL GROUND
17	SHIELD	SHIELD
18	SHIELD	SHIELD
20	B	CAMERA GROUND
24	O	CAMERA IMAGE SIGNAL
26	W	SOUND SIGNAL (-)
27	B	SOUND SIGNAL (+)
28	R	SOUND SIGNAL RH (+)
29	SHIELD	SHIELD
30	P	SOUND SIGNAL LH (+)
31	B	TEL VOICE SIGNAL (+)
32	SHIELD	SHIELD
33	G	VOICE GUIDANCE SIGNAL (+)
34	W	VOICE GUIDANCE SIGNAL (+)
35	SHIELD	SHIELD
36	G	MICROPHONE SIGNAL
37	O	MICROPHONE SIGNAL [Color of wire differs depending on production]
37	R	MICROPHONE SIGNAL [Color of wire differs depending on production]
38	L	MICROPHONE POWER SUPPLY
40	Y	CAMERA POWER SUPPLY

Connector No.	M52
Connector Name	DISPLAY CONTROL UNIT
Connector Type	TH24FW-NH

H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
46	G	AV COMMUNICATION SIGNAL (L)
47	P	CAN-L
49	R	DIMMER SIGNAL
50	BR	REVERSE SIGNAL
52	B	GROUND
56	BR	CAMERA SWITCH SIGNAL
58	Y	AV COMMUNICATION SIGNAL (H)
59	L	CAN-H
60	W	IGNITION SIGNAL
61	R	VEHICLE SPEED SIGNAL [8-PULSE]
63	L	ACC POWER SUPPLY
64	Y	BATTERY POWER SUPPLY

Connector No.	M59
Connector Name	WIRE TO WIRE
Connector Type	AMP_953893-1

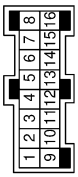
H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
1	BR	-
2	BR	-
3	O	-
4	V	- [With BOSE audio]
4	W	- [Without BOSE audio]
5	P	-
6	L	-
7	R	-
8	W	-
9	B	-
10	R	-
11	G	-
12	L	- [Without BOSE audio]
12	P	- [With BOSE audio]
13	B	-
15	B	-
16	SHIELD	-

Connector No.	M61
Connector Name	WIRE TO WIRE
Connector Type	AMP_953893-1

H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
1	G	-
2	BR	-
3	G	-
4	L	- [With BOSE audio]
4	Y	- [Without BOSE audio]
5	V	-
7	R	-
8	W	-
9	BR	-
10	R	-
11	O	-
12	BR	- [Without BOSE audio]
12	G	- [With BOSE audio]
13	GR	-
15	B	-
16	SHIELD	-

Connector No.	M63
Connector Name	WIRE TO WIRE
Connector Type	MB_A0085409181

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	O	-
2	BR	-
3	G	- [Without BOSE audio]
3	W	- [With BOSE audio]
4	B	- [With BOSE audio]
4	L	- [Without BOSE audio]
5	G	-
6	V	-
8	GR	-
9	O	-
10	L	-
11	G	-
12	W	-
13	GR	-
14	W	-
15	R	-
16	Y	-
17	BR	-
19	GR	-
20	W	-
21	R	-

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INFINITI INTOUCH (BASE AUDIO WITHOUT NAVIGATION)

26	GR	-
27	B	-

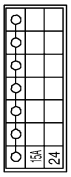
Connector No. M64
Connector Name WIRE TO WIRE
Connector Type MB_A0085409181

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	-
2	B	-
3	L	-
4	P	-
5	Y	-
6	O	-
8	GR	-
9	L	-
10	G	-
11	P	-
12	W	-
13	O	-
14	V	-
15	GR	-
16	Y	-
17	BR	-
19	GR	-
20	W	-
21	B	-
26	G	-
27	Y	-

Connector No. M109
Connector Name FUSE AND FUSIBLE LINK BLOCK 2
Connector Type MB_A0055459901

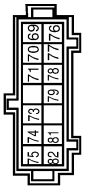
H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
24	Y	-

Connector No. M128
Connector Name FUSE AND FUSIBLE LINK BLOCK 2
Connector Type MB_A0395456128

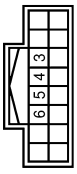
H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
69	B	-
70	P	-
71	B	-
73	BR	-
74	B	-
75	G	-
76	R	-
77	Y	-
78	P	-
79	GR	-
81	O	-
82	B	-

Connector No. M190
Connector Name WIRE TO WIRE
Connector Type TH16FW-NH

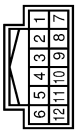
H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
3	R	-
4	W	-
5	SHIELD	-
6	L	-

Connector No. M209
Connector Name PRESET SWITCH
Connector Type TH12FW-NH

H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
1	B	NAVI SIGNAL
2	R	PUSH SWITCH C SIGNAL
3	BR	ILLUMINATION SIGNAL
4	R	ENCD-B SIGNAL
5	L	GROUND
6	G	PUSH SWITCH A SIGNAL
7	L	TYPE SIGNAL
8	GR	SHIELD
9	B	PUSH SWITCH B SIGNAL
10	Y	PUSH SWITCH D SIGNAL
11	W	ENCD-A SIGNAL
12	V	ILLUMINATION CONTROL SIGNAL

Connector No. M210
Connector Name PRESET SWITCH
Connector Type TH16FW-NH

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
20	O	ACC POWER SUPPLY
21	W	DISK EJECT SIGNAL
22	BR	CAMERA SWITCH SIGNAL
23	G	DISK EJECT SIGNAL GROUND
24	W	ILLUMINATION CONTROL SIGNAL
25	B	GROUND
26	G	AV COMMUNICATION SIGNAL (L)
27	L	AV COMMUNICATION SIGNAL (H)
28	W	ILLUMINATION SIGNAL

Connector No. M217
Connector Name CAN GATEWAY
Connector Type MB_A0225400481

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	SOS SWITCH LED SIGNAL
2	R	DIMMER SIGNAL
3	P	MULTIFUNCTION MEDIA CAN-L
4	O	ENGINE SPEED SIGNAL
7	BR	REVERSE SIGNAL
8	V	ACC POWER SUPPLY
9	L	MULTIFUNCTION MEDIA CAN-H
10	W	SOS CALL SWITCH SIGNAL
11	Y	VEHICLE SPEED SIGNAL
12	W	ILLUMINATION CONTROL SIGNAL

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INFINITI INTOUCH (BASE AUDIO WITHOUT NAVIGATION)

Connector No.	M218
Connector Name	CAN GATEWAY
Connector Type	MB_A0225400581

H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
13	B	GROUND
14	G	AV COMMUNICATION-L
15	L	AV COMMUNICATION-H
16	G	CHASSIS CAN-L
17	W	CHASSIS CAN-H
18	O	BATTERY POWER SUPPLY
19	P	MULTIFUNCTION MEDIA CAN-L
20	L	MULTIFUNCTION MEDIA CAN-H
21	BR	BODY CAN 1-L
22	R	BODY CAN 1-H
23	L	DIAGNOSTIC CAN-L
24	V	DIAGNOSTIC CAN-H

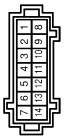
Connector No.	M222
Connector Name	EXTERNAL DATA INPUT BOX (USB)
Connector Type	TH04FW-NH

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	B	GROUND
3	V	ACC POWER SUPPLY
4	R	BATTERY POWER SUPPLY

Connector No.	M234
Connector Name	WIRE TO WIRE
Connector Type	MB_A2205453728

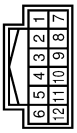
H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
3	BR	-
4	V	-
5	L	-
6	W	-
7	R	-
8	Y	-
9	L	-
10	G	-
11	B	-
12	R	-
13	B	-
14	V	-

Connector No.	M238
Connector Name	MULTIFUNCTION SWITCH
Connector Type	TH12FW-NH

H.S.

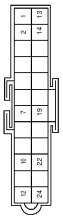


Terminal No.	Color Of Wire	Signal Name [Specification]
1	B	-
2	R	-
3	BR	-
4	R	-
5	L	-
6	G	-
7	L	-
8	V	-

9	B	-
10	Y	-
11	W	-
12	V	-

Connector No.	M354
Connector Name	JOINT CONNECTOR-M04
Connector Type	FEA24JB

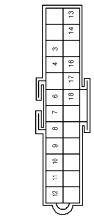
H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
1	Y	-
2	L	-
7	L	-
10	Y	-
12	L	-
13	G	-
14	G	-
19	G	-
22	G	-
24	G	-

Connector No.	M356
Connector Name	JOINT CONNECTOR-M06
Connector Type	FEA24JW

H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
3	W	-
4	V	-
6	W	-
7	G	-

8	W	-
9	W	-
10	W	-
11	B	-
12	P	-
13	G	-
14	G	-
16	GR	-
17	GR	-
18	GR	-

Connector No.	M357
Connector Name	JOINT CONNECTOR-M07
Connector Type	FEA24JOR

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
7	W	-
8	O	-
9	O	-
10	O	-
11	Y	-
12	Y	-
13	R	-
14	R	-
15	R	-
16	R	-

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INFINITI INTOUCH (BASE AUDIO WITHOUT NAVIGATION)

Connector No.	M358
Connector Name	JOINT CONNECTOR-M08
Connector Type	FEA24W

Terminal No.	Color Of Wire	Signal Name [Specification]
3	Y	-
4	O	-
5	Y	-
6	P	-
7	Y	-
9	R	-
10	R	-
11	Y	-
12	Y	-
13	GR	-
14	GR	-
15	GR	-
16	L	-
17	GR	-
18	GR	-
19	GR	-
20	G	-

Connector No.	M359
Connector Name	JOINT CONNECTOR-M10
Connector Type	FEA08JL

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

5	BR	-
6	G	-
7	BR	-
8	BR	-

Connector No.	M360
Connector Name	JOINT CONNECTOR-M11
Connector Type	FEA24JB

Terminal No.	Color Of Wire	Signal Name [Specification]
2	L	-
4	L	-
5	L	-
6	L	-
9	V	-
10	V	-
11	V	-
12	V	-

Connector No.	M375
Connector Name	WIRE TO WIRE
Connector Type	GT13SC-2_1S-HU

Terminal No.	Color Of Wire	Signal Name [Specification]
1	-	-
2	-	-
3	-	-

Connector No.	M376
Connector Name	WIRE TO WIRE
Connector Type	GT13SCN-2_1PP-HU

Terminal No.	Color Of Wire	Signal Name [Specification]
1	-	-
2	-	-
3	-	-

Connector No.	M386
Connector Name	ANTENNA AMP.
Connector Type	GT13SSN-1_1PP-HU

Terminal No.	Color Of Wire	Signal Name [Specification]
1	-	ANTENNA AMP. ON SIGNAL
2	-	ANTENNA SIGNAL

Connector No.	M387
Connector Name	AM/FM MAIN ANTENNA
Connector Type	P01FB-A

Terminal No.	Color Of Wire	Signal Name [Specification]
1	-	ANTENNA SIGNAL

Connector No.	M389
Connector Name	FM SUB ANTENNA
Connector Type	P01FB-A

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

Connector No.	M394
Connector Name	AV CONTROL UNIT
Connector Type	Tyco_1554987-1

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INFINITI INTOUCH (BASE AUDIO WITHOUT NAVIGATION)

Terminal No.	Color Of Wire	Signal Name [Specification]
89	G	USB GROUND
90	W	USB V BUS SIGNAL
91	R	USB D- SIGNAL
92	L	USB D+ SIGNAL
93	SHIELD	SHIELD

Connector No.	M500
Connector Name	AV CONTROL UNIT
Connector Type	TH04MW-NH

H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
150	-	FM SUB (+)
151	-	ANTENNA SIGNAL
152	-	ANTENNA AMP. ON SIGNAL
153	-	FM SUB (-)

Connector No.	M501
Connector Name	DISPLAY CONTROL UNIT
Connector Type	TYCO-2174512-1

H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
80	G	USB GROUND
81	W	USB V BUS SIGNAL
82	R	USB D-SIGNAL
83	L	USB D+SIGNAL
84	SHIELD	SHIELD

Connector No.	M504
Connector Name	DISPLAY CONTROL UNIT
Connector Type	TYCO-2174512-5

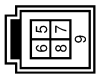
H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
89	G	USB GROUND
90	W	USB V BUS SIGNAL
91	R	USB D-SIGNAL
92	L	USB D+SIGNAL
93	SHIELD	SHIELD

Connector No.	M508
Connector Name	EXTERNAL DATA INPUT BOX (USB)
Connector Type	TYCO-2174512-5

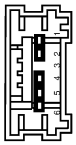
H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
5	G	USB_GND
6	W	V_BUS
7	R	USB_D-
8	L	USB_D+
9	SHIELD	SHIELD

Connector No.	M692
Connector Name	SPIRAL CABLE
Connector Type	A2040041699BLATT2

H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
1	-	-
2	-	-
3	-	-
4	-	-
5	-	-
6	-	-

Connector No.	M800
Connector Name	AV CONTROL UNIT
Connector Type	FAKRA

H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
154	-	SATELLITE RADIO ANTENNA SIGNAL
155	SHIELD	SHIELD

Connector No.	M801
Connector Name	WIRE TO WIRE
Connector Type	GT16C-1S-HU

H.S.



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

Connector No.	M802
Connector Name	WIRE TO WIRE
Connector Type	GT16C-1PP-HU

H.S.

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

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INFINITI INTOUCH (BASE AUDIO WITHOUT NAVIGATION)

Connector No.	M803
Connector Name	WIRE TO WIRE
Connector Type	GT16C-1S-HU

H.S.



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

Connector No.	M804
Connector Name	WIRE TO WIRE
Connector Type	GT16C-1PP-HU

H.S.



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

Connector No.	M805
Connector Name	SATELLITE RADIO ANTENNA
Connector Type	GT16C-1PP-HU

H.S.



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

Connector No.	R28
Connector Name	WIRE TO WIRE
Connector Type	TH16MW-NH

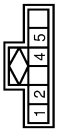
H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
3	R	-
4	W	-
5	SHIELD	-
6	L	-

Connector No.	R31
Connector Name	MICROPHONE
Connector Type	A06FW

H.S.



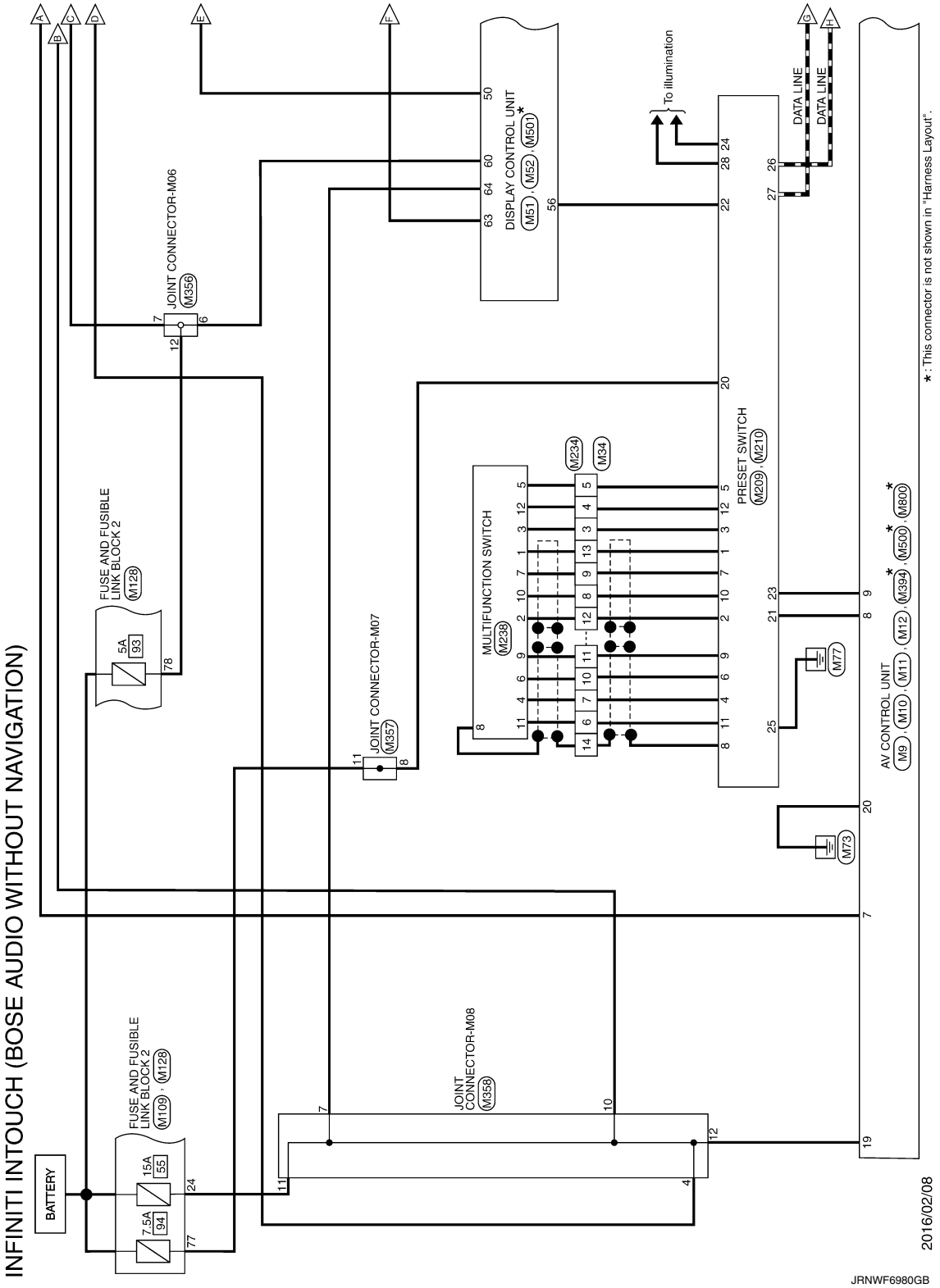
Terminal No.	Color Of Wire	Signal Name [Specification]
1	R	-
2	SHIELD	-
4	L	-
5	W	-

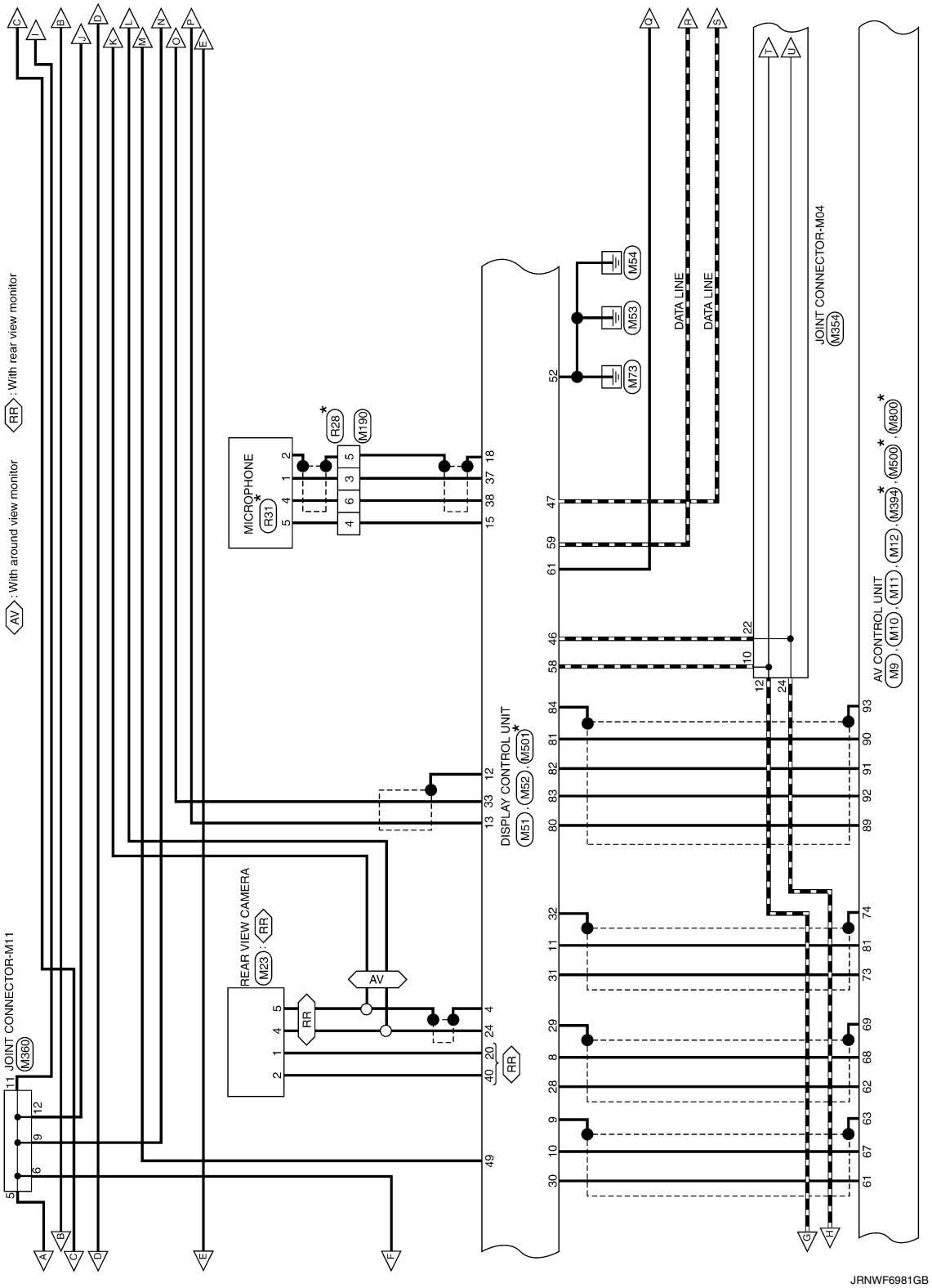
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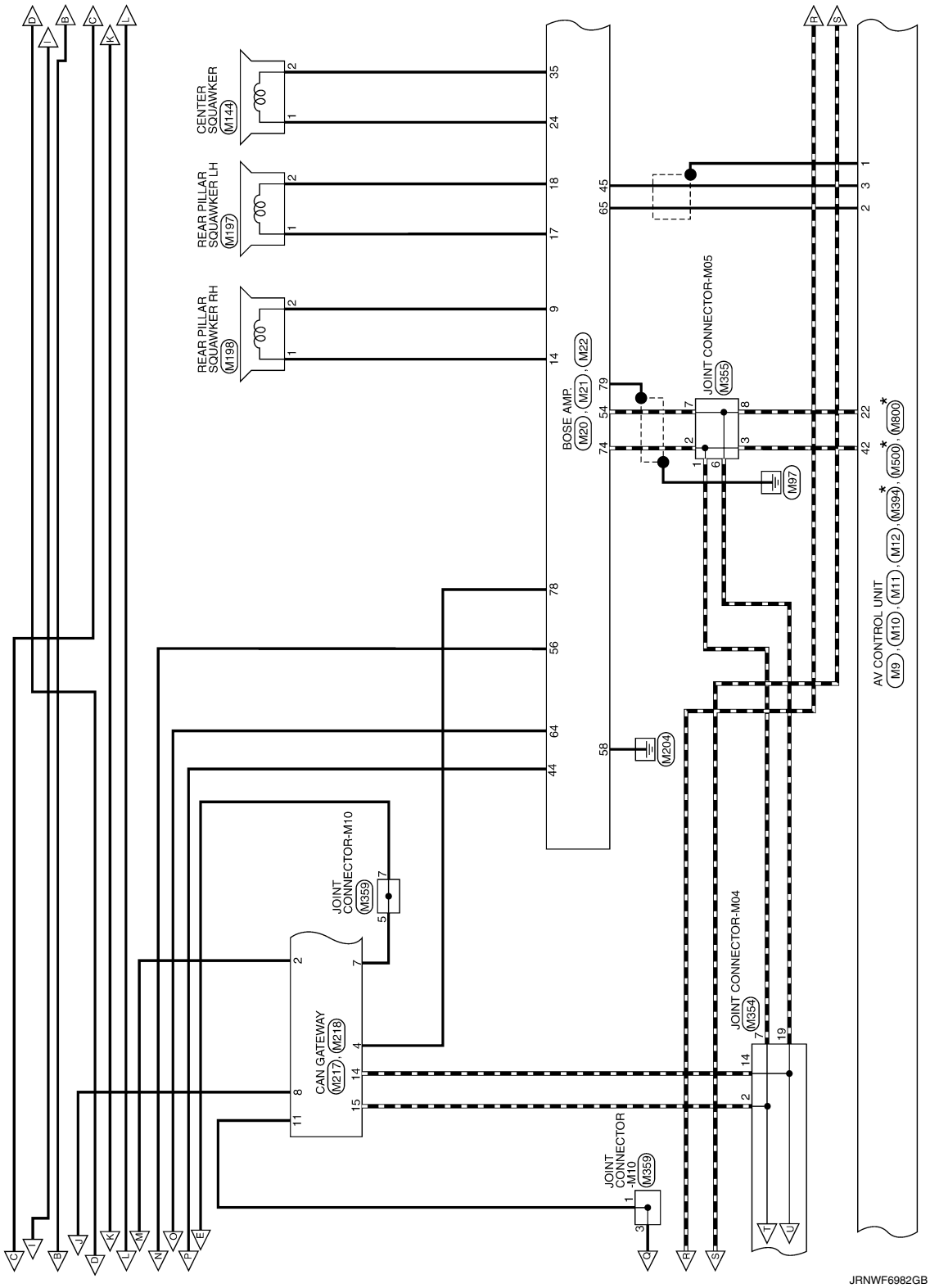
INFINITI INTOUCH (BOSE AUDIO WITHOUT NAVIGATION)

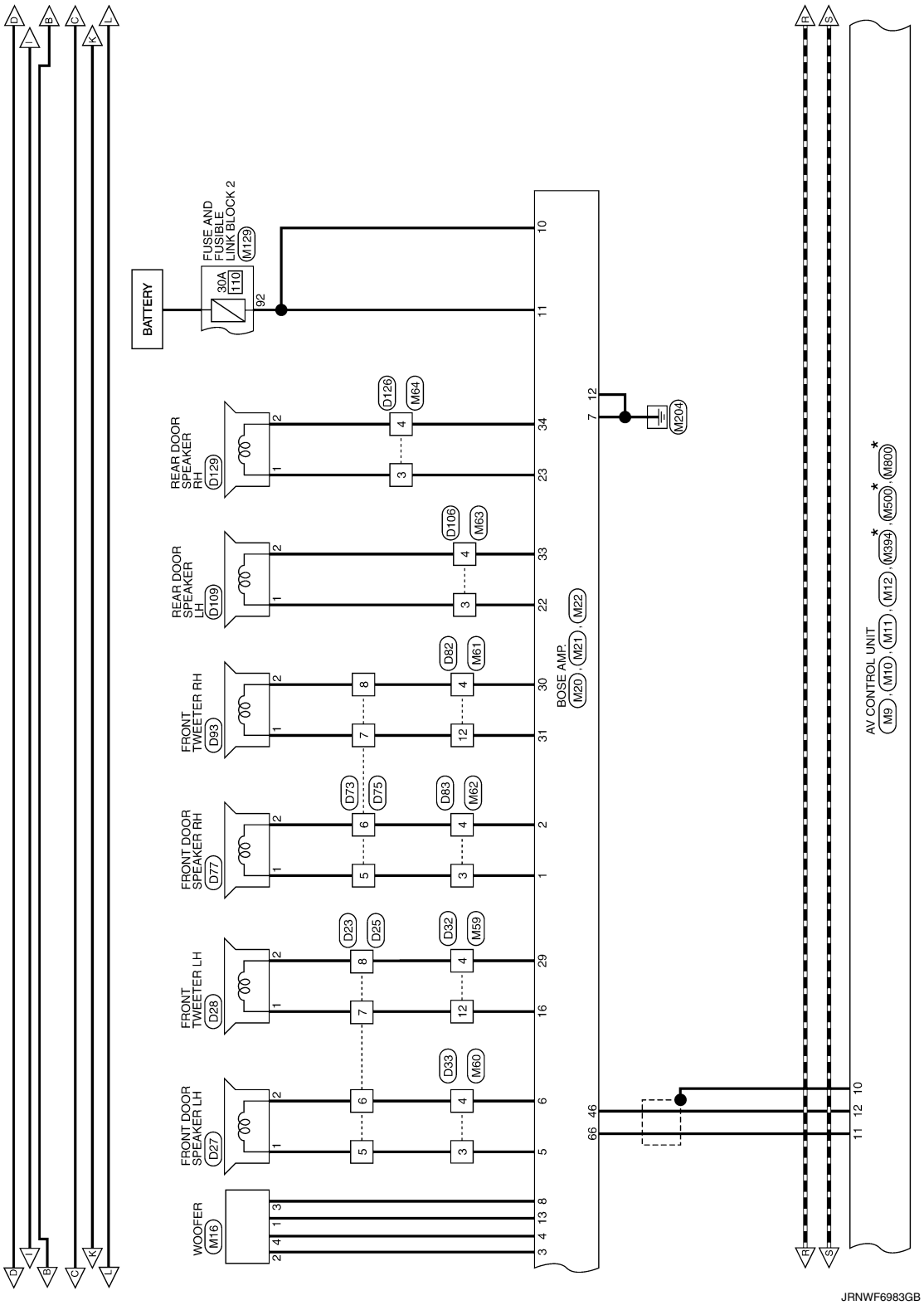
Wiring Diagram

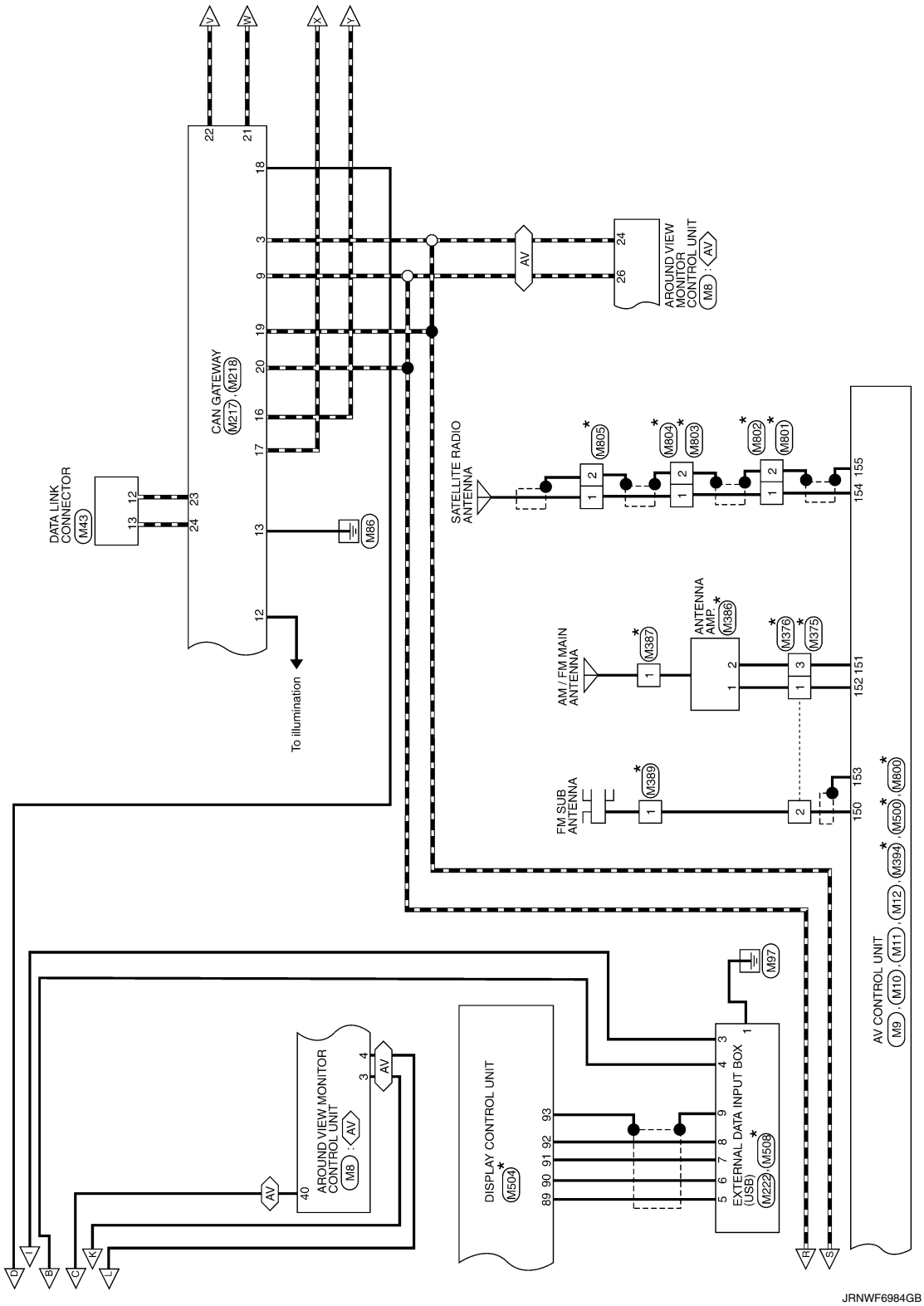
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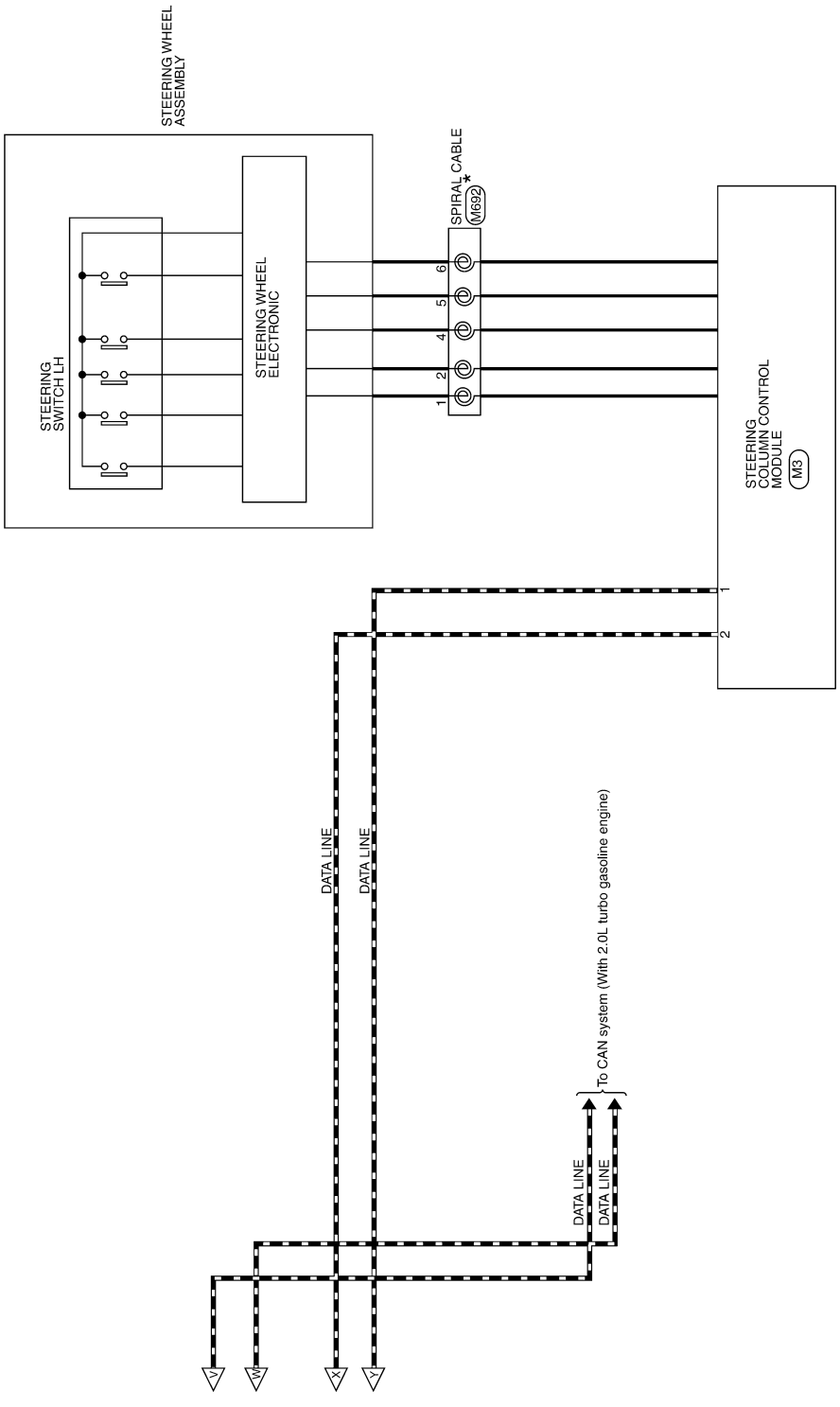



RR : With rear view monitor
AV : With around view monitor
JOINT CONNECTOR-M11
(M360)
REAR VIEW CAMERA
(M23)
MICROPHONE
(R31)
(R28)
(M190)
DISPLAY CONTROL UNIT
(M51), (M52), (M501)
DATA LINE
DATA LINE
JOINT CONNECTOR-M04
(M354)
(M54)
(M53)
(M73)
AV CONTROL UNIT
(M9), (M10), (M11), (M12), (M394), (M500), (M800)
JRNWF6981GB

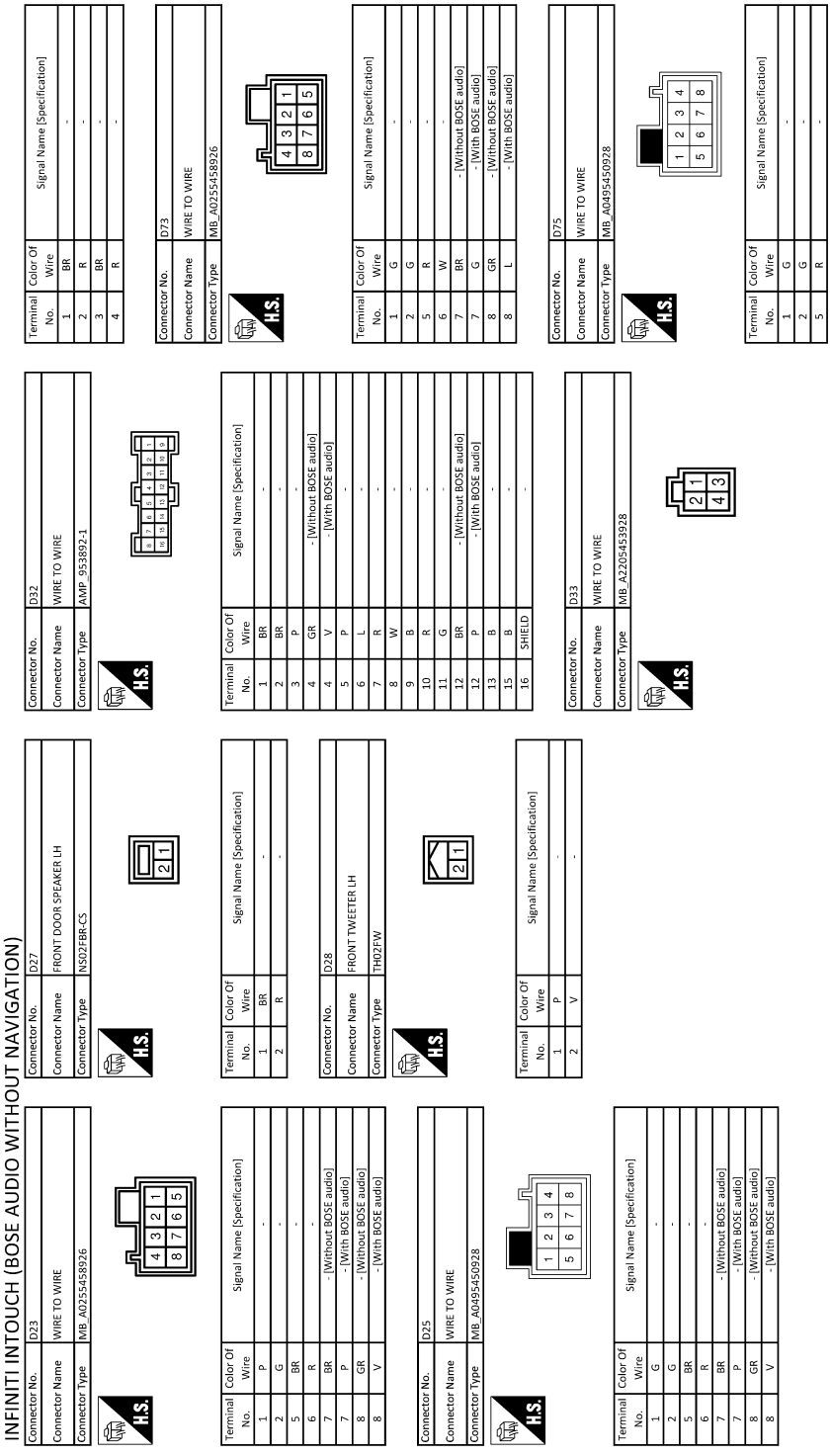

CENTER SQUAWKER (M144)
REAR PILLAR SQUAWKER LH (M197)
REAR PILLAR SQUAWKER RH (M198)
BOSE AMP. (M20), (M21), (M22)
JOINT CONNECTOR-M05 (M355)
M97
M204
AV CONTROL UNIT (M9), (M10), (M11), (M12), *(M394), *(M500), *(M800)
JOINT CONNECTOR-M10 (M359)
CAN GATEWAY (M217), (M218)
JOINT CONNECTOR-M04 (M354)
JOINT CONNECTOR -M10 (M359)
JRNWF6982GB


BATTERY
FUSE AND FUSIBLE LINK BLOCK 2
M129
30A
110
92
REAR DOOR SPEAKER RH
D129
REAR DOOR SPEAKER LH
D109
FRONT TWEETER RH
D93
FRONT DOOR SPEAKER RH
D77
FRONT TWEETER LH
D28
FRONT DOOR SPEAKER LH
D27
WOOFER
M16
BOSE AMP.
M20, M21, M22
AV CONTROL UNIT
M9, M10, M11, M12, M394*, M500*, M800*
M204
D126
M64
D106
M63
D82
M61
D73
D75
D83
M62
D23
D25
D32
M59
D33
M60
JRNWF6983GB


CAN GATEWAY
(M217), (M218)
DATA LINK CONNECTOR
(M43)
(M86)
To illumination
AROUND VIEW MONITOR CONTROL UNIT
(M8) : AV
SATELLITE RADIO ANTENNA
(M805) (M804) (M803) (M802) (M801)
AM / FM MAIN ANTENNA
(M387)
ANTENNA AMP.
(M386)
(M376) (M375)
FM SUB ANTENNA
(M389)
AV CONTROL UNIT
(M9), (M10), (M11), (M12), (M394), (M500), (M800)
(M97)
DISPLAY CONTROL UNIT
(M504)
EXTERNAL DATA INPUT BOX (USB)
(M22), (M508)
AROUND VIEW MONITOR CONTROL UNIT
(M8) : AV
AV
JRNWF6984GB


STEERING WHEEL ASSEMBLY
STEERING SWITCH LH
STEERING WHEEL ELECTRONIC
SPIRAL CABLE
M692
6
5
4
2
1
STEERING COLUMN CONTROL MODULE
M3
1
2
DATA LINE
DATA LINE
To CAN system (With 2.0L turbo gasoline engine)
DATA LINE
DATA LINE
JRNWF6985GB

INFINITI INTOUCH (BOSE AUDIO WITHOUT NAVIGATION)



JRNWF6986GB

INFINITI INTOUCH (BOSE AUDIO WITHOUT NAVIGATION)

6	W	-
7	BR	- [Without BOSE audio]
7	G	- [With BOSE audio]
8	GR	- [Without BOSE audio]
8	L	- [With BOSE audio]

12	BR	- [Without BOSE audio]
12	G	- [With BOSE audio]
13	GR	-
15	B	-
16	SHIELD	-

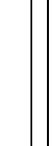
Connector No.	D77
Connector Name	FRONT DOOR SPEAKER RH
Connector Type	NS02FBR-CS

H.S.

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

Connector No.	D82
Connector Name	WIRE TO WIRE
Connector Type	AMP_953892-1

H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
1	B	-
2	BR	-
3	G	-
4	GR	- [Without BOSE audio]
4	L	- [With BOSE audio]
5	Y	-
7	R	-
8	W	-
9	BR	-
10	R	-
11	G	-

Connector No.	D83
Connector Name	WIRE TO WIRE
Connector Type	MB_A2205453928

H.S.



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

Connector No.	D93
Connector Name	FRONT TWEETER RH
Connector Type	TH02FW

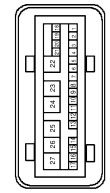
H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
1	G	-
2	L	-

Connector No.	D106
Connector Name	WIRE TO WIRE
Connector Type	MB_A0085408981

H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	-
2	B	-
3	G	- [Without BOSE audio]
3	W	- [With BOSE audio]
4	B	- [With BOSE audio]
4	L	- [Without BOSE audio]
5	G	-
6	V	-
8	W	-
9	P	-
10	L	-
11	G	-
12	W	-
13	O	-
14	W	-
15	R	-
16	Y	-
17	BR	-
19	GR	-
20	W	-
21	R	-
26	G	-
27	L	-

Connector No.	D109
Connector Name	REAR DOOR SPEAKER LH
Connector Type	NS02FBR-CS

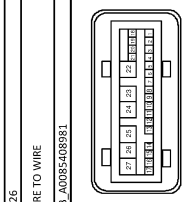
H.S.



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

Connector No.	D126
Connector Name	WIRE TO WIRE
Connector Type	MB_A0085408981

H.S.



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

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INFINITI INTOUCH (BOSE AUDIO WITHOUT NAVIGATION)

21	R	-
26	G	-
27	L	-

Connector No.	D129
Connector Name	REAR DOOR SPEAKER RH
Connector Type	NS02FBR-CS

H.S.



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

Connector No.	M3
Connector Name	STEERING COLUMN CONTROL MODULE
Connector Type	MB_A2045401281

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	G	CAN-L (CHASIS)
2	W	CAN-H (CHASIS)
3	BR	GND
4	R	KL30G
6	R	GND
7	BR	AB1+
8	L	AB1-
9	Y	AB2+
10	V	AB2-
11	G	

Connector No.	M8
Connector Name	AROUND VIEW MONITOR CONTROL UNIT
Connector Type	TH40FW-NH

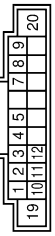
H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
3	SHIELD	SHIELD
4	O	CAMERA IMAGE SIGNAL
5	B	FRONT CAMERA GROUND
6	R	FRONT CAMERA POWER SUPPLY
7	SHIELD	SHIELD
8	W	FRONT CAMERA IMAGE SIGNAL
9	W	SIDE CAMERA LH GROUND
10	R	SIDE CAMERA LH POWER SUPPLY
11	SHIELD	SHIELD
12	B	SIDE CAMERA LH IMAGE SIGNAL
13	W	SIDE CAMERA RH GROUND
14	R	SIDE CAMERA RH POWER SUPPLY
15	SHIELD	SHIELD
16	B	SIDE CAMERA RH IMAGE SIGNAL
17	R	REAR CAMERA GROUND
18	W	REAR CAMERA POWER SUPPLY
19	SHIELD	SHIELD
20	B	REAR CAMERA IMAGE SIGNAL
24	P	CAN-L
26	L	CAN-H
32	G	REVERSE SIGNAL
39	B	GROUND
40	G	IGNITION SIGNAL

Connector No.	M9
Connector Name	AV CONTROL UNIT
Connector Type	TH18FW-CS2

H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
1	SHIELD	SHIELD
2	L	SOUND SIGNAL FRONT LH (+) [Without BOSE audio]
2	L	SOUND SIGNAL LH (+) [With BOSE audio]
3	P	SOUND SIGNAL LH (-) [With BOSE audio]
3	W	SOUND SIGNAL FRONT LH (-) [Without BOSE audio]
4	LG	SOUND SIGNAL REAR LH (+)
5	SB	SOUND SIGNAL REAR LH (-)
7	L	ACC POWER SUPPLY
8	W	DISK EJECT SIGNAL
9	G	DISK EJECT SIGNAL GROUND
10	SHIELD	SHIELD
11	BR	SOUND SIGNAL FRONT RH (+) [Without BOSE audio]
11	LG	SOUND SIGNAL RH (+) [With BOSE audio]
12	P	SOUND SIGNAL RH (-) [With BOSE audio]
12	Y	SOUND SIGNAL FRONT RH (-) [Without BOSE audio]
19	Y	BATTERY POWER SUPPLY
20	B	GROUND

Connector No.	M10
Connector Name	AV CONTROL UNIT
Connector Type	TH40FW-NH

H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
22	G	AV COMMUNICATION SIGNAL (L)
42	L	AV COMMUNICATION SIGNAL (H)

Connector No.	M11
Connector Name	AV CONTROL UNIT
Connector Type	TH12FW-NH

H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
61	P	SOUND SIGNAL LH (+)
62	R	SOUND SIGNAL RH (+)
63	SHIELD	SHIELD
67	L	SOUND SIGNAL LH (-)
68	G	SOUND SIGNAL RH (-)
69	SHIELD	SHIELD

Connector No.	M12
Connector Name	AV CONTROL UNIT
Connector Type	TH16FW-NH

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
73	B	TEL VOICE SIGNAL (+)
74	SHIELD	SHIELD
75	G	VOICE GUIDANCE SIGNAL (+)
76	B	SHIELD
77	G	SOUND SIGNAL FRONT LH (+)
78	R	SOUND SIGNAL FRONT LH (-)
81	W	TEL VOICE SIGNAL (-)
82	SHIELD	SHIELD
83	R	VOICE GUIDANCE SIGNAL (-)

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INFINITI INTOUCH (BOSE AUDIO WITHOUT NAVIGATION)

Connector No.	M16
Connector Name	WOOFER
Connector Type	RS04FGY-PR

H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
1	O	-
2	L	-
3	V	-
4	Y	-

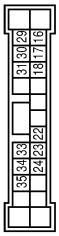
Connector No.	M20
Connector Name	BOSE AMP.
Connector Type	SGA12FBR-SJA2

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	R	SOUND SIGNAL FRONT DOOR SPEAKER RH (+)
2	W	SOUND SIGNAL FRONT DOOR SPEAKER RH (-)
3	L	SOUND SIGNAL WOOFER (+)
4	Y	SOUND SIGNAL WOOFER (-)
5	BR	SOUND SIGNAL FRONT DOOR SPEAKER LH (+)
6	R	SOUND SIGNAL FRONT DOOR SPEAKER LH (-)
7	B	GROUND
8	V	SOUND SIGNAL WOOFER (-)
9	BR	SOUND SIGNAL REAR PILLAR SQUAWKER RH (-)
10	BR	BATTERY POWER SUPPLY
11	GR	BATTERY POWER SUPPLY
12	B	GROUND
13	O	SOUND SIGNAL WOOFER (+)
14	P	SOUND SIGNAL REAR PILLAR SQUAWKER RH (+)

Connector No.	M21
Connector Name	BOSE AMP.
Connector Type	SCA19FBR-SGA4

H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
16	P	SOUND SIGNAL FRONT TWEETER LH (+)
17	BR	SOUND SIGNAL REAR PILLAR SQUAWKER LH (+)
18	GR	SOUND SIGNAL REAR DOOR SPEAKER RH (+)
22	W	SOUND SIGNAL REAR DOOR SPEAKER LH (+)
23	L	SOUND SIGNAL CENTER SQUAWKER (+)
24	G	SOUND SIGNAL FRONT TWEETER LH (-)
29	V	SOUND SIGNAL FRONT TWEETER RH (-)
30	L	SOUND SIGNAL REAR DOOR SPEAKER RH (-)
31	G	SOUND SIGNAL FRONT TWEETER RH (+)
33	B	SOUND SIGNAL REAR DOOR SPEAKER LH (-)
34	P	SOUND SIGNAL REAR DOOR SPEAKER RH (-)
35	R	SOUND SIGNAL CENTER SQUAWKER (-)

Connector No.	M22
Connector Name	BOSE AMP.
Connector Type	TH40FW-NH

H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
44	R	VOICE GUIDANCE SIGNAL (-)
45	P	SOUND SIGNAL LH (-)
46	B	SOUND SIGNAL RH (-)
54	W	AV COMMUNICATION SIGNAL (L)
56	V	ACC POWER SUPPLY
58	B	ENGINE TYPE SIGNAL 1
64	G	VOICE GUIDANCE SIGNAL (+)
65	L	SOUND SIGNAL LH (+)

66	W	SOUND SIGNAL RH (+)
74	B	AV COMMUNICATION SIGNAL (H)
78	O	ENGINE SPEED SIGNAL
79	SHIELD	SHIELD

Connector No.	M23
Connector Name	REAR VIEW CAMERA
Connector Type	RH06FB-1V

H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
1	B	GND
2	Y	POWER
4	O	CAMERA+
5	P	-

Connector No.	M34
Connector Name	WIRE TO WIRE
Connector Type	MB_A22054592Z8

H.S.

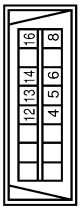


Terminal No.	Color Of Wire	Signal Name [Specification]
3	BR	-
4	V	-
5	L	-
6	W	-
7	R	-
8	Y	-
9	L	-
10	G	-
11	B	-
12	R	-

13	B	-
14	GR	-

Connector No.	M43
Connector Name	DATA LINK CONNECTOR
Connector Type	BD16FW

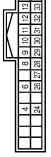
H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
4	B	CHASSIS_GND
5	B	ELECTRONICS_GND
6	GR	DIAGNOSTICS-CAN_H_DAI
8	W	IGN_SW
12	L	DIAGNOSTIC-CAN-L_NIS
13	V	DIAGNOSTIC-CAN_H_NIS
14	GR	DIAGNOSTICS-CAN_L_DAI
16	R	BATTERY

Connector No.	M51
Connector Name	DISPLAY CONTROL UNIT
Connector Type	TH40FW-NH

H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
4	SHIELD	SHIELD
6	SHIELD	SHIELD
8	G	SOUND SIGNAL RH (-)
9	SHIELD	SHIELD
10	L	SOUND SIGNAL LH (-)
11	W	TEL VOICE SIGNAL (-)
12	SHIELD	SHIELD
13	R	VOICE GUIDANCE SIGNAL (-)

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INFINITI INTOUCH (BOSE AUDIO WITHOUT NAVIGATION)

14	B	VOICE GUIDANCE SIGNAL (-)
15	W	NS ON/OFF SIGNAL
16	R	MICROPHONE SIGNAL GROUND
17	SHIELD	SHIELD
18	SHIELD	SHIELD
20	B	CAMERA GROUND
24	O	CAMERA IMAGE SIGNAL
26	W	SOUND SIGNAL (-)
27	B	SOUND SIGNAL (+)
28	R	SOUND SIGNAL RH (+)
29	SHIELD	SHIELD
30	P	SOUND SIGNAL LH (+)
31	B	TEL VOICE SIGNAL (+)
32	SHIELD	SHIELD
33	G	VOICE GUIDANCE SIGNAL (+)
34	W	VOICE GUIDANCE SIGNAL (+)
35	SHIELD	SHIELD
36	G	MICROPHONE SIGNAL
37	O	MICROPHONE SIGNAL [Color of wire differs depending on production]
37	R	MICROPHONE SIGNAL [Color of wire differs depending on production]
38	L	MICROPHONE POWER SUPPLY
40	Y	CAMERA POWER SUPPLY

Connector No.	M59
Connector Name	WIRE TO WIRE
Connector Type	AMP_953893-1

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	BR	-
2	BR	-
3	O	-
4	V	- [With BOSE audio]
4	W	- [Without BOSE audio]
5	P	-
6	L	-
7	R	-
8	W	-
9	B	-
10	R	-
11	G	-
12	L	- [Without BOSE audio]
12	P	- [With BOSE audio]
13	B	-
15	B	-
16	SHIELD	-

Connector No.	M60
Connector Name	WIRE TO WIRE
Connector Type	MB_A0375450528

H.S.

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

Connector No.	M52
Connector Name	DISPLAY CONTROL UNIT
Connector Type	TH24FW-NH

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
46	G	AV COMMUNICATION SIGNAL (L)
47	P	CAN-L
49	R	DIMMER SIGNAL
50	BR	REVERSE SIGNAL
52	B	GROUND
56	BR	CAMERA SWITCH SIGNAL
58	Y	AV COMMUNICATION SIGNAL (H)
59	L	CAN-H
60	W	IGNITION SIGNAL
61	R	VEHICLE SPEED SIGNAL [8-PULSE]
63	L	ACC POWER SUPPLY
64	Y	BATTERY POWER SUPPLY

4	R	-

Connector No.	M61
Connector Name	WIRE TO WIRE
Connector Type	AMP_953893-1

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	G	-
2	BR	-
3	G	-
4	L	- [With BOSE audio]
4	Y	- [Without BOSE audio]
5	V	-
7	R	-
8	W	-
9	BR	-
10	R	-
11	O	-
12	BR	- [Without BOSE audio]
12	G	- [With BOSE audio]
13	GR	-
15	B	-
16	SHIELD	-

Connector No.	M62
Connector Name	WIRE TO WIRE
Connector Type	MB_A0375450528

H.S.

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

Connector No.	M63
Connector Name	WIRE TO WIRE
Connector Type	MB_A0085409181

H.S.

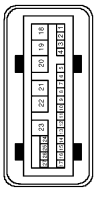
Terminal No.	Color Of Wire	Signal Name [Specification]
1	O	-
2	BR	-
3	G	- [Without BOSE audio]
3	W	- [With BOSE audio]
4	B	- [With BOSE audio]
4	L	- [Without BOSE audio]
5	G	-
6	V	-
8	GR	-
9	O	-
10	L	-
11	G	-
12	W	-
13	GR	-
14	W	-
15	R	-
16	Y	-
17	BR	-
19	GR	-
20	W	-
21	R	-
26	GR	-
27	B	-

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INFINITI INTOUCH (BOSE AUDIO WITHOUT NAVIGATION)

Connector No.	M64
Connector Name	WIRE TO WIRE
Connector Type	MB_A0085409181

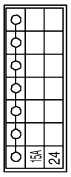
H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	-
2	B	-
3	L	-
4	P	-
5	Y	-
6	O	-
8	GR	-
9	L	-
10	G	-
11	P	-
12	W	-
13	O	-
14	V	-
15	GR	-
16	Y	-
17	BR	-
19	GR	-
20	W	-
21	B	-
26	G	-
27	Y	-

Connector No.	M109
Connector Name	FUSE AND FUSIBLE LINK BLOCK 2
Connector Type	MB_A0055459901

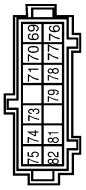
H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
24	Y	-

Connector No.	M128
Connector Name	FUSE AND FUSIBLE LINK BLOCK 2
Connector Type	MB_A0395456128

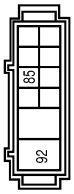
H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
69	B	-
70	P	-
71	B	-
73	BR	-
74	B	-
75	G	-
76	R	-
77	Y	-
78	P	-
79	GR	-
81	O	-
82	B	-

Connector No.	M129
Connector Name	FUSE AND FUSIBLE LINK BLOCK 2
Connector Type	MB_A2205453428

H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
85	R	-
92	BR	-

Connector No.	M144
Connector Name	CENTER SQUAWKER
Connector Type	TK02FBR

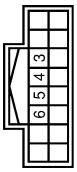
H.S.



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

Connector No.	M190
Connector Name	WIRE TO WIRE
Connector Type	TH16FW-NH

H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
3	R	-
4	W	-
5	SHIELD	-
6	L	-

Connector No.	M197
Connector Name	REAR PILLAR SQUAWKER LH
Connector Type	TK02FBR

H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
1	BR	-
2	GR	-

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INFINITI INTOUCH (BOSE AUDIO WITHOUT NAVIGATION)

Connector No.	M198
Connector Name	REAR PILLAR SQUAWKER RH
Connector Type	TK02FBR

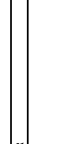
H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
1	P	-
2	BR	-

Connector No.	M209
Connector Name	PRESET SWITCH
Connector Type	TH12FW-NH

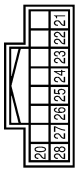
H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
1	B	NAVI SIGNAL
2	R	PUSH SWITCH C SIGNAL
3	BR	ILLUMINATION SIGNAL
4	R	ENCD-B SIGNAL
5	L	GROUND
6	G	PUSH SWITCH A SIGNAL
7	L	TYPE SIGNAL
8	GR	SHIELD
9	B	PUSH SWITCH B SIGNAL
10	Y	PUSH SWITCH D SIGNAL
11	W	ENCD-A SIGNAL
12	V	ILLUMINATION CONTROL SIGNAL

Connector No.	M210
Connector Name	PRESET SWITCH
Connector Type	TH16FW-NH

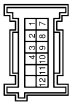
H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
20	O	ACC POWER SUPPLY
21	W	DISK EJECT SIGNAL
22	BR	CAMERA SWITCH SIGNAL
23	G	DISK EJECT SIGNAL GROUND
24	W	ILLUMINATION CONTROL SIGNAL
25	B	GROUND
26	G	AV COMMUNICATION SIGNAL (L)
27	L	AV COMMUNICATION SIGNAL (H)
28	W	ILLUMINATION SIGNAL

Connector No.	M217
Connector Name	CAN GATEWAY
Connector Type	MB_A0225400481

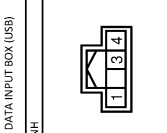
H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	SOS SWITCH LED SIGNAL
2	R	DIMMER SIGNAL
3	P	MULTIFUNCTION MEDIA CAN-L
4	O	ENGINE SPEED SIGNAL
7	BR	REVERSE SIGNAL
8	V	ACC POWER SUPPLY
9	L	MULTIFUNCTION MEDIA CAN-H
10	W	SOS CALL SWITCH SIGNAL
11	Y	VEHICLE SPEED SIGNAL
12	W	ILLUMINATION CONTROL SIGNAL

Connector No.	M218
Connector Name	CAN GATEWAY
Connector Type	MB_A0225400581

H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
13	B	GROUND
14	G	AV COMMUNICATION-L
15	L	AV COMMUNICATION-H
16	G	CHASSIS CAN-L
17	W	CHASSIS CAN-H
18	O	BATTERY POWER SUPPLY
19	P	MULTIFUNCTION MEDIA CAN-L
20	L	MULTIFUNCTION MEDIA CAN-H
21	BR	BODY CAN 1-L
22	R	BODY CAN 1-H
23	L	DIAGNOSTIC CAN-L
24	V	DIAGNOSTIC CAN-H

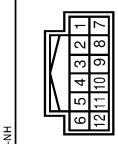
Connector No.	M222
Connector Name	EXTERNAL DATA INPUT BOX (USB)
Connector Type	TH04FW-NH

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	B	GROUND
3	V	ACC POWER SUPPLY
4	R	BATTERY POWER SUPPLY

Connector No.	M234
Connector Name	WIRE TO WIRE
Connector Type	MB_A2205453728

H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
3	BR	-
4	V	-
5	L	-
6	W	-
7	R	-
8	Y	-
9	L	-
10	G	-
11	B	-
12	R	-
13	B	-
14	V	-

Connector No.	M238
Connector Name	MULTIFUNCTION SWITCH
Connector Type	TH12FW-NH

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	B	-
2	R	-
3	BR	-
4	R	-
5	L	-
6	G	-
7	L	-
8	V	-

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INFINITI INTOUCH (BOSE AUDIO WITHOUT NAVIGATION)

9	B
10	Y
11	W
12	V

Connector No.	M354
Connector Name	JOINT CONNECTOR-M04
Connector Type	FEA24JB

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	Y	-
2	L	-
7	L	-
10	Y	-
12	L	-
13	G	-
14	G	-
19	G	-
22	G	-
24	G	-

Connector No.	M355
Connector Name	JOINT CONNECTOR-M05
Connector Type	FEA08IL

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	-
2	B	-
3	L	-
6	G	-

7	W
8	G

Connector No.	M356
Connector Name	JOINT CONNECTOR-M06
Connector Type	FEA24JW

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
3	W	-
4	V	-
6	W	-
7	G	-
8	W	-
9	W	-
10	W	-
11	B	-
12	P	-
13	G	-
14	G	-
16	GR	-
17	GR	-
18	GR	-

Connector No.	M357
Connector Name	JOINT CONNECTOR-M07
Connector Type	FEA24JOR

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
11	Y	-
12	Y	-
13	GR	-
14	GR	-
15	GR	-
16	L	-
17	GR	-
18	GR	-
19	GR	-
20	G	-

Connector No.	M358
Connector Name	JOINT CONNECTOR-M08
Connector Type	FEA24JW

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
7	W	-
8	O	-
9	O	-
10	O	-
11	Y	-
12	Y	-
13	R	-
14	R	-
15	R	-
16	R	-

Connector No.	M359
Connector Name	JOINT CONNECTOR-M10
Connector Type	FEA08JL

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	Y	-
2	O	-
3	R	-
5	BR	-
6	G	-
7	BR	-
8	BR	-

Connector No.	M360
Connector Name	JOINT CONNECTOR-M11
Connector Type	FEA24JB

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
2	L	-
4	L	-
5	L	-
6	L	-
9	V	-
10	V	-
11	V	-
12	V	-

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INFINITI INTOUCH (BOSE AUDIO WITHOUT NAVIGATION)

Connector No.	M375
Connector Name	WIRE TO WIRE
Connector Type	GT13SC-2_1S-HU

H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
1	-	-
2	-	-
3	-	-

Connector No.	M376
Connector Name	WIRE TO WIRE
Connector Type	GT13SCN-2_1PP-HU

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	-	-
2	-	-
3	-	-

Connector No.	M386
Connector Name	ANTENNA AMP.
Connector Type	GT13SSN-1_1PP-HU

H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
1	-	ANTENNA AMP. ON SIGNAL
2	-	ANTENNA SIGNAL

Connector No.	M387
Connector Name	AM/FM MAIN ANTENNA
Connector Type	P01FB-A

H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
1	-	ANTENNA SIGNAL

Connector No.	M389
Connector Name	FM SUB ANTENNA
Connector Type	P01FB-A

H.S.



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

Connector No.	M394
Connector Name	AV CONTROL UNIT
Connector Type	Tyco_1554987-1

H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
89	G	USB GROUND
90	W	USB V BUS SIGNAL
91	R	USB D- SIGNAL
92	L	USB D+ SIGNAL
93	SHIELD	SHIELD

Connector No.	M500
Connector Name	AV CONTROL UNIT
Connector Type	TH04MW-NH

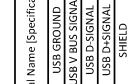
H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
150	-	FM SUB (+)
151	-	ANTENNA SIGNAL
152	-	ANTENNA AMP. ON SIGNAL
153	-	FM SUB (-)

Connector No.	M501
Connector Name	DISPLAY CONTROL UNIT
Connector Type	TYCO-2174512-1

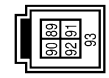
H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
80	G	USB GROUND
81	W	USB V BUS SIGNAL
82	R	USB D-SIGNAL
83	L	USB D+SIGNAL
84	SHIELD	SHIELD

Connector No.	M504
Connector Name	DISPLAY CONTROL UNIT
Connector Type	TYCO-2174512-5

H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
89	G	USB GROUND
90	W	USB V BUS SIGNAL
91	R	USB D-SIGNAL
92	L	USB D+SIGNAL
93	SHIELD	SHIELD

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INFINITI INTOUCH (BOSE AUDIO WITHOUT NAVIGATION)

Connector No.	M508
Connector Name	EXTERNAL DATA INPUT BOX (USB)
Connector Type	TYCO-2174512-5

H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
5	G	USB_GND
6	W	V_BUS
7	R	USB_D-
8	L	USB_D+
9	SHIELD	SHIELD

Connector No.	M692
Connector Name	SPIRAL CABLE
Connector Type	A2040041699BLATT2

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	-	-
2	-	-
3	-	-
4	-	-
5	-	-
6	-	-

Connector No.	M800
Connector Name	AV CONTROL UNIT
Connector Type	FAKRA

H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
154	-	SATELLITE RADIO ANTENNA SIGNAL
155	SHIELD	SHIELD

Connector No.	M801
Connector Name	WIRE TO WIRE
Connector Type	GT16C-1S-HU

H.S.



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

Connector No.	M802
Connector Name	WIRE TO WIRE
Connector Type	GT16C-1PP-HU

H.S.



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

Connector No.	M803
Connector Name	WIRE TO WIRE
Connector Type	GT16C-1S-HU

H.S.



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

Connector No.	M804
Connector Name	WIRE TO WIRE
Connector Type	GT16C-1PP-HU

H.S.



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

Connector No.	M805
Connector Name	SATELLITE RADIO ANTENNA
Connector Type	GT16C-1PP-HU

H.S.



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

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INFINITI INTOUCH (BOSE AUDIO WITHOUT NAVIGATION)

Connector No.	R28
Connector Name	WIRE TO WIRE
Connector Type	TH16MW-NH

H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
3	R	-
4	W	-
5	SHIELD	-
6	L	-

Connector No.	R31
Connector Name	MICROPHONE
Connector Type	A06FW

H.S.



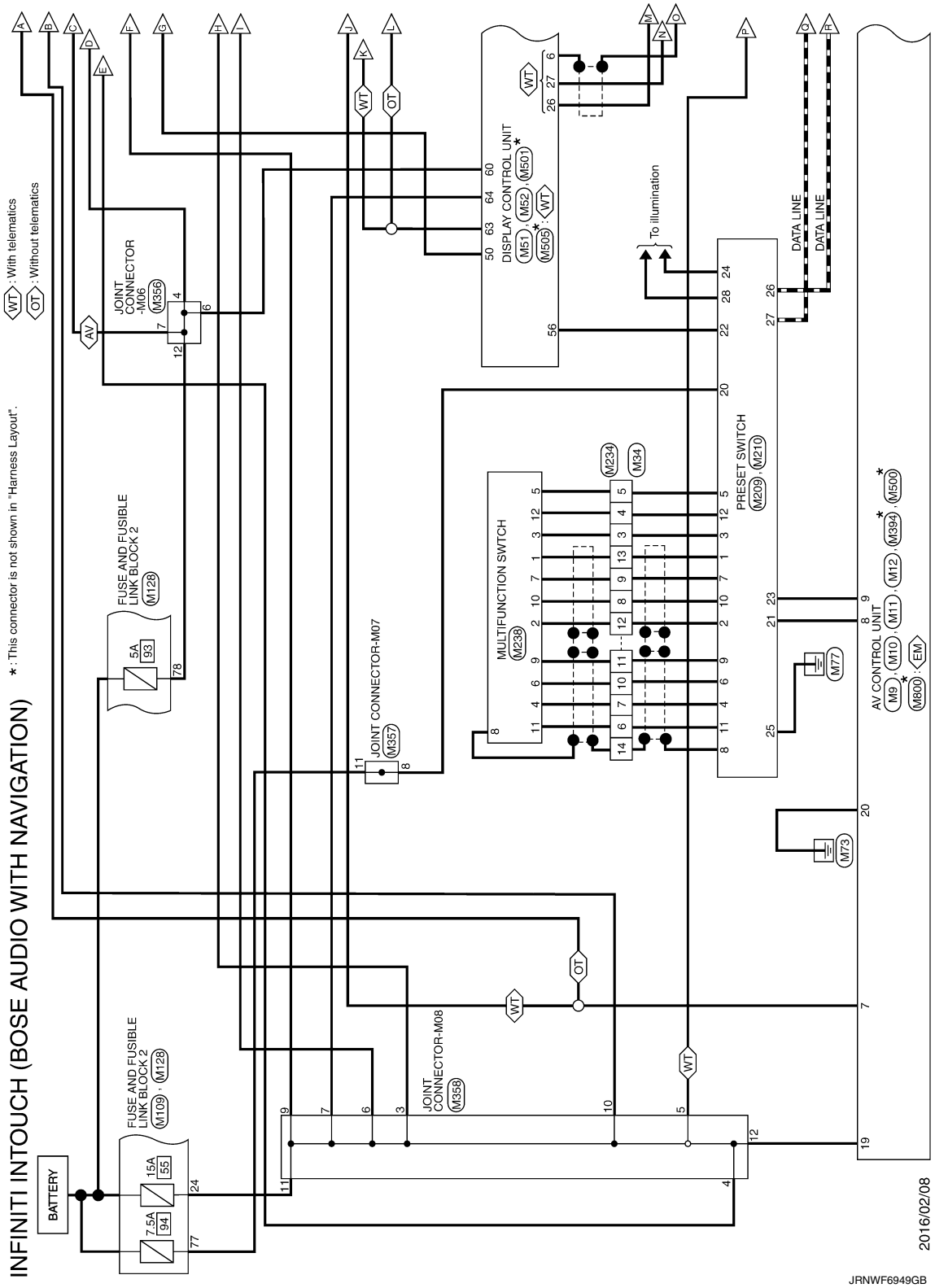
Terminal No.	Color Of Wire	Signal Name [Specification]
1	R	-
2	SHIELD	-
4	L	-
5	W	-

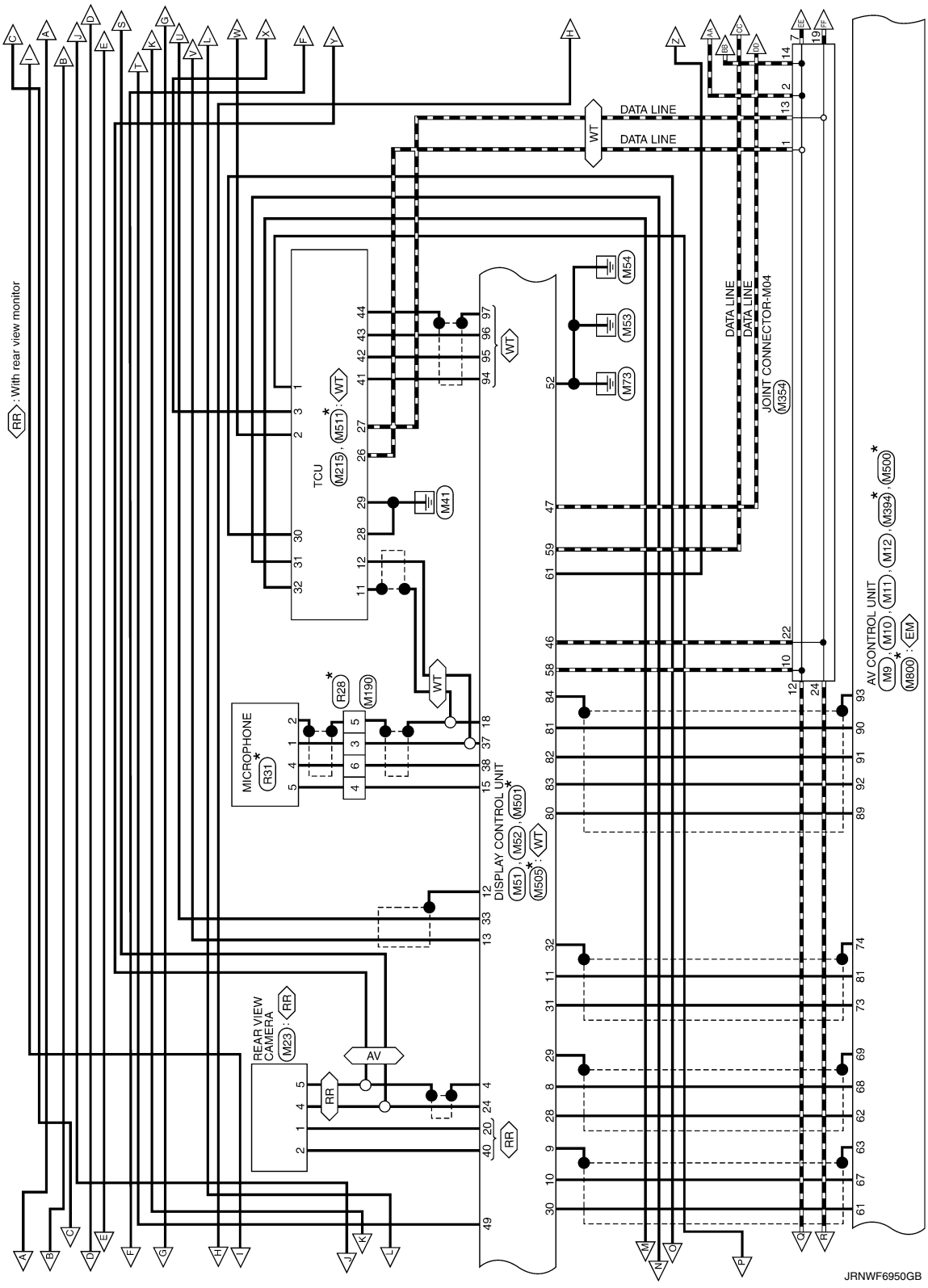
JRNWF6996GB

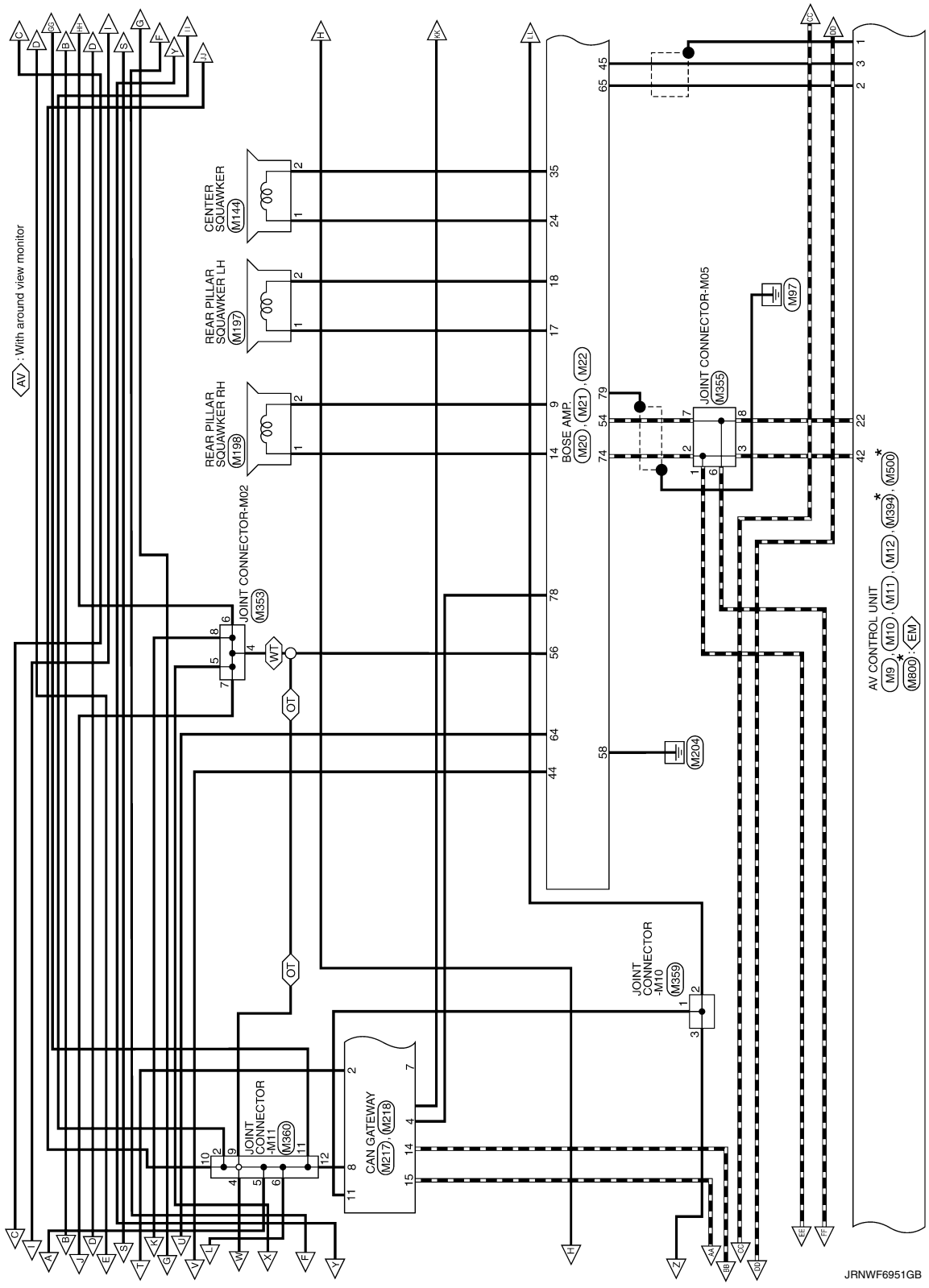
INFINITI INTOUCH (BOSE AUDIO WITH NAVIGATION)

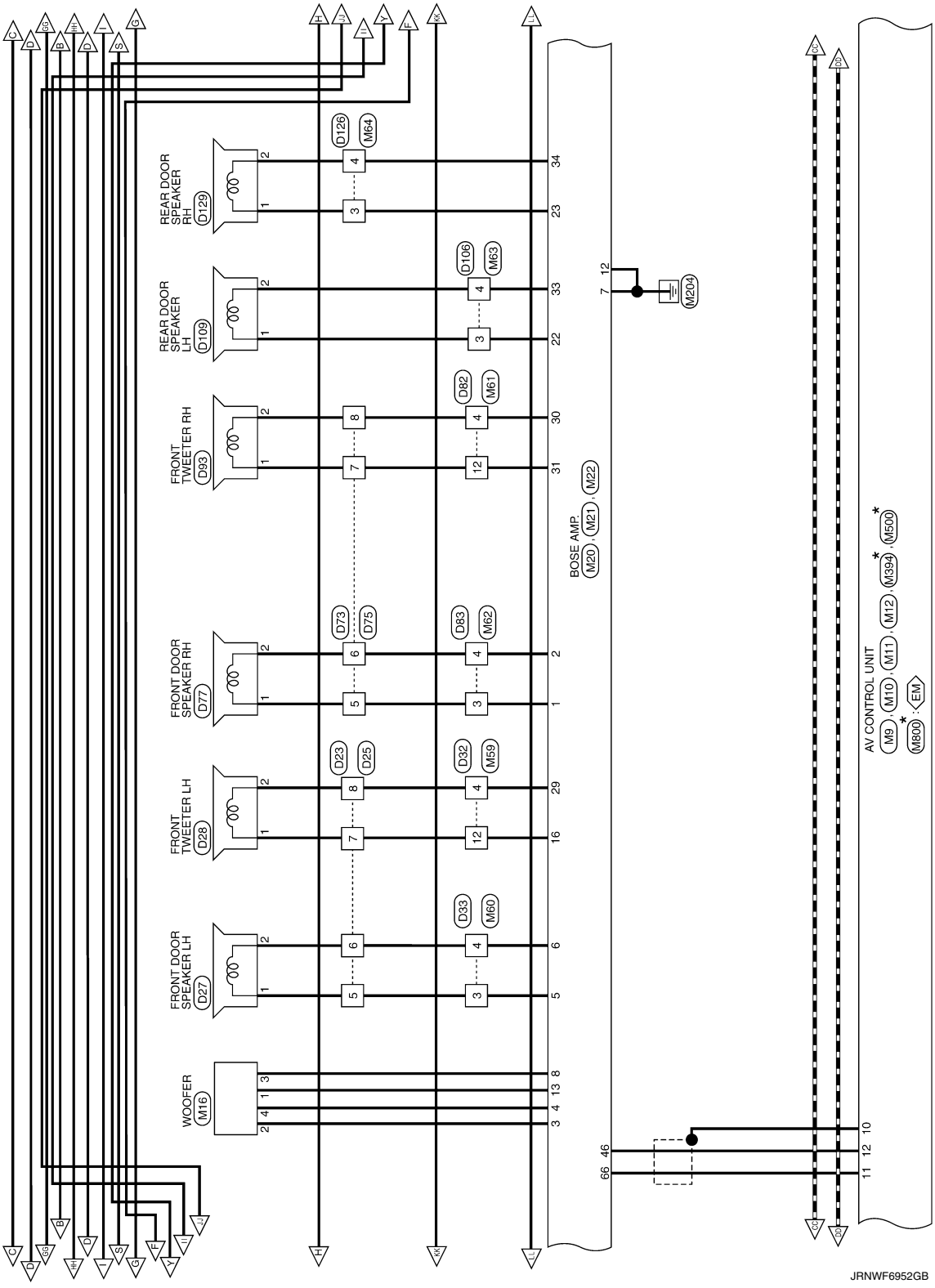
Wiring Diagram

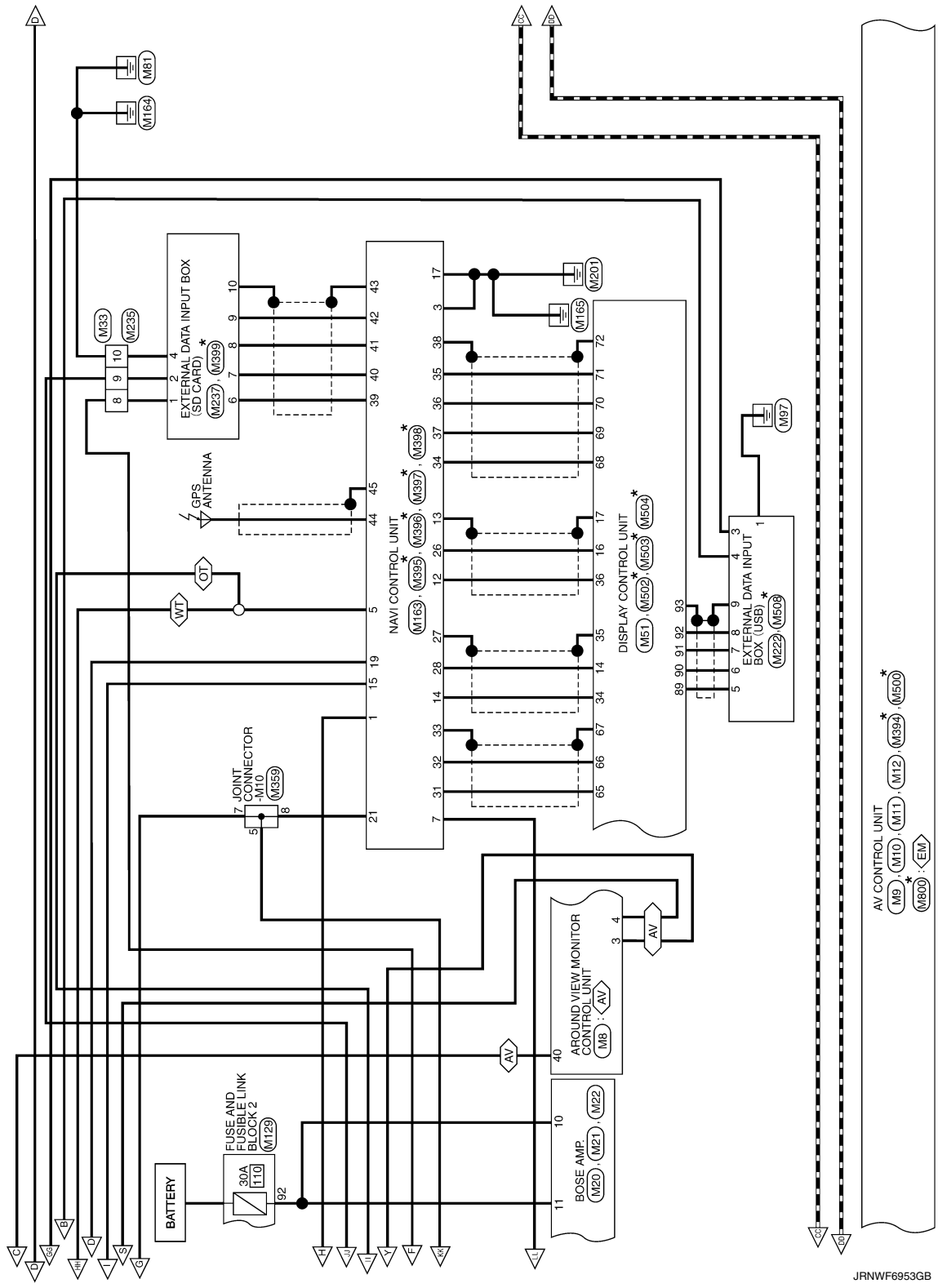
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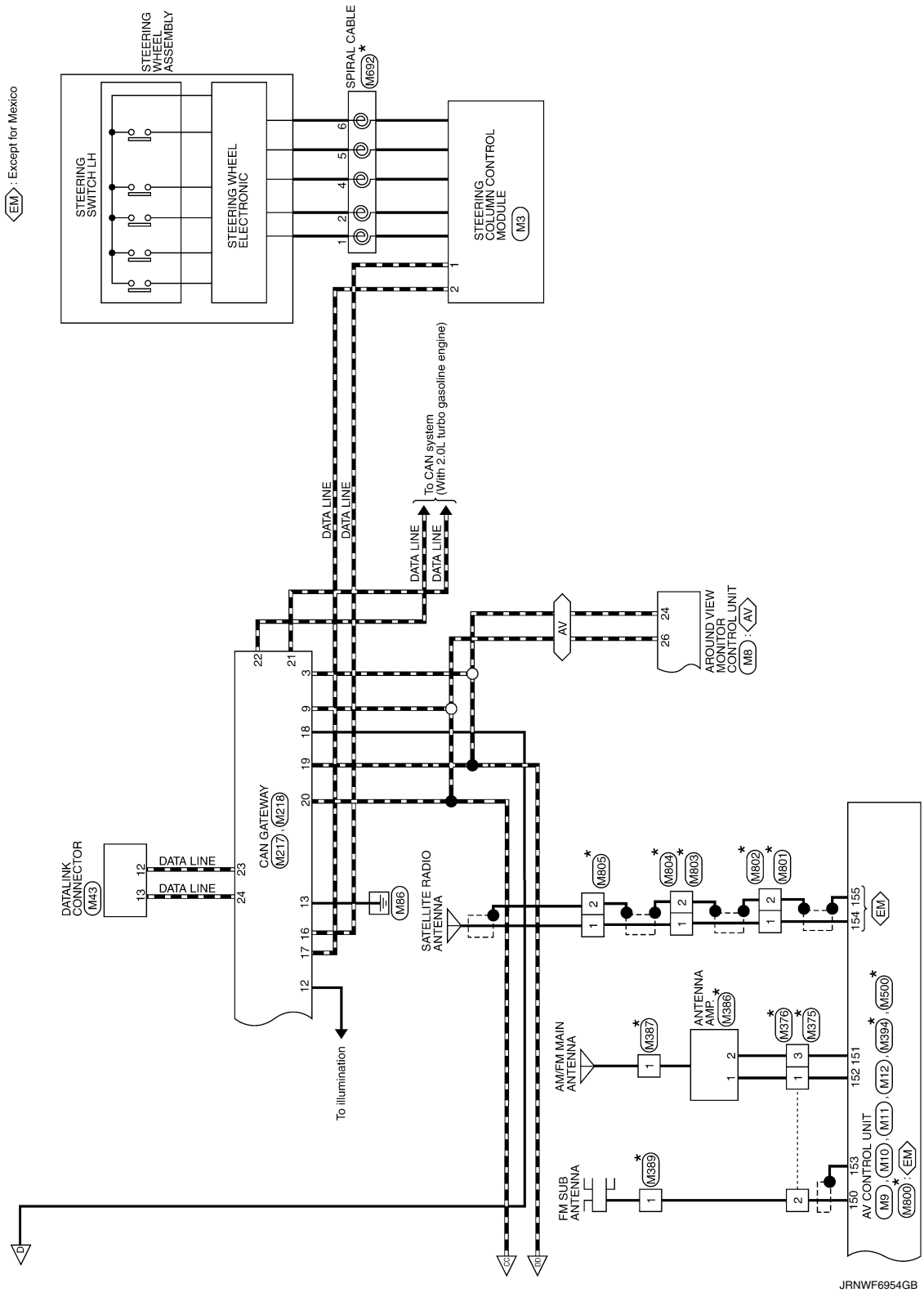



RR : With rear view monitor
DATA LINE
DATA LINE
WT
TCU
M215, M511
M41
M54
M53
M73
JOINT CONNECTOR-M04
M354
MICROPHONE
R31
R28
M190
DISPLAY CONTROL UNIT
M51, M52, M501
M505 : WT
REAR VIEW CAMERA
M23 : RR
AV
RR
AV CONTROL UNIT
M9, M10, M11, M12, M394, M500
M800 : EM
JRNWF6950GB

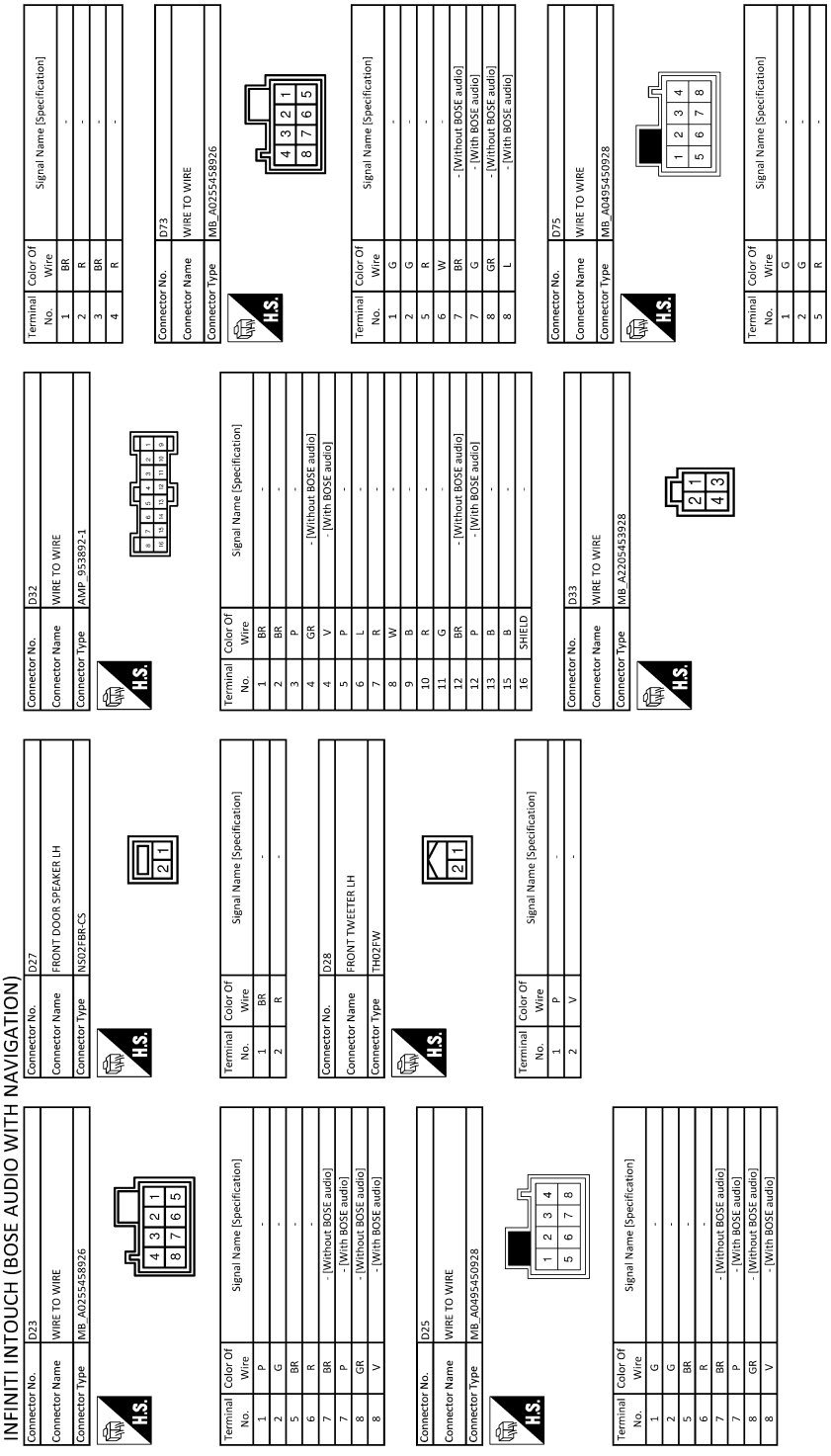

AV : With around view monitor
CENTER SQUAWKER (M144)
REAR PILLAR SQUAWKER LH (M197)
REAR PILLAR SQUAWKER RH (M198)
BOSE AMP. (M20), (M21), (M22)
JOINT CONNECTOR-M05 (M355)
(M97)
JOINT CONNECTOR-M02 (M353)
(M204)
AV CONTROL UNIT (M9), (M10), (M11), (M12), (M394), (M500), (M800), EM
JOINT CONNECTOR -M11 (M360)
CAN GATEWAY (M217), (M218)
JOINT CONNECTOR -M10 (M359)
JRNWF6951GB


REAR DOOR SPEAKER RH D129
REAR DOOR SPEAKER LH D109
FRONT TWEETER RH D93
FRONT TWEETER LH D28
FRONT DOOR SPEAKER RH D77
FRONT DOOR SPEAKER LH D27
WOOFER M16
D126 M64
D106 M63
D82 M61
D73 D75
D83 M62
D23 D25
D32 M59
D33 M60
M204
BOSE AMP. M20, M21, M22
AV CONTROL UNIT M9, M10, M11, M12, M394*, M500*
M800*: EM
JRNWF6952GB


M81
M164
M33
M235
EXTERNAL DATA INPUT BOX (SD CARD)
M237, M399
GPS ANTENNA
NAVI CONTROL UNIT
M163, M395, M396, M397, M398
DISPLAY CONTROL UNIT
M51, M502, M503, M504
EXTERNAL DATA INPUT BOX (USB)
M222, M508
M201
M165
M97
JOINT CONNECTOR -M10
M359
AROUND VIEW MONITOR CONTROL UNIT
M8 : AV
BOSE AMP.
M20, M21, M22
FUSE AND FUSIBLE LINK BLOCK 2
M129
30A
110
92
BATTERY
AV
OT
WT
AV CONTROL UNIT
M9, M10, M11, M12, M394, M500
M800 : EM
JRNWF6953GB


EM : Except for Mexico
STEERING WHEEL ASSEMBLY
STEERING SWITCH LH
STEERING WHEEL ELECTRONIC
SPIRAL CABLE
M692
STEERING COLUMN CONTROL MODULE
M3
To CAN system
(With 2.0L turbo gasoline engine)
DATA LINE
AROUND VIEW MONITOR CONTROL UNIT
M8
AV
CAN GATEWAY
M217
M218
DATA LINK CONNECTOR
M43
M86
SATELLITE RADIO ANTENNA
M805
M804
M803
M802
M801
EM
To illumination
AM/FM MAIN ANTENNA
M387
ANTENNA AMP.
M386
M376
M375
M500
M394
M12
M11
M10
M9
M800
FM SUB ANTENNA
M389
AV CONTROL UNIT
JRNWF6954GB

INFINITI INTOUCH (BOSE AUDIO WITH NAVIGATION)



JRNWF6955GB

INFINITI INTOUCH (BOSE AUDIO WITH NAVIGATION)

6	W	-
7	BR	- [Without BOSE audio]
7	G	- [With BOSE audio]
8	GR	- [Without BOSE audio]
8	L	- [With BOSE audio]

12	BR	- [Without BOSE audio]
12	G	- [With BOSE audio]
13	GR	-
15	B	-
16	SHIELD	-

Connector No.	D77
Connector Name	FRONT DOOR SPEAKER RH
Connector Type	NS02FBR-CS

H.S.

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

Connector No.	D83
Connector Name	WIRE TO WIRE
Connector Type	MB_A2205453928

H.S.



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

Connector No.	D82
Connector Name	WIRE TO WIRE
Connector Type	AMP_953892-1

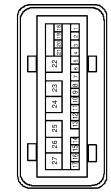
H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
1	B	-
2	BR	-
3	G	-
4	GR	- [Without BOSE audio]
4	L	- [With BOSE audio]
5	Y	-
7	R	-
8	W	-
9	BR	-
10	R	-
11	G	-

Connector No.	D106
Connector Name	WIRE TO WIRE
Connector Type	MB_A0085408981

H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	-
2	B	-
3	G	- [Without BOSE audio]
3	W	- [With BOSE audio]
4	B	- [With BOSE audio]
4	L	- [Without BOSE audio]
5	G	-
6	V	-
8	W	-
9	P	-
10	L	-
11	G	-
12	W	-
13	O	-
14	W	-
15	R	-
16	Y	-
17	BR	-
19	GR	-
20	W	-
21	R	-
26	G	-
27	L	-

Connector No.	D93
Connector Name	FRONT TWEETER RH
Connector Type	TH02FW

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	G	-
2	L	-

Connector No.	D109
Connector Name	REAR DOOR SPEAKER LH
Connector Type	NS02FBR-CS

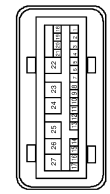
H.S.



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

Connector No.	D126
Connector Name	WIRE TO WIRE
Connector Type	MB_A0085408981

H.S.



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

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21	R	-
26	G	-
27	L	-

Connector No.	D129
Connector Name	REAR DOOR SPEAKER RH
Connector Type	NS02FBR-CS

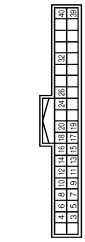


Terminal No.	Color Of Wire	Signal Name [Specification]
1	-	
2	-	

Connector No.	M3
Connector Name	STEERING COLUMN CONTROL MODULE
Connector Type	M8_A20454012B1

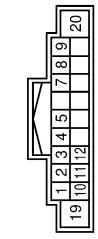
Terminal No.	Color Of Wire	Signal Name [Specification]
1	G	CAN-L (CHASIS)
2	W	CAN-H (CHASIS)
3	BR	GND
4	R	KL30G
6	R	KL30
7	BR	GND
8	L	AB1+
9	Y	AB1-
10	V	AB2+
11	G	AB2-

Connector No.	M8
Connector Name	AROUND VIEW MONITOR CONTROL UNIT
Connector Type	TH40FW-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
3	SHIELD	SHIELD
4	O	CAMERA IMAGE SIGNAL
5	B	FRONT CAMERA GROUND
6	R	FRONT CAMERA POWER SUPPLY
7	SHIELD	SHIELD
8	W	FRONT CAMERA IMAGE SIGNAL
9	W	SIDE CAMERA LH GROUND
10	R	SIDE CAMERA LH POWER SUPPLY
11	SHIELD	SHIELD
12	B	SIDE CAMERA LH IMAGE SIGNAL
13	W	SIDE CAMERA RH GROUND
14	R	SIDE CAMERA RH POWER SUPPLY
15	SHIELD	SHIELD
16	B	SIDE CAMERA RH IMAGE SIGNAL
17	R	REAR CAMERA GROUND
18	W	REAR CAMERA POWER SUPPLY
19	SHIELD	SHIELD
20	B	REAR CAMERA IMAGE SIGNAL
24	P	CAN-L
26	L	CAN-H
32	G	REVERSE SIGNAL
39	B	GROUND
40	G	IGNITION SIGNAL

Connector No.	M9
Connector Name	AV CONTROL UNIT
Connector Type	TH18FW-CS2



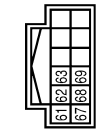
Terminal No.	Color Of Wire	Signal Name [Specification]
1	SHIELD	SHIELD
2	L	SOUND SIGNAL FRONT LH (+) [Without BOSE audio]
2	L	SOUND SIGNAL LH (+) [With BOSE audio]
3	P	SOUND SIGNAL LH (-) [With BOSE audio]
3	W	SOUND SIGNAL FRONT LH (-) [Without BOSE audio]
4	LG	SOUND SIGNAL REAR LH (+)
5	SB	SOUND SIGNAL REAR LH (-)
7	L	ACC POWER SUPPLY
8	W	DISK EJECT SIGNAL
9	G	DISK EJECT SIGNAL GROUND
10	SHIELD	SHIELD
11	BR	SOUND SIGNAL FRONT RH (+) [Without BOSE audio]
11	LG	SOUND SIGNAL RH (+) [With BOSE audio]
12	P	SOUND SIGNAL RH (-) [With BOSE audio]
12	Y	SOUND SIGNAL FRONT RH (-) [Without BOSE audio]
19	Y	BATTERY POWER SUPPLY
20	B	GROUND

Connector No.	M10
Connector Name	AV CONTROL UNIT
Connector Type	TH40FW-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
22	G	AV COMMUNICATION SIGNAL (L)
42	L	AV COMMUNICATION SIGNAL (H)

Connector No.	M11
Connector Name	AV CONTROL UNIT
Connector Type	TH12FW-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
61	P	SOUND SIGNAL LH (+)
62	R	SOUND SIGNAL RH (+)
63	SHIELD	SHIELD
67	L	SOUND SIGNAL LH (-)
68	G	SOUND SIGNAL RH (-)
69	SHIELD	SHIELD

Connector No.	M12
Connector Name	AV CONTROL UNIT
Connector Type	TH16FW-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
73	B	TEL VOICE SIGNAL (+)
74	SHIELD	SHIELD
75	G	VOICE GUIDANCE SIGNAL (+)
76	B	SHIELD
77	G	SOUND SIGNAL FRONT LH (+)
78	R	SOUND SIGNAL FRONT LH (-)
81	W	TEL VOICE SIGNAL (-)
82	SHIELD	SHIELD
83	R	VOICE GUIDANCE SIGNAL (-)

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Connector No.	M16
Connector Name	WOOFER
Connector Type	RS04FGY-PR

H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
1	O	-
2	L	-
3	V	-
4	Y	-

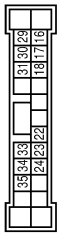
Connector No.	M20
Connector Name	BOSE AMP.
Connector Type	SGA12FBR-SJA2

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	R	SOUND SIGNAL FRONT DOOR SPEAKER RH (+)
2	W	SOUND SIGNAL FRONT DOOR SPEAKER RH (-)
3	L	SOUND SIGNAL WOOFER (+)
4	Y	SOUND SIGNAL WOOFER (-)
5	BR	SOUND SIGNAL FRONT DOOR SPEAKER LH (+)
6	R	SOUND SIGNAL FRONT DOOR SPEAKER LH (-)
7	B	GROUND
8	V	SOUND SIGNAL WOOFER (-)
9	BR	SOUND SIGNAL REAR PILLAR SQUAWKER RH (-)
10	BR	BATTERY POWER SUPPLY
11	GR	BATTERY POWER SUPPLY
12	B	GROUND
13	O	SOUND SIGNAL WOOFER (+)
14	P	SOUND SIGNAL REAR PILLAR SQUAWKER RH (+)

Connector No.	M21
Connector Name	BOSE AMP.
Connector Type	SCA19FBR-SGA4

H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
16	P	SOUND SIGNAL FRONT TWEETER LH (+)
17	BR	SOUND SIGNAL REAR PILLAR SQUAWKER LH (+)
18	GR	SOUND SIGNAL REAR PILLAR SQUAWKER LH (-)
22	W	SOUND SIGNAL REAR DOOR SPEAKER LH (+)
23	L	SOUND SIGNAL REAR DOOR SPEAKER RH (+)
24	G	SOUND SIGNAL CENTER SQUAWKER (+)
29	V	SOUND SIGNAL FRONT TWEETER LH (-)
30	L	SOUND SIGNAL FRONT TWEETER RH (-)
31	G	SOUND SIGNAL FRONT TWEETER RH (+)
33	B	SOUND SIGNAL REAR DOOR SPEAKER LH (-)
34	P	SOUND SIGNAL REAR DOOR SPEAKER RH (-)
35	R	SOUND SIGNAL CENTER SQUAWKER (-)

Connector No.	M22
Connector Name	BOSE AMP.
Connector Type	TH40FW-NH

H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
44	R	VOICE GUIDANCE SIGNAL (-)
45	P	SOUND SIGNAL LH (-)
46	B	SOUND SIGNAL RH (-)
54	W	AV COMMUNICATION SIGNAL (L)
56	V	ACC POWER SUPPLY
58	B	ENGINE TYPE SIGNAL 1
64	G	VOICE GUIDANCE SIGNAL (+)
65	L	SOUND SIGNAL LH (+)
66	W	SOUND SIGNAL RH (+)
74	B	AV COMMUNICATION SIGNAL (H)
78	O	ENGINE SPEED SIGNAL
79	SHIELD	SHIELD

Connector No.	M23
Connector Name	REAR VIEW CAMERA
Connector Type	RH06FB-1V

H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
1	B	GND
2	Y	POWER
4	O	CAMERA+
5	P	-

Connector No.	M33
Connector Name	WIRE TO WIRE
Connector Type	MB_A0365458728

H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
1	B	-
3	R	-
4	B	-
5	W	-
6	B	-
7	G	-
8	R	-
9	V	-
10	BR	-
11	BR	-
14	BR	-

Connector No.	M34
Connector Name	WIRE TO WIRE
Connector Type	MB_A2205459228

H.S.

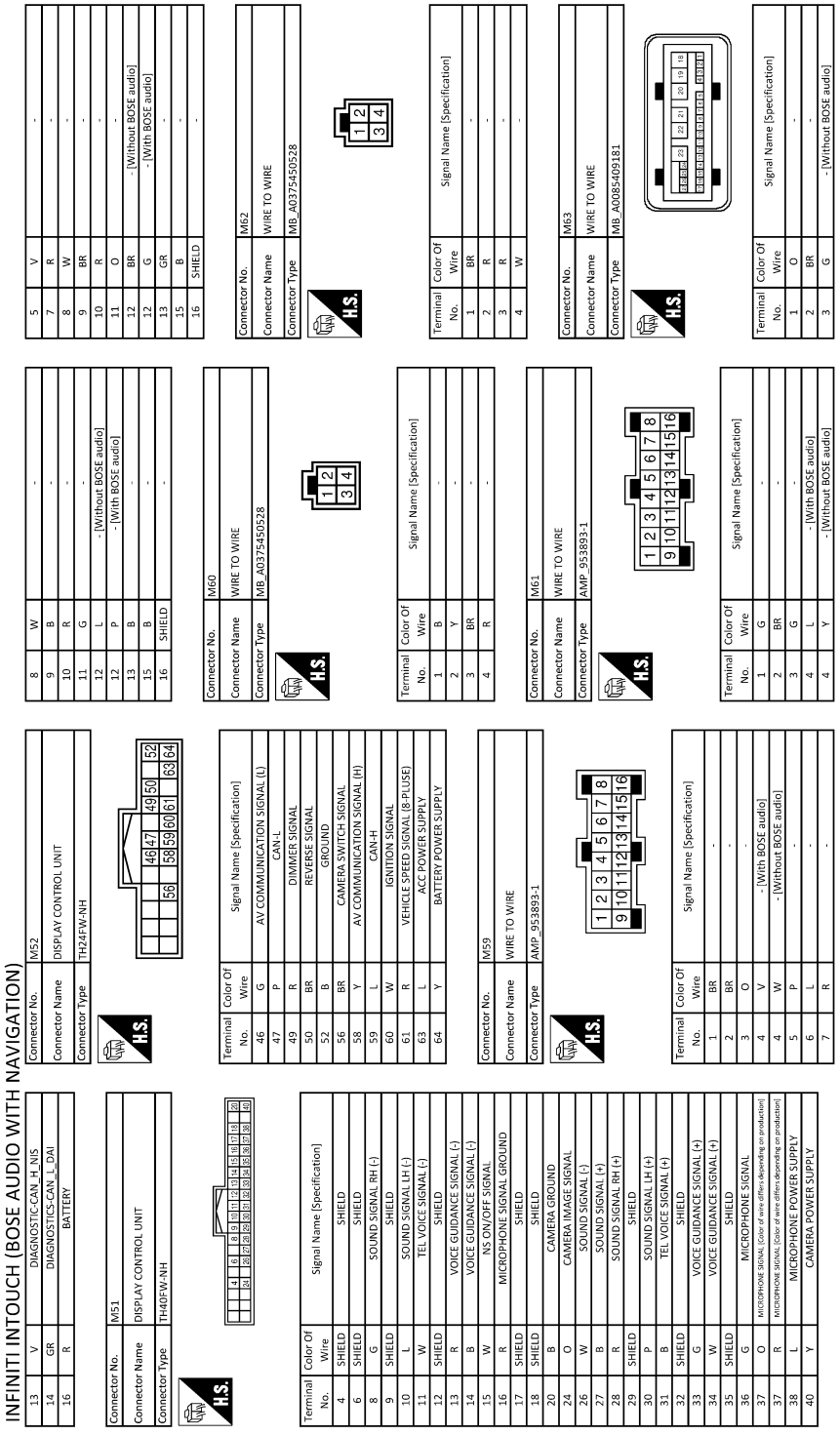
Terminal No.	Color Of Wire	Signal Name [Specification]
3	BR	-
4	V	-
5	L	-
6	W	-
7	R	-
8	Y	-
9	L	-
10	G	-
11	B	-
12	R	-
13	B	-
14	GR	-

Connector No.	M43
Connector Name	DATA LINK CONNECTOR
Connector Type	BD16FW

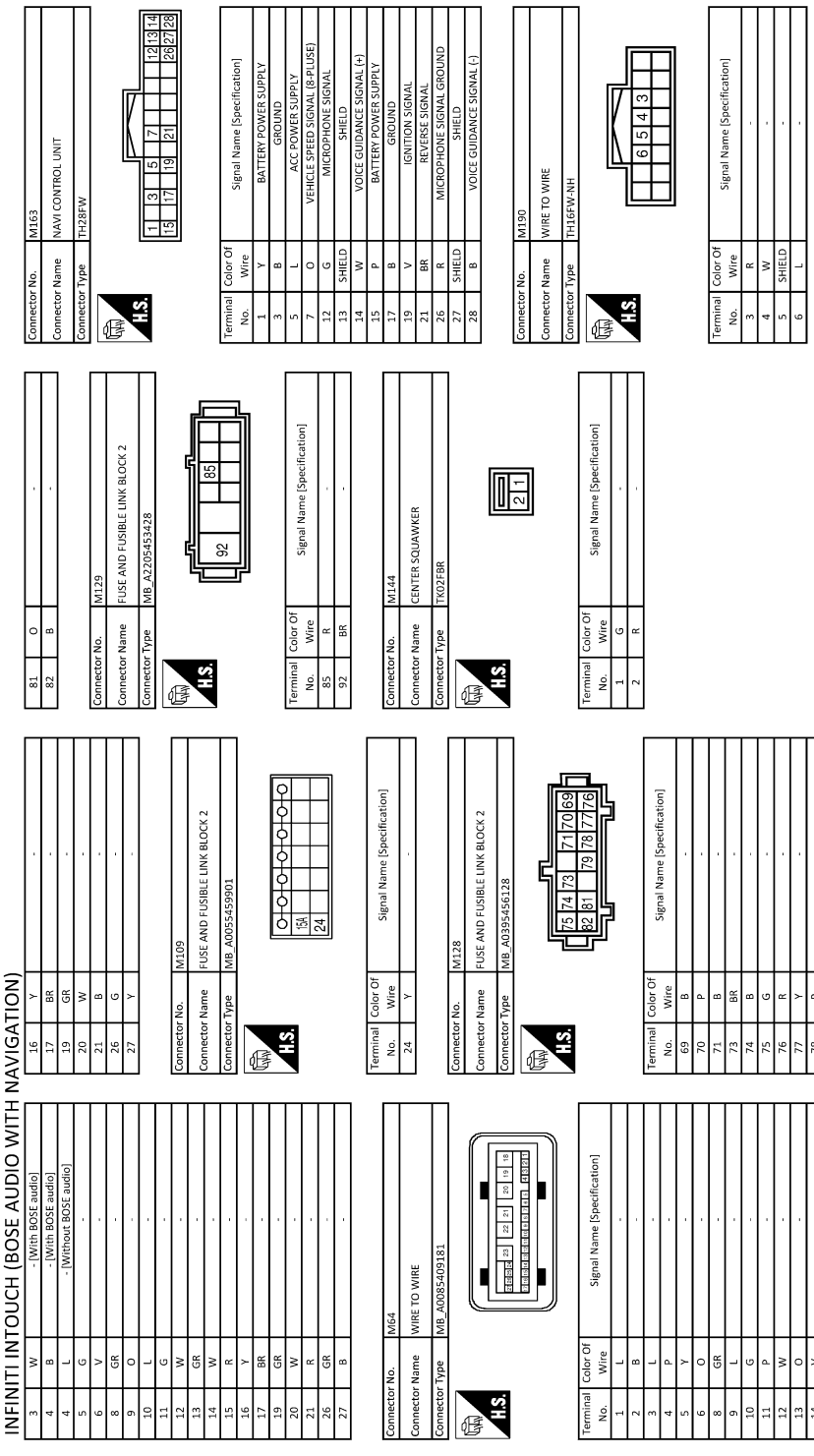
H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
4	B	CHASSIS GND
5	B	ELECTRONICS GND
6	GR	DIAGNOSTICS-CAN_H_DAI
8	W	IGN_SW
12	L	DIAGNOSTIC-CAN-L_NIS

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JRNWF6959GB



JRNWF6960GB

INFINITI INTOUCH (BOSE AUDIO WITH NAVIGATION)

Connector No.	M197
Connector Name	REAR PILLAR SQUAWKER LH
Connector Type	TK02FBR

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	BR	-
2	GR	-

Connector No.	M198
Connector Name	REAR PILLAR SQUAWKER RH
Connector Type	TK02FBR

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	P	-
2	BR	-

Connector No.	M209
Connector Name	PRESET SWITCH
Connector Type	TH12FW-NH

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	B	NAVI SIGNAL
2	R	PUSH SWITCH C SIGNAL
3	BR	ILLUMINATION SIGNAL
4	R	ENCD-B SIGNAL
5	L	GROUND
6	G	PUSH SWITCH A SIGNAL
7	L	TYPE SIGNAL
8	GR	SHIELD
9	B	PUSH SWITCH B SIGNAL
10	Y	PUSH SWITCH D SIGNAL
11	W	ENCD-A SIGNAL
12	V	ILLUMINATION CONTROL SIGNAL

Connector No.	M210
Connector Name	PRESET SWITCH
Connector Type	TH16FW-NH

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
20	O	ACC POWER SUPPLY
21	W	DISK EJECT SIGNAL
22	BR	CAMERA SWITCH SIGNAL
23	G	DISK EJECT SIGNAL GROUND
24	W	ILLUMINATION CONTROL SIGNAL
25	B	GROUND
26	G	AV COMMUNICATION SIGNAL (L)
27	L	AV COMMUNICATION SIGNAL (H)

28	W	ILLUMINATION SIGNAL

Connector No.	M215
Connector Name	TCU
Connector Type	TH40FB-NH

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	B	-
2	R	PUSH SWITCH C SIGNAL
3	P	BATTERY POWER SUPPLY
4	L	ACC POWER SUPPLY
5	V	ACC OUT PUT
6	GR	SOS SWITCH LED SIGNAL
7	L	CAN-H
10	P	CAN-L
11	W	IGNITION SIGNAL
12	SHIELD	MICROPHONE SIGNAL GROUND
16	O	MICROPHONE SIGNAL
17	SHIELD	SHIELD
18	R	MICROPHONE SIGNAL
26	L	MICROPHONE VCC
27	Y	AV COMMUNICATION (H)
28	G	AV COMMUNICATION (L)
29	B	GROUND
30	B	GROUND
31	SHIELD	SHIELD
32	B	SOUND SIGNAL (+)
37	W	SOUND SIGNAL (-)
	G	SOS CALL SWITCH SIGNAL

Connector No.	M217
Connector Name	CAN GATEWAY
Connector Type	MB_A0225400481

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	SOS SWITCH LED SIGNAL
2	R	DIMMER SIGNAL
3	P	MULTIFUNCTION MEDIA CAN-L
4	O	ENGINE SPEED SIGNAL
7	BR	REVERSE SIGNAL
8	V	ACC POWER SUPPLY
9	L	MULTIFUNCTION MEDIA CAN-H
10	W	SOS CALL SWITCH SIGNAL
11	Y	VEHICLE SPEED SIGNAL
12	W	ILLUMINATION CONTROL SIGNAL

Connector No.	M218
Connector Name	CAN GATEWAY
Connector Type	MB_A0225400581

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
13	B	GROUND
14	G	AV COMMUNICATION-L
15	L	AV COMMUNICATION-H
16	G	CHASSIS CAN-L
17	W	CHASSIS CAN-H
18	O	BATTERY POWER SUPPLY
19	P	MULTIFUNCTION MEDIA CAN-L
20	L	MULTIFUNCTION MEDIA CAN-H
21	BR	BODY CAN 1-L
22	R	BODY CAN 1-H

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INFINITI INTOUCH (BOSE AUDIO WITH NAVIGATION)

23	L	DIAGNOSTIC CAN-L
24	V	DIAGNOSTIC CAN-H

Connector No.	M222
Connector Name	EXTERNAL DATA INPUT BOX (USB)
Connector Type	TH04FW-NH

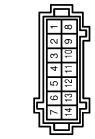
H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
1	B	GROUND
3	V	ACC POWER SUPPLY
4	R	BATTERY POWER SUPPLY

Connector No.	M234
Connector Name	WIRE TO WIRE
Connector Type	MB_A2205453728

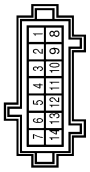
H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
3	BR	-
4	V	-
5	L	-
6	W	-
7	R	-
8	Y	-
9	L	-
10	G	-
11	B	-
12	R	-
13	B	-
14	V	-

Connector No.	M235
Connector Name	WIRE TO WIRE
Connector Type	MB_A2205459928

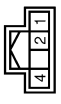
H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
1	B	-
3	B	-
4	Y	-
5	W	-
6	B	-
7	G	-
8	R	-
9	V	-
10	L	-
11	BR	-
14	BR	-

Connector No.	M237
Connector Name	EXTERNAL DATA INPUT BOX (SD CARD)
Connector Type	TH04FW-NH

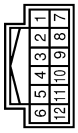
H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
1	R	CAN-H
2	V	CAN-L
4	L	GROUND

Connector No.	M238
Connector Name	MULTIFUNCTION SWITCH
Connector Type	TH12FW-NH

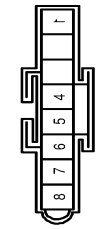
H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
1	B	-
2	R	-
3	BR	-
4	R	-
5	L	-
6	G	-
7	L	-
8	V	-
9	B	-
10	Y	-
11	W	-
12	V	-

Connector No.	M353
Connector Name	JOINT CONNECTOR-M02
Connector Type	FEA08JB

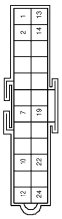
H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
1	BR	-
4	V	-
5	V	-
6	L	-
7	L	-
8	L	-

Connector No.	M354
Connector Name	JOINT CONNECTOR-M04
Connector Type	FEA24JB

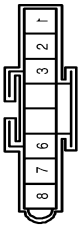
H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
1	Y	-
2	L	-
7	L	-
10	Y	-
12	L	-
13	G	-
14	G	-
19	G	-
22	G	-
24	G	-

Connector No.	M355
Connector Name	JOINT CONNECTOR-M05
Connector Type	FEA08JL

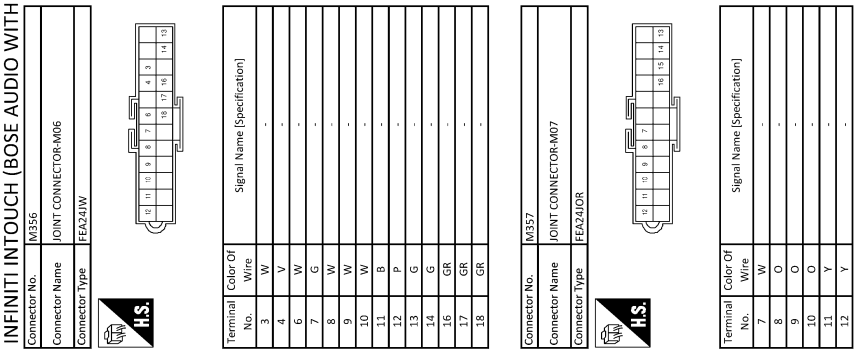
H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	-
2	B	-
3	L	-
6	G	-
7	W	-
8	G	-

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Connector No.	M356
Connector Name	JOINT CONNECTOR-M06
Connector Type	FEA24IW

Terminal No.	Color Of Wire	Signal Name [Specification]
3	W	-
4	V	-
6	W	-
7	G	-
8	W	-
9	W	-
10	W	-
11	B	-
12	P	-
13	G	-
14	G	-
16	GR	-
17	GR	-
18	GR	-

Connector No.	M357
Connector Name	JOINT CONNECTOR-M07
Connector Type	FEA24IOR

Terminal No.	Color Of Wire	Signal Name [Specification]
7	W	-
8	O	-
9	O	-
10	O	-
11	Y	-
12	Y	-

13	R	-
14	R	-
15	R	-
16	R	-

Connector No.	M358
Connector Name	JOINT CONNECTOR-M08
Connector Type	FEA24JW

Terminal No.	Color Of Wire	Signal Name [Specification]
3	Y	-
4	O	-
5	Y	-
6	P	-
7	Y	-
9	R	-
10	R	-
11	Y	-
12	Y	-
13	GR	-
14	GR	-
15	GR	-
16	L	-
17	GR	-
18	GR	-
19	GR	-
20	G	-

Connector No.	M359
Connector Name	JOINT CONNECTOR-M10
Connector Type	FEA08JL

Terminal No.	Color Of Wire	Signal Name [Specification]
1	Y	-
2	O	-
3	R	-
5	BR	-
6	G	-
7	BR	-
8	BR	-

Connector No.	M360
Connector Name	JOINT CONNECTOR-M11
Connector Type	FEA24JB

Terminal No.	Color Of Wire	Signal Name [Specification]
2	L	-
4	L	-
5	L	-
6	L	-
9	V	-
10	V	-
11	V	-
12	V	-

Connector No.	M375
Connector Name	WIRE TO WIRE
Connector Type	GT13SC-2_1S-HU

Terminal No.	Color Of Wire	Signal Name [Specification]
1	-	-
2	-	-
3	-	-

Connector No.	M376
Connector Name	WIRE TO WIRE
Connector Type	GT13SCN-2_1PP-HU

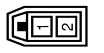
Terminal No.	Color Of Wire	Signal Name [Specification]
1	-	-
2	-	-
3	-	-

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INFINITI INTOUCH (BOSE AUDIO WITH NAVIGATION)

Connector No.	M386
Connector Name	ANTENNA AMP.
Connector Type	GT13SSN-1_1PP-HU

H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
1	-	ANTENNA AMP. ON SIGNAL
2	-	ANTENNA SIGNAL

Connector No.	M387
Connector Name	AM/FM MAIN ANTENNA
Connector Type	P01FB-A

H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
1	-	ANTENNA SIGNAL

Connector No.	M389
Connector Name	FM SUB ANTENNA
Connector Type	P01FB-A

H.S.



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

Connector No.	M394
Connector Name	AV CONTROL UNIT
Connector Type	Tyco_1554987-1

H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
89	G	USB GROUND
90	W	USB V BUS SIGNAL
91	R	USB D- SIGNAL
92	L	USB D+ SIGNAL
93	SHIELD	SHIELD

Connector No.	M395
Connector Name	NAVI CONTROL UNIT
Connector Type	GT5-1S-HU

H.S.



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

Connector No.	M396
Connector Name	NAVI CONTROL UNIT
Connector Type	TYCO-2174512-3

H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
31	W	LVDS (+)
32	B	LVDS (-)
33	SHIELD	SHIELD

Connector No.	M397
Connector Name	NAVI CONTROL UNIT
Connector Type	TYCO-1-1554979-6

H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
34	G	USB GROUND
35	W	USB D+SIGNAL
36	R	USB D-SIGNAL
37	L	USB V BUS SIGNAL
38	SHIELD	SHIELD

Connector No.	M398
Connector Name	NAVI CONTROL UNIT
Connector Type	TYCO-1-1554979-7

H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
39	G	USB GROUND
40	W	USB V BUS SIGNAL
41	R	USB D-SIGNAL
42	L	USB D+SIGNAL
43	SHIELD	SHIELD

Connector No.	M500
Connector Name	AV CONTROL UNIT
Connector Type	TH04MW-NH

H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
150	-	FM SUB (+)
151	-	ANTENNA SIGNAL
152	-	ANTENNA AMP. ON SIGNAL
153	-	FM SUB (-)

JRNWF6964GB

INFINITI INTOUCH (BOSE AUDIO WITH NAVIGATION)

Connector No.	M501
Connector Name	DISPLAY CONTROL UNIT
Connector Type	TYCO-2174512-1

H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
80	G	USB GROUND
81	W	USB V BUS SIGNAL
82	R	USB D-SIGNAL
83	L	USB D+SIGNAL
84	SHIELD	SHIELD

Connector No.	M502
Connector Name	DISPLAY CONTROL UNIT
Connector Type	TYCO-2174512-3

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
65	W	LVDS (+)
66	B	LVDS (-)
67	SHIELD	SHIELD

Connector No.	M503
Connector Name	DISPLAY CONTROL UNIT
Connector Type	TYCO-1-1534979-6

H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
68	G	USB GROUND
69	W	USB V BUS SIGNAL
70	R	USB D-SIGNAL
71	L	USB D+SIGNAL
72	SHIELD	SHIELD

Connector No.	M504
Connector Name	DISPLAY CONTROL UNIT
Connector Type	TYCO-2174512-5

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
89	G	USB GROUND
90	W	USB V BUS SIGNAL
91	R	USB D-SIGNAL
92	L	USB D+SIGNAL
93	SHIELD	SHIELD

Connector No.	M505
Connector Name	DISPLAY CONTROL UNIT
Connector Type	TYCO-2174512-5

H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
94	W	USB V BUS SIGNAL
95	R	USB D-SIGNAL
96	L	USB D+SIGNAL
97	SHIELD	SHIELD

Connector No.	M508
Connector Name	EXTERNAL DATA INPUT BOX (USB)
Connector Type	TYCO-2174512-5

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
5	G	USB_GND
6	W	V_BUS
7	R	USB_D-
8	L	USB_D+
9	SHIELD	SHIELD

Connector No.	M511
Connector Name	TCU
Connector Type	USCAR30-MC-F

H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
41	R	USB V BUS SIGNAL
42	P	USB D- SIGNAL
43	W	USB D+ SIGNAL
44	SHIELD	USB GND

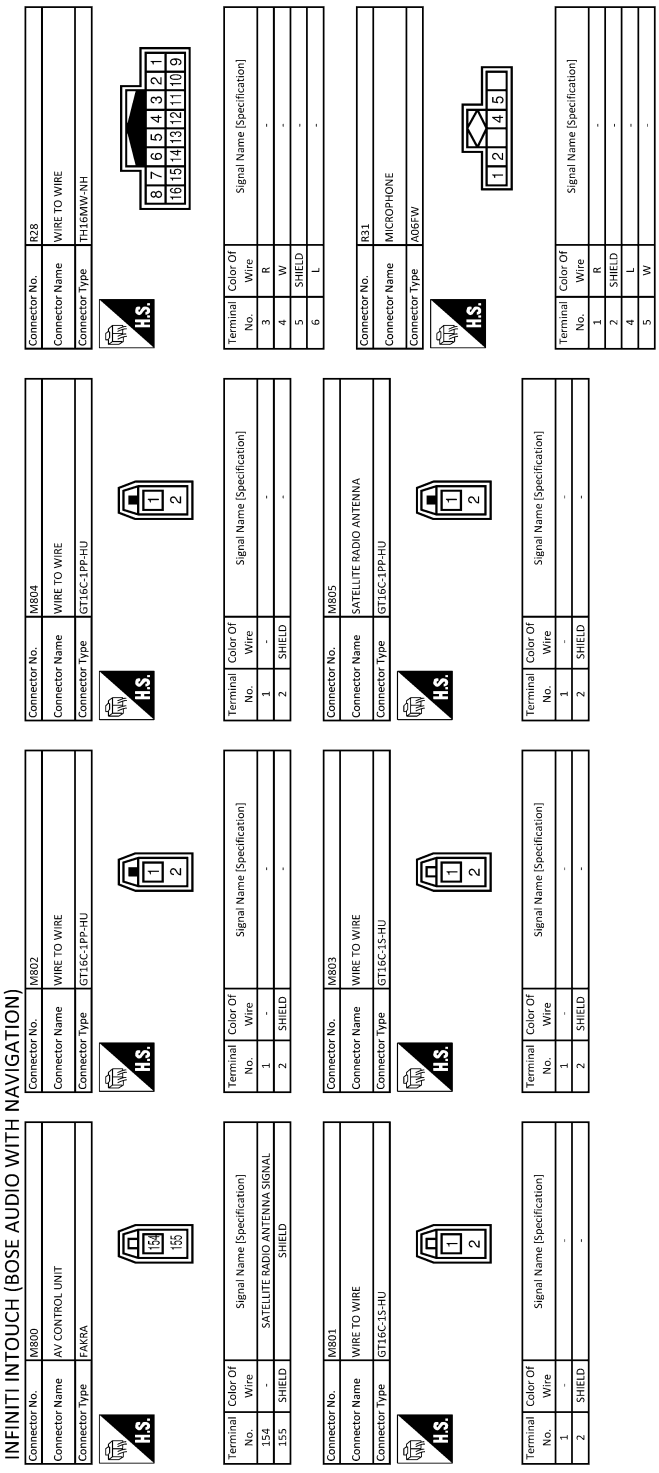
Connector No.	M692
Connector Name	SPIRAL CABLE
Connector Type	A204004169998LATT2

H.S.

Terminal No.	Color Of Wire	Signal Name [Specification]
1	-	-
2	-	-
3	-	-
4	-	-
5	-	-
6	-	-

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INFINITI INTOUCH (BOSE AUDIO WITH NAVIGATION)



JRNWF6966GB

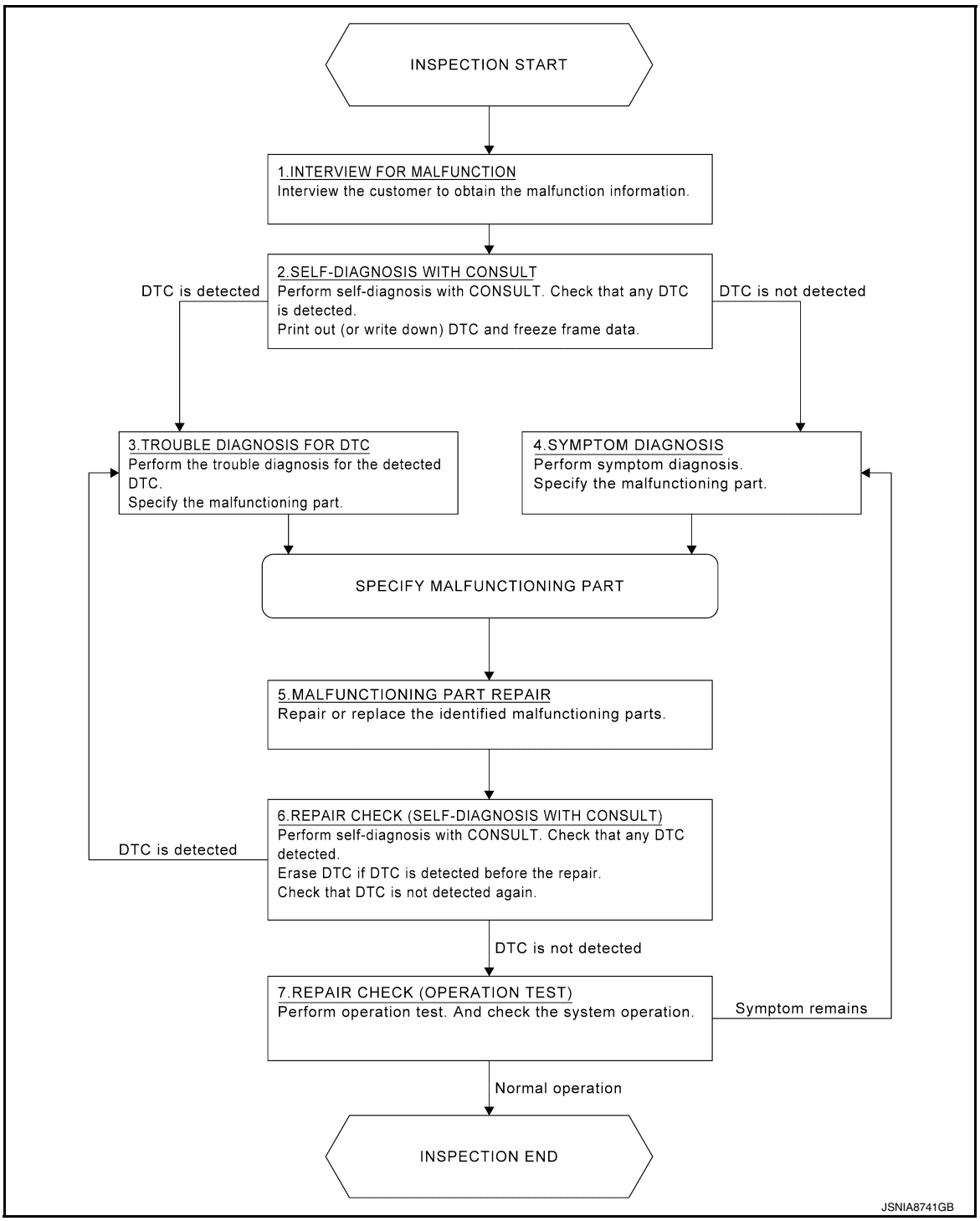
BASIC INSPECTION

DIAGNOSIS AND REPAIR WORKFLOW

Work Flow

INFOID:0000000013615543

OVERALL SEQUENCE



DETAILED FLOW

1.INTERVIEW FOR MALFUNCTION

It is also important to clarify the customer concerns before starting the inspection. Interview the customer about the concerns carefully and understand the symptoms fully.

NOTE:

The customers are not professionals. Never assume that “maybe the customer means···” or “maybe the customer mentioned this symptom”.

>> GO TO 2.

2.SELF-DIAGNOSIS WITH CONSULT

With CONSULT
Perform self-diagnosis of “MULTI AV” using CONSULT. Refer to AV-71, "CONSULT Function".
NOTE:
Skip to step 4 of the diagnosis procedure if “MULTI AV” is not displayed.

Is any DTC detected?

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

3.TROUBLE DIAGNOSIS FOR DTC

1. Check the DTC indicated in the “Self Diagnostic Result”.
2. When DTC is detected, follow the instructions below:
- Record DTC
- Freeze Frame Data (FFD)
3. Perform the relevant diagnosis referring to the DTC Index. Refer to AV-81, "DTC Index".

NOTE:
If DTC “U1000” is detected, first diagnose the CAN communication system.

>> GO TO 5.

4.SYMPTOM DIAGNOSIS

Perform the applicable diagnosis according to the diagnosis chart by symptom. Refer to AV-224, "Symptom Table".

>> GO TO 5.

5.MALFUNCTIONING PART REPAIR

Repair or replace the identified malfunctioning parts.

>> GO TO 6.

6.REPAIR CHECK (SELF-DIAGNOSIS WITH CONSULT)

With CONSULT
1. Erases self-diagnosis results.
2. Perform self-diagnosis of “MULTI AV” again after repairing or replacing the specific items.
3. Check if any DTC is detected in self-diagnosis results of “MULTI AV” .

Is any DTC detected?

YES >> GO TO 3.
NO >> GO TO 7.

7.REPAIR CHECK (OPERATION TEST)

Perform operation test. Check that the malfunction symptom is solved or no other symptoms occur.

Is there a malfunction symptom?

YES >> GO TO 4.
NO >> INSPECTION END

ADDITIONAL SERVICE WHEN REPLACING DISPLAY CONTROL UNIT

Description

INFOID:0000000013615544

Perform the following operations when replacing display control unit.
Configuration, refer to AV-145, "Work Procedure".

Work Procedure

INFOID:0000000013615545

1.SAVING VEHICLE SPECIFICATION

CONSULT Configuration
Perform “Before Replace ECU” of “Read / Write Configuration” to save or print current vehicle specification.
NOTE:
If “Before Replace ECU” of “Read / Write Configuration” can not be used, use the “Manual Configuration” after replacing display control unit.

>> GO TO 2.

2.REPLACE DISPLAY CONTROL UNIT

Replace display control unit. Refer to AV-239, "Removal and Installation".

>> GO TO 3.

3.WRITING VEHICLE SPECIFICATION

CONSULT Configuration
Perform “After Replace ECU” of “Read / Write Configuration” or “Manual Configuration” to write vehicle specification. Refer to AV-148, "Work Procedure".

>> WORK END

ADDITIONAL SERVICE WHEN REPLACING AV CONTROL UNIT

Description

INFOID:0000000013615546

Perform the following operations when replacing AV control unit.
Configuration of display control unit, refer to AV-146, "Work Procedure".

Work Procedure

INFOID:0000000013615547

1.SAVING VEHICLE SPECIFICATION

CONSULT Configuration
Perform “Before Replace ECU” of “Read / Write Configuration” in “MULTI AV” to save or print current vehicle specification.
NOTE:
If “Before Replace ECU” of “Read / Write Configuration” can not be used, use the “Manual Configuration” after replacing AV control unit.

>> GO TO 2.

2.REPLACE AV CONTROL UNIT

Replace AV control unit. Refer to AV-240, "Removal and Installation".

>> GO TO 3.

3.WRITING VEHICLE SPECIFICATION

CONSULT Configuration
Perform “After Replace ECU” of “Read / Write Configuration” or “Manual Configuration” to write vehicle specification. Refer to AV-148, "Work Procedure".

>> WORK END

ADDITIONAL SERVICE WHEN REPLACING NAVI CONTROL UNIT

Description

INFOID:0000000013615548

Perform the following operations when replacing NAVI control unit.
Configuration of display control unit, refer to AV-147, "Work Procedure".

Work Procedure

INFOID:0000000013615549

1.SAVING VEHICLE SPECIFICATION

CONSULT Configuration
Perform “Before Replace ECU” of “Read / Write Configuration” in “MULTI AV” to save or print current vehicle specification.
NOTE:
If “Before Replace ECU” of “Read / Write Configuration” can not be used, use the “Manual Configuration” after replacing NAVI control unit.

>> GO TO 2.

2.REPLACE NAVI CONTROL UNIT

Replace NAVI control unit. Refer to AV-241, "Removal and Installation".

>> GO TO 3.

3.WRITING VEHICLE SPECIFICATION

CONSULT Configuration
Perform “After Replace ECU” of “Read / Write Configuration” or “Manual Configuration” to write vehicle specification. Refer to AV-148, "Work Procedure".

>> WORK END

CONFIGURATION (DISPLAY CONTROL UNIT)

Work Procedure

INFOID:0000000013615550

1.WRITING MODE SELECTION

CONSULT Configuration
Select “Re/programming, Configuration” of “MULTI AV”.

When writing saved data>>GO TO 2.
When writing manually>>GO TO 3.

2.WRITING VEHICLE SPECIFICATION

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

CAUTION:
Do not perform any operation such as the navigation operation during configuration writing.

>> GO TO 4.

3.WRITE VEHICLE SPECIFICATION

CONSULT Configuration
Select “Manual Configuration”, and write the setting value as shown in the following table to display 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.**
- **Do not perform any operation such as the navigation operation during configuration writing.**

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.
- If selection items are not displayed on the CONSULT screen, touch “NEXT”.

MANUAL SETTING ITEM		Detail
Items	Setting value	
STEERING	LHD	LHD models
	RHD	RHD models
NAVIGATION	WITH	Models with navigation system
	WITHOUT	Models without navigation system
ENGINE TYPE	GASOLINE	Gasoline engine models
	DIESEL	Diesel engine models
ENGINE TYPE	VQ ENGINE	VQ engine models
	EXCEPT FOR VQ ENGINE	Except VQ engine models
ENGINE TYPE 3	1.6 LITER	1.6L turbo gasoline engine models
	1.8 LITER	K9K engine models
	2.0 LITER	2.0L turbo gasoline engine models
	2.2 LITER	2.2L diesel engine models
CAMERA SYSTEM	REAR CAMERA	Models with rear view monitor system
	NONE/AVM ph3	Models without camera system
	AVM (EXCEPT AVM ph3)	Models with around view monitor system
TRANSMISSION	AT/CVT	7DCT models
	MT	M/T models

MANUAL SETTING ITEM		Detail
Items	Setting value	
SONAR TYPE	NONE	Models without sonar system
	FRONT&REAR	Models with sonar system
AUDIO AMP TYPE	160W AMP	Models without BOSE system
	2ch AMP	Models with BOSE system
DAB FUNCTION	Off	Models without DAB (digital audio broadcast) function
	On	Models without DAB (digital audio broadcast) function

>> GO TO 5.

4. PERFORM SELF-DIAGNOSIS

CONSULT Self Diagnostic Result
Perform self-diagnosis of CONSULT, and check whether or not DTC “U1223” is detected.

Is DTC “U1223” detected?

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

5. OPERATION CHECK

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

>> WORK END

DTC/CIRCUIT DIAGNOSIS

B1505 STEERING SWITCH

DTC Description

INFOID:0000000013615551

DTC DETECTION LOGIC

DTC		CONSULT screen terms		DTC detection condition	
		(Trouble diagnosis content)	[Malfunction type]		
B1505	00	Steering switch right (The right steering switch group has a malfunction)	NO SUBTYPE INFORMATION	Diagnosis condition	Ignition switch is ON
				Signal (terminal)	—
				Threshold	Switch key detected as pressed over a period of time larger than 45 s
				Diagnosis delay time	45 seconds

POSSIBLE CAUSE

Jamming switch key

FAIL-SAFE

The output for this module switches to idle

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT
1. Turn ignition switch ON.
2. Press the steering switch RH button and wait at least 45 seconds or more.
3. Select “Self-diagnostic Result” mode of “SCCM” using CONSULT.
4. Check DTC.

Is DTC “B1505” detected?

YES >> Refer to AV-150, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-56, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000013615552

1. REPLACE STEERING SWITCH

Replace steering switch. Refer to AV-254, "Removal and Installation".

>> INSPECTION END

B1F01 ENGINE SPEED SIGNAL

DTC Description

INFOID:0000000013615555

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
B1F01	ENG SPEED SIG ERROR (Engine speed signal error)	Diagnosis condition	When during engine running
		Signal (terminal)	Engine speed signal
		Threshold	20% or more of error
		Diagnosis delay time	1 second or more

POSSIBLE CAUSE

- Harness or connectors (engine speed signal circuit)
- BOSE amp.
- CAN gateway

FAIL-SAFE

Active noise cancellation and active sound enhancement function are deactivated

DTC CONFIRMATION PROCEDURE

1.CHECK DTC PRIORITY

If B1F01 is displayed with DTC “U1000” or “U1010”, first perform the confirmation procedure (trouble diagnosis) for DTC “U1000” or “U1010”.

Is applicable DTC detected?

YES >> Perform diagnosis of applicable.
- U1000: Refer to AV-153, "DISPLAY CONTROL UNIT : DTC Description".
- U1010: Refer to AV-155, "DISPLAY CONTROL UNIT : DTC Description".

NO >> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT
1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Start engine and wait at least 30 seconds.
4. Select “Self Diagnostic Result” mode of “MULTI AV” using CONSULT.
5. Check DTC.

Is DTC “B1F01” detected?

YES >> Proceed to AV-151, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-56, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000013615556

1.CHECK SELF-DIAGNOSTIC RESULT OF CAN GATEWAY

With CONSULT
Check “Self Diagnostic Result” of “CAN GATEWAY” using CONSULT.

Is any DTC detected?

YES >> Perform diagnosis procedure for detected DTC. Refer to LAN-156, "DTC Index".
NO >> GO TO 2.

2.PERFORM ALL DTC READING

With CONSULT
1. Perform “All DTC Reading”.
2. Check diagnosis results.

Is any DTC detected?

YES >> Perform diagnosis procedure corresponding to DTC indicated.
NO >> GO TO 3.

3. CHECK INTERMITTENT INCIDENT

Check the intermittent incident. Refer to GI-56, "Intermittent Incident".

Is inspection result normal?

YES >> Replace BOSE amp. Refer to AV-246, "Removal and Installation".
NO >> Repair or replace malfunctioning parts.

U1000 CAN COMM CIRCUIT
DISPLAY CONTROL UNIT

DISPLAY CONTROL UNIT : DTC Description

INFOID:0000000013615579

DESCRIPTION

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.

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
U1000	CAN COMM CIRCUIT (CAN COMM CIRCUIT)	Diagnosis condition	When ignition switch is ON.
		Signal (terminal)	CAN communication signal
		Threshold	—
		Diagnosis delay time	2 seconds or more

POSSIBLE CAUSE

- CAN communication system
- CAN gateway

FAIL-SAFE

The system using the CAN communication signal from control unit which cannot communicate does not function

DTC CONFIRMATION PROCEDURE

1.CHECK DTC PRIORITY

If DTC “U1000” is displayed with DTC “U1223”, first perform the confirmation procedure (trouble diagnosis) for DTC “U1223”.

Is applicable DTC detected?

YES >> Perform diagnosis of applicable DTC. Refer to AV-157, "DTC Description".
NO >> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT
1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select “Self Diagnostic Result” mode of “MULTI AV” using CONSULT.
5. Check DTC.

Is DTC “U1000” detected?

YES >> Proceed to AV-153, "DISPLAY CONTROL UNIT : Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-56, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

DISPLAY CONTROL UNIT : Diagnosis Procedure

INFOID:0000000013615580

1.PERFORM DTC CONFIRMATION PROCEDURE AGAIN

With CONSULT
1. Turn ignition switch ON.
2. Erase DTC.

3. Perform DTC confirmation procedure again. Refer to AV-153, "DISPLAY CONTROL UNIT : DTC Description".

Is DTC “U1000” detected again?

YES >> Perform the trouble diagnosis for CAN communication system. Refer to LAN-58, "Trouble Diagnosis Flow Chart".

NO >> INSPECTION END

U1010 CONTROL UNIT (CAN)
DISPLAY CONTROL UNIT

DISPLAY CONTROL UNIT : DTC Description

INFOID:0000000013615583

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
U1010	CONTROL UNIT (CAN) [Control unit (CAN)]	Diagnosis condition	When ignition switch is ON.
		Signal (terminal)	—
		Threshold	Initial diagnosis abnormality of the display control unit CAN controller
		Diagnosis delay time	30 seconds or more

POSSIBLE CAUSE
Display control unit

FAIL-SAFE
The system using the CAN communication signal does not function

DTC CONFIRMATION PROCEDURE
1. PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT
1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select “Self Diagnostic Result” mode of “MULTI AV” using CONSULT.
5. Check DTC.

Is DTC “U1010” detected?

YES >> Proceed to AV-155, "DISPLAY CONTROL UNIT : Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-56, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

DISPLAY CONTROL UNIT : Diagnosis Procedure

INFOID:0000000013615584

1. PERFORM DTC CONFIRMATION PROCEDURE AGAIN

With CONSULT
1. Turn ignition switch ON.
2. Erase DTC.
3. Perform DTC confirmation procedure again. Refer to AV-155, "DISPLAY CONTROL UNIT : DTC Description".

Is DTC “U1010” detected again?

YES >> Replace display control unit. Refer to AV-239, "Removal and Installation".
NO >> INSPECTION END

U121F DISPLAY CONTROL UNIT

DTC Description

INFOID:0000000013615587

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
U121F	DISPLAY CONTROL UNIT (Display control unit)	Diagnosis condition	When ignition switch is ON.
		Signal (terminal)	—
		Threshold	Display control unit internal malfunction
		Diagnosis delay time	30 seconds or more

POSSIBLE CAUSE

Display control unit

FAIL-SAFE

- Display is not displayed
- Display control unit restart
- Display control unit freezes

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select “Self Diagnostic Result” mode of “MULTI AV” using CONSULT.
5. Check DTC.

Is DTC “U121F” detected?

YES >> Proceed to AV-156, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-56, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000013615588

1.CHECK CONNECTION STATUS OF DISPLAY CONTROL UNIT CONNECTOR

Check the connection status of display control unit connector.

Is the connection status normal?

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

2.CHECK FOR SD CARD POOR CONNECTION

With CONSULT

1. Turn the ignition switch OFF and wait 30 seconds or more.
2. Draw and insert SD card.
3. Turn the ignition switch ON and wait for 30 seconds or more.
4. Check self-diagnosis results of “MULTI AV” using CONSULT.

Is DTC “U121F” detected?

YES >> Replace display control unit. Refer to AV-239, "Removal and Installation".
NO >> INSPECTION END

U1223 CONFIG UNFINISH

DTC Description

INFOID:0000000013615589

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
U1223	CONFIG UNFINISH (Configuration unfinish)	Diagnosis condition	When ignition switch is ON.
		Signal (terminal)	—
		Threshold	Configuration is incomplete
		Diagnosis delay time	30 seconds or more

FAIL-SAFE

A function of display control unit becomes mismatched with a vehicle specification and destination

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT
1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select “Self Diagnostic Result” mode of “MULTI AV” using CONSULT.
5. Check DTC.

Is DTC “U1223” detected?

YES >> Proceed to AV-157, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-56, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000013615590

1.PERFORM DTC CONFIRMATION PROCEDURE AGAIN

With CONSULT
1. Turn ignition switch ON.
2. Erase DTC.
3. Perform DTC confirmation procedure again. Refer to AV-157, "DTC Description".

Is DTC “U1223” detected again?

YES >> Perform configuration of display control unit. Refer to AV-148, "Work Procedure".
NO >> INSPECTION END

U1231 BOSE AMP.

DTC Description

INFOID:0000000013615591

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
U1231	AMP TEMP (Amp temperature)	Diagnosis condition	When ignition switch is ON.
		Signal (terminal)	—
		Threshold	BOSE amp. temperature is high
		Diagnosis delay time	30 seconds or more

POSSIBLE CAUSE

- BOSE amp. temperature is high
- BOSE amp.

FAIL-SAFE

BOSE system does not function

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select “Self Diagnostic Result” mode of “MULTI AV” using CONSULT.
5. Check DTC.

Is DTC “U1231” detected?

YES >> Proceed to AV-158, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-56, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000013615592

1.CHECK AROUND BOSE AMP.

Check whether there is any factor which causes a temperature rise near BOSE amp.

Was there any factor?

YES >> GO TO 2.
NO >> Remove a factor.

2.PERFORM DTC CONFIRMATION PROCEDURE AGAIN

With CONSULT

1. Turn ignition switch ON.
2. Erase DTC.
3. Perform DTC confirmation procedure again. Refer to AV-158, "DTC Description".

Is DTC “U1231” detected again?

YES >> Replace BOSE amp. Refer to AV-246, "Removal and Installation".
NO >> INSPECTION END

U1232 STEERING ANGLE SENSOR

DTC Description

INFOID:0000000013615593

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
U1232	ST ANGLE SEN CALIB (Steering angle sensor calibration)	Diagnosis condition	When ignition switch is ON.
		Signal (terminal)	—
		Threshold	Neutral position adjustment of the steering angle sensor is incomplete
		Diagnosis delay time	30 seconds or more

POSSIBLE CAUSE

- Display control unit
- CAN gateway

FAIL-SAFE

Predictive course line is not displayed

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select “Self diagnostic result” mode of “MULTI AV” using CONSULT.
5. Check DTC.

Is DTC “U1232” detected?

YES >> Proceed to AV-159, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-56, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000013615594

1.CHECK SELF-DIAGNOSTIC RESULT OF CAN GATEWAY

With CONSULT

Check “Self Diagnostic Result” of “CAN GATEWAY” using CONSULT.

Is any DTC detected?

YES >> Perform diagnosis procedure for detected DTC. Refer to LAN-156, "DTC Index".
NO >> GO TO 2.

2.PERFORM ALL DTC READING

With CONSULT

1. Perform “All DTC Reading”.
2. Check diagnosis results.

Is any DTC detected?

YES >> Perform diagnosis procedure corresponding to DTC indicated.
NO >> Replace following parts.
- Display control unit: AV-239, "Removal and Installation"
- CAN gateway: LAN-218, "Removal and Installation"

U1233 NAVI CONTROL UNIT

DTC Description

INFOID:0000000013615595

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
U1233	NAVI CONTROL UNIT (Navigation control unit)	Diagnosis condition	When ignition switch is ON.
		Signal (terminal)	—
		Threshold	NAVI control unit internal malfunction
		Diagnosis delay time	30 seconds or more

POSSIBLE CAUSE

NAVI control unit

FAIL-SAFE

As an example:
- Map is not displayed
- Navigation screen does not operate

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT
1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select “Self diagnostic result” mode of “MULTI AV” using CONSULT.
5. Check DTC.

Is DTC “U1233” detected?

YES >> Proceed to AV-160, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-56, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000013615596

1.PERFORM DTC CONFIRMATION PROCEDURE AGAIN

With CONSULT
1. Turn ignition switch ON.
2. Erase DTC.
3. Perform DTC confirmation procedure again. Refer to AV-160, "DTC Description".

Is DTC “U1233” detected again?

YES >> Replace NAVI control unit. Refer to AV-241, "Removal and Installation".
NO >> INSPECTION END

U1234 AV CONTROL UNIT

DTC Description

INFOID:0000000013615597

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
U1234	AV CONTROL UNIT (AV control unit)	Diagnosis condition	When ignition switch is ON.
		Signal (terminal)	—
		Threshold	AV control unit internal malfunction
		Diagnosis delay time	30 seconds or more

POSSIBLE CAUSE

AV control unit

FAIL-SAFE

As an example:
- Sound is not output by a speaker
- CD is not played
- Radio does not operate

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT
1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select “Self diagnostic result” mode of “MULTI AV” using CONSULT.
5. Check DTC.

Is DTC “U1234” detected?

YES >> Proceed to AV-161, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-56, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000013615598

1.PERFORM DTC CONFIRMATION PROCEDURE AGAIN

With CONSULT
1. Turn ignition switch ON.
2. Erase DTC.
3. Perform DTC confirmation procedure again. Refer to AV-161, "DTC Description".

Is DTC “U1234” detected again?

YES >> Replace AV control unit. Refer to AV-240, "Removal and Installation".
NO >> INSPECTION END

U1240 SWITCH CONN

DTC Description

INFOID:0000000013615599

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition		
U1240	SWITCH CONN (Switch connection error)	1	Diagnosis condition	When ignition switch is ON.
			Signal (terminal)	Preset switch power supply and ground circuit
			Threshold	—
			Diagnosis delay time	30 seconds or more
		2	Diagnosis condition	When ignition switch is ON.
			Signal (terminal)	AV communication signal
			Threshold	Abnormality
			Diagnosis delay time	30 seconds or more

NOTE:
DTC “U1240” is displayed with DTC “U1300”.

POSSIBLE CAUSE

- Preset switch
- Preset switch power supply and ground circuit
- AV communication circuit is open

FAIL-SAFE

Switch operation is invalid

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT
1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select “Self Diagnostic Result” mode of “MULTI AV” using CONSULT.
5. Check DTC.

Is DTC “U1240” detected?

YES >> Proceed to AV-162, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-56, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000013615600

1.CHECK FUSE

1. Turn ignition switch OFF.
2. Check that the following fuse is not blown (open).

Power source	Fuse No.	Capacity
Ignitions switch ACC	#94	7.5 A

Is the fuse blown (open)?

YES >> Replace fuse after repairing the applicable circuit.
NO >> GO TO 2.

2.CHECK PRESET SWITCH ACCESSORY POWER SUPPLY

1. Turn ignition switch ON.

2. Check the voltage between preset switch harness connector and ground.

(+)		(−)	Standard value	Reference value
Preset switch				
Connector	Terminal			
M210	20	Ground	9.0 - 16.0 V	Battery voltage

Is the inspection result normal?

YES >> GO TO 3.
NO >> Perform trouble diagnosis for accessory power supply circuit.

3.CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect preset switch connector.
3. Check the continuity between preset switch harness connector and ground.

(+)		(−)	Continuity
Preset switch			
Connector	Terminal		
M210	25	Ground	Existed

Is the inspection result normal?

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

4.CHECK AV COMMUNICATION CIRCUIT

1. Disconnect display control unit connector.
2. Check the continuity between display control unit harness connector and preset switch harness connector.

Display control unit		Preset switch		Continuity
Connector	Terminal	Connector	Terminal	
M52	46	M210	26	Existed
	58		27	

Is the inspection result normal?

YES >> Replace preset switch. Refer to AV-242, "Removal and Installation".
NO >> Repair or replace harness or connector.

U1244 GPS ANTENNA CONN

DTC Description

INFOID:0000000013615601

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
U1244	GPS ANTENNA CONN (GPS antenna connection error)	Diagnosis condition	When ignition switch is ON.
		Signal (terminal)	GPS antenna signal
		Threshold	Abnormality
		Diagnosis delay time	30 seconds or more

POSSIBLE CAUSE

- GPS antenna is not connected
- GPS antenna

FAIL-SAFE

The vehicle positions on a navigation screen differ

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select “Self Diagnostic Result” mode of “MULTI AV” using CONSULT.
5. Check DTC.

Is DTC “U1244” detected?

YES >> Proceed to AV-164, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-56, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000013615602

1.CHECK GPS ANTENNA HARNESS CONNECTOR

Visually check GPS antenna connection.

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair connection of GPS antenna to NAVI control unit.

2.CHECK GPS ANTENNA FEEDER

Visually check GPS antenna feeder. Refer to AV-258, "Feeder Layout".

Is the inspection result normal?

YES >> GO TO 3.
NO >> Replace GPS antenna. Refer to AV-257, "Removal and Installation".

3.PERFORM DTC CONFIRMATION PROCEDURE AGAIN

With CONSULT

1. Turn ignition switch ON.
2. Erase DTC.
3. Perform DTC confirmation procedure again. Refer to AV-164, "DTC Description".

Is DTC “U1244” detected again?

YES >> GO TO 4.
NO >> If deficient phenomena such as the poor GPS reception do not occur, see a state because might detect the temporary abnormality due to the extreme electric wave disorder.

4. CHECK NAVI CONTROL UNIT VOLTAGE

1. Turn ignition switch OFF.
2. Disconnect GPS antenna connector.
3. Check the voltage between NAVI control unit terminal and ground.

(+) NAVI control unit Terminal	(–)	Standard value	Reference value (Approx.)
44	Ground	4.0 - 5.0 V	5.0 V

Is the inspection result normal?

YES >> Replace GPS antenna. Refer to AV-257, "Removal and Installation".
NO >> Replace NAVI control unit. Refer to AV-241, "Removal and Installation".

U1249 AUDIO H/U CONN

DTC Description

INFOID:0000000013615603

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition		
U1249	AUDIO H/U CONN (Audio head unit connection error)	1	Diagnosis condition	When ignition switch is ON.
			Signal (terminal)	AV control unit power supply and ground circuit
			Threshold	—
			Diagnosis delay time	30 seconds or more
		2	Diagnosis condition	When ignition switch is ON.
			Signal (terminal)	AV communication signal
			Threshold	Abnormality
			Diagnosis delay time	30 seconds or more

NOTE:
DTC “U1249” is displayed with DTC “U1300”.

POSSIBLE CAUSE

- AV control unit
- AV control unit power supply and ground circuit
- AV communication circuit is open

FAIL-SAFE

As an example:
- Sound is not output by a speaker
- CD is not played
- Radio does not operate

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT
1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select “Self Diagnostic Result” mode of “MULTI AV” using CONSULT.
5. Check DTC.

Is DTC “U1249” detected?

YES >> Proceed to AV-166, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-56, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000013615604

1.CHECK AV CONTROL UNIT POWER SUPPLY AND GROUND CIRCUIT

Check AV control unit power supply and ground circuit. Refer to AV-203, "AV CONTROL UNIT : Diagnosis Procedure".

Is the inspection result normal?

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

2.CHECK AV COMMUNICATION CIRCUIT

1. Turn ignition switch OFF.

2. Disconnect display control unit connector and AV control unit connector.
3. Check the continuity between display control unit harness connector and AV control unit harness connector.

Display control unit		AV control unit		Continuity
Connector	Terminal	Connector	Terminal	
M52	46	M10	22	Existed
	58		42	

Is the inspection result normal?

YES >> Replace AV control unit. Refer to AV-240, "Removal and Installation".
NO >> Repair or replace harness or connector.

U124E AMP CONN

DTC Description

INFOID:0000000013615605

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition		
U124E	AMP CONN (Amp connection error)	1	Diagnosis condition	When ignition switch is ON.
			Signal (terminal)	BOSE amp. power supply and ground circuit
			Threshold	—
			Diagnosis delay time	30 seconds or more
		2	Diagnosis condition	When ignition switch is ON.
			Signal (terminal)	AV communication signal
			Threshold	Abnormality
			Diagnosis delay time	30 seconds or more

NOTE:
DTC “U124E” is displayed with DTC “U1300”.

POSSIBLE CAUSE

- BOSE amp.
- BOSE amp. power supply and ground circuit
- AV communication circuit is open

FAIL-SAFE

Sound is not output by a speaker

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT
1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select “Self Diagnostic Result” mode of “MULTI AV” using CONSULT.
5. Check DTC.

Is DTC “U124E” detected?

YES >> Proceed to AV-168, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-56, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000013615606

1.CHECK BOSE AMP. POWER SUPPLY AND GROUND CIRCUIT

Check BOSE amp. power supply and ground circuit. Refer to AV-205, "BOSE AMP. : Diagnosis Procedure".

Is the inspection result normal?

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

2.CHECK AV COMMUNICATION CIRCUIT

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

Display control unit		BOSE amp.		Continuity
Connector	Terminal	Connector	Terminal	
M52	46	M22	54	Existed
	58		74	

Is the inspection result normal?

YES >> Replace BOSE amp. Refer to AV-246, "Removal and Installation".
NO >> Repair or replace harness or connector.

U1258 SATELLITE RADIO ANTENNA

DTC Description

INFOID:0000000013788230

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition		
U1258	XM ANTENNA CONN (Satellite radio antenna connection error)	1	Diagnosis condition	When ignition switch is ON.
			Signal (terminal)	Satellite radio antenna circuit is shorted to ground.
			Threshold	—
			Diagnosis delay time	30 seconds or more
		2	Diagnosis condition	When ignition switch is ON.
			Signal (terminal)	Satellite radio antenna circuit is open.
			Threshold	—
			Diagnosis delay time	30 seconds or more

POSSIBLE CAUSE

- Satellite radio antenna is not connected
- Harness or connector (satellite radio antenna circuit is open or short)

FAIL-SAFE

Satellite radio is not received

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select “Self Diagnostic Result” mode of “MULTI AV” using CONSULT.
5. Check DTC.

Is DTC U1258 detected?

YES >> Proceed to AV-170, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-56, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000013788231

1.CHECK SATELLITE RADIO ANTENNA HARNESS CONNECTOR

1. Turn ignition switch OFF.
2. Visually check satellite radio antenna and antenna feeder.

Is the inspection result normal?

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

2.CHECK SATELLITE RADIO ANTENNA HARNESS CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect AV control unit harness connector.
3. Check the continuity AV control unit harness connector and ground.

(+)		(–)	Continuity
AV control unit			
Connector	Terminal		
M800	154	Ground	Not existed

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair or replace malfunctioning parts.

3.CHECK AV CONTROL UNIT VOLTAGE

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

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

Is the inspection result normal?

YES >> Replace satellite radio antenna. Refer to AV-256, "Removal and Installation".
NO >> Replace AV control unit. Refer to AV-240, "Removal and Installation".

U125D NAVI CONN

DTC Description

INFOID:0000000013615607

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition		
U125D	DVD NAVI CONN (DVD navigation connection error)	1	Diagnosis condition	When ignition switch is ON.
			Signal (terminal)	NAVI control unit power supply and ground circuit
			Threshold	—
			Diagnosis delay time	30 seconds or more
		2	Diagnosis condition	When ignition switch is ON.
			Signal (terminal)	USB communication signal
			Threshold	Abnormality
			Diagnosis delay time	30 seconds or more

POSSIBLE CAUSE

- NAVI control unit
- NAVI control unit power supply and ground circuit
- USB harness is not connected

FAIL-SAFE

A navigation menu cannot be selected (hatching display).

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select “Self Diagnostic Result” mode of “MULTI AV” using CONSULT.
5. Check DTC.

Is DTC “U125D” detected?

YES >> Proceed to AV-172, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-56, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000013615608

1.CHECK USB HARNESS CONNECTION

1. Turn ignition switch OFF.
2. Visually check USB harness connector between display control unit and NAVI control unit.

Is the inspection result normal?

YES >> GO TO 2.
NO >> Replace USB harness.

2.CHECK NAVI CONTROL UNIT POWER SUPPLY AND GROUND CIRCUIT

Check NAVI control unit power supply and ground circuit. Refer to AV-204, "NAVI CONTROL UNIT : Diagnosis Procedure".

Is the inspection result normal?

YES >> Replace NAVI control unit. Refer to AV-241, "Removal and Installation".
NO >> Repair or replace malfunctioning parts.

U1266 TCU

DTC Description

INFOID:0000000013788228

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition		
U1266	TCU CONN (TCU connection)	1	Diagnosis condition	When ignition switch is ON.
			Signal (terminal)	TCU power supply and ground circuit
			Threshold	Abnormality
			Diagnosis delay time	30 seconds or more
		2	Diagnosis condition	When ignition switch is ON.
			Signal (terminal)	USB communication signal
			Threshold	Abnormality
			Diagnosis delay time	30 seconds or more

POSSIBLE CAUSE

- USB harness
- TCU
- Display control unit

FAIL-SAFE

Some telematics system does not function

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select “Self Diagnostic Result” mode of “MULTI AV” using CONSULT.
5. Check DTC.

Is DTC U1266 detected?

YES >> Proceed to AV-173, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-56, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000013788229

1.PERFORM SELF-DIAGNOSIS OF TCU

With CONSULT

Check “Self-Diagnostic Result” of “TELEMATICS” using CONSULT. Refer to AV-415, "CONSULT Function"

Is any DTC detected?

YES >> Perform trouble diagnosis for detected DTC. Refer to AV-420, "DTC Index".
NO >> GO TO 2.

2.CHECK CONTINUITY OF USB HARNESS

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

TCU		Display control unit		Continuity
Connector	Terminal	Connector	Terminal	
M511	41	M505	94	Existed
	42		95	
	43		96	
	44		97	

4. Check the continuity between display control unit harness connector and ground.

Display control unit			Continuity
Connector	Terminal		
M505	94	Ground	Not existed
	95		
	96		

Is the inspection result normal?

YES >> GO TO 3.
NO >> Replace USB harness.

3.PERFORM DTC CONFIRMATION PROCEDURE AGAIN

With CONSULT
1. Turn ignition switch ON.
2. Erase DTC.
3. Perform DTC confirmation procedure again. Refer to AV-173, "DTC Description".

Is DTC U1266 displayed?

YES >> Replace TCU. Refer to AV-459, "Removal and Installation".
NO >> Replace display control unit. Refer to AV-239, "Removal and Installation".

U1267 CGW CONN

DTC Description

INFOID:0000000013615609

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition		
U1267	CGW connection (CAN gateway connection)	1	Diagnosis condition	When ignition switch is ON.
			Signal (terminal)	CAN gateway power supply and ground
			Threshold	—
			Diagnosis delay time	30 seconds or more
		2	Diagnosis condition	When ignition switch is ON.
			Signal (terminal)	AV communication signal
			Threshold	Abnormality
			Diagnosis delay time	30 seconds or more

NOTE:
DTC “U1267” is displayed with DTC “U1300”.

POSSIBLE CAUSE

- CAN gateway power supply and ground circuit
- CAN gateway
- AV communication circuit is open

FAIL-SAFE

- Audio information is not displayed by the information display in the combination meter
- Navigation indicator is not displayed by the information display in the combination meter
- Steering switch does not operate

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT
1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select “Self Diagnostic Result” mode of “MULTI AV” using CONSULT.
5. Check DTC.

Is DTC “U1267” detected?

YES >> Proceed to AV-175, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-56, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000013615610

1.CHECK CAN GATEWAY POWER SUPPLY AND GROUND CIRCUIT

Check the CAN gateway power supply and ground circuit. Refer to LAN-217, "Diagnosis Procedure".

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair combination meter power supply circuit or ground circuit.

2.CHECK AV COMMUNICATION CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect display control unit connector and CAN gateway connector.
3. Check the continuity between display control unit harness connector and CAN gateway harness connector.

Display control unit		CAN gateway		Continuity
Connector	Terminal	Connector	Terminal	
M52	46	M218	14	Existed
	58		15	

Is the inspection result normal?

YES >> Replace CAN gateway. Refer to LAN-218, "Removal and Installation".
NO >> Repair or replace harness or connector.

U12BA MULTIFUNCTION SWITCH CONN

DTC Description

INFOID:0000000013615611

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	Detecting condition	
U12BA	MULTIFUNCTION SWITCH CONN (Multifunction switch connection error)	Diagnosis condition	When ignition switch is ON.
		Signal (terminal)	—
		Threshold	Connection error
		Diagnosis delay time	30 seconds or more

POSSIBLE CAUSE

- Preset switch
- Multifunction switch
- Multifunction switch is not connected

FAIL-SAFE

Multifunction switch operation is invalid

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select “Self Diagnostic Result” mode of “MULTI AV” using CONSULT.
5. Check DTC.

Is DTC “U12BA” detected?

YES >> Proceed to AV-177, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-56, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000013615612

1.PERFORM ON-BOARD DIAGNOSIS

1. Perform On-board Diagnosis function of display control unit. Refer to AV-60, "On Board Diagnosis Function".
2. Perform “Switch Information” of “Confirmation/Adjustment” item.
3. Check the preset switch and multifunction switch operation.

Is the inspection result normal?

YES >> Check the intermittent incident. Refer to GI-56, "Intermittent Incident".
NO-1 >> Preset switch does not operate: Replace preset switch. Refer to AV-242, "Removal and Installation".
NO-2 >> Multifunction switch does not operate: GO TO 2.

2.CHECK HARNESS BETWEEN PRESET SWITCH AND MULTIFUNCTION SWITCH

1. Turn ignition switch OFF.
2. Disconnect preset switch connector and multifunction switch connector.
3. Check the continuity between preset switch harness connector and multifunction switch harness connector.

Preset switch		Multifunction switch		Continuity
Connector	Terminal	Connector	Terminal	
M209	1	M238	1	Existed
	2		2	
	3		3	
	4		4	
	5		5	
	6		6	
	7		7	
	8		8	
	9		9	
	10		10	
	11		11	
	12		12	

Is the inspection result normal?

YES >> Replace multifunction switch. Refer to AV-243, "Removal and Installation".
NO >> Repair or replace harness or connector.

U12BE RADIO ANTENNA CONN

DTC Description

INFOID:0000000013615615

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)		Detecting condition	
U12BE	RADIO ANTENNA CONN (Radio antenna connection error)	GND-SHORT (Ground to short circuit)	Diagnosis condition	When ignition switch is ON.
			Signal (terminal)	Antenna signal
			Threshold	Radio antenna circuit is short circuit to ground
			Diagnosis delay time	30 seconds or more
		OPEN (Open circuit)	Diagnosis condition	When ignition switch is ON.
			Signal (terminal)	Antenna signal
			Threshold	Radio antenna circuit is open
			Diagnosis delay time	30 seconds or more

POSSIBLE CAUSE

- Radio antenna is not connected
- Harness or connector (Radio antenna amp. circuit is open or short)

FAIL-SAFE

Radio is not received

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select “Self Diagnostic Result” mode of “MULTI AV” using CONSULT.
5. Check DTC.

Is DTC “U12BE” detected?

YES >> Proceed to AV-179, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-56, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000013615616

1.CHECK RADIO ANTENNA

1. Turn ignition switch OFF.
2. Visually check radio antenna (AM/FM main antenna and FM sub antenna) and antenna feeder.

Is the inspection result normal?

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

2.CHECK ANTENNA AMP. ON SIGNAL

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

(+)		(–)	Standard value	Reference value (Approx.)
AV control unit				
Connector	Terminal			
M500	152	Ground	7.0 V or more	12.0 V

Is the inspection result normal?

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

3.CHECK ANTENNA AMP. ON SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect AV control unit connector and AM/FM main antenna connector.
3. Check the continuity between AV control unit harness connector and antenna amp. (AM/FM main antenna) harness connector.

AV control unit		Antenna amp.		Continuity
Connector	Terminal	Connector	Terminal	
M500	152	M386	1	Existed

Is the inspection result normal?

YES >> Replace AV control unit. Refer to AV-240, "Removal and Installation".
NO >> Repair or replace harness or connector.

4.CHECK ANTENNA SIGNAL CIRCUIT FOR SHORT

1. Turn ignition switch OFF.
2. Disconnect AV control unit connector.
3. Check the continuity AV control unit harness connector and ground.

(+)		(–)	Continuity
AV control unit			
Connector	Terminal		
M500	152	Ground	Not existed

Is the inspection result normal?

YES >> GO TO 5.
NO >> Repair or replace harness or connector.

5.CHECK ANTENNA SIGNAL GROUND CIRCUIT FOR OPEN

Check the continuity between AV control unit harness connector and antenna amp. (AM/FM main antenna) harness connector.

AV control unit		Antenna amp.		Continuity
Connector	Terminal	Connector	Terminal	
M500	151	M386	2	Existed

Is the inspection result normal?

YES >> Replace AM/FM main antenna. Refer to AV-255, "Removal and Installation".
NO >> Repair or replace harness or connector.

U1300 AV COMM CIRCUIT

DTC Description

INFOID:0000000013615617

DESCRIPTION

DTC “U1300” is displayed when the AV communication signal error is detected for the Infiniti InTouch navigation system. It is always displayed together with the error of the control unit connected to the display control unit via AV communication.

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
U1300	AV COMM CIRCUIT (AV communication circuit)	Diagnosis condition	When ignition switch is ON.
		Signal (terminal)	AV communication signal
		Threshold	Transmit or receive is abnormal
		Diagnosis delay time	30 seconds or more

NOTE:

DTC U1300 is simultaneously displayed as one of following DTC(s).

- U1240 SWITCH CONN
- U1249 AUDIO H/U CONN
- U124E AMP CONN
- U1267 CGW connection

POSSIBLE CAUSE

- AV communication circuit
- AV control unit
- BOSE amp.
- Preset switch
- CAN gateway

FAIL-SAFE

The system of ECU which detected abnormalities does not operate

DTC CONFIRMATION PROCEDURE

1.CHECK DTC PRIORITY

If DTC “U1300” is displayed with DTC “U1240”, “U1249”, “U124E” or “U1267”, first perform the confirmation procedure (trouble diagnosis) for DTC “U1240”, “U1249”, “U124E” or “U1267”.

Is applicable DTC detected?

YES >> Perform diagnosis of applicable DTC.
- U1240: Refer to AV-162, "DTC Description"
- U1249: Refer to AV-166, "DTC Description"
- U124E: Refer to AV-168, "DTC Description"
- U1267: Refer to AV-175, "DTC Description"

NO >> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select “Self Diagnostic Result” mode of “MULTI AV”.
5. Check DTC.

Is DTC “U1300” detected?

YES >> Proceed to AV-182, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-56, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000013615618

1.CHECK SELF-DIAGNOSTIC RESULT

Check if any DTC other than DTC “U1300” is detected in “Self-Diagnostic Result” of “MULTI AV”.

Is any DTC detected?

YES >> Perform diagnosis of the detected DTC. Refer to AV-81, "DTC Index".
NO >> Replace display control unit. Refer to AV-239, "Removal and Installation".

U1310 DISPLAY CONTROL UNIT

DTC Description

INFOID:0000000013615619

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
U1310	CONTROL UNIT (AV) [Control unit (AV)]	Diagnosis condition	When ignition switch is ON.
		Signal (terminal)	AV communication signal
		Threshold	AV communication circuit initial diagnosis abnormality
		Diagnosis delay time	30 seconds or more

POSSIBLE CAUSE

Display control unit

FAIL-SAFE

The system using the AV communication signal does not function

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT
1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select “Self Diagnostic Result” mode of “MULTI AV”.
5. Check DTC.

Is DTC “U1310” detected?

YES >> Proceed to AV-183, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-56, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000013615620

1.PERFORM DTC CONFIRMATION PROCEDURE AGAIN

With CONSULT
1. Turn ignition switch ON.
2. Erase DTC.
3. Perform DTC confirmation procedure. Refer to AV-183, "DTC Description".

Is DTC “U1310” detected again?

YES >> Replace display control unit. Refer to AV-239, "Removal and Installation".
NO >> INSPECTION END

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

DTC Description

INFOID:0000000013615621

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)		DTC detection condition	
U1601	FL-DOOR WOOFER (Front left-door woofer)	OPEN	Diagnosis condition	When ignition switch is ON.
			Signal (terminal)	Sound signal
			Threshold	Open circuit
			Diagnosis delay time	30 seconds or more
		SHORT	Diagnosis condition	When ignition switch is ON.
			Signal (terminal)	Sound signal
			Threshold	Short circuit
			Diagnosis delay time	30 seconds or more
		GND-SHORT	Diagnosis condition	When ignition switch is ON.
			Signal (terminal)	Sound signal
			Threshold	Short to ground circuit
			Diagnosis delay time	30 seconds or more
		VB-SHOR	Diagnosis condition	When ignition switch is ON.
			Signal (terminal)	Sound signal
			Threshold	Short to power supply circuit
			Diagnosis delay time	30 seconds or more
U1603	FL-DOOR TWEETER (Front left-door tweeter)	OPEN	Diagnosis condition	When ignition switch is ON.
			Signal (terminal)	Sound signal
			Threshold	Open circuit
			Diagnosis delay time	30 seconds or more
		SHORT	Diagnosis condition	When ignition switch is ON.
			Signal (terminal)	Sound signal
			Threshold	Short circuit
			Diagnosis delay time	30 seconds or more
		GND-SHORT	Diagnosis condition	When ignition switch is ON.
			Signal (terminal)	Sound signal
			Threshold	Short to ground circuit
			Diagnosis delay time	30 seconds or more
		VB-SHOR	Diagnosis condition	When ignition switch is ON.
			Signal (terminal)	Sound signal
			Threshold	Short to power supply circuit
			Diagnosis delay time	30 seconds or more

DTC No.	CONSULT screen terms (Trouble diagnosis content)		DTC detection condition	
U1609	FR-DOOR WOOFER (Front right-door woofer)	OPEN	Diagnosis condition	When ignition switch is ON.
			Signal (terminal)	Sound signal
			Threshold	Open circuit
			Diagnosis delay time	30 seconds or more
		SHORT	Diagnosis condition	When ignition switch is ON.
			Signal (terminal)	Sound signal
			Threshold	Short circuit
			Diagnosis delay time	30 seconds or more
		GND-SHORT	Diagnosis condition	When ignition switch is ON.
			Signal (terminal)	Sound signal
			Threshold	Short to ground circuit
			Diagnosis delay time	30 seconds or more
		VB-SHOR	Diagnosis condition	When ignition switch is ON.
			Signal (terminal)	Sound signal
			Threshold	Short to power supply circuit
			Diagnosis delay time	30 seconds or more
U160B	FR-DOOR TWEETER (Front right-door tweeter)	OPEN	Diagnosis condition	When ignition switch is ON.
			Signal (terminal)	Sound signal
			Threshold	Open circuit
			Diagnosis delay time	30 seconds or more
		SHORT	Diagnosis condition	When ignition switch is ON.
			Signal (terminal)	Sound signal
			Threshold	Short circuit
			Diagnosis delay time	30 seconds or more
		GND-SHORT	Diagnosis condition	When ignition switch is ON.
			Signal (terminal)	Sound signal
			Threshold	Short to ground circuit
			Diagnosis delay time	30 seconds or more
		VB-SHOR	Diagnosis condition	When ignition switch is ON.
			Signal (terminal)	Sound signal
			Threshold	Short to power supply circuit
			Diagnosis delay time	30 seconds or more

POSSIBLE CAUSE

- Front door speaker LH or front tweeter LH circuit
- Front door speaker RH or front tweeter RH circuit
- Front door speaker LH or front tweeter LH
- Front door speaker RH or front tweeter RH

FAIL-SAFE

- No sound from front door speaker LH or front tweeter LH
- No sound from front door speaker RH or front tweeter RH

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.

3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select “Self Diagnostic Result” mode of “MULTI AV” using CONSULT.
5. Check DTC.

Is DTC “U1601”, “U1603”, “U1609” or “U160B” detected?

YES-1 >> Without BOSE system: Proceed to AV-186, "WITHOUT BOSE SYSTEM : Diagnosis Procedure".
YES-2 >> With BOSE system: Proceed to AV-187, "WITH BOSE SYSTEM : Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-56, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

WITHOUT BOSE SYSTEM

WITHOUT BOSE SYSTEM : Diagnosis Procedure

INFOID:0000000013615622

1.CHECK SOUND SIGNAL CIRCUIT FOR OPEN

1. Turn ignition switch OFF.
2. Disconnect AV control unit connector and each speaker connector.
3. Check the continuity between AV control unit harness connector and each speaker harness connector.

Front door speaker

Position	AV control unit		Front door speaker		Continuity
	Connector	Terminal	Connector	Terminal	
LH	M9	2	D26	1	Existed
		3		2	
RH		11	D76	1	
		12		2	

Front tweeter

Position	AV control unit		Front tweeter		Continuity
	Connector	Terminal	Connector	Terminal	
LH	M9	2	D29	2	Existed
		3		1	
RH		11	D79	1	
		12		2	

Is the inspection result normal?

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

2.CHECK SOUND SIGNAL CIRCUIT FOR SHORT TO POWER SUPPLY

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

Position	(+)		(−)	Voltage (Approx.)
	AV control unit			
	Connector	Terminal		
LH	M9	2	Ground	0 V
		3		
RH		11		
		12		

Is the inspection result normal?

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

3.CHECK SOUND SIGNAL CIRCUIT FOR SHORT TO GROUND

1. Turn ignition switch OFF.

2. Check the continuity between AV control unit harness connector and ground.

Position	AV control unit		Ground	Continuity
	Connector	Terminal		
LH	M9	2		Not existed
		3		
RH		11		
		12		

Is the inspection result normal?

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

4. CHECK SOUND SIGNAL CIRCUIT FOR SHORT

1. Turn ignition switch OFF.
2. Check the continuity between AV control unit harness connector terminals.

Position	AV control unit			Continuity
	Connector	Terminal		
LH	M9	2	3	Not existed
RH		11	12	

Is the inspection result normal?

YES >> Replace malfunctioning speaker. Refer to the following.
- Front door speaker: AV-247, "Removal and Installation"
- Front tweeter: AV-248, "Removal and Installation"

NO >> Repair or replace harness or connector.

WITH BOSE SYSTEM

WITH BOSE SYSTEM : Diagnosis Procedure

INFOID:0000000013615623

1. CHECK SOUND SIGNAL CIRCUIT FOR OPEN

1. Turn ignition switch OFF.
2. Disconnect BOSE amp. connector each speaker connector.
3. Check the continuity between BOSE amp. harness connector and each speaker harness connector.

Front door speaker

Position	BOSE amp.		Front door speaker		Continuity
	Connector	Terminal	Connector	Terminal	
LH	M20	5	D27	1	Existed
		6		2	
RH		1	D77	1	
		2		2	

Front tweeter

Position	BOSE amp.		Front tweeter		Continuity
	Connector	Terminal	Connector	Terminal	
LH	M21	16	D28	1	Existed
		29		2	
RH		31	D93	1	
		30		2	

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace harness or connector.

2.CHECK SOUND SIGNAL CIRCUIT FOR SHORT TO POWER SUPPLY

1. Turn ignition switch ON.
2. Check the voltage between BOSE amp. harness connector and ground.

Front door speaker

Position	(+) BOSE amp. Connector	(+) BOSE amp. Terminal	(–)	Voltage (Approx.)
LH	M20	5	Ground	0 V
		6		
RH		1		
		2		

Front tweeter

Position	(+) BOSE amp. Connector	(+) BOSE amp. Terminal	(–)	Voltage (Approx.)
LH	M21	16	Ground	0 V
		29		
RH		31		
		30		

Is the inspection result normal?

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

3.CHECK SOUND SIGNAL CIRCUIT FOR SHORT TO GROUND

1. Turn ignition switch OFF.
2. Check the continuity between BOSE amp. harness connector and ground.

Front door speaker

Position	BOSE amp. Connector	BOSE amp. Terminal		Continuity
LH	M20	5	Ground	Not existed
		6		
RH		1		
		2		

Front tweeter

Position	BOSE amp. Connector	BOSE amp. Terminal		Continuity
LH	M21	16	Ground	Not existed
		29		
RH		31		
		30		

Is the inspection result normal?

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

4.CHECK SOUND SIGNAL CIRCUIT FOR SHORT

1. Turn ignition switch OFF.
2. Check the continuity between BOSE amp. harness connector terminals.

Front door speaker

Position	BOSE amp.			Continuity
	Connector	Terminal		
LH	M20	5	6	Not existed
RH		1	2	

Front tweeter

Position	BOSE amp.			Continuity
	Connector	Terminal		
LH	M21	16	29	Not existed
RH		31	30	

Is the inspection result normal?

YES >> Replace malfunctioning speaker. Refer to the following.
- Front door speaker: AV-247, "Removal and Installation"
- Front tweeter: AV-248, "Removal and Installation"

NO >> Repair or replace harness or connector.

U162A CENTER SQUAWKER

DTC Description

INFOID:0000000013615624

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)		DTC detection condition	
U162A	F-INST C-SQUAWK (Front-instrument center squawker)	OPEN	Diagnosis condition	When ignition switch is ON.
			Signal (terminal)	Sound signal
			Threshold	Open circuit
			Diagnosis delay time	30 seconds or more
		SHORT	Diagnosis condition	When ignition switch is ON.
			Signal (terminal)	Sound signal
			Threshold	Short circuit
			Diagnosis delay time	30 seconds or more
		GND-SHORT	Diagnosis condition	When ignition switch is ON.
			Signal (terminal)	Sound signal
			Threshold	Short to ground circuit
			Diagnosis delay time	30 seconds or more
		VB-SHOR	Diagnosis condition	When ignition switch is ON.
			Signal (terminal)	Sound signal
			Threshold	Short to power supply circuit
			Diagnosis delay time	30 seconds or more

POSSIBLE CAUSE

- Center squawker circuit
- Center squawker

FAIL-SAFE

No sound from center squawker

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select “Self Diagnostic Result” mode of “MULTI AV” using CONSULT.
5. Check DTC.

Is DTC “U162A” detected?

YES >> Proceed to AV-190, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-56, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000013615625

1.CHECK SOUND SIGNAL CIRCUIT FOR OPEN

1. Turn ignition switch OFF.
2. Disconnect BOSE amp. connector and center squawker connector.
3. Check the continuity between BOSE amp. harness connector and center squawker harness connector.

BOSE amp.		Center squawker		Continuity
Connector	Terminal	Connector	Terminal	
M21	24	M144	1	Existed
	35		2	

Is the inspection result normal?

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

2.CHECK SOUND SIGNAL CIRCUIT FOR SHORT TO POWER SUPPLY

1. Turn ignition switch ON.
2. Check the voltage between BOSE amp. harness connector and ground.

(+)		(−)	Voltage (Approx.)
BOSE amp.			
Connector	Terminal		
M21	24	Ground	0 V
	35		

Is the inspection result normal?

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

3.CHECK SOUND SIGNAL CIRCUIT FOR SHORT TO GROUND

1. Turn ignition switch OFF.
2. Check the continuity between BOSE amp. harness connector and ground.

BOSE amp.		Ground	Continuity
Connector	Terminal		
M21	24		Not existed
	35		

Is the inspection result normal?

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

4.CHECK SOUND SIGNAL CIRCUIT FOR SHORT

1. Turn ignition switch OFF.
2. Check the continuity between BOSE amp. harness connector terminals.

BOSE amp.			Continuity
Connector	Terminal		
M21	24	35	Not existed

Is the inspection result normal?

YES >> Replace center squawker. Refer to AV-249, "Removal and Installation".
NO >> Repair or replace harness or connector.

U1708, U1710 REAR DOOR SPEAKER

DTC Description

INFOID:0000000013615626

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)		DTC detection condition	
U1708	RL-DOOR SPEAKER (Rear left-door speaker)	OPEN	Diagnosis condition	When ignition switch is ON.
			Signal (terminal)	Sound signal
			Threshold	Open circuit
			Diagnosis delay time	30 seconds or more
		SHORT	Diagnosis condition	When ignition switch is ON.
			Signal (terminal)	Sound signal
			Threshold	Short circuit
			Diagnosis delay time	30 seconds or more
		GND-SHORT	Diagnosis condition	When ignition switch is ON.
			Signal (terminal)	Sound signal
			Threshold	Short to ground circuit
			Diagnosis delay time	30 seconds or more
		VB-SHOR	Diagnosis condition	When ignition switch is ON.
			Signal (terminal)	Sound signal
			Threshold	Short to power supply circuit
			Diagnosis delay time	30 seconds or more
U1710	RR-DOOR SPEAKER (Rear right-door speaker)	OPEN	Diagnosis condition	When ignition switch is ON.
			Signal (terminal)	Sound signal
			Threshold	Open circuit
			Diagnosis delay time	30 seconds or more
		SHORT	Diagnosis condition	When ignition switch is ON.
			Signal (terminal)	Sound signal
			Threshold	Short circuit
			Diagnosis delay time	30 seconds or more
		GND-SHORT	Diagnosis condition	When ignition switch is ON.
			Signal (terminal)	Sound signal
			Threshold	Short to ground circuit
			Diagnosis delay time	30 seconds or more
		VB-SHOR	Diagnosis condition	When ignition switch is ON.
			Signal (terminal)	Sound signal
			Threshold	Short to power supply circuit
			Diagnosis delay time	30 seconds or more

POSSIBLE CAUSE

- Rear door speaker LH circuit
- Rear door speaker RH circuit
- Rear door speaker LH
- Rear door speaker RH

FAIL-SAFE

- No sound from rear door speaker RH
- No sound from rear door speaker RH

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT
1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select “Self Diagnostic Result” mode of “MULTI AV” using CONSULT.
5. Check DTC.

Is DTC “U1708” or “U1710” detected?

YES-1 >> Without BOSE system: Proceed to AV-193, "WITHOUT BOSE SYSTEM : Diagnosis Procedure".
YES-2 >> With BOSE system: Proceed to AV-194, "WITH BOSE SYSTEM : Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-56, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

WITHOUT BOSE SYSTEM

WITHOUT BOSE SYSTEM : Diagnosis Procedure

INFOID:0000000013615627

1.CHECK SOUND SIGNAL CIRCUIT FOR OPEN

1. Turn ignition switch OFF.
2. Disconnect AV control unit connector and rear door speaker connector.
3. Check the continuity between AV control unit harness connector and rear door speaker harness connector.

Position	AV control unit		Rear door speaker		Continuity
	Connector	Terminal	Connector	Terminal	
LH	M9	4	D108	1	Existed
		5		2	
RH		13	D128	1	
		14		2	

Is the inspection result normal?

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

2.CHECK SOUND SIGNAL CIRCUIT FOR SHORT TO POWER SUPPLY

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

Position	(+)		(–)	Voltage (Approx.)
	AV control unit			
	Connector	Terminal		
LH	M9	4	Ground	0 V
		5		
RH		13		
		14		

Is the inspection result normal?

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

3.CHECK SOUND SIGNAL CIRCUIT FOR SHORT TO GROUND

1. Turn ignition switch OFF.
2. Check the continuity between AV control unit harness connector and ground.

Position	AV control unit			Continuity
	Connector	Terminal		
LH	M9	4	Ground	Not existed
		5		
RH		13		
		14		

Is the inspection result normal?

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

4.CHECK SOUND SIGNAL CIRCUIT FOR SHORT

1. Turn ignition switch OFF.
2. Check the continuity between AV control unit harness connector terminals.

Position	AV control unit			Continuity
	Connector	Terminal		
LH	M9	4	5	Not existed
RH		13	14	

Is the inspection result normal?

YES >> Replace rear door speaker. Refer to AV-250, "Removal and Installation".
NO >> Repair or replace harness or connector.

WITH BOSE SYSTEM

WITH BOSE SYSTEM : Diagnosis Procedure

INFOID:0000000013615628

1.CHECK SOUND SIGNAL CIRCUIT FOR OPEN

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

Position	BOSE amp.		Rear door speaker		Continuity
	Connector	Terminal	Connector	Terminal	
LH	M21	22	D109	1	Existed
		33		2	
RH		23	D129	1	
		34		2	

Is the inspection result normal?

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

2.CHECK SOUND SIGNAL CIRCUIT FOR SHORT TO POWER SUPPLY

1. Turn ignition switch ON.
2. Check the voltage between BOSE amp. harness connector and ground.

Position	(+)		(–)	Voltage (Approx.)
	BOSE amp.			
	Connector	Terminal		
LH	M21	22	Ground	0 V
		33		
RH		23		
		34		

Is the inspection result normal?

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

3.CHECK SOUND SIGNAL CIRCUIT FOR SHORT TO GROUND

1. Turn ignition switch OFF.
2. Check the continuity between BOSE amp. harness connector and ground.

Position	BOSE amp.			Continuity
	Connector	Terminal		
LH	M21	22	Ground	Not existed
		33		
RH		23		
		34		

Is the inspection result normal?

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

4.CHECK SOUND SIGNAL CIRCUIT FOR SHORT

1. Turn ignition switch OFF.
2. Check the continuity between BOSE amp. harness connector terminals.

Position	BOSE amp.			Continuity
	Connector	Terminal		
LH	M21	22	33	Not existed
RH		23	34	

Is the inspection result normal?

YES >> Replace rear door speaker. Refer to AV-250, "Removal and Installation".
NO >> Repair or replace harness or connector.

U1752, U175A REAR PILLAR SQUAWKER

DTC Description

INFOID:0000000013615629

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)		DTC detection condition	
U1752	RL-PILLAR SQUAWK (Rear left-pillar squawker)	OPEN	Diagnosis condition	When ignition switch is ON.
			Signal (terminal)	Sound signal
			Threshold	Open circuit
			Diagnosis delay time	30 seconds or more
		SHORT	Diagnosis condition	When ignition switch is ON.
			Signal (terminal)	Sound signal
			Threshold	Short circuit
			Diagnosis delay time	30 seconds or more
		GND-SHORT	Diagnosis condition	When ignition switch is ON.
			Signal (terminal)	Sound signal
			Threshold	Short to ground circuit
			Diagnosis delay time	30 seconds or more
		VB-SHOR	Diagnosis condition	When ignition switch is ON.
			Signal (terminal)	Sound signal
			Threshold	Short to power supply circuit
			Diagnosis delay time	30 seconds or more
U175A	RR-PILLAR SQUAWK (Rear right-pillar squawker)	OPEN	Diagnosis condition	When ignition switch is ON.
			Signal (terminal)	Sound signal
			Threshold	Open circuit
			Diagnosis delay time	30 seconds or more
		SHORT	Diagnosis condition	When ignition switch is ON.
			Signal (terminal)	Sound signal
			Threshold	Short circuit
			Diagnosis delay time	30 seconds or more
		GND-SHORT	Diagnosis condition	When ignition switch is ON.
			Signal (terminal)	Sound signal
			Threshold	Short to ground circuit
			Diagnosis delay time	30 seconds or more
		VB-SHOR	Diagnosis condition	When ignition switch is ON.
			Signal (terminal)	Sound signal
			Threshold	Short to power supply circuit
			Diagnosis delay time	30 seconds or more

POSSIBLE CAUSE

- Rear pillar squawker LH circuit
- Rear pillar squawker RH circuit
- Rear pillar squawker LH
- Rear pillar squawker RH

FAIL-SAFE

- No sound from rear pillar squawker RH
- No sound from rear pillar squawker RH

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT
1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select “Self Diagnostic Result” mode of “MULTI AV” using CONSULT.
5. Check DTC.

Is DTC “U1752” or “U175A” detected?

YES >> Proceed to AV-197, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-56, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000013615630

1.CHECK SOUND SIGNAL CIRCUIT FOR OPEN

1. Turn ignition switch OFF.
2. Disconnect rear pillar squawker connector.
3. Check the continuity between BOSE amp. harness connector and rear pillar squawker harness connector.

Position	BOSE amp.		Rear pillar squawker		Continuity
	Connector	Terminal	Connector	Terminal	
LH	M21	17	M197	1	Existed
		18		2	
RH	M20	14	M198	1	
		9		2	

Is the inspection result normal?

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

2.CHECK SOUND SIGNAL CIRCUIT FOR SHORT TO POWER SUPPLY

1. Turn ignition switch ON.
2. Check the voltage between BOSE amp. harness connector and ground.

Position	(+)		(–)	Voltage (Approx.)
	BOSE amp.			
	Connector	Terminal		
LH	M21	17	Ground	0 V
		18		
RH	M20	14		
		9		

Is the inspection result normal?

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

3.CHECK SOUND SIGNAL CIRCUIT FOR SHORT TO GROUND

1. Turn ignition switch OFF.
2. Check the continuity between BOSE amp. harness connector and ground.

Position	BOSE amp.			Continuity
	Connector	Terminal		
LH	M21	17	Ground	Not existed
		18		
RH	M20	14		
		9		

Is the inspection result normal?

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

4. CHECK SOUND SIGNAL CIRCUIT FOR SHORT

1. Turn ignition switch OFF.
2. Check the continuity between BOSE amp. harness connector terminals.

Position	BOSE amp.			Continuity
	Connector	Terminal		
LH	M21	17	18	Not existed
RH	M20	14	9	

Is the inspection result normal?

YES >> Replace rear pillar squawker. Refer to AV-251, "Removal and Installation".
NO >> Repair or replace harness or connector.

U175D, U1765 WOOFER

DTC Description

INFOID:0000000013615631

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)		DTC detection condition	
U175D	R-LUGGAGE L-WOOFER (Rear-luggage left-woofer)	OPEN	Diagnosis condition	When ignition switch is ON.
			Signal (terminal)	Sound signal
			Threshold	Open circuit
			Diagnosis delay time	30 seconds or more
		SHORT	Diagnosis condition	When ignition switch is ON.
			Signal (terminal)	Sound signal
			Threshold	Short circuit
			Diagnosis delay time	30 seconds or more
		GND-SHORT	Diagnosis condition	When ignition switch is ON.
			Signal (terminal)	Sound signal
			Threshold	Short to ground circuit
			Diagnosis delay time	30 seconds or more
		VB-SHOR	Diagnosis condition	When ignition switch is ON.
			Signal (terminal)	Sound signal
			Threshold	Short to power supply circuit
			Diagnosis delay time	30 seconds or more
U1765	R-LUGGAGE R-WOOFER (Rear-luggage right-woofer)	OPEN	Diagnosis condition	When ignition switch is ON.
			Signal (terminal)	Sound signal
			Threshold	Open circuit
			Diagnosis delay time	30 seconds or more
		SHORT	Diagnosis condition	When ignition switch is ON.
			Signal (terminal)	Sound signal
			Threshold	Short circuit
			Diagnosis delay time	30 seconds or more
		GND-SHORT	Diagnosis condition	When ignition switch is ON.
			Signal (terminal)	Sound signal
			Threshold	Short to ground circuit
			Diagnosis delay time	30 seconds or more
		VB-SHOR	Diagnosis condition	When ignition switch is ON.
			Signal (terminal)	Sound signal
			Threshold	Short to power supply circuit
			Diagnosis delay time	30 seconds or more

POSSIBLE CAUSE

- Woofer circuit
- Woofer

FAIL-SAFE

No sound from woofer

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT
1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select “Self Diagnostic Result” mode of “MULTI AV” using CONSULT.
5. Check DTC.

Is DTC “U175D” or “U1765” detected?

YES >> Proceed to AV-200, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-56, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000013615632

1.CHECK SOUND SIGNAL CIRCUIT FOR OPEN

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

BOSE amp.		Woofer		Continuity
Connector	Terminal	Connector	Terminal	
M20	3	M16	2	Existed
	4		4	
	13		1	
	8		3	

Is the inspection result normal?

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

2.CHECK SOUND SIGNAL CIRCUIT FOR SHORT TO POWER SUPPLY

1. Turn ignition switch ON.
2. Check the voltage between BOSE amp. harness connector and ground.

(+)		(–)	Voltage (Approx.)
BOSE amp.			
Connector	Terminal		
M20	3	Ground	0 V
	4		
	13		
	8		

Is the inspection result normal?

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

3.CHECK SOUND SIGNAL CIRCUIT FOR SHORT TO GROUND

1. Turn ignition switch OFF.
2. Check the continuity between BOSE amp. harness connector and ground.

BOSE amp.			Continuity
Connector	Terminal		
M20	3	Ground	Not existed
	4		
	13		
	8		

Is the inspection result normal?

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

4. CHECK SOUND SIGNAL CIRCUIT FOR SHORT

1. Turn ignition switch OFF.
2. Check the continuity between BOSE amp. harness connector terminals.

BOSE amp.			Continuity
Connector	Terminal		
M20	3	4	Not existed
	13	8	

Is the inspection result normal?

YES >> Replace woofer. Refer to AV-252, "Removal and Installation".
NO >> Repair or replace harness or connector.

POWER SUPPLY AND GROUND CIRCUIT
DISPLAY CONTROL UNIT

DISPLAY CONTROL UNIT : Diagnosis Procedure

INFOID:0000000013615633

1.CHECK FUSE

1. Turn ignition switch OFF.
2. Check that the following fuse is not blown (open).

Power source	Fuse No.	Capacity
Battery	#55	15 A
Ignition switch ON	#93	5 A

Is the fuse blown (open)?

YES >> Replace fuse after repairing the applicable circuit.
NO >> GO TO 2.

2.CHECK DISPLAY CONTROL UNIT BATTERY POWER SUPPLY

Check the voltage between display control unit harness connector and ground.

(+)		(–)	Standard value	Reference value
Display control unit				
Connector	Terminal			
M52	64	Ground	9.0 - 16.0 V	Battery voltage

Is the inspection result normal?

YES >> GO TO 3.
NO >> Perform trouble diagnosis for battery power supply circuit.

3.CHECK DISPLAY CONTROL UNIT ACCESSORY POWER SUPPLY

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

(+)		(–)	Standard value	Reference value
Display control unit				
Connector	Terminal			
M52	63	Ground	4.5 - 16.0 V	Battery voltage

Is the inspection result normal?

YES >> GO TO 4.
NO >> Perform trouble diagnosis for accessory power supply circuit.

4.CHECK DISPLAY CONTROL UNIT IGNITION POWER SUPPLY

Check the voltage between display control unit harness connector and ground.

(+)		(–)	Standard value	Reference value
Display control unit				
Connector	Terminal			
M52	60	Ground	7.0 - 16.0 V	Battery voltage

Is the inspection result normal?

YES >> GO TO 5.
NO >> Perform trouble diagnosis of ignition power supply circuit.

5.CHECK GROUND CIRCUIT

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

(+)		(–)	Continuity
Display control unit			
Connector	Terminal		
M52	52	Ground	Existed

Is the inspection result normal?

YES >> INSPECTION END
NO >> Repair or replace harness or connector.

AV CONTROL UNIT

AV CONTROL UNIT : Diagnosis Procedure

INFOID:0000000013615634

1.CHECK FUSE

1. Turn ignition switch OFF.
2. Check that the following fuse is not blown (open).

Power source	Fuse No.	Capacity
Battery	#55	15 A

Is the fuse blown (open)?

YES >> Replace fuse after repairing the applicable circuit.
NO >> GO TO 2.

2.CHECK AV CONTROL UNIT BATTERY POWER SUPPLY

Check the voltage between AV control unit harness connector and ground.

(+)		(–)	Standard value	Reference value
AV control unit				
Connector	Terminal			
M9	19	Ground	9.0 - 16.0 V	Battery voltage

Is the inspection result normal?

YES >> GO TO 3.
NO >> Perform trouble diagnosis for battery power supply circuit.

3.CHECK AV CONTROL UNIT ACCESSORY POWER SUPPLY

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

(+)		(–)	Standard value	Reference value
AV control unit				
Connector	Terminal			
M9	7	Ground	8.8 - 16.0 V	Battery voltage

Is the inspection result normal?

YES >> GO TO 4.
NO >> Perform trouble diagnosis for accessory power supply circuit.

4.CHECK GROUND CIRCUIT

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

(+)		(−)	Continuity
AV control unit			
Connector	Terminal		
M9	20	Ground	Existed

Is the inspection result normal?

YES >> INSPECTION END
NO >> Repair or replace harness or connector.

NAVI CONTROL UNIT

NAVI CONTROL UNIT : Diagnosis Procedure

INFOID:0000000013615635

1.CHECK FUSE

1. Turn ignition switch OFF.
2. Check that the following fuse is not blown (open).

Power source	Fuse No.	Capacity
Battery	#55	15 A
Ignition switch ON	#93	5 A

Is the fuse blown (open)?

YES >> Replace fuse after repairing the applicable circuit.
NO >> GO TO 2.

2.CHECK NAVI CONTROL UNIT BATTERY POWER SUPPLY

Check the voltage between NAVI control unit harness connector and ground.

(+)		(−)	Standard value	Reference value
NAVI control unit				
Connector	Terminal			
M163	1	Ground	7.0 - 16.0 V	Battery voltage
	15			

Is the inspection result normal?

YES >> GO TO 3.
NO >> Perform trouble diagnosis for battery power supply circuit.

3.CHECK NAVI CONTROL UNIT ACCESSORY POWER SUPPLY

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

(+)		(−)	Standard value	Reference value
NAVI control unit				
Connector	Terminal			
M163	5	Ground	7.0 - 16.0 V	Battery voltage

Is the inspection result normal?

YES >> GO TO 4.
NO >> Perform trouble diagnosis for accessory power supply circuit.

4.CHECK NAVI CONTROL UNIT IGNITION POWER SUPPLY

Check the voltage between NAVI control unit harness connector and ground.

(+)		(–)	Standard value	Reference value
NAVI control unit				
Connector	Terminal			
M163	19	Ground	7.0 - 16.0 V	Battery voltage

Is the inspection result normal?

YES >> GO TO 5.
NO >> Perform trouble diagnosis of ignition power supply circuit.

5.CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect NAVI control unit connector.
3. Check the continuity between NAVI control unit harness connector and ground.

(+)		(–)	Continuity
NAVI control unit			
Connector	Terminal		
M163	3	Ground	Existed
	17		

Is the inspection result normal?

YES >> INSPECTION END
NO >> Repair or replace harness or connector.

BOSE AMP.

BOSE AMP. : Diagnosis Procedure

INFOID:0000000013615636

1.CHECK FUSE

1. Turn ignition switch OFF.
2. Check that the following fuse is not blown (open).

Power source	Fuse No.	Capacity
Battery	#110	30 A

Is the fuse blown (open)?

YES >> Replace fuse after repairing the applicable circuit.
NO >> GO TO 2.

2.CHECK BOSE AMP. BATTERY POWER SUPPLY

Check the voltage between BOSE amp. harness connector and ground.

(+)		(–)	Standard value	Reference value
BOSE amp.				
Connector	Terminal			
M20	10	Ground	9.0 - 16.0 V	Battery voltage
	11			

Is the inspection result normal?

YES >> GO TO 3.
NO >> Perform trouble diagnosis for battery power supply circuit.

3.CHECK BOSE AMP. ACCESSORY POWER SUPPLY

1. Turn ignition switch ON.
2. Check the voltage between BOSE amp. harness connector and ground.

(+)		(–)	Standard value	Reference value
BOSE amp.				
Connector	Terminal			
M22	56	Ground	6.5 V or more	Battery voltage

Is the inspection result normal?

YES >> GO TO 4.
NO >> Perform trouble diagnosis for accessory power supply circuit.

4.CHECK BOSE AMP. GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect BOSE amp. connector.
3. Check the continuity between BOSE amp. harness connector and ground.

(+)		(–)	Continuity
BOSE amp.			
Connector	Terminal		
M20	7	Ground	Existed
	12		

Is the inspection result normal?

YES >> INSPECTION END
NO >> Repair or replace harness or connector.

DISK EJECT SIGNAL CIRCUIT

Description

INFOID:0000000013615638

The eject signal is output to AV control unit when the eject switch of preset switch is pressed.

Diagnosis Procedure

INFOID:0000000013615639

1.CHECK DISK EJECT SIGNAL

1. Turn ignition switch ON.
2. Check the voltage between AV control unit harness connector terminals.

AV control unit			Condition	Standard value	Reference value (Approx,)
Connector	(+)	(–)			
	Terminal				
M9	8	9	Pressing the eject switch	1.5 V or less	0 V
			Except for above	1.5 - 3.3 V	3.3 V

Is the inspection result normal?

YES >> Replace AV control unit. Refer to AV-240, "Removal and Installation".
NO >> GO TO 2.

2.CHECK DISK EJECT SIGNAL CIRCUIT FOR OPEN

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

AV control unit		Preset switch		Continuity
Connector	Terminal	Connector	Terminal	
M9	8	M210	21	Existed

Is the inspection result normal?

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

3.CHECK DISK EJECT SIGNAL CIRCUIT FOR SHORT

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

AV control unit		Ground	Continuity
Connector	Terminal		
M9	8		Not existed

Is the inspection result normal?

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

4.CHECK DISK EJECT SIGNAL GROUND CIRCUIT

Check the continuity between AV control unit harness connector and preset switch harness connector.

AV control unit		Preset switch		Continuity
Connector	Terminal	Connector	Terminal	
M9	9	M210	23	Existed

Is the inspection result normal?

YES >> Replace preset switch. Refer to AV-242, "Removal and Installation".
NO >> Repair or replace harness or connector.

VEHICLE SPEED SIGNAL CIRCUIT

Component Function Check

INFOID:0000000013615640

1.CHECK VEHICLE SPEED SIGNAL

With CONSULT
1. Turn ignition switch ON.
2. Select “VHCL SPD SIG” in “DATA MONITOR” mode of “MULTI AV” using CONSULT.
3. Check the status of “VHCL SPD SIG” as per the following condition.

Monitor item	Condition	Status
VHCL SPD SIG	Vehicle speed > 0 km/h (0 MPH)	On
	Vehicle speed = 0 km/h (0 MPH)	Off

Is the inspection result normal?

YES >> INSPECTION END
NO >> Proceed to AV-208, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000013615641

1.CHECK SELF-DIAGNOSTIC RESULT OF CAN GATEWAY

With CONSULT
1. Turn ignition switch ON.
2. Check “Self Diagnostic Result” of “CAN GATEWAY” using CONSULT.

Is any DTC detected?

YES >> Perform trouble diagnosis for detected DTC. Refer to LAN-156, "DTC Index".
NO >> GO TO 2.

2.CHECK INTERMITTENT INCIDENT

Check the intermittent incident. Refer to GI-56, "Intermittent Incident".

Is the inspection result normal?

YES >> Replace display control unit. Refer to AV-239, "Removal and Installation".
NO >> Repair or replace malfunctioning parts.

REVERSE SIGNAL CIRCUIT

Component Function Check

INFOID:0000000013615642

1.CHECK REVERSE SIGNAL

With CONSULT
1. Turn ignition switch ON.
2. Select “REV SIG” in “DATA MONITOR” mode of “MULTI AV” using CONSULT.
3. Check the status of “REV SIG” as per the following conditions.

Monitor item	Condition	Status
REV SIG	Selector lever is in R position	On
	Selector lever is in any position other than R	Off

Is the inspection result normal?

YES >> INSPECTION END
NO >> Proceed to AV-209, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000013615643

1.CHECK SELF-DIAGNOSTIC RESULT OF CAN GATEWAY

With CONSULT
1. Turn ignition switch ON.
2. Check “Self Diagnostic Result” of “CAN GATEWAY” using CONSULT.

Is any DTC detected?

YES >> Perform trouble diagnosis for detected DTC. Refer to LAN-156, "DTC Index".
NO >> GO TO 2.

2.CHECK INTERMITTENT INCIDENT

Check the intermittent incident. Refer to GI-56, "Intermittent Incident".

Is the inspection result normal?

YES >> Replace display control unit. Refer to AV-239, "Removal and Installation".
NO >> Repair or replace malfunctioning parts.

MICROPHONE SIGNAL CIRCUIT
WITHOUT TELEMATICS SYSTEM

WITHOUT TELEMATICS SYSTEM : Description

INFOID:0000000013615644

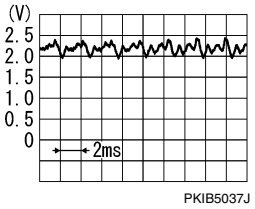
Supply power from display control unit to microphone. The microphone transmits the sound/voice to the display control unit.

WITHOUT TELEMATICS SYSTEM : Diagnosis Procedure

INFOID:0000000013615645

1.CHECK MICROPHONE SIGNAL

1. Turn ignition switch ON.
2. Check the signal between display control unit harness connector terminal as per the following condition.

Display control unit			Condition	Reference value
Connector	(+)	(–)		
	Terminal			
M51	37	18	Give a voice.	

PKIB5037J

Is the inspection result normal?

YES >> Replace display control unit. Refer to AV-239, "Removal and Installation".
NO >> GO TO 2.

2.CHECK VOLTAGE MICROPHONE POWER SUPPLY

1. Turn ignition switch OFF.
2. Disconnect microphone connector.
3. Turn ignition switch ON.
4. Check the voltage between microphone harness connector.

Microphone			Standard value	Reference value (Approx.)
Connector	(+)	(–)		
	Terminal			
R31	4	2	4.7 - 5.3 V	5.0 V

Is the inspection result normal?

YES >> Replace microphone. Refer to AV-253, "Removal and Installation".
NO >> GO TO 3.

3.CHECK MICROPHONE CIRCUIT FOR OPEN

1. Disconnect display control unit connector.
2. Check continuity between microphone harness connector and display control unit harness connector.

Microphone		Display control unit		Continuity
Connector	Terminal	Connector	Terminal	
R31	1	M51	37	Existed
	2		18	
	4		38	

Is the inspection result normal?

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

4. CHECK MICROPHONE CIRCUIT FOR SHORT

Check the continuity between display control unit harness connector and ground.

(+)		(–)	Continuity
Display control unit			
Connector	Terminal		
M51	37	Ground	Not existed
	38		

Is the inspection result normal?

YES >> Replace display control unit. Refer to AV-239, "Removal and Installation".
NO >> Repair or replace harness or connector.

WITH TELEMATICS SYSTEM

WITH TELEMATICS SYSTEM : Description

INFOID:0000000013827248

- TCU supplies power to the microphone when receiving a microphone ON signal from the display control unit.
- The microphone transmits an audio signal to TCU.
- TCU transmits a received sound signal to the display control unit.

WITH TELEMATICS SYSTEM : Diagnosis Procedure

INFOID:0000000013827249

1. CHECK CONTINUITY BETWEEN DISPLAY CONTROL UNIT AND TCU CIRCUIT

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

Display control unit		TCU		Continuity
Connector	Terminal	Connector	Terminal	
M51	37	M215	12	Existed
	18		11	

4. Check the continuity between display control unit harness connector and ground.

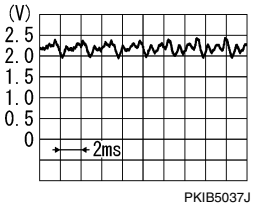
Display control unit		Ground	Continuity
Connector	Terminal		
M51	37		Not existed

Is the inspection result normal?

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

2. CHECK MICROPHONE SIGNAL (DISPLAY CONTROL UNIT TO TCU)

1. Connect TCU harness connector.
2. Turn ignition switch ON.
3. Check the signal between display control unit harness connector.

Display control unit			Condition	Reference value
Connector	(+)	(–)		
	Terminal			
M51	37	18	Give a voice.	

PKIB5037J

Is the inspection result normal?

YES >> Replace display control unit. Refer to AV-239, "Removal and Installation".
NO >> GO TO 3.

3. CHECK CONTINUITY BETWEEN TCU AND MICROPHONE CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect TCU harness connector and microphone harness connector.
3. Check the continuity between TCU harness connector and microphone harness connector.

TCU		Microphone		Continuity
Connector	Terminal	Connector	Terminal	
M215	16	R31	2	Existed
	17		1	
	18		4	

4. Check the continuity between TCU harness connector and ground.

TCU		Ground	Continuity
Connector	Terminal		
M215	17		Not existed
	18		

Is the inspection result normal?

YES >> GO TO 4.
NO >> Repair or replace malfunctioning parts.

4. CHECK VOLTAGE MICROPHONE POWER SUPPLY

1. Connect TCU harness connector.
2. Turn ignition switch ON.
3. Check the voltage between TCU harness connector ground.

(+)		(–)	Voltage (Approx.)
TCU			
Connector	Terminal		
M215	18	Ground	5.0 V

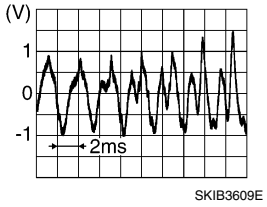
Is the inspection result normal?

YES >> GO TO 5.
NO >> Replace TCU. Refer to AV-459, "Removal and Installation".

5. CHECK MICROPHONE SIGNAL (TCU TO MICROPHONE)

1. Turn ignition switch OFF.
2. Connect microphone harness connector.
3. Turn ignition switch ON.

4. Check the signal between TCU harness connector.

TCU			Condition	Reference value
Connector	(+)	(–)		
	Terminal			
M215	17	16	When inputting interior sound.	

SKIB3609E

Is the inspection result normal?

YES >> Replace TCU. Refer to AV-459, "Removal and Installation".
NO >> Replace microphone. Refer to AV-253, "Removal and Installation".

SOUND SIGNAL CIRCUIT
WITHOUT BOSE SYSTEM

WITHOUT BOSE SYSTEM : Component Function Check

INFOID:0000000013615646

1.PERFORM ON-BOARD DIAGNOSIS

1. Perform On-board diagnosis function of display control unit. Refer to AV-60, "On Board Diagnosis Function".
2. Perform “Speaker Test” of “Confirmation/Adjustment” item.

Is test tone output by each speaker?

YES >> INSPECTION END
NO >> Proceed to AV-214, "WITHOUT BOSE SYSTEM : Diagnosis Procedure"

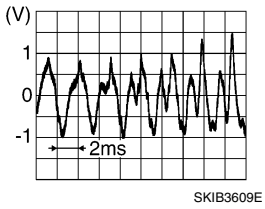
WITHOUT BOSE SYSTEM : Diagnosis Procedure

INFOID:0000000013615647

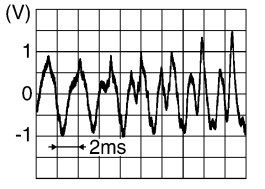
1.CHECK SOUND SIGNAL (BETWEEN DISPLAY CONTROL UNIT AND AV CONTROL UNIT)

1. Turn ignition switch ON.
2. Check the signal between AV control unit terminal as per the following condition.

Sound signal LH

AV control unit			Condition	Reference value
Connector	(+)	(−)		
	Terminal			
M11	61	67	[Ignition switch ON] • Sound output	 SKIB3609E

Sound signal RH

AV control unit			Condition	Reference value
Connector	(+)	(−)		
	Terminal			
M11	62	68	[Ignition switch ON] • Sound output	 SKIB3609E

Is the inspection result normal?

YES >> Replace AV control unit. Refer to AV-240, "Removal and Installation".
NO >> GO TO 2.

2.CHECK SOUND SIGNAL CIRCUIT FOR OPEN (BETWEEN DISPLAY CONTROL UNIT AND AV CONTROL UNIT)

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

Sound signal LH

Display control unit		AV control unit		Continuity
Connector	Terminal	Connector	Terminal	
M51	30	M11	61	Existed
	10		67	

Sound signal RH

Display control unit		AV control unit		Continuity
Connector	Terminal	Connector	Terminal	
M51	28	M11	62	Existed
	8		68	

Is the inspection result normal?

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

3. CHECK SOUND SIGNAL CIRCUIT FOR SHORT (BETWEEN DISPLAY CONTROL UNIT AND AV CONTROL UNIT)

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

Sound signal LH

(+)		(–)	Continuity
AV control unit			
Connector	Terminal		
M11	61	Ground	Not existed
	67		

Sound signal RH

(+)		(–)	Continuity
AV control unit			
Connector	Terminal		
M11	62	Ground	Not existed
	68		

Is the inspection result normal?

YES >> Replace display control unit. Refer to AV-239, "Removal and Installation".
NO >> Repair or replace harness or connector.

WITH BOSE SYSTEM

WITH BOSE SYSTEM : Component Function Check

INFOID:0000000013615648

1. PERFORM ON-BOARD DIAGNOSIS

1. Perform On-board diagnosis function of display control unit. Refer to AV-60, "On Board Diagnosis Function".
2. Perform “Speaker Test” of “Confirmation/Adjustment” item.

Is test tone output by each speaker?

YES >> INSPECTION END
NO >> Proceed to AV-215, "WITH BOSE SYSTEM : Diagnosis Procedure"

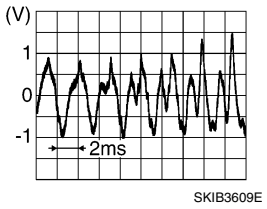
WITH BOSE SYSTEM : Diagnosis Procedure

INFOID:0000000013615649

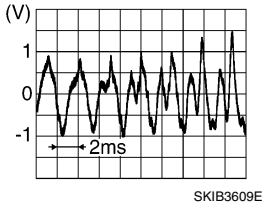
1. CHECK SOUND SIGNAL (BETWEEN DISPLAY CONTROL UNIT AND AV CONTROL UNIT)

1. Turn ignition switch ON.
2. Check the signal between AV control unit terminal as per the following condition.

Sound signal LH

AV control unit			Condition	Reference value
Connector	(+)	(–)		
	Terminal			
M11	61	67	[Ignition switch ON] • Sound output	 SKIB3609E

Sound signal RH

AV control unit			Condition	Reference value
Connector	(+)	(–)		
	Terminal			
M11	62	68	[Ignition switch ON] • Sound output	 SKIB3609E

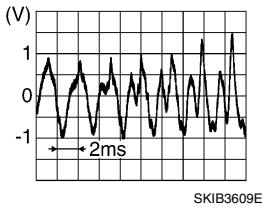
Is the inspection result normal?

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

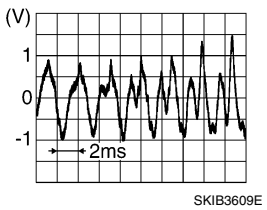
2. CHECK SOUND SIGNAL (BETWEEN AV CONTROL UNIT AND BOSE AMP.)

Check the signal between BOSE amp. terminal as per the following condition.

Sound signal LH

BOSE amp.			Condition	Reference value
Connector	(+)	(–)		
	Terminal			
M22	65	45	[Ignition switch ON] • Sound output	 SKIB3609E

Sound signal RH

BOSE amp.			Condition	Reference value
Connector	(+)	(–)		
	Terminal			
M22	66	46	[Ignition switch ON] • Sound output	 SKIB3609E

Is the inspection result normal?

YES >> Replace BOSE amp. Refer to AV-246, "Removal and Installation".
NO >> GO TO 5.

3. CHECK SOUND SIGNAL CIRCUIT FOR OPEN (BETWEEN DISPLAY CONTROL UNIT AND AV CONTROL UNIT)

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

Sound signal LH

Display control unit		AV control unit		Continuity
Connector	Terminal	Connector	Terminal	
M51	30	M11	61	Existed
	10		67	

Sound signal RH

Display control unit		AV control unit		Continuity
Connector	Terminal	Connector	Terminal	
M51	28	M11	62	Existed
	8		68	

Is the inspection result normal?

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

4. CHECK SOUND SIGNAL CIRCUIT FOR SHORT (BETWEEN DISPLAY CONTROL UNIT AND AV CONTROL UNIT)

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

Sound signal LH

(+)		(–)	Continuity
AV control unit			
Connector	Terminal		
M11	61	Ground	Not existed
	67		

Sound signal RH

(+)		(–)	Continuity
AV control unit			
Connector	Terminal		
M11	62	Ground	Not existed
	68		

Is the inspection result normal?

YES >> Replace display control unit. Refer to AV-239, "Removal and Installation".
NO >> Repair or replace harness or connector.

5. CHECK SOUND SIGNAL CIRCUIT FOR OPEN (BETWEEN AV CONTROL UNIT AND BOSE AMP.)

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

Sound signal LH

AV control unit		BOSE amp.		Continuity
Connector	Terminal	Connector	Terminal	
M9	2	M22	65	Existed
	3		45	

Sound signal RH

AV control unit		BOSE amp.		Continuity
Connector	Terminal	Connector	Terminal	
M9	11	M22	66	Existed
	12		46	

Is the inspection result normal?

YES >> GO TO 6.
NO >> Repair or replace harness or connector.

6. CHECK SOUND SIGNAL CIRCUIT FOR SHORT (BETWEEN AV CONTROL UNIT AND BOSE AMP.)

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

Sound signal LH

(+)		(–)	Continuity
BOSE amp.			
Connector	Terminal		
M22	65	Ground	Not existed
	45		

Sound signal RH

(+)		(–)	Continuity
BOSE amp.			
Connector	Terminal		
M22	66	Ground	Not existed
	46		

Is the inspection result normal?

YES >> Replace AV control unit. Refer to AV-240, "Removal and Installation".
NO >> Repair or replace harness or connector.

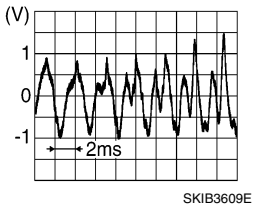
TEL VOICE SIGNAL CIRCUIT

Diagnosis Procedure

INFOID:0000000013615650

1.CHECK TEL VOICE SIGNAL

1. Turn ignition switch ON.
2. Check the signal between AV control unit terminal as per the following condition.

AV control unit			Condition	Reference value
Connector	(+)	(–)		
	Terminal			
M12	73	81	[Ignition switch ON] • During voice guide output	 SKIB3609E

Is the inspection result normal?

YES >> Replace AV control unit. Refer to AV-240, "Removal and Installation".
NO >> GO TO 2.

2.CHECK TEL VOICE SIGNAL CIRCUIT FOR OPEN

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

Display control unit		AV control unit		Continuity
Connector	Terminal	Connector	Terminal	
M51	31	M12	73	Existed
	11		81	

Is the inspection result normal?

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

3.CHECK TEL VOICE SIGNAL CIRCUIT FOR SHORT

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

(+)		(–)	Continuity
AV control unit			
Connector	Terminal		
M12	73	Ground	Not existed
	81		

Is the inspection result normal?

YES >> Replace display control unit. Refer to AV-239, "Removal and Installation".
NO >> Repair or replace harness or connector.

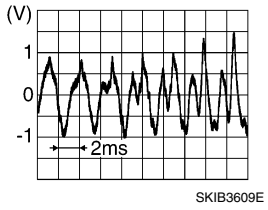
VOICE GUIDANCE SIGNAL CIRCUIT
WITHOUT BOSE SYSTEM

WITHOUT BOSE SYSTEM : Diagnosis Procedure

INFOID:0000000013615651

1.CHECK VOICE GUIDANCE SIGNAL INPUT

1. Turn ignition switch ON.
2. Check the signal between display control unit terminals as per the following condition.

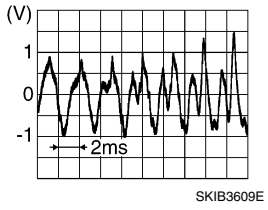
Display control unit			Condition	Continuity
Connector	(+)	(–)		
	Terminal			
M51	34	14	Sound output	

Is the inspection result normal?

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

2.CHECK VOICE GUIDANCE SIGNAL OUTPUT

Check the signal between AV control unit terminals as per the following condition.

AV control unit			Condition	Continuity
Connector	(+)	(–)		
	Terminal			
M12	75	83	Sound output	

Is the inspection result normal?

YES >> Replace AV control unit. Refer to AV-240, "Removal and Installation".
NO >> GO TO 5.

3.CHECK VOICE GUIDANCE SIGNAL INPUT CIRCUIT FOR OPEN

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

NAVI control unit		Display control unit		Continuity
Connector	Terminal	Connector	Terminal	
M163	14	M51	34	Existed
	28		14	

Is the inspection result normal?

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

4.CHECK VOICE GUIDANCE INPUT SIGNAL CIRCUIT FOR SHORT

Check the continuity between display control unit harness connector and ground.

(+)		(–)	Continuity
Display control unit			
Connector	Terminal		
M51	34	Ground	Not existed
	14		

Is the inspection result normal?

YES >> Replace NAVI control unit. Refer to AV-241, "Removal and Installation".
NO >> Repair or replace harness or connector.

5.CHECK VOICE GUIDANCE OUTPUT SIGNAL CIRCUIT FOR OPEN

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

Display control unit		AV control unit		Continuity
Connector	Terminal	Connector	Terminal	
M51	33	M12	75	Existed
	13		83	

Is the inspection result normal?

YES >> GO TO 6.
NO >> Repair or replace harness or connector.

6.CHECK VOICE GUIDANCE OUTPUT SIGNAL CIRCUIT FOR SHORT

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

(+)		(–)	Continuity
AV control unit			
Connector	Terminal		
M12	75	Ground	Not existed
	83		

Is the inspection result normal?

YES >> Replace display control unit. Refer to AV-239, "Removal and Installation".
NO >> Repair or replace harness or connector.

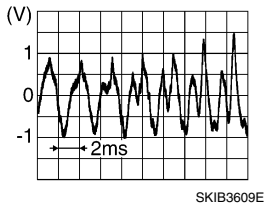
WITH BOSE SYSTEM

WITH BOSE SYSTEM : Diagnosis Procedure

INFOID:0000000013615652

1.CHECK VOICE GUIDANCE SIGNAL INPUT

1. Turn ignition switch ON.
2. Check the signal between display control unit terminals as per the following condition.

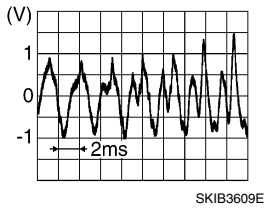
Display control unit			Condition	Continuity
Connector	(+)	(–)		
	Terminal			
M51	34	14	Sound output	

Is the inspection result normal?

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

2.CHECK VOICE GUIDANCE SIGNAL OUTPUT

Check the signal between BOSE amp. terminals as per the following condition.

BOSE amp.			Condition	Continuity
Connector	(+)	(–)		
	Terminal			
M22	64	44	Sound output	

Is the inspection result normal?

YES >> Replace BOSE amp. Refer to AV-246, "Removal and Installation".
NO >> GO TO 5.

3.CHECK VOICE GUIDANCE INPUT SIGNAL CIRCUIT FOR OPEN

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

NAVI control unit		Display control unit		Continuity
Connector	Terminal	Connector	Terminal	
M163	14	M51	34	Existed
	28		14	

Is the inspection result normal?

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

4.CHECK VOICE GUIDANCE INPUT SIGNAL CIRCUIT FOR SHORT

Check the continuity between display control unit harness connector and ground.

(+)		(–)	Continuity
Display control unit			
Connector	Terminal		
M51	34	Ground	Not existed
	14		

Is the inspection result normal?

YES >> Replace NAVI control unit. Refer to AV-241, "Removal and Installation".
NO >> Repair or replace harness or connector.

5. CHECK VOICE GUIDANCE OUTPUT SIGNAL CIRCUIT FOR OPEN

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

Display control unit		BOSE amp.		Continuity
Connector	Terminal	Connector	Terminal	
M51	33	M22	64	Existed
	13		44	

Is the inspection result normal?

YES >> GO TO 6.
NO >> Repair or replace harness or connector.

6. CHECK VOICE GUIDANCE OUTPUT SIGNAL CIRCUIT FOR SHORT

Check the continuity between BOSE amp. harness connector and ground.

(+)		(–)	Continuity
BOSE amp.			
Connector	Terminal		
M22	64	Ground	Not existed
	44		

Is the inspection result normal?

YES >> Replace display control unit. Refer to AV-239, "Removal and Installation".
NO >> Repair or replace harness or connector.

SYMPTOM DIAGNOSIS

INFINITI INTOUCH

Symptom Table

INFOID:0000000013615653

RELATED TO NAVIGATION

Symptoms	Check items	Probable malfunction location
MAP is not displayed	The navigation system-related operation can be operated.	AV communication signal circuit between display control unit and preset switch malfunction.
	The navigation system-related operation cannot be operated.	NAVI control unit power supply and ground circuit malfunction. Refer to AV-204, "NAVI CONTROL UNIT : Diagnosis Procedure".
	“Map data cannot be read. Please confirm~” is displayed on the screen.	• Check whether SD card is inserted correctly. • USB harness between external data input box (SD card) and NAVI control unit.
	Only icons, such as a vehicle mark and a clock, are displayed on the screen of display control unit by the background of the black screen.	LVDS harness between display control unit and NAVI control unit.
Fuel economy display, vehicle setting operation is abnormal.	There is malfunction in the CONSULT “self-diagnosis result” of “MULTI AV”. Refer to AV-71, "CONSULT Function".	Perform detected DTC diagnosis. Refer to AV-81, "DTC Index".
	There is no malfunction in the CONSULT “self-diagnosis results” of “MULTI AV”. Refer to AV-71, "CONSULT Function".	Ignition signal circuit malfunction. Refer to AV-202, "DISPLAY CONTROL UNIT : Diagnosis Procedure".
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.	Voice guidance signal circuit malfunction. Refer to AV-220, "WITHOUT BOSE SYSTEM : Diagnosis Procedure". (Without BOSE system.) Refer to AV-221, "WITH BOSE SYSTEM : Diagnosis Procedure". (With BOSE system.)

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.	Display control unit malfunction. Replace display control unit. Refer to AV-239, "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 “Voice Microphone Test” in Confirmation/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-210, "WITHOUT TELEMATICS SYSTEM : Diagnosis Procedure".
The system cannot be operated.	Steering switch does not work.	Check “Self Diagnostic Result” of “SCCM”. Refer to AV-74, "CONSULT Function (Steering Column Control Module)".

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.	Display control unit malfunction. Replace display control unit. Refer to AV-239, "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 “Voice Microphone Test” in Confirmation/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-210, "WITHOUT TELEMATICS SYSTEM : Diagnosis Procedure".
The system cannot be operated.	Steering switch does not work.	Check “Self Diagnostic Result” of “SCCM”. Refer to AV-74, "CONSULT Function (Steering Column Control Module)".

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.	Display control unit malfunction. Replace display control unit. Refer to AV-239, "Removal and Installation".
	Voice does not sound at “Voice Microphone Test” of Confirmation/Adjustment mode.	Microphone circuit malfunction. Refer to AV-210, "WITHOUT TELEMATICS SYSTEM : Diagnosis Procedure".
The voice cannot be controlled (Voice control screen is not displayed).	Steering switch does not work.	Check “Self Diagnostic Result” of “SCCM”. Refer to AV-74, "CONSULT Function (Steering Column Control Module)".

RELATED TO AUDIO

Symptoms	Check items	Probable malfunction location
The disk cannot be removed.	—	Disk eject signal circuit malfunction. Refer to AV-207, "Diagnosis Procedure".
No sound comes out or the level of the sound is low.	No sound from all speakers.	Without BOSE system • Sound signal circuit malfunction. Refer to AV-214, "WITHOUT BOSE SYSTEM : Component Function Check".
		With BOSE system • Sound signal circuit malfunction. Refer to AV-215, "WITH BOSE SYSTEM : Component Function Check". • BOSE amp. power supply and ground circuit malfunction. Refer to AV-205, "BOSE AMP. : Diagnosis Procedure".
	Sound is not heard from woofer.	Sound signal (woofer) circuit malfunction.

Symptoms	Check items	Probable malfunction location
Noise is mixed with audio.	Noise comes out from all speakers.	Without BOSE system • Malfunction in display control unit. • Malfunction in AV control unit.
		With BOSE system • Malfunction in display control unit. • 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).	Without BOSE system • Poor connector connection of speaker. • Sound signal circuit malfunction. Refer to AV-214, "WITHOUT BOSE SYSTEM : Component Function Check". • Malfunction in speaker. • Poor installation of speaker (e.g. backlash and looseness) • Malfunction in display control unit. • Malfunction in AV control unit.
		With BOSE system • Poor connector connection of speaker. • Sound signal circuit malfunction. Refer to AV-215, "WITH BOSE SYSTEM : Component Function Check". • Malfunction in speaker. • Poor installation of speaker (e.g. backlash and looseness) • Malfunction in display control unit. • 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 generation external noises).	• Antenna amp. ON signal circuit malfunction. • Poor connector connection of antenna or antenna feeder.

RELATED TO PRESET SWITCH

NOTE:

Check that there is no malfunction of preset switch main body before performing a diagnosis.

Symptoms	Check items	Probable malfunction location
Preset switch and multifunction switch operation does not work.	• All switches cannot be operated. • “MULTI AV” is displayed on system selection screen when the CONSULT is started.	Preset switch power supply and ground circuit malfunction. Refer to AV-162, "Diagnosis Procedure".
	• All switches cannot be operated. • “MULTI AV” is not displayed on system selection screen when the CONSULT is initialized.	Display control unit power supply and ground circuit malfunction. Refer to AV-202, "DISPLAY CONTROL UNIT : Diagnosis Procedure".
	Only specified switch cannot be operated.	Check “Switch Information” of “On-Board Diagnosis Function”. Refer to AV-60, "On Board Diagnosis Function".

RELATED TO EXTERNAL DATA INPUT BOX (USB)

NOTE:

Check that there is no malfunction of external data input box (USB) main body before performing a diagnosis.

Symptoms	Probable malfunction location
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.

NORMAL OPERATING CONDITION

Description

INFOID:0000000013615654

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

BASIC OPERATIONS

Symptom	Possible cause	Possible solution
No image is displayed.	The brightness is at the lowest setting.	Adjust the brightness of the display.
	The display is turned off.	Press and hold “MENU” to turn on the display.
No voice guidance is available. Or The volume is too high or too low.	The volume is not correctly set or the sound 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.
The map does not appear on the screen.	A screen other than map screen is displayed.	Press “MAP” switch.
The screen is too dim. The movement is slow.	The temperature in the interior of the vehicle is low.	Wait until the interior of the vehicle has warmed up.
Some pixels in the display are darker or brighter than others.	This condition is an inherent characteristic of liquid crystal displays.	This is not a malfunction.
Some menu items cannot be selected.	Some menu items become unavailable while the vehicle is driven.	Park the vehicle in a safe location, and then operate the navigation system.

LIQUID CRYSTAL DISPLAY

Symptom	Possible cause	Possible solution
The screen is too dark.	The cabin temperature is too low.	Wait until the cabin temperature becomes moderate.
	Screen brightness is set to the maximum darkness.	Adjust the brightness setting of the screen.
The screen is too bright.	Screen brightness is set to the maximum brightness.	Adjust the brightness setting of the screen.
A small black spot or a small bright spot appears on the screen.	This is a phenomenon typical to liquid crystal displays.	This is not a malfunction.
A dot or stripe pattern appears on the screen.	Electromagnetic waves that are generated from neon billboards, high voltage electric power cables, ham radios or other radio devices equipped to other vehicles may adversely affect the screen.	This is not a malfunction.
Image lag appears on the screen.	This is a phenomenon typical to liquid crystal displays.	This is not a malfunction.
Image motion displayed on the screen is slow.	The cabin temperature is below 0 °C (32 °F).	Wait until the in-cabin temperature rises to above 0 °C (32 °F).
When looking at the screen from an angle, the screen lightens or darkens.	This is a phenomenon typical to liquid crystal displays.	Adjust the brightness setting of the screen.
The screen turns blue or an error message is displayed on the display.	The SD card is not inserted into the slot correctly.	If the SD card containing map data is accidentally removed, place the ignition switch in the OFF position after re-inserting the SD card containing map data into the slot.
	A system malfunction has occurred.	Contact an INFINITI Centre or qualified workshop for inspection.

AUDIO SYSTEM

HD Radio Technology

Sound:

Symptom	Possible cause	Possible solution
Delay in digital audio on HD Radio broadcasts.	The radio acquires an analog station first and blends to a digital signal.	This is not a malfunction.
Audio skip, stutter or echo.	The radio station has not properly aligned the digital and analog audio.	Verify correct operation on another station. Report any station with poor performance.
Volume changing up/down.	The radio station has not properly aligned digital and analog audio level.	Verify correct operation on another station and check www.hdradio.com for stations in the area. Report any station with poor performance.
Sound fading in and out.	The transition between analog and digital is taking place (blending).	Verify transition performance on several stations in the area. Report any station with poor performance.
Excessive blending (Transition between analog and digital).	The receiver is located near the edge of the digital coverage area.	Refer to www.hdradio.com to verify stations in your coverage area.
Digital audio not better than analog audio.	Audio processing on the digital audio at a station can potentially decrease the digital audio sound quality.	Verify correct operation on another station. Report any station with poor performance.
Keep losing my local stations.	The digital coverage is slightly less than the analog signal coverage.	Verify correct operation on another station. This is expected behavior.
	Shadowing (urban/terrain) can cause reduced digital coverage.	Verify correct operation on another station.
Some data fields are blank.	Text information is sent at the broadcaster's discretion.	Verify correct operation on another station. Report station issues.
Text information is truncated / appears to be more available.	The display is limited to a fixed number of characters and more data is being sent than can be shown.	This is intended behavior. Refer to the Owne's Manual for ability to access addition.
AM reception changes at night.	AM stations are required by the government (FCC) to lower their power at night.	This is not a malfunction.

Compact Disc (CD) Player

Symptom	Possible cause	Possible solution
Music cannot be played back.	The disc is inserted upside down.	Insert a CD with the label side facing up.
	Moisture has accumulated inside the unit.	Wait until the moisture evaporates. (approximately 1 hour)
	The cabin temperature is too high.	Wait until the cabin temperature becomes moderate.
	The disc is scratched or dirty.	Wipe off any dirt from the disc. Scratched discs cannot be recovered. Replace the disc.
	Depending on the condition in which they are stored, discs may become unreadable due to deterioration (for example, keeping the discs in the passenger compartment, etc.).	Replace the disc with a deterioration-free disc. Do not use a deteriorated disc. The label surface of the disc may crack or chip, and the layer of the label surface may eventually peel off.
Compressed audio files cannot be played back.	If both music CD files (CD-DA data) and compressed audio files (MP3 data, etc.) are mixed on one disc, the compressed audio files cannot be played back.	Prepare a disc that contains compressed audio files only.
	The files are not named using characters that are compliant with the specifications.	Use the character codes and the number of characters that are compliant with the specifications for folder names and file names. In addition, always use “.MP3”, “.WMA”, “.mp3” or “.wma” file extensions.

Symptom	Possible cause	Possible solution
There is a gap before the music starts playing.	The disc contains a large amount of data.	Some time may be required to check the files. It is recommended that unnecessary folders or any files other than compressed audio files should not be recorded on a disc.
The sound quality is poor.	The disc is dirty.	Wipe off any dirt from the disc.
No sounds are played although the CD play time is displayed.	The system is playing the first track of a mix mode disc. (Mix mode is a format in which data except music is recorded on the first track and music data is recorded on one other than the first track in a session.)	Play music data in other tracks.
Music cuts off or skips.	The combination of writing software and hardware might not match; or the writing speed, writing depth, writing width, etc. might not match the specifications.	Create a disc using different writing speed settings, etc.
The system skips the selected track and moves to the next track.	A non-MP3/WMA file has been given an extension of ".MP3", ".WMA", ".mp3" or ".wma".	Prepare MP3/WMA files.
	Some of the file cannot be played due to copyright protection.	Prepare playable files.
The tracks do not play in the desired order.	The folder locations on the disc are changed by the writing software while the files are written on the disc.	Check the settings of the writing software and create a new disc.

iPod Player

Symptom	Possible cause	Possible solution
The system does not recognize an iPod.	The connector cable is not correctly connected or the iPod does not correctly operate.	Connect the connector cable again. If the system does not recognize the iPod after performing the procedure above, reset the iPod.
	The iPod that is to be connected is not compatible with the system.	Check the iPod model and firmware versions available for the system.
	The USB extension cable is not correctly connected.	Do not use a USB extension cable.
	The cable is rapidly connected to or disconnected from the USB connector.	Slowly connect or disconnect the USB cable.
An iPod cannot be operated.	The iPod is connected to the in-vehicle audio system while headsets, etc. are connected to the iPod.	Remove all equipment from the iPod after disconnecting the iPod from the system, and then connect it to the system again.
	The iPod is not operating normally.	Disconnect and re-connect the iPod to the in-vehicle audio system.
	The system plays back an album/track that includes particular album art.	Disconnect the iPod from the in-vehicle audio system and then reset the iPod. Disable the album art and then re-connect the iPod to the system.
An iPod does not respond.	There are too many tracks in a category.	Decrease the number of tracks in a category (less than 3,000 tracks).
	The shuffle function is turned on.	Turn off the shuffle function if many tracks are stored on the iPod.
Music cannot be played back.	The connector is not connected to the iPod.	Firmly connect the connector until it clicks.
Music stops playing.	The sound cuts off due to vibration resulting from the iPod being in an unstable location.	Place the iPod in a stable location.
The sound is distorted.	The EQ (equalizer) function of the iPod is turned on.	Turn off the EQ (equalizer) function.

Symptom	Possible cause	Possible solution
The iPod battery requires more time than usual to charge.	Charging the iPod battery may take longer while the iPod is playing.	Stop playing the iPod while charging.
An iPod cannot be charged while connected to the system.	The cable connected to the iPod may be deteriorated (cable disconnection, etc.).	Check the cable.
The connected iPod cannot be operated with the in-vehicle system.	iPod device recognition by the system is incomplete.	Operate after device recognition by the system is complete.
The sound skips.	Surrounding circumstances (noise, etc.) may cause the audio to skip.	This does not indicate a malfunction.
	The USB extension cable is not correctly connected.	Do not use a USB extension cable.

USB Memory

Symptom	Possible cause	Possible solution
The system does not recognize a USB device.	A USB extension cable is used.	Do not use a USB extension cable.
	A USB hub is used.	Do not use a USB hub.
	Connection or disconnection operation of the USB device was too abrupt.	Connect or disconnect the USB device slowly.

Bluetooth® Streaming Audio

Symptom	Possible cause	Possible solution
Registration cannot be performed.	The Bluetooth® streaming audio device is not compatible with the in-vehicle audio system.	Check the Bluetooth® streaming audio Owner's Manual.
	The PIN code is incorrect.	Check the PIN code for the Bluetooth® streaming audio device that is to be registered.
		Check that the PIN code for the Bluetooth® streaming audio device is consistent with that for the in-vehicle audio system.
	Another Bluetooth® device is used in the vehicle.	Turn off the other Bluetooth® device and wait until registration is completed.
Music cannot be played.	The Bluetooth® streaming audio device is not compatible with the in-vehicle audio system.	Check the Bluetooth® streaming audio Owner's Manual.
	The system is not in the Bluetooth® streaming audio mode.	Press <AUDIO> to select the Bluetooth® streaming audio mode.
	The Bluetooth® adapter is turned off.	Turn on the Bluetooth® adapter when it is used for a Bluetooth® streaming audio device.
Music stops playing.	The Bluetooth® streaming audio device is not compatible with the in-vehicle audio system.	Visit www.infiniti.eu/ownership/bluetooth.html and search for a recommended Bluetooth® streaming audio device.
	A mobile phone is connected.	This is not a malfunction.
	The sound may cut off when a Bluetooth® streaming audio device is operated.	Press <AUDIO> to select the Bluetooth® streaming audio mode, and then operate the device on the vehicle's display screen.

Symptom	Possible cause	Possible solution
Audio operation cannot be performed.	A Bluetooth® streaming audio device that does not support audio operations is in use.	This is not a malfunction. Refer to the owner's manual for the Bluetooth® streaming audio device.
	An error occurs when connecting to a Bluetooth® streaming audio profile.	Turn the power source of the Bluetooth® streaming audio player off and on, and then resume connection with the system.

BLUETOOTH® HANDS-FREE PHONE SYSTEM

Symptom	Possible cause	Possible solution
A mobile phone cannot be registered.	The mobile phone is not compatible with the in-vehicle hands-free phone system.	Use a mobile phone compatible with the system. Ask an INFINITI Centre or qualified workshop for information regarding model compatibility.
	Registration of the mobile phone has been performed incorrectly.	Check the registration procedure, and then register the mobile phone again.
A mobile phone cannot be connected or becomes disconnected after registration is complete.	The Bluetooth® setting of the in-vehicle hands-free phone system is turned off.	Turn on the Bluetooth® setting of the system.
	The Bluetooth® setting of the mobile phone is turned off.	Turn on the Bluetooth® setting of the mobile phone.
	The remaining battery level of the mobile phone is low.	Charge the battery of the mobile phone.
	The wireless Bluetooth® connection may be disrupted depending on the location of the mobile phone.	Do not place the mobile phone in an area surrounded by metal or far away from the in-vehicle hand-free phone system. Do not place the mobile phone close to the seats or your body.
	Registration of the mobile phone is not complete.	Perform registration of the mobile phone.
A call to a particular phone number fails.	If the system tries to make a call several times to the same phone number (for example: the party does not respond to the call, the party is out of the network service area, or the call is abandoned before the party responds), the system may reject a request to make a call to the phone number.	Reboot the mobile phone to reset the connection.
The system does not recognize the connection of a mobile phone and cannot receive or make a call.	The mobile phone is not compatible with the in-vehicle hands-free phone system.	For model compatibility visit http://infiniti.eu/ ownership/bluetooth.html or consult an INFINITI Centre or qualified workshop.
	The mobile phone is not connected.	Check the registration procedure, and then register the mobile phone again.
	The phone operation is limited by the functions (such as dial lock, etc.) of the registered mobile phone.	Remove any settings that are limiting use of the mobile phone, and then perform registration again.
Registered voice tag is cut short.	Speaking of the voice tag did not fit within the 5 second recording period after the beep.	Speak the voice tag within 5 seconds after the beep.

Symptom	Possible cause	Possible solution
The other party cannot hear your voice. The other party can hear your voice, but it cracks or cuts out.	The mobile phone is not connected.	Check the registration procedure, and then register the mobile phone again.
	The fan speed of the air conditioner is too fast.	Decrease the fan speed of the air conditioner.
	The ambient noise level is excessive. (For example: heavy rain, construction sites, inside a tunnel, oncoming vehicles, etc.)	Close the windows to shut out ambient noise.
	The noise generated by driving the vehicle is too loud.	Reduce the vehicle speed, and then speak a command.
	The incoming or outgoing voice level is too loud.	Adjust the incoming or outgoing voice level properly.
The voice is cut out or noise is heard during a call.	The wireless Bluetooth® connection may be disrupted depending on the location of the mobile phone.	Do not place the mobile phone in an area surrounded by metal or far away from the in-vehicle hands-free phone system. Do not place a mobile phone close to the seats or your body.
When a mobile phone is operated to make a call, the hands-free function is no longer available.	Some models of a mobile phone do not switch to the hands-free mode when they are operated to make a call.	This is not a malfunction. Make a call again using the hands-free function.
The other party's voice cannot be heard. There is no ring tone.	The volume level is set to the minimum.	Adjust the volume level.
	A mobile phone is not connected.	Check the registration procedure, and then register the mobile phone again.
Each volume level (ring tone, incoming voice or outgoing voice) is different.	Each volume level is not adjusted properly.	Adjust each volume level properly.
The antenna display is different between the navigation screen (where fitted) and the screen on a mobile phone. Making or receiving a call is unavailable even though the antenna display indicates that it is possible to do so.	The antenna display varies depending on the model of mobile phone.	This does not indicate a malfunction. The antenna display and remaining battery level shown on the navigation screen may be different from those shown on the mobile phone screen. Use them as a reference.
A voice cannot be heard clearly when using a mobile phone behind tall buildings.	Some structures such as tall buildings, etc. may cause irregular reflection of radio waves or completely shut out radio waves that are used for mobile phones.	This is not a malfunction.
Noise is heard when using a mobile phone under/near areas of elevated railroads, high voltage electric power cables, traffic signals, or neon billboards, etc.	Electromagnetic waves that are generated from radio devices may adversely affect the mobile phone.	This is not a malfunction.
Noise is heard in the sound from the audio system while using a mobile phone.	Radio waves that are generated from a mobile phone may adversely affect the sound from the audio system.	This is not a malfunction.
The sound skips.	The mobile phone may have turned on the wireless LAN (Wi-Fi).	Turn off the wireless LAN (Wi-Fi).
Phonebook cannot be downloaded.	An error occurred during the phone pairing process.	Re-register the Bluetooth® pairing information after deleting the pairing information from both the mobile phone and the vehicle system.

VOICE RECOGNITION

Symptom	Possible cause	Possible solution
The system does not operate or fails to interpret the command correctly.	The interior of the vehicle is too noisy.	Close the windows or make sure the other occupants are quiet.
	The fan speed of the air conditioner is too fast.	Decrease the fan speed of the air conditioner.
	The noise generated by driving the vehicle is too loud.	Reduce the vehicle speed, and then speak the command.
	The voice command is spoken in a low voice.	Speak the command in a louder voice.
	The command is spoken too fast.	Speak the command after confirming the following: voice guidance is announced, a tone sounds, and an icon on the screen changes from white to orange.
	The command is spoken too slowly.	Speak in a natural voice without pausing between words.
The system prompts to repeat a command.	Pronunciation is unclear.	Speak clearly.
	The command is spoken too late after the tone.	Speak the command within 5 seconds after confirming the following: a voice guidance is announced, a tone sounds, and an icon on the screen changes from white to orange.
	An improper command is spoken.	Speak the command or a number that is displayed in white on the screen.
		Speak a command that is shown in the command list.
The system does not correctly recognize a number spoken.	Many numbers are spoken at once.	Place a pause between the appropriate digits for correct recognition by the system. When speaking a telephone number, place a pause between area codes and dial codes, etc.
Voice recognition does not operate, and a tone sounds twice after pushing the "".	The "" is pushed before the system is ready to accept voice commands.	After turning on Infiniti InTouch, wait for the voice recognition system to be ready before giving voice commands.
The USB memory device cannot operate with voice recognition.	Depending on the device, an iPhone or iPod may be recognized as a USB memory device.	This is not a malfunction.
	More than one audio device is connected to USB port.	Only one audio device can be operated with the voice recognition system even when multiple numbers of devices are connected. Select an audio source to operate with the voice recognition system.
The USB/iPod operation screen is greyed out.	The audio device is not connected.	Connect an audio device to the system.
	An audio source to be operated with the voice recognition system has not been selected.	Select an audio source to be operated with the voice recognition system.

Symptom	Possible cause	Possible solution
An error message is displayed when trying to select a track and operate the USB/iPod.	The track information is being processed for registration by the system.	Song information will be loaded into the system when a new audio device is registered for the first time or when the song information in the preregistered device has been changed. Wait for the loading to complete (this may take from a few minutes to up to an hour).
	The number of songs stored on the connected audio device exceeds its capacity.	Decrease the number of songs stored on the audio device.
	No song is stored on the audio device.	Store songs on the connected audio device. Storing songs with information such as artist name, album name, song name, and playlist, etc., will make voice recognition song search available.

NAVIGATION DISPLAY

Symptom	Possible cause	Possible solution
Names of roads differ between Plan View and Birdview™ do not match.	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.

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 dark green).	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 five waypoints can be set on the route. If you want to go to six or more waypoints, perform route calculations multiple times as necessary.
	[Start] must be selected for route calculation after waypoints are selected from the Edit Route screen.	Touch [Start] after selecting waypoints.
The calculated 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 from each other.	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.
A part of the route is not displayed.	The suggested route includes narrow streets (roads displayed in gray).	This is not a malfunction.
The part of the route 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.

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.

TRAFFIC INFORMATION

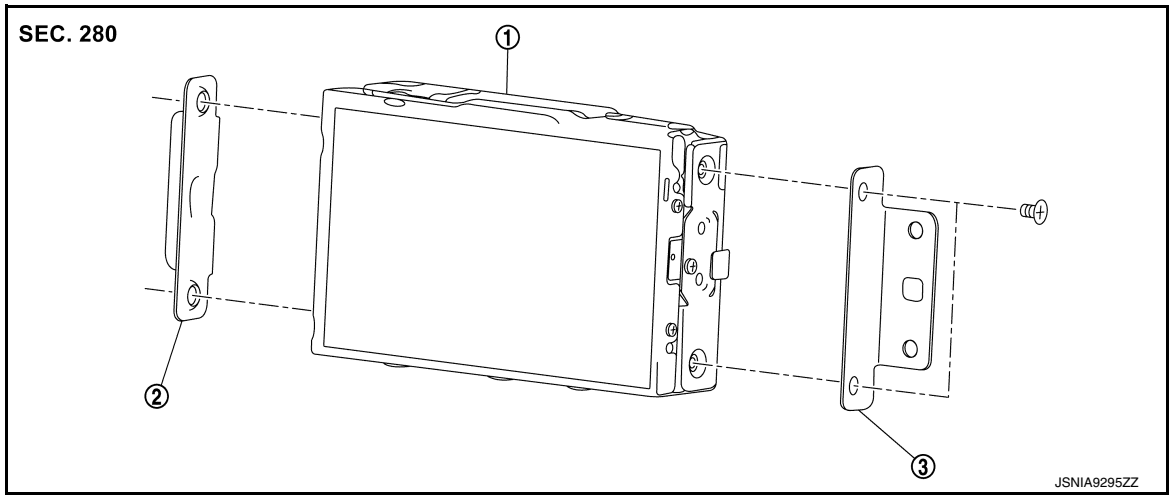
Symptom	Possible cause	Possible solution
Traffic information is not displayed.	The traffic information setting is turned off.	Turn on the traffic information setting.
	The vehicle is in an area where traffic information is not available.	Scroll to an area where traffic information is available.
	The map scale is set at a level where the icons cannot be displayed.	Check that the map scale is set to a level at which the icons can be displayed.
The automatic detour route search setting is turned on, but the suggested detour route does not avoid congested areas.	A faster route was not found, based on the road network and traffic information available.	The automatic detour search is not intended for avoiding traffic jams. It searches for the fastest route taking conditions such as traffic jams into consideration. Follow the suggested route.
The route does not avoid a road section with traffic information stating that it is closed due to road construction.	The navigation system does not avoid roads under construction if the day and time of the actual roadwork differs from the one that was declared.	Observe the actual road conditions and follow the instructions on the road to make a detour when necessary. If the road is closed, use the detour function and set the detour distance to avoid the road section that is closed.

REMOVAL AND INSTALLATION

DISPLAY CONTROL UNIT

Exploded View

INFOID:0000000013615655



① Display control unit ② Bracket RH ③ Bracket LH

Removal and Installation

INFOID:0000000013615656

REMOVAL

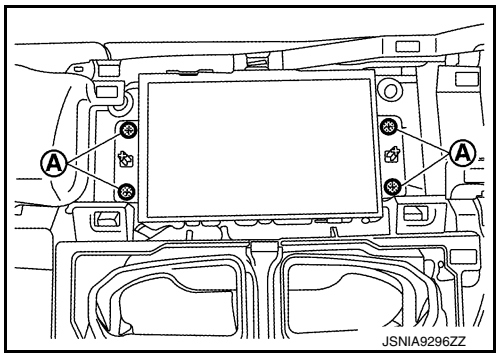
CAUTION:

Before replacing display control unit, perform “Read/Write Configuration” to save or print current vehicle specification. For details, refer to AV-145, "Description".

NOTE:

Downloaded applications are deleted when display control unit is replaced.

1. Remove the cluster lid D. Refer to IP-13, "Removal and Installation".
2. Remove the bracket mounting screws Ⓐ.
3. Disconnect the display control unit connectors.
4. Remove the display control unit.



INSTALLATION

Install in the reverse order of removal.

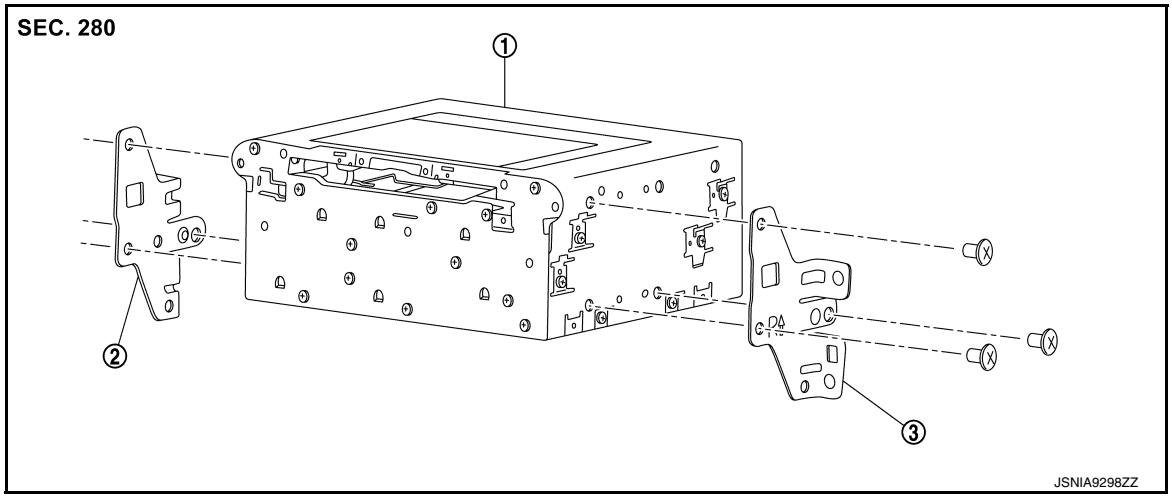
CAUTION:

Be sure to perform “Read/Write Configuration” when replacing display control unit. For details, refer to AV-145, "Description".

AV CONTROL UNIT

Exploded View

INFOID:0000000013615657



① AV control unit ② Bracket RH ③ Bracket LH

Removal and Installation

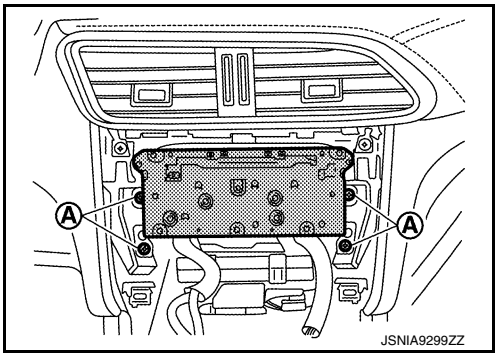
INFOID:0000000013615658

REMOVAL

CAUTION:

Before replacing AV control unit, perform "Read/Write Configuration" of display control unit to save or print current vehicle specification. For details, refer to AV-146, "Description".

1. Remove the preset switch panel. Refer to AV-242, "Removal and Installation".
2. Remove the bracket mounting screws Ⓐ.
3. Disconnect the AV control unit connectors.
4. Remove the AV control unit.



INSTALLATION

Installation is in the reverse order of removal.

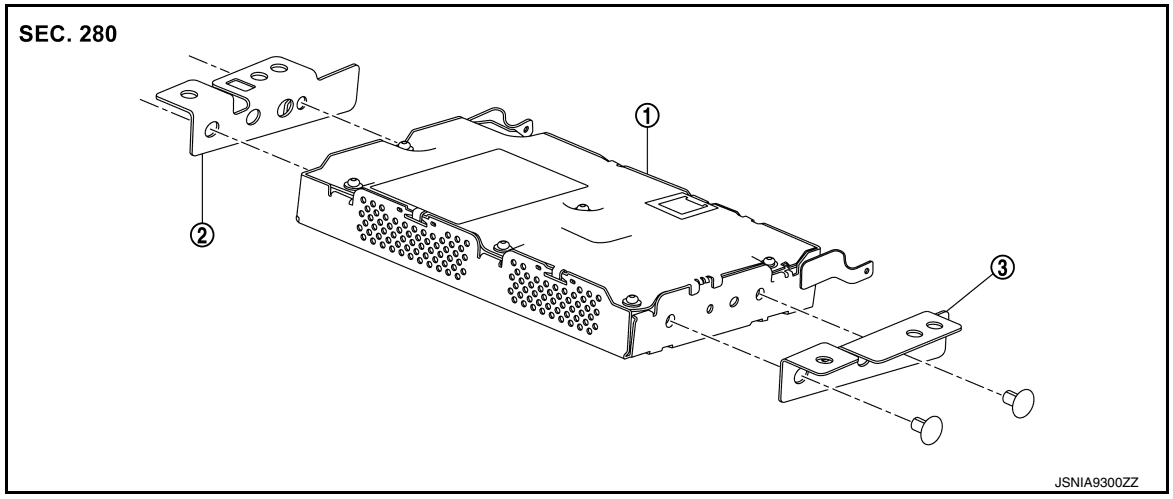
CAUTION:

Be sure to perform "Read/Write Configuration" of display control unit when replacing AV control unit. For details, refer to AV-146, "Description".

NAVI CONTROL UNIT

Exploded View

INFOID:0000000013615659



① NAVI control unit ② Bracket RH ③ Bracket LH

Removal and Installation

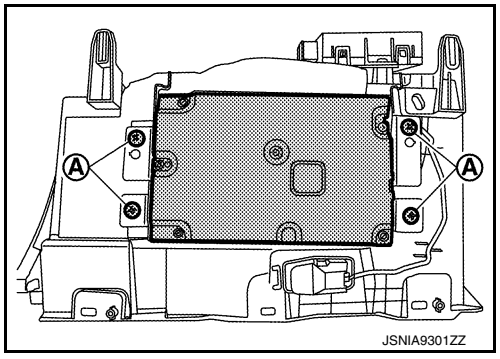
INFOID:0000000013615660

REMOVAL

CAUTION:

Before replacing NAVI control unit, perform "Read/Write Configuration" of display control unit to save or print current vehicle specification. For details, refer to AV-147, "Description".

1. Remove the glove box assembly. Refer to IP-13, "Removal and Installation".
2. Remove the mounting screws Ⓐ, and then remove the NAVI control unit.



INSTALLATION

Installation is in the reverse order of removal.

CAUTION:

Be sure to perform "Read/Write Configuration" of display control unit when replacing NAVI control unit. For details, refer to AV-147, "Description".

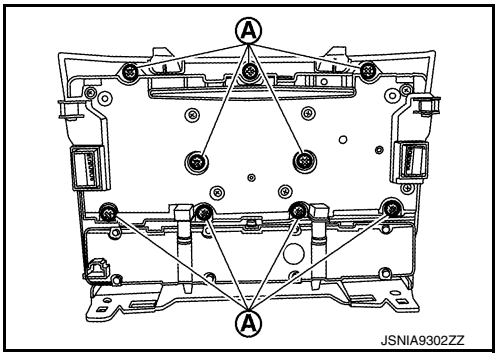
PRESET SWITCH

Removal and Installation

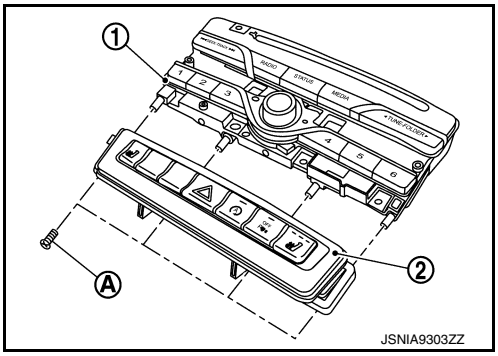
INFOID:0000000013615661

REMOVAL

1. Remove the cluster lid C. Refer to IP-13, "Removal and Installation".
2. Remove the preset switch mounting screws Ⓐ, and then remove the cluster lid C.



3. Remove the mounting screws Ⓐ, and then remove the preset switch ① and hazard & park switch ②.



INSTALLATION

Install in the reverse order of removal.

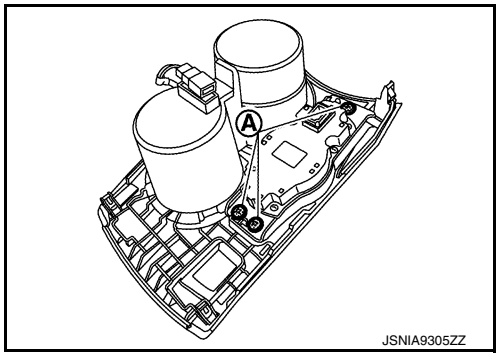
MULTIFUNCTION SWITCH

Removal and Installation

INFOID:0000000013615662

REMOVAL

1. Remove the center console center finisher. Refer to IP-22, "Removal and Installation".
2. Remove the mounting screws Ⓐ.
3. Remove the multifunction switch.



INSTALLATION

Installation is in the reverse order of removal.

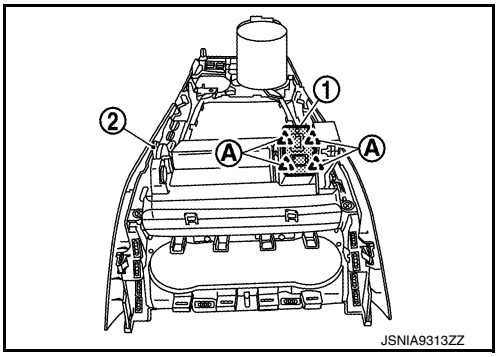
EXTERNAL DATA INPUT BOX (USB)

Removal and Installation

INFOID:0000000013615663

REMOVAL

1. Remove the center console front finisher. Refer to IP-22, "Removal and Installation".
2. Release the pawls Ⓐ and then remove the external data input box (USB) ① from the console finisher assembly ②.



△ : Pawl

INSTALLATION

Installation is in the reverse order of removal.

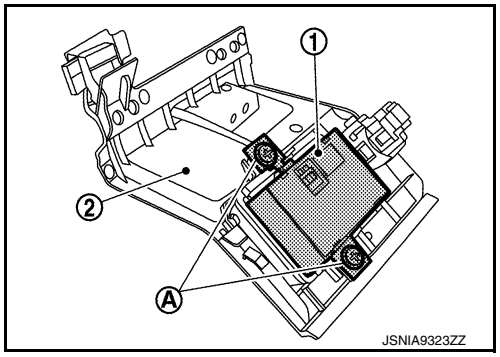
EXTERNAL DATA INPUT BOX (SD CARD)

Removal and Installation

INFOID:0000000013615664

REMOVAL

1. Remove the center console mask. Refer to IP-22, "Removal and Installation".
2. Remove the screws Ⓐ, and then remove the external data input box (SD card) ① from the center console mask ②.



INSTALLATION

Installation is in the reverse order of removal.

NOTE:

Since external data input box (SD card) connector and cap holder illumination connector have the same form, be careful not to insert them wrongly.

BOSE AMP.

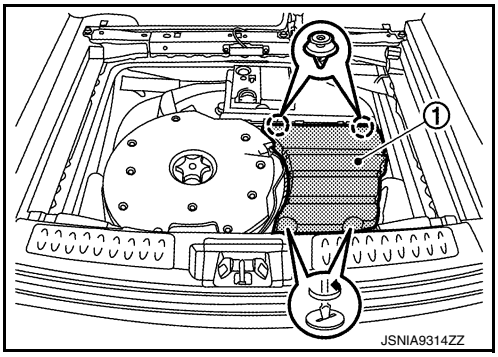
Removal and Installation

INFOID:0000000013615665

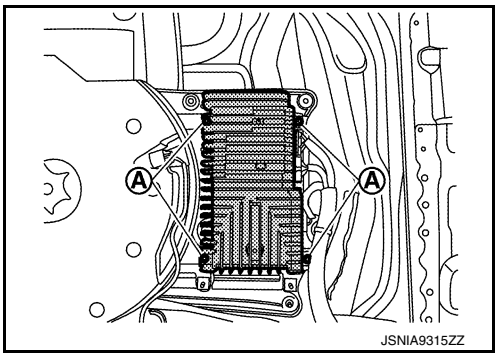
REMOVAL

1. Lift luggage floor board rear end and maintain it.
2. Remove the BOSE amp. cover ①.

: Clip



3. Disconnect the BOSE amp. connectors.
4. Remove the BOSE amp. mounting nuts Ⓐ, and then remove the BOSE amp.



INSTALLATION

Install in the reverse order of removal.

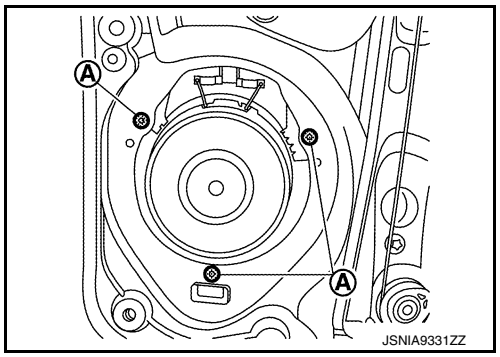
FRONT DOOR SPEAKER

Removal and Installation

INFOID:0000000013615666

REMOVAL

1. Remove the front door module assembly. Refer to INT-14, "Removal and Installation".
2. Disconnect the front door speaker connector.
3. Remove the front door speaker fixing rivets Ⓐ.
   NOTE:
   Grind the head of rivet with a drill. [bit of 7.0 mm (0.28 in)]
4. Remove the front door speaker.



INSTALLATION

Install in the reverse order of removal.

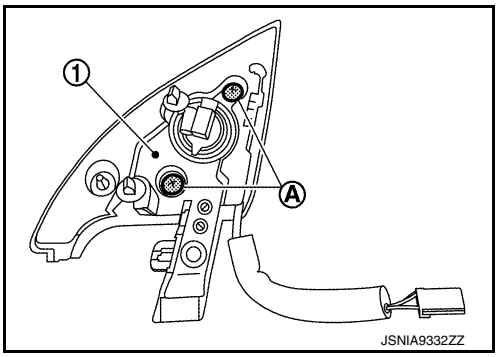
FRONT TWEETER

Removal and Installation

INFOID:0000000013615667

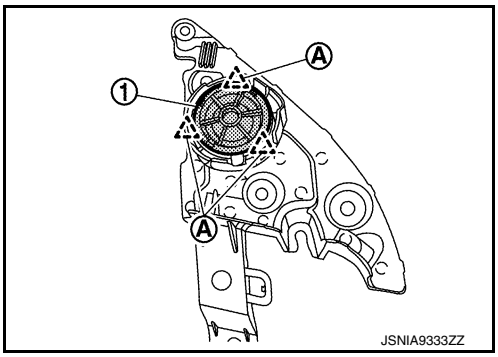
REMOVAL

1. Remove the door mirror corner cover. Refer to MIR-71, "DOOR MIRROR COVER : Removal and Installation".
2. Remove the screws Ⓐ, and then remove the front tweeter bracket ①.



3. Release the pawls Ⓐ, and then remove the front tweeter ①.

△ : Pawl



INSTALLATION

Installation is the reverse order of removal.

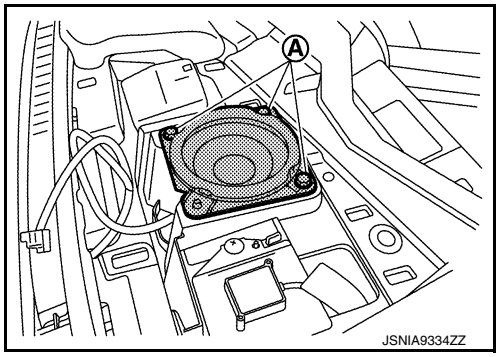
CENTER SQUAWKER

Removal and Installation

INFOID:0000000013615668

REMOVAL

1. Remove the center squawker grill. Refer to IP-13, "Removal and Installation".
2. Remove the mounting screws Ⓐ.
3. Disconnect the center squawker connector, and then remove the center squawker.



INSTALLATION

Installation is in the reverse order of removal.

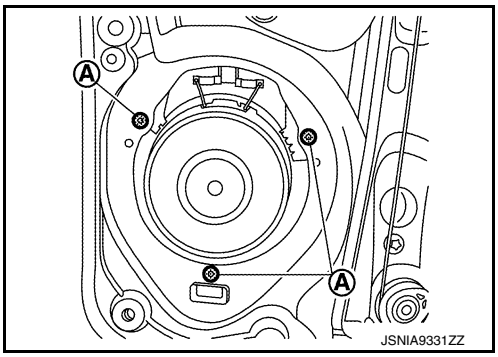
REAR DOOR SPEAKER

Removal and Installation

INFOID:0000000013615669

REMOVAL

1. Remove the rear door module assembly. Refer to INT-19, "Removal and Installation".
2. Disconnect the rear door speaker connector.
3. Remove the rear door speaker fixing rivets Ⓐ.
   NOTE:
   Grind the head of rivet with a drill. [bit of 7.0 mm (0.28 in)]
4. Remove the rear door speaker.



INSTALLATION

Install in the reverse order of removal.

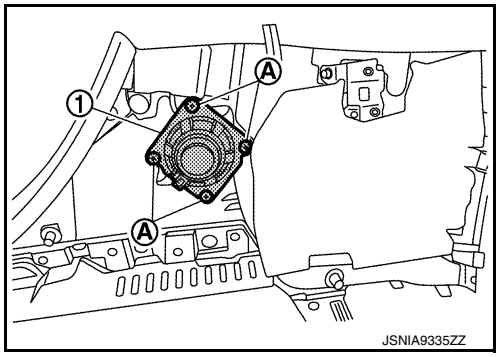
REAR PILLAR SQUAWKER

Removal and Installation

INFOID:0000000013615670

REMOVAL

1. Remove the rear pillar garnish. Refer to INT-39, "REAR PILLAR GARNISH : Removal and Installation".
2. Remove the mounting screws Ⓐ, and then remove the rear pillar squawker ①.



INSTALLATION

Install in the reverse order of removal.

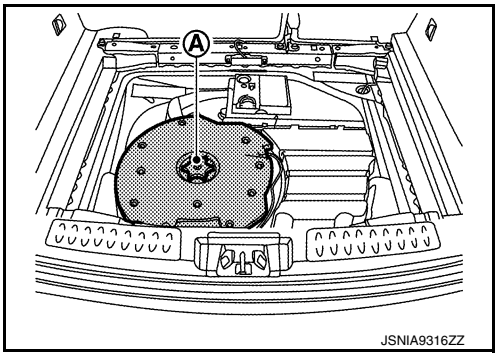
WOOFER

Removal and Installation

INFOID:0000000013615671

REMOVAL

1. Lift luggage floor board rear end and maintain it.
2. Remove the woofer clamp Ⓐ.
3. Disconnect the woofer connector, and then remove the woofer.



INSTALLATION

Installation is in the reverse order of removal.

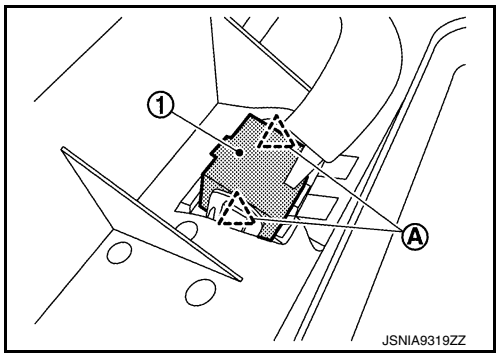
MICROPHONE

Removal and Installation

INFOID:0000000013615672

REMOVAL

1. Remove the headlining assembly. Refer to INT-33, "Removal and Installation".
2. Disconnect the microphone connector.
3. Release the pawls Ⓐ, and then remove the microphone ①.



: Pawl

CAUTION:
Carefully handle the pawl fixing the microphone because the pawl is fragile.

INSTALLATION

Installation is in the reverse order of removal.

NOTE:
Check the microphone for looseness after the installation.

STEERING SWITCH

Removal and Installation

INFOID:0000000013615676

Refer to ST-8, "Removal and Installation".

NOTE:

Always remove steering switch together with steering wheel.

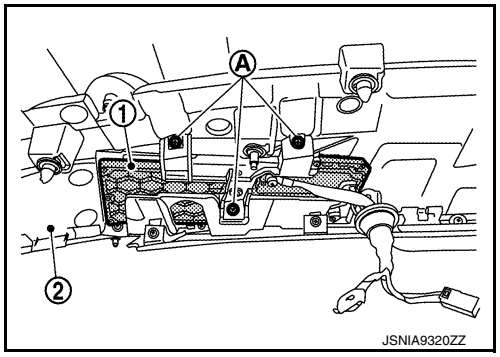
AM/FM MAIN ANTENNA

Removal and Installation

INFOID:0000000013615677

REMOVAL

1. Remove the rear spoiler. Refer to EXT-59, "REAR SPOILER : Removal and Installation".
2. Remove the mounting screw Ⓐ, and then remove the AM/FM main antenna ① from the rear spoiler ②.



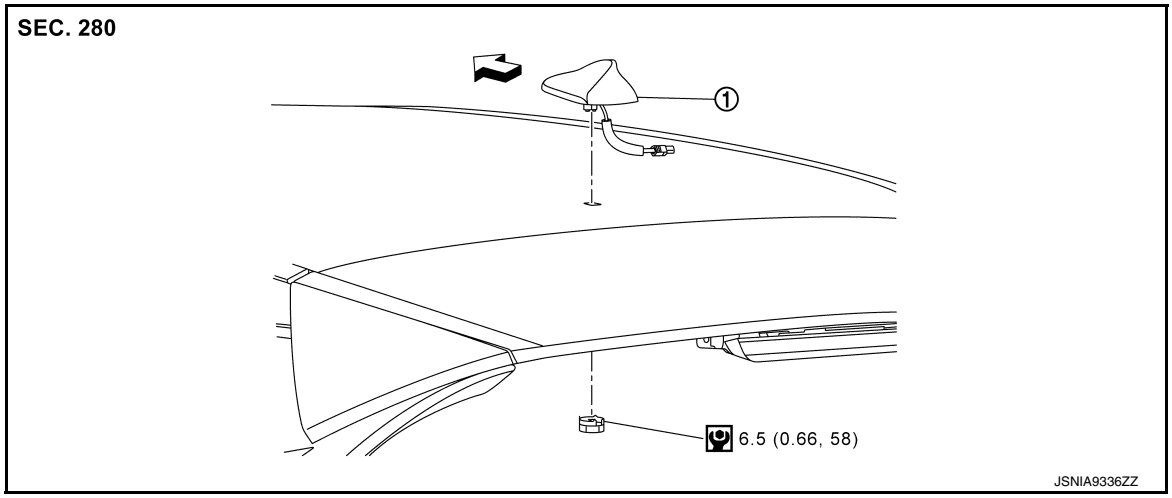
INSTALLATION

Installation is in the reverse order of removal.

SATELLITE RADIO ANTENNA

Exploded View

INFOID:0000000013615678



① Satellite radio antenna

: N·m (kg-m, in-lb)

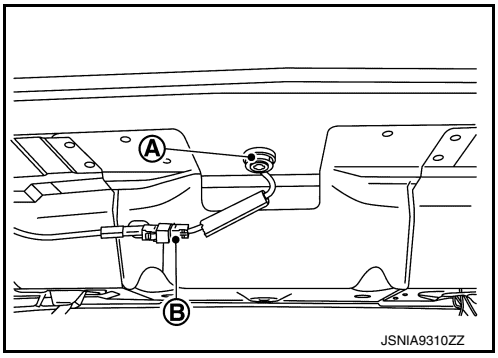
: Vehicle front

Removal and Installation

INFOID:0000000013615679

REMOVAL

1. Remove the headlining assembly. Refer to INT-33, "Removal and Installation".
2. Remove the nut Ⓐ and disconnect the satellite radio antenna connector Ⓑ , and then remove the satellite radio antenna.



INSTALLATION

Installation is the reverse order of removal.

CAUTION:

Be careful about tightening torque. Antenna sensitivity becomes poor, and when it is excessive, roof panel may be deformed, when satellite radio antenna mounting nut tightening torque is loose.

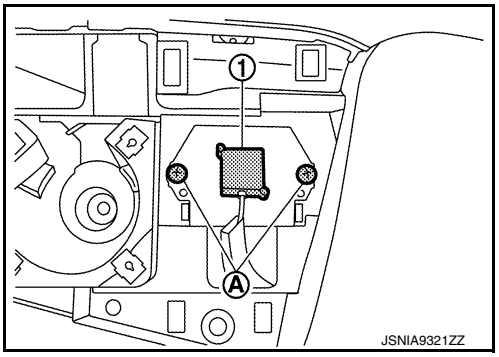
GPS ANTENNA

Removal and Installation

INFOID:0000000013615681

REMOVAL

1. Remove the instrument panel assembly. Refer to IP-13, "Removal and Installation".
2. Remove the mounting screw Ⓐ, and then remove the GPS antenna ① from the instrument panel.



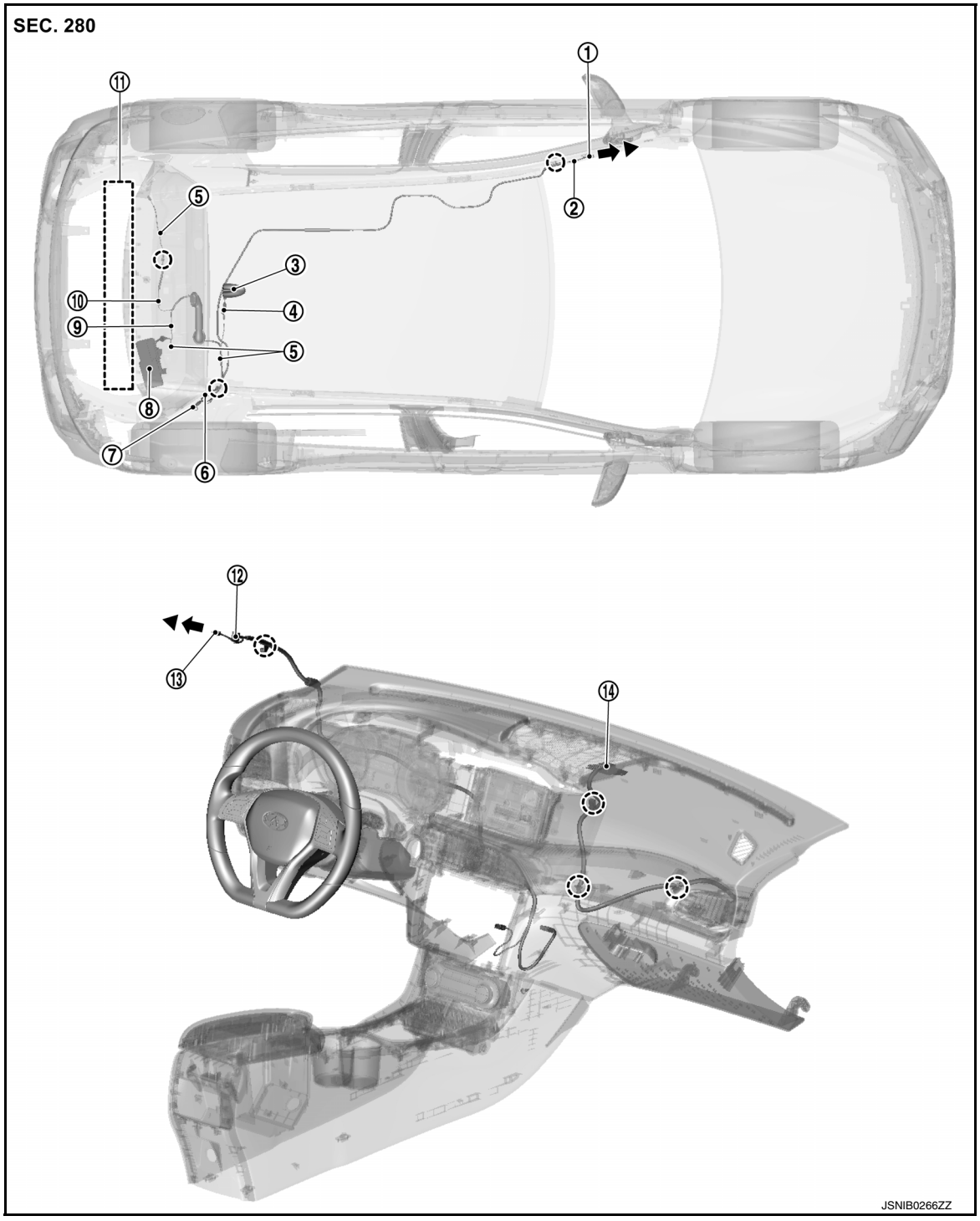
INSTALLATION

Install in the reverse order of removal.

ANTENNA FEEDER

Feeder Layout

INFOID:0000000013615682



① With clip connector (M376)
② Connector (M802)
③ Satellite radio antenna
④ With clip connector (M805)
⑤ Mounting bolts
⑥ With clip connector (M386)
⑦ With clip connector (M804/803)
⑧ AM/FM main antenna
⑨ With clip connector (M387)
⑩ With clip connector (M389)
⑪ Window glass antenna
⑫ Connector (M375)
⑬ Connector (M801)
⑭ GPS antenna

: Clips

▲ : 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:0000000013615683

Risk of injury

There is a risk of injury caused by parts becoming projectiles if uncontrolled deployment of air bag or seat belt pre-tensioner occurs, or by storing air bag with the deployment side facing downwards. When scrapping air bag or seat belt pre-tensioner by means of controlled deployment, there is also a danger present if a sufficiently safe distance is not maintained, or if opening using cutting torches or other cutting tools, or due to smelting or if parts that are not yet triggered are exposed to a blaze or a smoldering fire at landfills.

Safety instructions/precautions

- Removed air bag must always be stored with deployment side facing up.
- Acquisition, transportation, storage, testing and assembly work should only be performed or supervised by properly trained personnel.
- Install air bag or seat belt pre-tensioner immediately following retrieval from storage.
- Air bag and seat belt pre-tensioner must be protected from flying sparks, open fires and temperature exceeding 100°C (212°F).
- Never transport air bag and seat belt pre-tensioner in the passenger compartment. Store them securely in the luggage room of the vehicle in their original replacement part packaging and secure them so that they cannot slip around.
- Never allow air bag and seat belt pre-tensioner to come into contact with grease, oil, or cleaning agents.
- Perform system tests using approved testing equipment only, and only when the units are properly installed and the vehicle is unoccupied.
- Before the initial hookup of the battery or an external power supply, the ignition must be switched on and the vehicle unoccupied.
- Air bag and seat belt pre-tensioner that fall from a height of more than 0.5 m must be replaced.
- When scrapping by means of controlled deployment of air bag and seat belt pre-tensioner, a safe distance of at least 10 m must be maintained.
- Before starting work on air bag and seat belt pre-tensioner and work on components that are connected to air bag and seat belt pre-tensioner or require and intervention in their electric circuit (e.g. when removing the steering wheel):
- Disconnect any external power sources (e.g. charger).
- Disconnect and insulate ground line of battery
- Before starting bodywork in combination with welding or retrofitting, during which work is performed on uninsulated, current-carrying lines or require an intervention in their electric circuit (e.g. when removing the steering wheel):
- Disconnect any external power sources (e.g. charger).
- Disconnect and insulate ground line of battery.
- During welding, disconnect plug connection and from control unit of air bag.
- When the air bag deploys, the pyrofuse activates and the power source from the battery is disconnected. This prevents possible fires caused by electric leakage after an accident occurs.

Precautions for Removing Battery Terminal

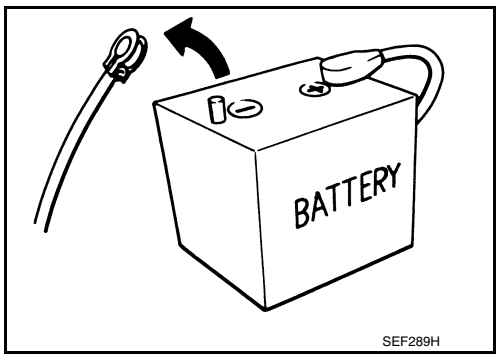
INFOID:0000000013615684

When disconnecting the battery terminal, pay attention to the following.

- Always use a 12V battery as power source.
- Never disconnect battery terminal while engine is running.

- When removing the 12V battery terminal, turn OFF the ignition switch and wait at least 30 seconds.
- For vehicles with the engine listed below, remove the battery terminal after a lapse of the specified time:

BR08DE	: 4 minutes	YD25DDTi	: 2 minutes
D4D engine	: 20 minutes	YS23DDT	: 4 minutes
HRA2DDT	: 12 minutes	YS23DDTT	: 4 minutes
K9K engine	: 4 minutes	ZD30DDTi	: 60 seconds
M9R engine	: 4 minutes	ZD30DDTT	: 60 seconds
R9M engine	: 4 minutes		
V9X engine	: 4 minutes		



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.

- After high-load driving, if the vehicle is equipped with the V9X engine, turn the ignition switch OFF and wait for at least 15 minutes to remove the battery terminal.

NOTE:
- Turbocharger cooling pump may operate in a few minutes after the ignition switch is turned OFF.
- Example of high-load driving
  - Driving for 30 minutes or more at 140 km/h (86 MPH) or more.
  - Driving for 30 minutes or more on a steep slope.

- 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.

Precaution for Trouble Diagnosis

INFOID:0000000013615685

AV COMMUNICATION SYSTEM

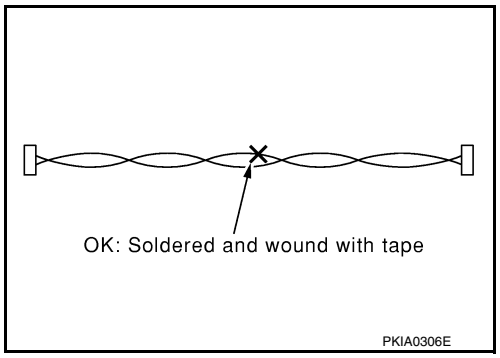
- Do not apply voltage of 7.0 V or higher to the measurement terminals.
- Use the tester with its open terminal voltage being 7.0 V or less.
- Be sure to turn ignition switch OFF and disconnect the battery cable from the negative terminal before checking the circuit.

Precaution for Harness Repair

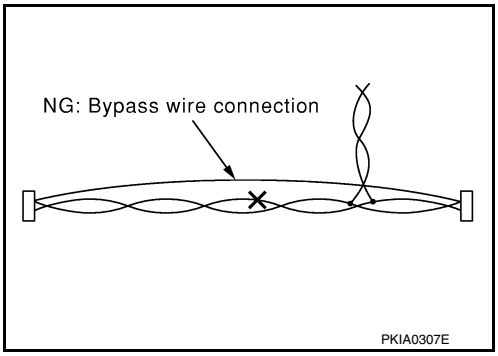
INFOID:0000000013615686

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.)

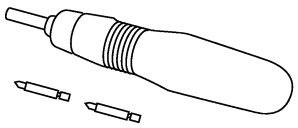


PREPARATION

PREPARATION

Commercial Service Tools

INFOID:0000000013788423

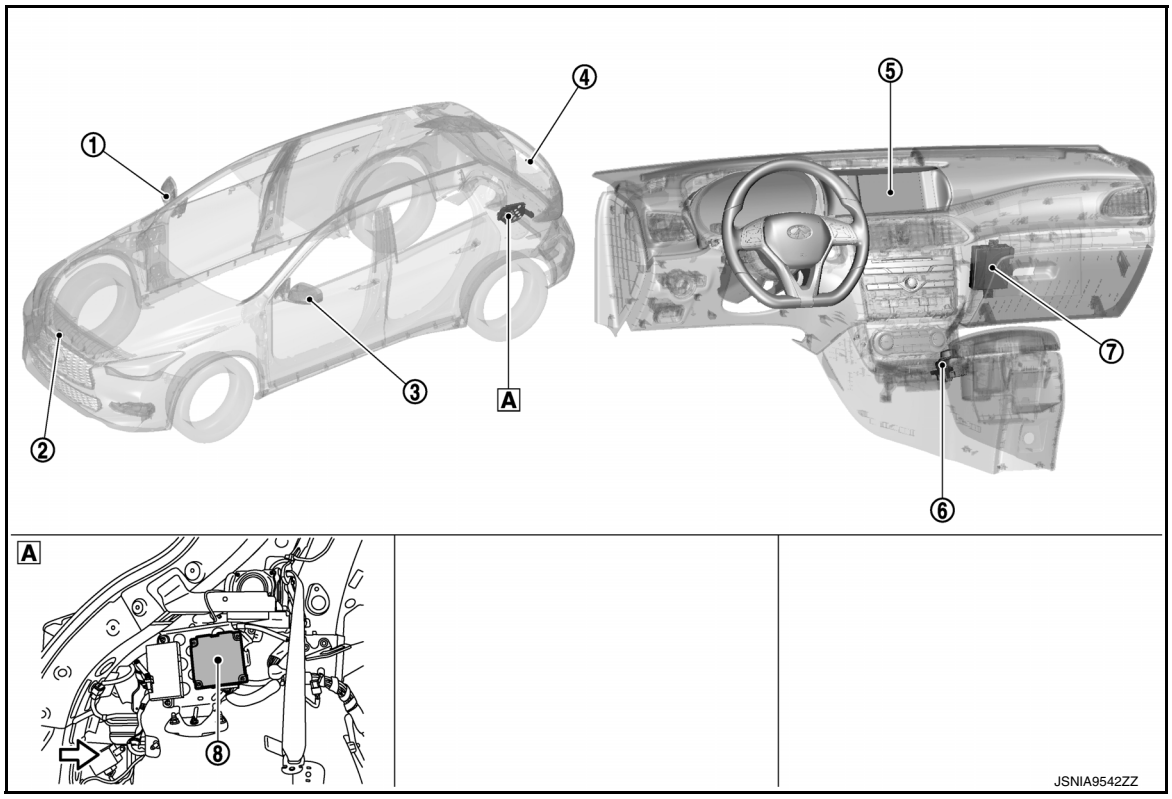
Tool	Description
Power tool  PBIC0191E	Loosening screws

SYSTEM DESCRIPTION

COMPONENT PARTS

Component Parts Location

INFOID:0000000013615687



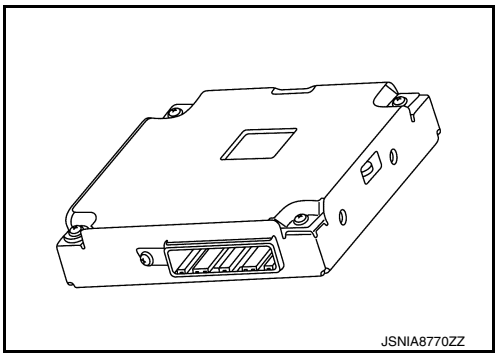
A Luggage floor LH side

No.	Component	Function
①	Side camera RH	Refer to AV-265, "Side Camera".
②	Front camera	Refer to AV-265, "Front Camera".
③	Side camera LH	Refer to AV-265, "Side Camera".
④	Rear camera	Refer to AV-266, "Rear Camera".
⑤	Display control unit	• Camera image signal that is received from around view monitor control unit is displayed in the display. • Transmits the camera switch signal to the around view monitor control unit.
⑥	Multifunction switch	Transmits the camera switch signal to the display control unit.
⑦	CAN gateway	• Transmits the CAN communication signal to the around view monitor control unit. • CAN gateway receives each signal via CAN communication. And it converts the signal to Digital/PWM and outputs it to around view monitor control unit. Refer to LAN-150, "Component Parts Location" for detailed installation location.
⑧	Around view monitor control unit	Refer to AV-265, "Around View Monitor Control Unit".

Around View Monitor Control Unit

INFOID:0000000013615688

- Necessary signals are received from CAN gateway via CAN communication.
- Necessary signals are transmitted/received to/from display control unit.
- Camera image signals received from each camera are converted/synthesized in the around view monitor control unit and transmitted to the display control unit.
- Vehicle width guide lines, predicted course line, vehicle front guiding line and vehicle side line and vehicle icon are rendered with the around view monitor control unit and combined with camera image.

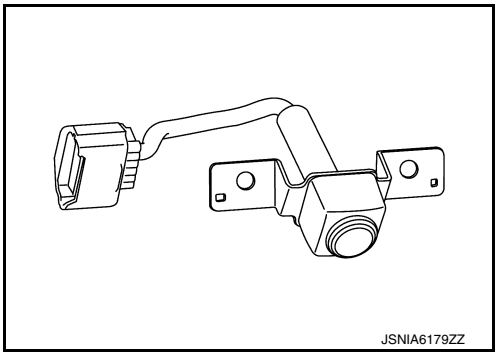

JSNIA8770ZZ

Front Camera

INFOID:0000000013615689

- Super-small CMOS camera (color) using CMOS* for the image pickup element is adopted.
- Power for the camera is supplied from the around view monitor control unit, and the image at the front of the vehicle is sent to the around view monitor control unit.

NOTE:
*: "CMOS" is abbreviation of Complementary Metal Oxide Semiconductor, and features low power consumption and high speed reading rate of electric charge.


JSNIA6179ZZ

Specification

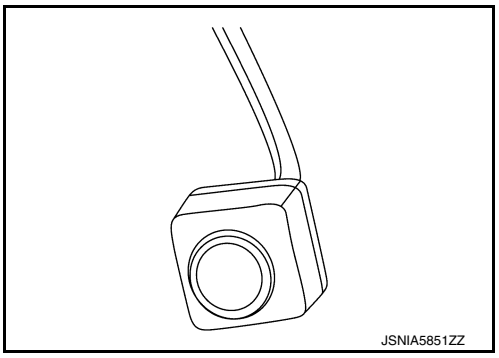
Image pickup element	1/4-inch CMOS image sensor
Effective number of pixels	Approx. 300,000 pixels (632 × 480)
Minimum brightness	1 lx
Angle of view	Horizontal view angle: 190.4° Vertical view angle: 141.8°

Side Camera

INFOID:0000000013615690

- Super-small CMOS camera (color) using CMOS* for the image pickup element is adopted.
- Power for the camera is supplied from the around view monitor control unit, and the image at the side of the vehicle is sent to the around view monitor control unit.

NOTE:
*: "CMOS" is abbreviation of Complementary Metal Oxide Semiconductor, and features low power consumption and high speed reading rate of electric charge.


JSNIA5851ZZ

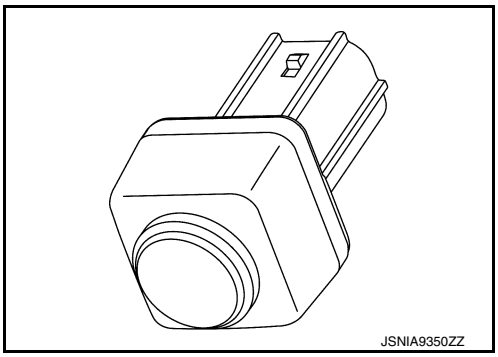
Specification

Image pickup element	1/4-inch CMOS image sensor
Effective number of pixels	Approx. 300,000 pixels (632 × 480)
Minimum brightness	1 lx
Angle of view	Horizontal view angle: 190.4° Vertical view angle: 141.8°

Rear Camera

INFOID:0000000013615691

- Super-small CMOS camera (color) using CMOS* for the image pickup element is adopted.
- With the mirror processing function, a mirror image is sent as if it is viewed by a rear view mirror.
- Power for the camera is supplied from the around view monitor control unit, and the image at the rear of the vehicle is sent to the around view monitor control unit.



NOTE:
*: "CMOS" is abbreviation of Complementary Metal Oxide Semiconductor, and features low power consumption and high speed reading rate of electric charge.

Specification

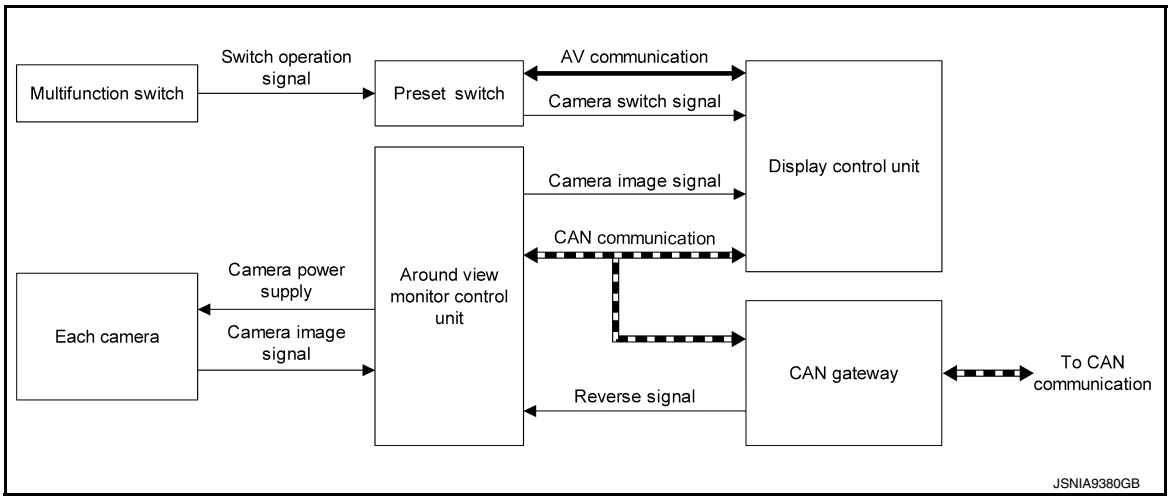
Image pickup element	1/4-inch CMOS image sensor
Effective number of pixels	Approx. 300,000 pixels (632 × 480)
Minimum brightness	1 lx
Angle of view	Horizontal view angle: 190.4° Vertical view angle: 141.8°
Image	With mirror processing function

AROUND VIEW MONITOR SYSTEM

System Description

INFOID:0000000013615692

SYSTEM DIAGRAM



Around View Monitor Control Unit Input Signal (CAN Communication)

Transmit unit	Signal name
CAN gateway*	Steering angle sensor signal
	Vehicle speed signal
	Front LH wheel speed signal
	Front RH wheel speed signal
	Rear LH wheel speed signal
	Rear RH wheel speed signal
	Door switch signal
	Back door switch signal
	High beam request signal
	Low beam request signal
	Position light request signal
	Front fog light request signal
	Parking brake switch signal
	Shift position signal
	Turn indicator signal
	Sonar indicator display signal
	System selection signal
Display control unit	Camera switch signal
	Camera OFF signal

*: CAN communication signal from each control unit receive via CAN gateway. Refer to LAN-151, "CAN COMMUNICATION SYSTEM : System Description".

Around View Monitor Control Unit Output Signal (CAN Communication)

Transmit unit	Signal name
Display control unit	View change signal
CAN gateway*	Buzzer output signal

*: CAN communication signal is transmitted to each unit via CAN gateway.

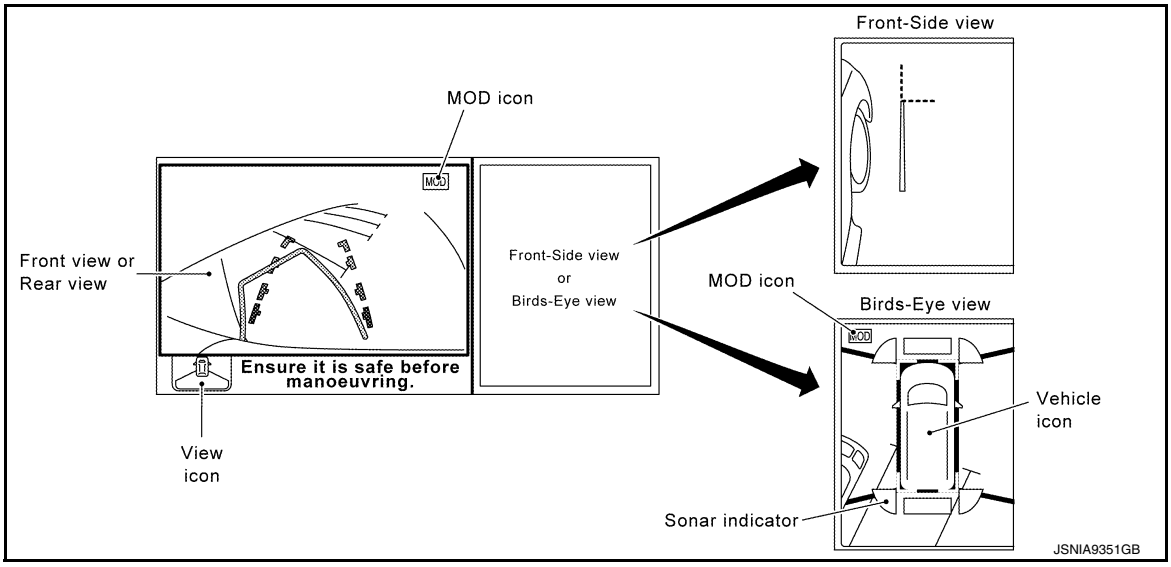
DESCRIPTION

- This system is equipped with wide-angle 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 (passenger 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.

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”.
- Around view monitor control unit renders the view icon and warning message on display.

Screen constitution

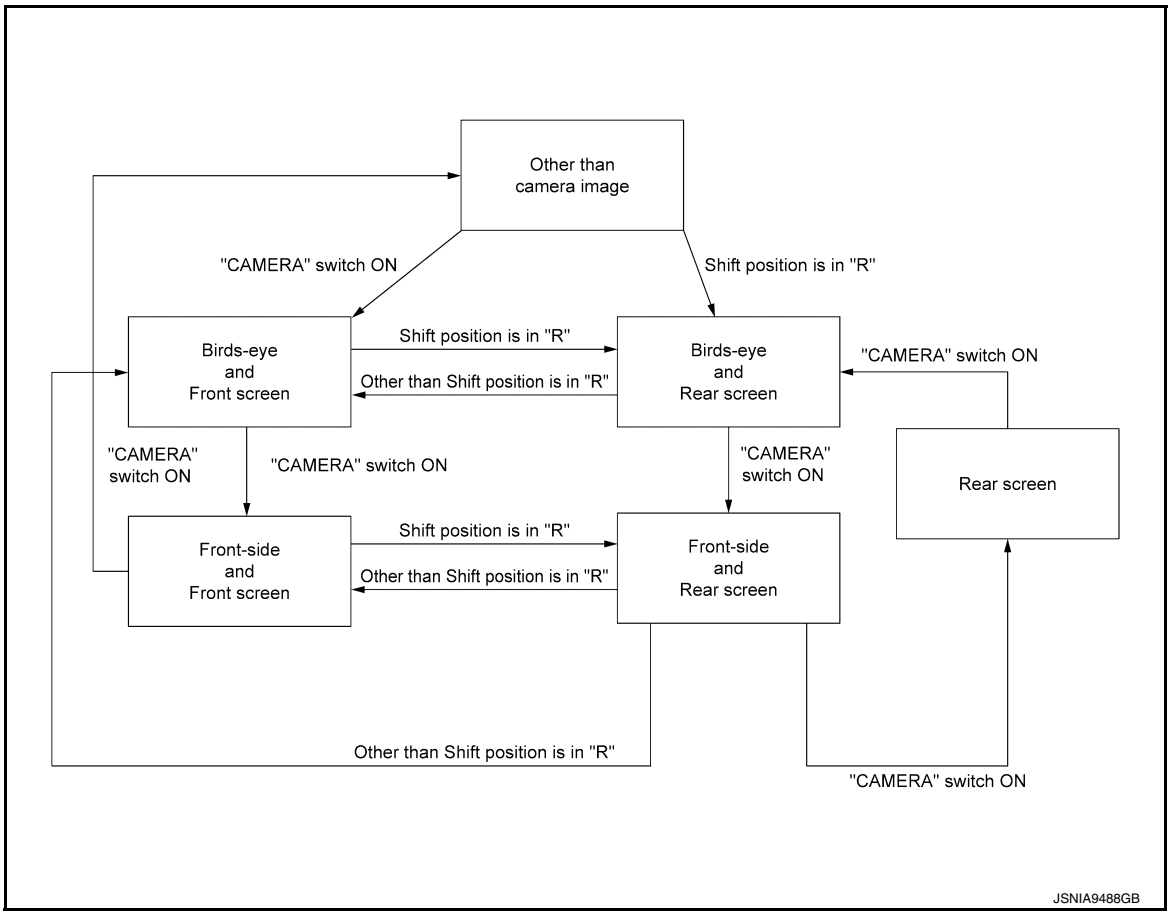


NOTE:
There is the icon which is not displayed by specifications.

OPERATION DESCRIPTION

- Around view monitor operates by pressing the “CAMERA” switch or shifting the selector lever to the reverse position.
- When the selector lever is in any position other than the reverse position, the screen is switched to the around view monitor by pressing the “CAMERA” switch.
- The screen is switched to the around view monitor by shifting the selector lever to the reverse position.
- In the around view monitor, Birds-Eye view, Front-side view can be switched by pressing the “CAMERA” switch.
- The around view monitor is cancelled 3 minutes after pressing the “CAMERA” switch, and then the screen returns to the screen before displaying the around view monitor when selector lever is in a position other than the reverse position.
- In the Birds-Eye view, the invisible area is displayed to show the border of 4 camera images. In addition, red fixed lines are displayed in 4 corners of the vehicle icon. After turning the ignition switch ON, the invisible area is highlighted with yellow and red fixed lines are blink only once.

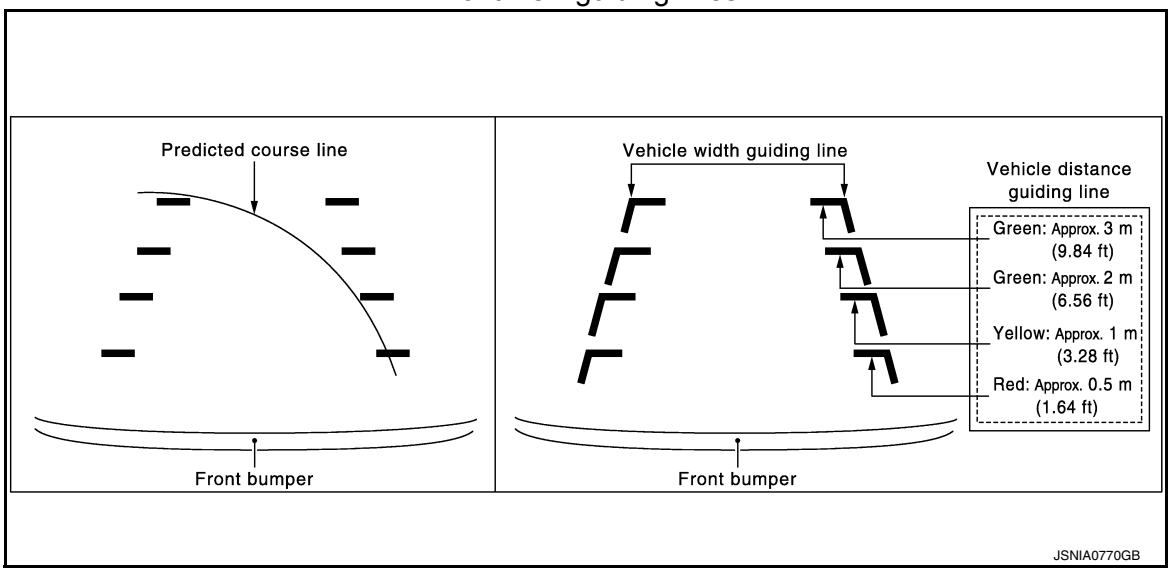
Around view monitor screen transition



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.
- Around view monitor control unit receives the steering angle sensor signal via CAN communication, and controls the direction and distance of the predictive course line.
- ON/OFF setting of predictive course line can be performed by CONSULT.

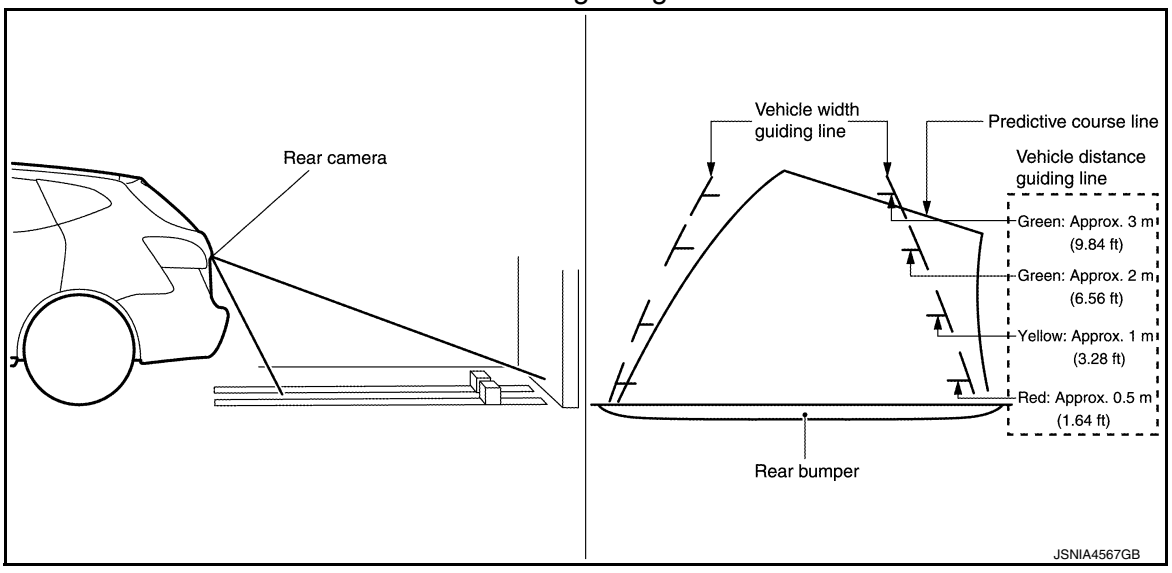
Front view guiding lines



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.
- 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.
- The predictive course line is not displayed at the steering neutral position.
- Around view monitor control unit receives the steering angle sensor signal from steering angle sensor via CAN communication, and controls the direction and distance of the predictive course line.
- ON/OFF setting of predictive course line can be performed by CONSULT

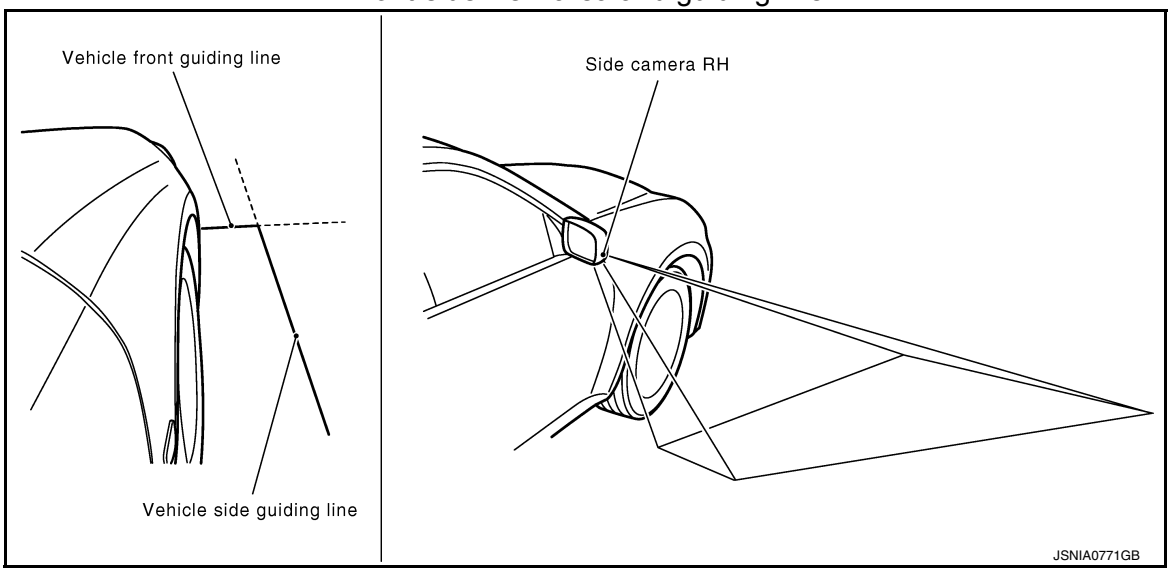
Rear view guiding lines



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.

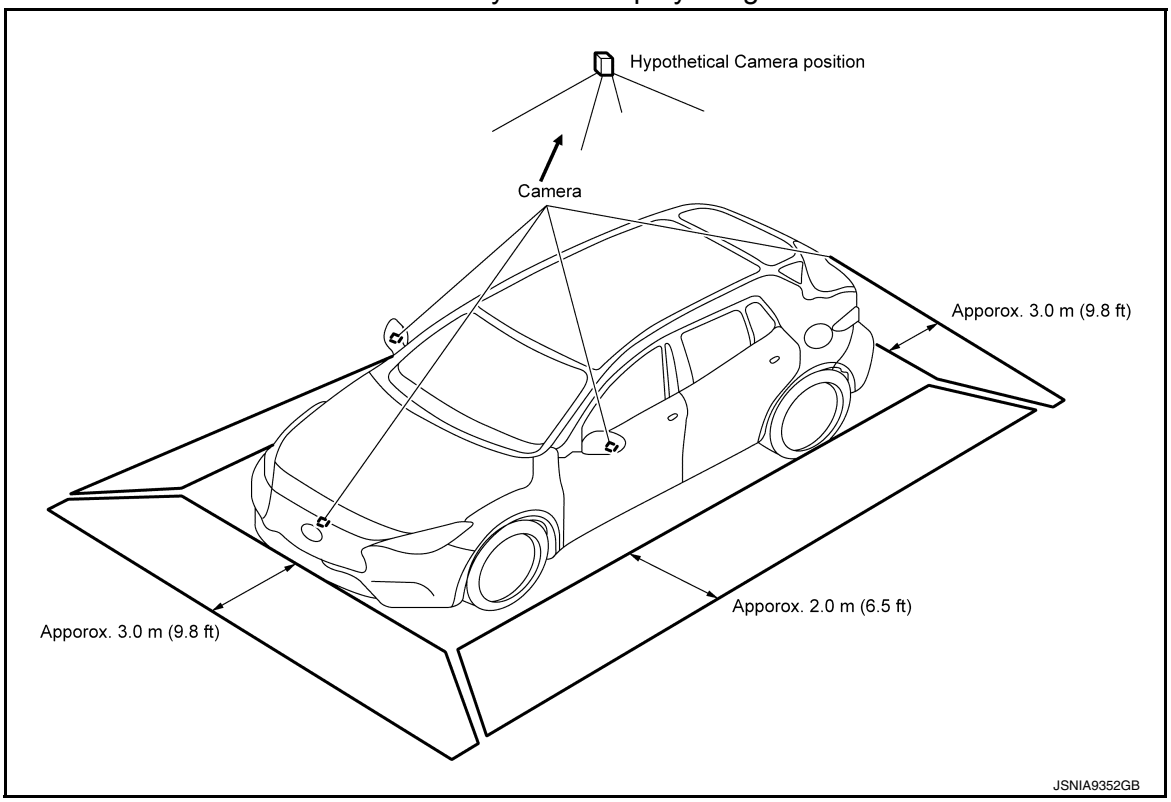
Front-side view area and guiding line



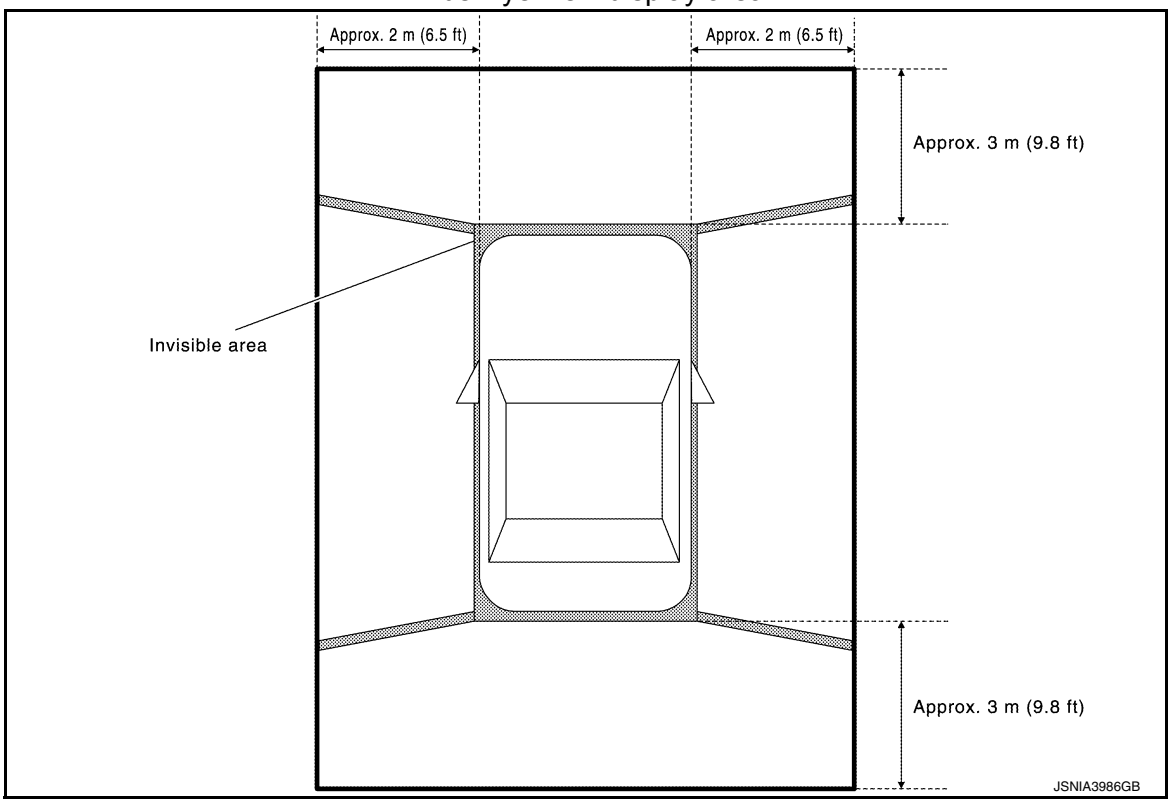
Birds-eye View

- 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.

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.
- MOD detects moving objects while camera image is displayed on 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 buzzer output signal to sonar control unit via CAN communication so that buzzer 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 permanent OFF by the following operation.
  - Permanent OFF: Settings can be performed on the information display of the combination meter.
- 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 or orange. MOD icon is not displayed when MOD is off (permanent off).
- 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 and N position	0 km/h (0 MPH)	Birds-eye view
R position	0 km/h (0 MPH) or more - less than 8 km/h (5 MPH)	Rear view
D position	0 km/h (0 MPH) or more - less than 8 km/h (5 MPH)	Front view

- MOD does not operate or stops operation when any of the conditions in the following table are satisfied. “MOD” icon is displayed in gray or orange.

Operation stop condition	“MOD” icon color	Note
Front or rear door is open.	Gray	Operation of Birds-eye view stops when door is open.
Back door is open.	Gray	Operation of Birds-eye view and rear view, stops when trunk lid is open.
Rear camera installation angle is incorrect	Gray	Operation of rear view stops when rear view camera installation angle is incorrect.
Front camera image is abnormal (Temporary)	Gray	Operation of Birds-eye view and front view stops when front camera image is temporarily abnormal.
Side camera image is abnormal (Temporary)	Gray	Operation of Birds-eye view stops when side camera image is temporarily abnormal.
Rear camera image is abnormal (Temporary)	Gray	Operation of Birds-eye view and rear view, stops when rear camera image is temporarily abnormal.
System malfunction	Orange	Refer to AV-288, "DTC Index"

CAMERA IMAGE OPERATION PRINCIPLE

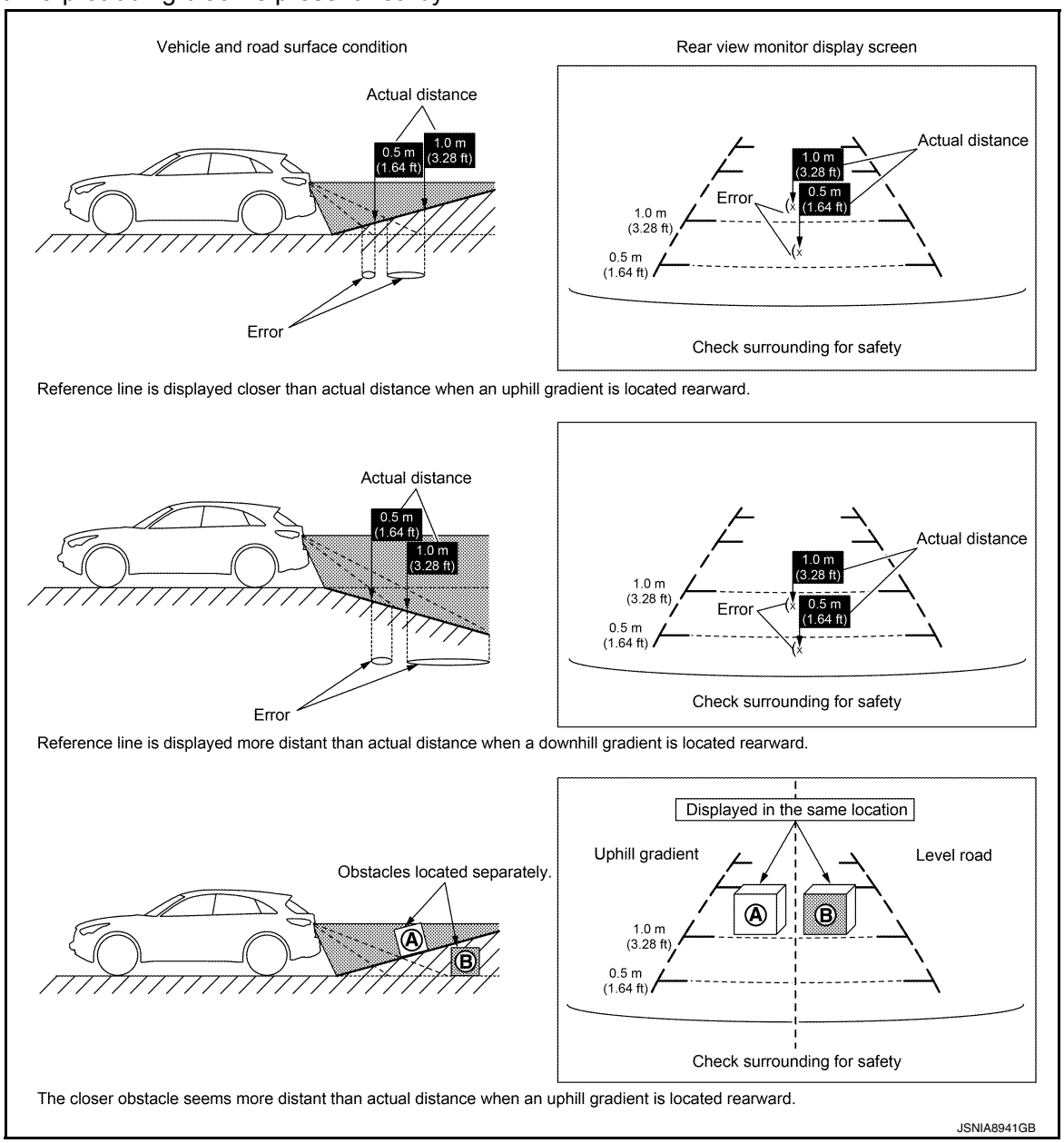
- If the camera image calibration is incomplete, the applicable camera position is indicated as an error on the Birds-Eye view display. (Calibration operation is necessary when replacing each camera or when replacing around view monitor control unit.)
- Around view monitor control unit receives the camera switch signal via CAN communication from display control unit by pressing the “CAMERA” 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, and outputs them to the display control unit.

PRECAUTIONS FOR VEHICLE WIDTH GUIDE LINE AND PREDICTIVE COURSE LINE DISPLAY ON THE REAR VIEW MONITOR DISPLAY

Side distance guide lines and predictive course line on the display may be different from actual lines depending on vehicle conditions and road conditions.

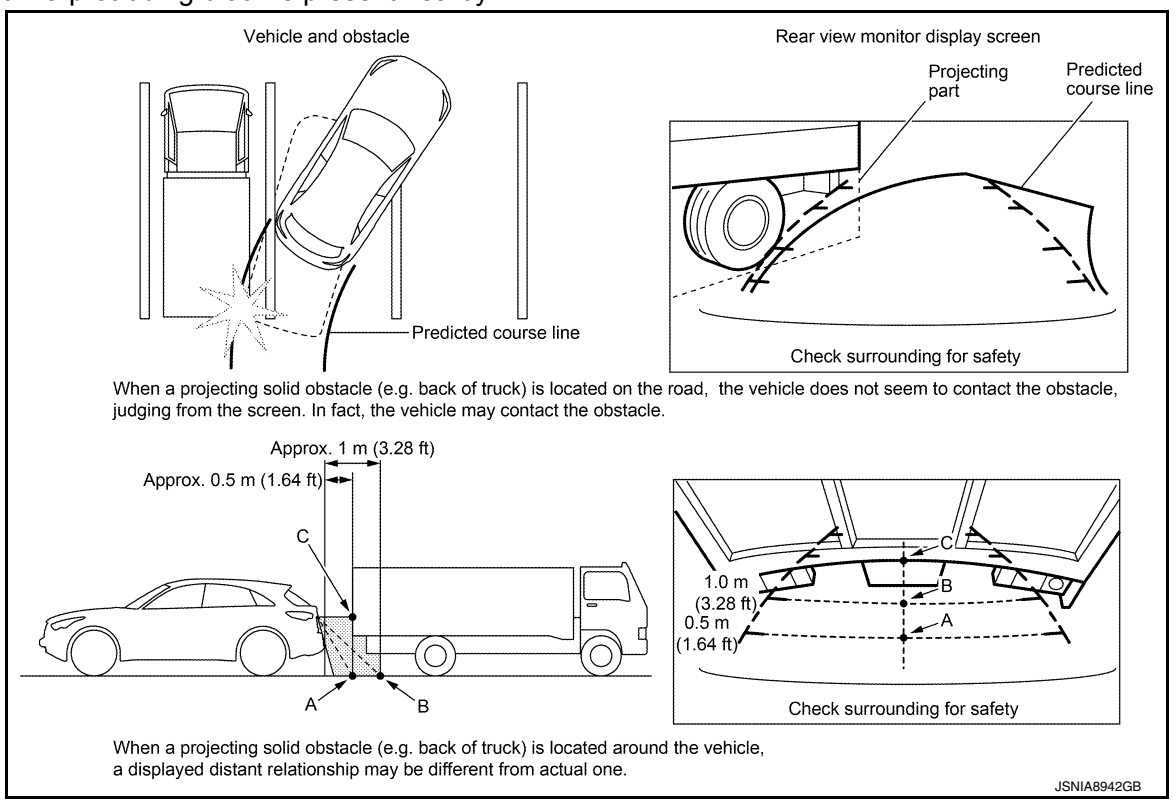
Precautions for Road Conditions

- Since guide lines and predictive course line are drawn based on the road, a different distance may be displayed if a protruding block is present nearby.



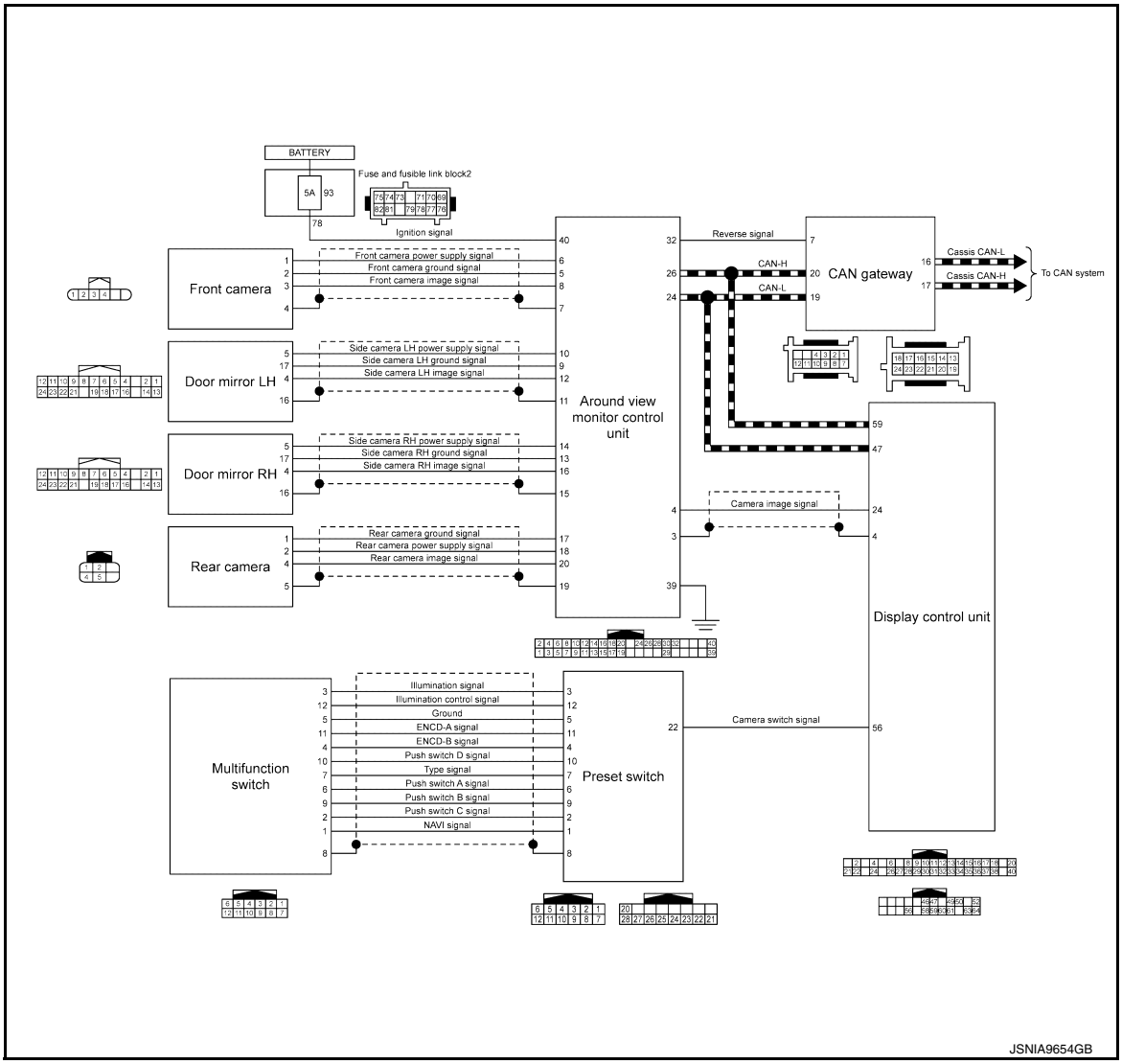
Precautions for Block

- Since guide lines and predictive course line are drawn based on the road, a different distance may be displayed if a protruding block is present nearby.



Circuit Diagram

INFOID:0000000013615693



Fail-safe

INFOID:0000000013615694

DTC Display contents of CONSULT	Malfunction detection condition	Fail-safe condition
C1A03 VHCL SPEED SE CIRC	If the vehicle speed signal (wheel speed) from CAN gateway [ABS actuator and electric unit (control unit)] received by the around view monitor control unit via CAN communication, are inconsistent	MOD (Moving Object Detection) function is cancel
C1A04 ABS/TCS/VDC CIRC	If a malfunction occurs in the VDC/TCS/ABS system	MOD (Moving Object Detection) function is cancel
C1A39 STRG SEN CIR	If the steering angle sensor is malfunction	MOD (Moving Object Detection) function is cancel
U0122 VDC P-RUN DIAGNOSIS	If around view monitor control unit detects an error signal that is received from CAN gateway [ABS actuator and electric unit (control unit)] via CAN communication	MOD (Moving Object Detection) function is cancel
U0416 VDC CHECKSUM DIAGNOSIS	If around view monitor control unit detects an error signal that is received from CAN gateway [ABS actuator and electric unit (control unit)] via CAN communication	MOD (Moving Object Detection) function is cancel

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.
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. • 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.
U1010 CONTROL UNIT (CAN)	CAN initial diagnosis malfunction is detected.	Around view monitor system does not function.
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). • MOD (Moving Object Detection) function is stopped.
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.	Camera image is not displayed (Gray screen display).
U111C FRONT CAMERA IMAGE SIGNAL	No-signal status of front 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).
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.	Camera image is not displayed (Gray screen display).
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.
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 camera power supply output is ON: 5.9 - 6.5 V • When OFF: 0 V by camera power supply measurement	Camera power output is stopped
U1303 LED POWER SUPPLY VOLT	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	None

DTC Display contents of CONSULT	Malfunction detection condition	Fail-safe condition
U1304 CAMERA IMAGE CALIB	• When camera calibration is incomplete. • When camera information in around view monitor 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.	On applicable camera screen ⚠ marking (Red) is displayed.

HANDLING PRECAUTION

Around View Monitor

INFOID:0000000013615695

PRECAUTIONS FOR THE HANDLING OF CAMERA SYSTEM

- The camera system assists the detection of obstacles. When operating the vehicle, the safety must be confirmed and ensured directly by sight, using the mirrors.
- Distance shown by vehicle width guiding lines and predicted course lines may differ from actual distance depending on the number of passengers and fuel capacity. For this reason, these lines must be used only as a guide.
- With the camera lens characteristics, a distance shown on the screen may look different from actual distance or obstacles may look deformed.
- The camera is a precision instrument. Always prevent a strong impact, such as high-pressure car wash. Failure to do this results in a malfunction.
- Adhesion of dirt, rain drops, and snow to the camera lens may lower the sharpness of camera image or cause an improper operation in MOD (Moving Object Detection) function. These adherents must be removed with a soft wet cloth first, then with a dry soft cloth.
- Never damage the camera. Failure to do this may affect camera images.

PRECAUTIONS FOR THE HANDLING OF MOD (MOVING OBJECT DETECTION)

- MOD (Moving Object Detection) does not inform the driver of stationary objects.
- MOD (Moving Object Detection) detects a moving object by processing image data of an image shown on the display. The detection performance of a moving object is limited.
- MOD (Moving Object Detection) may not operate properly when any of the following conditions is satisfied:

- Color and brightness of a moving object are similar to those of its background.
- Existence of blinking light, such as turn signal lamp
- Reflection of a strong light, such as head lamp light from other vehicles or sun light.
- Inappropriate orientation of camera due to folded mirror.
- Non-moving objects, such as water droplets dripping on the camera lens, white smoke from the muffler or moving shadow may be detected.
- Detection may not be performed properly depending on the speed, direction, distance, and shape of moving object.

DIAGNOSIS SYSTEM (AROUND VIEW MONITOR CONTROL UNIT)

CONSULT Function

INFOID:0000000013615696

APPLICATION ITEMS

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

Diagnosis mode	Description
ECU Identification	Around view monitor control unit part number can be identified.
Self Diagnostic Results	Around view monitor control unit 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. • Display of predicted course line can be switched to ON/OFF. • Camera screen activation enhancing display can be switched to ON/OFF. • Displays causes of system cancellation occurred during system control.
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 can be identified.

SELF DIAGNOSIS RESULT

- Refer to AV-288, "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] and [U1010] 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 is switched to ON/OFF.
REVERSE SIGNAL [ON/OFF]	Receiving status of reverse signal is displayed by ON/OFF.

Display Item	Remarks
VEHICLE SPEED SIGNAL [ON/OFF]	Receiving status of vehicle speed signal is displayed by ON/OFF.
CAMERA SWITCH SIGNAL [ON/OFF]	Receiving status of camera switch signal is displayed by ON/OFF.
CAMERA OFF SIGNAL [ON/OFF]	Receiving status of camera OFF signal is displayed by ON/OFF.
ST ANGLE SENSOR TYPE [Absolute/Relative/Wheel]	Input type of steering angle sensor is displayed.
STEERING GEAR RATIO TYPE [TYPE 0/1/2/3]	Type of steering gear ratio is displayed.
STEERING POSITION [LHD/RHD]	Steering position is displayed.
REAR CAMERA IMAGE SIGNAL [OK/NG]	Input status of rear camera image signal 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.
DR-SIDE CAMERA IMAGE SIG [OK/NG]	Input status of driver side camera image signal is displayed by OK/NG in real time.
PA-SIDE CAMERA IMAGE SIG [OK/NG]	Input status of passenger side camera image signal is displayed by OK/NG in real time.
ILL [ON/OFF]	Receiving status of dimmer signal received from BCM is displayed by ON/OFF.
TURN SIGNAL [ON/OFF]	Indicates [On/Off] status of the turn signal input.

WORK SUPPORT

Display Item	Remarks
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 passenger side camera. **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 driver side camera. **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.
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.
NON-VIEWABLE AREA REMINDER	ON/OFF setting of the non-viewable area reminder can be performed.
PREDICTIVE COURSE LINE DISPLAY	ON/OFF setting of predictive course line can be performed.

Display Item	Remarks
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.
STEERING ANGLE SENSOR ADJUSTMENT	**NOTE:** The item is displayed, but it is not used.
CAUSE OF ENTRY CANCEL	Display causes of around view monitor system cancellation .
MOD FUNCTION	Allows turning ON/OFF of MOD function.

CONFIGURATION

Configuration includes functions as follows.

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

ECU DIAGNOSIS INFORMATION

AROUND VIEW MONITOR CONTROL UNIT

Reference Value

INFOID:0000000013615697

VALUES ON THE DIAGNOSIS TOOL

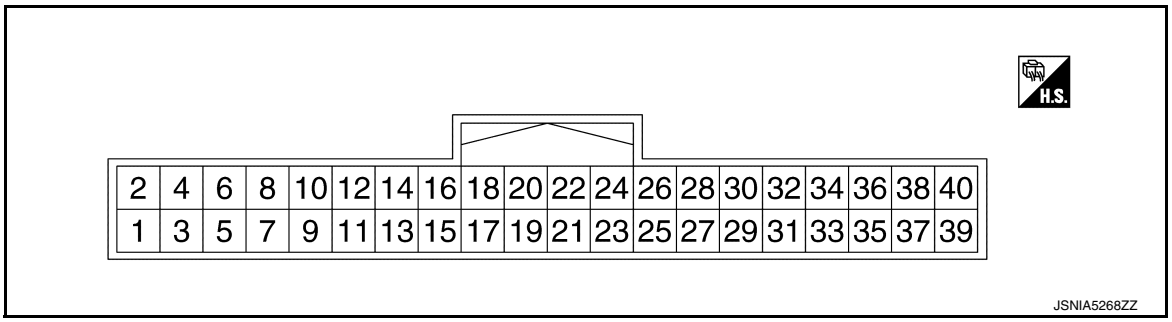
NOTE:

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

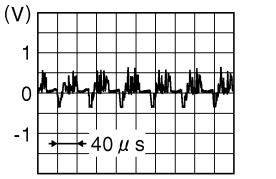
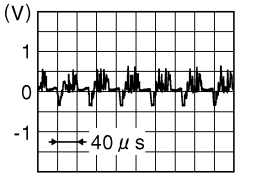
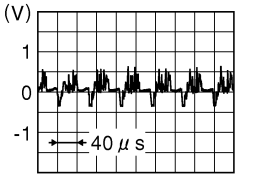
CONSULT MONITOR ITEM

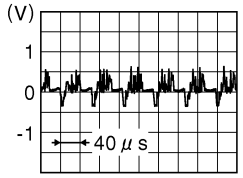
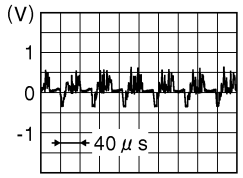
Monitor Item	Condition		Value/Status
ST ANGLE SENSOR SIGNAL	Ignition switch ON	When steering angle sensor signal is input	ON
		Other than the above	OFF
REVERSE SIGNAL	Ignition switch ON	When selector lever is in “R”	ON
		When selector lever is in any position other than “R”	OFF
VEHICLE SPEED SIGNAL	Ignition switch ON	When vehicle speed is input	ON
		Other than the above	OFF
CAMERA SWITCH SIGNAL	Ignition switch ON	When camera switch signal is input	ON
		Other than the above	OFF
CAMERA OFF SIGNAL	Ignition switch ON	When camera OFF signal is input	ON
		Other than the above	OFF
ST ANGLE SENSOR TYPE	Ignition switch ON	—	Absolute
STEERING GEAR RATIO TYPE	Ignition switch ON	—	TYPE 0
STEERING POSITION	Ignition switch ON	—	LHD
REAR CAMERA IMAGE SIGNAL	Ignition switch ON	When rear camera image signal input status is normal	OK
		When rear camera image signal input status is not normal	NG
F-CAMERA IMAGE SIGNAL	Ignition switch ON	When front camera image signal input status is normal	OK
		When front camera image signal input status is not normal	NG
DR-SIDE CAMERA IMAGE SIG	Ignition switch ON	When driver side camera image signal input status is normal	OK
		When driver side camera image signal input status is not normal	NG
PA-SIDE CAMERA IMAGE SIG	Ignition switch ON	When passenger side camera image signal input status is normal	OK
		When passenger side camera image signal input status is not normal	NG
ILL	Ignition switch ON	When lighting switch is ON	ON
		When lighting switch is OFF	OFF
TURN SIGNAL	Ignition switch ON	Turn signal is ON	ON
		Turn signal is OFF	OFF

TERMINAL LAYOUT



PHYSICAL VALUES

Terminal (Wire color)		Description		Condition	Standard value	Reference value (Approx.)
+	–	Signal name	Input/ Output			
3	—	Shield	—	—	—	—
4 (O)	3	Camera image signal	Output	Ignition switch ON	—	Input the waveform synchronized with the camera image signal.  JSNIA0834GB
5 (B)	Ground	Front camera ground	—	Ignition switch ON	0 - 0.1 V	0 V
6 (R)	5 (B)	Front camera power supply	Output	Ignition switch ON	5.0 - 9.0 V	6.0 V
7	—	Shield	—	—	—	—
8 (W)	7	Front camera image signal	Input	Ignition switch ON	—	Input the waveform synchronized with the camera image signal.  JSNIA0834GB
9 (W)	Ground	Side camera LH ground	—	Ignition switch ON	0 - 0.1 V	0 V
10 (R)	9 (W)	Side camera LH power supply	Output	Ignition switch ON	5.0 - 9.0 V	6.0 V
11	—	Shield	—	—	—	—
12 (B)	11	Side camera LH image signal	Input	Ignition switch ON	—	Input the waveform synchronized with the camera image signal.  JSNIA0834GB

Terminal (Wire color)		Description		Condition		Standard value	Reference value (Approx.)
+	–	Signal name	Input/ Output				
13 (W)	Ground	Side camera RH ground	—	Ignition switch ON		0 - 0.1 V	0 V
14 (R)	13 (W)	Side camera RH power supply	Output	Ignition switch ON		5.0 - 9.0 V	6.0 V
15	—	Shield	—	—		—	—
16 (B)	15	Side camera RH image signal	Input	Ignition switch ON		—	Input the waveform synchronized with the camera image signal.  JSNIA0834GB
17 (R)	Ground	Rear camera ground	—	Ignition switch ON		0 - 0.1 V	0 V
18 (W)	17 (R)	Rear camera power supply	Output	Ignition switch ON		5.0 - 9.0 V	6.0 V
19	—	Shield	—	—		—	—
20 (B)	19	Rear camera image signal	Input	Ignition switch ON		—	Input the waveform synchronized with the camera image signal.  JSNIA0834GB
24 (P)	—	CAN-L	Input/ Output	—		—	—
26 (L)	—	CAN-H	Input/ Output	—		—	—
32 (G)	—	Reverse signal	Input	Ignition switch ON	Selector lever is in R position.	9.5 - 16.0 V	12.0 V
					Selector lever is in other than R position.	—	0 V
39 (B)	Ground	Ground	—	Ignition switch ON		0 - 0.1 V	0 V
40 (G)	Ground	Ignition signal	Input	Ignition switch ON		9.5 - 16.0 V	Battery voltage

Fail-safe

INFOID:0000000013615698

DTC Display contents of CONSULT	Malfunction detection condition	Fail-safe condition
C1A03 VHCL SPEED SE CIRC	If the vehicle speed signal (wheel speed) from CAN gateway [ABS actuator and electric unit (control unit)] received by the around view monitor control unit via CAN communication, are inconsistent	MOD (Moving Object Detection) function is cancel
C1A04 ABS/TCS/VDC CIRC	If a malfunction occurs in the VDC/TCS/ABS system	MOD (Moving Object Detection) function is cancel
C1A39 STRG SEN CIR	If the steering angle sensor is malfunction	MOD (Moving Object Detection) function is cancel
U0122 VDC P-RUN DIAGNOSIS	If around view monitor control unit detects an error signal that is received from CAN gateway [ABS actuator and electric unit (control unit)] via CAN communication	MOD (Moving Object Detection) function is cancel
U0416 VDC CHECKSUM DIAGNOSIS	If around view monitor control unit detects an error signal that is received from CAN gateway [ABS actuator and electric unit (control unit)] via CAN communication	MOD (Moving Object Detection) function is cancel
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.
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. • 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.
U1010 CONTROL UNIT (CAN)	CAN initial diagnosis malfunction is detected.	Around view monitor system does not function.
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). • MOD (Moving Object Detection) function is stopped.
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.	Camera image is not displayed (Gray screen display).
U111C FRONT CAMERA IMAGE SIGNAL	No-signal status of front 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).

DTC Display contents of CONSULT	Malfunction detection condition	Fail-safe condition
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.	Camera image is not displayed (Gray screen display).
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.
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 camera power supply output is ON: 5.9 - 6.5 V • When OFF: 0 V by camera power supply measurement	Camera power output is stopped
U1303 LED POWER SUPPLY VOLT	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	None
U1304 CAMERA IMAGE CALIB	• When camera calibration is incomplete. • When camera information in around view monitor 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.	On applicable camera screen ⚠ marking (Red) is displayed.

DTC Inspection Priority Chart

INFOID:0000000013615699

If multiple DTCs are detected simultaneously, check them one by one depending on the following DTC inspection priority chart.

Priority	Detected items (DTC)
1	U1305: CONFIG UNFINISH
2	• U1000: CAN COMM CIRCUIT • U1010: CONTROL UNIT (CAN)
3	U1232: ST ANGLE SEN CALIB
4	• C1A04: ABS/TCS/VDC CIRC • C1A39: STRG SEN CIR • U0122: VDC P-RUN DIAGNOSIS • U0416: VDC CHECKSUM DIAGNOSIS • U0428: ST ANGLE SENSOR CALIBRATION • U111A: REAR CAMERA IMAGE SIGNAL • U111B: SIDE CAMERA RH IMAGE SIGNAL • U111C: FRONT CAMERA IMAGE SIGNAL • U111D: SIDE CAMERA LH IMAGE SIGNAL • U1302: CAMERA POWER VOLT • U1303: LED POWER SUPPLY VOLT • U1304: CAMERA IMAGE CALIB
5	C1A03: VHCL SPEED SE CIRC

DTC Index

INFOID:0000000013615700

DTC	Display contents of CONSULT	Refer to
C1A03	VHCL SPEED SE CIRC	AV-308, "DTC Description"
C1A04	ABS/TCS/VDC CIRC	AV-310, "DTC Description"
C1A39	STRG SEN CIR	AV-312, "DTC Description"
U0122	VDC P-RUN DIAGNOSIS	AV-314, "DTC Description"
U0416	VDC CHECKSUM DIAGNOSIS	AV-316, "DTC Description"
U0428	ST ANGLE SENSOR CALIBRATION	AV-318, "DTC Description"
U1000[NOTE]	CAN COMM CIRCUIT	AV-319, "DTC Description"
U1010	CONTROL UNIT (CAN)	AV-321, "DTC Description"
U111A	REAR CAMERA IMAGE SIGNAL	AV-322, "DTC Description"
U111B	SIDE CAMERA RH IMAGE SIGNAL	AV-325, "DTC Description"
U111C	FRONT CAMERA IMAGE SIGNAL	AV-328, "DTC Description"
U111D	SIDE CAMERA LH IMAGE SIGNAL	AV-331, "DTC Description"
U1232	ST ANGLE SEN CALIB	AV-334, "DTC Description"
U1302	CAMERA POWER VOLT	AV-335, "DTC Description"
U1303	LED POWER SUPPLY VOLT	AV-339, "DTC Description"
U1304	CAMERA IMAGE CALIB	AV-340, "DTC Description"
U1305	CONFIG UNFINISH	AV-341, "DTC Description"

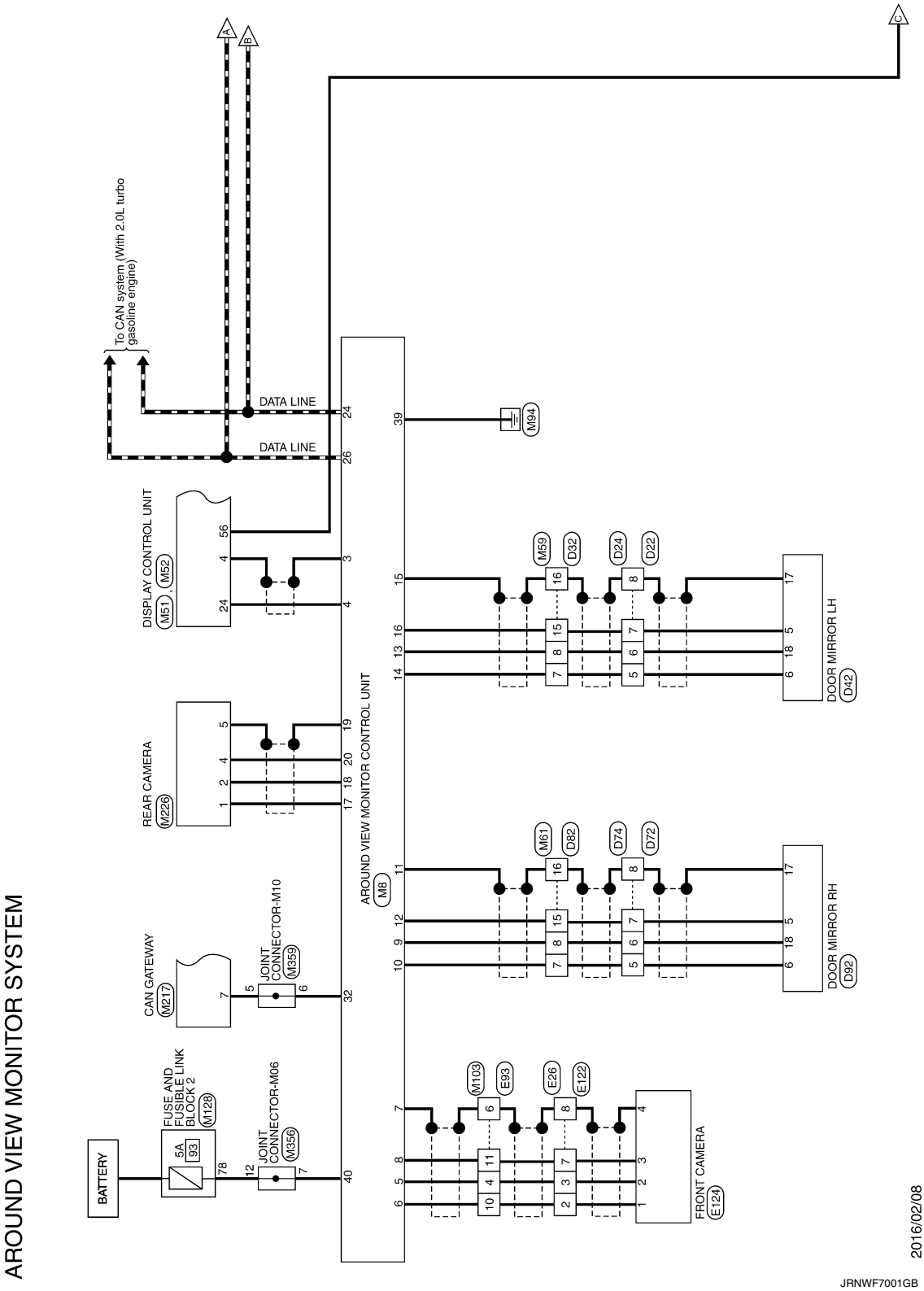
NOTE:
Some systems activate failsafe when U1000 is detected, and some do not.
- The systems which activate failsafe are those which use the signal from the control unit where communication with the around view monitor control unit is interrupted.

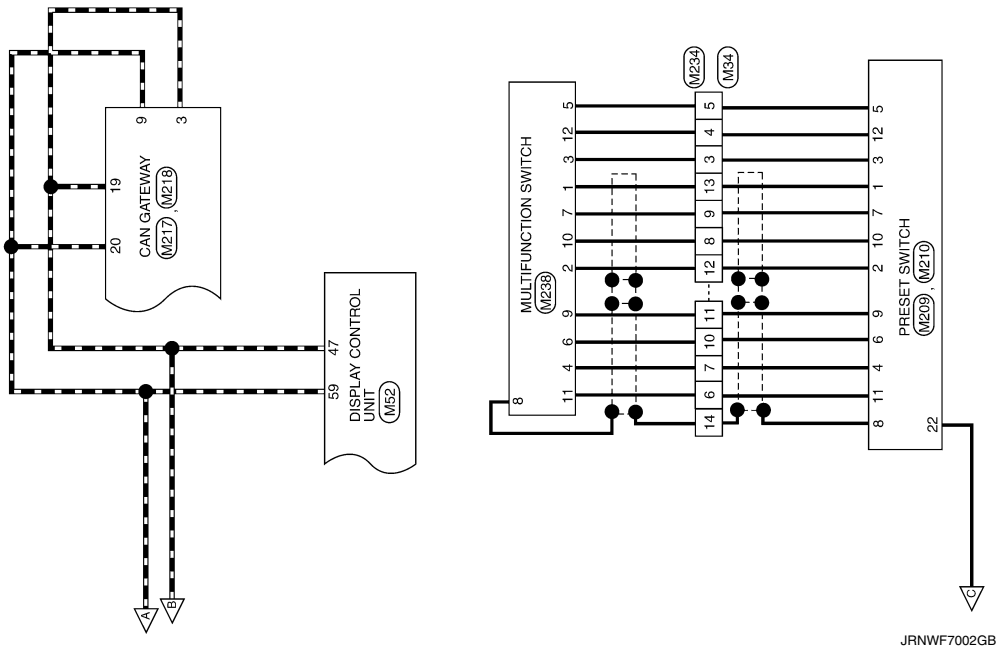
WIRING DIAGRAM

AROUND VIEW MONITOR SYSTEM

Wiring Diagram

INFOID:0000000013615701

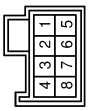




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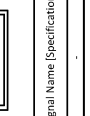
AROUND VIEW MONITOR SYSTEM

Connector No.	D22
Connector Name	WIRE TO WIRE
Connector Type	MB_A0255458826



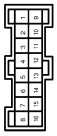
Terminal No.	Color Of Wire	Signal Name [Specification]
1	B	-
2	BR	-
3	P	-
4	B	-
5	R	-
6	W	-
7	B	-
8	SHIELD	-

Connector No.	D24
Connector Name	WIRE TO WIRE
Connector Type	MB_A0495450828



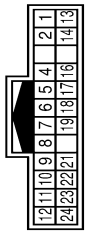
Terminal No.	Color Of Wire	Signal Name [Specification]
1	B	-
2	BR	-
3	L	-
4	BR	-
5	L	-
6	W	-
7	B	-
8	SHIELD	-

Connector No.	D32
Connector Name	WIRE TO WIRE
Connector Type	AMP_953892-1



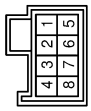
Terminal No.	Color Of Wire	Signal Name [Specification]
1	BR	-
2	BR	-
3	P	-
4	GR	- [Without BOSE audio]
4	V	- [With BOSE audio]
5	P	-
6	L	-
7	R	-
8	W	-
9	B	-
10	R	-
11	G	-
12	BR	- [Without BOSE audio]
12	P	- [With BOSE audio]
13	B	-
15	B	-
16	SHIELD	-

Connector No.	D42
Connector Name	DOOR MIRROR LH
Connector Type	TH24MW-NH



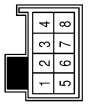
Terminal No.	Color Of Wire	Signal Name [Specification]
1	B	-
2	BR	-
3	BR	-
4	Y	-
5	R	-
6	W	-
7	B	-
8	SHIELD	-

Connector No.	D72
Connector Name	WIRE TO WIRE
Connector Type	MB_A0255458826



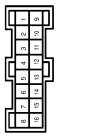
Terminal No.	Color Of Wire	Signal Name [Specification]
1	G	-
2	G	-
4	BR	-
5	B	-
6	L	-
7	L	-
8	O	-
9	O	-
10	L	-
11	Y	-
12	P	-
13	W	-
14	V	-
16	V	-
17	SHIELD	-
18	W	-
19	B	-
21	G	-
22	GR	-
23	B	-
24	BR	-

Connector No.	D74
Connector Name	WIRE TO WIRE
Connector Type	MB_A0495450828



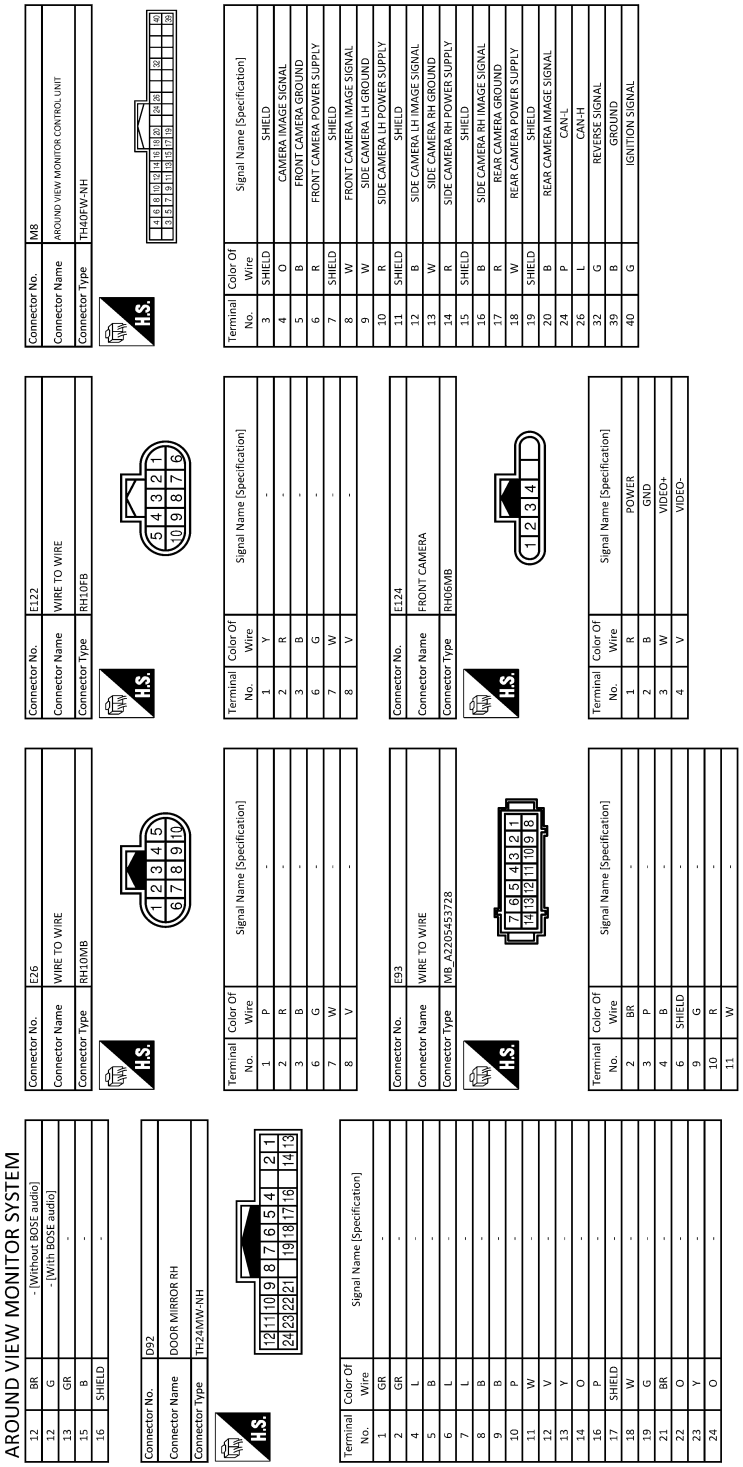
Terminal No.	Color Of Wire	Signal Name [Specification]
1	B	-
2	BR	-
3	L	-
4	BR	-
5	L	-
6	W	-
7	B	-
8	SHIELD	-

Connector No.	D82
Connector Name	WIRE TO WIRE
Connector Type	AMP_953892-1



Terminal No.	Color Of Wire	Signal Name [Specification]
1	B	-
2	BR	-
3	G	-
4	GR	- [Without BOSE audio]
4	L	- [With BOSE audio]
5	Y	-
7	R	-
8	W	-
9	BR	-
10	R	-
11	G	-

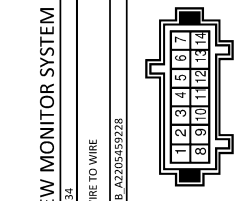
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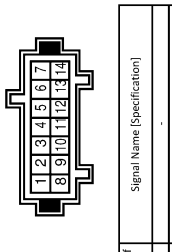
AROUND VIEW MONITOR SYSTEM

Connector No.	M34
Connector Name	WIRE TO WIRE
Connector Type	MB_A2205459228



Terminal No.	Color Of Wire	Signal Name [Specification]
3	BR	-
4	V	-
5	L	-
6	W	-
7	R	-
8	Y	-
9	L	-
10	G	-
11	B	-
12	R	-
13	B	-
14	GR	-

Connector No.	M51
Connector Name	DISPLAY CONTROL UNIT
Connector Type	TH40FW-NH



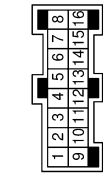
Terminal No.	Color Of Wire	Signal Name [Specification]
4	SHIELD	SHIELD
6	SHIELD	SHIELD
8	G	SOUND SIGNAL RH (-)
9	SHIELD	SHIELD
10	L	SOUND SIGNAL LH (-)
11	W	TEL VOICE SIGNAL (-)
12	SHIELD	SHIELD
13	R	VOICE GUIDANCE SIGNAL (-)
14	B	VOICE GUIDANCE SIGNAL (-)
15	W	NS ON/OFF SIGNAL
16	R	MICROPHONE SIGNAL GROUND
17	SHIELD	SHIELD
18	SHIELD	SHIELD
20	B	CAMERA GROUND
24	O	CAMERA IMAGE SIGNAL
26	W	SOUND SIGNAL (-)
27	B	SOUND SIGNAL (+)
28	R	SOUND SIGNAL RH (+)
29	SHIELD	SHIELD
30	P	SOUND SIGNAL LH (+)
31	B	TEL VOICE SIGNAL (+)
32	SHIELD	SHIELD
33	G	VOICE GUIDANCE SIGNAL (+)
34	W	VOICE GUIDANCE SIGNAL (+)
35	SHIELD	SHIELD
36	G	MICROPHONE SIGNAL
37	O	MICROPHONE SIGNAL [Color of wire differs depending on production]
37	R	MICROPHONE SIGNAL [Color of wire differs depending on production]
38	L	MICROPHONE POWER SUPPLY
40	Y	CAMERA POWER SUPPLY

Connector No.	M52
Connector Name	DISPLAY CONTROL UNIT
Connector Type	TH24FW-NH



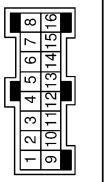
Terminal No.	Color Of Wire	Signal Name [Specification]
46	G	AV COMMUNICATION SIGNAL (L)
47	P	CAN-L
49	R	DIMMER SIGNAL
50	BR	REVERSE SIGNAL
52	B	GROUND
56	BR	CAMERA SWITCH SIGNAL
58	Y	AV COMMUNICATION SIGNAL (H)
59	L	CAN-H
60	W	IGNITION SIGNAL
61	R	VEHICLE SPEED SIGNAL [8-PULSE]
63	L	ACC POWER SUPPLY
64	Y	BATTERY POWER SUPPLY

Connector No.	M59
Connector Name	WIRE TO WIRE
Connector Type	AMP_953893-1



Terminal No.	Color Of Wire	Signal Name [Specification]
1	BR	-
2	BR	-
3	O	-
4	V	- [With BOSE audio]
4	W	- [Without BOSE audio]
5	P	-
6	L	-
7	R	-
8	W	-
9	B	-
10	R	-
11	G	-
12	L	- [Without BOSE audio]
12	P	- [With BOSE audio]
13	B	-
15	B	-
16	SHIELD	-

Connector No.	M61
Connector Name	WIRE TO WIRE
Connector Type	AMP_953893-1



Terminal No.	Color Of Wire	Signal Name [Specification]
1	G	-
2	BR	-
3	G	-
4	L	- [With BOSE audio]
4	Y	- [Without BOSE audio]
5	V	-
7	R	-
8	W	-
9	BR	-
10	R	-
11	O	-
12	BR	- [Without BOSE audio]
12	G	- [With BOSE audio]
13	GR	-
15	B	-
16	SHIELD	-

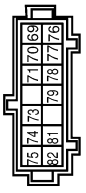
Connector No.	M103
Connector Name	WIRE TO WIRE
Connector Type	MB_A2205459228

Terminal No.	Color Of Wire	Signal Name [Specification]
2	BR	-
3	P	-
4	B	-
6	SHIELD	-
9	G	-
10	R	-
11	W	-

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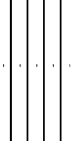
AROUND VIEW MONITOR SYSTEM

Connector No.	M128
Connector Name	FUSE AND FUSIBLE LINK BLOCK 2
Connector Type	MB_A0395456128



Terminal No.	Color Of Wire	Signal Name [Specification]
69	B	-
70	P	-
71	B	-
73	BR	-
74	B	-
75	G	-
76	R	-
77	Y	-
78	P	-
79	GR	-
81	O	-
82	B	-

Connector No.	M209
Connector Name	PRESET SWITCH
Connector Type	TH12FW-NH



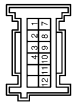
Terminal No.	Color Of Wire	Signal Name [Specification]
1	B	NAVI SIGNAL
2	R	PUSH SWITCH C SIGNAL
3	BR	ILLUMINATION SIGNAL
4	R	ENCD-B SIGNAL
5	L	GROUND
6	G	PUSH SWITCH A SIGNAL
7	L	TYPE SIGNAL
8	GR	SHIELD
9	B	PUSH SWITCH B SIGNAL
10	Y	PUSH SWITCH D SIGNAL
11	W	ENCD-A SIGNAL
12	V	ILLUMINATION CONTROL SIGNAL

Connector No.	M210
Connector Name	PRESET SWITCH
Connector Type	TH16FW-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
20	O	ACC POWER SUPPLY
21	W	DISK EJECT SIGNAL
22	BR	CAMERA SWITCH SIGNAL
23	G	DISK EJECT SIGNAL GROUND
24	W	ILLUMINATION CONTROL SIGNAL
25	B	GROUND
26	G	AV COMMUNICATION SIGNAL (L)
27	L	AV COMMUNICATION SIGNAL (H)
28	W	ILLUMINATION SIGNAL

Connector No.	M217
Connector Name	CAN GATEWAY
Connector Type	MB_A0225400481



Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	SOS SWITCH LED SIGNAL
2	R	DIMMER SIGNAL
3	P	MULTIFUNCTION MEDIA CAN-L
4	O	ENGINE SPEED SIGNAL
7	BR	REVERSE SIGNAL
8	V	ACC POWER SUPPLY
9	L	MULTIFUNCTION MEDIA CAN-H
10	W	SOS CALL SWITCH SIGNAL
11	Y	VEHICLE SPEED SIGNAL
12	W	ILLUMINATION CONTROL SIGNAL

Connector No.	M218
Connector Name	CAN GATEWAY
Connector Type	MB_A0225400581



Terminal No.	Color Of Wire	Signal Name [Specification]
13	B	GROUND
14	G	AV COMMUNICATION-L
15	L	AV COMMUNICATION-H
16	G	CHASSIS CAN-L
17	W	CHASSIS CAN-H
18	O	BATTERY POWER SUPPLY
19	P	MULTIFUNCTION MEDIA CAN-L
20	L	MULTIFUNCTION MEDIA CAN-H
21	BR	BODY CAN 1-L
22	R	BODY CAN 1-H
23	L	DIAGNOSTIC CAN-L
24	V	DIAGNOSTIC CAN-H

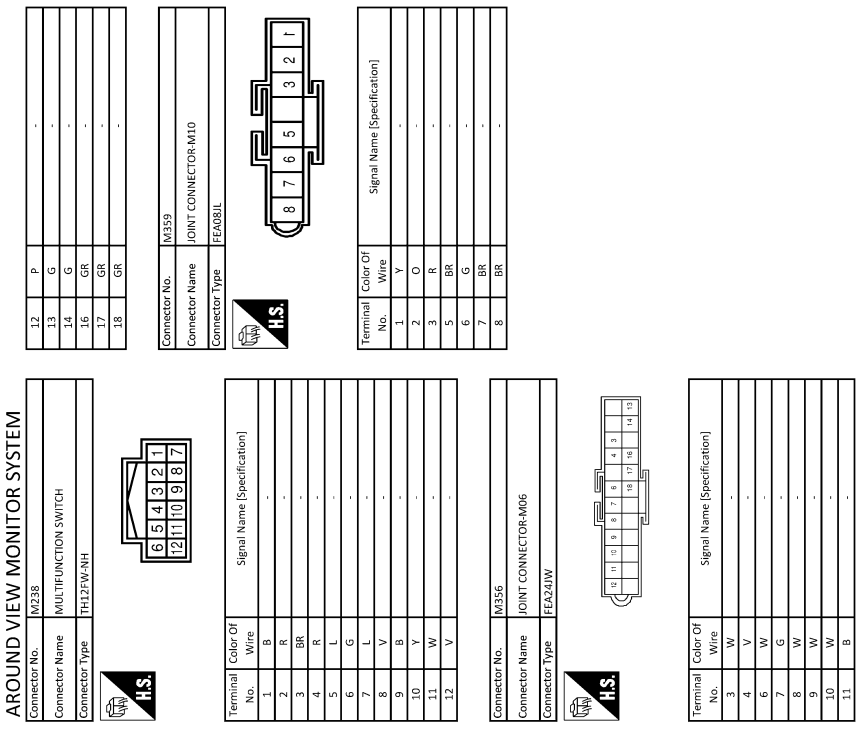
Connector No.	M226
Connector Name	REAR CAMERA
Connector Type	RH06FB-1V

Terminal No.	Color Of Wire	Signal Name [Specification]
1	R	GND
2	W	VCC
4	B	VIDEO+
5	P	-

Connector No.	M234
Connector Name	WIRE TO WIRE
Connector Type	MB_A2205453728

Terminal No.	Color Of Wire	Signal Name [Specification]
3	BR	-
4	V	-
5	L	-
6	W	-
7	R	-
8	Y	-
9	L	-
10	G	-
11	B	-
12	R	-
13	B	-
14	V	-

JRNWF7006GB



JRNWF7007GB

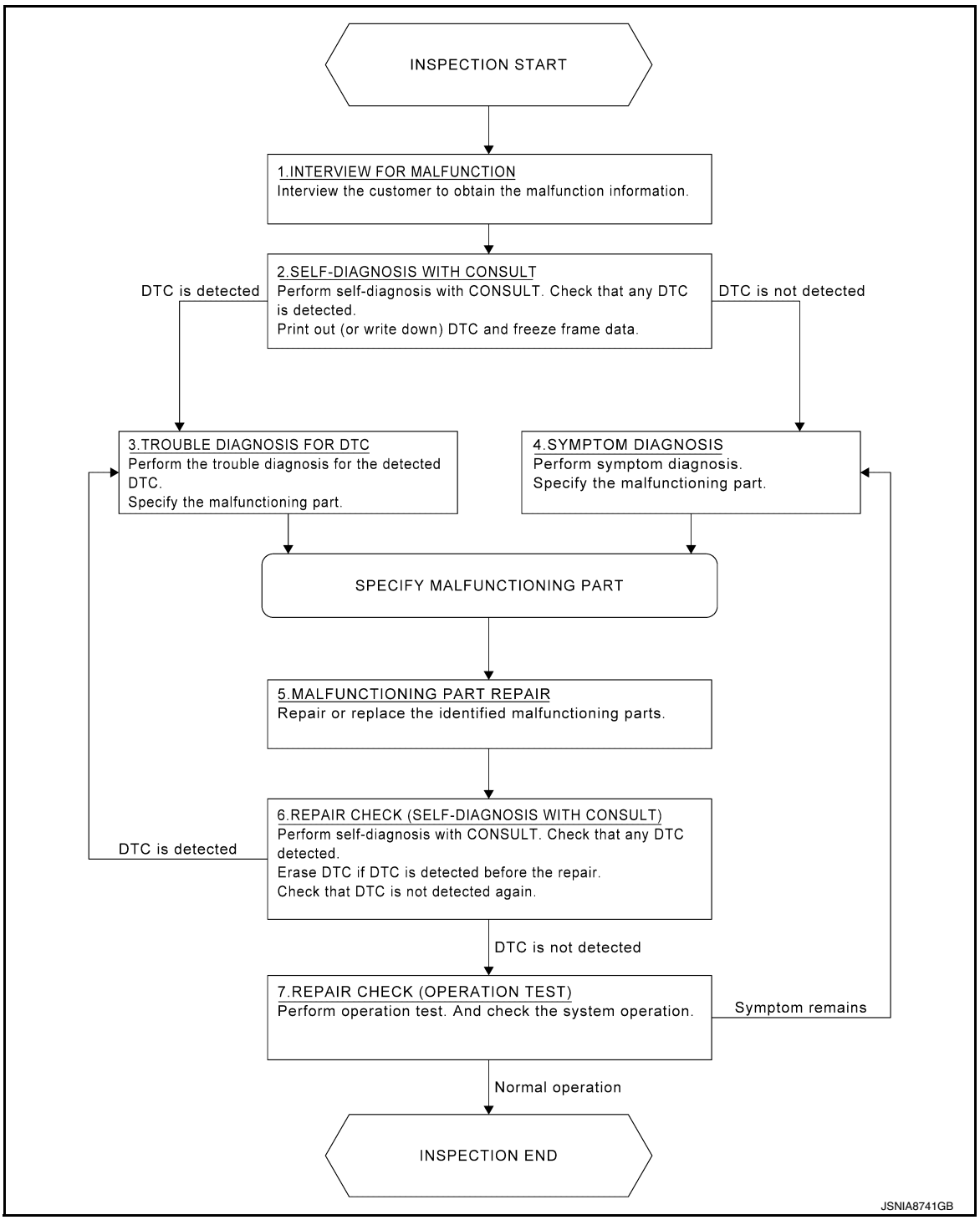
BASIC INSPECTION

DIAGNOSIS AND REPAIR WORKFLOW

Work Flow

INFOID:0000000013615702

OVERALL SEQUENCE



DETAILED FLOW

1.INTERVIEW FOR MALFUNCTION

It is also important to clarify the customer concerns before starting the inspection. Interview the customer about the concerns carefully and understand the symptoms fully.

NOTE:

The customers are not professionals. Never assume that “maybe the customer means···” or “maybe the customer mentioned this symptom”.

>> GO TO 2.

2.SELF-DIAGNOSIS WITH CONSULT

With CONSULT
Perform self-diagnosis of “AVM” using CONSULT. Refer to AV-280, "CONSULT Function".
NOTE:
Skip to step 4 of the diagnosis procedure if “AVM” is not displayed.

Is any DTC detected?

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

3.TROUBLE DIAGNOSIS FOR DTC

1. Check the DTC indicated in the “Self Diagnostic Result”.
2. When DTC is detected, follow the instructions below:
- Record DTC
- Freeze Frame Data (FFD)
3. Perform the relevant diagnosis referring to the DTC Index. Refer to AV-288, "DTC Index".

NOTE:
If DTC “U1000” is detected, first diagnose the CAN communication system.

>> GO TO 5.

4.SYMPTOM DIAGNOSIS

Perform the applicable diagnosis according to the diagnosis chart by symptom. Refer to AV-345, "Symptom Table".

>> GO TO 5.

5.MALFUNCTIONING PART REPAIR

Repair or replace the identified malfunctioning parts.

>> GO TO 6.

6.REPAIR CHECK (SELF-DIAGNOSIS WITH CONSULT)

With CONSULT
1. Erases self-diagnosis results.
2. Perform self-diagnosis of “AVM” again after repairing or replacing the specific items.
3. Check if any DTC is detected in self-diagnosis results of “AVM” .

Is any DTC detected?

YES >> GO TO 3.
NO >> GO TO 7.

7.REPAIR CHECK (OPERATION TEST)

Perform operation test. Check that the malfunction symptom is solved or no other symptoms occur.

Is there a malfunction symptom?

YES >> GO TO 4.
NO >> INSPECTION END

ADDITIONAL SERVICE WHEN REPLACING AROUND VIEW MONITOR CONTROL UNIT

Description

INFOID:0000000013615703

- Always perform the around view monitor control unit configuration after replacing the around view monitor control unit. Refer to AV-298, "Work Procedure".
- Always perform the around view monitor calibration after removing and installing or replacing the rear camera.
- Always perform the around view monitor calibration after replacing the around view monitor control unit.

CAUTION:

The system does not operate normally unless the around view monitor calibration is performed. Always perform it.

Work Procedure

INFOID:0000000013615704

1.AROUND VIEW MONITOR CONTROL UNIT CONFIGURATION

Perform the around view monitor control unit configuration with CONSULT. Refer to AV-299, "Work Procedure".

>> GO TO 2.

2.AROUND VIEW MONITOR CONTROL UNIT CALIBRATION

Perform the around view monitor calibration with CONSULT. Refer to AV-302, "Description".

>> GO TO 3.

3.PREDICTIVE COURSE LINE CENTER POSITION ADJUSTMENT

Perform the predictive course line center position adjustment. Refer to AV-301, "Description".

>> GO TO 4.

4.PERFORM SELF-DIAGNOSIS

1. Perform the self-diagnosis of around view monitor control unit with CONSULT (AVM).
2. Check if any DTC is detected.

Is any DTC detected?

YES >> Perform the trouble diagnosis for the detected DTC. Refer to AV-288, "DTC Index".
NO >> WORK END

CONFIGURATION (AROUND VIEW MONITOR CONTROL UNIT)

Work Procedure

INFOID:0000000013615705

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-347, "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-347, "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 around view monitor 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.**
- **Do not perform any operation such as the navigation operation during configuration writing.**

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.
- If selection items are not displayed on the CONSULT screen, touch “NEXT”.

MANUAL SETTING ITEM		Detail
Items	Setting value	
HANDLE	LHD	LHD models
	RHD	RHD models
TRANSMISSION	AT/CVT	A/T models
	MT	M/T models

>> 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?

YES >> GO TO 5.
NO >> 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

PREDICTIVE COURSE LINE CENTER POSITION ADJUSTMENT

Description

INFOID:0000000013615706

Adjust the center position of the predictive course line of the front view and rear view monitor.
Refer to AV-301, "Work Procedure".

Work Procedure

INFOID:0000000013615707

1.DRIVING

Drive the vehicle straight ahead 100 m (328.1 ft) or more at a speed of 30 km/h (19 MPH) or more.

>> WORK END

CALIBRATING CAMERA IMAGE (AROUND VIEW MONITOR)

Description

INFOID:0000000013615708

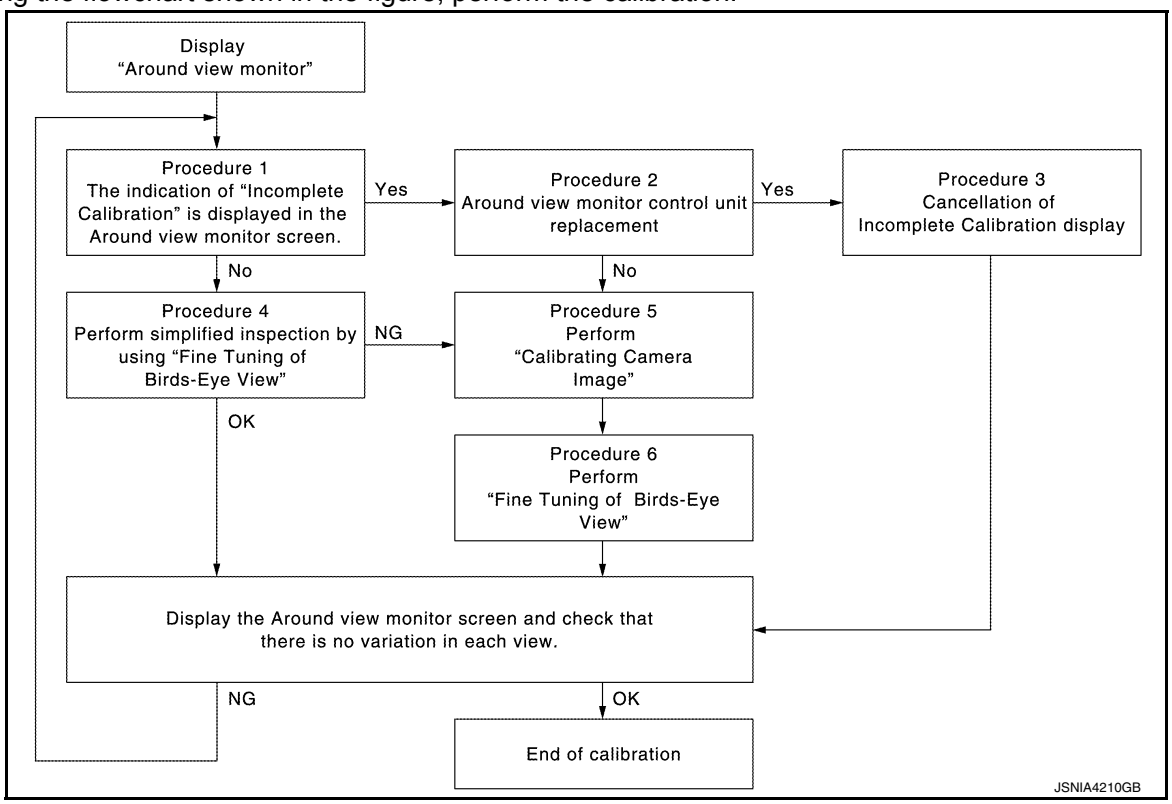
- Calibration must be performed after removing/replacing the cameras, removing parts (e.g. front grille, door mirror, and others) mounted on the cameras, or replacing the around view monitor control unit. Refer to AV-302, "Work Procedure".
- The use of CONSULT is required to perform calibration or writing of calibration results to the around view monitor control unit.
- Align the white lines on the road near the vehicle at the boundary of each camera image by this camera calibration. The white lines far from the vehicle may not be aligned at the boundary of each camera image. The farther the line, the greater the difference is.

Work Procedure

INFOID:0000000013615709

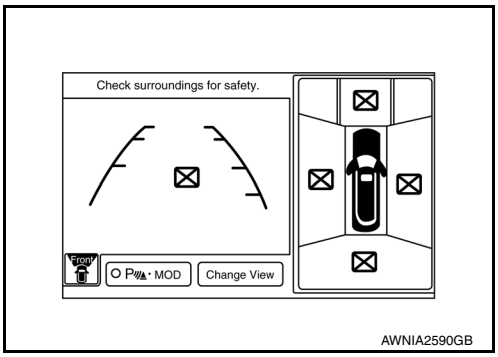
CALIBRATION FLOWCHART

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



NOTE:

View in the incomplete calibration state is indicated by “⊠” on the around view monitor.



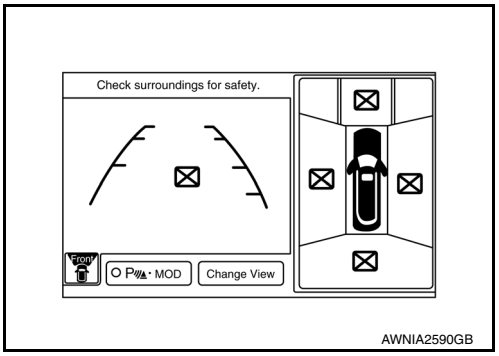
CALIBRATION PROCEDURE

1. AROUND VIEW MONITOR SCREEN CONFIRMATION

Check that there is no indication of “Incomplete calibration”.

Is the “Incomplete calibration” display visible?

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



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2. CHECK THAT AROUND VIEW MONITOR CONTROL UNIT IS REPLACED

Check that the around view monitor control unit is replaced.

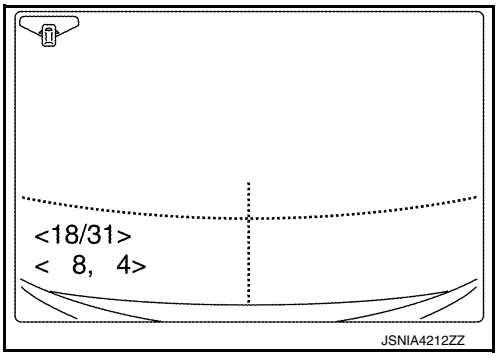
Is the around view monitor control unit replaced?

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

3. CANCEL THE INDICATION OF INCOMPLETE CALIBRATION (PERFORM THIS ONLY AFTER REPLACING AROUND VIEW MONITOR CONTROL UNIT.)

CONSULT work support

1. On the CONSULT screen, touch “CALIBRATING CAMERA IMAGE (FRONT CAMERA)”, “CALIBRATING CAMERA IMAGE (PASS-SIDE CAMERA)”, “CALIBRATING CAMERA IMAGE (DR-SIDE CAMERA)”, or “CALIBRATING CAMERA IMAGE (REAR CAMERA)” to accept the selection.
   NOTE:
   To cancel the indication of Incomplete calibration, select items based on the target camera.
2. On the adjustment screen of each camera, touch “APPLY” button. After this, touch “OK” button.
   CAUTION:
   - **Never perform operations other than those mentioned above.**
   - **Never perform “Initialize Camera Image Calibration”.**
3. Display the around view monitor screen to check that there is no errors, such as deviations among the camera images.



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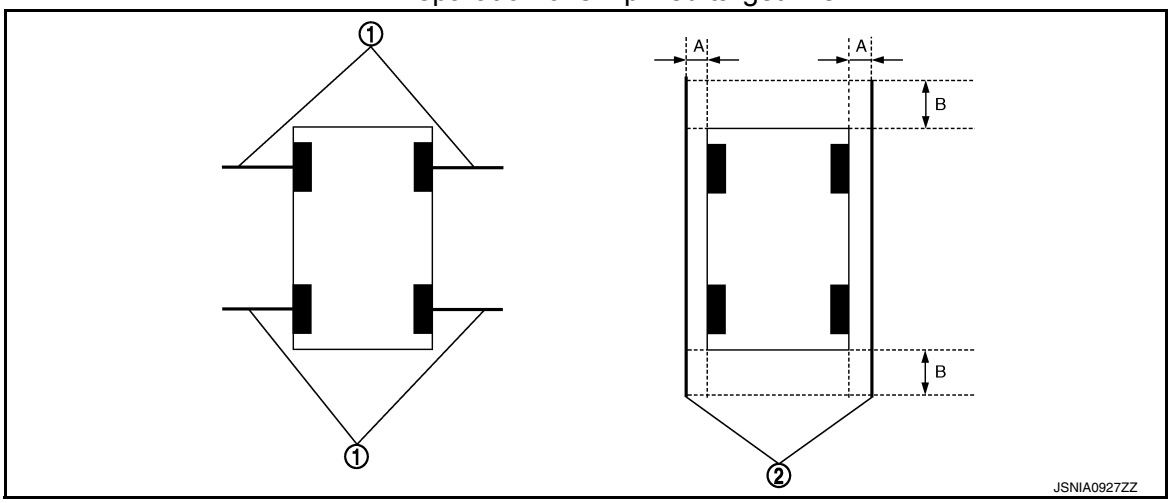
Is there a malfunction?

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

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

1. Put target line 1 on the ground beside each axle using packing tape, etc.
2. Put target lines 2 equal to the vehicle total length + approximately 1.0 m (39.4 in) from the vehicle side (right and left) at approximately 30 cm (11.8 in) away from the vehicle (make the line as parallel with the vehicle as possible)

Preparation of simplified target line



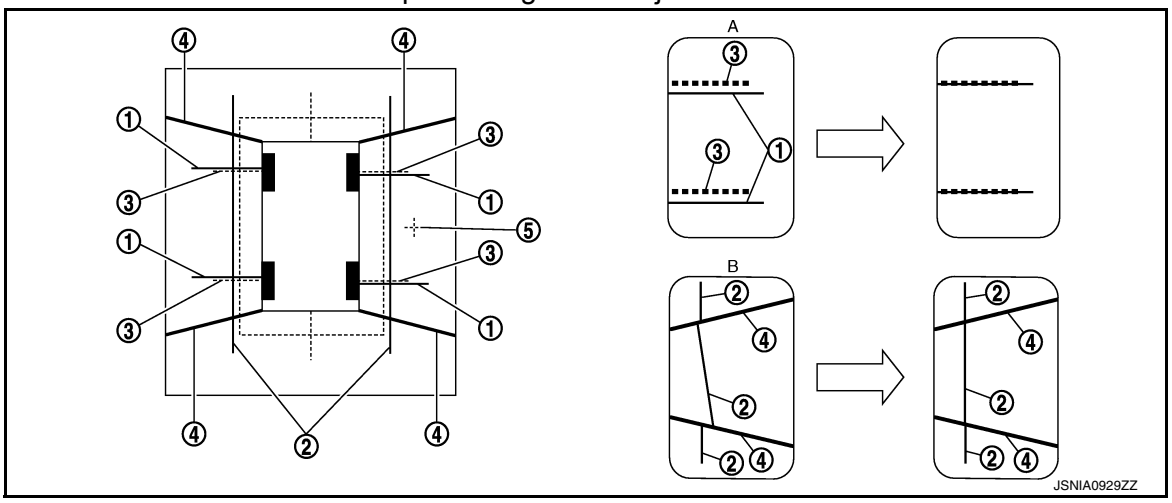
① Target lines 1 ② Target lines 2
A. Approx. 30 cm (11.8 in) B. Approx. 1.0 m (39.4 in)

3. CONSULT work support
   Touch “FINE TUNING OF BIRDS-EYE VIEW” on the CONSULT screen.
4. On the CONSULT screen, touch “SELECT” button to select right or left camera and perform camera calibration as instructed below:

- If the marker on the screen deviates from Target line 1, touch “AXIS X” button and “AXIS Y” button to adjust so that the marker is placed on the Target line 1.
- If Target line 2 is misaligned among the cameras, adjust each camera image to bring Target line 2 into a straight line.

CAUTION:
Never adjust the front camera and rear camera. Only adjust the right and left cameras.

Simplified target line adjustment method



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

5. Adjust right and left cameras. Touch "APPLY" on the CONSULT screen to display adjustment results.
6. After adjusting right and left cameras, check that the marker is properly placed on the screen and there is no deviation in Target line 1.
   NOTE:
   • It can be initialized to the NISSAN factory default condition with “Initialize Camera Image Calibration”.
   • The adjustment value is cancelled on this mode by performing “Initialize Camera Image Calibration”.

Is the difference corrected?

YES >> On the CONSULT screen, touch “OK” button to complete writing to the around view monitor control unit.

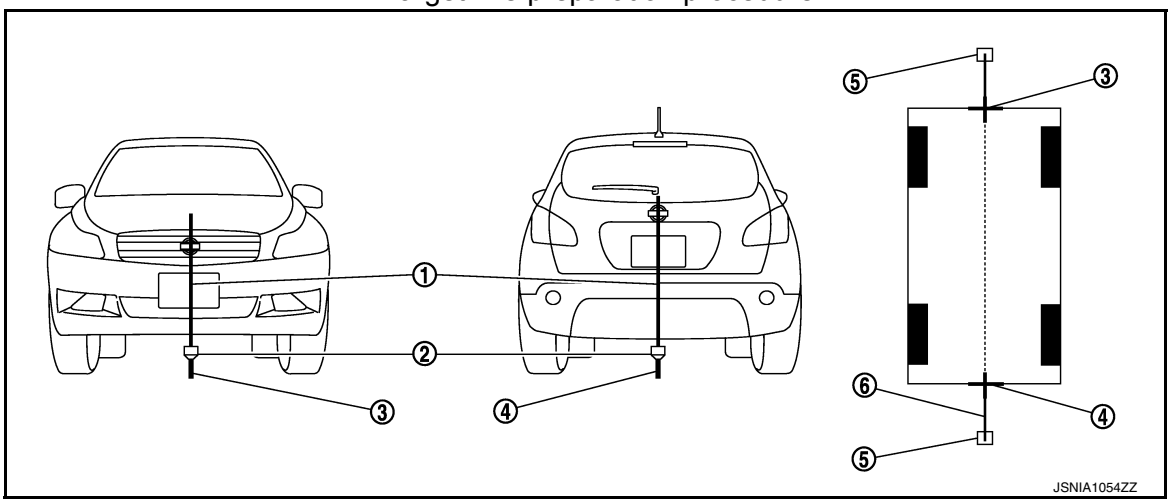
NO >> GO TO 5.

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 with white packing tape or a pen.
2. Route the vinyl string under the vehicle, and then pull and fix it on the point approximately 1.0 m (39.4 in) to the front and rear of the vehicle through the points FM0 and RM0 using packing tape.

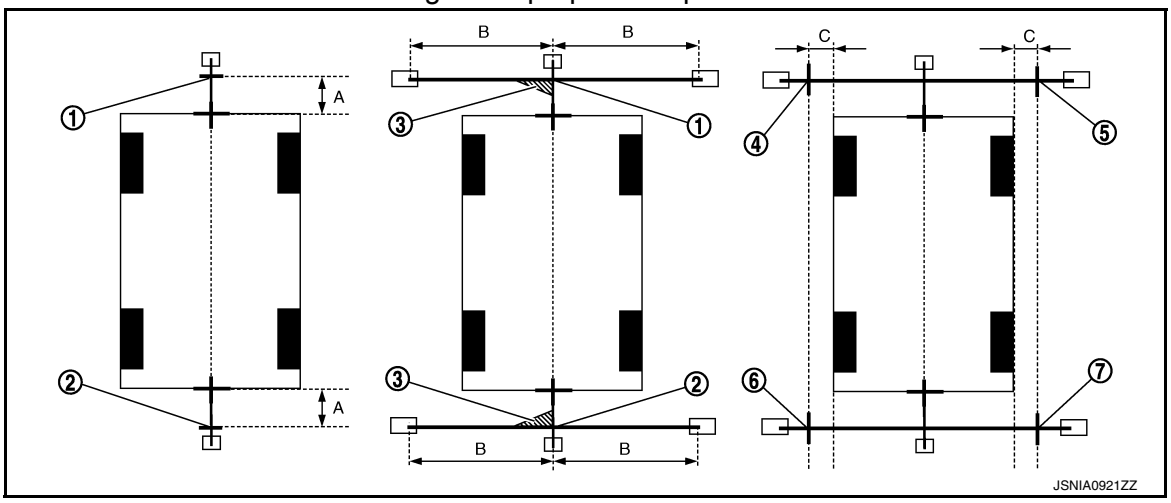
Target line preparation procedure 1



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 the points FM and RM (mark) 75 cm (29.5 in) from the points FM0 and RM0 individually.
4. Route the vinyl string through the points FM and RM using a triangle scale, and then fix it at approximately 1.5 m (59 in) on both sides with packing tape.
5. Put the points FL, FR, RL, and RR (mark) to both right and left [vehicle width / 2 + 30 cm (11.8 in)] from the points FM and RM.

Target line preparation procedure 2



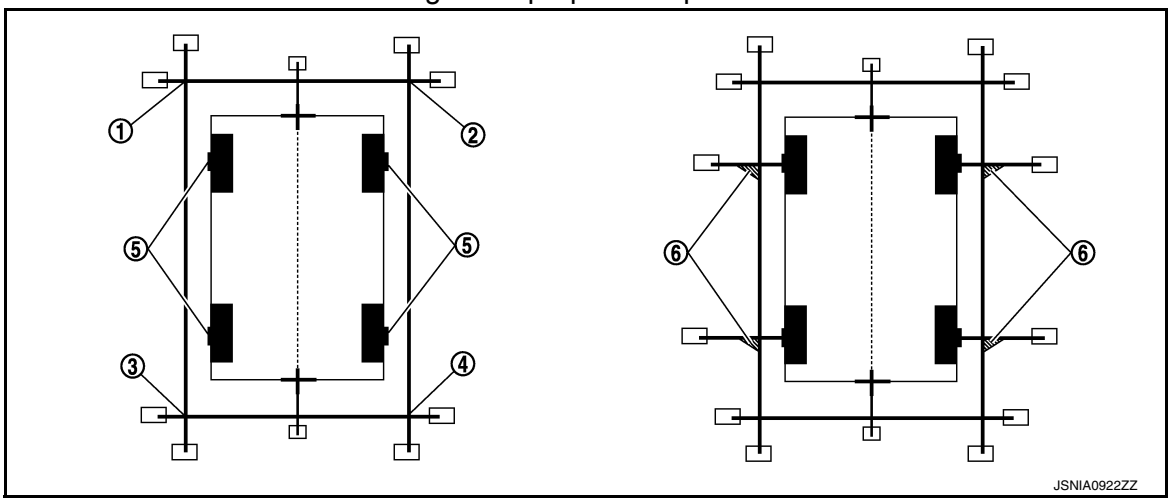
① Point FM ② Point RM ③ Triangle scale
④ Point FL (mark) ⑤ Point FR (mark) ⑥ Point RL (mark)

⑦ Point RR (mark)

A. 75 cm (29.5 in) B. Approx. 1.5 m (59 in) C. 30 cm (11.8 in) [Vehicle width/ 2 + 30 cm (11.8 in) from the points FM and RM]

6. Draw the lines of the points FL – RL and FR – RR with 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 the 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

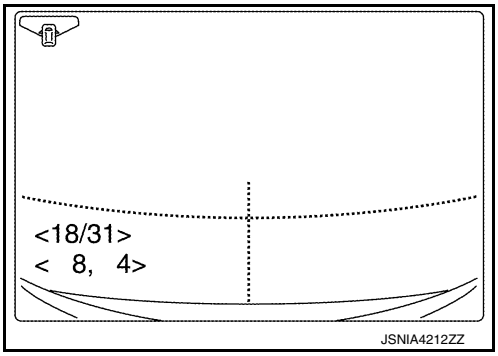


① Point FL ② Point FR ③ Point RL
④ Point RR ⑤ Center position of axle ⑥ Triangle scale

Perform “Calibrating Camera Image”

CONSULT work support

1. On the CONSULT screen, touch “CALIBRATING CAMERA IMAGE (FRONT CAMERA)”, “CALIBRATING CAMERA IMAGE (PASS-SIDE CAMERA)”, “CALIBRATING CAMERA IMAGE (DR-SIDE CAMERA)”, or “CALIBRATING CAMERA IMAGE (REAR CAMERA)” to accept the selection.
   NOTE:
   To cancel the indication of Incomplete calibration, select items based on the target camera.
2. On the adjustment screen of each camera, adjust the parameter by touching the “AXIS X” button, “AXIS Y” button, and “ROTATE” button to place the calibration marker shown on the camera screen on the target line drawn on the ground.



Adjustment range	
Rotation direction (Center dial)	: 31 patterns (16 on the center)
Upper/lower direction (upper/lower switch)	: –22 – 22
Left/right direction (left/right switch)	: –22 – 22

3. Touch “APPLY” button on the CONSULT screen. “PRCSNG” is displayed and adjustment results are shown on the camera screen.
   CAUTION:
   Check that “PRCSNG” is displayed. Do never perform other operations while “PRCSNG” is displayed.
4. Touch “OK” button on the CONSULT screen. “PRCSNG” is displayed and adjustment results are written to the around view monitor control unit.
   CAUTION:
   Check that “PRCSNG” is displayed. Do never perform other operations while “PRCSNG” is displayed.

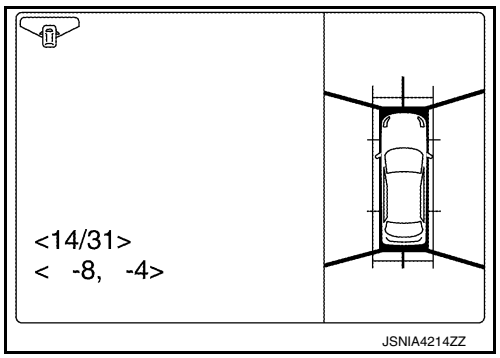
>> GO TO 6.

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

This mode is designed to align the boundary between each camera image that could not be aligned in the “Calibrating Camera Image” mode.

CONSULT work support

1. Select “FINE TUNING OF BIRDS-EYE VIEW” by touching CONSULT screen.
2. On the adjustment screen of each camera, adjust the parameter by touching the “AXIS X” button, “AXIS Y” button”, and “ROTATE” button to place the calibration marker shown on the camera screen on the target line drawn on the ground.
   NOTE:
   Touch “SELECT” button on the CONSULT screen to select the target camera.
3. Touch “APPLY” button on the CONSULT screen. “PRCSNG” is displayed and adjustment results are shown on the camera screen.
   CAUTION:
   Check that “PRCSNG” is displayed. Do never perform other operations while “PRCSNG” is displayed.



4. Touch “OK” button on the CONSULT screen. “PRCSNG” is displayed and adjustment results are written to the around view monitor control unit.
   CAUTION:
   - **Check that “PRCSNG” is displayed. Never perform other operations while “PRCSNG” is displayed.**
   - **After pressing the “OK” button, never press buttons other than the “BACK” button.**

   NOTE:
   - It can be initialized to the NISSAN factory default condition with “Initialize Camera Image Calibration”.
   - The adjustment value is cancelled in this mode by performing “Initialize Camera Image Calibration”.

>> Calibration end

DTC/CIRCUIT DIAGNOSIS

C1A03 VEHICLE SPEED SENSOR

DTC Description

INFOID:0000000013615710

DTC DETECTION LOGIC

DTC	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
C1A03	VHCL SPEED SE CIRC (Vehicle speed sensor circuit)	Diagnosis condition	When ignition switch is ON
		Signal (terminal)	CAN communication signal
		Threshold	Received the vehicle speed signals (wheel speed) from CAN gateway are inconsistent
		Diagnosis delay time	2 seconds or more

POSSIBLE CAUSE

- Around view monitor control unit
- CAN gateway

FAIL-SAFE

MOD (Moving Object Detection) function is cancel

DTC CONFIRMATION PROCEDURE

1. CHECK DTC PRIORITY

If DTC “C1A03” is displayed with DTC “U1000” or “C1A04”, first perform the confirmation procedure (trouble diagnosis) for DTC “U1000” or “C1A04”.

Is applicable DTC detected?

YES >> Perform diagnosis of applicable.
- U1000: Refer to AV-319, "DTC Description".
- C1A04: Refer to AV-310, "DTC Description".

NO >> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT
1. Start the engine.
2. Drive the vehicle at 30 km/h (19 MPH) or more.
   CAUTION:
   Always drive safety.
3. Stop the vehicle.
4. Perform “All DTC Reading” with CONSULT.
5. Check if the “C1A03” is detected as the current malfunction in “Self Diagnostic Result” of “AVM”.

Is DTC “C1A03” detected as the current malfunction?

YES >> Refer to AV-308, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-56, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000013615711

1. CHECK SELF-DIAGNOSTIC RESULT OF CAN GATEWAY

With CONSULT
Check “Self Diagnostic Result” of “CAN GATEWAY” using CONSULT.

Is any DTC detected?

YES >> Perform diagnosis procedure for detected DTC. Refer to LAN-156, "DTC Index".
NO >> GO TO 2.

2. PERFORM ALL DTC READING

With CONSULT
1. Perform “All DTC Reading”.
2. Check diagnosis results.

Is any DTC detected?

YES >> Perform diagnosis procedure corresponding to DTC indicated.
NO >> GO TO 3.

3. CHECK INTERMITTENT INCIDENT

Check the intermittent incident. Refer to GI-56, "Intermittent Incident".

Is the inspection result normal?

YES >> Replace around view monitor control unit. Refer to AV-347, "Removal and Installation".
NO >> Repair or replace malfunctioning parts.

C1A04 ABS/TCS/VDC SYSTEM

DTC Description

INFOID:0000000013615712

DTC DETECTION LOGIC

DTC	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
C1A04	ABS/TCS/VDC CIRC (ABS/TCS/VDC circuit)	Diagnosis condition	When ignition switch is ON
		Signal (terminal)	CAN communication signal
		Threshold	The VDC/TCS/ABS system is malfunctioning
		Diagnosis delay time	2 seconds or more

POSSIBLE CAUSE

- Around view monitor control unit
- CAN gateway

FAIL-SAFE

MOD (Moving Object Detection) function is cancel

DTC CONFIRMATION PROCEDURE

1.CHECK DTC PRIORITY

If DTC C1A04 is displayed with DTC U1000, first perform the confirmation procedure (trouble diagnosis) for DTC U1000.

Is applicable DTC detected?

YES >> Perform diagnosis of applicable. Refer to AV-319, "DTC Description".
NO >> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT
1. Start the engine.
2. Perform “All DTC Reading” with CONSULT.
3. Check if the “C1A04” is detected as the current malfunction in “Self Diagnostic Result” of “AVM”.

Is “C1A04” detected as the current malfunction?

YES >> Refer to AV-310, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-56, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000013615713

1.CHECK SELF-DIAGNOSTIC RESULT OF CAN GATEWAY

With CONSULT
Check “Self Diagnostic Result” of “CAN GATEWAY” using CONSULT.

Is any DTC detected?

YES >> Perform diagnosis procedure for detected DTC. Refer to LAN-156, "DTC Index".
NO >> GO TO 2.

2.PERFORM ALL DTC READING

With CONSULT
1. Perform “All DTC Reading”.
2. Check diagnosis results.

Is any DTC detected?

YES >> Perform diagnosis procedure corresponding to DTC indicated.
NO >> GO TO 3.

3.CHECK INTERMITTENT INCIDENT

Check the intermittent incident. Refer to GI-56, "Intermittent Incident".

Is the inspection result normal?

YES >> Replace around view monitor control unit. Refer to AV-347, "Removal and Installation".
NO >> Repair or replace malfunctioning parts.

C1A39 STEERING ANGLE SENSOR

DTC Description

INFOID:0000000013615714

DTC DETECTION LOGIC

DTC	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
C1A39	STRG SEN CIR (Steering angle sensor circuit)	Diagnosis condition	When ignition switch is ON
		Signal (terminal)	CAN communication signal
		Threshold	The steering angle is malfunctioning
		Diagnosis delay time	2 seconds or more

POSSIBLE CAUSE

- Around view monitor control unit
- CAN gateway

FAIL-SAFE

MOD (Moving Object Detection) function is cancel

DTC CONFIRMATION PROCEDURE

1.CHECK DTC PRIORITY

If DTC C1A39 is displayed with DTC U1000, first perform the confirmation procedure (trouble diagnosis) for DTC U1000.

Is applicable DTC detected?

YES >> Perform diagnosis of applicable. Refer to AV-319, "DTC Description".
NO >> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT
1. Turn the ignition switch ON.
2. Perform “All DTC Reading” with CONSULT.
3. Check if the “C1A39” is detected as the current malfunction in “Self Diagnostic Result” of “AVM”.

Is “C1A39” detected as the current malfunction?

YES >> Refer to AV-312, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-56, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000013615715

1.CHECK SELF-DIAGNOSTIC RESULT OF CAN GATEWAY

With CONSULT
Check “Self Diagnostic Result” of “CAN GATEWAY” using CONSULT.

Is any DTC detected?

YES >> Perform diagnosis procedure for detected DTC. Refer to LAN-156, "DTC Index".
NO >> GO TO 2.

2.PERFORM ALL DTC READING

With CONSULT
1. Perform “All DTC Reading”.
2. Check diagnosis results.

Is any DTC detected?

YES >> Perform diagnosis procedure corresponding to DTC indicated.
NO >> GO TO 3.

3.CHECK INTERMITTENT INCIDENT

Check the intermittent incident. Refer to GI-56, "Intermittent Incident".

Is the inspection result normal?

YES >> Replace around view monitor control unit. Refer to AV-347, "Removal and Installation".
NO >> Repair or replace malfunctioning parts.

U0122 ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)

DTC Description

INFOID:0000000013615716

DTC DETECTION LOGIC

DTC	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
U0122	VDC P-RUN DIAGNOSIS (VDC P-run diagnosis)	Diagnosis condition	When ignition switch is ON
		Signal (terminal)	CAN communication signal
		Threshold	Received an error signal from CAN gateway
		Diagnosis delay time	2 seconds or more

POSSIBLE CAUSE

- Around view monitor control unit
- CAN gateway

FAIL-SAFE

MOD (Moving Object Detection) function is cancel

DTC CONFIRMATION PROCEDURE

1.CHECK DTC PRIORITY

If DTC “U0122” is displayed with DTC “U1000”, first perform the confirmation procedure (trouble diagnosis) for DTC “U1000”.

Is applicable DTC detected?

YES >> Perform diagnosis of applicable. Refer to AV-319, "DTC Description".
NO >> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT
1. Start the engine.
2. Perform “All DTC Reading” with CONSULT.
3. Check if the “U0122” is detected as the current malfunction in “Self Diagnostic Result” of “AVM”.

Is DTC “U0122” detected as the current malfunction?

YES >> Refer to AV-314, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-56, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000013615717

1.CHECK SELF-DIAGNOSTIC RESULT OF CAN GATEWAY

With CONSULT
Check “Self Diagnostic Result” of “CAN GATEWAY” using CONSULT.

Is any DTC detected?

YES >> Perform diagnosis procedure for detected DTC. Refer to LAN-156, "DTC Index".
NO >> GO TO 2.

2.PERFORM ALL DTC READING

With CONSULT
1. Perform “All DTC Reading”.
2. Check diagnosis results.

Is any DTC detected?

YES >> Perform diagnosis procedure corresponding to DTC indicated.
NO >> GO TO 3.

3.CHECK INTERMITTENT INCIDENT

Check the intermittent incident. Refer to GI-56, "Intermittent Incident".

Is the inspection result normal?

YES >> Replace around view monitor control unit. Refer to AV-347, "Removal and Installation".
NO >> Repair or replace malfunctioning parts.

U0416 ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)

DTC Description

INFOID:0000000013615718

DTC DETECTION LOGIC

DTC	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
U0416	VDC CHECKSUM DIAGNOSIS (VDC checksum diagnosis)	Diagnosis condition	When ignition switch is ON
		Signal (terminal)	CAN communication signal
		Threshold	Received an error signal from CAN gateway
		Diagnosis delay time	2 seconds or more

POSSIBLE CAUSE

- Around view monitor control unit
- CAN gateway

FAIL-SAFE

MOD (Moving Object Detection) function is cancel

DTC CONFIRMATION PROCEDURE

1.CHECK DTC PRIORITY

If DTC “U0416” is displayed with DTC “U1000”, first perform the confirmation procedure (trouble diagnosis) for DTC U1000.

Is applicable DTC detected?

YES >> Perform diagnosis of applicable. Refer to AV-319, "DTC Description".
NO >> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT
1. Start the engine.
2. Perform “All DTC Reading” with CONSULT.
3. Check if the “U0416” is detected as the current malfunction in “Self Diagnostic Result” of “AVM”.

Is DTC “U0416” detected as the current malfunction?

YES >> Refer to AV-316, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-56, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000013615719

1.CHECK SELF-DIAGNOSTIC RESULT OF CAN GATEWAY

With CONSULT
Check “Self Diagnostic Result” of “CAN GATEWAY” using CONSULT.

Is any DTC detected?

YES >> Perform diagnosis procedure for detected DTC. Refer to LAN-156, "DTC Index".
NO >> GO TO 2.

2.PERFORM ALL DTC READING

With CONSULT
1. Perform “All DTC Reading”.
2. Check diagnosis results.

Is any DTC detected?

YES >> Perform diagnosis procedure corresponding to DTC indicated.
NO >> GO TO 3.

3.CHECK INTERMITTENT INCIDENT

Check the intermittent incident. Refer to GI-56, "Intermittent Incident".

Is the inspection result normal?

YES >> Replace around view monitor control unit. Refer to AV-347, "Removal and Installation".
NO >> Repair or replace malfunctioning parts.

U0428 STEERING ANGLE SENSOR

DTC Description

INFOID:0000000013615720

DTC	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
U0428	ST ANGLE SENSOR CALIBRATION (Steering angle sensor calibration)	Diagnosis condition	When ignition switch is ON
		Signal (terminal)	CAN communication signal
		Threshold	The neutral position adjustment of the steering angle sensor is incomplete.
		Diagnosis delay time	2 seconds or more

POSSIBLE CAUSE

- Neutral position of steering angle sensor is not yet adjusted
- Steering column control module (steering angle sensor)
- CAN gateway

FAIL-SAFE

- Predicted course line is not displayed.
- MOD (Moving Object Detection) function is stopped.

DTC CONFIRMATION PROCEDURE

1.CHECK DTC PRIORITY

If DTC “U0428” is displayed with DTC “U1232”, first perform the confirmation procedure (trouble diagnosis) for DTC “U1232”.

Is applicable DTC detected?

YES >> Perform diagnosis of applicable. Refer to AV-334, "DTC Description".
NO >> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT
1. Turn the ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds.
4. Select “Self Diagnostic Result” mode of “AVM” using CONSULT.
5. Check DTC.

Is DTC “U0428” detected?

YES >> Refer to AV-318, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-56, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000013615721

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.

U1000 CAN COMM CIRCUIT

DTC Description

INFOID:0000000013615722

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 and 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.

DTC DETECTION LOGIC

DTC	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
U1000	CAN COMM CIRCUIT (CAN communication circuit)	Diagnosis condition	When ignition switch is ON
		Signal (terminal)	CAN communication signal
		Threshold	Communication error
		Diagnosis delay time	2 seconds or more

NOTE:
If “U1000” is detected, first diagnose the CAN communication system.

POSSIBLE CAUSE

- CAN communication system
- CAN gateway

FAIL-SAFE

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.
- When communication of vehicle signal, wheel speed sensor signal, and shift position signal is not normal
  - Predicted course line is not displayed.
  - MOD (Moving Object Detection) function is stopped.

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

1. Turn the ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds.
4. Select “Self Diagnostic Result” mode of “AVM” using CONSULT.
5. Check DTC.

Is DTC “U1000” detected?

YES >> Refer to AV-319, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-56, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000013615723

1.PERFORM DTC CONFIRMATION PROCEDURE AGAIN

With CONSULT

1. Turn ignition switch ON.
2. Erase DTC.
3. Perform DTC confirmation procedure again. Refer to AV-319, "DTC Description".

Is DTC “U1000” detected again?

YES >> Perform the trouble diagnosis for CAN communication system. Refer to LAN-58, "Trouble Diagnosis Flow Chart".

NO >> INSPECTION END

U1010 CONTROL UNIT (CAN)

DTC Description

INFOID:0000000013615724

CAN controller controls the communication of CAN communication signal and the error detection.

DTC DETECTION LOGIC

DTC	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
U1010	CONTROL UNIT (CAN) [Control unit (CAN)]	Diagnosis condition	When ignition switch is ON
		Signal (terminal)	—
		Threshold	Initial diagnosis abnormality
		Diagnosis delay time	2 seconds or more

POSSIBLE CAUSE

Around view monitor control unit

FAIL-SAFE

Around view monitor system does not function

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT
1. Turn the ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds.
4. Select “Self Diagnostic Result” mode of “AVM” using CONSULT.
5. Check DTC.

Is DTC “U1010” detected?

YES >> Refer to AV-321, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-56, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000013615725

1.PERFORM DTC CONFIRMATION PROCEDURE AGAIN

With CONSULT
1. Turn ignition switch ON.
2. Erase DTC.
3. Perform DTC confirmation procedure again. Refer to AV-321, "DTC Description".

Is DTC “U1010” detected again?

YES >> Replace around view monitor control unit. Refer to AV-347, "Removal and Installation".
NO >> INSPECTION END

U111A REAR CAMERA IMAGE SIGNAL CIRCUIT

DTC Description

INFOID:0000000013615726

DTC DETECTION LOGIC

DTC	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
U111A	REAR CAMERA IMAGE SIGNAL (Rear camera image signal)	Diagnosis condition	When ignition switch is ON
		Signal (terminal)	Rear camera image signal
		Threshold	Open or shorted
		Diagnosis delay time	30 seconds or more

POSSIBLE CAUSE

- Camera image signal circuit between rear camera and around view monitor control unit
- Rear camera

FAIL-SAFE

- Camera image is not displayed (Gray screen display).
- MOD (Moving Object Detection) function is stopped.

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

1. Turn the ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select “Self Diagnostic Result” mode of “AVM” using CONSULT.
5. Check DTC.

Is DTC “U111A” detected?

YES >> Refer to AV-322, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-56, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000013615727

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 the 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	
M8	18	M226	2	Existed
	17		1	

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

Around view monitor control unit		Ground	Continuity
Connector	Terminal		
M8	18		Not existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair or replace 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 the voltage between around view monitor control unit harness connector terminals.

Around view monitor control unit			Standard voltage	Reference voltage (Approx.)
Connector	(+)	(−)		
	Terminal			
M8	18	17	5.0 - 9.0 V	6.0 V

Is the inspection result normal?

YES >> GO TO 3.
NO >> Replace around view monitor control unit. Refer to AV-347, "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 the 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	
M8	20	M226	4	Existed
	19		5	

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

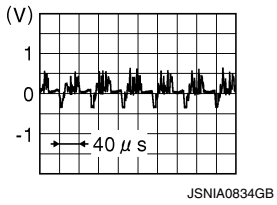
Around view monitor control unit		Ground	Continuity
Connector	Terminal		
M8	20		Not existed
	19		

Is the inspection result normal?

YES >> GO TO 4.
NO >> Repair or replace 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 the signal between around view monitor control unit harness connector.

Around view monitor control unit			Reference value
Connector	(+)	(−)	
	Terminal		
M8	20	19	

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Is the inspection result normal?

YES >> Replace around view monitor control unit. Refer to AV-347, "Removal and Installation".
NO >> Replace rear camera. Refer to AV-350, "Removal and Installation".

U111B SIDE CAMERA RH IMAGE SIGNAL CIRCUIT

DTC Description

INFOID:0000000013615728

DTC DETECTION LOGIC

DTC	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
U111B	SIDE CAMERA RH IMAGE SIGNAL (Side camera right image signal)	Diagnosis condition	When ignition switch is ON
		Signal (terminal)	Side camera RH image signal
		Threshold	Open or shorted
		Diagnosis delay time	30 seconds or more

POSSIBLE CAUSE

Camera image signal circuit between side camera RH and around view monitor control unit

FAIL-SAFE

Camera image is not displayed (Gray screen display).

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT
1. Turn the ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds.
4. Perform “All DTC Reading” with CONSULT.
5. Check if the “U111B” is detected as the current malfunction in “Self Diagnostic Result” of “AVM”.

Is “U111B” detected as the current malfunction?

YES >> Refer to AV-325, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-56, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000013615729

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 RH connector.
3. Check the continuity between around view monitor control unit harness connector and door mirror RH harness connector.

Around view monitor control unit		Door mirror RH		Continuity
Connector	Terminal	Connector	Terminal	
M8	14	D42	5	Existed
	13		17	

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

Around view monitor control unit		Ground	Continuity
Connector	Terminal		
M8	14		Not existed

Is the inspection result normal?

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

2.CHECK VOLTAGE SIDE CAMERA RH POWER SUPPLY

1. Connect around view monitor control unit connector and door mirror RH connector.
2. Turn ignition switch ON.
3. Check the voltage between around view monitor control unit harness connector terminals.

Around view monitor control unit			Standard value	Reference value (Approx.)
Connector	(+)	(–)		
	Terminal			
M8	14	13	5.0 - 9.0 V	6.0 V

Is the inspection result normal?

YES >> GO TO 3.
NO >> Replace around view monitor control unit. Refer to AV-347, "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 RH connector.
3. Check the continuity between around view monitor control unit harness connector and door mirror RH harness connector.

Around view monitor control unit		Door mirror RH		Continuity
Connector	Terminal	Connector	Terminal	
M8	16	D42	4	Existed
	15		16	

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

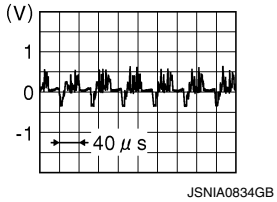
Around view monitor control unit		Ground	Continuity
Connector	Terminals		
M8	16		Not existed
	15		

Is the inspection result normal?

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

4.CHECK SIDE CAMERA RH IMAGE SIGNAL

1. Connect around view monitor control unit connector and door mirror RH connector.
2. Turn ignition switch ON.
3. Check the signal between around view monitor control unit harness connector terminals.

Around view monitor control unit			Reference value
Connector	(+)	(–)	
	Terminal		
M8	16	15	

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Is the inspection result normal?

YES >> Replace around view monitor control unit. Refer to AV-347, "Removal and Installation".
NO >> Replace side camera RH. Refer to AV-349, "Removal and Installation".

U111C FRONT CAMERA IMAGE SIGNAL CIRCUIT

DTC Description

INFOID:0000000013615730

DTC DETECTION LOGIC

DTC	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
U111C	FRONT CAMERA IMAGE SIGNAL (Front camera image signal)	Diagnosis condition	When ignition switch is ON
		Signal (terminal)	Front camera image signal
		Threshold	Open or shorted
		Diagnosis delay time	30 seconds or more

POSSIBLE CAUSE

Camera image signal circuit between front camera and around view monitor control unit

FAIL-SAFE

Camera image is not displayed (Gray screen display).

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

1. Turn the ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds.
4. Perform “All DTC Reading” with CONSULT.
5. Check if the “U111C” is detected as the current malfunction in “Self Diagnostic Result” of “AVM”.

Is “U111C” detected as the current malfunction?

YES >> Refer to AV-328, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-56, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000013615731

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 the 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	
M8	6	E124	1	Existed
	5		2	

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

Around view monitor control unit		Ground	Continuity
Connector	Terminal		
M8	6		Not existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair or replace 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 the voltage between around view monitor control unit harness connector terminals.

Around view monitor control unit			Standard value	Reference value (Approx.)
Connector	(+)	(–)		
	Terminal			
M8	6	5	5.0 - 9.0 V	6.0 V

Is the inspection result normal?

YES >> GO TO 3.
NO >> Replace around view monitor control unit. Refer to AV-347, "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 the 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	
M8	8	E124	3	Existed
	7		4	

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

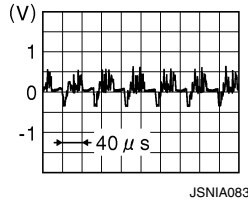
Around view monitor control unit		Ground	Continuity
Connector	Terminal		
M8	8		Not existed
	7		

Is the inspection result normal?

YES >> GO TO 4.
NO >> Repair or replace 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 the signal between around view monitor control unit harness connector terminals.

Around view monitor control unit			Reference value
Connector	(+)	(–)	
	Terminal		
M8	8	7	

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Is the inspection result normal?

YES >> Replace around view monitor control unit. Refer to AV-347, "Removal and Installation".
NO >> Replace front camera. Refer to AV-348, "Removal and Installation".

U111D SIDE CAMERA LH IMAGE SIGNAL CIRCUIT

DTC Description

INFOID:0000000013615732

DTC DETECTION LOGIC

DTC	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
U111D	SIDE CAMERA LH IMAGE SIGNAL (Side camera left image signal)	Diagnosis condition	When ignition switch is ON
		Signal (terminal)	Side camera LH image signal
		Threshold	Open or shorted
		Diagnosis delay time	30 seconds or more

POSSIBLE CAUSE

Camera image signal circuit between side camera LH and around view monitor control unit

FAIL-SAFE

Camera image is not displayed (Gray screen display).

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

1. Turn the ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds.
4. Perform “All DTC Reading” with CONSULT.
5. Check if the “U111D” is detected as the current malfunction in “Self Diagnostic Result” of “AVM”.

Is “U111D” detected as the current malfunction?

YES >> Refer to AV-331, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-56, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000013615733

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 LH connector.
3. Check the continuity between around view monitor control unit harness connector and door mirror LH harness connector.

Around view monitor control unit		Door mirror LH		Continuity
Connector	Terminal	Connector	Terminal	
M8	10	D92	5	Existed
	9		17	

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

Around view monitor control unit		Ground	Continuity
Connector	Terminal		
M8	10		Not existed

Is the inspection result normal?

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

2.CHECK VOLTAGE SIDE CAMERA LH POWER SUPPLY

1. Connect around view monitor control unit connector and door mirror LH connector.
2. Turn ignition switch ON.
3. Check the voltage between around view monitor control unit harness connector terminals.

Around view monitor control unit			Standard value	Reference value (Approx.)
Connector	(+)	(–)		
	Terminal			
M8	10	9	5.0 - 9.0 V	6.0 V

Is the inspection result normal?

YES >> GO TO 3.
NO >> Replace around view monitor control unit. Refer to AV-347, "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 LH connector.
3. Check the continuity between around view monitor control unit harness connector and door mirror LH harness connector.

Around view monitor control unit		Door mirror LH		Continuity
Connector	Terminal	Connector	Terminal	
M8	12	D92	4	Existed
	11		16	

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

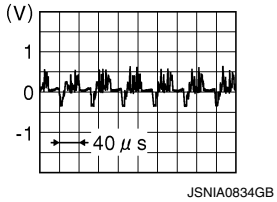
Around view monitor control unit		Ground	Continuity
Connector	Terminal		
M8	12		Not existed
	11		

Is the inspection result normal?

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

4.CHECK SIDE CAMERA LH IMAGE SIGNAL

1. Connect around view monitor control unit connector and door mirror LH connector.
2. Turn ignition switch ON.
3. Check the signal between around view monitor control unit harness connector terminals.

Around view monitor control unit			Reference value
Connector	(+)	(–)	
	Terminal		
M8	12	11	

JSNIA0834GB

Is the inspection result normal?

YES >> Replace around view monitor control unit. Refer to AV-347, "Removal and Installation".
NO >> Replace side camera LH. Refer to AV-349, "Removal and Installation".

U1232 STEERING ANGLE SENSOR

DTC Description

INFOID:0000000013615734

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
U1232	ST ANGLE SEN CALIB (Steering angle sensor calibration)	Diagnosis condition	When ignition switch is ON
		Signal (terminal)	—
		Threshold	The neutral position registration of the steering angle sensor can not finish.
		Diagnosis delay time	30 seconds or more

POSSIBLE CAUSE

- Steering column control module (steering angle sensor)
- CAN gateway

FAIL-SAFE

- Predicted course line is not displayed.
- MOD (Moving Object Detection) function is stopped.

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds.
4. Select “Self Diagnostic Result” mode of “AVM” using CONSULT.
5. Check DTC.

Is DTC “U1232” detected?

YES >> Refer to AV-334, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-56, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000013615735

1.CHECK SELF-DIAGNOSTIC RESULT OF CAN GATEWAY

With CONSULT

Check “Self Diagnostic Result” of “CAN GATEWAY” using CONSULT.

Is any DTC detected?

YES >> Perform diagnosis procedure for detected DTC. Refer to LAN-156, "DTC Index".
NO >> GO TO 2.

2.PERFORM ALL DTC READING

With CONSULT

1. Perform “All DTC Reading”.
2. Check diagnosis results.

Is any DTC detected?

YES >> Perform diagnosis procedure corresponding to DTC indicated.
NO >> Replace following parts.
- Around view monitor control unit: AV-347, "Removal and Installation"
- CAN gateway: LAN-218, "Removal and Installation"

U1302 CAMERA POWER VOLT

DTC Description

INFOID:0000000013615736

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
U1302	CAMERA POWER VOLT (Camera power voltage)	Diagnosis condition	When ignition switch is ON
		Signal (terminal)	Camera power supply voltage
		Threshold	0 V
		Diagnosis delay time	2 seconds or more

POSSIBLE CAUSE

- Short circuit to battery or short circuit to ground of camera power supply output circuit.
- Around view monitor control unit

FAIL-SAFE

Camera power output is stopped

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select “Self Diagnostic Result” mode of “AVM” using CONSULT.
5. Check DTC.

Is DTC “U1302” detected?

YES >> Proceed to AV-335, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: GI-56, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000013615737

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

Check the around view monitor control unit power supply and ground circuit. Refer to AV-342, "AROUND VIEW MONITOR CONTROL UNIT : Diagnosis Procedure".

Is the inspection result normal?

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

2.CHECK REAR CAMERA POWER SUPPLY OUTPUT CIRCUIT

1. Disconnect around view monitor control unit connector and rear camera connector.
2. Check the continuity between around view monitor control unit harness connector and ground.

Around view monitor control unit		Ground	Continuity
Connector	Terminal		
M8	18		Not existed

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair or replace harnesses or connector.

3.CHECK REAR CAMERA POWER SUPPLY (1)

1. Connect around view monitor control unit connector.

2. Turn ignition switch ON.
3. Check the voltage between around view monitor control unit harness connector terminals.

Around view monitor control unit			Standard value	Reference value (Approx.)
Connector	(+)	(–)		
	Terminal			
M8	18	17	5.0 - 9.0 V	6.0 V

Is the inspection result normal?

YES >> GO TO 4.
NO >> Replace around view monitor control unit. Refer to AV-347, "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 the voltage between around view monitor control unit harness connector terminals.

Around view monitor control unit			Standard value	Reference value (Approx.)
Connector	(+)	(–)		
	Terminal			
M8	18	17	5.0 - 9.0 V	6.0 V

Is the inspection result normal?

YES >> GO TO 5.
NO >> Replace rear camera. Refer to AV-350, "Removal and Installation".

5. CHECK FRONT CAMERA POWER SUPPLY OUTPUT CIRCUIT

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

Around view monitor control unit		Ground	Continuity
Connector	Terminal		
M8	6		Not existed

Is the inspection result normal?

YES >> GO TO 6.
NO >> Repair or replace harnesses or connector.

6. CHECK FRONT CAMERA POWER SUPPLY (1)

1. Connect around view monitor control unit connector.
2. Turn ignition switch ON.
3. Check the voltage between around view monitor control unit harness connector terminals.

Around view monitor control unit			Standard value	Reference value (Approx.)
Connector	(+)	(–)		
	Terminal			
M8	6	5	5.0 - 9.0 V	6.0 V

Is the inspection result normal?

YES >> GO TO 7.
NO >> Replace around view monitor control unit. Refer to AV-347, "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 the voltage between around view monitor control unit harness connector terminals.

Around view monitor control unit			Standard value	Reference value (Approx.)
Connector	(+)	(–)		
	Terminal			
M8	6	5	5.0 - 9.0 V	6.0 V

Is the inspection result normal?

YES >> GO TO 8.
NO >> Replace front camera. Refer to AV-348, "Removal and Installation".

8. CHECK SIDE CAMERA RH POWER SUPPLY OUTPUT CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect around view monitor control unit connector and door mirror RH connector.
3. Check the continuity between around view monitor control unit harness connector and ground.

Around view monitor control unit		Ground	Continuity
Connector	Terminal		
M8	14		Not existed

Is the inspection result normal?

YES >> GO TO 9.
NO >> Repair or replace 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 the voltage between around view monitor control unit harness connector terminals.

Around view monitor control unit			Standard value	Reference value (Approx.)
Connector	(+)	(–)		
	Terminal			
M8	14	13	5.0 - 9.0 V	6.0 V

Is the inspection result normal?

YES >> GO TO 10.
NO >> Replace around view monitor control unit. Refer to AV-347, "Removal and Installation".

10. CHECK SIDE CAMERA RH POWER SUPPLY (2)

1. Turn ignition switch OFF.
2. Connect door mirror RH connector.
3. Turn ignition switch ON.
4. Check the voltage between around view monitor control unit harness connector terminals.

Around view monitor control unit			Standard value	Reference value (Approx.)
Connector	(+)	(–)		
	Terminal			
M8	14	13	5.0 - 9.0 V	6.0 V

Is the inspection result normal?

YES >> GO TO 11.
NO >> Replace side camera RH. Refer to AV-349, "Removal and Installation".

11. CHECK SIDE CAMERA LH POWER SUPPLY OUTPUT CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect around view monitor control unit connector and door mirror LH connector.

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

Around view monitor control unit		Ground	Continuity
Connector	Terminal		
M8	10		Not existed

Is the inspection result normal?

YES >> GO TO 12.
NO >> Repair or replace 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 the voltage between around view monitor control unit harness connector terminals.

Around view monitor control unit			Standard value	Reference value (Approx.)
Connector	(+)	(–)		
	Terminal			
M8	10	9	5.0 - 9.0 V	6.0 V

Is the inspection result normal?

YES >> GO TO 13.
NO >> Replace around view monitor control unit. Refer to AV-347, "Removal and Installation".

13. CHECK SIDE CAMERA LH POWER SUPPLY (2)

1. Turn ignition switch OFF.
2. Connect door mirror LH connector.
3. Turn ignition switch ON.
4. Check the voltage between around view monitor control unit harness connector terminals.

Around view monitor control unit			Standard value	Reference value (Approx.)
Connector	(+)	(–)		
	Terminal			
M8	10	9	5.0 - 9.0 V	6.0 V

Is the inspection result normal?

YES >> Replace around view monitor control unit. Refer to AV-347, "Removal and Installation".
NO >> Replace side camera LH. Refer to AV-349, "Removal and Installation".

U1303 LED POWER SUPPLY VOLT

DTC Description

INFOID:0000000013615738

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
U1303	LED POWER SUPPLY VOLT (LED power supply voltage)	Diagnosis condition	When ignition switch is ON
		Signal (terminal)	Lighting supply voltage
		Threshold	5.2 - 5.8 V
		Diagnosis delay time	2 seconds or more

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

POSSIBLE CAUSE

- Short circuit to battery or short circuit to ground of supplemental lighting output circuit
- Around view monitor control unit

FAIL-SAFE

None

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT
1. Turn ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select “Self Diagnostic Result” mode of “AVM” using CONSULT.
5. Check DTC.

Is DTC “U1303” detected?

YES >> Proceed to AV-339, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: GI-56, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000013615739

1.DTC CONFIRMATION PROCEDURE AGAIN

With CONSULT
1. Turn ignition switch ON.
2. Erase DTC.
3. Perform DTC confirmation procedure again. Refer to AV-339, "DTC Description".

Is DTC “U1303” detected again?

YES >> Replace around view monitor control unit. Refer to AV-347, "Removal and Installation".
NO >> INSPECTION END

U1304 CAMERA IMAGE CALIBRATION

DTC Description

INFOID:0000000013615740

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
U1304	CAMERA IMAGE CALIB (Camera image calibration)	Diagnosis condition	When ignition switch is ON
		Signal (terminal)	—
		Threshold	Camera calibration is incomplete
		Diagnosis delay time	2 seconds or more

POSSIBLE CAUSE

Perform camera calibration

FAIL-SAFE

Unmatched icon ☒ display (red) is displayed (applicable for unmatched camera only).

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

1. Turn the ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds.
4. Select “Self Diagnostic Result” mode of “AVM” using CONSULT.
5. Check DTC.

Is DTC “U1304” detected?

YES >> Refer to AV-340, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-56, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000013615741

1.PERFORM CALIBRATING CAMERA IMAGE

Perform camera calibration when DTC “U1304” is detected.

>> Perform camera calibration. Refer to AV-302, "Description".

U1305 CONFIG UNFINISH

DTC Description

INFOID:0000000013615742

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
U1305	CONFIG UNFINISH (Configuration unfinish)	Diagnosis condition	When ignition switch is ON
		Signal (terminal)	—
		Threshold	Configuration is incomplete
		Diagnosis delay time	2 seconds or more

POSSIBLE CAUSE

Vehicle specifications for around view monitor control unit is incomplete

FAIL-SAFE

On applicable camera screen ⚠ marking (Red) is displayed.

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT
1. Turn the ignition switch ON.
2. Turn ignition switch OFF and wait at least 30 seconds.
3. Turn ignition switch ON and wait at least 30 seconds or more.
4. Select “Self Diagnostic Result” mode of “AVM” using CONSULT.
5. Check DTC.

Is DTC “U1305” detected?

YES >> Refer to AV-341, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-56, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000013615743

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-299, "Work Procedure".

POWER SUPPLY AND GROUND CIRCUIT
AROUND VIEW MONITOR CONTROL UNIT

AROUND VIEW MONITOR CONTROL UNIT : Diagnosis Procedure

INFOID:0000000013615744

1.CHECK FUSE

1. Turn ignition switch OFF.
2. Check that the following fuse is not blown (open).

Power source	Fuse No.	Capacity
Ignition switch ON	#93	5 A

Is the fuse blown (open)?

YES >> Replace fuse after repairing the applicable circuit.
NO >> GO TO 2.

2.CHECK AROUND VIEW MONITOR CONTROL UNIT IGNITION POWER SUPPLY

1. Turn ignition switch ON.
2. Check the voltage between around view monitor control unit harness connector and ground.

(+)		(−)	Standard value	Reference value
Around view monitor control unit				
Connector	Terminal			
M8	40	Ground	9.5 - 16.0 V	Battery voltage

Is the inspection result normal?

YES >> GO TO 3.
NO >> Perform trouble diagnosis of ignition power supply circuit.

3.CHECK GROUND CIRCUIT

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

(+)		(−)	Continuity
Around view monitor control unit			
Connector	Terminal		
M8	39	Ground	Existed

Is the inspection result normal?

YES >> INSPECTION END
NO >> Repair or replace harness or connector.

CAMERA IMAGE SIGNAL CIRCUIT

Description

INFOID:0000000013615745

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 display control unit.

Diagnosis Procedure

INFOID:0000000013615746

1.CHECK CONTINUITY CAMERA IMAGE SIGNAL CIRCUIT FOR OPEN

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

Display control unit		Around view monitor control unit		Continuity
Connector	Terminal	Connector	Terminal	
M51	24	M8	4	Existed
	4		3	

Is the inspection result normal?

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

2.CHECK CONTINUITY CAMERA IMAGE SIGNAL CIRCUIT FOR SHORT

Check the continuity between display control unit harness connector and ground.

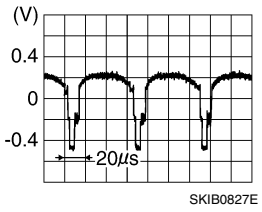
Display control unit		Ground	Continuity
Connector	Terminal		
M51	24		Not existed

Is the inspection result normal?

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

3.CHECK CAMERA IMAGE SIGNAL

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

Display control unit			Condition	Standard value	Reference value
Connector	(+)	(–)			
	Terminal				
M51	24	4	At camera image is displayed.	Input the waveform synchronized with the rear view camera image.	

SKIB0827E

Is the inspection result normal?

YES >> Replace display control unit. Refer to AV-239, "Removal and Installation".
NO >> Replace around view monitor control unit. Refer to AV-347, "Removal and Installation".

REVERSE SIGNAL CIRCUIT

Component Function Check

INFOID:0000000013615747

1.CHECK REVERSE SIGNAL

With CONSULT
1. Turn ignition switch ON.
2. Select “REVERSE SIGNAL” in “DATA MONITOR” mode of “AVM” using CONSULT.
3. Check “REVERSE SIGNAL” indication as per the following condition.

Monitor item	Condition		Indication
REVERSE SIGNAL	Selector lever position	R position	On
		Other than R position	Off

Is the inspection result normal?

YES >> INSPECTION END
NO >> Proceed to AV-344, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000013615748

1.CHECK SELF-DIAGNOSTIC RESULT OF CAN GATEWAY

With CONSULT
1. Turn ignition switch ON.
2. Check “Self Diagnostic Result” of “CAN GATEWAY” using CONSULT.

Is any DTC detected?

YES >> Perform trouble diagnosis for detected DTC. Refer to LAN-156, "DTC Index".
NO >> GO TO 2.

2.CHECK INTERMITTENT INCIDENT

Check the intermittent incident. Refer to GI-56, "Intermittent Incident".

Is the inspection result normal?

YES >> Replace around view monitor control unit. Refer to AV-347, "Removal and Installation".
NO >> Repair or replace malfunctioning parts.

SYMPTOM DIAGNOSIS

AROUND VIEW MONITOR SYSTEM

Symptom Table

INFOID:0000000013615749

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 Refer to AV-342, "AROUND VIEW MONITOR CONTROL UNIT : Diagnosis Procedure".
	“AVM” is displayed on the system selection screen of CONSULT.	Check “Self Diagnostic Result” of “MULTI AV”. Refer to AV-71, "CONSULT Function".
Screen is switched when pressing camera switch or shifting selector lever to the reverse position, however, all views are not displayed.	—	Camera image signal circuit. Refer to AV-343, "Diagnosis Procedure".
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.	Reverse signal circuit. Refer to AV-344, "Component Function Check".
• Front view screen is not displayed. • Front of top view screen is displayed.	—	Check “Self Diagnostic Result” of “AVM”. Refer to AV-280, "CONSULT Function".
• The rear view screen is not displayed. • Rear of top view screen is not displayed.	—	
• The side view screen is not displayed. • Left side of top view screen is not displayed.	—	
• The side view screen is not displayed. • Right side of top view image is not displayed.	—	

NORMAL OPERATING CONDITION

Description

INFOID:0000000013615750

BASIC OPERATIONS

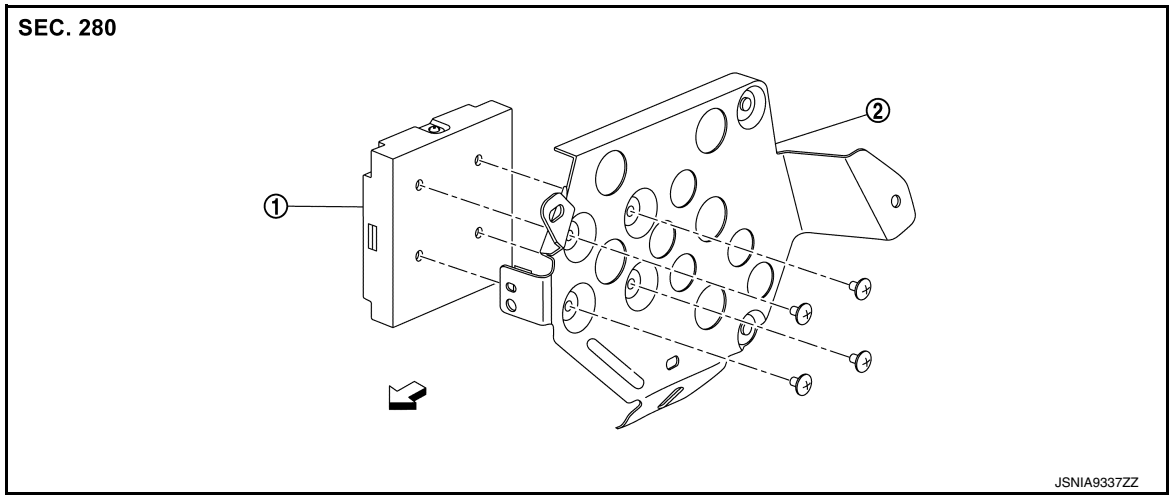
Symptom	Possible cause	Possible solution
No image is displayed.	The brightness is at the lowest setting.	Adjust the brightness of the display.
	The systems in the video mode.	Press “CAMERA” to change the mode.
	The interior of the vehicle becomes the a little less than 80°C (176°F) or high temperature, and the protection of the display acts, and a display is turned off.	Wait until the interior of the vehicle has cooled down.
Screen not clear.	Contrast setting is not appropriate.	Adjust the contrast of the display.

REMOVAL AND INSTALLATION

AROUND VIEW MONITOR CONTROL UNIT

Exploded View

INFOID:0000000013615751



① Around view monitor control unit ② Bracket

⇦ : Vehicle front

Removal and Installation

INFOID:0000000013615752

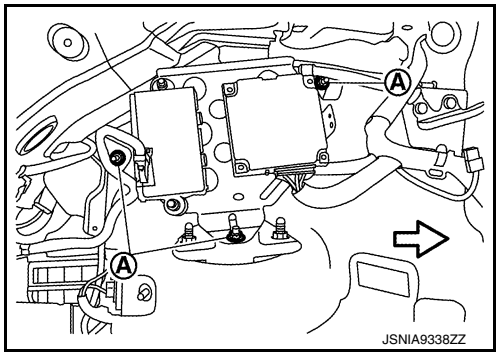
REMOVAL

CAUTION:

Before replacing around view monitor control unit, perform "Read/Write Configuration" to save or print current vehicle specification. For details, refer to AV-298, "Description".

1. Remove the luggage side lower finisher LH. Refer to INT-40, "LUGGAGE SIDE LOWER FINISHER : Removal and Installation".
2. Disconnect around view monitor control unit harness connectors.
3. Remove the around view monitor control unit bracket mounting nuts Ⓐ, and then remove the around view monitor control unit from the vehicle.

⇦ : Vehicle front



4. Remove the around view monitor control unit mounting screws, and then remove around view monitor control unit from the bracket.

INSTALLATION

Installation is the reverse order of removal.

CAUTION:

- **Must be perform additional service when replacing around view monitor control unit. Refer to AV-298, "Description".**
- **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 bumper, door mirror, etc.) and replacing the around view monitor control unit.**

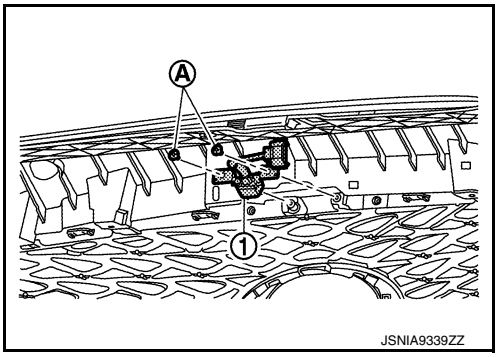
FRONT CAMERA

Removal and Installation

INFOID:0000000013615753

REMOVAL

1. Remove the front bumper. Refer to EXT-21, "Removal and Installation".
2. Remove the front camera mounting screws Ⓐ, and then remove the front camera ①.



INSTALLATION

Install in the reverse order of removal.

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 bumper, door mirror, etc.) and replacing the around view monitor control unit. Refer to AV-302, "Description"

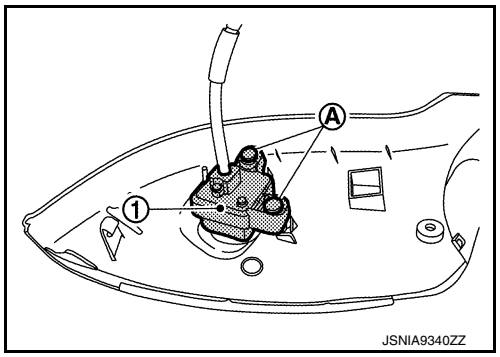
SIDE CAMERA

Removal and Installation

INFOID:0000000013615754

REMOVAL

1. Remove the door mirror finisher. Refer to MIR-72, "DOOR MIRROR ASSEMBLY : Disassembly and Assembly".
2. Remove the side camera mounting screws Ⓐ, and then remove the side camera ①.



INSTALLATION

Install in the reverse order of removal.

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 bumper, door mirror, etc.) and replacing the around view monitor control unit. Refer to AV-302, "Description"

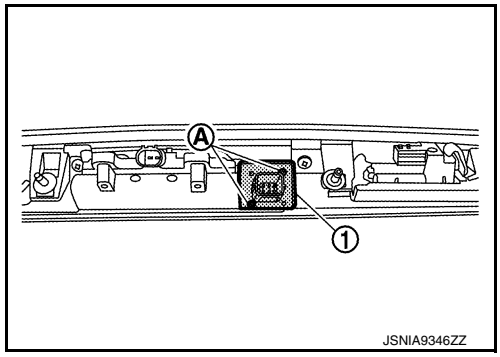
REAR CAMERA

Removal and Installation

INFOID:0000000013615755

REMOVAL

1. Remove the back door finisher. Refer to INT-43, "Removal and Installation".
2. Remove the rear camera mounting screws Ⓐ, and then remove the rear camera ①.



INSTALLATION

Install in the reverse order of removal.

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 bumper, door mirror, etc.) and replacing the around view monitor control unit. Refer to AV-302, "Description"

PRECAUTION

PRECAUTIONS

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

INFOID:0000000013615756

Risk of injury

There is a risk of injury caused by parts becoming projectiles if uncontrolled deployment of air bag or seat belt pre-tensioner occurs, or by storing air bag with the deployment side facing downwards. When scrapping air bag or seat belt pre-tensioner by means of controlled deployment, there is also a danger present if a sufficiently safe distance is not maintained, or if opening using cutting torches or other cutting tools, or due to smelting or if parts that are not yet triggered are exposed to a blaze or a smoldering fire at landfills.

Safety instructions/precautions

- Removed air bag must always be stored with deployment side facing up.
- Acquisition, transportation, storage, testing and assembly work should only be performed or supervised by properly trained personnel.
- Install air bag or seat belt pre-tensioner immediately following retrieval from storage.
- Air bag and seat belt pre-tensioner must be protected from flying sparks, open fires and temperature exceeding 100°C (212°F).
- Never transport air bag and seat belt pre-tensioner in the passenger compartment. Store them securely in the luggage room of the vehicle in their original replacement part packaging and secure them so that they cannot slip around.
- Never allow air bag and seat belt pre-tensioner to come into contact with grease, oil, or cleaning agents.
- Perform system tests using approved testing equipment only, and only when the units are properly installed and the vehicle is unoccupied.
- Before the initial hookup of the battery or an external power supply, the ignition must be switched on and the vehicle unoccupied.
- Air bag and seat belt pre-tensioner that fall from a height of more than 0.5 m must be replaced.
- When scrapping by means of controlled deployment of air bag and seat belt pre-tensioner, a safe distance of at least 10 m must be maintained.
- Before starting work on air bag and seat belt pre-tensioner and work on components that are connected to air bag and seat belt pre-tensioner or require and intervention in their electric circuit (e.g. when removing the steering wheel):
- Disconnect any external power sources (e.g. charger).
- Disconnect and insulate ground line of battery
- Before starting bodywork in combination with welding or retrofitting, during which work is performed on uninsulated, current-carrying lines or require an intervention in their electric circuit (e.g. when removing the steering wheel):
- Disconnect any external power sources (e.g. charger).
- Disconnect and insulate ground line of battery.
- During welding, disconnect plug connection and from control unit of air bag.
- When the air bag deploys, the pyrofuse activates and the power source from the battery is disconnected. This prevents possible fires caused by electric leakage after an accident occurs.

Precautions for Removing Battery Terminal

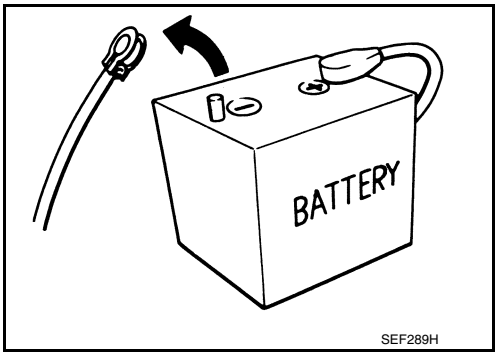
INFOID:0000000013615757

When disconnecting the battery terminal, pay attention to the following.

- Always use a 12V battery as power source.
- Never disconnect battery terminal while engine is running.

- When removing the 12V battery terminal, turn OFF the ignition switch and wait at least 30 seconds.
- For vehicles with the engine listed below, remove the battery terminal after a lapse of the specified time:

BR08DE	: 4 minutes	YD25DDTi	: 2 minutes
D4D engine	: 20 minutes	YS23DDT	: 4 minutes
HRA2DDT	: 12 minutes	YS23DDTT	: 4 minutes
K9K engine	: 4 minutes	ZD30DDTi	: 60 seconds
M9R engine	: 4 minutes	ZD30DDTT	: 60 seconds
R9M engine	: 4 minutes		
V9X engine	: 4 minutes		



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.

- After high-load driving, if the vehicle is equipped with the V9X engine, turn the ignition switch OFF and wait for at least 15 minutes to remove the battery terminal.

NOTE:
- Turbocharger cooling pump may operate in a few minutes after the ignition switch is turned OFF.
- Example of high-load driving
  - Driving for 30 minutes or more at 140 km/h (86 MPH) or more.
  - Driving for 30 minutes or more on a steep slope.

- 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.

Precaution for Trouble Diagnosis

INFOID:0000000013615758

AV COMMUNICATION SYSTEM

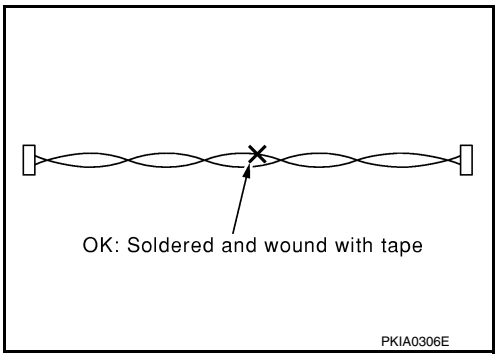
- Do not apply voltage of 7.0 V or higher to the measurement terminals.
- Use the tester with its open terminal voltage being 7.0 V or less.
- Be sure to turn ignition switch OFF and disconnect the battery cable from the negative terminal before checking the circuit.

Precaution for Harness Repair

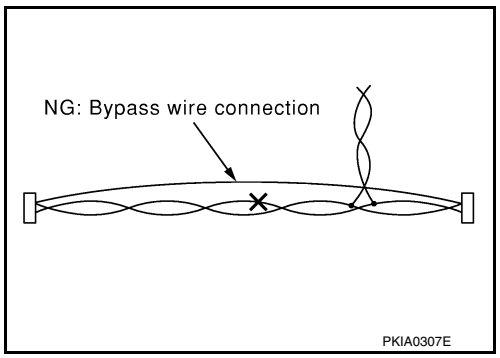
INFOID:0000000013615759

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.)

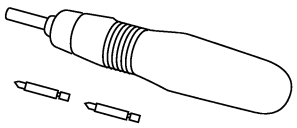


PREPARATION

PREPARATION

Commercial Service Tools

INFOID:0000000013788417

Tool		Description
Power tool	 PBIC0191E	Loosening screws

Lubricant or/and Sealant

INFOID:0000000013788418

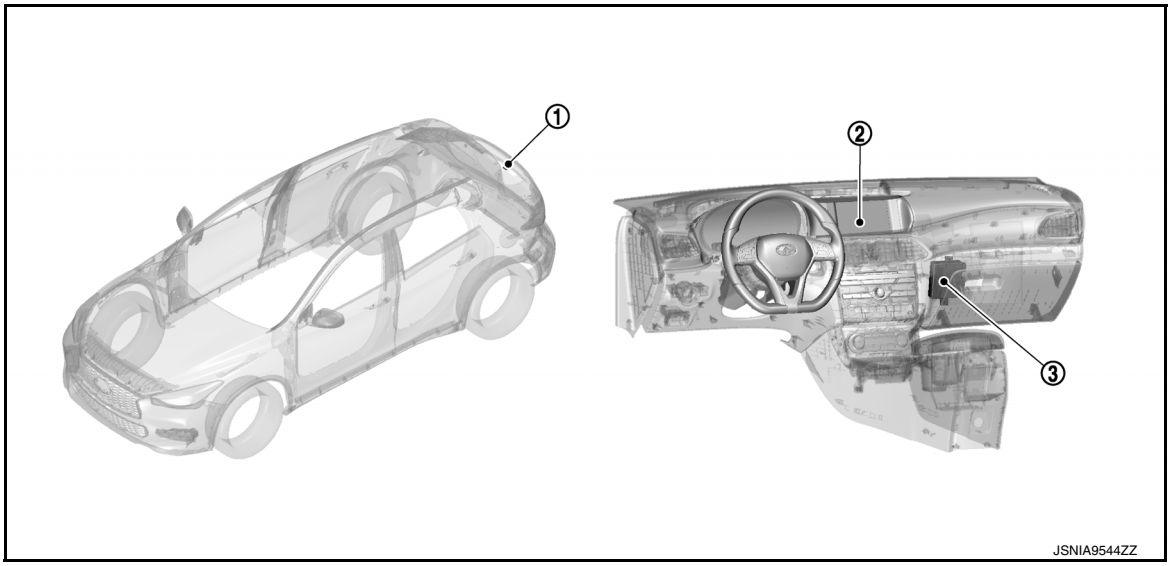
Name	Description	Note
Primer (Sumitomo 3M K520 or equivalent)	Primer for attaching sonar sensor holder to bumper	Sumitomo 3M Limited

SYSTEM DESCRIPTION

COMPONENT PARTS

Component Parts Location

INFOID:0000000013615760



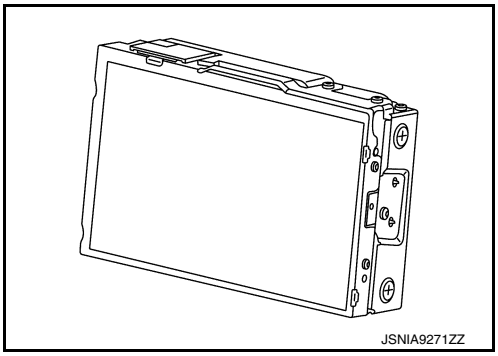
No.	Component	Function
①	Rear view camera	Refer to AV-356, "Rear View Camera".
②	Display control unit	Refer to AV-355, "Display Control Unit".
③	CAN gateway	• Transmits the CAN communication signals to the display control unit. • CAN gateway receives each signal via CAN communication. And it converts the signal to Digital/PWM and outputs it to control unit of AV system. Refer to LAN-150, "Component Parts Location", for detailed installation location.

Display Control Unit

INFOID:0000000013615761

Display control unit integrates the following functions, and controls the rear view monitor system.

Unit equipped
Display
Camera controller



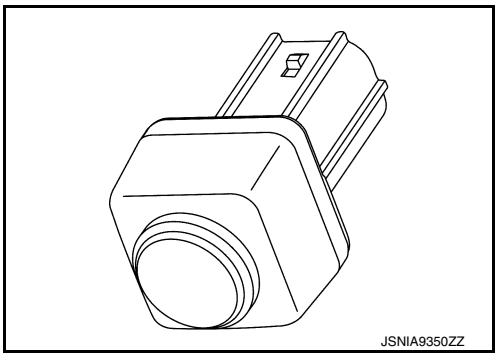
SPECIFICATION

Camera controller	Guideline display function	Vehicle width guide lines
		Predictive course lines
	Steering signal input method	CAN communication

Rear View Camera

INFOID:0000000013615762

- Super-small CMOS camera (color) using CMOS* for the image pickup element is adopted.
- With the mirror processing function, a mirror image is sent as if it is viewed by a rear view mirror.
- Power for the camera is supplied from the display control unit, and the image at the rear of the vehicle is sent to the display control unit.



NOTE:

*: "CMOS" is abbreviation of Complementary Metal Oxide Semiconductor, and features low power consumption and high speed reading rate of electric charge.

Specification

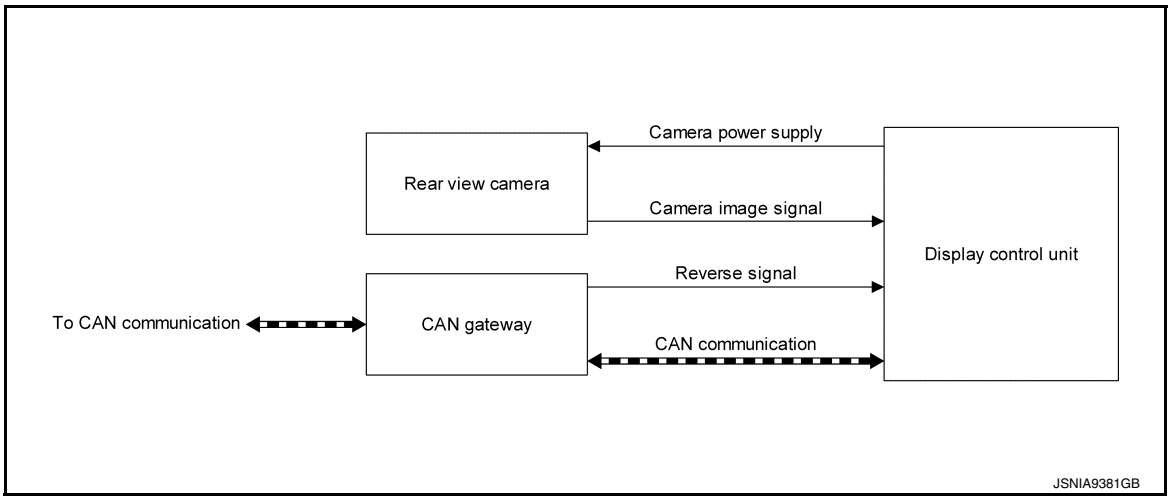
Image pickup element	1/4-inch CMOS image sensor
Effective number of pixels	Approx. 300,000 pixels (632 × 480)
Minimum brightness	1 lx
Angle of view	Horizontal view angle: 153.9° Vertical view angle: 119.5°
Image	With the mirror processing function

REAR VIEW MONITOR SYSTEM

System Description

INFOID:0000000013615763

SYSTEM DIAGRAM



Display Control Unit Input Signal (CAN Communication)

Transmit unit	Signal name
CAN gateway	Steering angle sensor signal

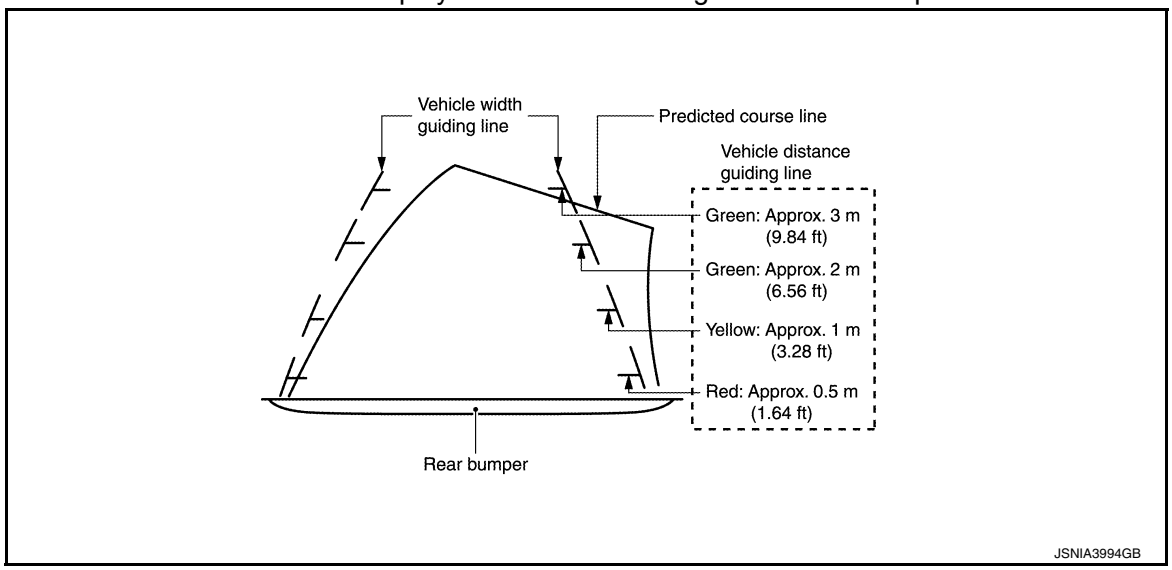
DESCRIPTION

Operation Description
- When the selector lever is shifted to the reverse position, the rear view monitor image is displayed.
- When the selector lever is shifted to any position other than the reverse position, the original image (the image displayed before the rear view monitor image) is displayed.

Camera Image Operation Principle
- The display control unit that receives the reverse signal input supplies power to the rear view camera and gives input of image signal.
- The display control unit outputs the rear view camera image to the display when the reverse signal is inputted.
- The display control unit generates the warning message, vehicle width guide lines and the predicted course lines on the image from the rear view camera to display a rear view camera image on the screen.

Vehicle Width Guide Lines and Predicted Course Lines Display Function at Rear View Monitor Display
- The vehicle width guide lines and the predicted course lines that indicate the vehicle route according to the steering angle are displayed at the rear view monitor display to allow the driver to more easily judge distances between the vehicle and objects and help the driver back into a parking space.
- The display control unit receives the steering angle sensor signal from the multimedia CAN gateway via CAN communication and draws a vehicle width guide line according to the steering angle.
- When the vehicle width guide lines are displayed, the vehicle width guide lines are displayed translucently.

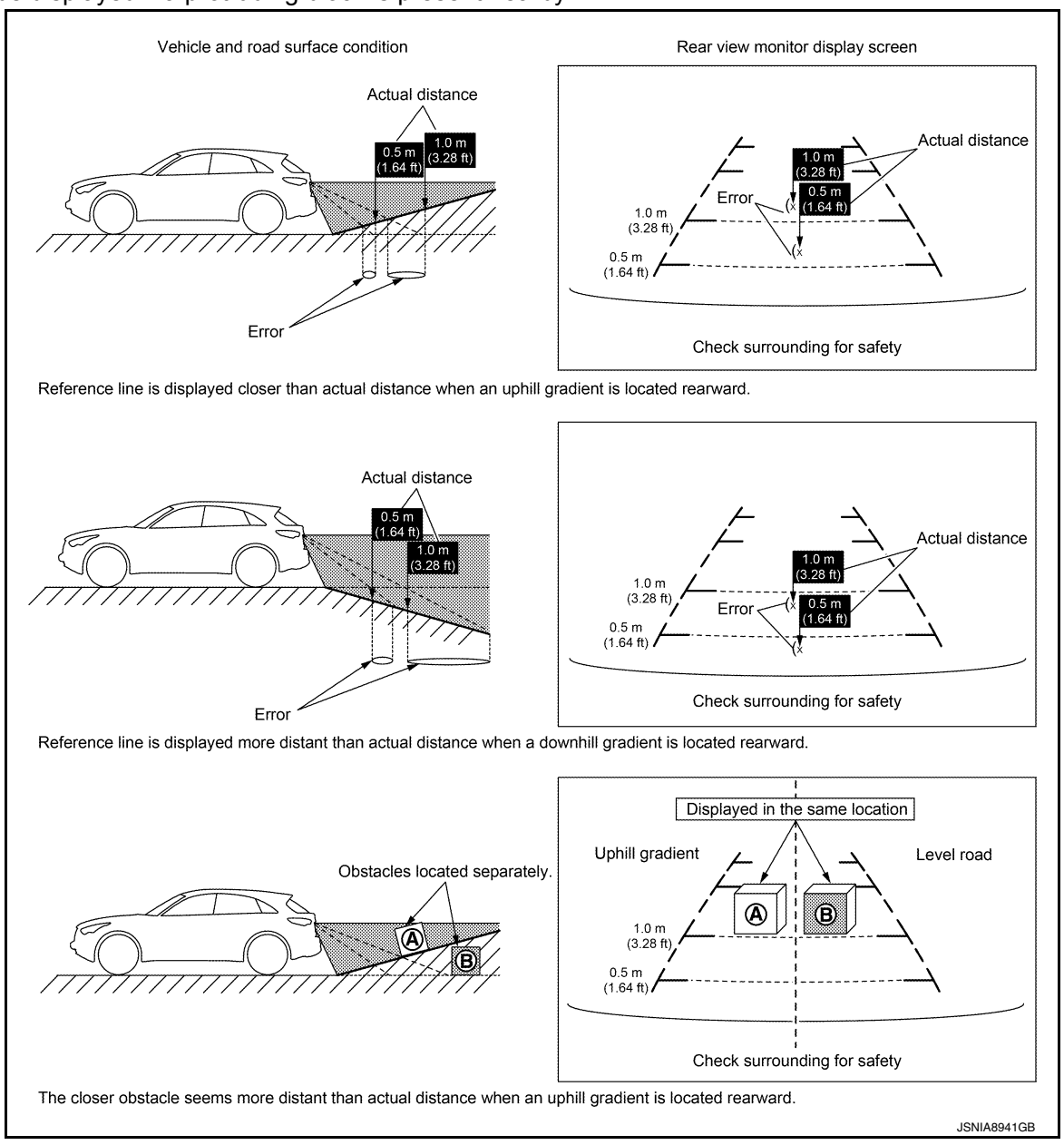
• The predicted course lines are not displayed when the steering is in the neutral position.



Precautions for Vehicle Width Guide Lines and Predicted Course Lines Display on the Rear View Monitor Display
Vehicle width guide lines and predicted course lines on the display may be different from actual lines depending on vehicle conditions and road conditions.

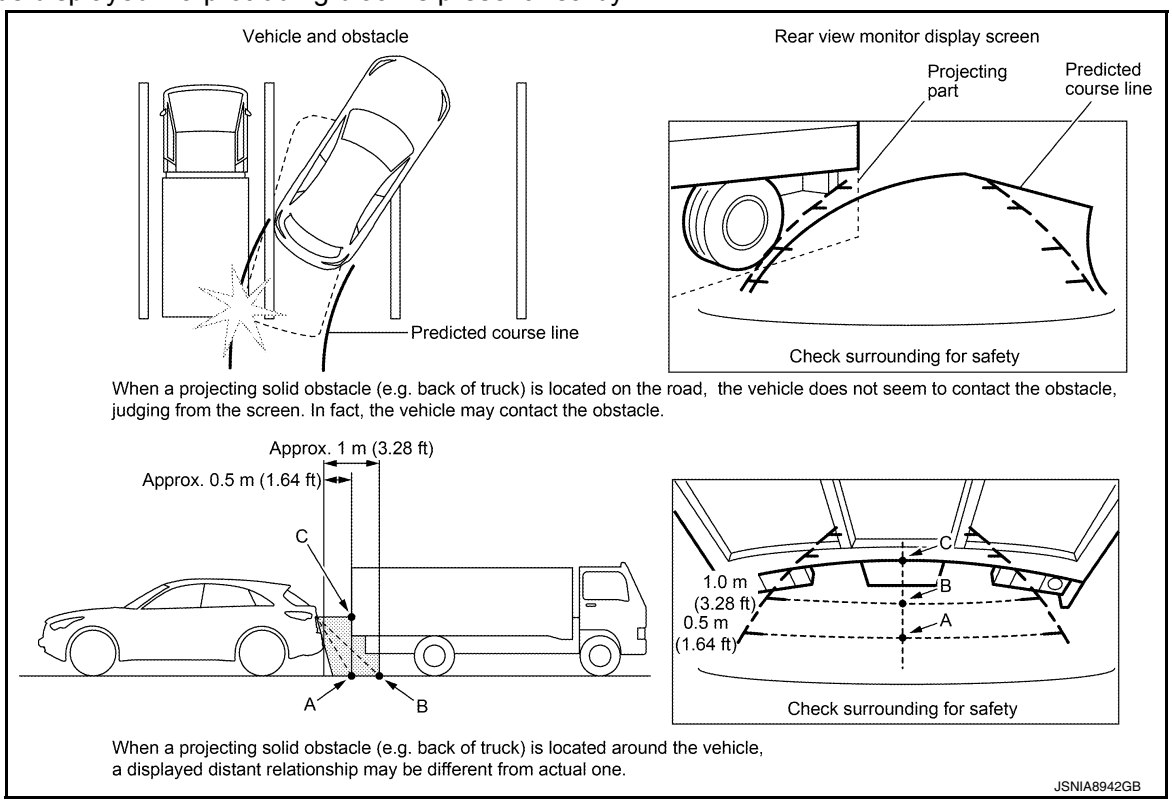
Precautions for road conditions

- Since vehicle width guide lines and predicted course lines are drawn based on the road, a different distance may be displayed if a protruding block is present nearby.



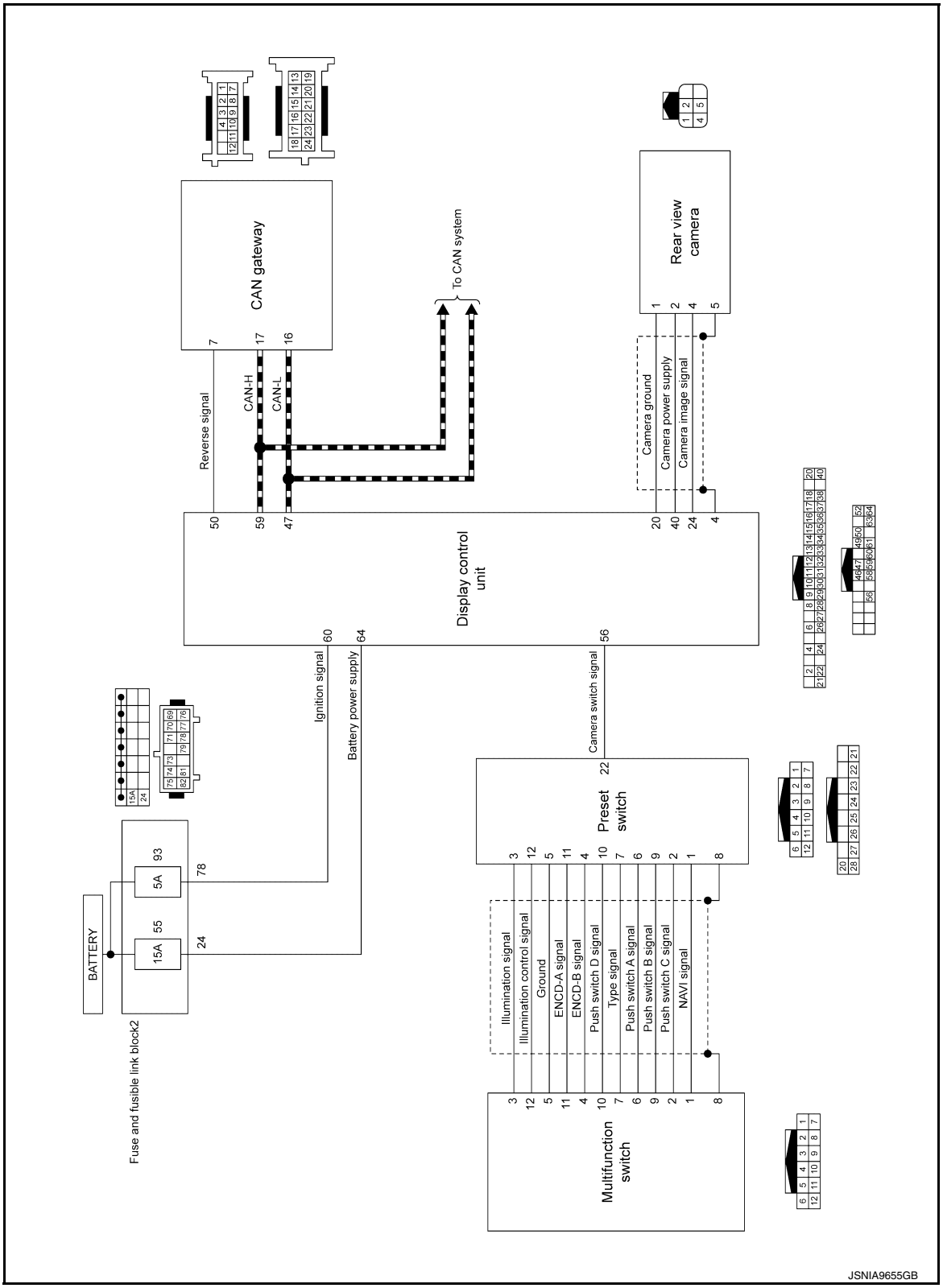
Precautions for block

- Since vehicle width guide lines and predicted course lines are drawn based on the road, a different distance may be displayed if a protruding block is present nearby.



Circuit Diagram

INFOID:0000000013615764



HANDLING PRECAUTION

Display

INFOID:0000000013615765

- When the compartment temperature is low, the display images may look slower because the LCD response is deteriorated. The system will recover its normal operation when the cabin temperature increases to an appropriate level.
- When the compartment temperature is low [0°C (32°F) or less], the display images may look slower. It is characteristic of the LCD monitor and should not be considered to be a malfunction. When the temperature is at the operating temperature [0°C (32°F) to 50°C (122°F)], the display returns to normal.
- There may be small dark or bright dots in the screen or remaining display content may be found (image lag). These are inherent symptoms to any LCD monitor and should not be considered to be a malfunction.
- The image may look bright or dark when viewed obliquely from the rear. It is inherent to any LCD monitor and should not be considered to be a malfunction.
- Do not apply pressure on the LCD monitor. Doing so may cause irregularities in the screen image or render it inoperative.
- Do not use hard cloth, organic solvent (alcohol, benzine, and thinner), or chemical wipe to clean the LCD monitor. Doing so may affect the panel surface. When cleaning the LCD monitor, always wipe it with a soft cloth after shutting off the power. For severe contamination, use a soft cloth dampened with mild detergent (no droplets can be present).

Rear View Monitor

INFOID:0000000013615766

- Since the range shown on the rear view monitor is limited, be sure to check safety visually around the area. Never drive while viewing only the image. It must be used only as a supplementary measure to gain field of view at the back of the vehicle.
- Since the rear view camera is using a wide lens, distance of the image shown on the display is different from the actual distance.
- Since the rear view camera is a precision device, do not apply a strong impact to it. Doing so may cause a malfunction, fire or electric shock.
- Raindrop, snow, mud, body wax, etc. on the lens may give poor image. Damage to the lens may adversely affect the image.
- Do not use hard cloth, organic solvent (alcohol, benzine, and thinner), or chemical wipe to clean the lens. Doing so may cause discoloration. When cleaning the lens, always wipe it with a dry soft cloth. For severe contamination, use a soft cloth dampened with mild detergent (no droplets can be present).
- In a high-pressure car wash, do not expose the camera directly to water. It may cause entry of water on the lens or cause condensation, resulting in a malfunction, fire or electric shock. Do not use a car wash brush on the lens.
- When it is extremely hot or cold, the image may be poor, but it should not be considered to be a malfunction.
- The image may be poor or bluish at a dark place or at night, but it should not be considered to be a malfunction. In this case, image quality may be adjusted using the image quality adjusting function.
- Flickering may appear on the screen under fluorescent light, but it should not be considered to be a malfunction.
- When the rear view monitor is used, some of the audio and hand-free phone functions can be operated.
- It may take some time to switch to the camera image or non-camera image. Image may be instantaneously disturbed before a complete image appears.
- If highly brilliant point (sun reflecting on the vehicle body) is shown on the camera, a smear or ghost inherent to CCD occur, but it should not be considered to be a malfunction.
- The back view monitor image is a mirror image with reverse left and right to suit the situation when the rear is viewed with the rear view mirror.
- Possible route lines and side distance guide lines are subject to the number of passengers, fuel level, vehicle position, road condition, road gradient, etc. There may be a difference from the actual driving route.
- If tires are replaced with a size not specified, possible route lines may not be correctly displayed.
- The possible route line center position may be misaligned. In this case, perform the correction of the neutral position according to the following procedure.

- Drive 100 m (328.1 ft) or more straight ahead at 30 km/h (19 MPH) or more.

DIAGNOSIS SYSTEM (DISPLAY CONTROL UNIT)

Description

INFOID:0000000013615767

- The display control unit diagnosis function starts up with preset switch operation and the display 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 preset switch does not function, etc.

On Board Diagnosis Function

INFOID:0000000013615768

ON BOARD DIAGNOSIS ITEM

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 display control unit, connections between system components. 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

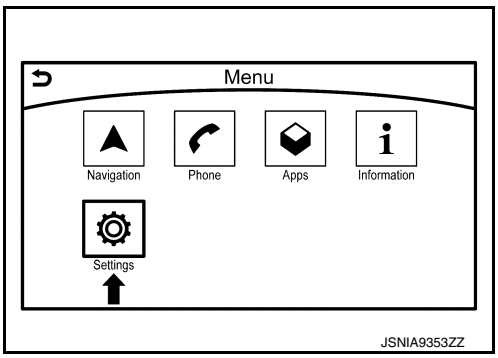
Mode	Description
Self Diagnosis	• Display control unit diagnosis. • Diagnoses the connections across system components.

Mode		Description
Confirmation/ Adjustment	Display Diagnosis	The following check functions are available: • Color tone check by color bar display, white display and black display • Light and shade check by gray scale display • Touch panel check • Sensor sensitivity settings
	Vehicle Signals	Diagnosis of signals can be performed .
	Speaker Test	The connection of a speaker can be confirmed by test tone.
	Navigation*1	The reception status of GPS can be confirmed. Display On/Off of the simulation menu of navigation.
	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.
	AV COMM Diagnosis	The communication condition of each unit of Infiniti InTouch can be monitored.
	Clock Setting*1	The date and time information can be adjusted.
	Camera Control	The signal connected to camera control unit can be checked and the guiding line position that overlaps rear view camera image can be adjusted.
	Delete Unit Connection Log	Erase the connection history of unit and error history.
	Reset Settings	Initializes the each data.
	Version Information	Version information of the following items is displayed. • Display control unit • NAVI control unit • AV control unit • BOSE amp. • Preset switch • Around view monitor control unit
	Program Update	Version of the display control unit can be update.
	SXM	Display the information related to satellite radio.
	Switch Information	Display each switch information.
	ANC/ASC Diagnosis*2	Display the information related to active noise cancellation and active sound enhancement.
	Hands-free Phone	The received volume adjustment of hands-free phone and microphone speaker check can be performed.

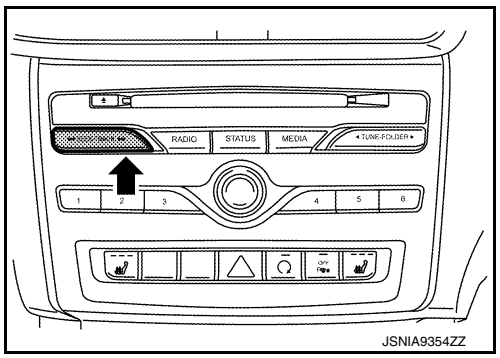
*1: Only models with navigation system
*2: Models with BOSE audio system

METHOD OF STARTING

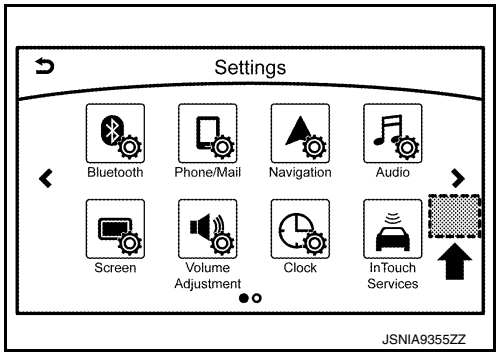
1. Start the engine.
2. Turn the audio system OFF.
3. Touch the “SETTINGS” icon and display a settings menu screen.



4. Press the “SEEK/TRACK UP” switch (⏭) at least 3 times. (Within 15 seconds after the settings menu screen display.)
NOTE:
When press the “SEEK/TRACK Up” switch (⏭) more than 4 times, a self-diagnosis mode is not started. press the “MENU” switch again.



5. Touch the screen (area of the figure) for 3 seconds.



6. The trouble diagnosis initial screen is displayed, and then the items of “Self Diagnosis” and “Confirmation/ Adjustment” can be selected.

NOTE:
When a diagnostic screen is not displayed, press the “MENU” switch. And then, restart from the procedure of Step 3.

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 (display control unit), BOSE® Amp., Audio Head Unit and Navigation unit are displayed in red.
- Replace display control unit if “Self-Diagnosis did not run because of a control unit malfunction” is indicated. The symptom is display control unit internal error. Refer to AV-239, "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 display control unit and each unit and the internal operation of the display 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 display control unit and preset 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
DCU	Malfunction is detected in display control unit power supply and ground circuits.	Check display control unit power supply and ground circuits. Refer to AV-202, "DISPLAY CONTROL UNIT : Diagnosis Procedure". When detecting no malfunction in those components, replace display control unit. Refer to AV-239, "Removal and Installation".
Audio Head Unit	Malfunction is detected in AV control unit power supply and ground circuits.	Check AV control unit power supply and ground circuits. Refer to AV-203, "AV CONTROL UNIT : Diagnosis Procedure". When detecting no malfunction in those components, replace AV control unit. Refer to AV-240, "Removal and Installation".
Navigation unit	Malfunction is detected in NAVI control unit power supply and ground circuits.	Check NAVI control unit power supply and ground circuits. Refer to AV-204, "NAVI CONTROL UNIT : Diagnosis Procedure". When detecting no malfunction in those components, replace NAVI control unit. Refer to AV-241, "Removal and Installation".
BOSE® Amp.	When either one of the following items are detected: • Sound signal circuits between BOSE amp. and each speaker are malfunctioning. • Sound signal circuits between BOSE amp. and either front or rear microphone is malfunctioning. • BOSE amp. malfunction is detected.	• Malfunctioning speaker circuits. • Malfunctioning front or rear microphone circuits. • Replace BOSE amp. Refer to AV-246, "Removal and Installation".

A Connecting Cable Between Units Is Displayed In Yellow.

Area with yellow connection lines	Description	Possible malfunction location / Action to take
DCU ⇔ Audio Head Unit	When either one of the following items are detected: • AV control unit power supply and ground circuits are malfunctioning. • AV communication circuits between display control unit and AV control unit are malfunctioning. • USB communication circuits between display control unit and AV control unit are malfunctioning.	• AV control unit power supply and ground circuits. Refer to AV-203, "AV CONTROL UNIT : Diagnosis Procedure". • AV communication circuits between display control unit and AV control unit are malfunctioning. • USB communication circuits between display control unit and AV control unit are malfunctioning.
DCU ⇔ BOSE® Amp	When either one of the following items are detected: • BOSE amp. power supply and ground circuits are malfunctioning. • AV communication circuits between display control unit and BOSE amp. are malfunctioning.	• BOSE amp. power supply and ground circuits. Refer to AV-205, "BOSE AMP. : Diagnosis Procedure". • AV communication circuits between display control unit and BOSE amp. are malfunctioning.
DCU ⇔ TGW	When either one of the following items are detected: • CAN gateway power supply and ground circuits are malfunctioning. • AV communication circuits between display control unit and CAN gateway are malfunctioning.	• CAN gateway power supply and ground circuits are malfunctioning. Refer to LAN-217, "Diagnosis Procedure". • AV communication circuits between display control unit and CAN gateway are malfunctioning.
DCU ⇔ Switches	When either one of the following items are detected: • Preset switch power supply and ground circuits are malfunctioning. • AV communication circuits between display control unit and preset switch are malfunctioning.	• Preset switch power supply and ground circuits are malfunctioning. Refer to AV-162, "Diagnosis Procedure". • AV communication circuits between display control unit and preset switch are malfunctioning.
DCU ⇔ Rear Camera	Malfunction is detected in rear view camera circuit between display control unit and rear view camera.	Rear view camera power supply and ground circuits. Refer to AV-394, "Diagnosis Procedure".
DCU ⇔ Navigation unit	USB communication circuits between display control unit and NAVI control unit are malfunctioning.	• Check NAVI control unit power supply and ground circuits. Refer to AV-204, "NAVI CONTROL UNIT : Diagnosis Procedure". • USB communication circuits between display control unit and NAVI control unit are malfunctioning.
DCU ⇔ TCU	USB communication circuits between display control unit and TCU are malfunctioning.	• Check TCU power supply and ground circuits. Refer to AV-455, "TCU : Diagnosis Procedure". • USB communication circuits between display control unit and TCU are malfunctioning.
Navigation unit ⇔ GPS Antenna	GPS antenna connection malfunctions detected.	GPS antenna Refer to AV-164, "Diagnosis Procedure".
Audio Head Unit ⇔ XM Antenna	Satellite radio antenna connection malfunctions detected.	Satellite radio antenna Refer to AV-170, "Diagnosis Procedure".
Audio Head Unit ⇔ Radio Antenna	AM/FM main antenna connection malfunctions detected.	AM/FM main antenna Refer to AV-179, "Diagnosis Procedure".

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. Touch the “Back” to return to the initial Confirmation/Adjustment Mode screen.

Display Diagnosis
Confirmation of the display control unit screen.

Item		Description
Display Settings	Color Spectrum Bar	• Display 7 colors of following bars. - White - Yellow - Cyan (Close to light blue) - Green - Magenta (Close to purplish red) - Red - Blue
	Gradation Bar	Display 64 gradation gray-scale image to a screen.
	White Display	Display white screen.
	Black Display	Display black screen.
Touch Panel		• The function can check the presence of a “+” indication and deviation from where it should be while touching the touch panel. • Display coordinates and gesture operation name (Drag, Tap, Double Tap, Spread, etc.) of the screen which touched.
Sensor Sensitivity Settings		• Display a current touch panel sensor sensitivity set value. • Can change the touch panel sensor sensitivity set value with 1 (Low) - 5 (high) phases.

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

Display control unit

Diagnosis item	Display	Vehicle status	Remarks
Vehicle Speed	ON	Vehicle speed > 0 km/h (0 MPH)	Changes in indication may be delayed. This is normal.
	OFF	Vehicle speed = 0 km/h (0 MPH)	
Parking Brake Signal	ON	Parking brake is applied.	
	OFF	Parking brake is released.	
Light Signal	ON	Block the light beam from the auto light optical sensor when the light switch is ON.	—
	OFF	Either of the following conditions • Lighting switch OFF. • Expose the auto light optical sensor to light when the light switch is ON.	
Ignition Signal	ON	Ignition switch ON.	—
	OFF	Ignition switch in ACC position.	
Reverse Signal	ON	Shift the selector lever to “R” position.	Changes in indication may be delayed. This is normal.
	OFF	Shift the selector lever other than “R” position.	

NAVI control unit

Diagnosis item	Display	Vehicle status	Remarks
Vehicle Speed	ON	Vehicle speed > 0 km/h (0 MPH)	Changes in indication may be delayed. This is normal.
	OFF	Vehicle speed = 0 km/h (0 MPH)	
Ignition Signal	ON	Ignition switch ON.	—
	OFF	Ignition switch in ACC position.	

Diagnosis item	Display	Vehicle status	Remarks
Reverse Signal	ON	Shift the selector lever to “R” position.	Changes in indication may be delayed. This is normal.
	OFF	Shift the selector lever other than “R” position.	

NOTE:
Only models with navigation system.

Speaker Test
Select “Speaker Test” to display the speaker diagnosis screen. Touch “Start” to generate a test tone in a speaker. Touch “Next” to generate a test tone in the next speaker. Touch “End” to stop the test tones.

Speaker Name
Front Instr. Panel Center Squawker
Front Door Left Sub Woofer
Front Door Right Sub Woofer
Front Door Left Tweeter
Front Door Right Tweeter
Rear Door Left Speaker
Rear Door Right Speaker
Rear Pillar Left Squawker
Rear Pillar Right Squawker
Rear Luggage Left Sub Woofer
Rear Luggage Right Sub Woofer

Navigation

Item	Description
Sensor Information	The reception status of GPS can be confirmed.
Route Simulation	Set the display ON/OFF of the “simulation” menu of the navigation.

NOTE:
Only models with navigation system.

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.
- Place of the error occurrence is represented by the longitude and latitude 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 up-and-down manner.

Count up method
- 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.

Display type of occurrence frequency	Error history display item
Count up method	CAN communication line, control unit (CAN), AV communication line, control unit (AV)

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	Applicable DTC	Reference
TACHO signal failure	B1F01	AV-151
CAN COMM CIRCUIT	U1000	AV-153
CONTROL UNIT (CAN)	U1010	AV-155
Control unit internal error	U121F	AV-156
Mismatched configuration data stored	U1223	AV-157
Amplifier temperature error	U1231	AV-158
Steer. Angle Sensor calibration	U1232	AV-159
Navi unit internal error	U1233	AV-160
Audio unit internal error	U1234	AV-161
Switches connection error	U1240	AV-162
GPS Antenna error	U1244	AV-164
Audio unit connection error	U1249	AV-166
Bose AMP connection error	U124E	AV-168
XM Antenna connection error : open	U1258	AV-170
XM Antenna connection error : short		
Navi unit connection error	U125D	AV-172
TCU connection error	U1266	AV-173
TGW connection error	U1267	AV-175
IT Comander connection error	U12BA	AV-177
Radio Antenna error : open	U12BE	AV-179
Radio Antenna error : short		
AV COMM CIRCUIT	U1300	AV-181
CONTROL UNIT (AV)	U1310	AV-183
FL-DOOR WOOFER	U1601	AV-184
FL-DOOR TWEETER	U1603	AV-184
FR-DOOR WOOFER	U1609	AV-184
FR-DOOR TWEETER	U160B	AV-184
F-INST C-SQUAWKER	U162A	AV-190
RL-DOOR SPEAKER	U1708	AV-192
RR-DOOR SPEAKER	U1710	AV-192
RL-PILLAR SQUAWKER	U1752	AV-196
RR-PILLAR SQUAWKER	U175A	AV-196
R-LUGGAGE L-WOOFER	U175D	AV-199
R-LUGGAGE R-WOOFER	U1765	AV-199

AV COMM Diagnosis

AV COMM Monitor
- Displays the communication status between display 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)
CMF Send Switch	OK / UNKW	OK / 0 – 39 / —
CMF Receive Switch	OK / UNKW	OK / 0 – 39 / —
CMF Receive Bose® AMP	OK / UNKW	OK / 0 – 39 / —
CMF Receive TGW	OK / UNKW	OK / 0 – 39 / —
CMF Receive Audio	OK / UNKW	OK / 0 – 39 / —

Clock Setting
The date and time information can be adjusted.
NOTE:
Only models with navigation system.

Camera Cont. (With Rear View Monitor)

Item	Description
Adjust Guide Line of Rear View Camera	The guiding lines in the rear view monitor can be adjusted.
Check/Change Configuration	Displays the current configuration data. **NOTE:** Refer to the following list for the items of the configuration adjustment function.
Reset Configuration	Initializes the camera system configuration.
Camera System Type	Sets the type of camera that is connected.

Configuration list

Setting item	Setting (Default value)
Predictive Course Lines	With (No SBW)
Rear Coeff. K	1.49591
Rear Coeff. F	0.14104
Rear Coeff. P1	−0.65196
Rear Coeff. P2	0.2805
Rear Coeff. C1	−0.03754
Rear Coeff. C2	−0.00001
Rear Coeff. D1	130.3
Rear Coeff. D2	−46.18
Car Width	1808.7
Rear Offset	3421.41
Rear Height	570.96
Rear L/R Angle	0
Rear Up/Dn Angle	0
Rear Roll Angle	0
Bumper Rear Dist.	0
Bumper Rear Axle Dist	0
Max. Steering Angle	32
Min. Turning Radius	1.39
Wheelbase	2699
Total Length	4425.9
Steering Gear Ratio	0.0403492

Camera Cont. (With Around View Monitor)

Item	Description
Adjust Guide Line of Rear View Camera	**NOTE:** This item displayed, but it is not used.
Check/Change Configuration	
Reset Configuration	
Camera System Type	Sets the type of camera that is connected.

Delete Unit Connection Log
Deletes any unit connection records and error records from the display control unit memory. (Clear the records of the unit that has been removed.)

Reset Settings

Item	Description
Reset User Data	Initializes the display control unit, NAVI control unit and AV control unit memory.
Reset Configuration	Initializes the configuration data.

Version Information
Version information of the each control unit and switch is displayed.

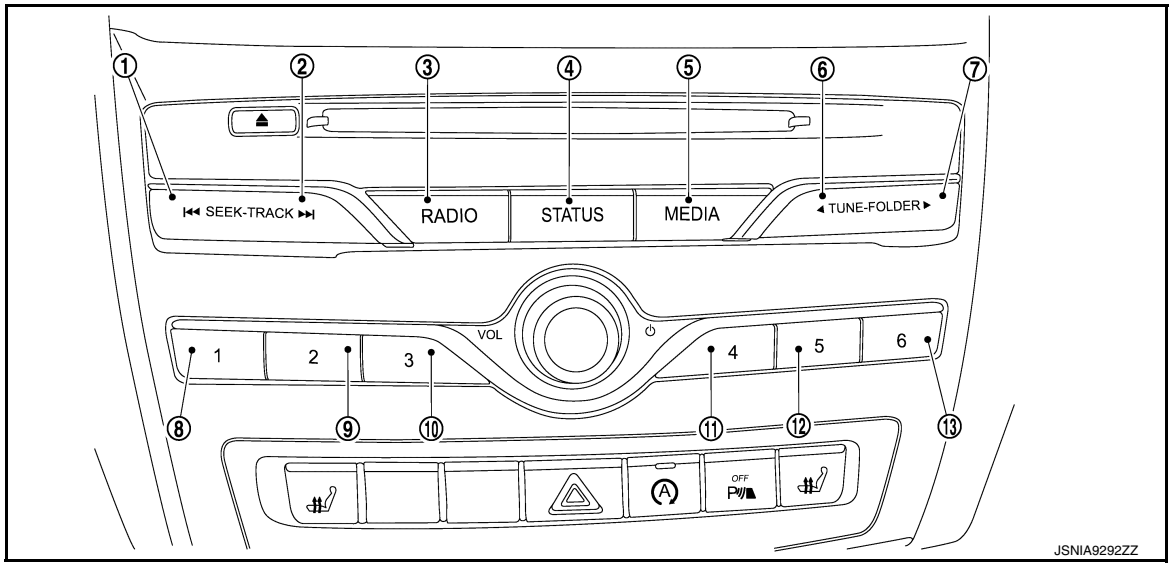
Program Update
Version of the display control unit can be update.

SXM

XM Mode Diagnosis

Item	Description
Show XM Diagnosis	Display adjustment items to test satellite radio function.
External Connection Mode	Set in external diagnostic mode.

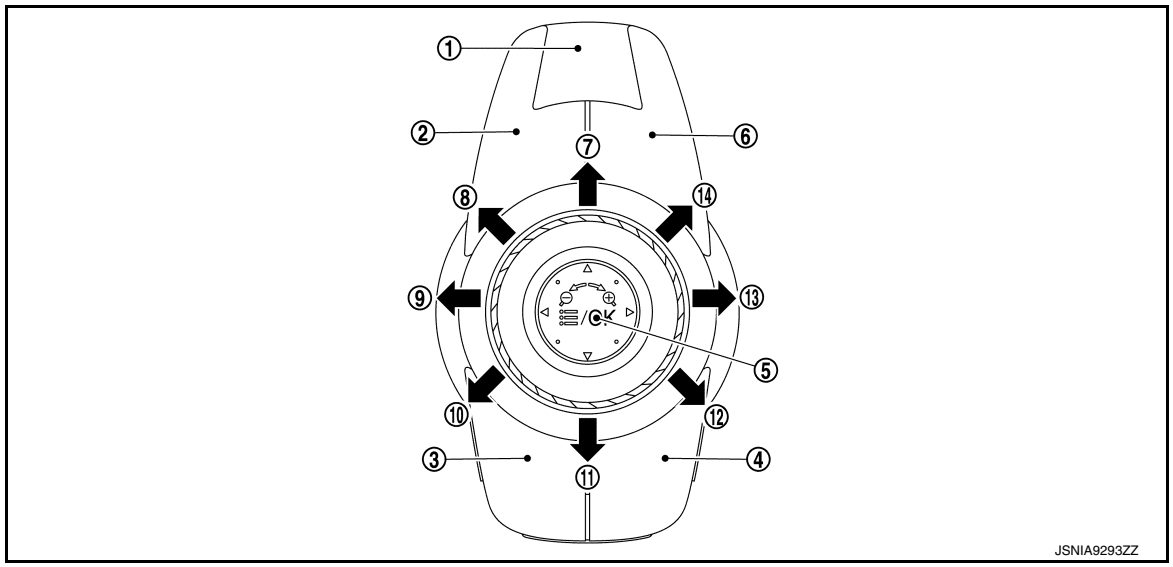
Switch Information
Preset switch, multifunction switch and steering switch information can be checked.
Switch name and ID are displayed when press each switch.
• Preset switch



No.	Display (Panel Name)
①	⏮
②	⏭
③	Radio

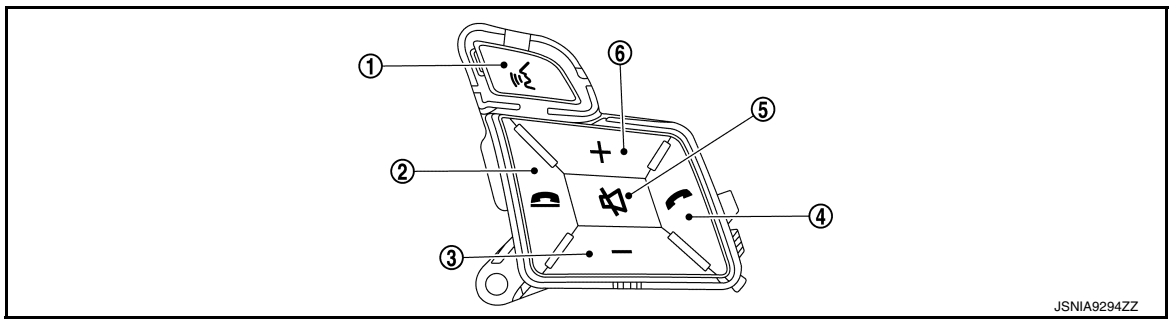
No.	Display (Panel Name)
④	Status
⑤	DISC/AUX
⑥	<TUNE/CH/FOLDER
⑦	TUNE/CH/FULDER>
⑧	Preset 1
⑨	Preset 2
⑩	Preset 3
⑪	Preset 4
⑫	Preset 5
⑬	Preset 6

- Multifunction switch



No.	Display (Panel Name)
①	Map
②	MENU
③	Camera or Back
④	Back or Camera
⑤	OK
⑥	Audio
⑦	Up
⑧	Up/Left
⑨	Left
⑩	Down/Left
⑪	Down
⑫	Down/Right
⑬	Right
⑭	Up/Right

• Steering switch



No.	Display (STRG SW)
①	Voice Recognition Engine
②	TEL_Off
③	VOL DOWN/Left
④	TEL_On
⑤	Audio ON/OFF
⑥	VOL UP/Right

ANC/ASC Diagnosis

Item	Description
Show Settings	Following items can be confirmed. • Part Number • Software Version • Config Result • ASC ON/OFF status [Enabled: ON/OFF]
Connection Diagnosis	Display a state of wiring connected with in BOSE amp.
Active Test	ANC function can be confirmed by test tone. **NOTE:** This item is displayed, but not used.
Version	Version information of the each parts is displayed.

Hands-Free Phone

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

Item	Description
Handsfree Volume	The reception volume can be set in 3 steps: “Low”, “Mid” and “High”.
Voice Microphone Test	The microphone audio can be directly connected to the speakers to perform a microphone test.

CONSULT Function

INFOID:0000000013615769

APPLICATION ITEMS

CONSULT performs the following functions via the communication with the display control unit

Diagnosis mode	Description
Self Diagnostic Result	Performs a diagnosis on the display 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 display control unit can be performed.
Work Support	Steering angle sensor can be adjusted.

Diagnosis mode	Description
ECU Identification	The part number of display control unit can be checked.
Configuration	• Read and save the vehicle specification. • Write the vehicle specification when replacing display 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 display control unit to each unit as well as the error counter.
	AUDIO	Displays the display control unit communication status and the error counter.

SELF DIAGNOSIS RESULT

- 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.
- Refer to AV-383, "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.

- Displays the status of the following vehicle signals inputted into the display 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 > 0 km/h (0 MPH)	Changes in indication may be delayed. This is normal.
	Off	Vehicle speed = 0 km/h (0 MPH)	
PKB SIG	On	Parking brake is applied.	
	Off	Parking brake is released.	
ILLUM SIG	On	Block the light beam from the auto light optical sensor when the light switch is ON.	—
	Off	Either of the following conditions • Lighting switch OFF. • Expose the auto light optical sensor to light when the light switch is ON.	
IGN SIG	On	Ignition switch ON.	
	Off	Ignition switch in ACC position.	
REV SIG	On	Selector lever in R position.	Changes in indication may be delayed. This is normal.
	Off	Selector lever in any position other than R.	

WORK SUPPORT

Adjusts the neutral position of the steering angle sensor.

Item	Description
ST ANGLE SENSOR ADJUSTMENT	**NOTE:** This item is displayed, but it is not used.

ECU IDENTIFICATION

The part number of display control unit is displayed.

CONFIGURATION

Configuration has three functions as follows.

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

CAUTION:

- **When replacing display control unit, you must perform “Read / Write Configuration” or “Manual Configuration” with CONSULT.**
- **Complete the procedure of “Read / Write Configuration” or “Manual Configuration” in order.**
- **If you set incorrect “Read / Write Configuration” or “Manual Configuration”, incidents might occur.**
- **Configuration is different for each vehicle model. Confirm configuration of each vehicle model.**

ECU DIAGNOSIS INFORMATION

DISPLAY CONTROL UNIT

Reference Value

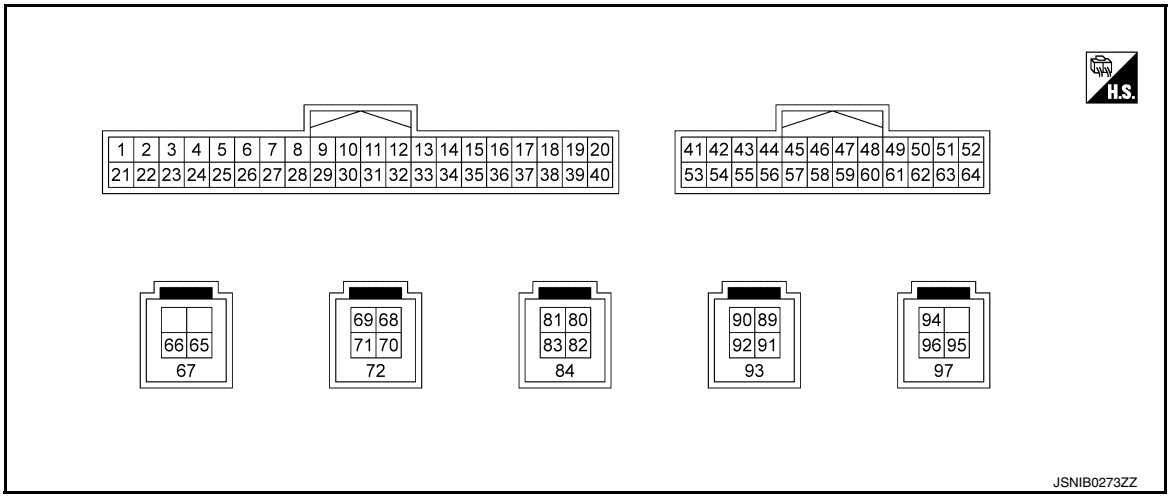
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VALUES ON THE DIAGNOSIS TOOL

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

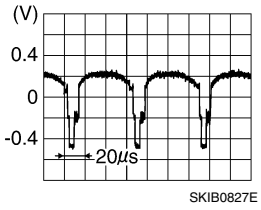
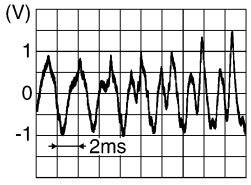
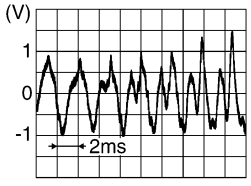
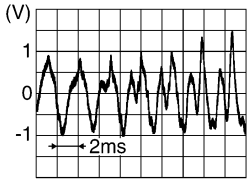
Monitor Item	Condition		Value/Status
VHCL SPD SIG	Ignition switch ON	Vehicle speed > 0 km/h (0 MPH)	On
		Vehicle speed = 0 km/h (0 MPH)	Off
PKB SIG	Ignition switch ON	Parking brake is applied	On
		Parking brake is released	Off
ILLUM SIG	Ignition switch ON	Block the light beam from the auto light optical sensor when the light switch is ON	On
		Either of the following conditions • Lighting switch OFF • Expose the auto light optical sensor to light when the light switch is ON	Off
IGN SIG	Ignition switch ON		On
	Ignition switch in ACC position		Off
REV SIG	Ignition switch ON	Selector lever in R position	On
		Selector lever in any position other than R	Off

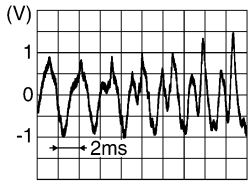
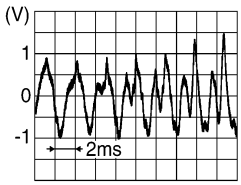
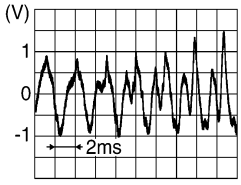
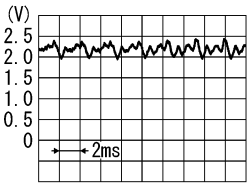
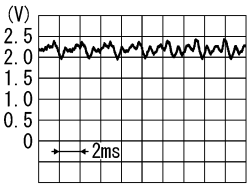
TERMINAL LAYOUT

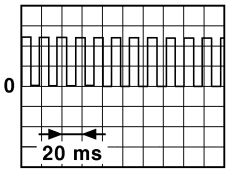


PHYSICAL VALUES

Terminal (Wire color)		Description		Condition	Standard value	Reference value (Approx.)
+	–	Signal name	Input/ Output			
4	—	Shield	—	—	—	—
6	—	Shield	—	—	—	—
8 (G)	—	Sound signal RH (–)	—	—	—	—
9	—	Shield	—	—	—	—

Terminal (Wire color)		Description		Condition	Standard value	Reference value (Approx.)
+	–	Signal name	Input/ Output			
10 (L)	—	Sound signal LH (–)	—	—	—	—
11 (W)	—	TEL voice signal (–)	—	—	—	—
12	—	Shield	—	—	—	—
13 (R)	—	Voice guidance signal output (–)	—	—	—	—
14 (B)	—	Voice guidance signal input (–)	—	—	—	—
15 (W)	—	NS ON/OFF signal	—	—	—	—
16 (R)	—	Microphone signal ground	—	[Ignition switch ON]	—	0 V
17	—	Shield	—	—	—	—
18	—	Shield	—	—	—	—
20 (B)	—	Camera ground	—	[Ignition switch ON]	—	0 V
24 (O)	4	Camera image signal	Input	[Ignition switch ON] • Image is displayed.	Waveform according to rear view camera image is input.	 SKIB0827E
26 (W)	—	Sound signal (–)	—	—	—	—
27 (B)	26 (W)	Sound signal (+)	Output	[Ignition switch ON] • Sound output	Outputs waveform synchronized with sound.	 SKIB3609E
28 (R)	8 (G)	Sound signal RH (+)	Output	[Ignition switch ON] • Sound output	Outputs waveform synchronized with sound.	 SKIB3609E
29	—	Shield	—	—	—	—
30 (P)	10 (L)	Sound signal LH (+)	Output	[Ignition switch ON] • Sound output	Outputs waveform synchronized with sound.	 SKIB3609E

Terminal (Wire color)		Description		Condition	Standard value	Reference value (Approx.)
+	–	Signal name	Input/ Output			
31 (B)	11 (W)	TEL voice signal (+)	Output	[Ignition switch ON] • During voice guide output	Waveform according to voice is input.	 SKIB3609E
32	—	Shield	—	—	—	—
33 (G)	13 (R)	Voice guidance signal output (+)	Output	[Ignition switch ON] • Sound output	Outputs waveform synchronized with sound.	 SKIB3609E
34 (W)	14 (B)	Voice guidance signal input (+)	Input	[Ignition switch ON] • Sound output	Waveform according to sound is input.	 SKIB3609E
35	—	Shield	—	—	—	—
36 (G)	16 (R)	Microphone signal	Output	[Ignition switch ON] • Give a voice	Outputs waveform synchronized with voice.	 PKIB5037J
37 (O)* (R)*	18	Microphone signal	Input	[Ignition switch ON] • Give a voice	Waveform according to sound is input.	 PKIB5037J
38 (L)	18	Microphone power supply	Output	[Ignition switch ON]	4.7 – 5.3 V	5.0 V
40 (Y)	20 (B)	Camera power supply	Output	[Ignition switch ON] • At rear view camera image is displayed	5.9 - 6.5 V	6.0 V
				[Ignition switch ON] • Except for above	1.0 V or more	0 V
46 (G)	—	AV communication signal (L)	Input/ Output	—	—	—
47 (P)	—	CAN-L	Input/ Output	—	—	—

Terminal (Wire color)		Description		Condition	Standard value	Reference value (Approx.)
+	–	Signal name	Input/ Output			
49 (R)	52 (B)	Dimmer signal	Input	[Ignition switch ON] • Either of the following conditions - Lighting switch OFF - Expose the auto light optical sensor to light when the light switch is ON.	3.0 V or less	0 V
				[Ignition switch ON] • Block the light beam from the auto light optical sensor when the light switch is ON.	7.0 V or more	12.0 V
50 (BR)	52 (B)	Reverse signal	Input	[Ignition switch ON] • R position	7.0 V or more	12.0 V
				[Ignition switch ON] • Other than R position	3.0 V or less	0 V
52 (B)	—	Ground	—	[Ignition switch ON]	—	0 V
56 (BR)	52 (B)	Camera switch signal	Input	[Ignition switch ON] • Camera switch: ON	3.0 V or less	0 - 2.5 V
				[Ignition switch ON] • Camera switch: OFF	3.0 V or more	3.0 V
58 (Y)	—	AV communication signal (H)	Input/ Output	—	—	—
59 (L)	—	CAN-H	Input/ Output	—	—	—
60 (W)	52 (B)	Ignition signal	Input	[Ignition switch ON]	7.0 - 16.0 V	Battery voltage
61 (R)	52 (B)	Vehicle speed signal (8-pulse)	Input	[Ignition switch ON] • When vehicle speed is approx. 40 km/h (25 MPH)	Waveform according to vehicle speed is input.	**NOTE:** The maximum voltage varies depending on the specification (destination unit).  JSNIA0012GB
63 (L)	52 (B)	ACC power supply	Input	[Ignition switch ACC]	4.5 - 16.0 V	Battery voltage
64 (Y)	52 (B)	Battery power supply	Input	[Ignition switch OFF]	9.0 - 16.0 V	Battery voltage
65 (W)	66 (B)	LVDS (+)	Input/ Output	—	—	—
66 (B)	—	LVDS (–)	Input/ Output	—	—	—
67	—	Shield	—	—	—	—
68 (G)	—	USB ground	—	—	—	—

Terminal (Wire color)		Description		Condition	Standard value	Reference value (Approx.)
+	–	Signal name	Input/ Output			
69 (W)	—	USB V BUS signal	Output	—	—	—
70 (R)	—	USB D- signal	Input/ Output	—	—	—
71 (L)	—	USB D+ signal	Input/ Output	—	—	—
72	—	Shield	—	—	—	—
80 (G)	—	USB ground	—	—	—	—
81 (W)	—	USB V BUS signal	Output	—	—	—
82 (R)	—	USB D- signal	Input/ Output	—	—	—
83 (L)	—	USB D+ signal	Input/ Output	—	—	—
84	—	Shield	—	—	—	—
89 (G)	—	USB ground	—	—	—	—
90 (W)	—	USB V BUS signal	Output	—	—	—
91 (R)	—	USB D- signal	Input/ Output	—	—	—
92 (L)	—	USB D+ signal	Input/ Output	—	—	—
93	—	Shield	—	—	—	—
94 (W)	—	USB V BUS signal	Output	—	—	—
95 (R)	—	USB D- signal	Input/ Output	—	—	—
96 (L)	—	USB D+ signal	Input/ Output	—	—	—
97	—	Shield	—	—	—	—

*: Color of wire differs depending on production.

Fail-Safe (Display Control Unit)

INFOID:0000000013819722

If a malfunction occurs in the Infiniti InTouch, display control unit performs fail-safe activation according to the detected malfunction.

Detection item	Infiniti InTouch operation in fail-safe mode	DTC
Engine speed signal	Active sound enhancement function are deactivated.	B1F01
CAN communication	The system using the CAN communication signal from control unit which cannot communicate does not function.	U1000
	The system using the CAN communication signal does not function.	U1010
Display control unit	• Display is not displayed. • Display control unit restart. • Display control unit freezes. **NOTE:** Symptom other than an item may occur.	U121F

Detection item	Infiniti InTouch operation in fail-safe mode		DTC
Configuration	A function of display control unit becomes mismatched with a vehicle specification and destination.		U1223
BOSE amp.	BOSE system does not function.		U1231
Steering angle sensor	Predictive course line is not displayed.		U1232
NAVI control unit	• Map is not displayed. • Navigation screen does not operate. **NOTE:** Symptom other than an item may occur.		U1233
AV control unit	• Sound is not output by a speaker. • CD is not played. • Radio does not operate. **NOTE:** Symptom other than an item may occur.		U1234
GPS antenna	The vehicle positions of a navigation screen differ.		U1244
AV communication	AV control unit	• Sound is not output by a speaker. • CD is not played. • Radio does not operate. **NOTE:** Symptom other than an item may occur.	U1249
	BOSE amp.	Sound is not output by a speaker.	U124E
	Preset switch	Switch operation does not operate. **NOTE:** Symptom other than an item may occur.	U1240
	CAN gateway	• Audio information is not displayed by the information display in the combination meter. • Navigation indicator is not displayed by the information display in the combination meter. • Steering switch does not operate.	U1267
	Display control unit	The system of ECU which detected abnormalities does not operate.	U1300
		The system which is using AV communication does not operate.	U1310
USB communication	NAVI control unit	A navigation menu cannot be selected (hatching display).	U125D
	TCU	Telematics system does not function.	U1266
Multifunction switch	Multifunction switch operation does not operate.		U12BA
Satellite radio antenna	Satellite radio is not received.		U1258
Radio antenna	Radio is not received.		U12BE
Speaker/squawker/tweeter/ woofer	No sound from malfunction speaker		U1601 U1603 U1609 U160B U162A U1708 U1710 U1752 U175A U175D U1765

DTC Inspection Priority Chart

INFOID:0000000013819723

If multiple DTCs are detected simultaneously, check them one by one depending on the following DTC inspection priority chart.

Priority	Detected items (DTC)
1	U1223: CONFIG UNFINISH
2	• U1000: CAN COMM CIRCUIT • U1010: CONTROL UNIT (CAN)
3	• B1F01: ENG SPEED SIG ERROR • U1240: SWITCH CONN • U1249: AUDIO H/U CONN • U124E: AMP CONN • U1267: CGW connection
4	• U121F: DISPLAY CONTROL UNIT • U1233: NAVI CONTROL UNIT • U1234: AV CONTROL UNIT • U1300: AV COMM CIRCUIT • U1310: CONTROL UNIT (AV)
5	• U1231: AMP TEMP • U1232: ST ANGLE SEN CALIB • U1244: GPS ANTENNA CONN • U1258: XM ANTENNA CONN • U125D: DVD NAVI CONN • U1266: TCU CONN • U12BA: MULTIFUNCTION SWITCH CONN • U12BE: RADIO ANTENA CONN • U1601: FL-DOOR WOOFER • U1603: FL-DOOR TWEETER • U1609: FR-DOOR WOOFER • U160B: FR-DOOR TWEETER • U162A: F-INST C-SQUAWK • U1708: RL-DOOR SPEAKER • U1710: RR-DOOR SPEAKER • U1752: RL-PILLAR SQUAWK • U175A: RR-PILLAR SQUAWK • U175D: R-LUGGAGE L-WOOFER • U1765: R-LUGGAGE R-WOOFER

DTC Index

INFOID:0000000013819724

SELF-DIAGNOSIS RESULTS DISPLAY ITEM

DTC	CONSULT display	Reference
B1F01	ENG SPEED SIG ERROR	AV-151, "DTC Description"
U1000	CAN COMM CIRCUIT	AV-153, "DISPLAY CONTROL UNIT : DTC Description"
U1010	CONTROL UNIT (CAN)	AV-155, "DISPLAY CONTROL UNIT : DTC Description"
U121F	DISPLAY CONTROL UNIT	AV-156, "DTC Description"
U1223	CONFIG UNFINISH	AV-157, "DTC Description"
U1231	AMP TEMP	AV-158, "DTC Description"
U1232	ST ANGLE SEN CALIB	AV-159, "DTC Description"
U1233	NAVI CONTROL UNIT	AV-160, "DTC Description"
U1234	AV CONTROL UNIT	AV-161, "DTC Description"
U1240	SWITCH CONN	AV-162, "DTC Description"
U1244	GPS ANTENNA CONN	AV-164, "DTC Description"
U1249	AUDIO H/U CONN	AV-166, "DTC Description"
U124E	AMP CONN	AV-168, "DTC Description"

DTC	CONSULT display		Reference
U1258	XM ANTENNA CONN	GND-SHORT	AV-170, "DTC Description"
		OPEN	
U125D	DVD NAVI CONN		AV-172, "DTC Description"
U1266	TCU CONN		AV-173, "DTC Description"
U1267	CGW connection		AV-175, "DTC Description"
U12BA	MULTIFUNCTION SWITCH CONN		AV-177, "DTC Description"
U12BE	RADIO ANTENA CONN	GND-SHORT	AV-179, "DTC Description"
		OPEN	
U1300	AV COMM CIRCUIT		AV-181, "DTC Description"
U1310	CONTROL UNIT (AV)		AV-183, "DTC Description"
U1601	FL-DOOR WOOFER	OPEN	AV-184, "DTC Description"
		SHORT	
		GND-SHORT	
		VB-SHORT	
U1603	FL-DOOR TWEETER	OPEN	AV-184, "DTC Description"
		SHORT	
		GND-SHORT	
		VB-SHORT	
U1609	FR-DOOR WOOFER	OPEN	AV-184, "DTC Description"
		SHORT	
		GND-SHORT	
		VB-SHORT	
U160B	FR-DOOR TWEETER	OPEN	AV-184, "DTC Description"
		SHORT	
		GND-SHORT	
		VB-SHORT	
U162A	F-INST C-SQUAWK	OPEN	AV-190, "DTC Description"
		SHORT	
		GND-SHORT	
		VB-SHORT	
U1708	RL-DOOR SPEAKER	OPEN	AV-192, "DTC Description"
		SHORT	
		GND-SHORT	
		VB-SHORT	
U1710	RR-DOOR SPEAKER	OPEN	AV-192, "DTC Description"
		SHORT	
		GND-SHORT	
		VB-SHORT	
U1752	RL-PILLAR SQUAWK	OPEN	AV-196, "DTC Description"
		SHORT	
		GND-SHORT	
		VB-SHORT	

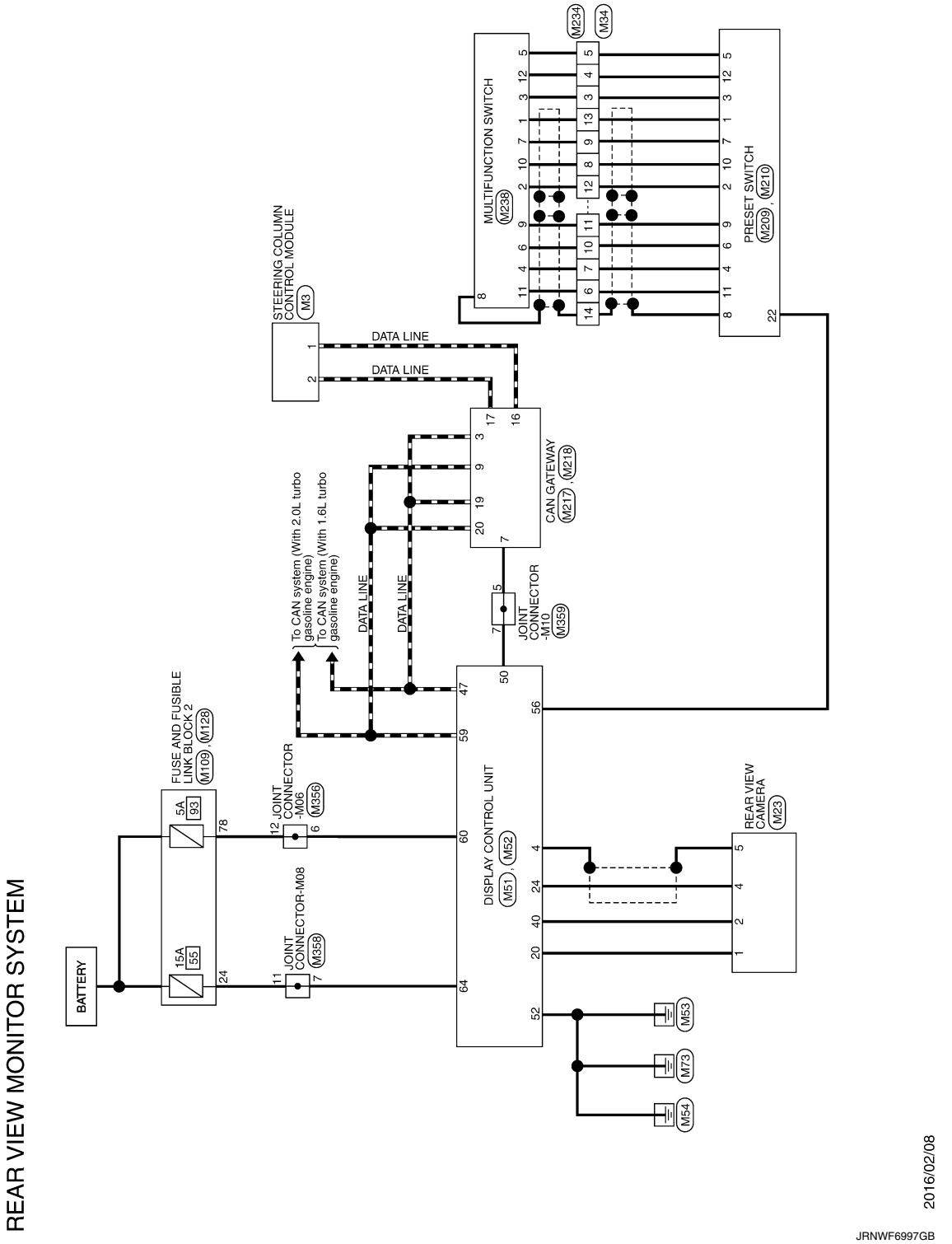
DTC	CONSULT display		Reference
U175A	RR-PILLAR SQUAWK	OPEN	AV-196, "DTC Description"
		SHORT	
		GND-SHORT	
		VB-SHORT	
U175D	R-LUGGAGE L-WOOFER	OPEN	AV-199, "DTC Description"
		SHORT	
		GND-SHORT	
		VB-SHORT	
U1765	R-LUGGAGE R-WOOFER	OPEN	AV-199, "DTC Description"
		SHORT	
		GND-SHORT	
		VB-SHORT	

WIRING DIAGRAM

REAR VIEW MONITOR SYSTEM

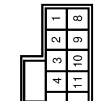
Wiring Diagram

INFOID:0000000013615774



REAR VIEW MONITOR SYSTEM

Connector No.	M3
Connector Name	STEERING COLUMN CONTROL MODULE
Connector Type	MB_A2045401281



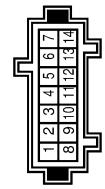
Terminal No.	Color Of Wire	Signal Name [Specification]
1	G	CAN-L (CHASIS)
2	W	CAN-H (CHASIS)
3	BR	GND
4	R	KL30G
6	R	KL30
7	BR	GND
8	L	AB1+
9	Y	AB1-
10	V	AB2+
11	G	AB2-

Connector No.	M23
Connector Name	REAR VIEW CAMERA
Connector Type	RH06FB-1V



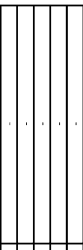
Terminal No.	Color Of Wire	Signal Name [Specification]
1	B	GND
2	Y	POWER
4	O	CAMERA+
5	P	-

Connector No.	M34
Connector Name	WIRE TO WIRE
Connector Type	MB_A2205459228



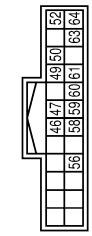
Terminal No.	Color Of Wire	Signal Name [Specification]
3	BR	-
4	V	-
5	L	-
6	W	-
7	R	-
8	Y	-
9	L	-
10	G	-
11	B	-
12	R	-
13	B	-
14	GR	-

Connector No.	M51
Connector Name	DISPLAY CONTROL UNIT
Connector Type	TH40FW-NH



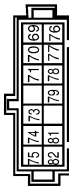
Terminal No.	Color Of Wire	Signal Name [Specification]
4	SHIELD	SHIELD
6	SHIELD	SHIELD
8	G	SOUND SIGNAL RH (-)
9	SHIELD	SHIELD
10	L	SOUND SIGNAL LH (-)
11	W	TEL VOICE SIGNAL (-)
12	SHIELD	SHIELD
13	R	VOICE GUIDANCE SIGNAL (-)
14	B	VOICE GUIDANCE SIGNAL (-)
15	W	NS ON/OFF SIGNAL
16	R	MICROPHONE SIGNAL GROUND
17	SHIELD	SHIELD
18	SHIELD	SHIELD
20	B	CAMERA GROUND
24	O	CAMERA IMAGE SIGNAL
26	W	SOUND SIGNAL (-)
27	B	SOUND SIGNAL (+)
28	R	SOUND SIGNAL RH (+)
29	SHIELD	SHIELD
30	P	SOUND SIGNAL LH (+)
31	B	TEL VOICE SIGNAL (+)
32	SHIELD	SHIELD
33	G	VOICE GUIDANCE SIGNAL (+)
34	W	VOICE GUIDANCE SIGNAL (+)
35	SHIELD	SHIELD
36	G	MICROPHONE SIGNAL
37	O	MICROPHONE SIGNAL [Color of wire differs depending on production]
37	R	MICROPHONE SIGNAL [Color of wire differs depending on production]
38	L	MICROPHONE POWER SUPPLY
40	Y	CAMERA POWER SUPPLY

Connector No.	M52
Connector Name	DISPLAY CONTROL UNIT
Connector Type	TH24FW-NH



Terminal No.	Color Of Wire	Signal Name [Specification]
46	G	AV COMMUNICATION SIGNAL (L)
47	P	CAN-L
49	R	DIMMER SIGNAL
50	BR	REVERSE SIGNAL
52	B	GROUND
56	BR	CAMERA SWITCH SIGNAL
58	Y	AV COMMUNICATION SIGNAL (H)
59	L	CAN-H
60	W	IGNITION SIGNAL
61	R	VEHICLE SPEED SIGNAL (8-PLUSE)
63	L	ACC POWER SUPPLY
64	Y	BATTERY POWER SUPPLY

Connector No.	M109
Connector Name	FUSE AND FUSIBLE LINK BLOCK 2
Connector Type	MB_A0055459901

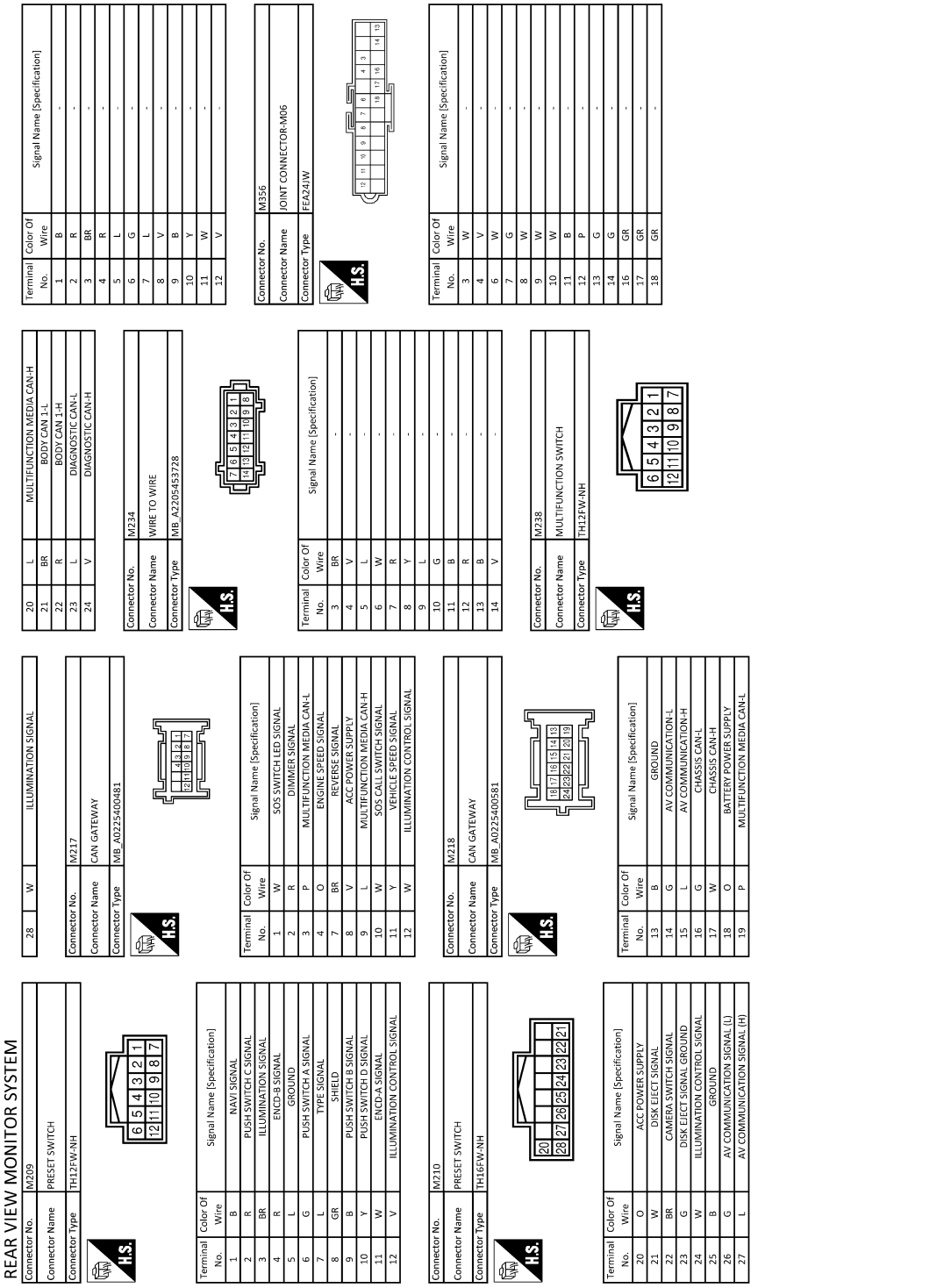


Terminal No.	Color Of Wire	Signal Name [Specification]
24	Y	-

Connector No.	M128
Connector Name	FUSE AND FUSIBLE LINK BLOCK 2
Connector Type	MB_A0395456128

Terminal No.	Color Of Wire	Signal Name [Specification]
69	B	-
70	P	-
71	B	-
73	BR	-
74	B	-
75	G	-
76	R	-
77	Y	-
78	P	-
79	GR	-
81	O	-
82	B	-

JRNWF6998GB

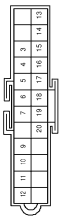


JRNWF6999GB

REAR VIEW MONITOR SYSTEM

Connector No.	M358
Connector Name	JOINT CONNECTOR-M08
Connector Type	FEA24IW

H.S.

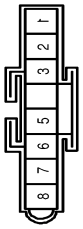


Terminal No.	Color Of Wire	Signal Name [Specification]
3	Y	-
4	O	-
5	Y	-
6	P	-
7	Y	-
9	R	-
10	R	-
11	Y	-
12	Y	-
13	GR	-
14	GR	-
15	GR	-
16	L	-
17	GR	-
18	GR	-
19	GR	-
20	G	-

5	BR	-
6	G	-
7	BR	-
8	BR	-

Connector No.	M359
Connector Name	JOINT CONNECTOR-M10
Connector Type	FEA08IL

H.S.



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

JRNWF7000GB

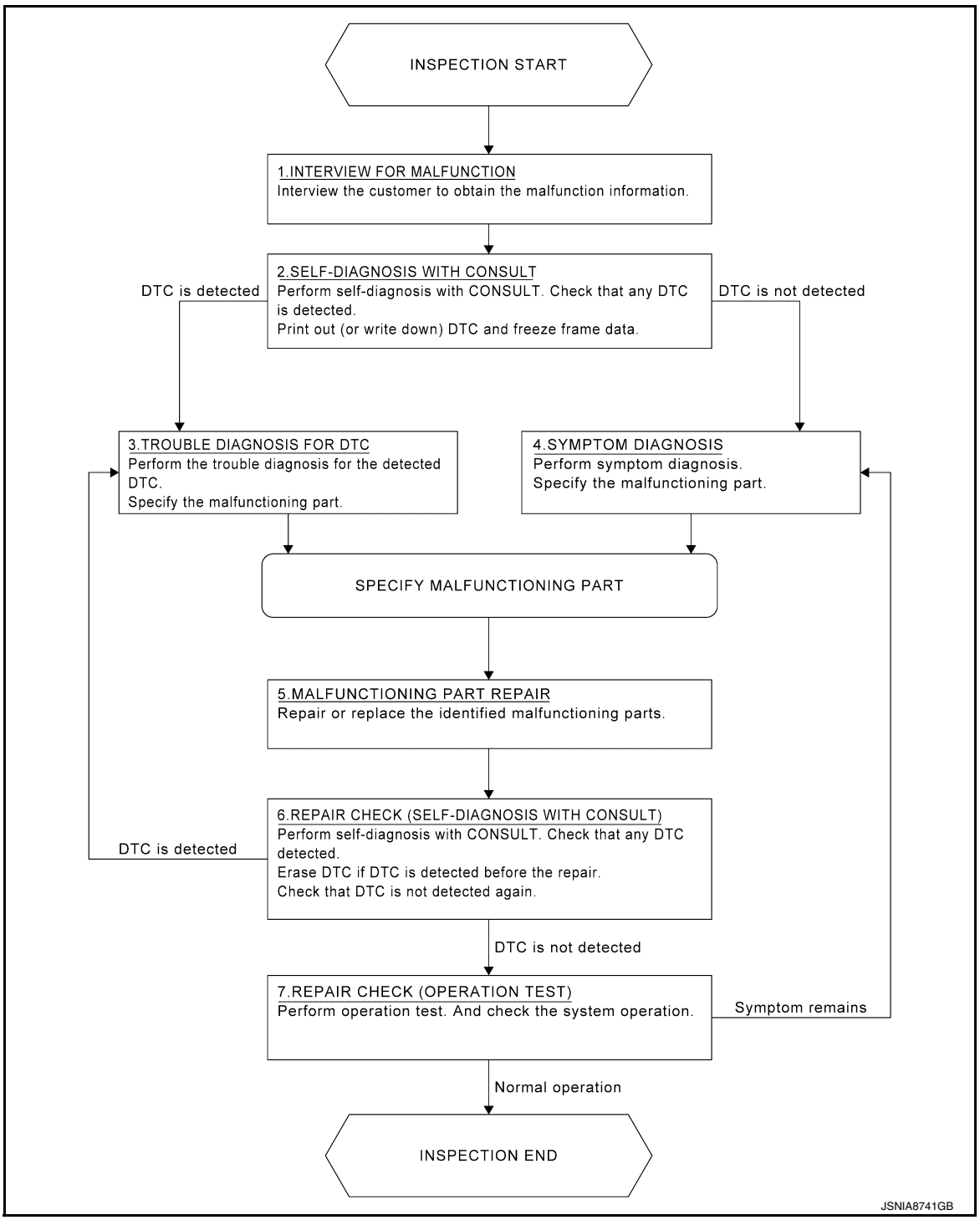
BASIC INSPECTION

DIAGNOSIS AND REPAIR WORKFLOW

Work Flow

INFOID:0000000013615775

OVERALL SEQUENCE



DETAILED FLOW

1.INTERVIEW FOR MALFUNCTION

It is also important to clarify the customer concerns before starting the inspection. Interview the customer about the concerns carefully and understand the symptoms fully.

NOTE:

The customers are not professionals. Never assume that “maybe the customer means···” or “maybe the customer mentioned this symptom”.

>> GO TO 2.

2.SELF-DIAGNOSIS WITH CONSULT

With CONSULT
Perform self-diagnosis of “MULTI AV” using CONSULT. Refer to AV-374, "CONSULT Function".
NOTE:
Skip to step 4 of the diagnosis procedure if “MULTI AV” is not displayed.

Is any DTC detected?

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

3.TROUBLE DIAGNOSIS FOR DTC

1. Check the DTC indicated in the “Self Diagnostic Result”.
2. When DTC is detected, follow the instructions below:
- Record DTC
- Freeze Frame Data (FFD)
3. Perform the relevant diagnosis referring to the DTC Index. Refer to AV-383, "DTC Index".

NOTE:
If DTC “U1000” is detected, first diagnose the CAN communication system.

>> GO TO 5.

4.SYMPTOM DIAGNOSIS

Perform the applicable diagnosis according to the diagnosis chart by symptom. Refer to AV-399, "Symptom Table".

>> GO TO 5.

5.MALFUNCTIONING PART REPAIR

Repair or replace the identified malfunctioning parts.

>> GO TO 6.

6.REPAIR CHECK (SELF-DIAGNOSIS WITH CONSULT)

With CONSULT
1. Erases self-diagnosis results.
2. Perform self-diagnosis of “MULTI AV” again after repairing or replacing the specific items.
3. Check if any DTC is detected in self-diagnosis results of “MULTI AV” .

Is any DTC detected?

YES >> GO TO 3.
NO >> GO TO 7.

7.REPAIR CHECK (OPERATION TEST)

Perform operation test. Check that the malfunction symptom is solved or no other symptoms occur.

Is there a malfunction symptom?

YES >> GO TO 4.
NO >> INSPECTION END

DTC/CIRCUIT DIAGNOSIS

POWER SUPPLY AND GROUND CIRCUIT
DISPLAY CONTROL UNIT

DISPLAY CONTROL UNIT : Diagnosis Procedure

INFOID:0000000013615776

1.CHECK FUSE

1. Turn ignition switch OFF.
2. Check that the following fuse is not blown (open).

Power source	Fuse No.	Capacity
Battery	#55	15 A
Ignition switch ON	#93	5 A

Is the fuse blown (open)?

YES >> Replace fuse after repairing the applicable circuit.
NO >> GO TO 2.

2.CHECK DISPLAY CONTROL UNIT BATTERY POWER SUPPLY

Check the voltage between display control unit harness connector and ground.

(+)		(–)	Standard value	Reference value
Display control unit				
Connector	Terminal			
M52	64	Ground	9.0 - 16.0 V	Battery voltage

Is the inspection result normal?

YES >> GO TO 3.
NO >> Perform trouble diagnosis for battery power supply circuit.

3.CHECK DISPLAY CONTROL UNIT IGNITION POWER SUPPLY

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

(+)		(–)	Standard value	Reference value
Display control unit				
Connector	Terminal			
M52	60	Ground	7.0 - 16.0 V	Battery voltage

Is the inspection result normal?

YES >> GO TO 4.
NO >> Perform trouble diagnosis of ignition power supply circuit.

4.CHECK GROUND CIRCUIT

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

(+)		(–)	Continuity
Display control unit			
Connector	Terminal		
M52	52	Ground	Existed

Is the inspection result normal?

YES >> INSPECTION END
NO >> Repair or replace harness or connector.

CAMERA POWER SUPPLY CIRCUIT

Description

INFOID:0000000013615777

- The display control unit supplies power to the rear view camera when receiving a reverse signal.
- The rear view camera transmits camera images to the display control unit when power is supplied from the display control unit.

Diagnosis Procedure

INFOID:0000000013615778

1.CHECK CAMERA POWER SUPPLY (1)

1. Turn ignition switch ON.
2. Check the voltage between rear view camera harness connector terminals as per the following condition.

Rear view camera			Condition	Standard value	Reference value (Approx.)
Connector	(+)	(−)			
	Terminal				
M23	2	1	At rear view camera image is displayed.	5.9 - 6.5 V	6.0 V
			Except for above	1 V or more	0 V

Is the inspection result normal?

YES >> Replace rear view camera. Refer to AV-401, "Removal and Installation".
NO >> GO TO 2.

2.CHECK CAMERA POWER SUPPLY (2)

Check the voltage between rear view camera harness connector and ground as per the following condition.

(+)		(−)	Condition	Standard value	Reference value (Approx.)
Rear view camera					
Connector	Terminal				
M23	2	Ground	At rear view camera image is displayed.	5.9 - 6.5 V	6.0 V
			Except for above	1 V or more	0 V

Is the inspection result normal?

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

3.CHECK CAMERA GROUND CIRCUIT

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

Display control unit		Rear view camera		Continuity
Connector	Terminal	Connector	Terminal	
M51	20	M23	1	Existed

Is the inspection result normal?

YES >> Replace rear view camera. Refer to AV-401, "Removal and Installation".
NO >> Repair or replace harness or connector.

4.CHECK CAMERA POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect display control unit connector and rear view camera connector.

3. Check the continuity between display control unit harness connector and rear view camera harness connector.

Display control unit		Rear view camera		Continuity
Connector	Terminal	Connector	Terminal	
M51	40	M23	2	Existed

Is the inspection result normal?

YES >> Replace display control unit. Refer to AV-239, "Removal and Installation".
NO >> Repair or replace harness or connector.

CAMERA IMAGE SIGNAL CIRCUIT

Description

INFOID:0000000013615779

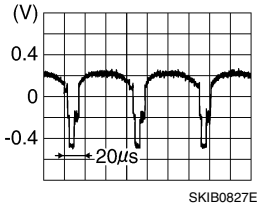
- The display control unit supplies power to the rear view camera when receiving a reverse signal.
- The rear view camera transmits camera images to the display control unit when power is supplied from the display control unit.

Diagnosis Procedure

INFOID:0000000013615780

1.CHECK CAMERA IMAGE SIGNAL

1. Turn ignition switch ON.
2. Shift the selector lever to “R” position.
3. Check the signal between display control unit harness connector and ground.

Display control unit			Condition	Reference value
Connector	(+)	(–)		
	Terminal			
M51	24	4	At rear view camera image is displayed.	

SKIB0827E

Is the inspection result normal?

YES >> Replace display control unit. Refer to AV-239, "Removal and Installation".
NO >> GO TO 2.

2.CHECK CAMERA IMAGE SIGNAL CIRCUIT FOR OPEN

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

Display control unit		Rear view camera		Continuity
Connector	Terminal	Connector	Terminal	
M51	24	M23	4	Existed

Is the inspection result normal?

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

3.CHECK CAMERA IMAGE SIGNAL CIRCUIT FOR SHORT

Check the continuity between display control unit harness connector and ground.

(+)		(–)	Continuity
Display control unit			
Connector	Terminal		
M51	24	Ground	Not existed

Is the inspection result normal?

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

4.CHECK CAMERA IMAGE SIGNAL GROUND CIRCUIT

Check the continuity between display control unit harness connector and rear view camera harness connector.

Display control unit		Rear view camera		Continuity
Connector	Terminal	Connector	Terminal	
M51	4	M23	5	Existed

Is the inspection result normal?

YES >> Replace rear view camera. Refer to AV-401, "Removal and Installation".
NO >> Repair or replace harness or connector.

REVERSE SIGNAL CIRCUIT

Component Function Check

INFOID:0000000013615781

1.CHECK REVERSE SIGNAL

With CONSULT
1. Turn ignition ON.
2. Select “REV SIG” in “DATA MONITOR” mode of “MULTI AV” using CONSULT.
3. Check “REV SIG” indication as per the following condition.

Monitor item	Condition		Indication
REV SIG	Selector lever position	R position	On
		Other than R position	Off

Is the inspection result normal?

YES >> INSPECTION END
NO >> Proceed to AV-398, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000013615782

1.CHECK SELF-DIAGNOSTIC RESULT OF CAN GATEWAY

With CONSULT
1. Turn ignition switch ON.
2. Check “Self Diagnostic Result” of “CAN GATEWAY” using CONSULT.

Is any DTC detected?

YES >> Perform trouble diagnosis for detected DTC. Refer to LAN-156, "DTC Index".
NO >> GO TO 2.

2.CHECK INTERMITTENT INCIDENT

Check the intermittent incident. Refer to GI-56, "Intermittent Incident".

Is the inspection result normal?

YES >> Replace display control unit. Refer to AV-239, "Removal and Installation".
NO >> Repair or replace malfunctioning parts.

SYMPTOM DIAGNOSIS

REAR VIEW MONITOR SYSTEM

Symptom Table

INFOID:0000000013615783

Symptoms	Possible cause	Inspection item
Camera image is not shown. (Vehicle width and predictive course line are displayed.)	• Harness between rear view camera and display control unit • Rear view camera • Display control unit	Camera image signal circuit. Refer to AV-396, "Diagnosis Procedure".
Camera image does not switch.	• Harness between CAN gateway and display control unit • Ignition power supply circuit • CAN gateway • Display control unit	Reverse signal circuit. Refer to AV-398, "Component Function Check".

NORMAL OPERATING CONDITION

Description

INFOID:0000000013615784

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 systems in the video mode.	Press “CAMERA” to change the mode.
	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.
Screen not clear.	Contrast setting is not appropriate.	Adjust the contrast of the display.

REMOVAL AND INSTALLATION

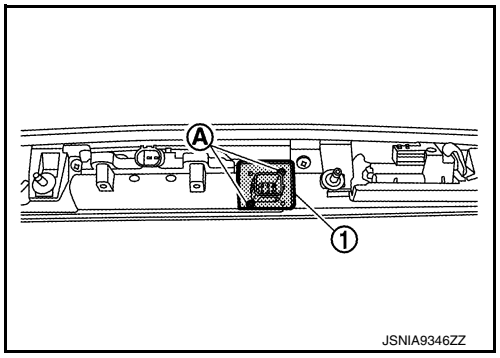
REAR VIEW CAMERA

Removal and Installation

INFOID:0000000013615785

REMOVAL

1. Remove back door finisher. Refer to INT-43, "Removal and Installation".
2. remove the mounting screws Ⓐ, and then remove the rear view camera ①.



INSTALLATION

Install in the reverse order of removal.

NOTE:

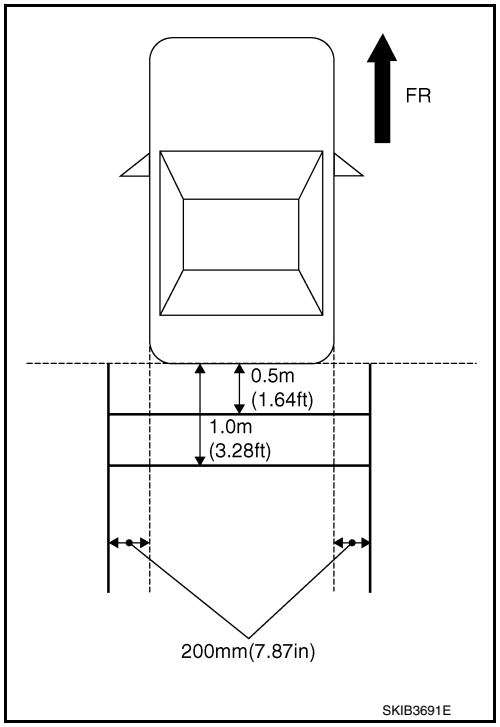
Adjust the guide line position if the guide line position is shifted after installing the rear view camera. Refer to AV-401, "Adjustment"

Adjustment

INFOID:0000000013615786

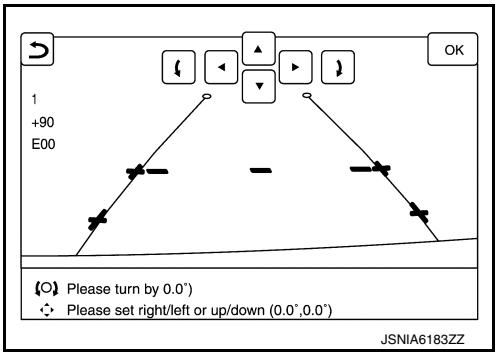
If the side distance guiding lines are dislocated after installation of the rear view camera, adjust the position of the side distance guiding lines.

1. Draw the correction lines at the rear of the vehicle passing through the following points: 20 cm from both sides of the vehicle, and 0.5 m and 1.0 m from the rear end of the bumper.
2. Set “Adjust offset of rear view camera” mode in Confirmation/ Adjustment mode.



3. Operate the touch panel and select the guiding line pattern so that its angle is aligned with the correction line of the rear of the vehicle.

   Selection range (–10°) – (+10°) in increments of 0.2° step



4. Press the upper/lower/left/right switch to perform the fine adjustment of the guiding lines so that the position of the guiding lines is aligned with the correction lines of the rear of the vehicle. The position of adjusted guiding line is recorded to the display control unit by pressing the “OK” switch.
   CAUTION:
   Never perform other operations while the guiding line position is memorized.

   Upper/lower adjustment range (–10°) – (+10°) in increments of 0.2° step
   Left/right adjustment range (–10°) – (+10°) in increments of 0.2° step

PRECAUTION

PRECAUTIONS

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

INFOID:0000000013946661

Risk of injury

There is a risk of injury caused by parts becoming projectiles if uncontrolled deployment of air bag or seat belt pre-tensioner occurs, or by storing air bag with the deployment side facing downwards. When scrapping air bag or seat belt pre-tensioner by means of controlled deployment, there is also a danger present if a sufficiently safe distance is not maintained, or if opening using cutting torches or other cutting tools, or due to smelting or if parts that are not yet triggered are exposed to a blaze or a smoldering fire at landfills.

Safety instructions/precautions

- Removed air bag must always be stored with deployment side facing up.
- Acquisition, transportation, storage, testing and assembly work should only be performed or supervised by properly trained personnel.
- Install air bag or seat belt pre-tensioner immediately following retrieval from storage.
- Air bag and seat belt pre-tensioner must be protected from flying sparks, open fires and temperature exceeding 100°C (212°F).
- Never transport air bag and seat belt pre-tensioner in the passenger compartment. Store them securely in the luggage room of the vehicle in their original replacement part packaging and secure them so that they cannot slip around.
- Never allow air bag and seat belt pre-tensioner to come into contact with grease, oil, or cleaning agents.
- Perform system tests using approved testing equipment only, and only when the units are properly installed and the vehicle is unoccupied.
- Before the initial hookup of the battery or an external power supply, the ignition must be switched on and the vehicle unoccupied.
- Air bag and seat belt pre-tensioner that fall from a height of more than 0.5 m must be replaced.
- When scrapping by means of controlled deployment of air bag and seat belt pre-tensioner, a safe distance of at least 10 m must be maintained.
- Before starting work on air bag and seat belt pre-tensioner and work on components that are connected to air bag and seat belt pre-tensioner or require and intervention in their electric circuit (e.g. when removing the steering wheel):
- Disconnect any external power sources (e.g. charger).
- Disconnect and insulate ground line of battery
- Before starting bodywork in combination with welding or retrofitting, during which work is performed on uninsulated, current-carrying lines or require an intervention in their electric circuit (e.g. when removing the steering wheel):
- Disconnect any external power sources (e.g. charger).
- Disconnect and insulate ground line of battery.
- During welding, disconnect plug connection and from control unit of air bag.
- When the air bag deploys, the pyrofuse activates and the power source from the battery is disconnected. This prevents possible fires caused by electric leakage after an accident occurs.

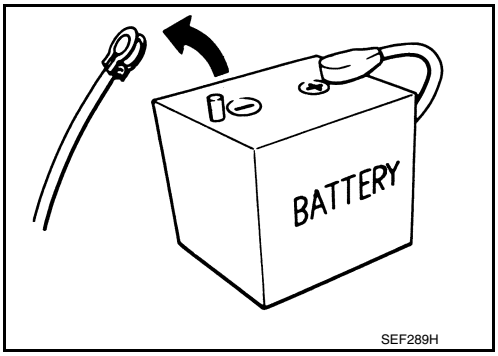
Precautions for Removing Battery Terminal

INFOID:0000000013616429

When disconnecting the battery terminal, pay attention to the following.

- Always use a 12V battery as power source.
- Never disconnect battery terminal while engine is running.

- When removing the 12V battery terminal, turn OFF the ignition switch and wait at least 30 seconds.
- For vehicles with the engine listed below, remove the battery terminal after a lapse of the specified time:



BR08DE	: 4 minutes	YD25DDTi	: 2 minutes
D4D engine	: 20 minutes	YS23DDT	: 4 minutes
HRA2DDT	: 12 minutes	YS23DDTT	: 4 minutes
K9K engine	: 4 minutes	ZD30DDTi	: 60 seconds
M9R engine	: 4 minutes	ZD30DDTT	: 60 seconds
R9M engine	: 4 minutes		
V9X engine	: 4 minutes		

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.

- After high-load driving, if the vehicle is equipped with the V9X engine, turn the ignition switch OFF and wait for at least 15 minutes to remove the battery terminal.

NOTE:
- Turbocharger cooling pump may operate in a few minutes after the ignition switch is turned OFF.
- Example of high-load driving
  - Driving for 30 minutes or more at 140 km/h (86 MPH) or more.
  - Driving for 30 minutes or more on a steep slope.

- 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.

Precaution for Trouble Diagnosis

INFOID:0000000013616430

AV COMMUNICATION SYSTEM

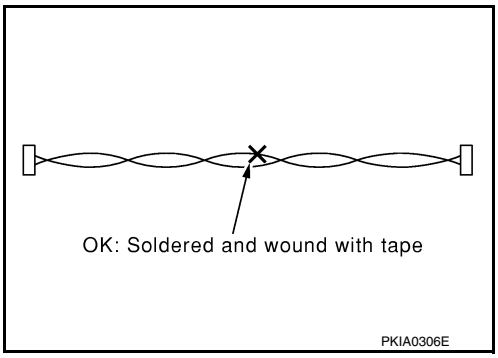
- Do not apply voltage of 7.0 V or higher to the measurement terminals.
- Use the tester with its open terminal voltage being 7.0 V or less.
- Be sure to turn ignition switch OFF and disconnect the battery cable from the negative terminal before checking the circuit.

Precaution for Harness Repair

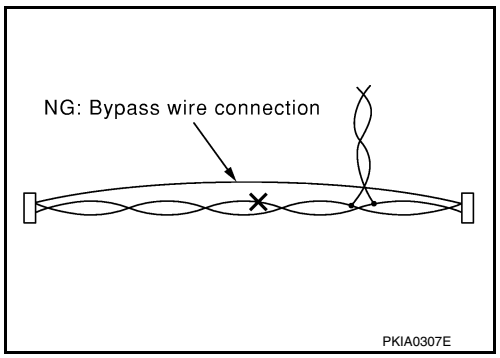
INFOID:0000000013616431

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.)

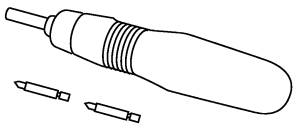


PREPARATION

PREPARATION

Commercial Service Tools

INFOID:0000000013616432

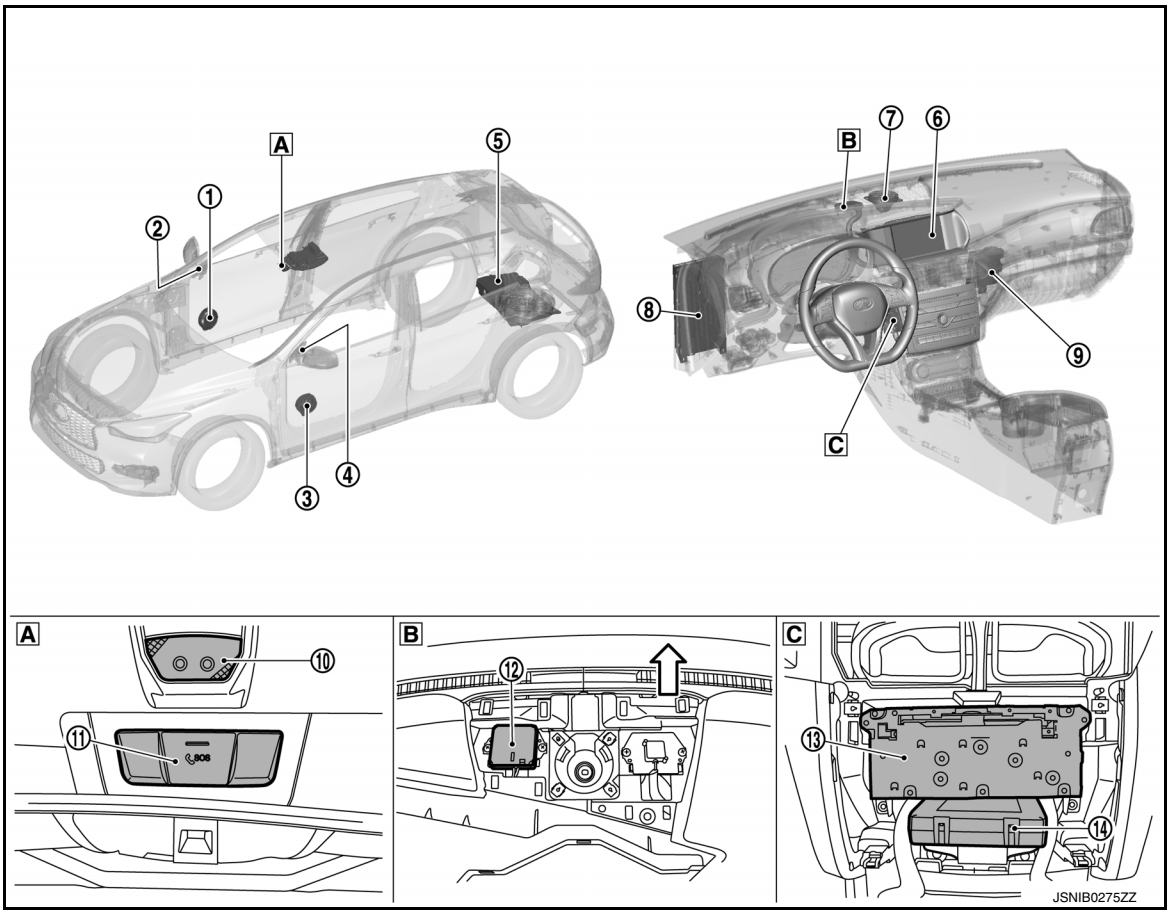
Tool		Description
Power tool	 PBIC0191E	Loosening screws

SYSTEM DESCRIPTION

COMPONENT PARTS

Component Parts Location

INFOID:0000000013616433



A Headlining front
B Instrument panel upper
C Instrument panel center
⇦ : Vehicle front

No.	Part name	Description
①	Front door speaker RH	Outputs sound signal.
②	Front tweeter RH	Outputs sound signal.
③	Front door speaker LH	Outputs sound signal.
④	Front tweeter LH	Outputs sound signal.
⑤	BOSE amp.	Inputs sound signal from AV control unit, and outputs sound signal to each speaker.
⑥	Display control unit	• 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 display control unit.
⑦	Center squawker	Outputs sound signal.
⑧	BCM	Transmits the CAN communication signals to the TCU via CAN gateway. Refer to BCS-8, "BODY CONTROL SYSTEM : Component Parts Location", for detailed installation location.

No.	Part name	Description
⑨	CAN gateway	• Transmits the CAN communication signals to the TCU. • CAN gateway receives each signal via CAN communication. And it converts the signal to Digital/PWM and outputs it to control unit of AV system. Refer to LAN-150, "Component Parts Location", for detailed installation location.
⑩	Microphone	Refer to AV-409, "Microphone".
⑪	Telematics switch (SOS switch)	Refer to AV-410, "Telematics Switch (SOS Switch)".
⑫	Telematics antenna	Refer to AV-408, "Telematics Antenna".
⑬	AV control unit	Inputs sound signal from display control unit, and outputs sound signal to BOSE amp.
⑭	TCU	Refer to AV-408, "TCU".

TCU

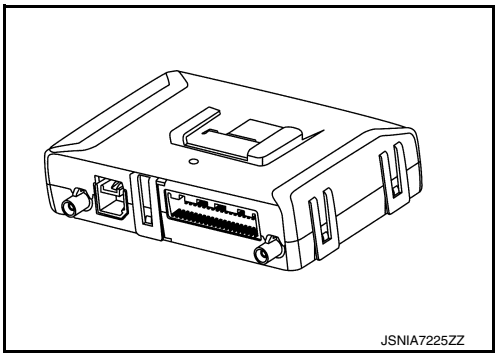
INFOID:0000000013616435

- 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.

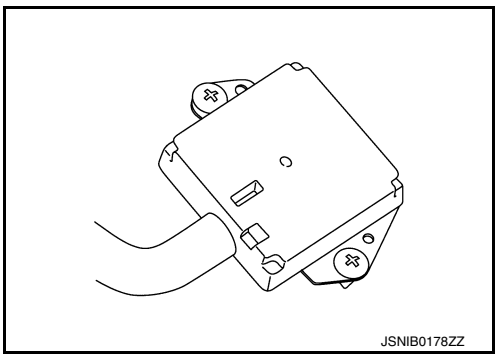


- It is connected to the display control unit with the USB harness for sound signal input/output and USB communication.
- VIN information necessary for the Telematics service is memorized.
- It is connected to the air bag diagnosis sensor unit via CAN communication. TCU performs an emergency report when the air bag is inflated.
- Audio signals received during SOS/Infiniti Connection™ Response Specialists call are transmitted from TCU to each speaker via the display control unit and 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:0000000013788365

- Telematics antenna consists of TEL antenna and GPS antenna.
- It is installed in the instrument panel.



TEL ANTENNA

- Data communications signals and voice signals are transmitted/received.
- Power is supplied with TCU activated.

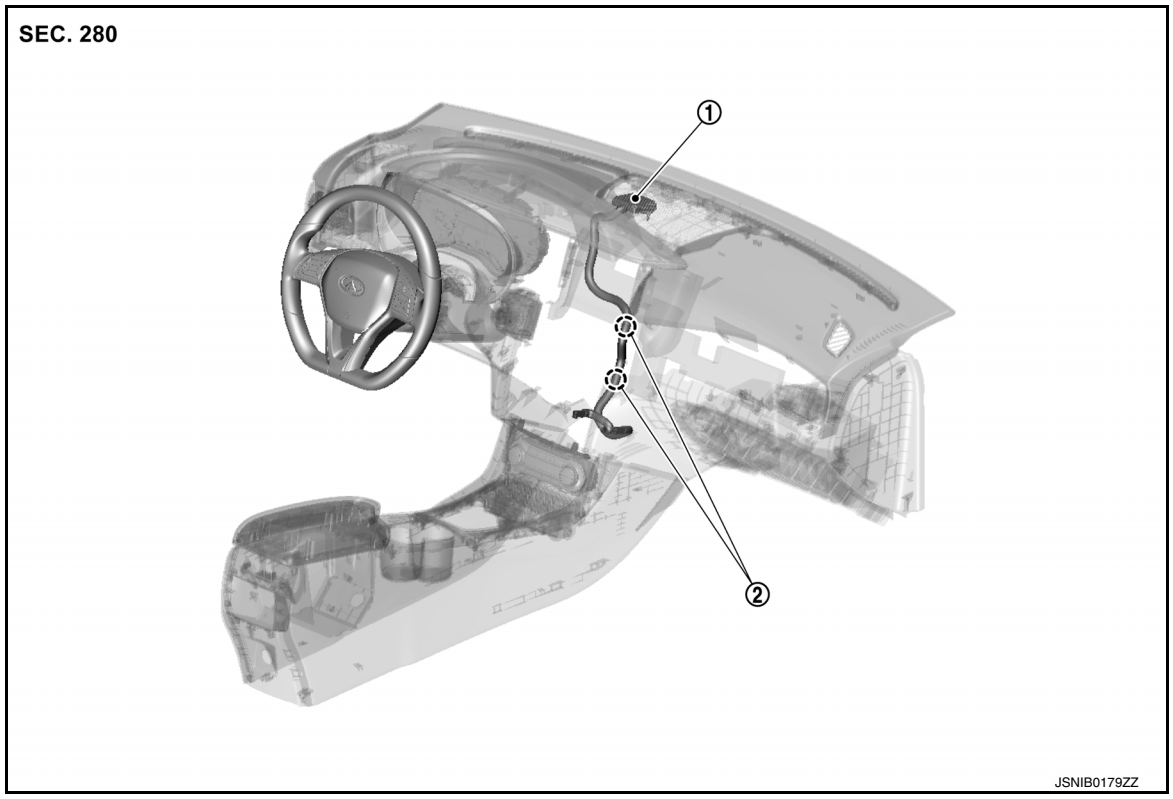
GPS ANTENNA

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.

FEEDER LAYOUT

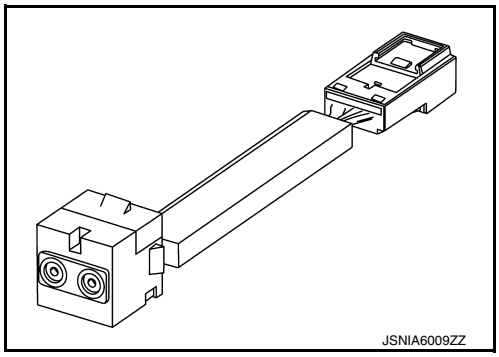


① Telematics antenna ② Clip

Microphone

INFOID:0000000013616437

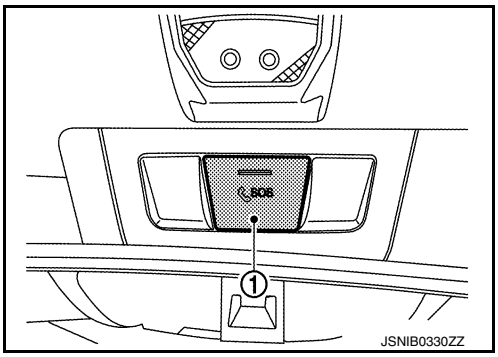
- The microphone is used for hands-free phone and voice recognition function in addition to the Infiniti Connection™ Response service of Infiniti Connection™.
- TCU supplies power to the microphone.
- An sound signal during speech is transmitted to TCU.



Telematics Switch (SOS Switch)

INFOID:0000000013616438

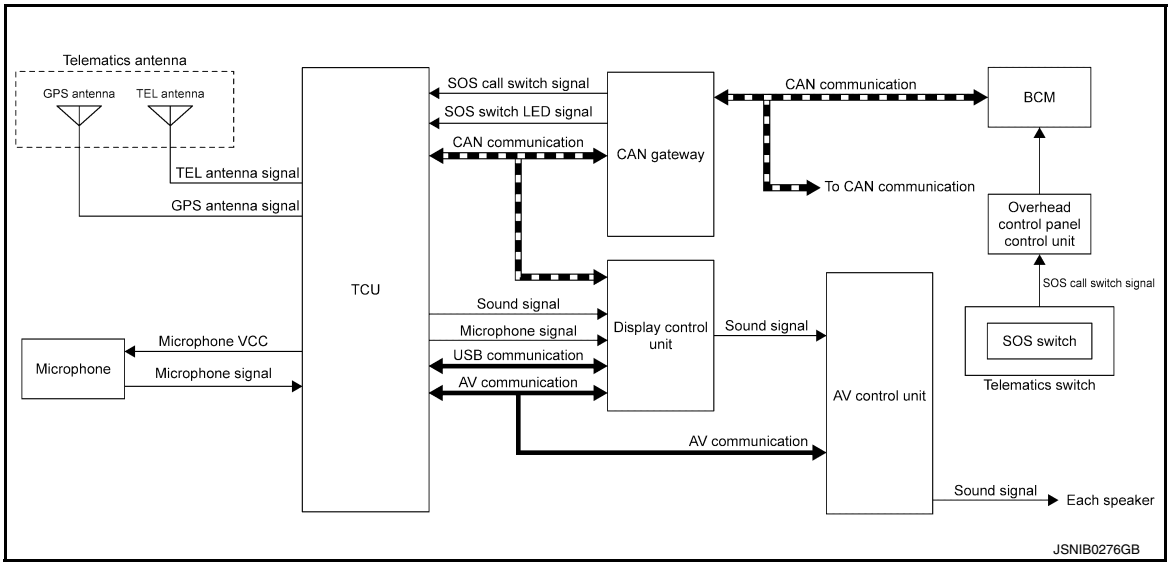
- SOS switch ① is integrated into telematics switch.
- SOS switch transmits SOS call switch signal to overhead control panel control unit.
- SOS call switch signal is transmitted to BCM, and BCM is transmitted to TCU via CAN gateway in CAN communication.



SYSTEM
TELEMATICS SYSTEM
TELEMATICS SYSTEM : System Description

INFOID:0000000013616439

SYSTEM DIAGRAM



TCU Input Signal (CAN Communication)

Transmit unit	Signal name
CAN gateway*	ABS warning lamp signal
	VDC warning lamp signal
	Brake warning lamp signal
	Car crash information signal
	Door lock status signal
	Trunk switch signal
	Oil pressure switch signal
	Malfunctioning indicator lamp signal
	Engine status signal

*: CAN communication signal from each control unit receive via CAN gateway. Refer to LAN-151, "CAN COMMUNICATION SYSTEM : System Description".

DESCRIPTION

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.

The telematics system interacts with the Infiniti Connection™ Data Center using GPS and GSM/GPRS technologies. The telematics communication 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.

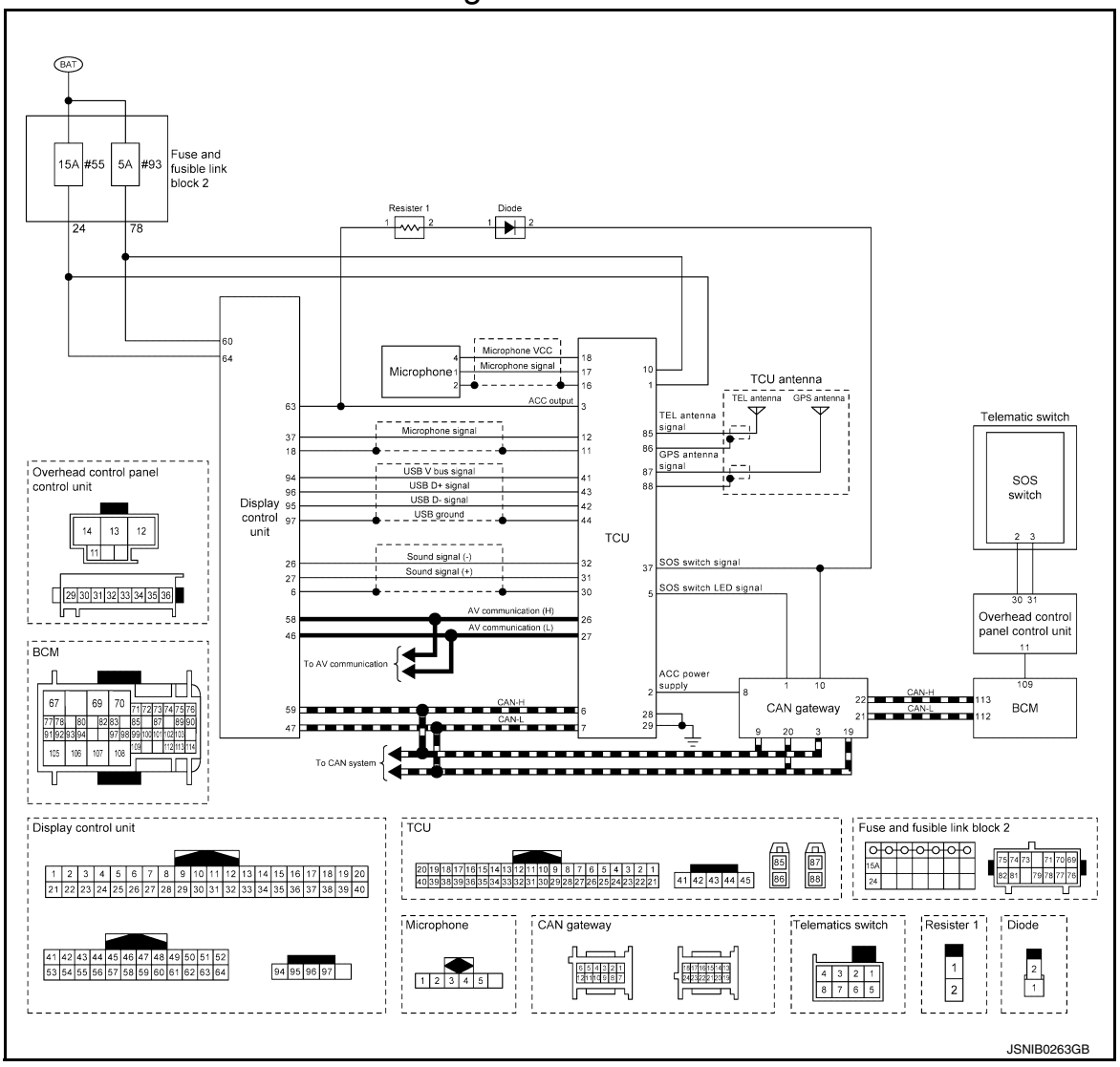
Infiniti Connection™ SERVICE

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.

TELEMATICS SYSTEM : Circuit Diagram

INFOID:0000000013616440



TELEMATICS SYSTEM : Fail-safe

INFOID:0000000013616441

If a malfunction occurs in the telematics system, TCU performs fail-safe activation according to the detected malfunction.

Detection item	Telematics system operation in fail-safe mode	DTC
Air-bag connection	• Some telematics system does not function. • Inform a INFINITI CONNECTION data center about abnormality.	U1A10
CAN communication	• Telematics system does not function. • Inform a INFINITI CONNECTION data center about abnormality.	U1000
AV communication	• Some telematics system does not function. • Inform a INFINITI CONNECTION data center about abnormality.	B13E1
TEL antenna	• SOS switch LED indicator is turned OFF (LED indicator turns ON 10 times when push the SOS switch.) • When operated a telematics system, inform that cannot be connected to the INFINITI CONNECTION data center .	U1A06

Detection item	Telematics system operation in fail-safe mode	DTC
GPS antenna	• Telematics system cannot send correct positional information. • Inform a INFINITI CONNECTION data center about abnormality.	U1A09 U1A0A
USB communication	• Telematics system does not function. • Inform a INFINITI CONNECTION data center about abnormality.	B13D9
TCU	Telematics system function stops.	B1310 B130D B2EF0 U1010 U1A01 U1A02
	• Telematics system function stops. • When operated a telematics system, inform that cannot be connected to the INFINITI CONNECTION data center .	U1A03 U1A11
SOS switch	• Telematics system does not function. (Only SOS call does not operate.) • SOS switch LED indicator is turned OFF.	B2E33 U1A0E
Microphone	• Transmit an own vehicle position to the INFINITI CONNECTION data center . • Inform a INFINITI CONNECTION data center about abnormality.	U1A0B U1A0C
VIN	Telematics service does not function.	U1A04

HANDLING PRECAUTION

Telematics

INFOID:0000000013616442

- 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:0000000013616443

APPLICATION ITEM

CONSULT performs the following items by communication with TCU:

Diagnosis mode	Description
Self-Diagnosis Result	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	Checks TCU part number and various ID numbers.
Configuration	• The vehicle specification that is written in TCU can be displayed or stored • The vehicle specification can be written when TCU is replaced

SELF-DIAGNOSIS RESULT

Refer to AV-420, "DTC Index".

- In CONSULT self-diagnosis, the self-diagnosis results and error history are displayed collectively.
- The current malfunction indicates “0”. The counter increases by 1 if the condition is normal at the next power 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.

Display item	Display	Condition	Note
HF TYPE	BT	—	Indicates state of configuration result. **NOTE:** This item is displayed, but not used.
AUDIO UNIT TYPE	NAVI	—	
CALL SWITCH TYPE	SOS	—	
SPEAKER TYPE	INDRCT	—	
ZONE	USA/CAN	—	
CHANNEL	INFINITI 2	—	
CAN COMM	GEN.3	—	
AV COMM	ENABLE/ DISABLE	—	
K-LINE	ENABLE/ DISABLE	—	
VEHICLE TYPE	ENG	—	
ECHO CANCEL	TYPE 1	—	This item is displayed, but cannot be monitored.
	TYPE 2		
	TYPE 3		
	TYPE 4		
NOISE CANCEL	TYPE 1	—	This item is displayed, but cannot be monitored.
	TYPE 2		
	TYPE 3		
	TYPE 4		
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
SENSOR ANGLE X	—	—	Indicates state of configuration result. **NOTE:** This item is displayed, but not used.
SENSOR ANGLE Y	—	—	
SENSOR ANGLE Z	—	—	
SVTB	—	—	
REMOTE DOOR LOCK	ENABLE/ DISABLE	—	
REMOTE HORN & LAMP	ENABLE/ DISABLE	—	
REMOTE START	ENABLE/ DISABLE	—	
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	—	—	—

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.
TCU ACTIVATE SETTING	TCU ON/OFF setting is available.
WRITE VIN (SAVED DATA)	Write VIN data stored by “SAVE VIN DATA” in work support mode to TCU.
WRITE VIN (MANUAL INPUT)	Write VIN data in TCU. (MANUAL)

ECU IDENTIFICATION

Displays TCU part number and various ID numbers.

Display items	Description
ECU PART NUMBER	Displays TCU part number.
UNIT ID	Displays display control unit ID number.
TCU ID	Displays TCU ID number.
SIM ID	Displays ICC ID of SIM card.
V.I.N	Displays the vehicle identification number stored in TCU.

CONFIGURATION

Configuration includes functions as follows.

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

ECU DIAGNOSIS INFORMATION

TCU

Reference Value

INFOID:0000000013788275

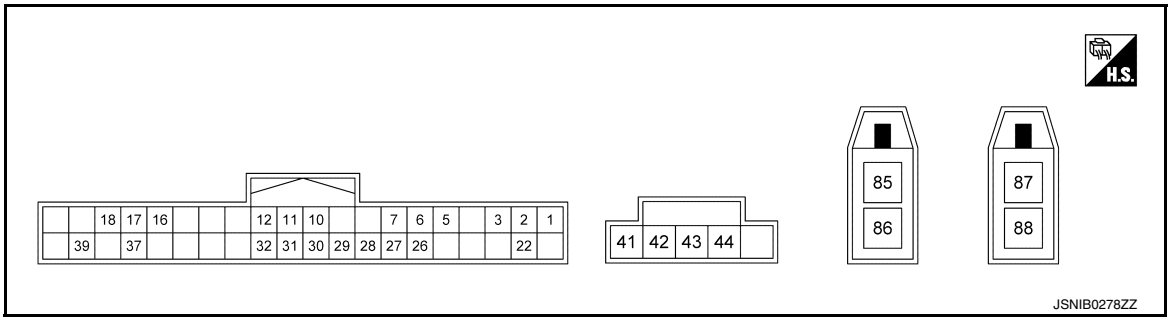
VALUES ON THE DIAGNOSIS TOOL

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

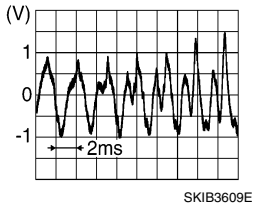
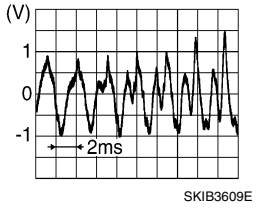
CONSULT MONITOR ITEM

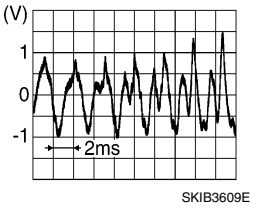
Monitor Item	Condition	Value/Status
HF TYPE	Ignition switch ON	BT
AUDIO UNIT TYPE	Ignition switch ON	NAVI
CALL SWITCH TYPE	Ignition switch ON	SOS
SPEAKER TYPE	Ignition switch ON	INDRCT
ZONE	Ignition switch ON	USA/CAN
CHANNEL	Ignition switch ON	INFINITI 2
CAN COMM	Ignition switch ON	GEN.3
AV COMM	Ignition switch ON	ENABLE
K-LINE	Ignition switch ON	DISABLE
VEHICLE TYPE	Ignition switch ON	ENG
ECHO CANCEL	Ignition switch ON	TYPE1
NOISE CANCEL	Ignition switch ON	TYPE1
TCU STANDBY TIME	Set at 14 days (default)	14DAYS
	Set at 2 days	2DAYS
	Set at 30 days	30DAYS
	No setting	NON
SENSOR ANGLE X	Ignition switch ON	4.0
SENSOR ANGLE Y	Ignition switch ON	4.0
SENSOR ANGLE Z	Ignition switch ON	4.0
SVTB	Ignition switch ON	DISABLE
REMOTE DOOR LOCK	Ignition switch ON	DISABLE
REMOTE HORN & LAMP	Ignition switch ON	DISABLE
REMOTE START	Ignition switch ON	DISABLE
NAD OUTPUT STATUS	When TCU activation is ON	On
	When TCU activation is OFF	Off
ACN COMM SEQUENCE LOG	Ignition switch ON	0
SOS COMM SEQUENCE LOG	Ignition switch ON	0

TERMINAL LAYOUT



PHYSICAL VALUES

Terminal (Wire color)		Description		Condition	Threshold value	Reference value (Approx.)
+	–	Signal name	Input/ Output			
1 (Y)	Ground	Battery power supply	Input	[Ignition switch OFF]	9.0 - 16.0 V	Battery Voltage
2 (L)	Ground	ACC power supply	Input	[Ignition switch ACC]	9.0 - 16.0 V	Battery Voltage
3 (V)	Ground	ACC output	Output	[Ignition switch ACC]	9.0 - 16.0 V	Battery Voltage
5 (GR)	Ground	SOS switch LED signal	Input	[Ignition switch ON]	—	5.0 V
6 (L)	—	CAN-H	Input/ Output	—	—	—
7 (P)	—	CAN-L	Input/ Output	—	—	—
10 (W)	Ground	Ignition signal	Input	[Ignition switch ON]	9.0 - 16.0 V	12.0 V
11 (—)	—	Microphone output ground	—	—	—	—
12 (O)	11 (—)	Microphone output signal	Output	[Ignition switch ON] • When inputting interior sound	—	 SKIB3609E
16 (—)	—	Shield	—	—	—	—
17 (R)	16 (—)	Microphone signal	Input	[Ignition switch ON] • When inputting interior sound	—	 SKIB3609E
18 (L)	16 (—)	Microphone VCC	Output	[Ignition switch ON]	4.0 - 5.5 V	4.72 V
26 (Y)	—	AV communication (H)	Input/ Output	—	—	—
27 (G)	—	AV communication (L)	Input/ Output	—	—	—
28 (B)	—	Ground	—	—	—	—
29 (B)	—	Ground	—	—	—	—

Terminal (Wire color)		Description		Condition	Threshold value	Reference value (Approx.)
+	–	Signal name	Input/ Output			
30 (—)	—	Shield	—	—	—	—
31 (B)	32 (W)	Sound signal (+)	Input	[Ignition switch ON] • When inputting interior sound	—	 SKIB3609E
32 (W)	—	Sound signal (–)	—	—	—	—
37 (G)	Ground	SOS call switch signal	Input	[Ignition switch ON] • When pressing SOS switch (telematics switch)	Less than 1.0 V	0 V
				Except for above	—	5.0 V
41 (R)	—	V BUS signal	—	—	—	—
42 (P)	—	USB D- signal	—	—	—	—
43 (W)	—	USB D+ signal	—	—	—	—
44 (—)	—	USB ground	—	—	—	—
85 (—)	Ground	TEL antenna signal	Input	Not connected TEL antenna connector.	—	5.0 V
86 (—)	—	Shield	—	—	—	—
87 (—)	Ground	GPS antenna signal	Input	Not connected GPS antenna connector.	—	5.0 V
88 (—)	—	Shield	—	—	—	—

Fail-safe

INFOID:0000000013616445

If a malfunction occurs in the telematics system, TCU performs fail-safe activation according to the detected malfunction.

Detection item	Telematics system operation in fail-safe mode	DTC
Air-bag connection	• Some telematics system does not function. • Inform a INFINITI CONNECTION data center about abnormality.	U1A10
CAN communication	• Telematics system does not function. • Inform a INFINITI CONNECTION data center about abnormality.	U1000
AV communication	• Some telematics system does not function. • Inform a INFINITI CONNECTION data center about abnormality.	B13E1
TEL antenna	• SOS switch LED indicator is turned OFF (LED indicator turns ON 10 times when push the SOS switch.) • When operated a telematics system, inform that cannot be connected to the INFINITI CONNECTION data center .	U1A06

Detection item	Telematics system operation in fail-safe mode	DTC
GPS antenna	• Telematics system cannot send correct positional information. • Inform a INFINITI CONNECTION data center about abnormality.	U1A09 U1A0A
USB communication	• Telematics system does not function. • Inform a INFINITI CONNECTION data center about abnormality.	B13D9
TCU	Telematics system function stops.	B1310 B130D B2EF0 U1010 U1A01 U1A02
	• Telematics system function stops. • When operated a telematics system, inform that cannot be connected to the INFINITI CONNECTION data center .	U1A03 U1A11
SOS switch	• Telematics system does not function. (Only SOS call does not operate.) • SOS switch LED indicator is turned OFF.	B2E33 U1A0E
Microphone	• Transmit an own vehicle position to the INFINITI CONNECTION data center . • Inform a INFINITI CONNECTION data center about abnormality.	U1A0B U1A0C
VIN	Telematics service does not function.	U1A04

DTC Inspection Priority Chart

INFOID:0000000013788277

If multiple DTCs are detected simultaneously, check them one by one depending on the following DTC inspection priority chart.

Priority	Detected items (DTC)
1	U1A04: VIN UNFINISHED
2	• U1000: CAN COMM CIRCUIT • U1010: CONTROL UNIT (CAN)
3	• B130D: TEL LINE OUT ERROR • B1310: TCU TEMPERATURE ERROR • B13D9: USB CONNECTION • B13E1: CAN COMMUNICATION • B2E33: ECALL BUTTON • B2EF0: INTERNAL BATTERY • U1A00: ACC NO CONN • U1A01: INTERNAL ERROR (TCU) • U1A02: TEL COMMUNICATION MODULE • U1A03: SIM CARD • U1A06: TEL ANTENNA • U1A09: GPS ANTENNA CONN • U1A0A: GPS MODULE COMM • U1A0B: MIC IN CONN • U1A0C: MIC OUT CONN • U1A0E: SOS SWITCH ON STUCK • U1A10: AIRBAG SIGNAL

DTC Index

INFOID:0000000013788278

DTC	Display contents of CONSULT	Reference
B130D	TEL LINE OUT ERROR	AV-432, "DTC Description"
B1310	TCU TEMPERATURE ERROR	AV-434, "DTC Description"
B13D9	USB CONNECTION	AV-435, "DTC Description"
B13E1	CAN COMMUNICATION	AV-436, "DTC Description"
B2E33	ECALL BUTTON	AV-437, "DTC Description"
B2EF0	INTERNAL BATTERY	AV-438, "DTC Description"

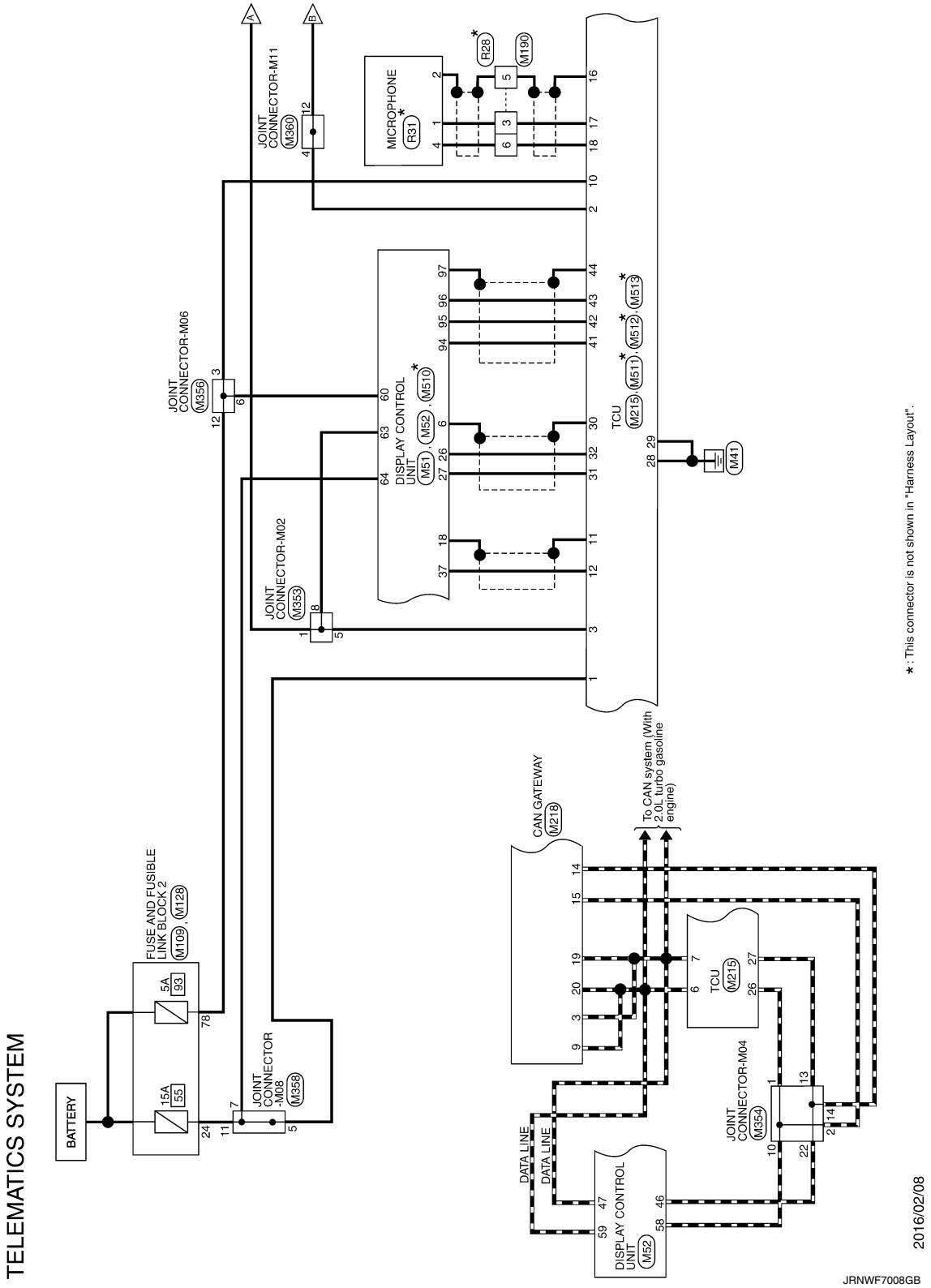
DTC	Display contents of CONSULT	Reference
U1000	CAN COMM CIRCUIT	AV-439, "DTC Description"
U1010	CONTROL UNIT (CAN)	AV-440, "DTC Description"
U1A00	ACC NO CONN	AV-441, "DTC Description"
U1A01	INTERNAL ERROR (TCU)	AV-442, "DTC Description"
U1A02	TEL COMMUNICATION MODULE	AV-443, "DTC Description"
U1A03	SIM CARD	AV-444, "DTC Description"
U1A04	VIN UNFINISHED	AV-445, "DTC Description"
U1A06	TEL ANTENNA	AV-446, "DTC Description"
U1A09	GPS ANTENNA CONN	AV-447, "DTC Description"
U1A0A	GPS MODULE COMM	AV-448, "DTC Description"
U1A0B	MIC IN CONN	AV-449, "DTC Description"
U1A0C	MIC OUT CONN	AV-451, "DTC Description"
U1A0E	SOS SWITCH ON STUCK	AV-453, "DTC Description"
U1A10	AIRBAG SIGNAL	AV-454, "DTC Description"

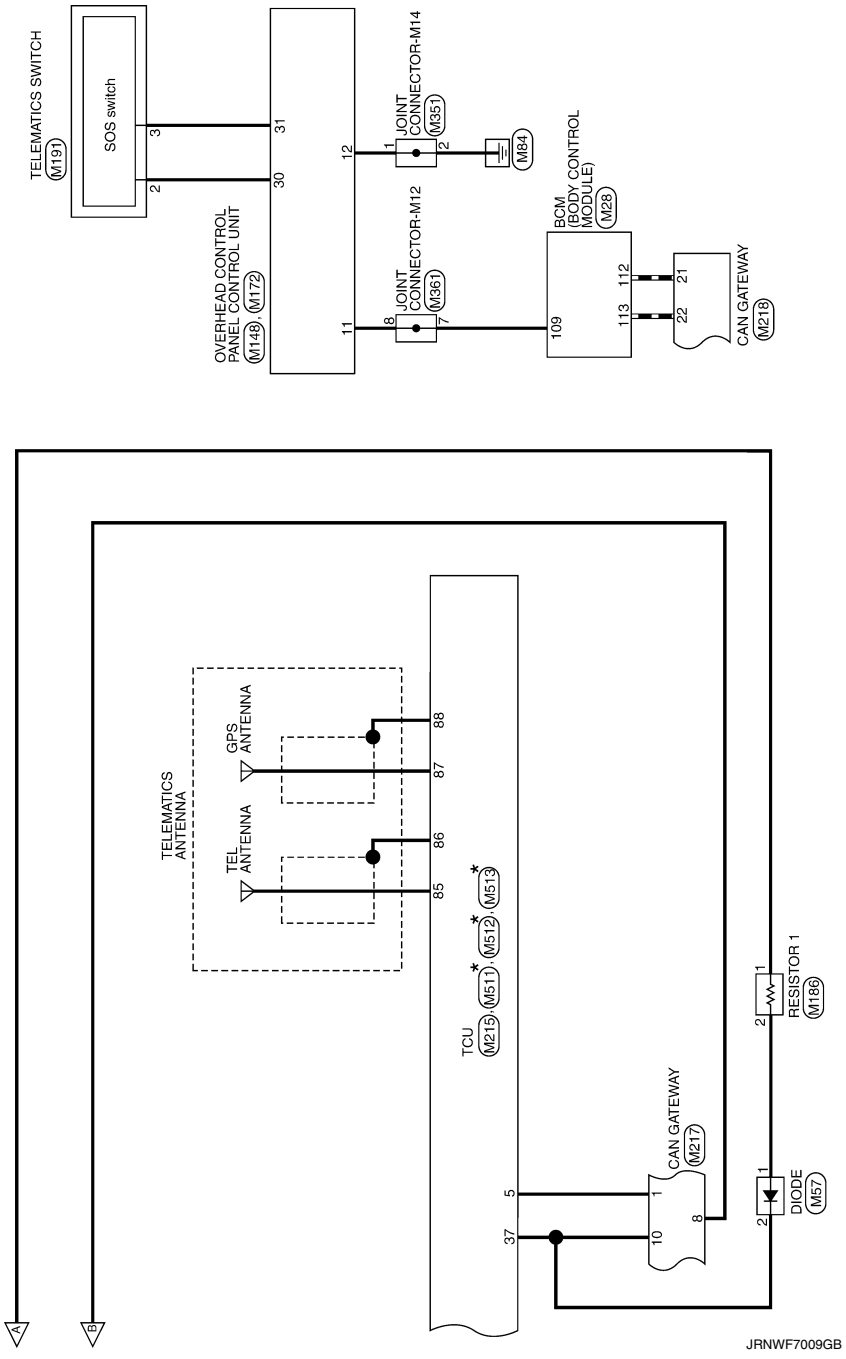
WIRING DIAGRAM

TELEMATICS SYSTEM

Wiring Diagram

INFOID:0000000013616448




TELEMATICS SWITCH
(M191)
SOS switch
3
2
OVERHEAD CONTROL
PANEL CONTROL UNIT
(M148), (M172)
31
30
12
11
JOINT
CONNECTOR-M14
(M351)
1
2
M84
JOINT
CONNECTOR-M12
(M361)
8
7
BCM
(BODY CONTROL
MODULE)
(M28)
109
112
113
CAN GATEWAY
(M218)
21
22
TELEMATICS
ANTENNA
GPS
ANTENNA
TEL
ANTENNA
88
87
86
85
TCU
(M215), (M511), (M512), (M513)
CAN GATEWAY
(M217)
5
37
1
8
10
RESISTOR 1
(M186)
DIODE
(M57)
A
B
JRNWF7009GB

TELEMATICS SYSTEM

Connector No.	M28
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	MB A166540048 1

Terminal No.	Color Of Wire	Signal Name [Specification]
67	V	BACK DOOR UNLOCK
69	GR	STOP LAMP (BODY RH)
70	B	REAR TURN SIGNAL LH
71	GR	BACK-UP LAMP RH
72	Y	LICENSE PLATE LAMP RH
73	L	RR POWER WINDOW SW RH UP
74	B	RR POWER WINDOW SW RH DOWN
75	L	RR POWER WINDOW SW RH GND
76	GR	HALL SENSOR RH POWER SUPPLY
77	R	SUB BAT-
78	B	TERMINAL RELAY 15R1 CONT
80	B	REAR WIPER RELAY CONT
82	GR	TAIL LAMP (BODY LH)
83	P	TERMINAL RELAY 15R2 CONT
85	B	TAIL LAMP (BK LH)
87	R	BAT (VIA LATCHING TERMINAL RELAY 30G)
89	O	HALL SENSOR RH GND
90	V	HALL SENSOR RH SIGNAL
91	P	FUEL LEVEL SENSOR GND
92	L	FUEL LEVEL SENSOR
93	GR	FUEL LEVEL SENSOR
94	Y	FUEL FILLER LID STATUS
97	G	LATCHING TERMINAL RELAY 30G CONT 1
98	B	LATCHING TERMINAL RELAY 30G GND 1
99	W	LATCHING TERMINAL RELAY 30G GND 2
100	V	LATCHING TERMINAL RELAY 30G CONT 2
101	Y	REAR DOOR INSIDE HANDLE LAMP CONT
102	GR	AMBIENT LAMP CONT
103	V	SUB BAT RELAY CONT
105	G	RR DOOR LH UNLOCK
106	W	FUEL FILLER LID UNLOCK
107	L	RR DOOR LH LOCK
108	R	SUB BAT+
109	O	LIN (ROOF)
112	BR	CAN-L (BODY 1)

113	R	CAN-H (BODY 1)
114	B	INJECTION RELAY CONT

Connector No.	M51
Connector Name	DISPLAY CONTROL UNIT
Connector Type	TH40FW-NH

Terminal No.	Color Of Wire	Signal Name [Specification]
4	SHIELD	SHIELD
6	SHIELD	SHIELD
8	G	SOUND SIGNAL RH (-)
9	SHIELD	SHIELD
10	L	SOUND SIGNAL LH (-)
11	W	TEL VOICE SIGNAL (-)
12	SHIELD	SHIELD
13	R	VOICE GUIDANCE SIGNAL (-)
14	B	VOICE GUIDANCE SIGNAL (-)
15	W	NS ON/OFF SIGNAL
16	R	MICROPHONE SIGNAL GROUND
17	SHIELD	SHIELD
18	SHIELD	SHIELD
20	B	CAMERA GROUND
24	O	CAMERA IMAGE SIGNAL
26	W	SOUND SIGNAL (-)
27	B	SOUND SIGNAL (+)
28	R	SOUND SIGNAL RH (+)
29	SHIELD	SHIELD
30	P	SOUND SIGNAL LH (+)
31	B	TEL VOICE SIGNAL (+)
32	SHIELD	SHIELD
33	G	VOICE GUIDANCE SIGNAL (+)
34	W	VOICE GUIDANCE SIGNAL (+)
35	SHIELD	SHIELD
36	G	MICROPHONE SIGNAL
37	O	MICROPHONE SIGNAL [Color of wire differs depending on production]
37	R	MICROPHONE SIGNAL [Color of wire differs depending on production]
38	L	MICROPHONE POWER SUPPLY
40	Y	CAMERA POWER SUPPLY

Connector No.	M52
Connector Name	DISPLAY CONTROL UNIT
Connector Type	TH24FW-NH

Terminal No.	Color Of Wire	Signal Name [Specification]
46	G	AV COMMUNICATION SIGNAL (L)
47	P	CAN-L
49	R	DIMMER SIGNAL
50	BR	REVERSE SIGNAL
52	B	GROUND
56	BR	CAMERA SWITCH SIGNAL
58	Y	AV COMMUNICATION SIGNAL (H)
59	L	CAN-H
60	W	IGNITION SIGNAL
61	R	VEHICLE SPEED SIGNAL [8-PLUSE]
63	L	ACC POWER SUPPLY
64	Y	BATTERY POWER SUPPLY

Connector No.	M57
Connector Name	DIODE
Connector Type	ET02-2W

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

Connector No.	M109
Connector Name	FUSE AND FUSIBLE LINK BLOCK 2
Connector Type	MB A0055459901

Terminal No.	Color Of Wire	Signal Name [Specification]
24	Y	-

Connector No.	M128
Connector Name	FUSE AND FUSIBLE LINK BLOCK 2
Connector Type	MB A0395456128

Terminal No.	Color Of Wire	Signal Name [Specification]
69	B	-
70	P	-
71	B	-
73	BR	-
74	B	-
75	G	-
76	R	-
77	Y	-
78	P	-
79	GR	-
81	O	-
82	B	-

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TELEMATICS SYSTEM

Connector No.	M148
Connector Name	OVERHEAD CONTROL PANEL CONTROL UNIT
Connector Type	MB_A1645450728

Terminal No.	Color Of Wire	Signal Name [Specification]
30	BR	SOS SWITCH LED SIGNAL
31	G	SOS SWITCH SIGNAL

Connector No.	M172
Connector Name	OVERHEAD CONTROL PANEL CONTROL UNIT
Connector Type	MB_A0025406781

Terminal No.	Color Of Wire	Signal Name [Specification]
11	O	LIN (ROOF)
12	B	GND
13	G	BATTERY POWER SUPPLY
14	O	BATTERY POWER SUPPLY

Connector No.	M186
Connector Name	RESISTER1
Connector Type	M02FBR-LC

Terminal No.	Color Of Wire	Signal Name [Specification]
1	BR	-
2	V	-

Connector No.	M191
Connector Name	ANTI-THEFT ALARM SYSTEM/EMERGENCY CALL SYSTEM/BUTTON ASSY
Connector Type	MB_A0015451073

Terminal No.	Color Of Wire	Signal Name [Specification]
1	L	KL.31
2	BR	HSD_E-CALL_LED
3	G	DI_E-CALL_SWITCH

Connector No.	M215
Connector Name	TCU
Connector Type	TH40FB-NH

Terminal No.	Color Of Wire	Signal Name [Specification]
1	Y	BATTERY POWER SUPPLY
2	L	ACC POWER SUPPLY
3	V	ACC OUT PUT
5	GR	SOS SWITCH LED SIGNAL
6	L	CAN-H
7	P	CAN-L
10	W	IGNITION SIGNAL
11	SHIELD	MICROPHONE SIGNAL GROUND
12	O	MICROPHONE SIGNAL
16	SHIELD	SHIELD
17	R	MICROPHONE SIGNAL
18	L	MICROPHONE VCC
26	V	AV COMMUNICATION (H)
27	G	AV COMMUNICATION (L)
28	B	GROUND
29	B	GROUND
30	SHIELD	SHIELD
31	B	SOUND SIGNAL (+)
32	W	SOUND SIGNAL (-)
37	G	SOS CALL SWITCH SIGNAL

Connector No.	M217
Connector Name	CAN GATEWAY
Connector Type	MB_A0225400481

Terminal No.	Color Of Wire	Signal Name [Specification]
1	W	SOS SWITCH LED SIGNAL
2	R	DIMMER SIGNAL
3	P	MULTIFUNCTION MEDIA CAN-L
4	O	ENGINE SPEED SIGNAL
7	BR	REVERSE SIGNAL
8	V	ACC POWER SUPPLY
9	L	MULTIFUNCTION MEDIA CAN-H
10	W	SOS CALL SWITCH SIGNAL
11	Y	VEHICLE SPEED SIGNAL
12	W	ILLUMINATION CONTROL SIGNAL

Connector No.	M218
Connector Name	CAN GATEWAY
Connector Type	MB_A0225400581

Terminal No.	Color Of Wire	Signal Name [Specification]
13	B	GROUND
14	G	AV COMMUNICATION-L
15	L	AV COMMUNICATION-H
16	G	CHASSIS CAN-L
17	W	CHASSIS CAN-H
18	O	BATTERY POWER SUPPLY
19	P	MULTIFUNCTION MEDIA CAN-L
20	L	MULTIFUNCTION MEDIA CAN-H
21	BR	BODY CAN 1-L
22	R	BODY CAN 1-H

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TELEMATICS SYSTEM

23	L	DIAGNOSTIC CAN-L
24	V	DIAGNOSTIC CAN-H

Connector No.	M353
Connector Name	JOINT CONNECTOR-M02
Connector Type	FEA08JB

H.S.

8 7 6 5 4 1

Terminal No.	Color Of Wire	Signal Name [Specification]
1	BR	-
4	V	-
5	V	-
6	L	-
7	L	-
8	L	-

Connector No.	M354
Connector Name	JOINT CONNECTOR-M04
Connector Type	FEA24JB

H.S.

12 10 7 2 1 13 14 19 22 24

Terminal No.	Color Of Wire	Signal Name [Specification]
1	Y	-
2	L	-
7	L	-
10	Y	-
12	L	-
13	G	-
14	G	-
19	G	-
22	G	-
24	G	-

Connector No.	M356
Connector Name	JOINT CONNECTOR-M06
Connector Type	FEA24JW

H.S.

12 11 10 9 8 7 6 15 16 17 4 3 14 13

Terminal No.	Color Of Wire	Signal Name [Specification]
3	W	-
4	V	-
6	W	-
7	G	-
8	W	-
9	W	-
10	W	-
11	B	-
12	P	-
13	G	-
14	G	-
16	GR	-
17	GR	-
18	GR	-

Connector No.	M360
Connector Name	JOINT CONNECTOR-M11
Connector Type	FEA24JB

H.S.

12 11 10 9 6 5 4 2

Terminal No.	Color Of Wire	Signal Name [Specification]
2	L	-
4	L	-
5	L	-
6	L	-
9	V	-
10	V	-

11	V	-
12	V	-

Connector No.	M510
Connector Name	DISPLAY CONTROL UNIT
Connector Type	USCAR30-MC-F

H.S.

94 95 96 97

Terminal No.	Color Of Wire	Signal Name [Specification]
94	-	USB V BUS SIGNAL
95	-	USB D- SIGNAL
96	-	USB D+ SIGNAL
97	-	USB GROUND

Connector No.	M511
Connector Name	TCU
Connector Type	USCAR30-MC-F

H.S.

41 42 43 44

Terminal No.	Color Of Wire	Signal Name [Specification]
41	R	USB V BUS SIGNAL
42	P	USB D- SIGNAL
43	W	USB D+ SIGNAL
44	SHIELD	USB GND

Connector No.	M512
Connector Name	TCU
Connector Type	GT16C-1P-DS

H.S.

85 86

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

Connector No.	M513
Connector Name	TCU
Connector Type	GT16C-1P-DS

H.S.

87 88

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

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TELEMATICS SYSTEM

Connector No.	R28
Connector Name	WIRE TO WIRE
Connector Type	TH16MW-NH

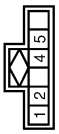
H.S.



Terminal No.	Color Of Wire	Signal Name [Specification]
3	R	-
4	W	-
5	SHIELD	-
6	L	-

Connector No.	R31
Connector Name	MICROPHONE
Connector Type	A06FW

H.S.



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

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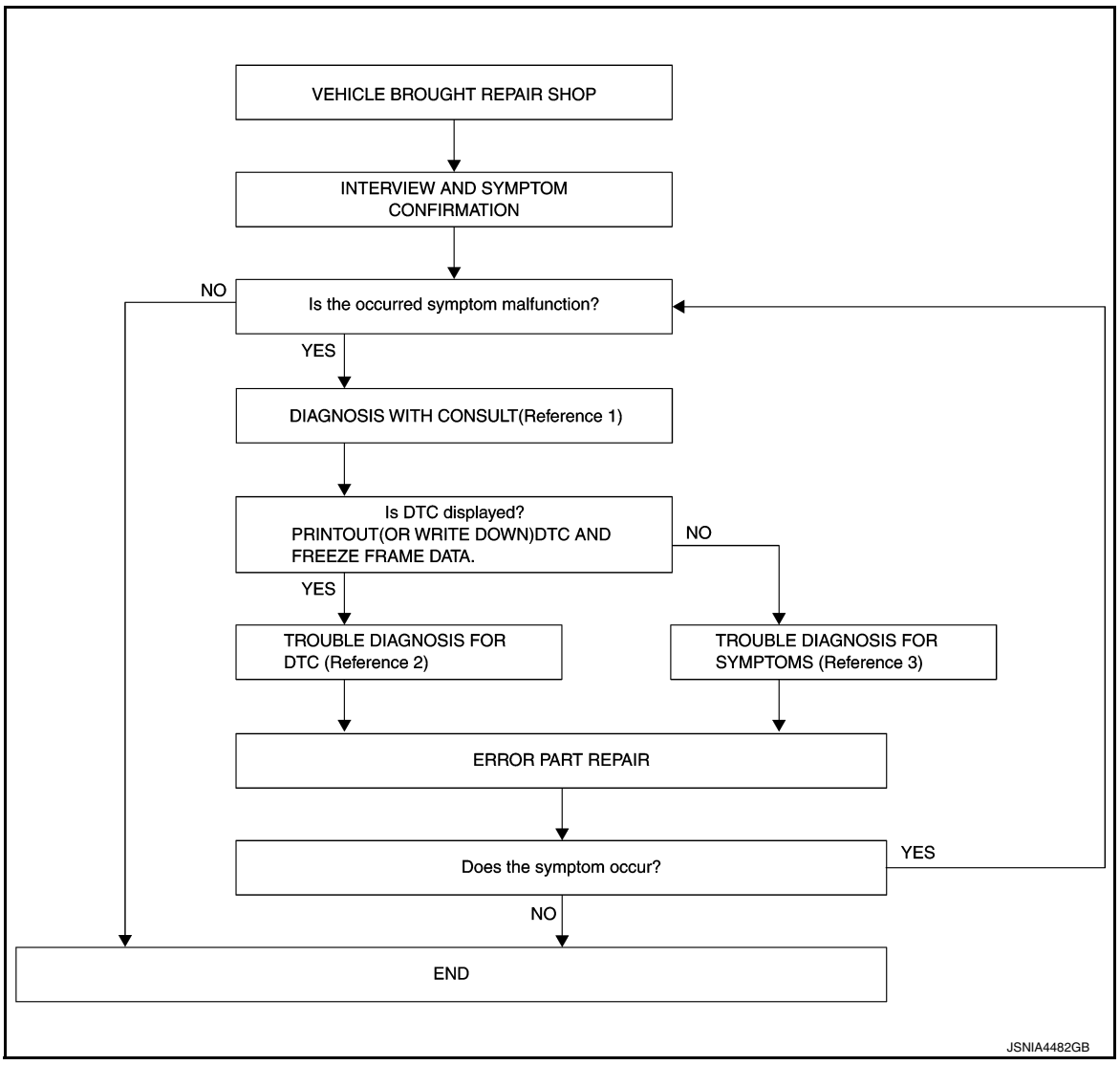
BASIC INSPECTION

DIAGNOSIS AND REPAIR WORK FLOW

Work Flow

INFOID:0000000013616449

OVERALL SEQUENCE



- Reference 1··· Refer to AV-415, "CONSULT Function".
- Reference 2··· Refer to AV-420, "DTC Index".
- Reference 3··· Refer to AV-456, "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 “TELEMATICS”. Refer to AV-415, "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-420, "DTC Index".

>> GO TO 5.

4. TROUBLE DIAGNOSIS FOR SYMPTOMS

Perform the relevant diagnosis referring to the diagnosis chart by symptom. Refer to AV-456, "SYMPTOM TABLE".

>> GO TO 5.

5. ERROR PART REPAIR

1. Repair or replace the identified malfunctioning parts.
2. Perform a self-diagnosis for “TELEMATICS” with CONSULT.
3. Check that the symptom does not occur.

Does the symptom occur?

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

ADDITIONAL SERVICE WHEN REPLACING TCU

Description

INFOID:0000000013616450

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)
- Since VIN data and vehicle specifications are not included in the TCU after replacement, it is required to write VIN data and vehicle specifications with CONSULT.

Refer to AV-430, "Work Procedure".

Work Procedure

INFOID:0000000013616451

1.READING OF VIN DATA

WITH CONSULT

Select “SAVE VIN DATA”, then “Start” on “SAVE VIN DATA” screen to save the VIN data stored in replaced TCU in CONSULT.

NOTE:

If it cannot be saved, writing operation must be performed manually.

>> GO TO 2.

2.CHECKING TYPE ID

WITH CONSULT

1. Select “Before ECU Replacement” of “Read / Write Configuration”.
2. Check that “Type ID” is displayed on CONSULT.

Is “Type ID” displayed?

YES >> GO TO 3.
NO >> GO TO 7.

3.VERIFYING TYPE ID (1)

WITH CONSULT

Compare a “Type ID” displayed on the CONSULT screen with the one searched by using FAST (service parts catalogue) to check that these “Type ID” agree with each other.

NOTE:

For the “Type ID” searched by using FAST (service parts catalog), use the last five digits of the “Type ID”.

>> GO TO 4.

4.SAVING TYPE ID

WITH CONSULT

Save “Type ID” on CONSULT.

>> GO TO 5.

5.TCU REPLACEMENT

Replace TCU. Refer to AV-459, "Removal and Installation".

>> GO TO 6.

6.WRITING TYPE ID (AUTOMATIC WRITING)

WITH CONSULT

1. Select “After ECU Replacement” of “Re/programming, Configuration” or that of “Read / Write Configuration”.
2. Select the “Type ID” agreeing with the one stored on CONSULT and the one searched by using FAST (service parts catalogue) to write the “Type ID” into the TCU.

>> GO TO 9.

7.TCU REPLACEMENT

Replace TCU. Refer to AV-459, "Removal and Installation".

>> GO TO 8.

8.WRITING TYPE ID (MANUAL WRITING)

WITH CONSULT
1. Select “Manual selection”.
2. Select the “Type ID” searched by using FAST (service parts catalogue) to write the “Type ID” into the TCU.
   NOTE:
   For the “Type ID” searched by using FAST (service parts catalog), use the last five digits of the “Type ID”.

>> GO TO 9.

9.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 10.
NO >> GO TO 11.

10.AUTOMATIC WRITING OF VIN DATA TO TCU

WITH CONSULT
Select “WRITE VIN (SAVED DATA)”, then “Start” at “WRITE VIN (SAVED DATA)” screen to write the VIN data saved in CONSULT into new TCU.

>> GO TO 12.

11.MANUAL WRITING OF VIN DATA TO TCU

WITH CONSULT
Select “WRITE VIN (MANUAL INPUT)”, “WRITE VIN (MANUAL INPUT)” then “Start” on changing screen to write the VIN data saved into new TCU.

>> GO TO 12.

12.TCU ACTIVATION

WITH CONSULT
1. Wait for 5 seconds or more after turning the ignition 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 ignition switch OFF.
8. Wait (at least 10 seconds) until the ignition switch indicator turns OFF to shut down TCU.

>> WORK END.

DTC/CIRCUIT DIAGNOSIS

B130D TCU

DTC Description

INFOID:0000000013826562

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
B130D	TEL LINE OUT ERROR (Telephone line out error)	Diagnosis condition	When ignition switch is ON.
		Signal (terminal)	Sound signal between TCU and display control unit
		Threshold	—
		Diagnosis delay time	1 second or more

POSSIBLE CAUSE

Sound signal circuit between TCU and display control unit

FAIL-SAFE

Telematics system function stops

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT
1. Turn ignition switch ON.
2. Erase DTC using CONSULT.
3. Select “Self Diagnostic Result” mode of ”TELEMATICS” using CONSULT.
4. Check DTC.

Is DTC U130D detected?

YES >> Proceed to AV-432, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-56, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000013826563

1. CHECK CONTINUITY BETWEEN TCU AND DISPLAY CONTROL UNIT CIRCUIT

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

TCU		Display control unit		Continuity
Connector	terminal	Connector	terminal	
M215	31	M51	27	Existed
	32		26	

4. Check continuity between TCU harness connector and ground.

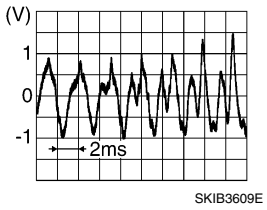
TCU		Ground	Continuity
Connector	terminal		
M215	31		Not existed
	32		

Is the inspection result normal?

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

2.CHECK SOUND SIGNAL

1. Connect TCU harness connector and display control unit harness connector.
2. Turn ignition switch ON.
3. Check signal between TCU harness connector terminals.

TCU			Condition	Reference value
Connector	(+)	(−)		
	Terminal			
M215	31	32	When inputting interior sound	 SKIB3609E

Is the inspection result normal?

YES >> Replace TCU. Refer to AV-459, "Removal and Installation".
NO >> Replace display control unit. Refer to AV-239, "Removal and Installation".

B1310 TCU

DTC Description

INFOID:0000000013826560

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
B1310	TCU TEMPERATURE ERROR (TCU temperature error)	Diagnosis condition	When ignition switch is ON.
		Signal (terminal)	—
		Threshold	TCU internal temperature is high temperature
		Diagnosis delay time	1 second or more

POSSIBLE CAUSE

- TCU temperature is high
- TCU

FAIL-SAFE

Telematics system function stops

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

1. Turn ignition switch ON.
2. Erase DTC using CONSULT.
3. Select “Self Diagnostic Result” mode of “TELEMATICS” using CONSULT.
4. Check DTC.

Is DTC B1310 detected?

YES >> Proceed to AV-434, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-56, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000013826561

1.CHECK AROUND TCU

Check whether there is any factor which causes a temperature rise near TCU.

Was there any factor?

YES >> Remove a factor.
NO >> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE AGAIN

Perform DTC confirmation procedure again. Refer to AV-434, "DTC Description".

Is DTC B1310 detected again?

YES >> Replace TCU. Refer to AV-459, "Removal and Installation".
NO >> INSPECTION END

B13D9 TCU

DTC Description

INFOID:0000000013826564

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
B13D9	USB CONNECTION (USB connection)	Diagnosis condition	When ignition switch is ON.
		Signal (terminal)	USB communication signal
		Threshold	—
		Diagnosis delay time	1 second or more

POSSIBLE CAUSE

- USB harness
- TCU

FAIL-SAFE

- Telematics system does not function
- Inform a INFINITI CONNECTION data center about abnormality

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

1. Turn ignition switch ON.
2. Erase DTC using CONSULT.
3. Select “Self Diagnostic Result” mode of “TELEMATICS” using CONSULT.
4. Check DTC.

Is DTC B13D9 detected?

YES >> Proceed to AV-435, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-56, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000013826565

1.CHECK USB HARNESS CONNECTION

1. Turn ignition switch OFF.
2. Visually check USB harness connector between display control unit and TCU.

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair or replace USB harness.

2.PERFORM DTC CONFIRMATION PROCEDURE AGAIN

Perform DTC confirmation procedure again. Refer to AV-435, "DTC Description".

Is DTC B13D9 detected again?

YES >> Replace TCU. Refer to AV-459, "Removal and Installation".
NO >> INSPECTION END

B13E1 TCU

DTC Description

INFOID:0000000013826566

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
B13E1	CAN COMMUNICATION (CAN communication)	Diagnosis condition	When ignition switch is ON.
		Signal (terminal)	AV communication signal
		Threshold	—
		Diagnosis delay time	1 second or more

POSSIBLE CAUSE

- TCU
- AV communication circuit is open

FAIL-SAFE

- Some telematics system does not function
- Inform a INFINITI CONNECTION data center about abnormality

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

1. Turn ignition switch ON.
2. Erase DTC using CONSULT.
3. Select “Self Diagnostic Result” mode of “TELEMATICS” using CONSULT.
4. Check DTC.

Is DTC B13E1 detected?

YES >> Proceed to AV-436, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-56, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000013826567

1.CHECK AV COMMUNICATION CIRCUIT

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

Display control unit		TCU		Continuity
Connector	Terminal	Connector	Terminal	
M52	46	M215	27	Existed
	58		26	

Is the inspection result normal?

YES >> Replace TCU. Refer to AV-459, "Removal and Installation".
NO >> Repair or replace harness or connector.

B2E33 SOS SWITCH

DTC Description

INFOID:0000000013826568

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
B2E33	ECALL BUTTON (Ecall button)	Diagnosis condition	When ignition switch is ON.
		Signal (terminal)	SOS switch LED signal
		Threshold	—
		Diagnosis delay time	1 second or more

POSSIBLE CAUSE

- SOS switch LED signal circuit
- SOS switch

FAIL-SAFE

- Telematics system does not function (Only SOS call does not operate)
- SOS switch LED indicator is turned OFF

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT
1. Turn ignition switch ON.
2. Erase DTC using CONSULT.
3. Select “Self Diagnostic Result” mode of “TELEMATICS” using CONSULT.
4. Check DTC.

Is DTC B2E33 detected?

YES >> Proceed to AV-437, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-56, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000013826569

1.CHECK SELF-DIAGNOSTIC RESULT OF CAN GATEWAY

With CONSULT
Check “Self Diagnostic Result” of “CAN GATEWAY” using CONSULT.

Is any DTC detected?

YES >> Perform diagnosis procedure for detected DTC. Refer to LAN-156, "DTC Index".
NO >> GO TO 2.

2.PERFORM ALL DTC READING

With CONSULT
1. Perform “All DTC Reading”.
2. Check diagnosis results.

Is any DTC detected?

YES >> Perform diagnosis procedure corresponding to DTC indicated.
NO >> GO TO 3.

3.CHECK INTERMITTENT INCIDENT

Check the intermittent incident. Refer to GI-56, "Intermittent Incident".

Is inspection result normal?

YES >> Replace TCU. Refer to AV-459, "Removal and Installation".
NO >> Repair or replace malfunctioning parts.

B2EF0 TCU

DTC Description

INFOID:0000000013826570

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
B2EF0	INTERNAL BATTERY (Internal battery)	Diagnosis condition	When ignition switch is ON.
		Signal (terminal)	—
		Threshold	TCU internal malfunction
		Diagnosis delay time	Less than 1 second

POSSIBLE CAUSE

TCU

FAIL-SAFE

—

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

1. Turn ignition switch ON.
2. Erase DTC using CONSULT.
3. Select “Self Diagnostic Result” mode of “TELEMATICS” using CONSULT.
4. Check DTC.

Is DTC B2EF0 detected?

YES >> Proceed to AV-438, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-56, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000013826571

1.PERFORM DTC CONFIRMATION PROCEDURE AGAIN

Perform DTC confirmation procedure again. Refer to AV-438, "DTC Description".

Is DTC B2EF0 detected again?

YES >> Replace TCU. Refer to AV-459, "Removal and Installation".
NO >> INSPECTION END

U1000 CAN COMM CIRCUIT

DTC Description

INFOID:0000000013826572

DESCRIPTION

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.

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
U1000	CAN COMM CIRC (CAN communication circuit)	Diagnosis condition	When ignition switch is ON.
		Signal (terminal)	CAN communication signal
		Threshold	—
		Diagnosis delay time	2 seconds or more

POSSIBLE CAUSE

CAN communication system

FAIL-SAFE

- Telematics system does not function
- Inform a INFINITI CONNECTION data center about abnormality

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT
1. Turn ignition switch ON.
2. Erase DTC using CONSULT.
3. Select “Self-Diagnostic Result” mode of “TELEMATICS” using CONSULT.
4. Check DTC.

Is DTC U1000 detected?

YES >> Proceed to AV-439, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: GI-56, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000013826573

1.PERFORM DTC CONFIRMATION PROCEDURE AGAIN

Perform DTC confirmation procedure again. Refer to AV-439, "DTC Description".

Is DTC U1000 detected again?

YES >> Perform the trouble diagnosis for CAN communication system. Refer to LAN-58, "Trouble Diagnosis Flow Chart".
NO >> INSPECTION END

U1010 CONTROL UNIT (CAN)

DTC Description

INFOID:0000000013826574

DESCRIPTION

CAN controller controls the communication of CAN communication signal and the error detection.

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
U1010	CONTROL UNIT (CAN) [Control unit (CAN)]	Diagnosis condition	When ignition switch is ON.
		Signal (terminal)	—
		Threshold	Initial diagnosis abnormality of the TCUCAN controller
		Diagnosis delay time	1 second or more

POSSIBLE CAUSE

TCU

FAIL-SAFE

Telematics system does not function

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

1. Turn ignition switch ON.
2. Erase DTC using CONSULT.
3. Select “Self-Diagnostic Result” mode of “TELEMATICS” using CONSULT.
4. Check DTC.

Is DTC U1010 detected?

YES >> Proceed to AV-440, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: GI-56, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000013826575

1.PERFORM DTC CONFIRMATION PROCEDURE AGAIN

Perform DTC confirmation procedure again. Refer to AV-440, "DTC Description".

Is DTC U1010 detected again?

YES >> Replace TCU. Refer to AV-459, "Removal and Installation".
NO >> INSPECTION END

U1A00 TCU

DTC Description

INFOID:0000000013826576

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
U1A00	ACC NO CONN [ACC no connection]	Diagnosis condition	When ignition switch is ON.
		Signal (terminal)	ACC power supply
		Threshold	No input
		Diagnosis delay time	1 second or more

POSSIBLE CAUSE

- ACC power supply circuit
- TCU

FAIL-SAFE

Telematics system function stops

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT
1. Turn ignition switch ON.
2. Erase DTC using CONSULT.
3. Select “Self Diagnostic Result” mode of TELEMATICS” using CONSULT.
4. Check DTC.

Is DTC U1A00 detected?

YES >> Proceed to AV-441, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-56, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000013826577

1.CHECK ACC POWER CIRCUIT

Check the ACC power circuit. Refer to AV-455, "TCU : Diagnosis Procedure".

Is the inspection result normal?

YES >> Replace TCU. Refer to AV-459, "Removal and Installation".
NO >> Repair or replace malfunctioning parts.

U1A01 TCU

DTC Description

INFOID:0000000013826578

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
U1A01	INTERNAL ERROR (TCU) [Internal error (TCU)]	Diagnosis condition	When ignition switch is ON.
		Signal (terminal)	—
		Threshold	TCU internal malfunction
		Diagnosis delay time	1 second or more

POSSIBLE CAUSE

TCU

FAIL-SAFE

Telematics system function stops

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

1. Turn ignition switch ON.
2. Erase DTC using CONSULT.
3. Select “Self Diagnostic Result” mode of “TELEMATICS” using CONSULT.
4. Check DTC.

Is DTC U1A01 detected?

YES >> Proceed to AV-442, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-56, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000013826579

1.PERFORM DTC CONFIRMATION PROCEDURE AGAIN

Perform DTC confirmation procedure again. Refer to AV-442, "DTC Description".

Is DTC U1A01 detected again?

YES >> Replace TCU. Refer to AV-459, "Removal and Installation".
NO >> INSPECTION END

U1A02 TCU

DTC Description

INFOID:0000000013830997

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
U1A02	TEL COMMUNICATION MODULE (Telephone communication module)	Diagnosis condition	When ignition switch is ON.
		Signal (terminal)	—
		Threshold	TCU internal malfunction
		Diagnosis delay time	1 second or more

POSSIBLE CAUSE

TCU

FAIL-SAFE

Telematics system function stops

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT
1. Turn ignition switch ON.
2. Erase DTC using CONSULT.
3. Select “Self Diagnostic Result” mode of “TELEMATICS” using CONSULT.
4. Check DTC.

Is DTC U1A012detected?

YES >> Proceed to AV-443, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-56, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000013830998

1.PERFORM DTC CONFIRMATION PROCEDURE AGAIN

Perform DTC confirmation procedure again. Refer to AV-443, "DTC Description".

Is DTC U1A02 detected again?

YES >> Replace TCU. Refer to AV-459, "Removal and Installation".
NO >> INSPECTION END

U1A03 TCU

DTC Description

INFOID:0000000013826580

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
U1A03	SIM CARD (SIM card)	Diagnosis condition	When ignition switch is ON.
		Signal (terminal)	—
		Threshold	—
		Diagnosis delay time	1 second or more

POSSIBLE CAUSE

TCU

FAIL-SAFE

- Telematics system function stops
- When operated a telematics system, inform that cannot be connected to the INFINITI CONNECTION data center

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

1. Turn ignition switch ON.
2. Erase DTC using CONSULT.
3. Select “Self Diagnostic Result” mode of “TELEMATICS” using CONSULT.
4. Check DTC.

Is DTC U1A03 detected?

YES >> Proceed to AV-444, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-56, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000013826581

1.PERFORM DTC CONFIRMATION PROCEDURE AGAIN

Perform DTC confirmation procedure again. Refer to AV-444, "DTC Description".

Is DTC U1A03 detected again?

YES >> Replace TCU. Refer to AV-459, "Removal and Installation".
NO >> INSPECTION END

U1A04 TCU

DTC Description

INFOID:0000000013826582

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
U1A04	VIN UNFINISHED (VIN unfinished)	Diagnosis condition	When ignition switch is ON.
		Signal (terminal)	—
		Threshold	Vehicle identification number is not written
		Diagnosis delay time	1 second or more

POSSIBLE CAUSE

- VIN number is not written
- TCU

FAIL-SAFE

Telematics system does not function

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

1. Turn ignition switch ON.
2. Erase DTC using CONSULT.
3. Select “Self Diagnostic Result” mode of “TELEMATICS” using CONSULT.
4. Check DTC.

Is DTC U1A04 detected?

YES >> Proceed to AV-445, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-56, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000013826583

1.PERFORM WRITING VIN DATA TO TCU

Perform writing VIN data to TCU. Refer to AV-430, "Description".

Was the writing of VIN data completed?

YES >> GO TO 2.
NO >> Replace TCU. Refer to AV-459, "Removal and Installation".

2.PERFORM DTC CONFIRMATION PROCEDURE AGAIN

Perform DTC confirmation procedure again. Refer to AV-445, "DTC Description".

Is DTC U1A04 detected again?

YES >> Replace TCU. Refer to AV-459, "Removal and Installation".
NO >> INSPECTION END

U1A06 TEL ANTENNA

DTC Description

INFOID:0000000013826584

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
U1A06	TEL ANTENNA (TEL antenna)	Diagnosis condition	When ignition switch is ON.
		Signal (terminal)	TEL antenna signal
		Threshold	No input
		Diagnosis delay time	1 second or more

POSSIBLE CAUSE

- TEL antenna signal circuit
- TEL antenna

FAIL-SAFE

- SOS switch LED indicator is turned OFF
  (LED indicator turns ON 10 times when push the SOS call switch.)
- When operated a telematics system, inform that cannot be connected to the INFINITI CONNECTION data center

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT
1. Turn ignition switch ON.
2. Erase DTC using CONSULT.
3. Select “Self Diagnostic Result” mode of “TELEMATICS” using CONSULT.
4. Check DTC.

Is DTC U1A06 detected?

YES >> Proceed to AV-446, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-56, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000013826585

1.CHECK TELEMATICS ANTENNA

Visually check telematics antenna and antenna feeder. Refer to AV-462, "Feeder Layout".

Is the inspection result normal?

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

2.CHECK TCU VOLTAGE

1. Disconnect TCU harness connector.
2. Turn ignition switch ON.
3. Check voltage between TCU terminal and ground.

(+) TCU Terminal	(–)	Voltage (Approx.)
85	Ground	5.0 V

Is the check result normal?

YES >> Replace telematics antenna. Refer to AV-462, "Removal and Installation".
NO >> Replace TCU. Refer to AV-459, "Removal and Installation".

U1A09 GPS ANTENNA

DTC Description

INFOID:0000000013826586

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
U1A09	GPS ANTENNA CONN (GPS antenna connection)	Diagnosis condition	When ignition switch is ON.
		Signal (terminal)	GPS antenna signal
		Threshold	No input
		Diagnosis delay time	1 second or more

POSSIBLE CAUSE

- GPS antenna signal circuit
- GPS antenna

FAIL-SAFE

- Telematics system cannot send correct position inform
- Inform a INFINITI CONNECTION data center about abnormality

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT
1. Turn ignition switch ON.
2. Erase DTC using CONSULT.
3. Select “Self Diagnostic Result” mode of “TELEMATICS” using CONSULT.
4. Check DTC.

Is DTC U1A09 detected?

YES >> Proceed to AV-447, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-56, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000013826587

1.CHECK TELEMATICS ANTENNA

Visually check telematics antenna and antenna feeder. Refer to AV-462, "Feeder Layout".

Is the inspection result normal?

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

2.CHECK TCU VOLTAGE

1. Disconnect TCU harness connector.
2. Turn ignition switch ON.
3. Check voltage between TCU terminal and ground.

(+) TCU Terminal	(−)	Voltage (Approx.)
87	Ground	5.0 V

Is the check result normal?

YES >> Replace telematics antenna. Refer to AV-462, "Removal and Installation".
NO >> Replace TCU. Refer to AV-459, "Removal and Installation".

U1A0A TCU

DTC Description

INFOID:0000000013826588

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
U1A0A	GPS MODULE COMM (GPS module communication error)	Diagnosis condition	When ignition switch is ON.
		Signal (terminal)	—
		Threshold	Malfunction on the GPS module in TCU
		Diagnosis delay time	1 second or more

POSSIBLE CAUSE

TCU

FAIL-SAFE

- Telematics system cannot send correct position inform
- Inform a INFINITI CONNECTION data center about abnormality

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

1. Turn ignition switch ON.
2. Erase DTC using CONSULT.
3. Select “Self Diagnostic Result” mode of “TELEMATICS” using CONSULT.
4. Check DTC.

Is DTC U1A0A detected?

YES >> Proceed to AV-448, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-56, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000013826589

1.PERFORM DTC CONFIRMATION PROCEDURE AGAIN

Perform DTC confirmation procedure again. Refer to AV-436, "DTC Description".

Is DTC U1A0A detected again?

YES >> Replace TCU. Refer to AV-459, "Removal and Installation".
NO >> INSPECTION END

U1A0B MICROPHONE

DTC Description

INFOID:0000000013826590

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition		
U1A0B	MIC IN CONN (Microphone input connection)	1	Diagnosis condition	When ignition switch is ON.
			Signal (terminal)	Microphone signal (between TCU and microphone)
			Threshold	Abnormality
			Diagnosis delay time	1 second or more
		2	Diagnosis condition	When ignition switch is ON.
			Signal (terminal)	Microphone VCC signal
			Threshold	Abnormality
			Diagnosis delay time	1 second or more

POSSIBLE CAUSE

- Microphone signal circuit
- Microphone VCC signal circuit

FAIL-SAFE

- Transmit an own vehicle position to the INFINITI CONNECTION data center
- Inform a INFINITI CONNECTION data center about abnormality

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

1. Turn ignition switch ON.
2. Erase DTC using CONSULT.
3. Select “Self Diagnostic Result” mode of “TELEMATICS” using CONSULT.
4. Check DTC.

Is DTC U1A0B detected?

YES >> Proceed to AV-449, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-56, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000013826591

1.CHECK MICROPHONE SIGNAL CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect TCU harness connector and microphone harness connector.
3. Check the continuity between TCU harness connector and microphone harness connector.

TCU		Microphone		Continuity
Connector	Terminal	Connector	Terminal	
M215	16	R31	2	Existed
	17		1	
	18		4	

4. Check the continuity between TCU harness connector and ground.

TCU		Ground	Continuity
Connector	Terminal		
M215	17		Not existed
	18		

Is the inspection result normal?

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

2.CHECK VOLTAGE MICROPHONE POWER SUPPLY

1. Connect TCU harness connector.
2. Turn ignition switch ON.
3. Check the voltage between TCU harness connector terminals.

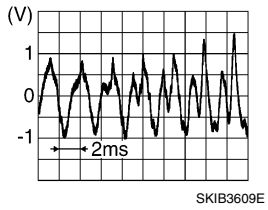
TCU			Voltage (Approx.)
Connector	Terminal		
	(+)	(–)	
M215	18	16	5.0 V

Is the inspection result normal?

YES >> GO TO 3.
NO >> Replace TCU. Refer to AV-459, "Removal and Installation".

3.CHECK MICROPHONE SIGNAL

1. Connect microphone harness connector.
2. Check the signal between TCU harness connector terminals.

TCU			Condition	Reference value
Connector	(+)	(–)		
	Terminal			
M215	17	16	When inputting interior sound.	

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Is the inspection result normal?

YES >> Replace TCU. Refer to AV-459, "Removal and Installation".
NO >> Replace microphone. Refer to AV-460, "Removal and Installation".

U1A0C MICROPHONE

DTC Description

INFOID:0000000013826592

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
U1A0C	MIC OUT CONN (Microphone output connection)	Diagnosis condition	When ignition switch is ON.
		Signal (terminal)	Microphone signal (between TCU and display control unit)
		Threshold	Abnormality
		Diagnosis delay time	1 second or more

POSSIBLE CAUSE

Microphone signal circuit

FAIL-SAFE

- Transmit an own vehicle position to the INFINITI CONNECTION data center
- Inform a INFINITI CONNECTION data center about abnormality

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

1. Turn ignition switch ON.
2. Erase DTC using CONSULT.
3. Select “Self Diagnostic Result” mode of “TELEMATICS” using CONSULT.
4. Check DTC.

Is DTC U1A0C detected?

YES >> Proceed to AV-451, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-56, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000013826593

1.CHECK MICROPHONE SIGNAL CIRCUIT

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

TCU		Display control unit		Continuity
Connector	Terminal	Connector	Terminal	
M215	11	M51	18	Existed
	12		37	

4. Check continuity between TCU harness connector and ground.

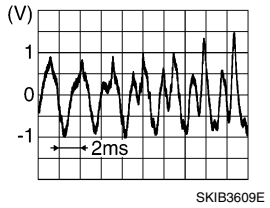
TCU		Ground	Continuity
Connector	Terminal		
M215	11		Not existed
	12		

Is the inspection result normal?

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

2.CHECK MICROPHONE SIGNAL

1. Connect TCU harness connector and display control unit harness connector.
2. Check the signal between TCU harness connector.

TCU			Condition	Reference value
Connector	(+)	(−)		
	Terminal			
M215	12	11	When inputting interior sound.	

SKIB3609E

Is the inspection result normal?

YES >> Replace display control unit. Refer to AV-239, "Removal and Installation".
NO >> Replace TCU. Refer to AV-459, "Removal and Installation".

U1A0E SOS SWITCH

DTC Description

INFOID:0000000013826596

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
U1A0E	SOS SWITCH ON STUCK (SOS switch ON stuck)	Diagnosis condition	When ignition switch is ON.
		Signal (terminal)	SOS switch signal
		Threshold	Continue being turned ON
		Diagnosis delay time	10 seconds or more

POSSIBLE CAUSE

SOS call switch signal circuit

FAIL-SAFE

- Telematics system does not function (Only SOS call does not operate)
- SOS switch LED indicator is turned OFF

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT
1. Turn ignition switch ON.
2. Erase DTC using CONSULT.
3. Select “Self Diagnostic Result” mode of “TELEMATICS” using CONSULT.
4. Check DTC.

Is DTC U1A0E detected?

YES >> Proceed to AV-453, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-56, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000013826597

1.CHECK SELF-DIAGNOSTIC RESULT OF CAN GATEWAY

With CONSULT
Check “Self Diagnostic Result” of “CAN GATEWAY” using CONSULT.

Is any DTC detected?

YES >> Perform diagnosis procedure for detected DTC. Refer to LAN-156, "DTC Index".
NO >> GO TO 2.

2.PERFORM ALL DTC READING

With CONSULT
1. Perform “All DTC Reading”.
2. Check diagnosis results.

Is any DTC detected?

YES >> Perform diagnosis procedure corresponding to DTC indicated.
NO >> GO TO 3.

3.CHECK INTERMITTENT INCIDENT

Check the intermittent incident. Refer to GI-56, "Intermittent Incident".

Is inspection result normal?

YES >> Replace TCU. Refer to AV-459, "Removal and Installation".
NO >> Repair or replace malfunctioning parts.

U1A10 TCU

DTC Description

INFOID:0000000013826598

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
U1A10	AIRBAG SIGNAL (Lose signal of airbag)	Diagnosis condition	When ignition switch is ON.
		Signal (terminal)	Car crash information signal
		Threshold	Abnormality
		Diagnosis delay time	1 seconds or more

POSSIBLE CAUSE

Car crash information signal (CAN communication)

FAIL-SAFE

- Some telematics system does not function
- Inform a INFINITI CONNECTION data center about abnormality

DTC CONFIRMATION PROCEDURE

1.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

1. Turn ignition switch ON.
2. Erase DTC using CONSULT.
3. Select “Self Diagnostic Result” mode of “TELEMATICS” using CONSULT.
4. Check DTC.

Is DTC U1A10 detected?

YES >> Proceed to AV-454, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-56, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000013826599

1.PERFORM DTC CONFIRMATION PROCEDURE AGAIN

Perform DTC confirmation procedure again. Refer to AV-436, "DTC Description"

Is DTC U1A10 detected again?

YES >> Replace TCU. Refer to AV-459, "Removal and Installation".
NO >> INSPECTION END

POWER SUPPLY AND GROUND CIRCUIT
TCU

TCU : Diagnosis Procedure

INFOID:0000000013788325

1.CHECK FUSE

1. Turn ignition switch OFF.
2. Check if the fuse is burned out.

Fuse No.	Capacity
#55	15 A
#93	5 A

Is the fuse blown?

YES >> Replace the fuse after repairing the applicable circuit.
NO >> GO TO 2.

2.CHECK BATTERY POWER SUPPLY

Check the voltage between the TCU harness connector and ground.

(+)		(-)	Standard value	Reference value (Approx.)
TCU				
Connector	Terminal			
M215	1	Ground	9.0 - 16.0 V	Battery Voltage

Is the inspection result normal?

YES >> GO TO 3.
NO >> Repair or replace harness between TCU and fuse.

3.CHECK ACC POWER SUPPLY

1. Turn ignition switch ON.
2. Check the voltage between the TCU harness connector and ground.

(+)		(-)	Standard value	Reference value (Approx.)
TCU				
Connector	Terminal			
M215	2	Ground	9.0 - 16.0 V	Battery Voltage

Is the inspection result normal?

YES >> GO TO 4.
NO >> Repair or replace harness between TCU and fuse.

4.CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect TCU harness connector.
3. Check the continuity between TCU harness connector and ground.

TCU			Continuity
Connector	Terminal	Ground	
M215	28		Existed
	29		

Is the inspection result normal?

YES >> INSPECTION END
NO >> Repair TCU ground circuit.

SYMPTOM DIAGNOSIS

TELEMATICS SYSTEM

SYMPTOM TABLE

INFOID:0000000013616491

INFINITI INTOUCH

Symptoms	Check items	Possible malfunction location/Action to take
Display control unit does not start (Display is not indicated).	—	Refer to AV-224, "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-459, "Removal and Installation". • Turn it ON again if it is OFF. Replace TCU if ON is switched to OFF. Refer to AV-459, "Removal and Installation".
				Use other cellular phone to check radio wave condition. • If the service is available, replace TCU or telematics antenna. - For TCU replacement, refer to AV-459, "Removal and Installation". - For telematics antenna replacement, refer to AV-462, "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.
				Configuration is incomplete. Perform configuration of TCU. Refer to AV-430, "Description".
		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 telematics antenna. - For TCU replacement, refer to AV-459, "Removal and Installation". - For telematics antenna replacement, refer to AV-462, "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-459, "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 telematics antenna. • For TCU replacement, refer to AV-459, "Removal and Installation". • For telematics antenna replacement, refer to AV-462, "Removal and Installation". • Perform CONSULT self-diagnosis. Refer to AV-415, "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 signal circuit. Refer to AV-449, "Diagnosis Procedure" or AV-451, "Diagnosis Procedure".

NORMAL OPERATING CONDITION

Description

INFOID:0000000013616492

NOTE:
For Telematics system operation detail information, refer to Navigation system Owner's Manual.

INFINITI INTOUCH™ SERVICES

Symptom	Possible cause	Possible solution
The system cannot connect to the Infiniti InTouch™ Services Data Center.	A subscription for the Infiniti InTouch™ Services has not been established.	Sign up for a subscription to the Infiniti InTouch™ Services. For details about subscriptions, contact the Infiniti InTouch™ Services support line.
	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.
	TCU is not turned on.	If the icon does not show that the vehicle is inside the communication area despite the fact that the vehicle is in that location, contact the Infiniti InTouch™ Services support line.
	Radio wave reception is not sufficient for TCU operation.	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 VOLUME control knob located on the audio system or on the steering-wheel switch while the system is announcing information.

REMOVAL AND INSTALLATION

TCU

Removal and Installation

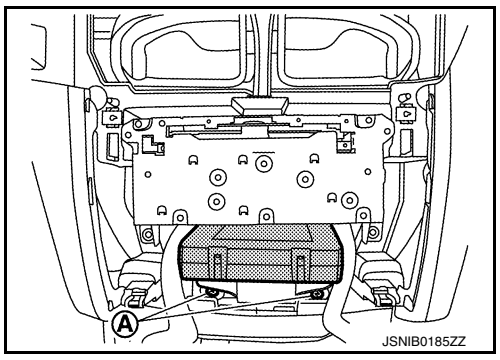
INFOID:0000000013788347

REMOVAL

CAUTION:

Before replacing TCU, perform “Read/Write Configuration” to save or print current vehicle specification. For details, refer to AV-430, "Description".

1. Remove the preset switch panel. Refer to AV-242, "Removal and Installation".
2. Remove the bracket mounting screws Ⓐ.
3. Disconnect the harness connector from the TCU.
4. Remove the bracket screws, and then remove the TCU.



INSTALLATION

Installation is in the reverse order of removal.

CAUTION:

Be sure to perform “Read/Write Configuration” when replacing TCU. For details, refer to AV-430, "Description".

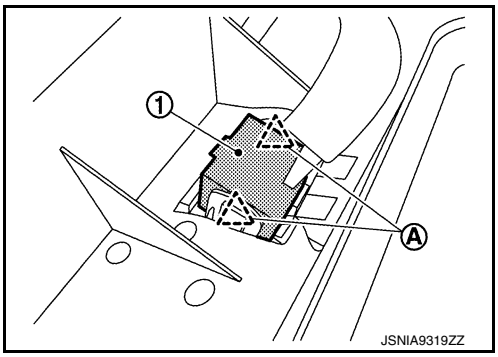
MICROPHONE

Removal and Installation

INFOID:0000000013788348

REMOVAL

1. Remove the headlining assembly. Refer to INT-33, "Removal and Installation".
2. Disconnect the microphone connector.
3. Release the pawls Ⓐ, and then remove the microphone ①.



: Pawl

CAUTION:
Carefully handle the pawl fixing the microphone because the pawl is fragile.

INSTALLATION

Installation is in the reverse order of removal.

NOTE:
Check the microphone for looseness after the installation.

TELEMATICS SWITCH

Removal and Installation

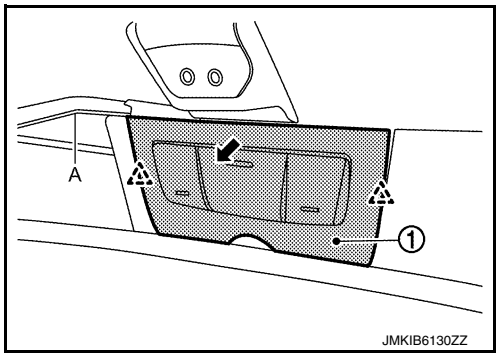
INFOID:0000000013788349

NOTE:
SOS switch integrates with telematics switch.

REMOVAL

Disengage telematics switch fixing pawls using a remover tool (A), and then remove telematics switch ①.

: Pawl



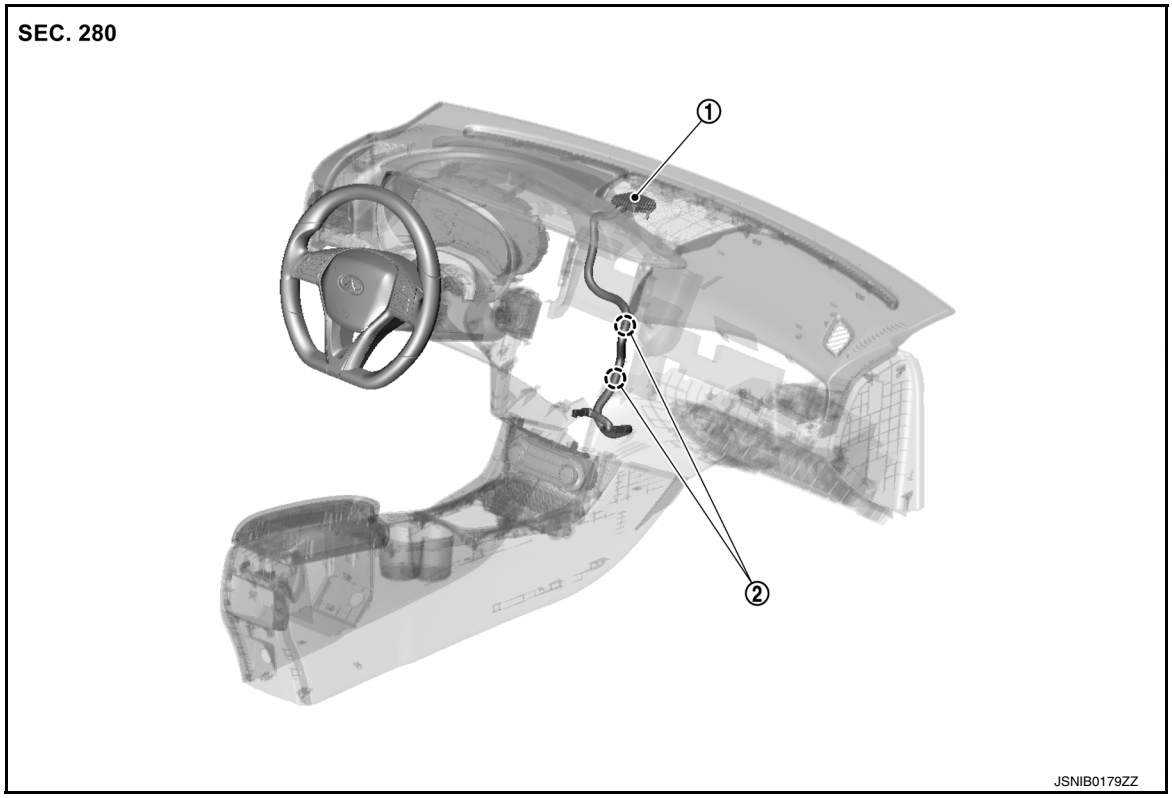
INSTALLATION

Install in the reverse order of removal.

TELEMATICS ANTENNA

Feeder Layout

INFOID:0000000013788350



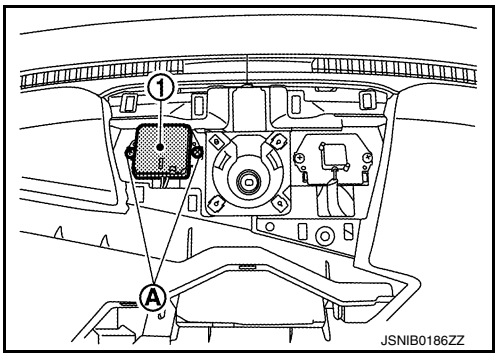
① TCU antenna ② Clip

Removal and Installation

INFOID:0000000013788351

REMOVAL

1. Remove the instrument panel assembly. Refer to IP-13, "Removal and Installation".
2. Remove the mounting screw Ⓐ, and then remove the telematics antenna ① from the instrument panel.



INSTALLATION

Install in the reverse order of removal.