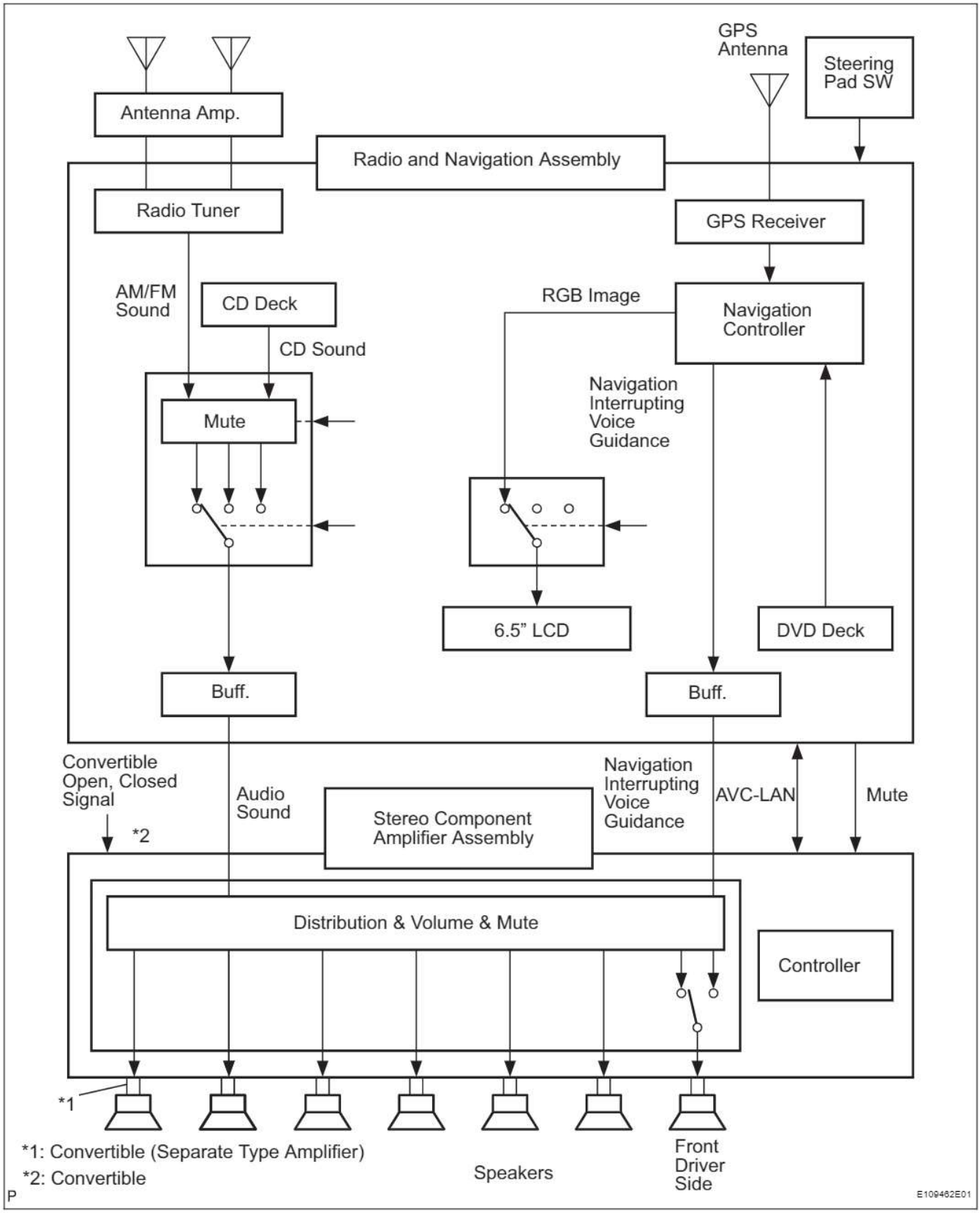
SYSTEM DIAGRAM

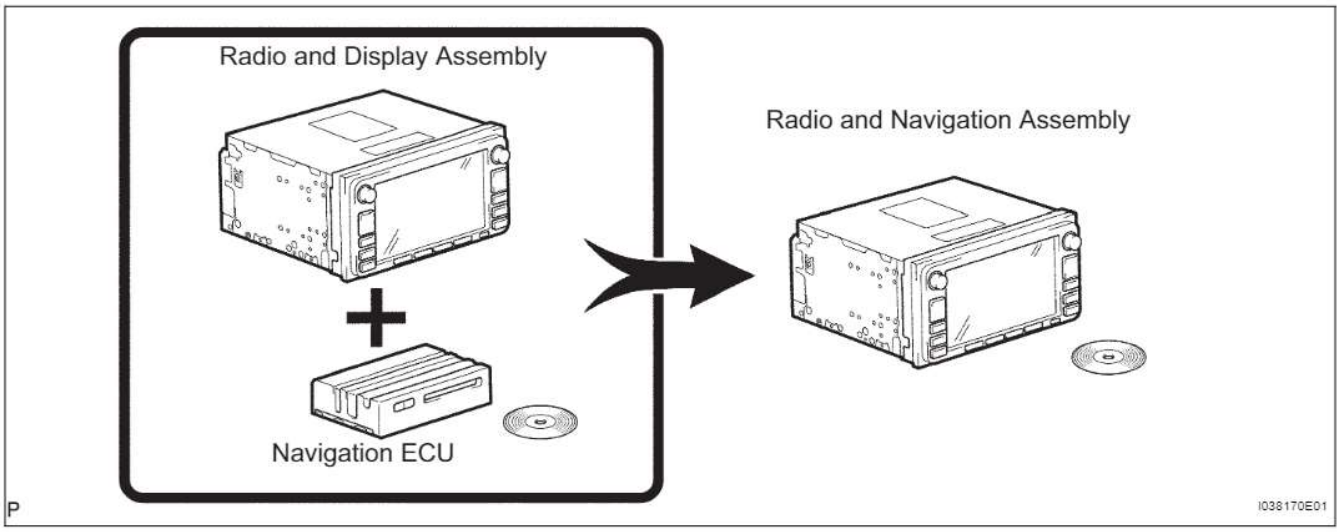


NS

SYSTEM DESCRIPTION

1. Radio and navigation assembly outline

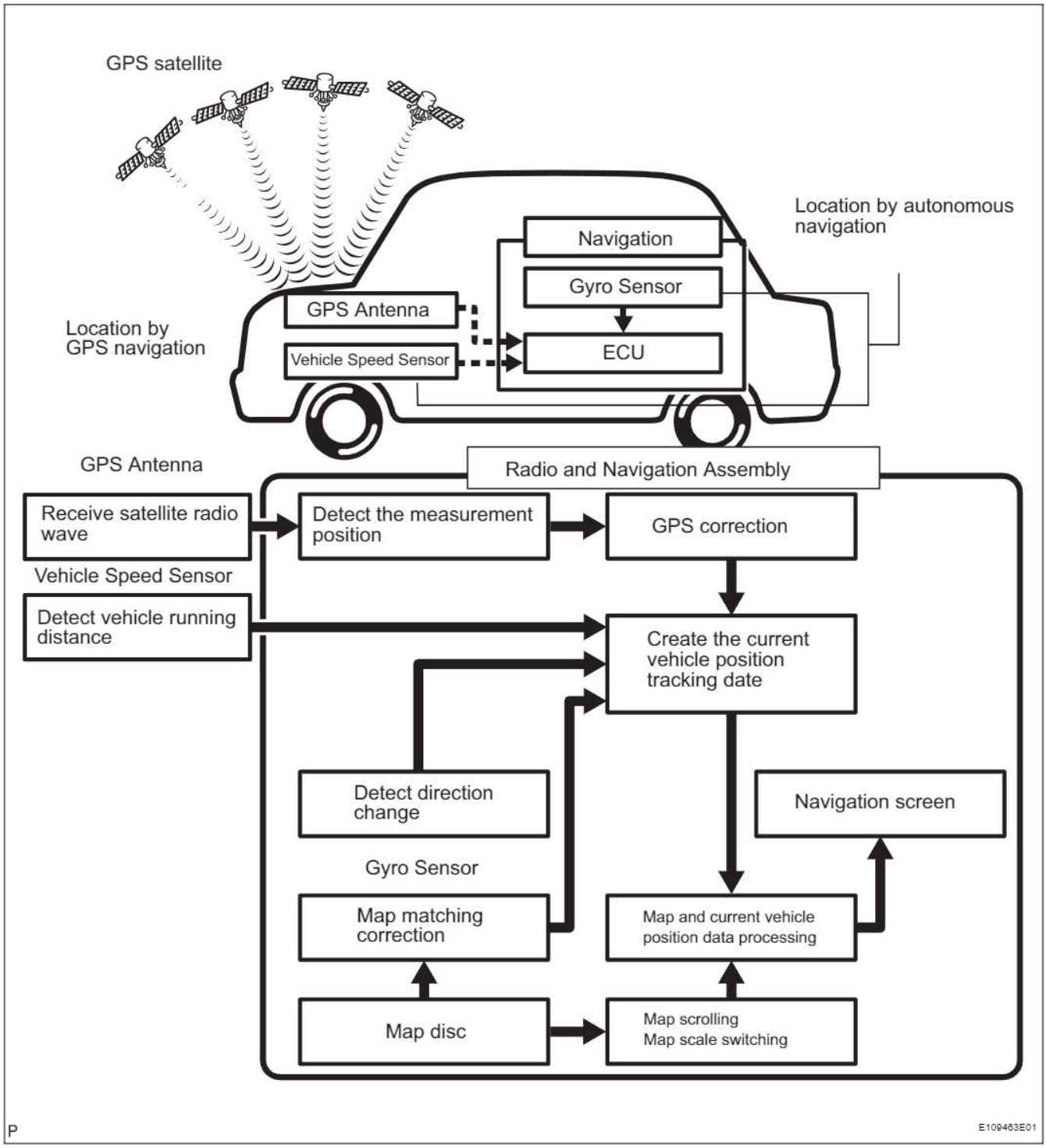
(a) Conventionally, 2 separate devices, a "radio and display assembly" and a "navigation ECU" are used. This model has adopted a new type, combining these devices into a single unit.



2. Navigation system outline

(a) Vehicle position tracking methods

It is essential that the navigation system correctly tracks the current vehicle position and displays it on the map. There are 2 methods to track the current vehicle position: autonomous (dead reckoning) and GPS* (satellite) navigation. Both navigation methods are used in conjunction with each other.
*GPS (Global Positioning System)

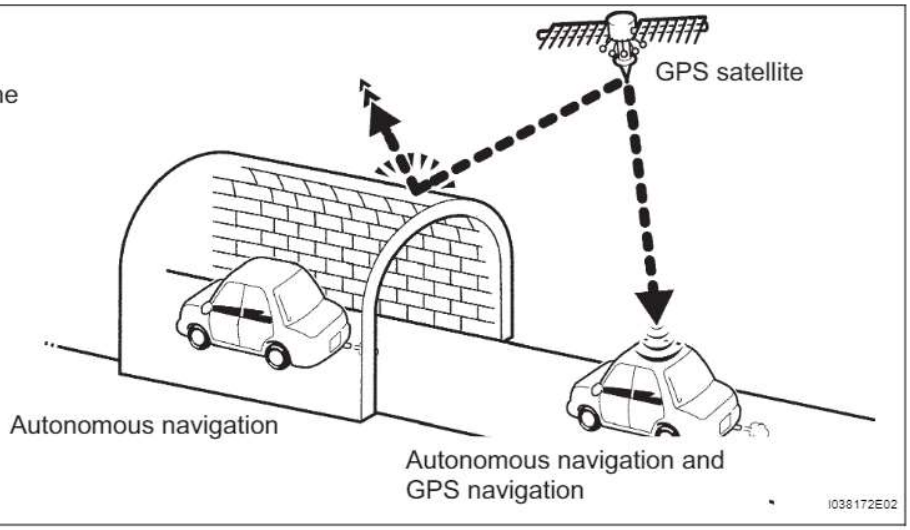


NS

Operation	Description
Vehicle Position Calculation	The navigation ECU calculates the current vehicle position (direction and current position) using the direction deviation signal from the gyro sensor and the running distance signal from the vehicle speed sensor and creates the driving route.
Map Display processing	The navigation ECU displays the vehicle track on the map by processing the vehicle position data, vehicle running track, and map data from the map disc.
Map Matching	The map data from the map disc is compared to the vehicle position and running track data. Then, the vehicle position is matched with the nearest road.
GPS Correction	The vehicle position is matched to the position measured by GPS. Then, the measurement position data from the GPS unit is compared with the vehicle position and running track data. If the position is widely different, the GPS measurement position is used.
Distance Correction	The running distance signal from the vehicle speed sensor includes the error caused by tire wear and slippage between the tires and road surface. Distance correction is performed to account for this. The navigation ECU automatically offsets the running distance signal to make up for the difference between it and the distance data of the map. The offset is automatically updated.

HINT:
The combination of autonomous and GPS navigation makes it possible to display the vehicle position even when the vehicle is in places where the GPS radio wave cannot receive a signal. When only autonomous navigation is used, however, the mapping accuracy may slightly decline.

Navigation performed even where the GPS radio wave does not reach.
- In a tunnel
- In an indoor parking lot
- Between tall buildings
- Under an overpass
- On a forest or tree-lined path

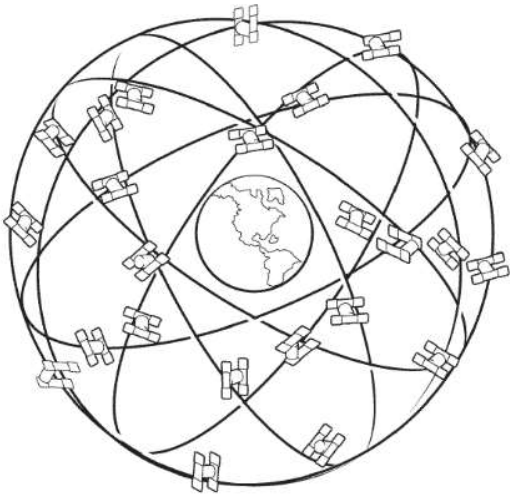


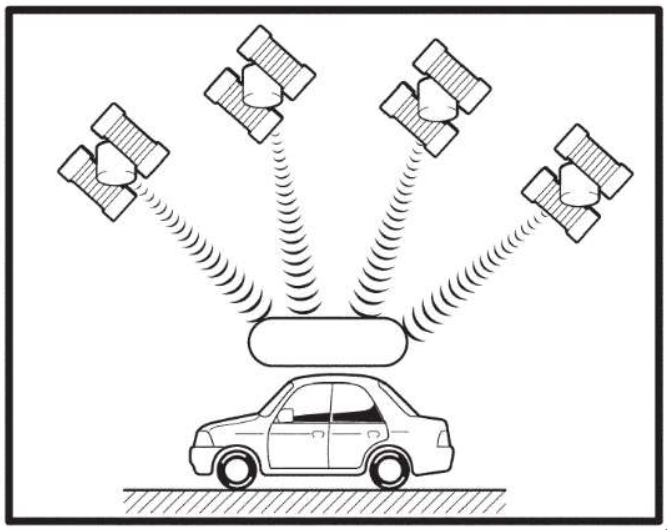
(b) Autonomous navigation
This method determines the relative vehicle position based on the running track determined by the gyro and vehicle speed sensors located in the navigation ECU.
(1) Gyro sensor
Calculates the direction by detecting angular velocity. It is located in the radio and navigation assembly.
(2) Vehicle speed sensor
Used to calculate the vehicle running distance.

NS

(c) GPS navigation (Satellite navigation)
This method detects the absolute vehicle position using radio wave from a GPS satellite.
* GPS satellites were launched by the U.S. Department of Defence for military purposes.

Current longitude/latitude/altitude is determined using the radio wave arrival time from four satellites.



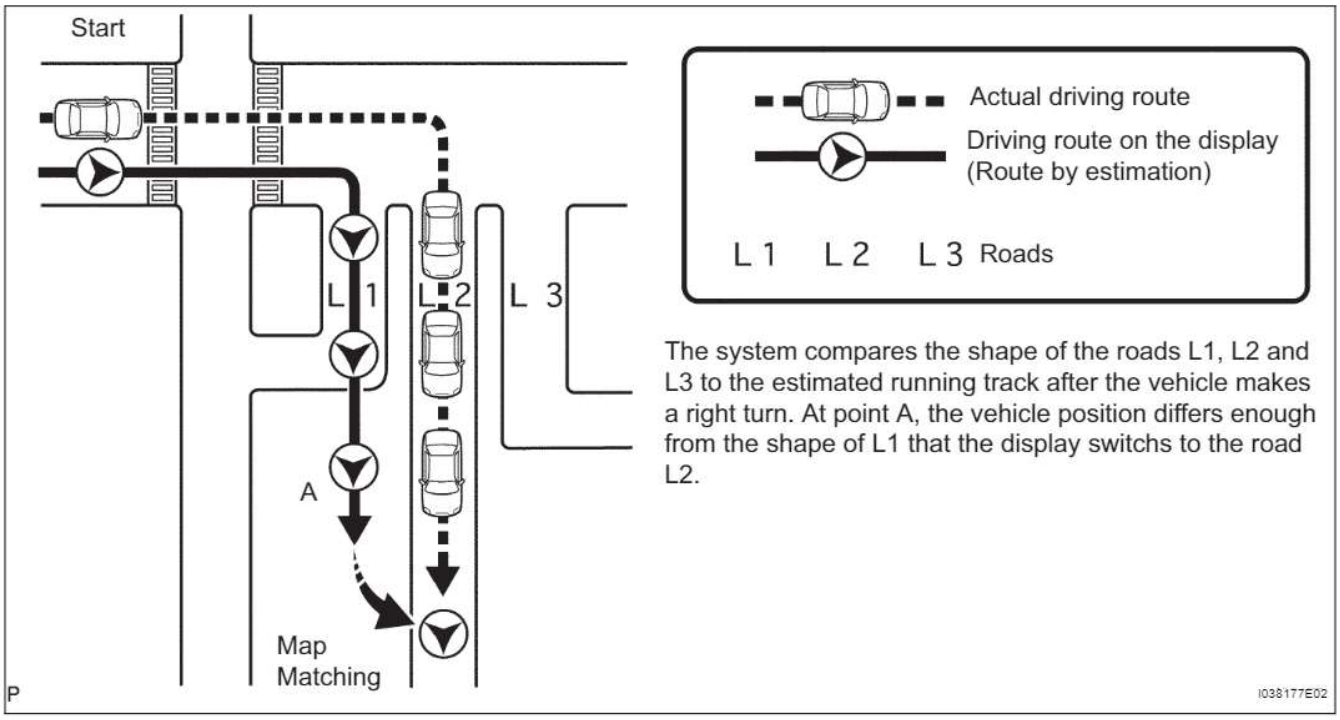


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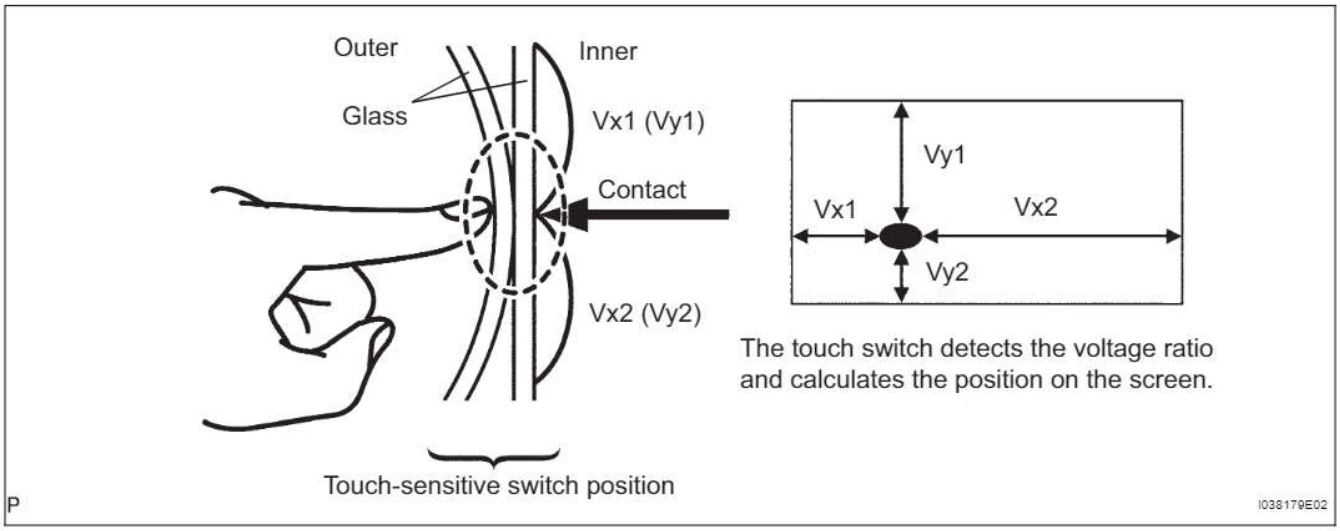
Number of satellites	Measurement	Description
2 or less	Measurement impossible	Vehicle position cannot be obtained because the number of satellites is not enough.
3	2-dimensional measurement is possible	Vehicle position is obtained based on the current longitude and latitude. (This is less precise than 3-dimensional measurement)
4	3-dimensional measurement is possible	Vehicle position is obtained based on the current longitude, latitude and altitude.

NS

(d) Map matching
The current driving route is calculated by autonomous navigation (according to the gyro sensor and vehicle speed sensor) and GPS navigation. This information is then compared with possible road shapes from the map data in the map disc and the vehicle position is set onto the most appropriate road.



(e) Touch switch
Touch switches are touch-sensitive (interactive) switches operated by touching the screen. When a switch is pressed, the outer glass bends in to contact the inner glass at the pressed position. By doing this, the voltage ratio is measured and the pressed position is detected.



NS

3. DVD (Digital Versatile Disc) player outline (for navigation map)

(a) The navigation ECU uses a laser pickup to read the digital signals recorded on a DVD.
HINT:
- Do not disassemble any part of the navigation system.
- Do not apply oil to the navigation system.
- Do not insert anything but a DVD into the navigation system.

CAUTION:
Because the navigation system uses an invisible laser beam, do not look directly at the laser pickup. Be sure to only operate the navigation as instructed.

4. CD (Compact Disc) player outline

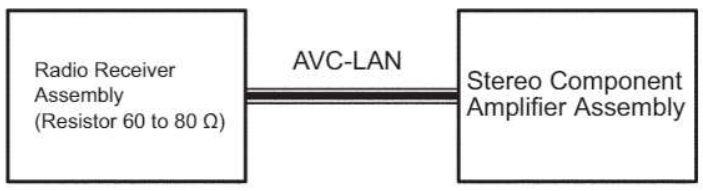
(a) A compact disc player uses a laser pickup to read digital signals recorded on a compact disc (CD). By converting the digital signals to analog, it can play music and other things. In general, CD players can play 4.7-inch (12 cm) or 3.2-inch (8 cm) discs.
HINT:
- Do not disassemble any part of the CD player.
- Do not apply oil to the CD player.
- Do not insert anything but a CD into the CD player.

CAUTION:
Because the CD player uses an invisible laser beam, do not look directly at the laser pickup. Be sure to only operate the player as instructed.

5. AVC-LAN Description

(a) What is AVC-LAN?
AVC-LAN, an abbreviation for "Audio Visual Communication Local Area Network", is a united standard developed by the manufacturers in affiliation with Toyota Motor Corporation. This standard pertains to audio and visual signals as well as switch and communication signals.

Example:



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(b) Purpose:
Recently, car audio systems have rapidly developed and the functions vastly changed. The conventional car audio system is being integrated with multi-media interfaces similar to those in navigation systems. At the same time, customers are demanding higher quality from their audio systems. This is merely an overview of the standardization background. The specific purposes are as follows.
(1) To solve sound problems, etc. caused by using components of different manufacturers through signal standardization.
(2) To allow each manufacturer to concentrate on developing products they do best. From this, reasonably priced products can be produced.

(c) Above is the purpose of the AVC-LAN. Under this standardization, system errors caused by a new product development should not occur.
HINT:
- If a +B or GND short is detected in the AVC-LAN circuit, communication is interrupted and the audio system will stop functioning.
- If an audio system is equipped with a navigation system, the multi-display unit acts as the master unit. If the navigation system is not equipped, the audio head unit acts as the master unit instead. If the radio and navigation assembly is equipped, it is the master unit.
- The radio and navigation assembly provides resistance to make communication possible.
- The car audio system with an AVC-LAN circuit has a diagnostic function.
- Each component has a specified number (3-digit) called a physical address. Each function has a number (2-digit) called a logical address.

6. Communication system outline

(a) Components of the audio system communicate with each other via the AVC-LAN.

(b) The master component of the AVC-LAN is a radio and navigation assembly with a 60 to 80 Ωresistor. This is essential for communication.

(c) If a short circuit or open circuit occurs in the AVC-LAN circuit, communication is interrupted and the audio system will stop functioning.

NS

7. Diagnostic function outline

(a) The audio system has a diagnostic function (the result is indicated on the master unit).

(b) A 3-digit hexadecimal component code (physical address) is allocated to each component on the AVC-LAN. Using this code, the component in the diagnostic function can be displayed.

HOW TO PROCEED WITH TROUBLESHOOTING

1	VEHICLE BROUGHT INTO A WORKSHOP

NEXT

2	DIAGNOSTIC QUESTIONING AND SYMPTOM CONFIRMATION

(a) Ask the customer about symptoms and confirm malfunctions. Fill out the Customer Problem Analysis check sheet.

- THE SCREEN DISPLAYS NOTHING (GO TO STEP 6, PROCEED TO "BLACK SCREEN (NO IMAGE APPEARS ON NAVIGATION/ AUDIO SCREEN)")
- OTHER SYMPTOMS (GO TO STEP 3)

3	CHECK MULTIPLEX COMMUNICATION SYSTEM (BEAN)

(a) Use the intelligent tester to check for normal function of the body multiplex communication system.

- A CODE IS OUTPUT (PROCEED TO "BODY MULTIPLEX COMMUNICATION SYSTEM")
- A CODE IS NOT OUTPUT (GO TO STEP 4)

4	CONFIRM THE SYSTEM NORMAL CONDITION

- APPLICABLE (THIS IS NOT A MALFUNCTION.)
- NOT APPLICABLE (GO TO STEP 5)

5	CHECK THE DIAGNOSTIC TROUBLE CODES

HINT:

- If the system cannot enter the diagnosis mode, inspect each AVC-LAN communication signal and repair or replace problem parts.
- Even if the malfunction symptom is not confirmed, check for diagnostic trouble codes. This is because the system stores past diagnostic trouble codes.
- Refer to the detailed description on the diagnostic screen, as necessary (See page NS-23).

NS

- Check and clear the past diagnostic trouble code. Check the diagnostic trouble code and inspect the area the code indicates.

A CODE IS OUTPUT (GO TO STEP 6)

A CODE IS NOT OUTPUT (GO TO STEP 7)

6	DIAGNOSTIC TROUBLE CODE CHART

(a) Find the output code on the diagnostic trouble code chart.

NEXT → OUTPUT THE DIAGNOSTIC TROUBLE CODE (GO TO STEP 9)

7	PROBLEM SYMPTOMS TABLE

(a) Find the applicable symptom code in the problem symptoms table.
HINT:
If the symptom does not recur and no code is output, perform the symptom reproduction method (See page IN-26).

THERE IS AN APPLICABLE SYMPTOM CODE IN THE TABLE (GO TO STEP 9)

THERE IS NO APPLICABLE SYMPTOM CODE IN THE TABLE (GO TO STEP 8)

8	CHECK THE ECU TERMINAL ARRANGEMENT BASED ON THE MALFUNCTION SYMPTOM

NEXT

9	CHECK THE CIRCUIT

(a) Adjust, repair or replace as necessary.

NEXT

NS

10	RECHECK THE DIAGNOSTIC TROUBLE CODE

HINT:
After deleting the DTC, recheck the diagnostic trouble code.

NEXT

11	PERFORM CONFIRMATION TEST

NEXT

END

IDENTIFICATION OF NOISE SOURCE

1. Radio Description

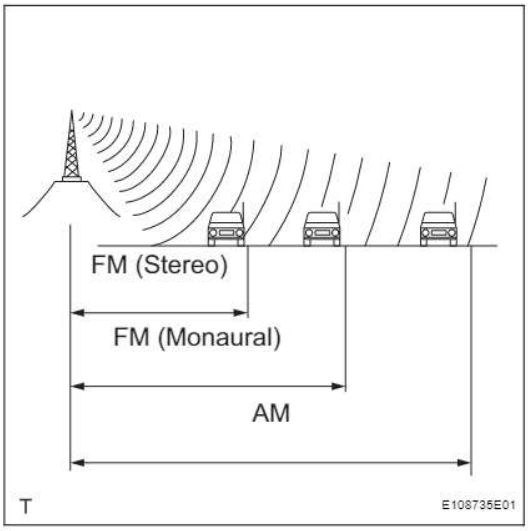
(a) Radio frequency band

(1) Radio broadcasts use the radio frequency bands shown in the table below.

Frequency	30 kHz	300 kHz	30 MHz	30 MHz	300 MHz
Designation	LF	MF	HF	VHF	
Radio Wave		AM ⟷		FM ⟷	
Modulation	Amplitude modulation			Frequency modulation	

LF: Low Frequency MF: Medium Frequency HF: High Frequency VHF: Very High Frequency

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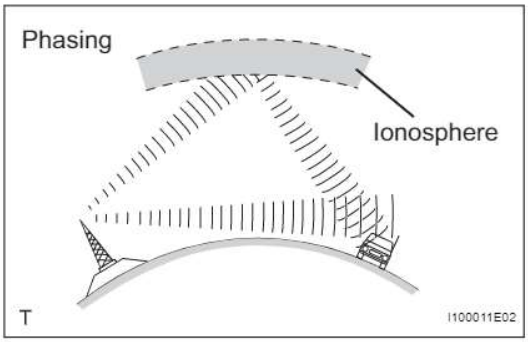
(b) Service area

(1) The service areas of AM and FM broadcasts are vastly different. Sometimes an AM broadcast can be received very clearly but an FM stereo cannot. FM stereo has the smallest service area, and is prone to pick up static and other types of interference such as noise.

(c) Radio reception problems

HINT:

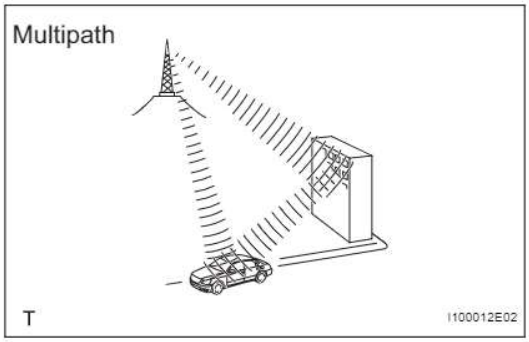
In addition to static, other problems such as "phasing", "multipath", and "fade out" exist. These problems are not caused by electrical noise, but by the radio signal propagation method itself.



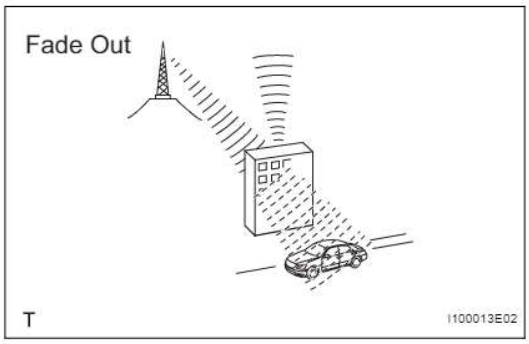
(1) Phasing

AM broadcasts are susceptible to electrical interference and another kind of interference called phasing. Occurring only at night, phasing is the interference created when a vehicle receives 2 radio wave signals from the same transmitter. One signal is reflected off the ionosphere and the other signal is received directly from the transmitter.

NS



(2) Multipath
Multipath is a type of interference created when a vehicle receives 2 radio wave signals from the same transmitter. One signal is reflected off buildings or mountains and the other signal is received directly from the transmitter.



(3) Fade out
Fade out is caused by objects (buildings, mountains, and other such large obstacles) that deflect away part of a signal, resulting in a weaker signal when the object is between the transmitter and vehicle. High frequency radio waves, such as FM broadcasts, are easily deflected by obstructions. Low frequency radio waves, such as AM broadcasts, are much more difficult to deflect.

(d) Noise problem
Technicians must have a clear understanding about each customer's noise complaints. Use the following table to diagnose noise problems.

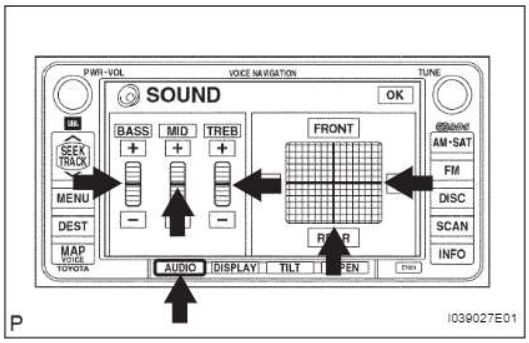
Radio Frequency	Noise Occurrence Condition	Presumable Cause
AM	Noise occurs in a specified area	Foreign noise
AM	Noise occurs when listening to an intermittent broadcast	An identical program transmitted from multiple towers can cause noise where the signals overlap
FM	Noise occurs only at night	Music beat from a distant broadcast
FM	Noise occurs while driving in a specified area	Multipath or phasing noise resulting from a change in FM frequency

HINT:
If the noise does not match the examples above, refer to the descriptions about phasing and multipath.

NS

No Sound can be Heard from Speakers (Audio is Mute)

1	CHECK AUDIO SETTING



(a) Enter the sound adjustment screen by pressing the "SOUND" switch on the AUDIO display.

(b) Set volume, fader, and balance to the initial values and check that sound is normal.

OK:

Audio returns to normal.

HINT:

Sound quality adjustment items vary depending on the type of the amplifier.

OK → **END**

NG

PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

NS

CD cannot be Ejected

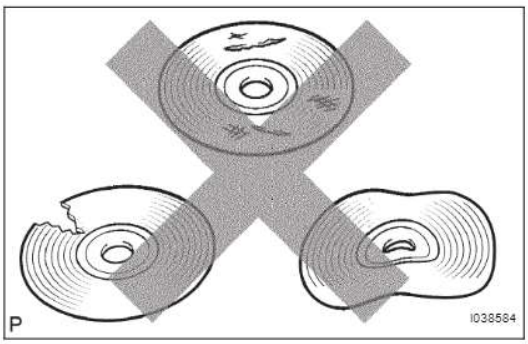
1	CHECK RADIO AND NAVIGATION ASSEMBLY

(a) Turn the ignition switch to the ACC position.
(b) Keep pressing the "DISC" eject switch for 5 seconds and check if the disc is ejected by forced ejection.
OK:
The disc is ejected.

NG → **PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE**

OK

2	CHECK CD



(a) Check that the CD is not deformed or cracked.
OK:
No deformations or cracks appear on the CD.

NG → **REPLACE CD**

OK

3	CHECK RADIO AND NAVIGATION ASSEMBLY

(a) Insert another CD and check if it is ejected.
OK:
The disc is ejected.

NG → **ADJUST RADIO AND NAVIGATION ASSEMBLY**

OK

NS **NORMAL OPERATION**

NAVIGATION SYSTEM

PRECAUTION

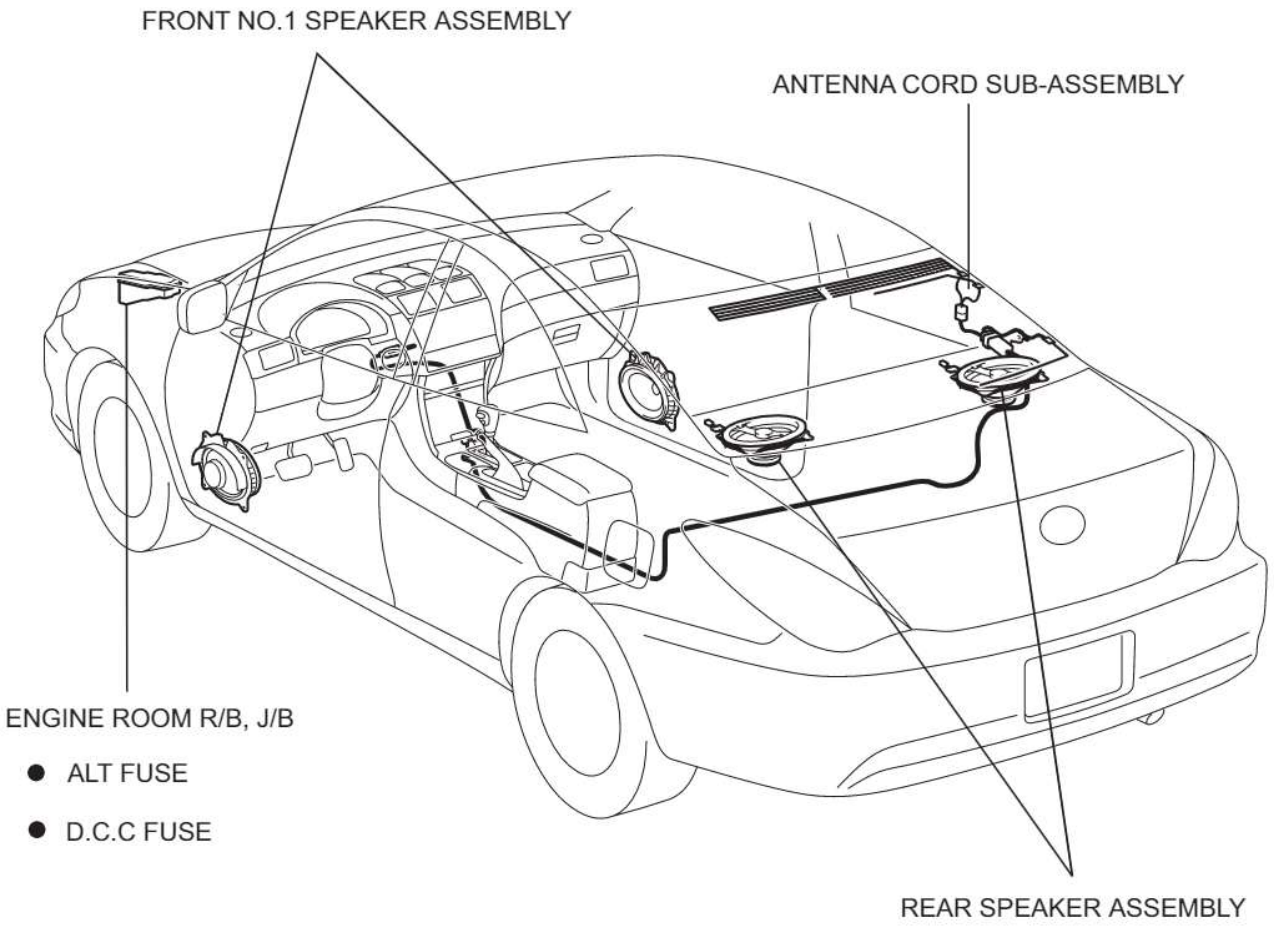
NOTICE:
When disconnecting the negative (-) battery terminal, initialize the following systems after the terminal is reconnected.

System Name	See procedure
Power Window Control System	IN-24
Sliding Roof System	IN-24

NS

PARTS LOCATION

COUPE:

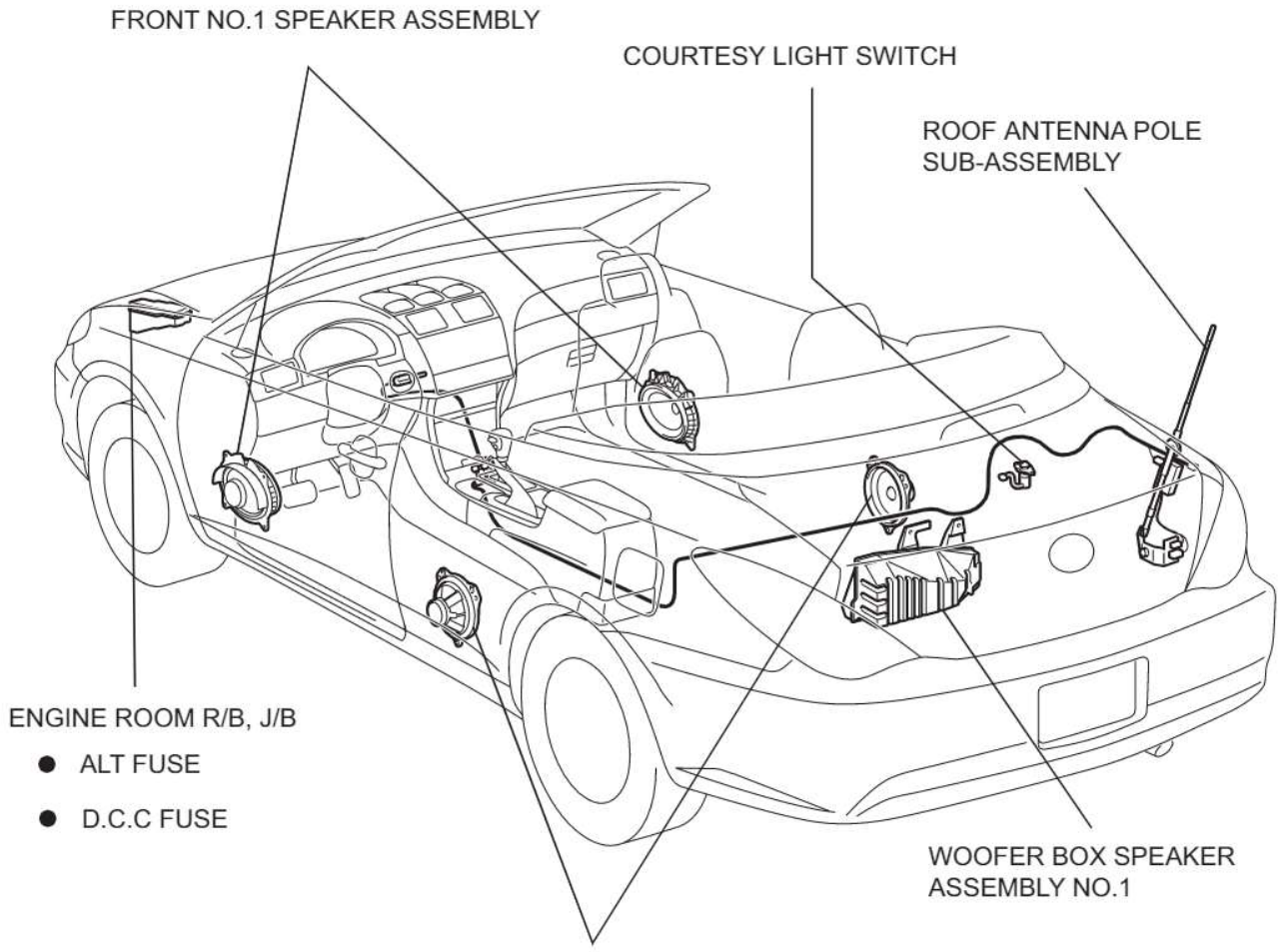


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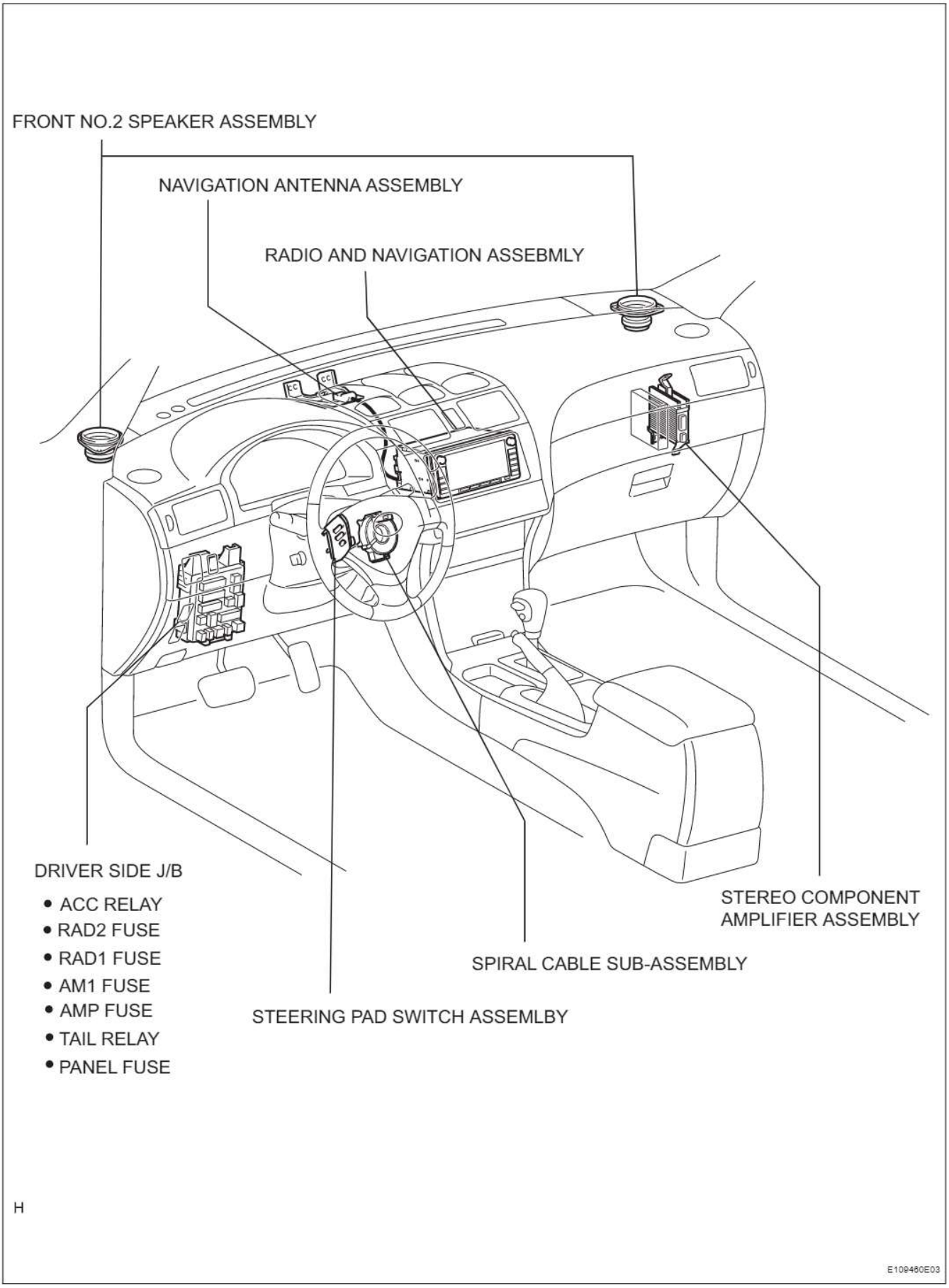
CONVERTIBLE:



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NS


FRONT NO.2 SPEAKER ASSEMBLY
NAVIGATION ANTENNA ASSEMBLY
RADIO AND NAVIGATION ASSEBMLY
DRIVER SIDE J/B
• ACC RELAY
• RAD2 FUSE
• RAD1 FUSE
• AM1 FUSE
• AMP FUSE
• TAIL RELAY
• PANEL FUSE
STEERING PAD SWITCH ASSEMLBY
SPIRAL CABLE SUB-ASSEMBLY
STEREO COMPONENT AMPLIFIER ASSEMBLY
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CD cannot be Inserted / Played or CD is Ejected Right After Insertion

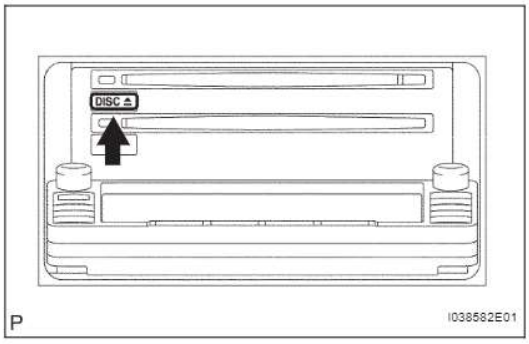
1	CHECK CD

(a) Check if another normal audio CD can be inserted.
(1) Check if a normal audio CD that has no cracks, scratches, deformations, dirt, or other defects can be inserted.
OK:
The CD is inserted correctly.
HINT:
- Translucent or deformed CDs cannot be played.
- CD-ROMs (even those with music) and CD-R discs cannot be played.
- A copy protected CD should not be used.
- An adaptor is not necessary to play 3.2 inch (8 cm) CDs.

NG → **REPLACE CD**

OK

2	CHECK CD INSERTION

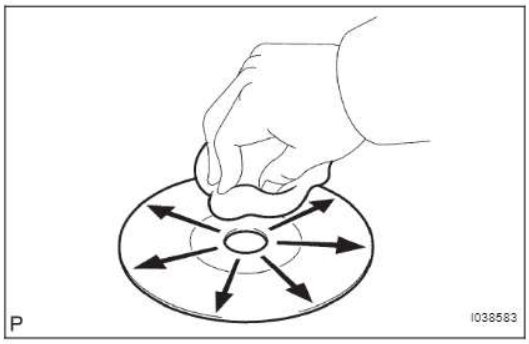


(a) Check that a CD is correctly inserted.
(1) Check that the "DISC" indicator near the disc slot comes on.
(2) Check that the CD has not been inserted upside down.
OK:
CD is inserted correctly.

NG → **INSERT CD CORRECTLY**

OK

3	CHECK CD



(a) Check for dirt on the CD surface.
OK:
The CD is clean.
HINT:
If dirt is on the CD surface, wipe it with a soft cloth from inside to outside in a radial direction.
NOTICE:
Do not use a conventional record cleaner or anti-static preservative.

NG → **CLEAN THE CD**

NS

OK

4	CHECK USING ANOTHER CD

(a) Check using another CD.
(1) Check if the problem recurs using another CD.
OK:
The problem does not recur.

OK → REPLACE CD

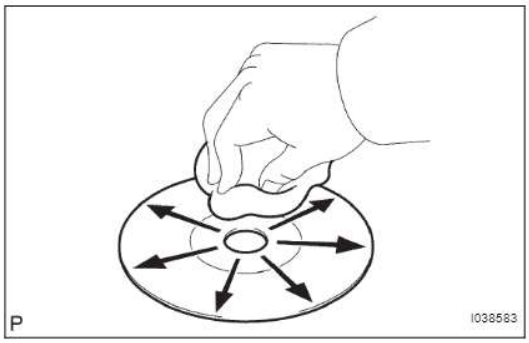
NG

PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

NS

CD Sound Skips

1 CHECK CD

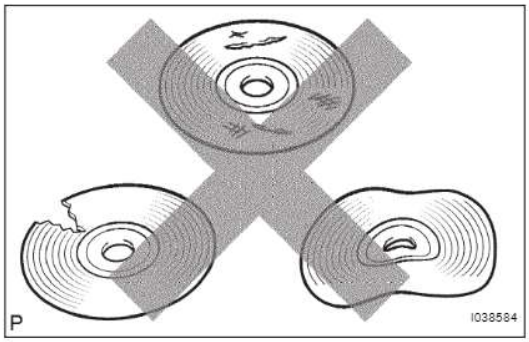


(a) Check for dirt on the CD surface.
OK:
The CD is clean.
HINT:
If dirt is on the CD surface, wipe it with a soft cloth from inside to outside in a radial direction.
NOTICE:
Do not use a conventional record cleaner or anti-static preservative.

NG → **CLEAN CD**

OK

2 CHECK CD



(a) Check that the CD is not deformed or cracked.
OK:
No deformations or cracks appear on the CD.

NG → **REPLACE CD**

OK

3 CHECK USING ANOTHER CD

(a) Check using another CD.
(1) Check if the problem recurs using another CD.
OK:
The problem does not recur.

OK → **REPLACE CD**

NG

4 CHECK RADIO AND NAVIGATION ASSEMBLY

(a) Check the radio and navigation assembly installation condition.
(1) Check that the radio and navigation assembly is properly installed (See page NS-120).

NS

OK:
Radio and navigation assembly is properly installed.

NG → REINSTALL RADIO AND NAVIGATION ASSEMBLY PROPERLY

OK

PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

Radio Broadcast cannot be Received (Bad Reception)

1	CHECK IF RADIO AUTO-SEARCH FUNCTIONS PROPERLY

(a) Check if the radio auto-search functions properly.
(1) Perform the auto-search of the radio and check that it functions normally.
OK:
The radio auto-search functions properly.

OK → **REPLACE RADIO AND NAVIGATION ASSEMBLY**

NG

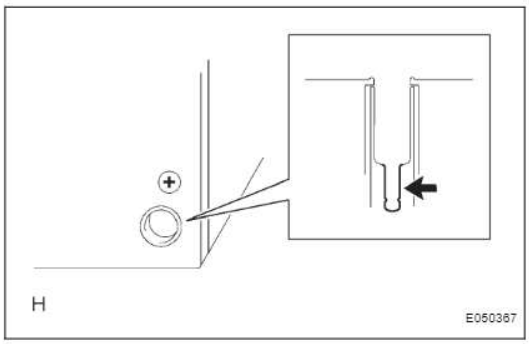
2	CHECK OPTIONAL COMPONENT

(a) Check optional component (sun shade film, telephone antenna, etc.).
(1) Check whether or not any optional component such as the sun shade film and the telephone antenna is installed.
OK:
Optional component is installed.

OK → **EFFECT FROM OPTIONAL COMPONENT**

NG

3	INSPECT RADIO AND NAVIGATION ASSEMBLY



(a) Preparation for check
(1) Remove the antenna plug of the radio and navigation assembly.
(b) Noise Check
(1) With the radio and navigation assembly connector connected, turn the ignition switch to the ACC position.
(2) Turn on the radio and choose the AM mode.
(3) Place a screwdriver or a piece of metal such as thin wire on an antenna jack of the radio and navigation assembly and check that the noise is heard from the speaker.
OK:
Noise occurs.

NG → **REPLACE RADIO AND NAVIGATION ASSEMBLY**

OK

NS

4	CHECK ANTENNA TYPE

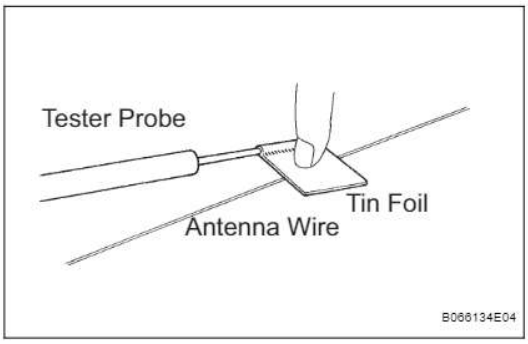
(a) Choose type to be inspected.

Type	Go to step
Glass printed type antenna	A
Roof type antenna	B

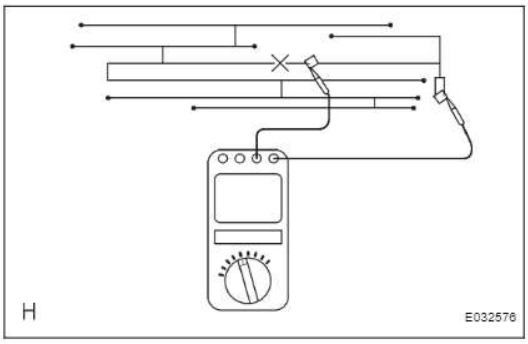
B → Go to step 8

A

5	CHECK ANTENNA ASSEMBLY



(a) Check antenna assembly.



(b) Check for continuity of the antenna.
HINT:
Check the continuity, at the center of each antenna wire, as shown in the illustration.
NOTICE:
When cleaning the glass, wipe it in the direction of the wire with a soft dry cloth. Take care not to damage the wire. Do not use detergents or glass cleaners with abrasive ingredients. When measuring voltage, wind a piece of tin foil around the top of the negative probe and press the foil against the wire with your finger, as shown in the illustration.
OK:
There is continuity in the antenna.

NG → REPAIR ANTENNA ASSEMBLY

OK

NS

6	CHECK ANTENNA CORD SUB-ASSEMBLY

(a) Remove the antenna plug of the radio and navigation assembly and antenna assembly.
(b) Measure the resistance between the antenna assembly and radio and navigation assembly to check for an open circuit in the antenna cord sub-assembly.
Standard:
Below 1 Ω

(c) Measure the resistance between the antenna cord sub-assembly and body ground to check for a short circuit in the antenna cord sub-assembly.
Standard:
10 kΩ or higher

NG → **REPLACE ANTENNA CORD SUB-ASSEMBLY**

OK

7	REPLACE AMPLIFIER ANTENNA ASSEMBLY

(a) Replace the amplifier antenna assembly and check if it operates normally.
OK:
The amplifier antenna assembly operates normally.

OK → **NORMAL OPERATION**

NG

REPLACE RADIO AND NAVIGATION ASSEMBLY

8	CHECK ANTENNA ASSEMBLY

(a) Check that the antenna is securely installed.
OK:
The antenna is installed properly.

OK → **Go to step 6**

NG

INSTALL ANTENNA ASSEMBLY PROPERLY

NS

Black Screen (No Image Appears on Navigation and Audio Screen)

1 CHECK DISPLAY SETTING

(a) Check that the display is not in "Screen OFF" mode.
OK:
The display setting is not in "Screen OFF" mode.

NG → **CHANGE SCREEN TO "SCREEN ON" MODE**

OK ↓

2 CHECK IMAGE QUALITY SETTING

(a) Check that the screen color quality can be set.
OK:
Setting is possible.

NG → **Go to step 3**

OK ↓

PRESS PANEL SWITCH "DISPLAY" AND SET SCREEN COLOR QUALITY TO NORMAL

3 CHECK CABIN

(a) Check that condensation is not likely to occur in the cabin, and that the temperature is not high or extremely low in the cabin.
HINT:
- A humid cabin and a rapid change in temperature may lead to condensation. Condensation in the cabin may short circuit the screen.
- The appropriate temperature cabin is 20 to 30°C (68 to 86°F).

OK:
Condensation is not likely and temperature is not high or extremely low.

NG → **SET CABIN TO APPROPRIATE TEMPERATURE**

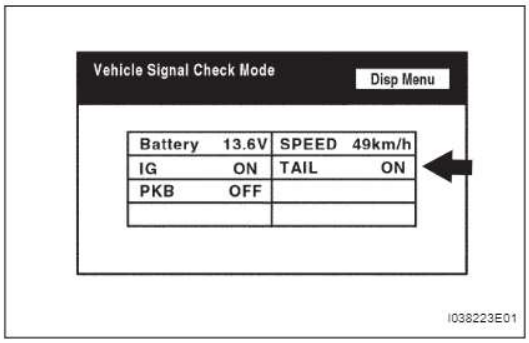
NS

OK ↓

PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

Illumination for Panel Switch does not Come on with Tail Switch ON

1 CHECK VEHICLE SIGNAL (DISPLAY CHECK MODE)



(a) Enter the "Display Check" mode (Vehicle Signal Check Mode) (See page NS-19).

(b) Check that the display changes between ON and OFF according to the light control switch operation.

OK

Light Control Switch	Display
TAIL or ON	ON
OFF	OFF

HINT:
This display is updated once per second. As a result, it is normal for the display to lag behind the actual change in the switch.

OK → REPLACE RADIO AND NAVIGATION

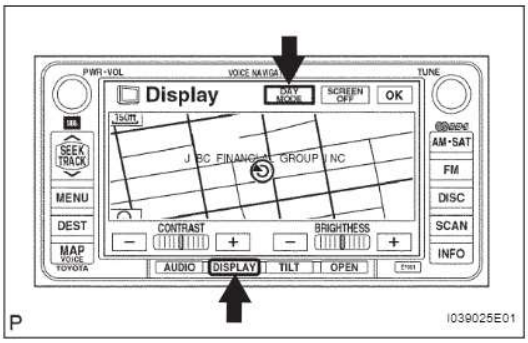
NG

PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

NS

Display does not DIM (Night Screen) with Tail Switch ON

1 CHECK IMAGE QUALITY SETTING

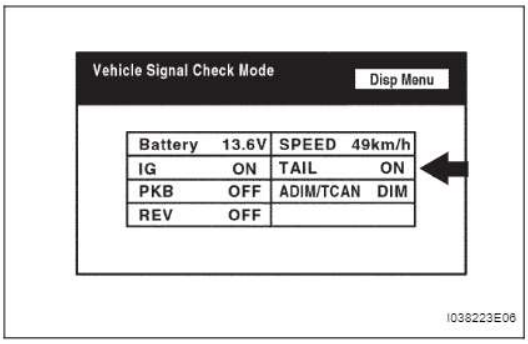


(a) Enter the display adjustment screen by pressing the "DISPLAY" switch.
(b) Turn the light control switch to the TAIL position.
(c) Check if "DAY MODE" on the display adjustment is ON.
OK:
"DAY MODE" is ON.

OK → **TURN FORCED "DAY MODE" SETTING OFF**

NG

2 DISPLAY CHECK MODE (VEHICLE SIGNAL CHECK MODE)



(a) Enter the "Display Check" mode (Vehicle Signal Check Mode) (See page NS-19).
(b) Turn the light control switch to the TAIL, HEAD or OFF position.
Standard

Light Control Switch	Display
TAIL or HEAD	ON
OFF	OFF

HINT:
The display is updated once per second. As a result, it is normal for the display to lag behind the actual change in the switch.

OK → **REPLACE RADIO AND NAVIGATION ASSEMBLY**

NG

PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

NS

Panel Switches do not Function

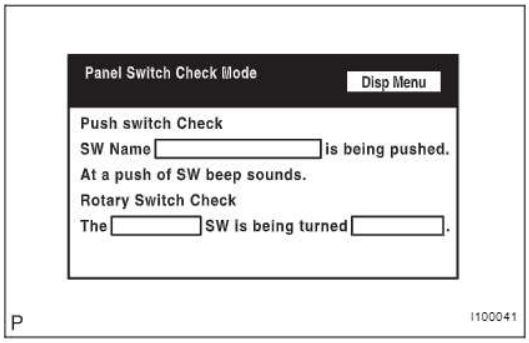
1	CHECK PANEL SWITCH

(a) Check for foreign matter around the switches that might prevent operation.
OK:
No foreign matter is found.

NG → **REMOVE ANY FOREIGN MATTER FOUND**

OK

2	CHECK PANEL SWITCH (DISPLAY CHECK MODE)



(a) Enter the "Display Check" mode (Panel Switch Check Mode) (See page NS-19).
(b) Operate the abnormal switch and check if the switch name and status are correctly displayed.
OK:
The switch name and status are correctly displayed as operated.

NG → **PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE**

OK

REPLACE RADIO AND NAVIGATION ASSEMBLY

NS

Touch Panel Switch does not Function

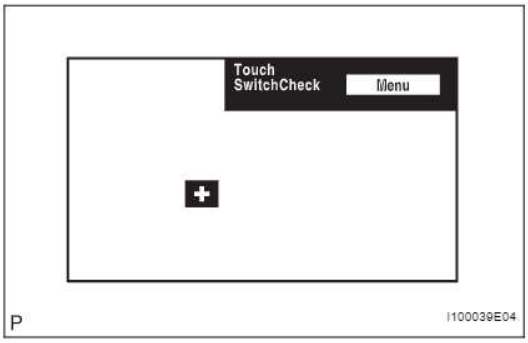
1 CHECK TOUCH PANEL

(a) Check for foreign matter on the display.
OK:
The display is clean.

NG → **CLEAN DISPLAY AND RECHECK TOUCH PANEL**

OK

2 CHECK TOUCH SWITCH (DISPLAY CHECK MODE)



(a) Enter the "Display Check" mode (Touch Switch Check) (See page NS-19).
(b) Touch the display in the area where the switch malfunction occurs.
OK:
A "+" mark appears at the touched position.

NG → **PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE**

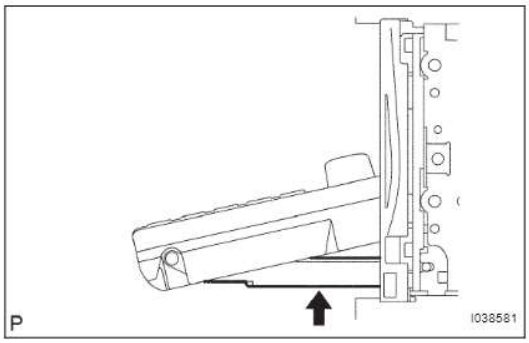
OK

REPLACE RADIO AND NAVIGATION ASSEMBLY

NS

Display Panel does not Open, Tilt or Tilts Improperly

1	CHECK RADIO AND NAVIGATION ASSEMBLY



(a) Check for foreign matter or obstructions caught in the moving parts of the panel.
OK:
No obstruction or foreign matter is found.

NG → **REMOVE ANY OBSTRUCTION OR FOREIGN MATTER FOUND**

OK

2	OPERATION CHECK

(a) Check if the navigation and audio systems function properly.
OK:
Navigation and audio systems function properly.

OK → **REPLACE RADIO AND NAVIGATION ASSEMBLY**

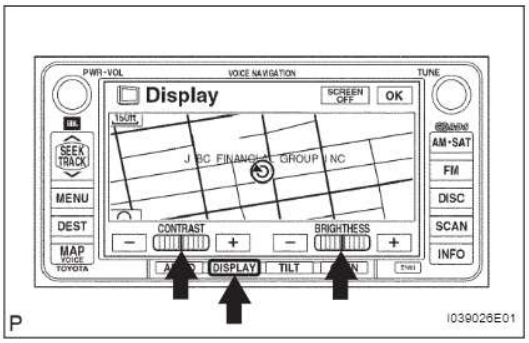
NG

PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

NS

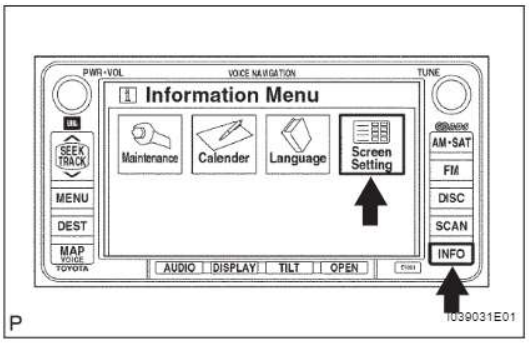
Screen Flicker or Color Distortion

1 CHECK DISPLAY SETTING

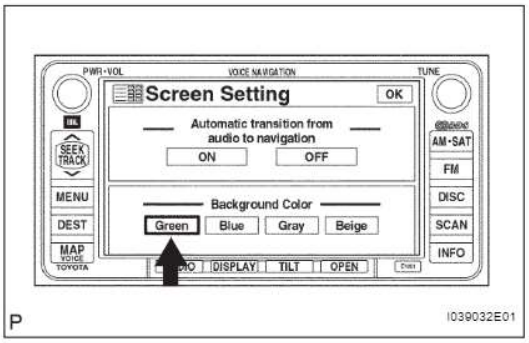


(a) Enter the display adjustment screen by pressing the "DISPLAY" switch.

(b) Reset display settings (contrast, brightness) and check if the screen appears normal.



(c) Press the "INFO" switch and then the "Screen Setting" switch.



(d) Set the "Background Color" to "Green" (initial setting) and check if it is normal.

OK:

Returns to normal.

OK	END

NG

2 CHECK CABIN

(a) Check if the cabin temperature is -20°C (-4.0°F) or less.

OK:

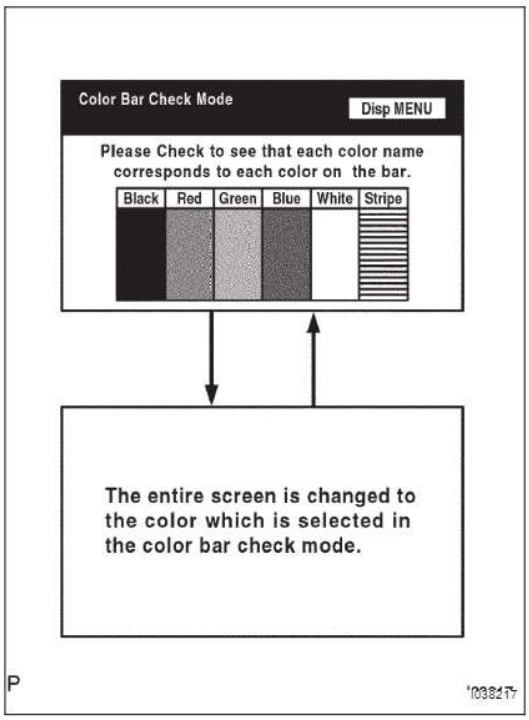
Cabin is warmer than -20°C (-4.0°F).

NG	HEAT THE CABIN AND RECHECK THE TEMPERATURE

OK

NS

3	DISPLAY CHECK MODE (COLOR BAR CHECK MODE)

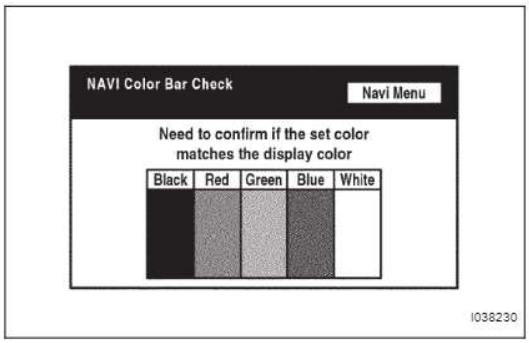


(a) Enter the "Display Check" mode (Color Bar Check Mode) (See page NS-19).
(b) Check that color bars match the displayed names.
OK:
Color bars match the displayed names.

NG → **REPLACE RADIO AND NAVIGATION ASSEMBLY**

OK

4	NAVIGATION CHECK MODE (NAVI COLOR BAR CHECK)



(a) Enter the "Navigation Check" mode (NAVI Color Bar Check) (See page NS-21).
(b) Check that color bars match the displayed names.
OK:
Color bars match the displayed names.

NG → **REPLACE RADIO AND NAVIGATION ASSEMBLY**

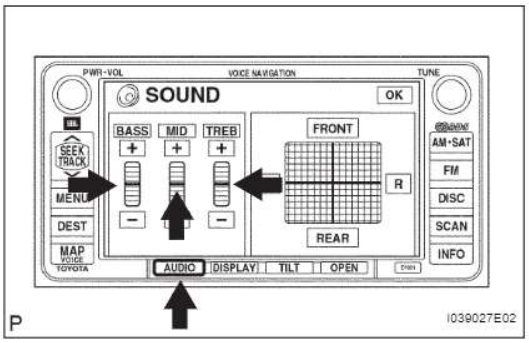
OK

PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

NS

Poor Sound Quality in All Modes (Low Volume)

1	CHECK AUDIO SETTINGS



(a) Enter the sound adjustment screen by pressing the "SOUND" switch on the AUDIO display.

(b) Set "BASS", "MID" and "TREB" to the initial values and check if sound is normal.

OK:

Returns to normal.

HINT:

Sound quality adjustment items vary depending on the type of the amplifier.

OK → END

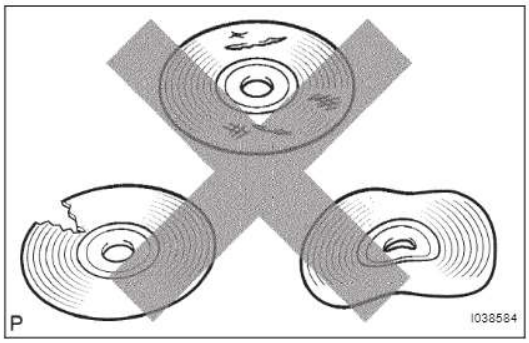
NG

PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

NS

MAP Disc cannot be Inserted

1	CHECK MAP DISC

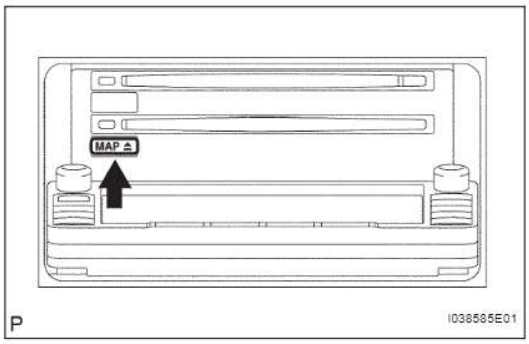


(a) Check that the map disc is not deformed or cracked.
OK:
No deformations or cracks appear on the map disc.

NG → **REPLACE MAP DISC**

OK

2	CHECK RADIO AND NAVIGATION ASSEMBLY



(a) Check if the "MAP" indicator near the disc slot is on.
OK:
It is not on.

NG → **PRESS EJECT SWITCH TO EJECT DISC**

OK

PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

NS

MAP Disc cannot be Ejected

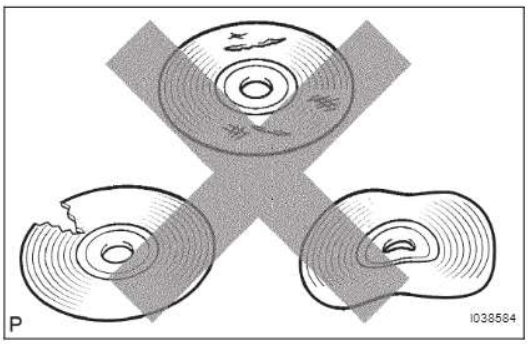
1	CHECK RADIO AND NAVIGATION ASSEMBLY

(a) Turn the ignition switch to the ACC position.
(b) Keep pressing the "MAP" eject switch for 5 seconds and check if the disc is ejected by forced ejection.
OK:
The disc is ejected.

NG → **PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE**

OK

2	CHECK MAP DISC



(a) Check that the map disc is not deformed or cracked.
OK:
No deformations or cracks appear on the map disc.

NG → **REPLACE MAP DISC**

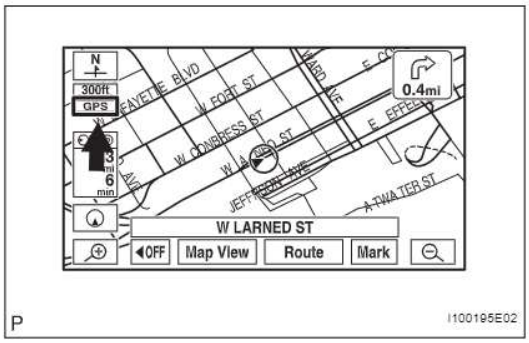
OK

NORMAL OPERATION

NS

Vehicle Position Mark Deviates Greatly

1 CHECK GPS MARK

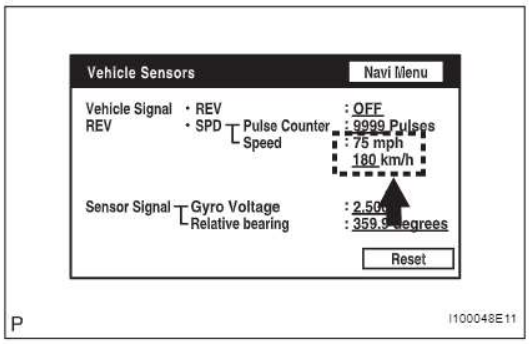


(a) Check that the GPS mark is displayed.
OK:
GPS mark is displayed.

NG → **GO TO "GPS MARK IS NOT DISPLAYED" IN PROBLEM SYMPTOMS TABLE**

OK

2 CHECK VEHICLE SENSOR (NAVIGATION CHECK MODE)

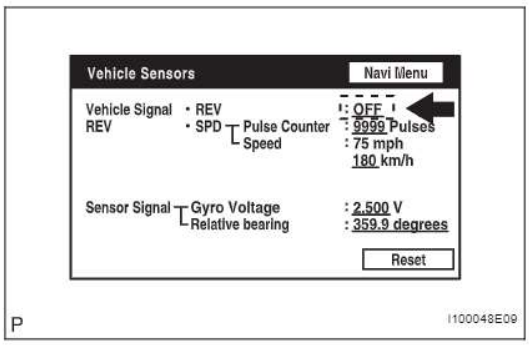


(a) Enter the "Navigation Check" mode (Vehicle Sensors) (See page NS-21).
(b) While driving the vehicle, compare the "Speed" indicator to the reading on the speedometer. Check that these readings are almost equal.
OK:
The readings are almost equal.

NG → **GO TO "SPEED SIGNAL CIRCUIT" IN FLOW CHART**

OK

3 CHECK VEHICLE SENSOR (NAVIGATION CHECK MODE)



(a) Check that the display changes between ON and OFF according to the shift lever operation (P and R).
OK

Shift Lever Position	Display
P	OFF
R	ON

HINT:
The display is updated once per second. It is normal for the display to lag behind the actual switch operation.

NG → **GO TO "REVERSE SIGNAL CIRCUIT" IN PROBLEM SYMPTOMS TABLE**

NS

OK

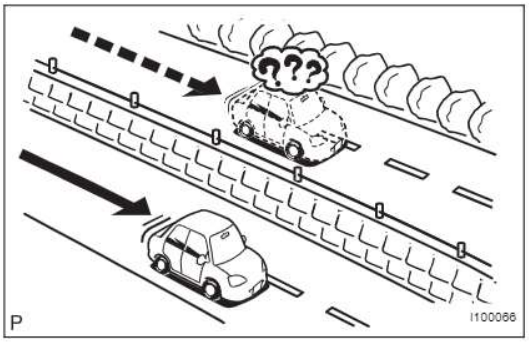
PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

SYSTEM NORMAL CONDITION CHECK

1. CHECK NORMAL CONDITION

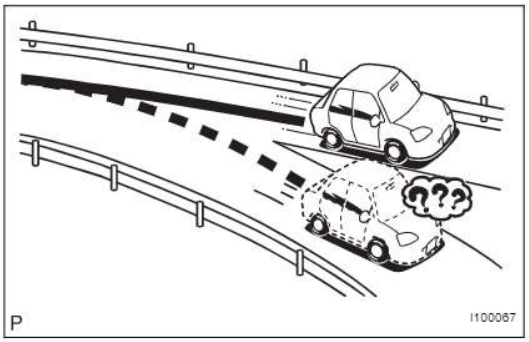
(a) If the symptom is applicable to any of the following, it is intended behavior, and not a malfunction.

Symptom	Answer
A longer route than expected is chosen.	Depending on the road conditions, the navigation ECU (radio and navigation assembly) may determine that a longer route is quicker.
Even when distance priority is high, the shortest route is not shown.	Some paths may not be advised due to safety concerns.
When the vehicle is put into motion immediately after the engine starts, the navigation system deviates from the actual position.	If the vehicle starts before the navigation system activates, the system may not react.
When running on certain types of roads, especially new roads, the vehicle position deviates from the actual position.	When the vehicle is driving on new roads not available on the map disc, the system attempts to match it to another nearby road, causing the position mark to deviate.

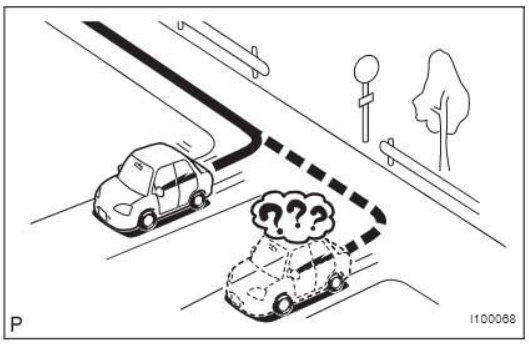


(b) The following symptoms are not a malfunction, but are caused by errors inherent in the GPS, gyro sensor, speed sensor, and built-in navigation ECU.

(1) The current position mark may be displayed on a nearby parallel road.

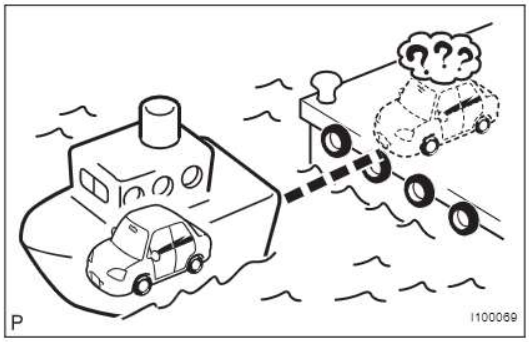


(2) Immediately after a fork in the road, the current vehicle position mark may be displayed on the wrong road.

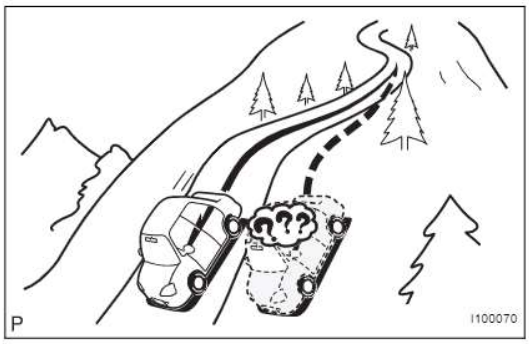


(3) When the vehicle turns right or left at an intersection, the current vehicle position mark may be displayed on a nearby parallel road.

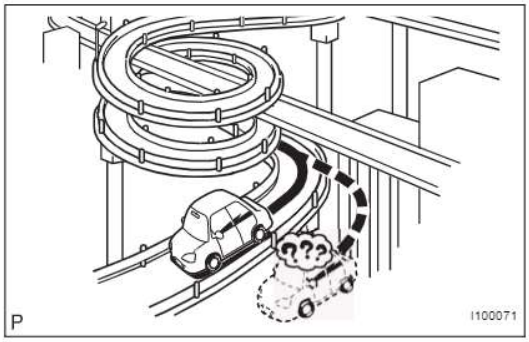
NS



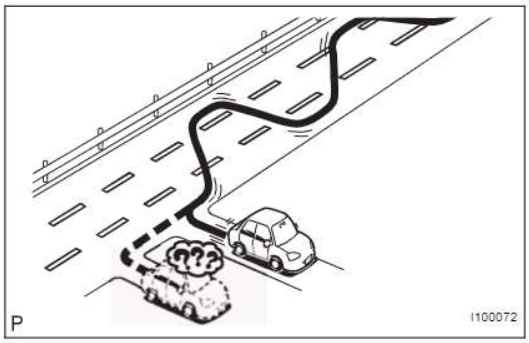
(4) When the vehicle is carried, such as on a ferry, and the vehicle itself is not running, the current vehicle position mark may be displayed in the position where the vehicle was until a measurement can be performed by GPS.



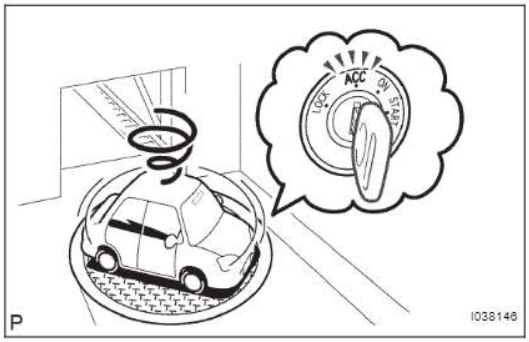
(5) When the vehicle runs on a steep hill, the current vehicle position mark may deviate from the correct position.



(6) When the vehicle makes a continuous turn of 360, 720, 1,080, etc. degrees, the current vehicle position mark may deviate from the correct position.



(7) When the vehicle moves erratically, such as constant lane changes, the current vehicle position mark may deviate from the correct position.

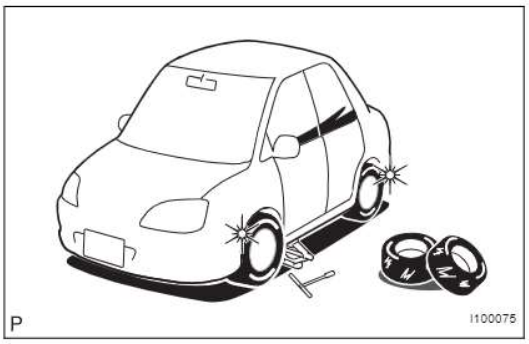


(8) When the ignition switch is turned to the ACC or ON position on a turntable before parking, the current vehicle position mark may not point in the correct direction. The same will occur when the vehicle comes out of parking.

NS



(9) When the vehicle runs on a snowy road or a mountain path with the chains installed or using a spare tire, the current vehicle position mark may deviate from the correct position.

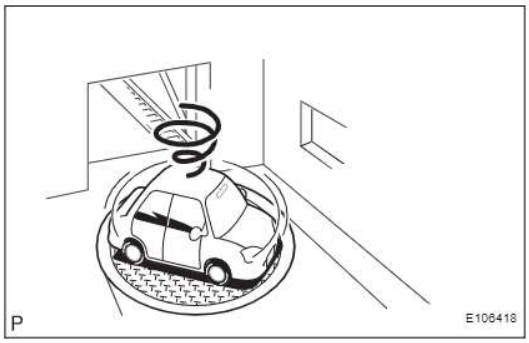


(10)When a tire is changed, the current vehicle position mark may deviate from the correct position.
HINT:
- Diameter of the tire may change, causing a speed sensor error.
- Performing the "tire change" in calibration mode will allow the system to correct the current vehicle position faster.

NS

Cursor or MAP Rotates when Vehicle Stopped

1	CHECK CONDITION



(a) Check with the customer if the vehicle has been turned by a turntable.

OK:

Vehicle has not been turned by turntable.

HINT:

If the vehicle is rotated on a turntable with the ignition switch ON, the system may store the angular velocity. As a result, the vehicle position cursor may deviate.

NG → **TURN IGNITION SWITCH TO ON POSITION WHEN VEHICLE IS COMPLETELY STOPPED**

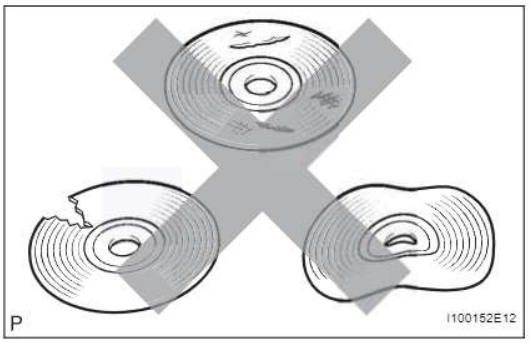
OK

PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

NS

Vehicle Position Mark is not Updated

1 CHECK MAP DISC



(a) Check that the map disc is not deformed or cracked.
OK:
No deformations or cracks on map disc.

NG → **REPLACE MAP DISC**

OK

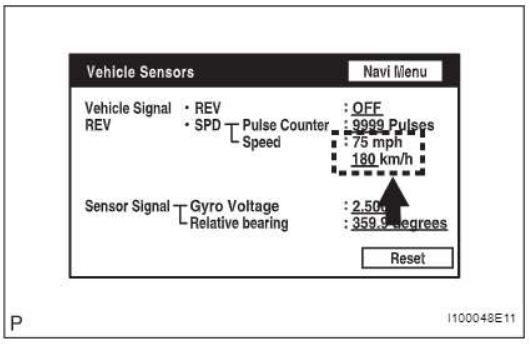
2 CHECK MAP DISPLAY

(a) Check if a touch scroll can be performed on the map display.
OK:
Touch scroll can be performed.

NG → **PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE**

OK

3 CHECK VEHICLE SENSOR (NAVIGATION CHECK MODE)



(a) Enter the "Navigation Check" mode (Vehicle Sensors) (See page NS-21).
(b) While driving the vehicle, compare the "Speed" indicator to the reading on the speedometer. Check if these readings are almost equal.
OK:
The readings are almost equal.

NG → **GO TO "SPEED SIGNAL CIRCUIT" IN PROBLEM SYMPTOMS TABLE**

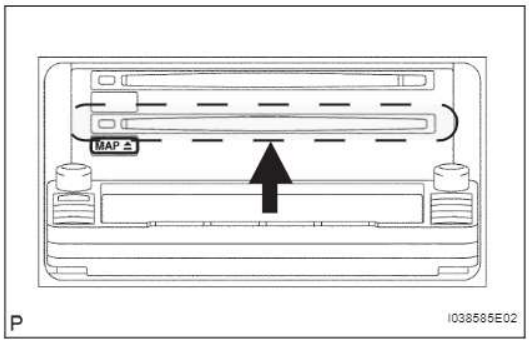
NS

OK

PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

Current Position Display does not Appear

1	CHECK RADIO AND NAVIGATION ASSEMBLY

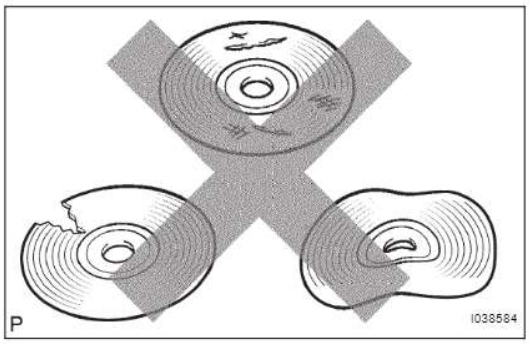


(a) Check if a map disc is inserted in the map disc slot.
OK:
A map disc is inserted.

NG → **INSERT MAP DISC IN "MAP" SIDE SLOT**

OK

2	CHECK MAP DISC



(a) Check that the map disc is not deformed or cracked.
OK:
No deformations or cracks appear on the map disc.

NG → **REPLACE MAP DISC**

OK

PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

NS

GPS Mark is not Displayed

1	CHECK CABIN

(a) Check the cabin for any object that might interrupt radio reception on the instrument panel. If such an object exists, remove it and check if the GPS mark reappears.
HINT:
The GPS uses extremely faint radio waves originating from satellites. If the signal is interrupted by obstructions or other radio waves, the GPS may not be able to properly receive the signal.
OK:
Mark appears.

NG → **Go to step 2**

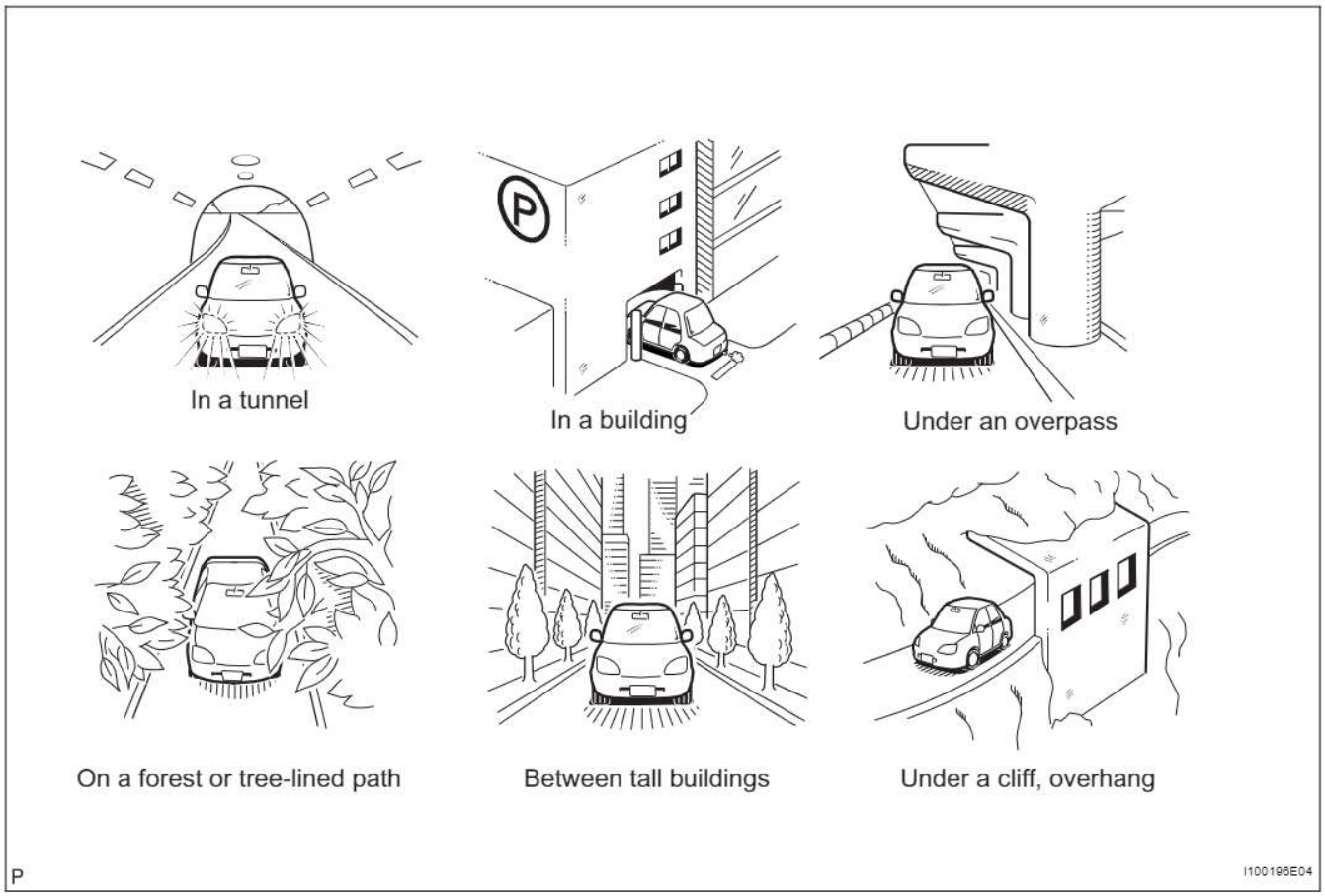
OK

NORMAL OPERATION

2	CHECK SURROUNDINGS

(a) Check if the vehicle is in a location where GPS signal reception is poor. If the vehicle is in such a place, relocate the vehicle and check if the GPS mark reappears.
HINT:
The GPS uses 24 satellites in 6 orbits. At any point in time, 4 satellites should be able to pinpoint your vehicle. However, GPS signals may not reach the vehicle due to influence from the surroundings, vehicle direction and time. For illustrated examples, see below.

NS



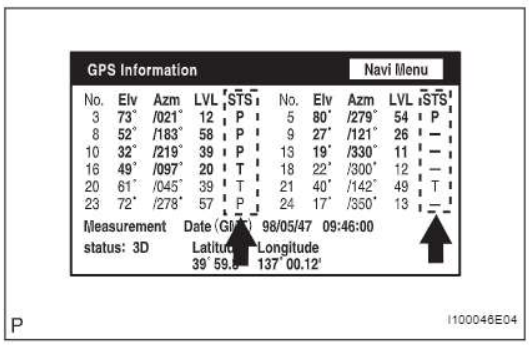
OK:
GPS mark is displayed.

NG → **Go to step 3**

OK

SYSTEM RETURNS TO NORMAL

3 CHECK GPS INFORMATION (NAVIGATION CHECK MODE)



(a) Enter the "Navigation Check" mode (GPS Information) (See page NS-21).
(b) Check how many of the following codes appear in the "STS" column.
For DENSO Made:
T, P
For AISIN AW Made:
08H, 04H
OK:
At least 3 codes appear.

NG → **PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE**

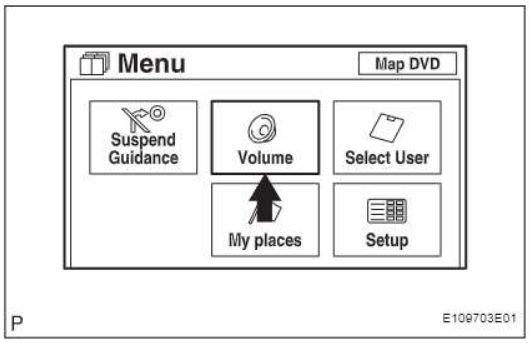
NS

OK

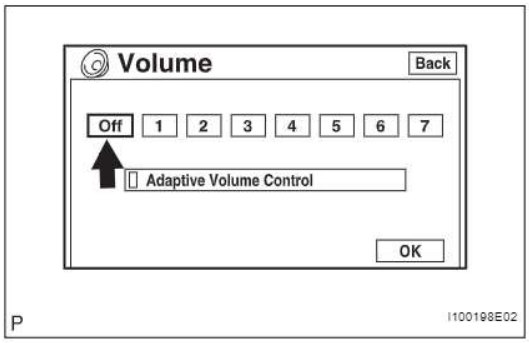
REPLACE RADIO AND NAVIGATION ASSEMBLY

Voice Guidance does not Function

1 CHECK NAVIGATION SYSTEM SETTING



(a) Enter the "Menu" screen by pressing the "MENU" switch.
(b) Select "Volume".

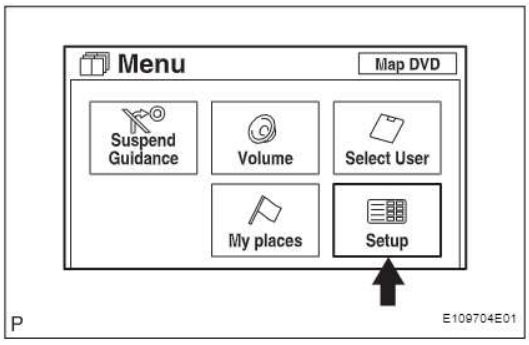


(c) Check that "off" is not selected.
OK:
"Off" is not selected.

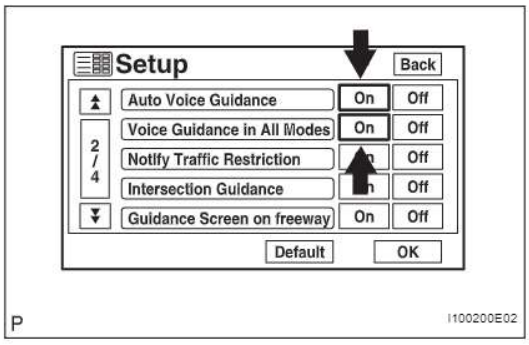
NG → **TURN VOICE GUIDANCE VOLUME UP TO 4 USING VOICE ADJUSTMENT SWITCHES**

OK

2 CHECK NAVIGATION SETTING



(a) Enter the "Menu" screen by pressing the "MENU" switch.
(b) Select "Setup".



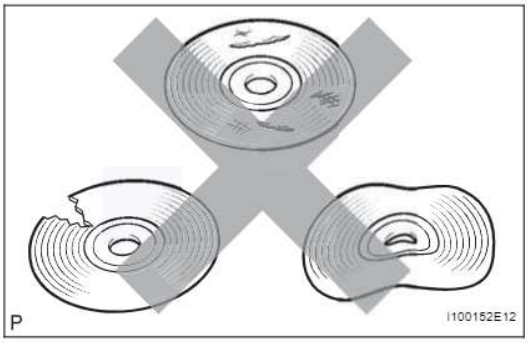
(c) Check that "Auto Voice Guidance" is not OFF.
OK:
Auto voice guidance is not OFF.
(d) Check that "Voice Guidance in All Modes" is not OFF.
OK:
Voice guidance in all modes is not OFF.

NG → **TURN AUTO VOICE GUIDANCE "ON"**

NS

OK

3	CHECK MAP DISC



(a) Check that the map disc is not deformed or cracked.
OK:
No deformations or cracks on map disc.

NG → REPLACE MAP DISC

OK

4	CHECK RADIO AND NAVIGATION ASSEMBLY

(a) Check that audio sound can be heard from the driver side speaker.
OK:
Audio sound can be heard.

NG → PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

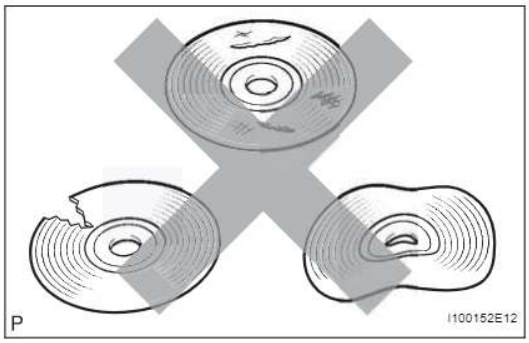
OK

REPLACE RADIO AND NAVIGATION ASSEMBLY

NS

MAP Display Incomplete

1	CHECK MAP DISC



(a) Check that the map disc is not deformed or cracked.
OK:
No deformations or cracks on map disc.

NG → **REPLACE MAP DISC**

OK

2	CHECK DISPLAY

(a) Check that displays other than the navigation display are complete.
OK:
No other incomplete displays are found.

NG → **PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE**

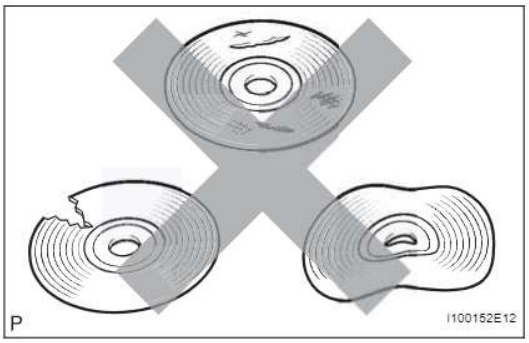
OK

REPLACE RADIO AND NAVIGATION ASSEMBLY

NS

Route cannot be Calculated

1	CHECK MAP DISC



(a) Check that the map disc is not deformed or cracked.
OK:
No deformations or cracks on map disc.

NG → **REPLACE MAP DISC**

OK

2	SET DESTINATION

(a) Set another destination and check if the system can calculate the route correctly.
OK:
Route can be correctly calculated.

NG → **PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE**

OK

NORMAL OPERATION

NS

GYRO Error

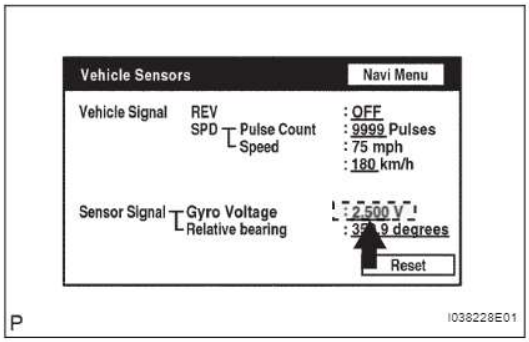
1	NAVIGATION CHECK MODE (VEHICLE SENSORS)

(a) Enter the "Navigation Check" mode (Vehicle Sensors) (See page NS-21).

(b) Check the gyro voltage.

Standard voltage:

0.1 to 4.5 V



NG → **REPLACE RADIO AND NAVIGATION ASSEMBLY**

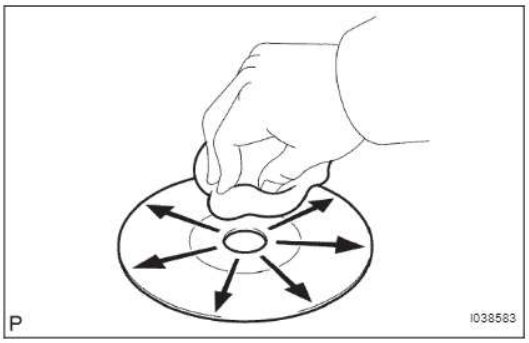
OK

PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN DIAGNOSTIC TROUBLE CODE CHART

NS

MAP Disc Read Error

1	CHECK MAP DISC

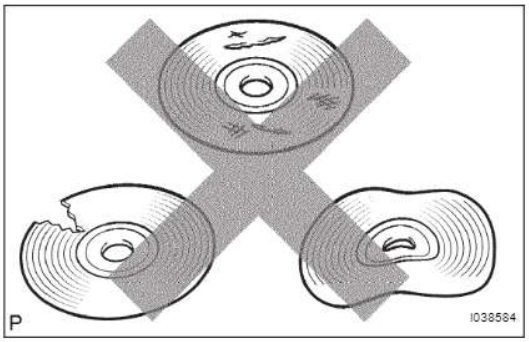


(a) Check for dirt on the map disc surface.
OK:
No dirt is on the map disc surface.
HINT:
If dirt is on the map disc surface, wipe it with a soft cloth from inside to outside in a radial direction.
NOTICE:
Do not use a conventional record cleaner or anti-static preservative.

NG → **CLEAN MAP DISC**

OK

2	CHECK MAP DISC



(a) Check that the map disc is not deformed or cracked.
OK:
No deformations or cracks appear on the map disc.

NG → **REPLACE MAP DISC**

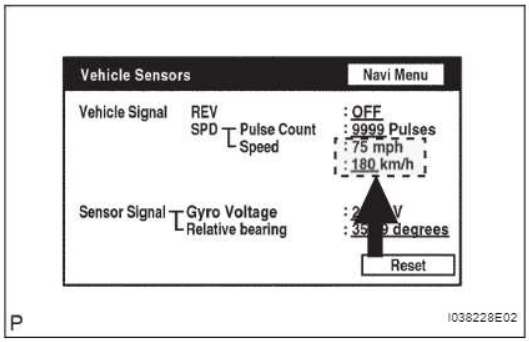
OK

PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN DIAGNOSTIC TROUBLE CODE CHART

NS

Speed Signal Error

1	NAVIGATION CHECK MODE (VEHICLE SENSORS)



(a) Enter the "Navigation Check" mode (Vehicle Sensors) (See page NS-21).

(b) While driving, compare the "SPEED" indicator to the reading on the speedometer. Check if these readings are almost the same.

OK:

The readings are almost the same.

OK → **REPLACE RADIO AND NAVIGATION ASSEMBLY**

NG

PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN DIAGNOSTIC TROUBLE CODE CHART

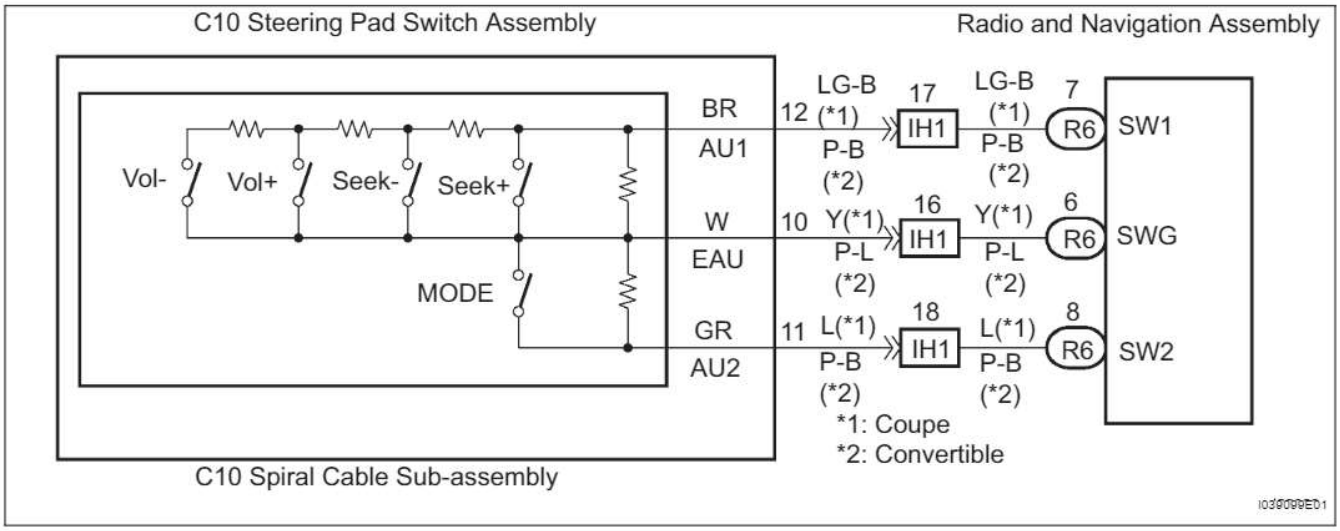
NS

Steering Pad Switch Circuit

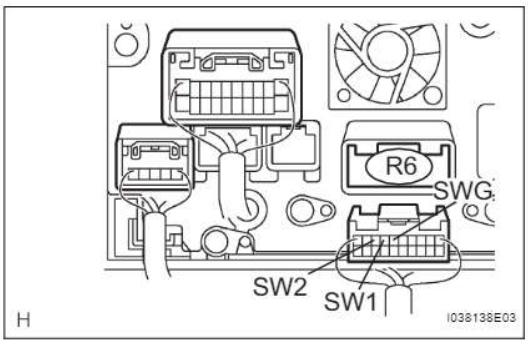
DESCRIPTION

This circuit sends an operation signal from the steering pad switch to the radio and navigation assembly.
If there is an open in the circuit, the audio system cannot be operated by the steering pad switch.
If there is a short in the circuit, the resulting condition is the same as if the switch were continuously depressed. Therefore, the radio and navigation assembly cannot be operated by the steering pad switch, and the radio and navigation assembly itself does not function.

WIRING DIAGRAM



1 INSPECT RADIO AND NAVIGATION ASSEMBLY



(a) Disconnect the radio and navigation assembly connector R6.
(b) Measure the resistance according to the values in the table below.

Standard resistance

Tester connection	Condition	Specified condition
SW1 - SWG	No switch is pushed	Approx. 100 kΩ
SW1 - SWG	SEEK+ switch: pushed	Approx. 0 Ω
SW1 - SWG	SEEK- switch: pushed	Approx. 0.3 kΩ
SW1 - SWG	VOL+ switch: pushed	Approx. 1 kΩ
SW1 - SWG	VOL- switch: pushed	Approx. 3.2 kΩ
SW2 - SWG	No switch is pushed	Approx. 100 kΩ
SW2 - SWG	MODE switch: pushed	Approx. 0 Ω

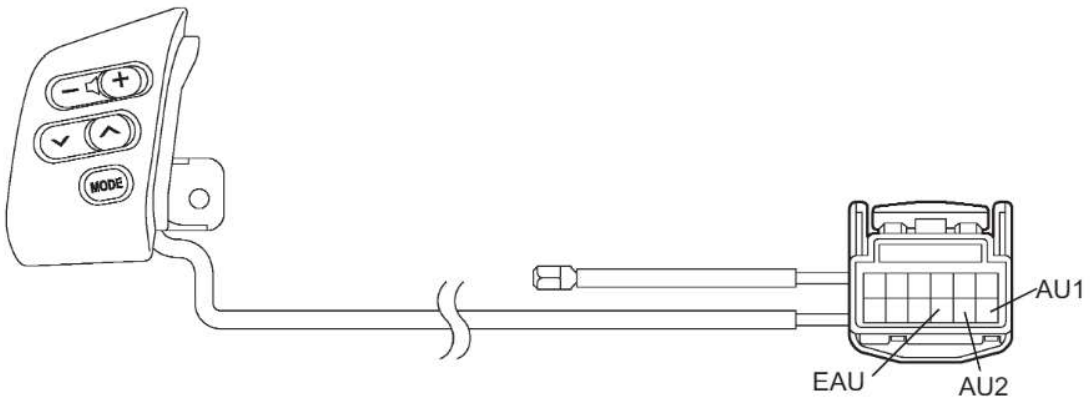
NG → Go to step 2

OK

PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

2	INSPECT STEERING PAD SWITCH ASSEMBLY

Connector Front View:



(a) Disconnect the steering pad switch assembly connector.
(b) Measure the resistance according to the values in the table below.

Standard resistance

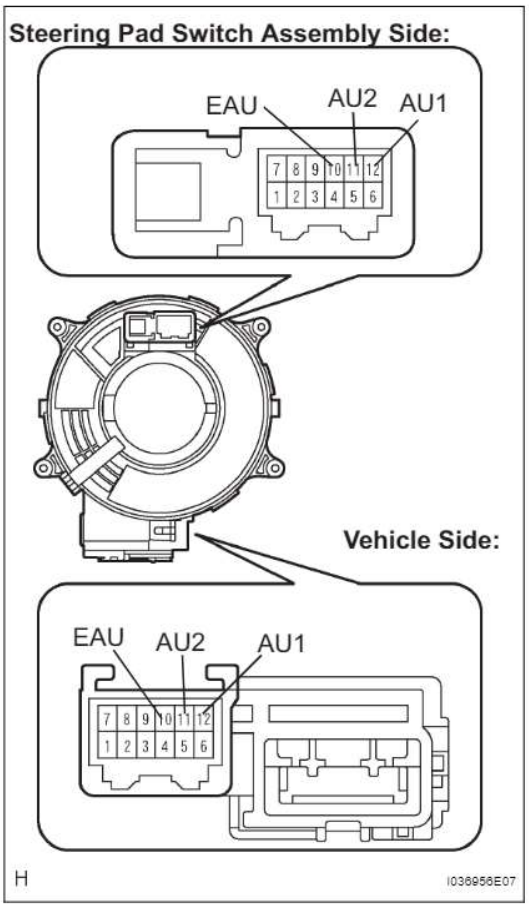
Tester connection	Condition	Specified condition
AU1 (12) - EAU (10)	No switch is pushed	Approx. 100 kΩ
AU1 (12) - EAU (10)	SEEK+ switch: pushed	Approx. 0 Ω
AU1 (12) - EAU (10)	SEEK- switch: pushed	Approx. 0.3 kΩ
AU1 (12) - EAU (10)	VOL+ switch: pushed	Approx. 1 kΩ
AU1 (12) - EAU (10)	VOL- switch: pushed	Approx. 3.2 kΩ
AU2 (11) - EAU (10)	No switch is pushed	Approx. 100 kΩ
AU2 (11) - EAU (10)	MODE switch: pushed	Approx. 0 Ω

NG → REPLACE STEERING PAD SWITCH ASSEMBLY

OK

NS

3	INSPECT SPIRAL CABLE SUB-ASSEMBLY



(a) Disconnect the spiral cable sub-assembly connector.
(b) Measure the resistance according to the value(s) in the table below.

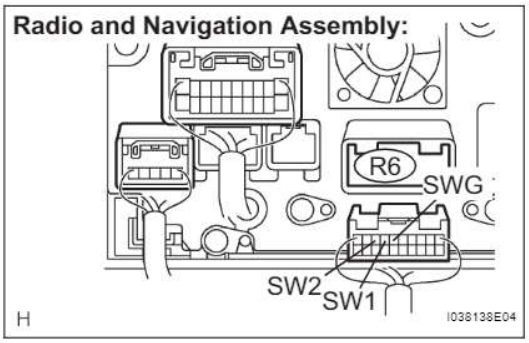
Standard resistance

Tester connection	Specified condition
EAU - EAU	Below 1 Ω
AU1 - AU1	Below 1 Ω
AU2 - AU2	Below 1 Ω

NG → REPLACE SPIRAL CABLE SUB-ASSEMBLY

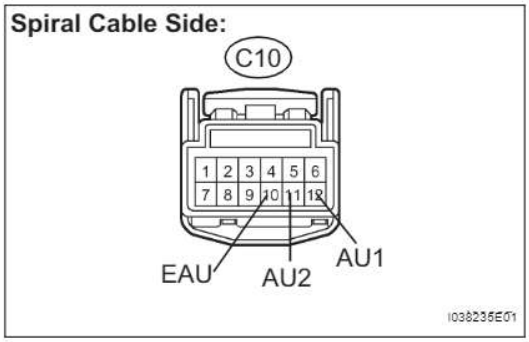
OK

4	CHECK HARNESS AND CONNECTOR (SPIRAL CABLE SUB-ASSEMBLY - RADIO AND NAVIGATION ASSEMBLY)



(a) Disconnect the connectors from the spiral cable sub-assembly C10 and radio and navigation assembly R6.

NS



(b) Measure the resistance according to the value(s) in the table below.

Standard resistance

Tester connection	Specified condition
SW1 - AU1	Below 1 Ω
SW2 - AU2	Below 1 Ω
SWG - EAU	Below 1 Ω
SW1 - Body ground	10 kΩ or higher
SW2 - Body ground	10 kΩ or higher
SWG - Body ground	10 kΩ or higher

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

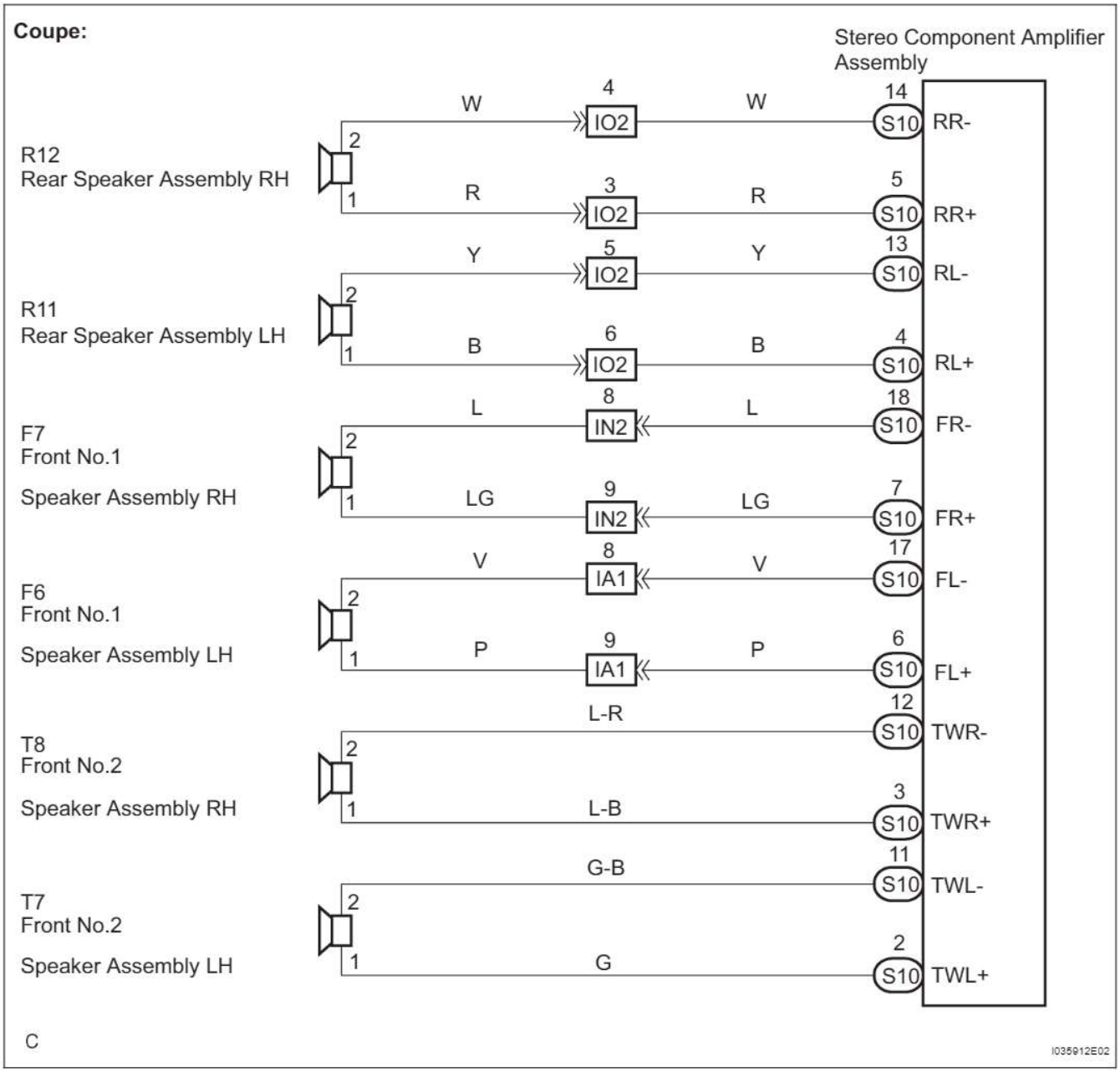
NS

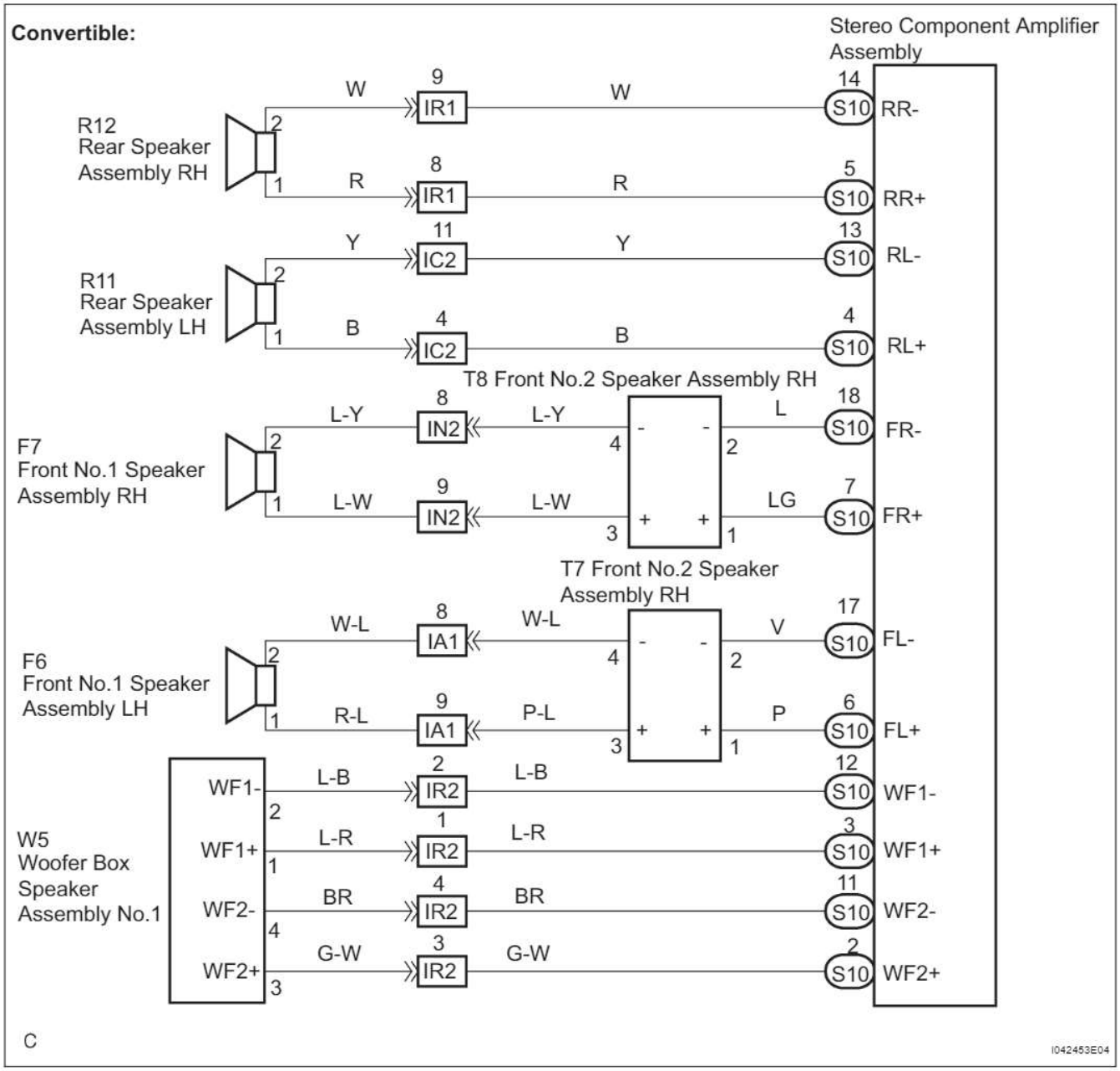
Speaker Circuit

DESCRIPTION

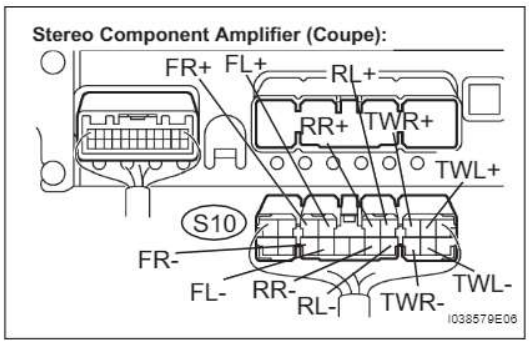
The sound signal that has been amplified by the stereo component amplifier assembly is sent to the speakers from the stereo component amplifier assembly through this circuit.
If there is a short in this circuit, the stereo component amplifier assembly detects it and stops output to the speakers.
Thus sound can not be heard from the speakers even if there is no malfunction in the stereo component amplifier assembly or speakers.

WIRING DIAGRAM



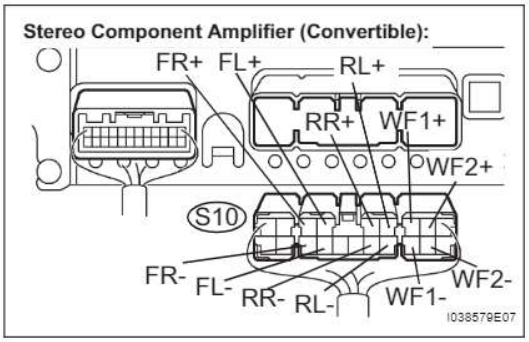


1	CHECK HARNESS AND CONNECTOR (STEREO COMPONENT AMPLIFIER - SPEAKER ASSEMBLY)

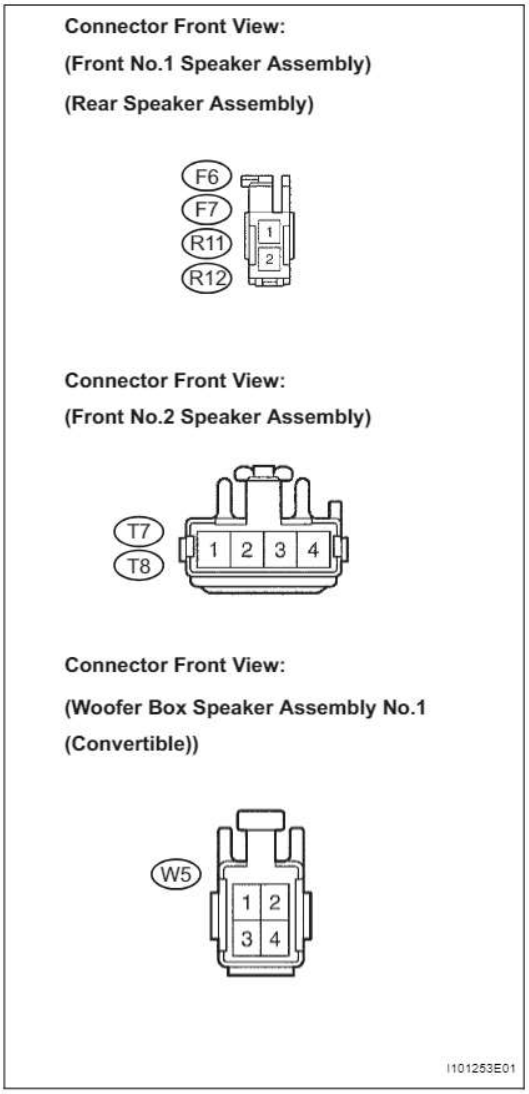


(a) Disconnect the connectors shown in the illustration on the left from the stereo component amplifier assembly and speakers.
(1) Coupe model

NS



(2) Convertible model



(b) Measure the resistance between the speakers and the stereo component amplifier assembly to check for an open circuit in the wire harness.
Standard resistance:
Below 1 Ω

(c) Measure the resistance between the speakers and body ground to check for a short circuit in the wire harness.
Standard resistance:
10 kΩ or higher

NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK

NS

2	CHECK VEHICLE TYPE

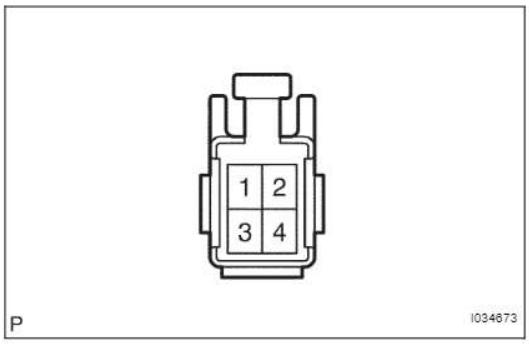
(a) Choose type to be inspected.

Type	Proceed to
Convertible	A
Coupe	B

B → Go to step 4

A

3 INSPECT WOOFER BOX SPEAKER ASSEMBLY NO.1



(a) Resistance check.
(1) Measure the resistance according to the value(s) in the table below.
Standard resistance

Tester connection	Condition	Specified condition
1 - 3	Always	0.81 to 1.61Ω
2 - 4	Always	0.81 to 1.61Ω

NOTICE:
The speaker should not be removed for checking.

NG → **REPLACE WOOFER BOX SPEAKER ASSEMBLY NO.1**

OK

4 INSPECT FRONT NO.1 SPEAKER ASSEMBLY

(a) Resistance check.
(1) Measure the resistance between the terminals of the speaker.
NOTICE:
The speaker should not be removed for checking.
Standard resistance:
Coupe: 3 to 4 Ω
Convertible: 3.5 to 4.5 Ω

NG → **REPLACE FRONT NO.1 SPEAKER ASSEMBLY**

OK

5 INSPECT FRONT NO.2 SPEAKER ASSEMBLY

(a) Check that malfunction disappears when another speaker in good condition is installed.
OK:
Malfunction disappears.
HINT:
- Connect all the connectors to the speakers.
- When there is a possibility that either right or left front speaker is defective, inspect by interchanging the right one and the left one.

NS

OK → REPLACE FRONT NO.2 SPEAKER ASSEMBLY

NG

6	INSPECT REAR SPEAKER ASSEMBLY

(a) Resistance check.
(1) Measure the resistance between the terminals of the speaker.
NOTICE:
The speaker should not be removed for checking.
Standard resistance:
Coupe: 1.75 to 2.75 Ω
Convertible: Approximately 2.4 Ω

NG → REPLACE REAR SPEAKER ASSEMBLY

OK

PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

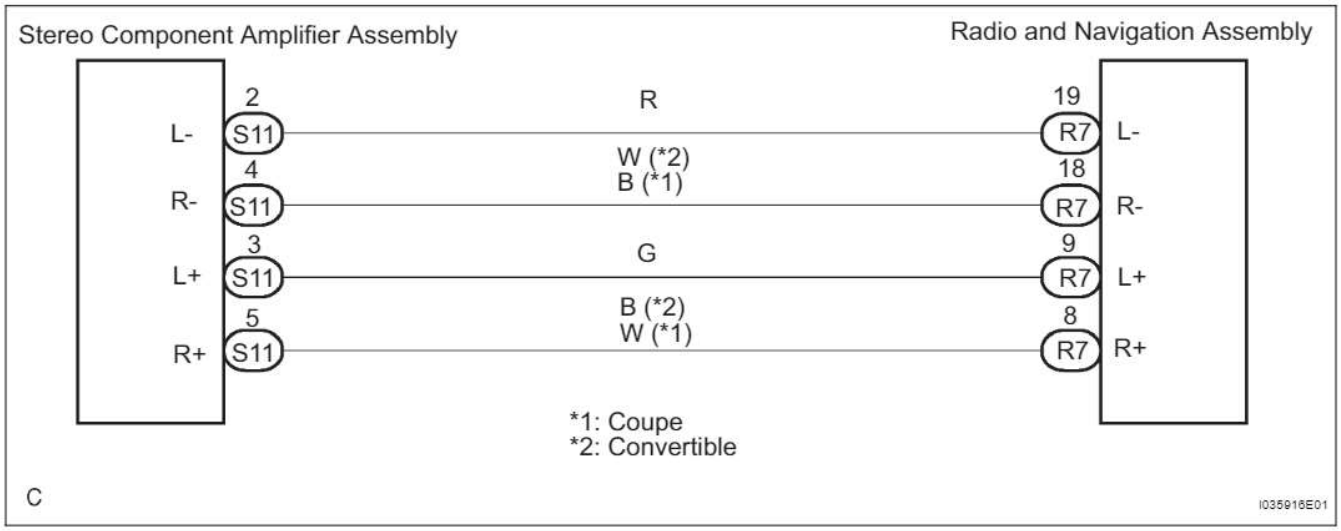
NS

AMP Sound Signal Circuit

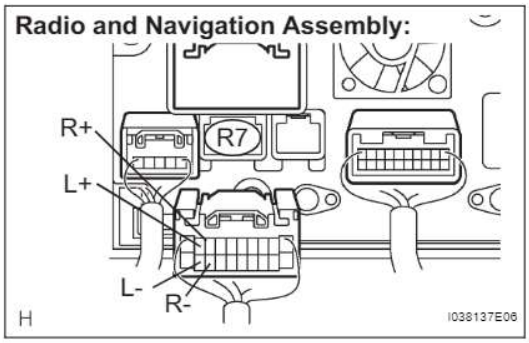
DESCRIPTION

The radio and navigation assembly sends a sound signal to the stereo component amplifier assembly through this circuit.
The sound signal that has been sent is amplified by the stereo component amplifier assembly, and then is sent to the speaker. If there is an open or short in the circuit, sound can not be heard from the speaker even if there is no malfunction in the stereo component amplifier assembly or speakers.

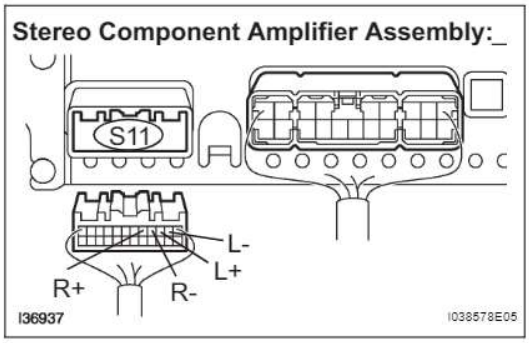
WIRING DIAGRAM



1	CHECK HARNESS AND CONNECTOR (RADIO AND NAVIGATION ASSEMBLY - STEREO COMPONENT AMPLIFIER)



(a) Disconnect the connectors from the radio and navigation assembly R7 and stereo component amplifier assembly S11.



(b) Measure the resistance according to the value(s) in the table below.

Standard resistance

Tester Connection	Specified Condition
L+ (R7) - L+ (S11)	Below 1 Ω
L- (R7) - L- (S11)	Below 1 Ω
R+ (R7) - R+ (S11)	Below 1 Ω
R- (R7) - R- (S11)	Below 1 Ω
L+ (R7 or S11) - Body ground	10 kΩ or higher

NS

Tester Connection	Specified Condition
L- (R7 or S11) - Body ground	10 kΩ or higher
R+ (R7 or S11) - Body ground	10 kΩ or higher
R- (R7 or S11) - Body ground	10 kΩ or higher

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

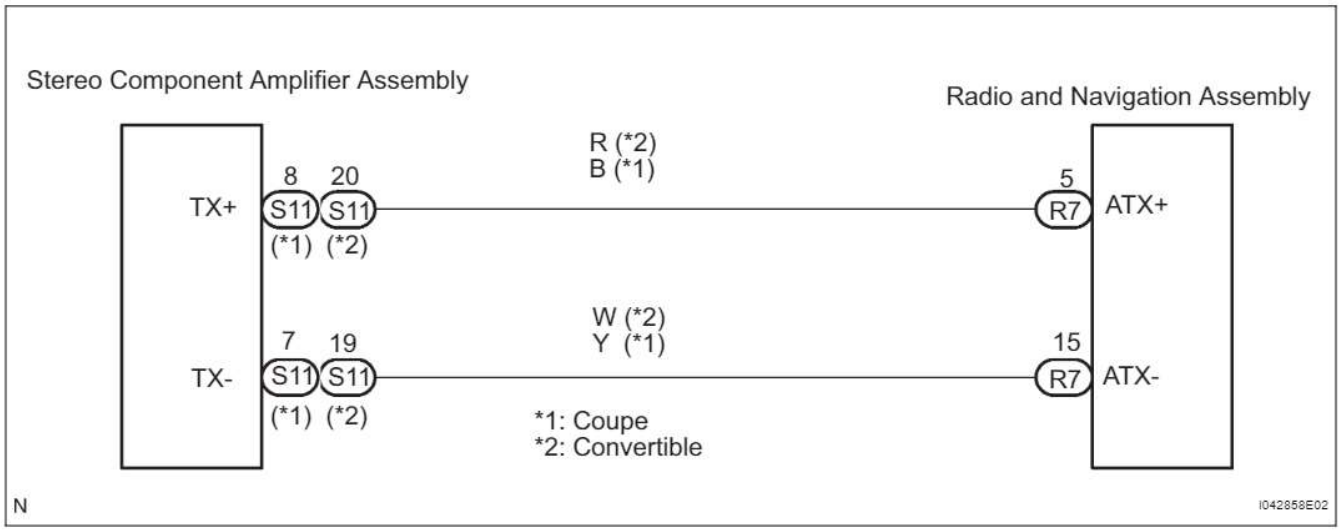
PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

AVC-LAN Circuit

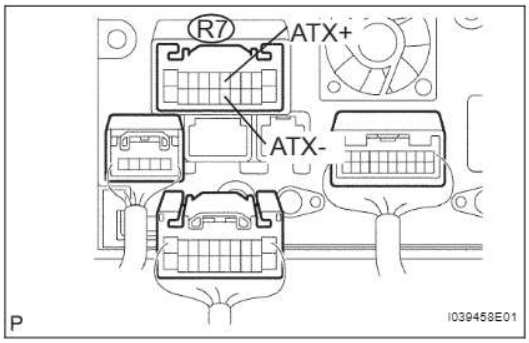
DESCRIPTION

Each unit of the radio and navigation system communicates by transferring signals for each of its own switches through the AVC-LAN (communication bus).
If a +B or GND short occurs in the AVC-LAN, the radio and navigation system cannot function normally, as communication ceases.

WIRING DIAGRAM



1	INSPECT RADIO AND NAVIGATION ASSEMBLY



(a) Disconnect the radio and navigation assembly connector R7.
(b) Measure the resistance according to the value(s) in the table below.
Standard resistance

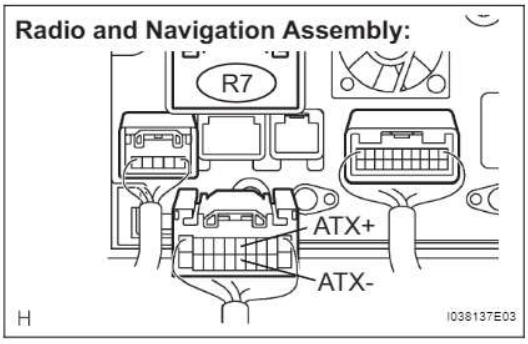
Tester connection	Condition	Specified condition
ATX+ - ATX-	Always	60 to 80 Ω

NG → REPLACE RADIO AND NAVIGATION ASSEMBLY

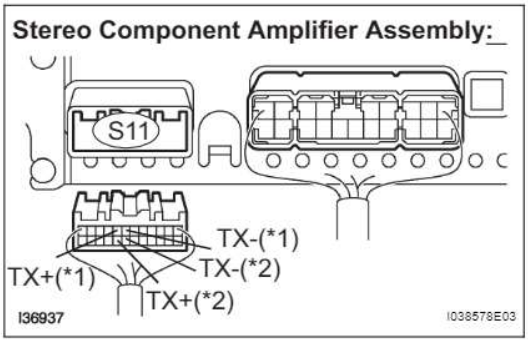
OK

NS

2	CHECK HARNESS AND CONNECTOR (RADIO AND NAVIGATION ASSEMBLY - STEREO COMPONENT AMPLIFIER)



(a) Disconnect the connectors from the radio and navigation assembly R7 and stereo component amplifier assembly S11.



(b) Measure the resistance according to the value(s) in the table below.

Standard resistance

Tester connection	Condition	Specified condition
ATX+ - TX+ (S11-8) (*1)	Always	Below 1 Ω
ATX- - TX- (S11-7) (*1)	Always	Below 1 Ω
ATX+ - TX+ (S11-20) (*2)	Always	Below 1 Ω
ATX- - TX- (S11-19) (*2)	Always	Below 1 Ω
ATX+ - Body ground	Always	10 kΩ or higher
ATX- - Body ground	Always	10 kΩ or higher

*1: Coupe
*2: Convertible

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

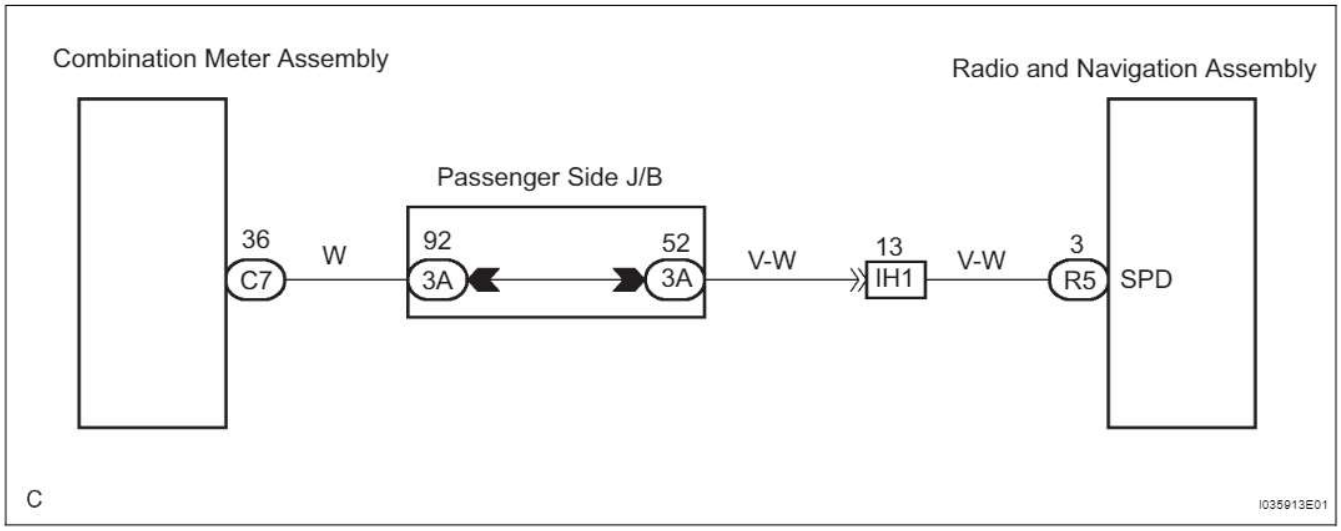
NS

Speed Signal Circuit

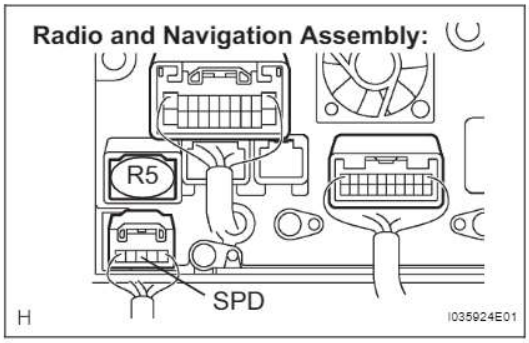
DESCRIPTION

The radio and navigation assembly receives the vehicle speed signal and information about the GPS antenna to update the vehicle position.

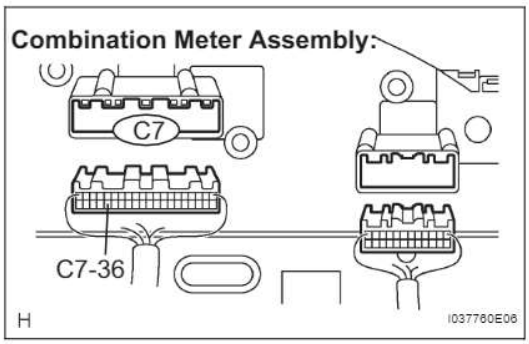
WIRING DIAGRAM



1	CHECK HARNESS AND CONNECTOR (COMBINATION METER ASSEMBLY - RADIO AND NAVIGATION ASSEMBLY)



(a) Disconnect the connectors from the radio and navigation assembly R5 and combination meter assembly C7.



(b) Measure the resistance according to the value(s) in the table below.

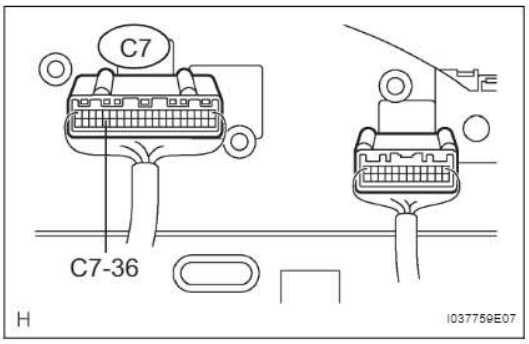
Standard resistance

Tester connection	Condition	Specified condition
SPD - C7-36	Always	Below 1 Ω
SPD - Body ground	Always	10 kΩ or higher

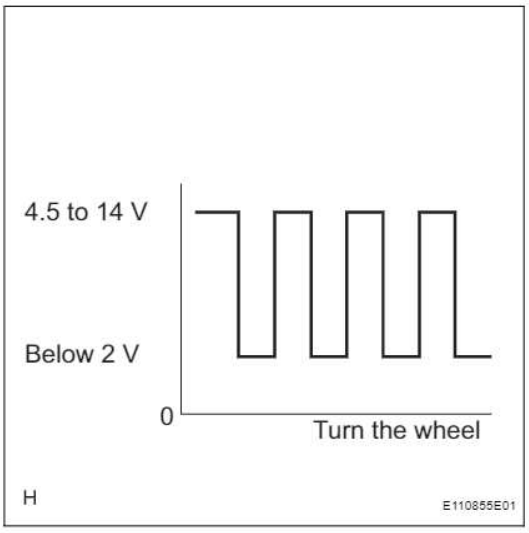
NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

2	INSPECT COMBINATION METER ASSEMBLY



(a) Connect the combination meter assembly connector C7.
(b) Measure the voltage.
(1) Move the shift lever to the neutral position.
(2) Jack up either one of the front wheels.
(3) Turn the ignition switch to the ON position.



(4) Measure the voltage between terminal C7-36 and body ground of the combination meter assembly when the front wheels are turned slowly.
OK:
Voltage is pulsed as shown below.

NG → **GO TO COMBINATION METER SYSTEM**

OK

REPLACE RADIO AND NAVIGATION ASSEMBLY

NS

DISPLAY CHECK MODE

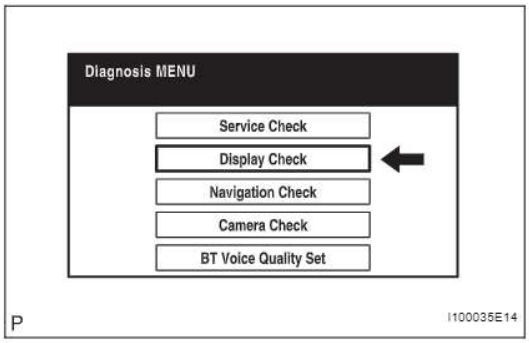
HINT:

- This mode checks the color display on the radio and navigation assembly.
- Illustrations may differ from the actual vehicle depending on the device settings and options. Therefore, some detailed areas may not be shown exactly the same as on the actual vehicle.

1. **ENTER DIAGNOSTIC MODE (See page NS-42).**

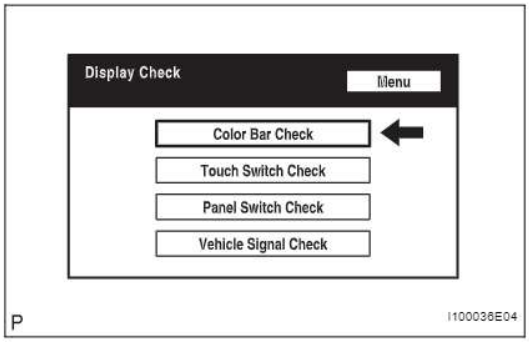
2. **DISPLAY CHECK**

   (a) Select "Display Check" from the "Diagnosis MENU" screen.



3. **COLOR BAR CHECK**

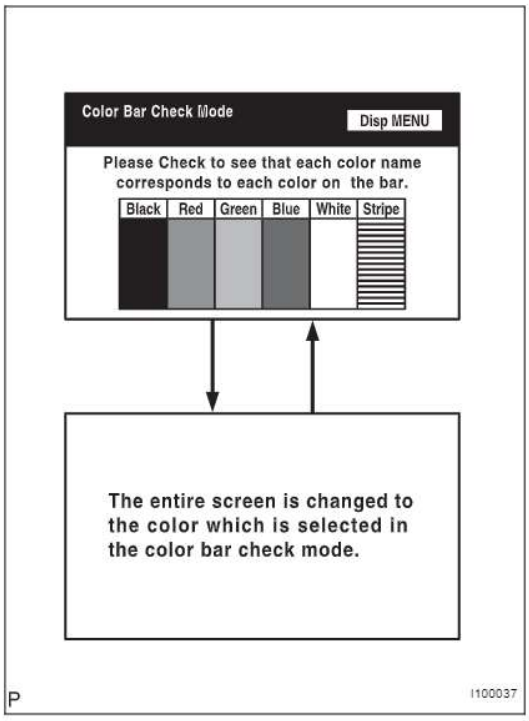
   (a) Select "Color Bar Check" from the "Display Check" screen.



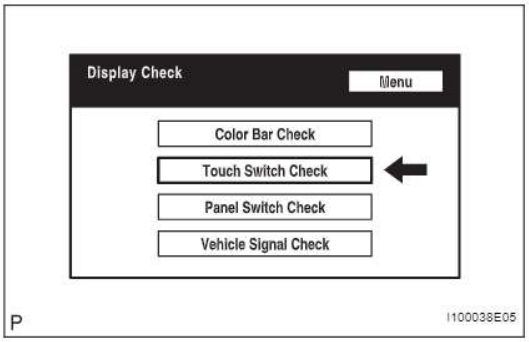
   (b) Select a color bar from the "Color Bar Check Mode" screen.

   HINT:

   - The entire screen turns to the color or stripe selected.
   - Touching the display will return to the "Color Bar Check" screen.

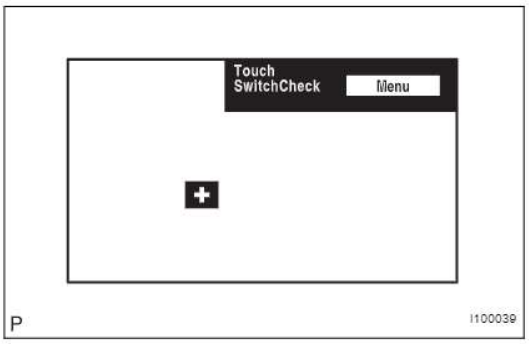


NS



4. TOUCH SWITCH CHECK

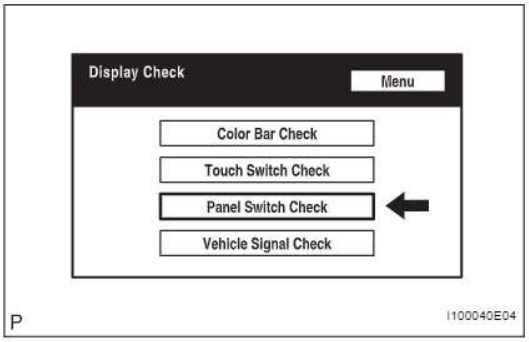
(a) Select "Touch Switch Check" from the "Display Check" screen.



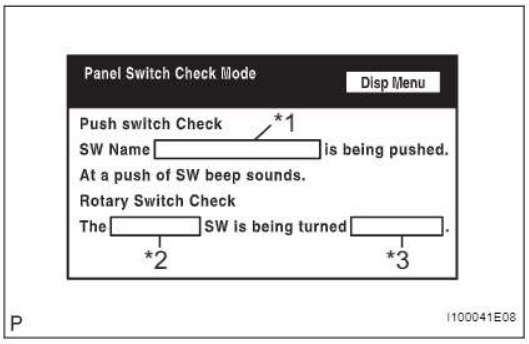
(b) Touch the display anywhere in the open area to perform the check when the "Touch Switch Check" screen is displayed.
HINT:
- A "+" mark is displayed where the display is touched.
- The "+" mark remains on the display even after the finger is removed.

5. PANEL SWITCH CHECK

(a) Select "Panel Switch Check" from the "Display Check" screen.

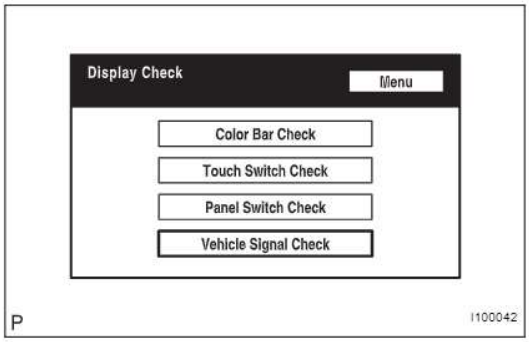


(b) Operate each switch and check that the switch name and condition are correctly displayed.



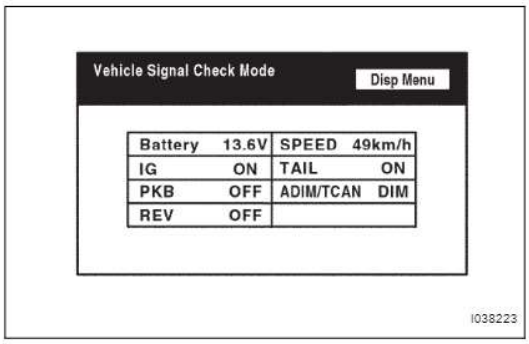
NS

Display	Contents
Push switch name/*1	• Name of the pressed switch is displayed. • If more than one switch is pressed, "MULTIPLE" is displayed.
Rotary switch name/*2	Name of the rotary switch is displayed.
Rotary switch direction/*3	Direction of the rotary switch is rotated.



6. VEHICLE SIGNAL CHECK

(a) Select "Vehicle Signal Check" from the "Display Check" screen.



(b) When the "Vehicle Signal Check Mode" screen is displayed, check all the vehicle signal conditions.
HINT:
- Only conditions having inputs are displayed.
- This screen is updated once per second when input signals to the vehicle are changed.

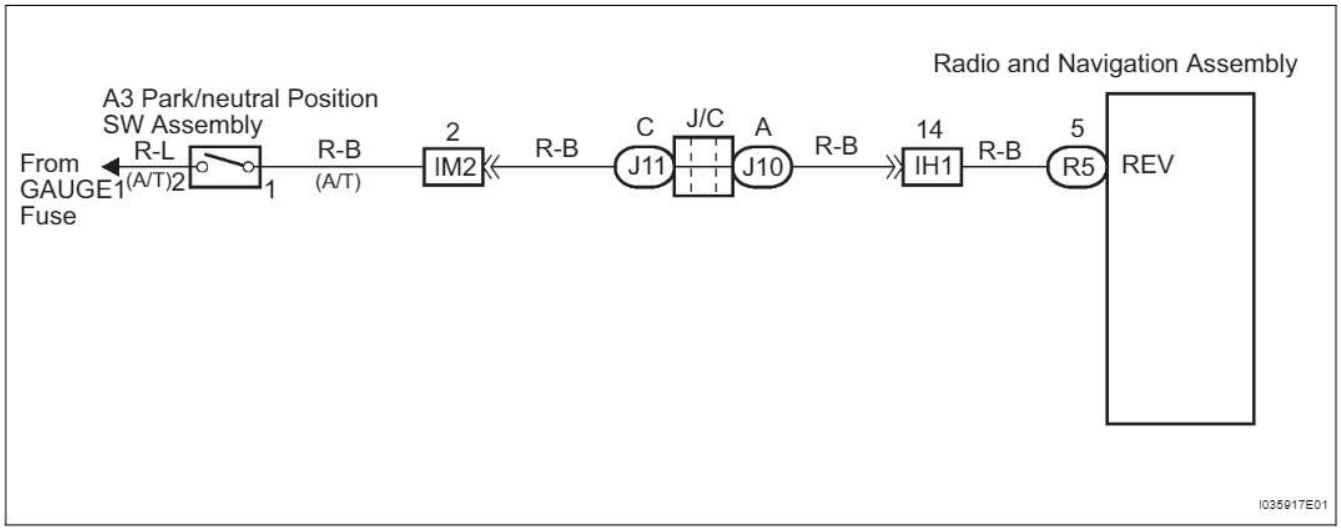
NS

Reverse Signal Circuit

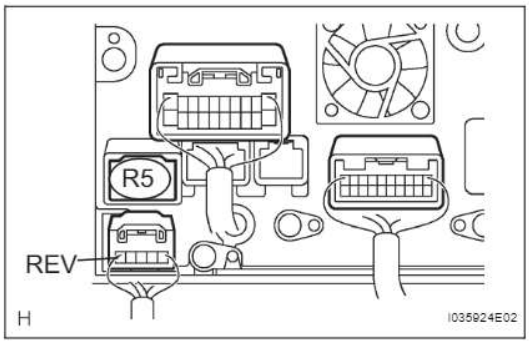
DESCRIPTION

The radio and navigation assembly receives the reverse signal from the park/neutral position switch assembly and information about the GPS antenna, and then adjusts the vehicle position.

WIRING DIAGRAM



1 INSPECT RADIO AND NAVIGATION ASSEMBLY



(a) Disconnect the radio and navigation assembly connector R5.

(b) Measure the voltage according to the value(s) in the table below.

Standard voltage

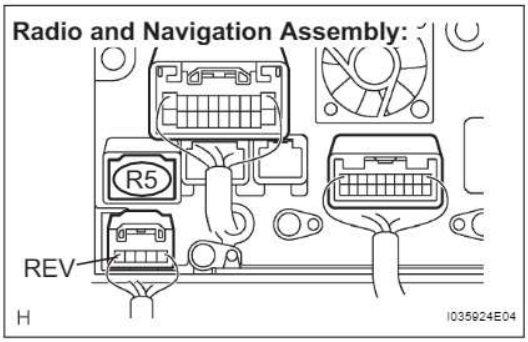
Tester connection	Condition	Specified condition
REV - Body ground	Ignition switch is turned to ON position. Shift lever is moved to R position.	10 to 14 V
REV - Body ground	Ignition switch is turned to ON position. Shift lever is moved to any position except R.	Below 1 V

OK → REPLACE RADIO AND NAVIGATION ASSEMBLY

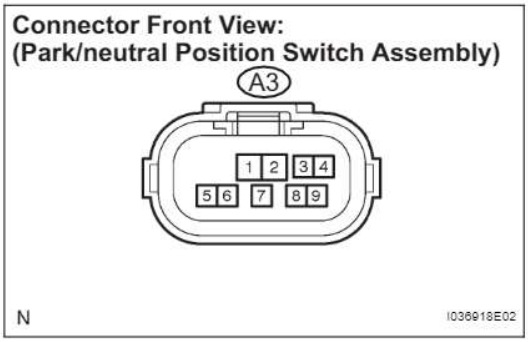
NG

NS

2	CHECK HARNESS AND CONNECTOR (RADIO AND NAVIGATION ASSEMBLY - PARK/ NEUTRAL POSITION SWITCH)



(a) Disconnect the connectors from the radio and navigation assembly R5 and park/neutral position switch assembly A3.



(b) Measure the resistance according to the value(s) in the table below.

Standard resistance

Tester connection	Condition	Specified condition
REV - A3-1	Always	Below 1 Ω
REV - Body ground	Always	10 kΩ or higher

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE RADIO AND NAVIGATION ASSEMBLY

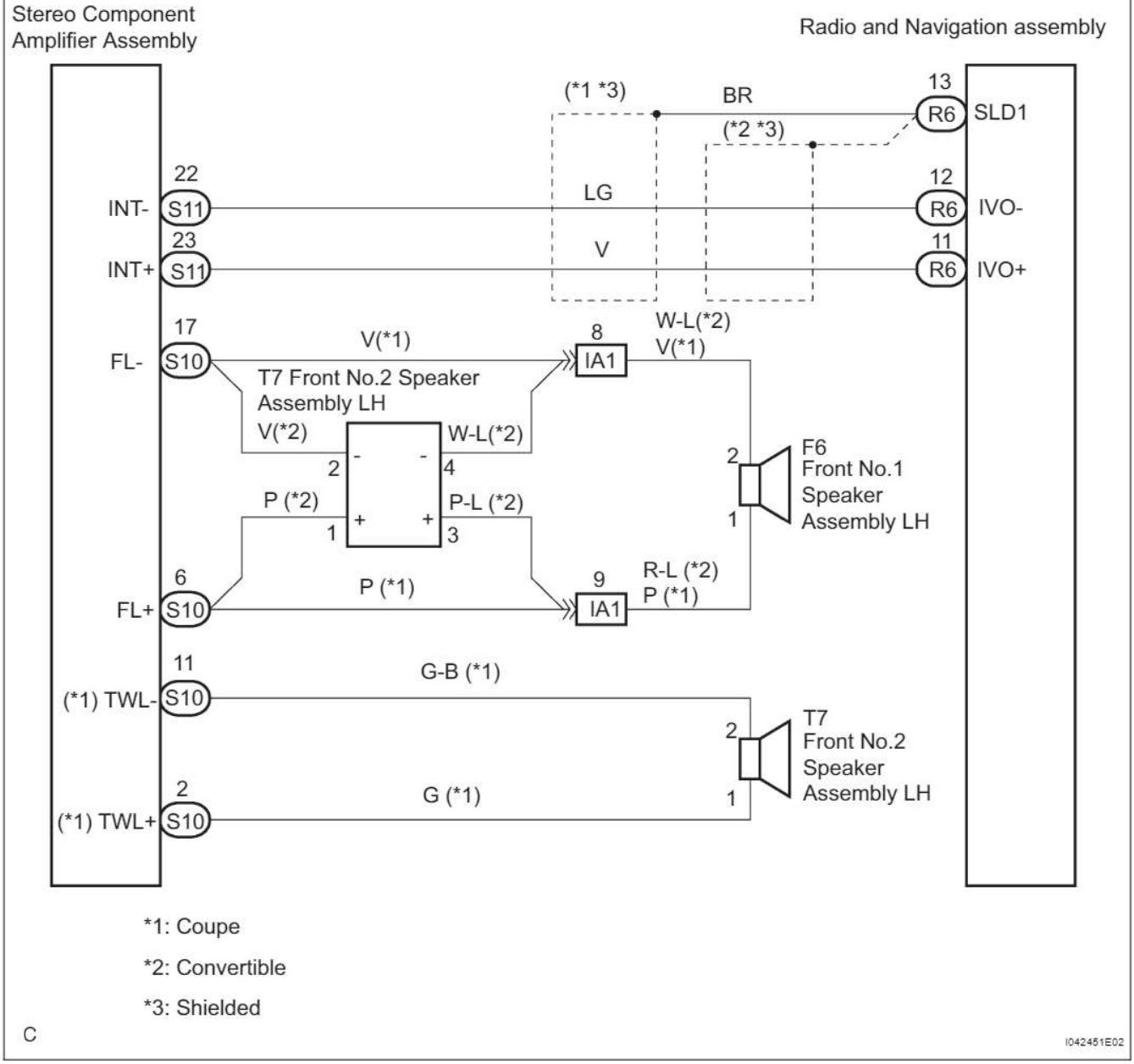
NS

Navigation Voice Speaker Circuit

DESCRIPTION

This circuit is used when the voice guidance in the radio and navigation assembly is on.

WIRING DIAGRAM



1	CHECK VEHICLE TYPE

(a) Choose type to be inspected.

Type	Proceed to
Coupe	A

NS

Type	Proceed to
Convertible	B

B → Go to step 8

A

2 INSPECT SYSTEM

(a) Check the system.
(1) Check if sound is heard from speakers.

Symptom	Proceed to
No sound is heard from front No.1 speaker assembly	A
No sound is heard from front No.2 speaker assembly	B
No sound is heard from both speakers	C

B → Go to step 5

C → Go to step 7

A

3 INSPECT FRONT NO.1 SPEAKER ASSEMBLY

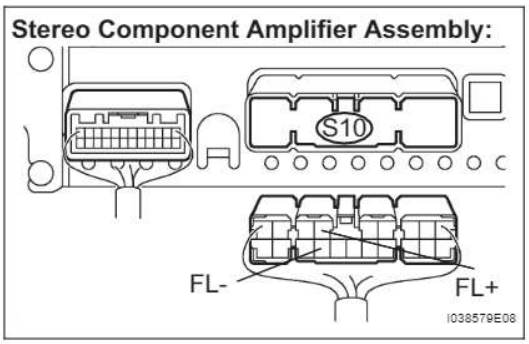
(a) Disconnect the speaker connector.
(b) Resistance check
(1) Measure the resistance between the terminals of the speaker.
NOTICE:
The speaker should not be removed for checking.
Standard resistance:
3 to 4 Ω

NG → **REPLACE FRONT NO.1 SPEAKER ASSEMBLY**

OK

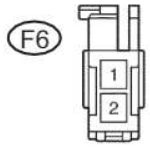
4 CHECK HARNESS AND CONNECTOR (FRONT NO.1 SPEAKER - STEREO COMPARTMENT AMPLIFIER)

NS



(a) Disconnect the stereo component amplifier assembly connector S10.

Connector Front View
(Front No.1 Speaker Assembly):



I038233E03

(b) Measure the resistance according to the value(s) in the table below.
Standard resistance

Tester Connection	Condition	Specified Condition
F6-1 - FL+	Always	Below 1 Ω
F6-2 - FL-	Always	Below 1 Ω
F6-1 - Body ground	Always	10 kΩ or higher
F6-2 - Body ground	Always	10 kΩ or higher

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE STEREO COMPONENT AMPLIFIER ASSEMBLY

5	INSPECT FRONT NO.2 SPEAKER ASSEMBLY

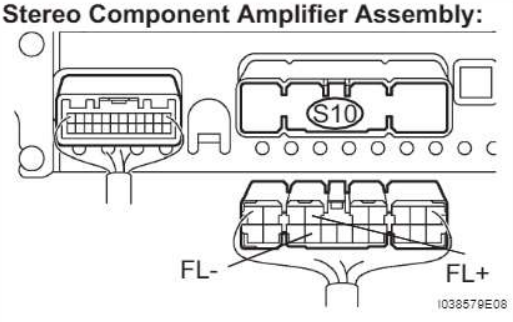
(a) Inspect by changing the right one with the left one, and vice versa.
OK:
Malfunction disappears.
HINT:
Connect all connectors of the speakers.

OK → REPLACE FRONT NO.2 SPEAKER ASSEMBLY

NG

6	CHECK HARNESS AND CONNECTOR (STEREO COMPARTMENT AMPLIFIER - FRONT NO.2 SPEAKER)

Stereo Component Amplifier Assembly:

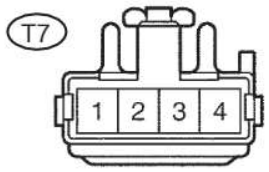


I038579E08

(a) Disconnect the connectors from the stereo component amplifier assembly S10 and front No.2 speaker assembly T7.

NS

Connector Front View
(Front No.2 Speaker Side):



I038999E04

(b) Measure the resistance according to the value(s) in the table below.

Standard resistance

Tester Connection	Condition	Specified Condition
T7-1 - TWL+	Always	Below 1 Ω
T7-2 - TWL-	Always	Below 1 Ω
T7-1 - Body ground	Always	10 kΩ or higher
T7-2 - Body ground	Always	10 kΩ or higher

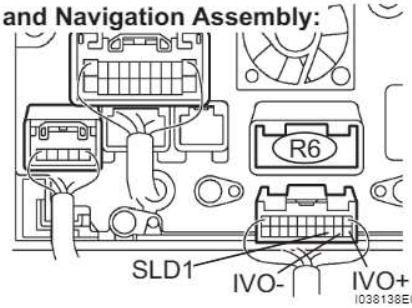
NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE STEREO COMPONENT AMPLIFIER ASSEMBLY

7	CHECK HARNESS AND CONNECTOR (RADIO AND NAVIGATION ASSEMBLY - STEREO COMPONENT AMPLIFIER)

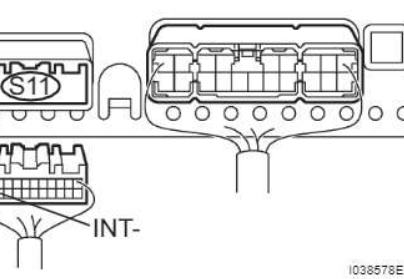
Radio and Navigation Assembly:



I038138E05

(a) Disconnect the connectors from the radio and navigation assembly R6 and stereo component amplifier assembly S11.

Stereo Component Amplifier Assembly:



I038578E06

(b) Measure the resistance according to the value(s) in the table below.

Standard resistance

Tester Connection	Condition	Specified Condition
IVO+ - INT+	Always	Below 1 Ω
IVO- - INT-	Always	Below 1 Ω
IVO+ - Body ground	Always	10 kΩ or higher
IVO- - Body ground	Always	10 kΩ or higher
SLD1 - Body ground	Always	10 kΩ or higher

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

NS

OK

PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

8	INSPECT SYSTEM

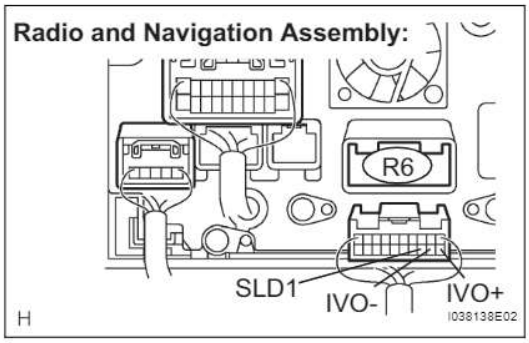
(a) Check the system.
(1) Check if sound is heard from speakers.

Symptom	Proceed to
No sound is heard from both speakers	A
No sound is heard from front No.1 speaker assembly	B
No sound is heard from front No.2 speaker assembly	Replace front No.2 speaker assembly (See page)

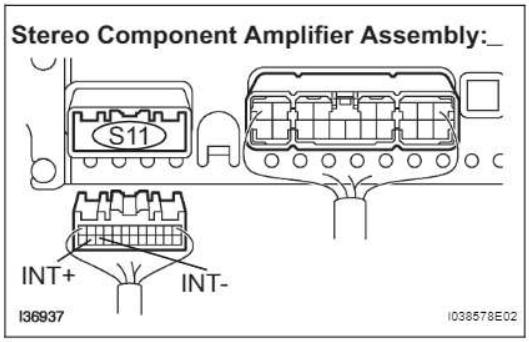
B → Go to step 11

A

9	CHECK HARNESS AND CONNECTOR (RADIO AND NAVIGATION ASSEMBLY - STEREO COMPONENT AMPLIFIER)



(a) Disconnect the connectors from the radio and navigation assembly R6 and stereo component amplifier assembly S11.



(b) Measure the resistance according to the value(s) in the table below.
Standard resistance

Tester Connection	Condition	Specified Condition
IVO+ - INT+	Always	Below 1 Ω
IVO- - INT-	Always	Below 1 Ω
IVO+ - Body ground	Always	10 kΩ or higher
IVO- - Body ground	Always	10 kΩ or higher
SLD1 - Body ground	Always	10 kΩ or higher

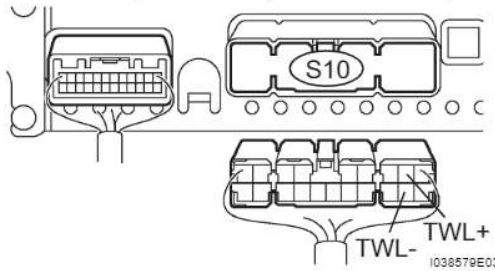
NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

NS

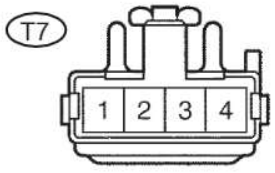
10	CHECK HARNESS AND CONNECTOR (STEREO COMPONENT AMPLIFIER - FRONT NO.2 SPEAKER)

Stereo Component Amplifier Assembly:



(a) Disconnect the connectors from the stereo component amplifier assembly S10 and front No.2 speaker assembly T7.

Connector Front View
(Front No.2 Speaker Side):



(b) Measure the resistance according to the value(s) in the table below.
Standard resistance

Tester Connection	Condition	Specified Condition
T7-1 - TWL+	Always	Below 1 Ω
T7-2 - TWL-	Always	Below 1 Ω
T7-1 - Body ground	Always	10 kΩ or higher
T7-2 - Body ground	Always	10 kΩor higher

NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK

11	INSPECT FRONT NO.2 SPEAKER ASSEMBLY

(a) Inspect by changing the right one with the left one, and vice versa.
OK:
Malfunction disappears.
HINT:
Connect all connectors of the speakers.

OK → **REPLACE FRONT NO.2 SPEAKER ASSEMBLY**

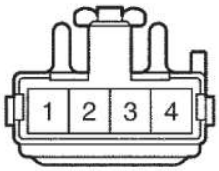
NG

NS

12 CHECK HARNESS AND CONNECTOR (FRONT NO.2 SPEAKER - FRONT NO.1 SPEAKER)

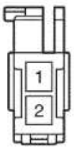
Connector Front View:

Front No.2 Speaker Assembly



Connector Front View:

Front No.1 Speaker Assembly



I040554E02

(a) Disconnect the connectors from the front No.2 speaker assembly and front No.1 speaker assembly.
(b) Measure the resistance according to the values in the table below.

Standard resistance

Tester Connection	Condition	Specified Condition
3 (Front No.2 speaker assembly) - 1 (Front No.1 speaker Assembly)	Always	Below 1 Ω
4 (Front No.2 speaker assembly) - 2 (Front No.1 speaker Assembly)	Always	Below 1 Ω
3 (Front No.2 speaker assembly) - Body ground	Always	10 kΩ or higher
4 (Front No.2 speaker assembly) - Body ground	Always	10 kΩ or higher

NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK

13 INSPECT FRONT NO.1 SPEAKER ASSEMBLY

(a) Disconnect the speaker connector.
(b) Resistance check
(1) Measure the resistance between the terminal of the speaker.

NOTICE:
The speaker should not be removed for checking.
Standard resistance:
3.5 to 4.5 Ω

NG → **REPLACE FRONT NO.1 SPEAKER ASSEMBLY**

OK

PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

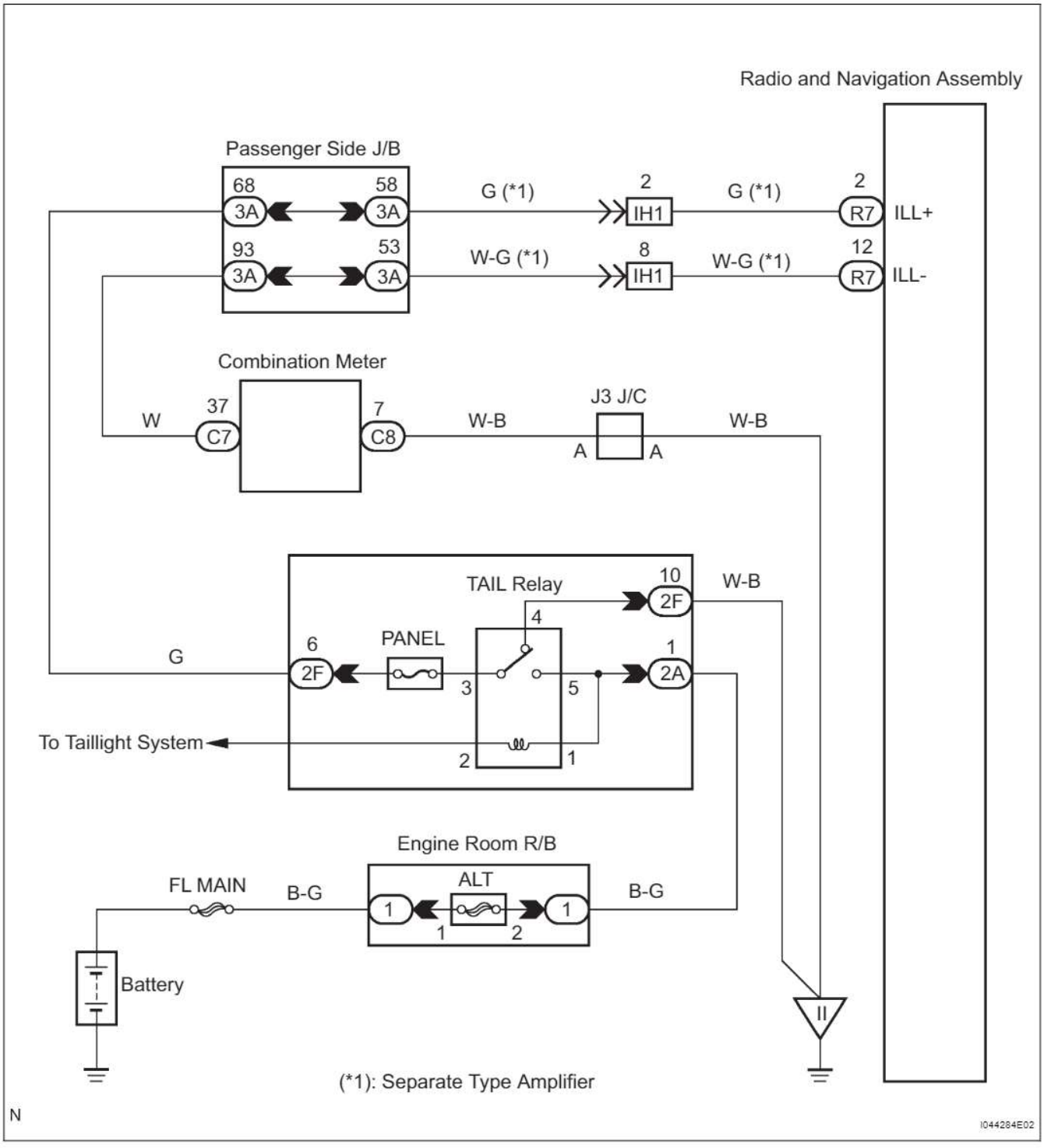
NS

Dimmer Signal Circuit

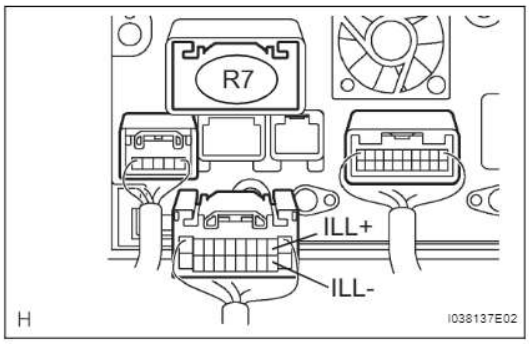
DESCRIPTION

Receiving the dimmer signal from the tail relay, the radio and navigation assembly dims the display and illuminates the panel switches.

WIRING DIAGRAM



1	INSPECT RADIO AND NAVIGATION ASSEMBLY (ILL+, ILL-)



(a) Disconnect the radio and navigation assembly connector R7.

(b) Measure the resistance according to the value(s) in the table below.

Standard resistance

Tester Connection	Condition	Specified Condition
ILL- - Body ground	Always	Below 1 Ω

(c) Measure the voltage according to the value(s) in the table below.

Standard voltage

Tester Connection	Condition	Specified Condition
ILL+ - ILL-	Light control switch ON	10 to 14 V

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

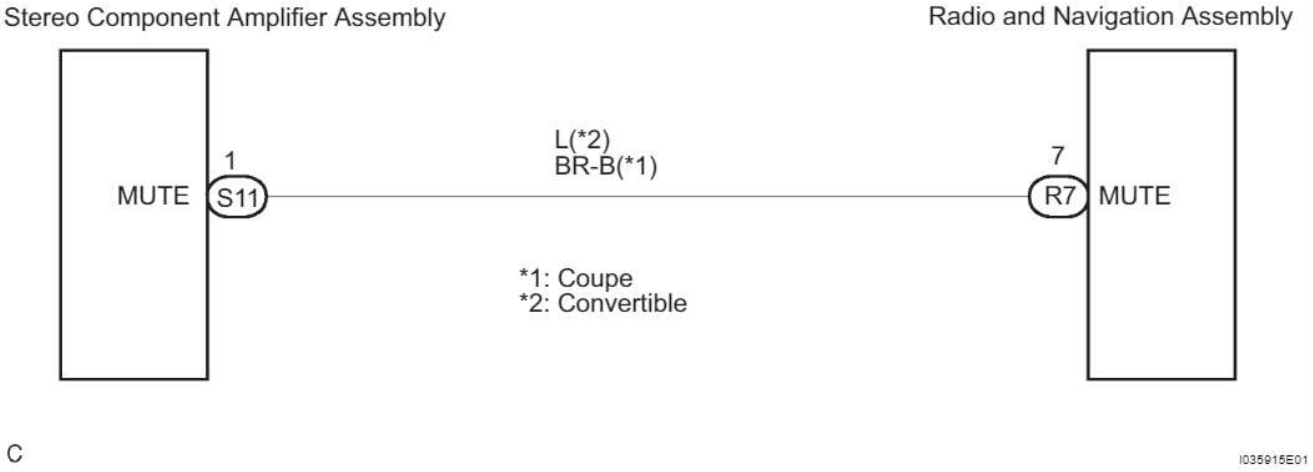
NS

Mute Signal Circuit

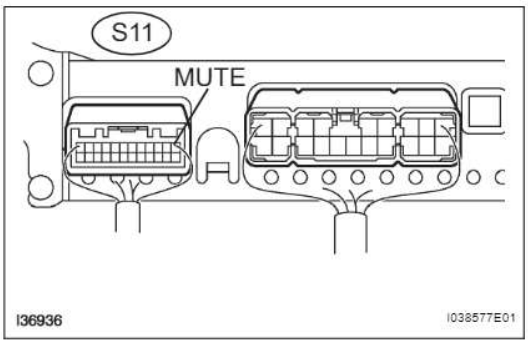
DESCRIPTION

This circuit sends a mute signal to the stereo component amplifier assembly. This has the effect of keeping sound from being produced even when the sound source changes.
If there is an open in the circuit, sound can be heard from the speaker when changing the sound source.
If there is a short in the circuit, either extremely quiet sound will be produced, or no sound will be produced at all.

WIRING DIAGRAM



1	INSPECT STEREO COMPONENT AMPLIFIER ASSEMBLY



(a) Measure the voltage according to the value(s) in the table below.

Standard voltage

Tester Connection	Condition	Specified Condition
MUTE - Body ground	Turn ignition switch to ACC, Audio system is playing → Changing	Above 3.5 V → Below 1 V

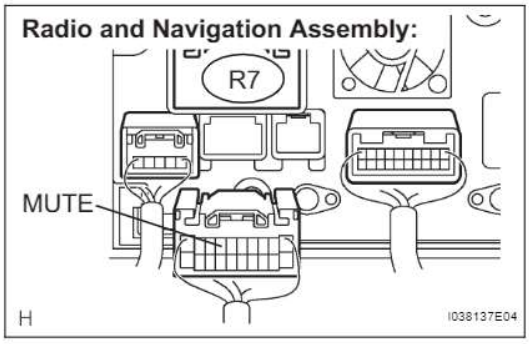
NG → Go to step 2

OK

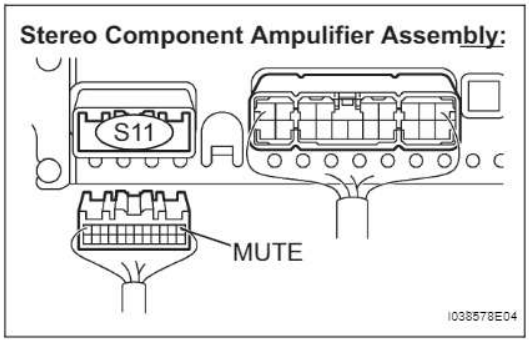
NS

PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

2	CHECK HARNESS AND CONNECTOR (RADIO AND NAVIGATION ASSEMBLY - STEREO COMPONENT AMPLIFIER)



(a) Disconnect the connectors from the radio and navigation assembly R7 and stereo component amplifier assembly S11.



(b) Measure the resistance according to the value(s) in the table below.

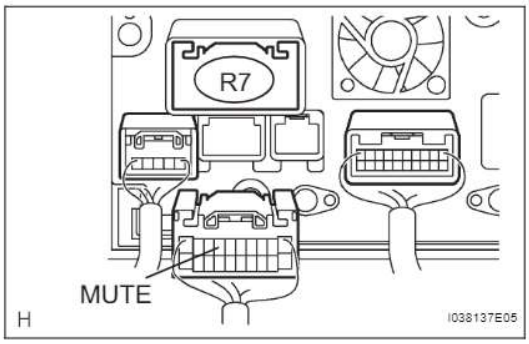
Standard resistance

Tester Connection	Condition	Specified Condition
MUTE (R7) - MUTE (S11)	Always	Below 1 Ω
MUTE (R7) - Body ground	Always	10 kΩ or higher

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

3	INSPECT RADIO AND NAVIGATION ASSEMBLY



(a) Reconnect the stereo component amplifier assembly connector.

(b) Measure the voltage according to the value(s) in the table below.

Standard voltage

Tester Connection	Condition	Specified Condition
MUTE - Body ground	Turn ignition switch to ACC	Above 3.5 V

NG → REPLACE STEREO COMPONENT AMPLIFIER ASSEMBLY

OK

REPLACE RADIO AND NAVIGATION ASSEMBLY

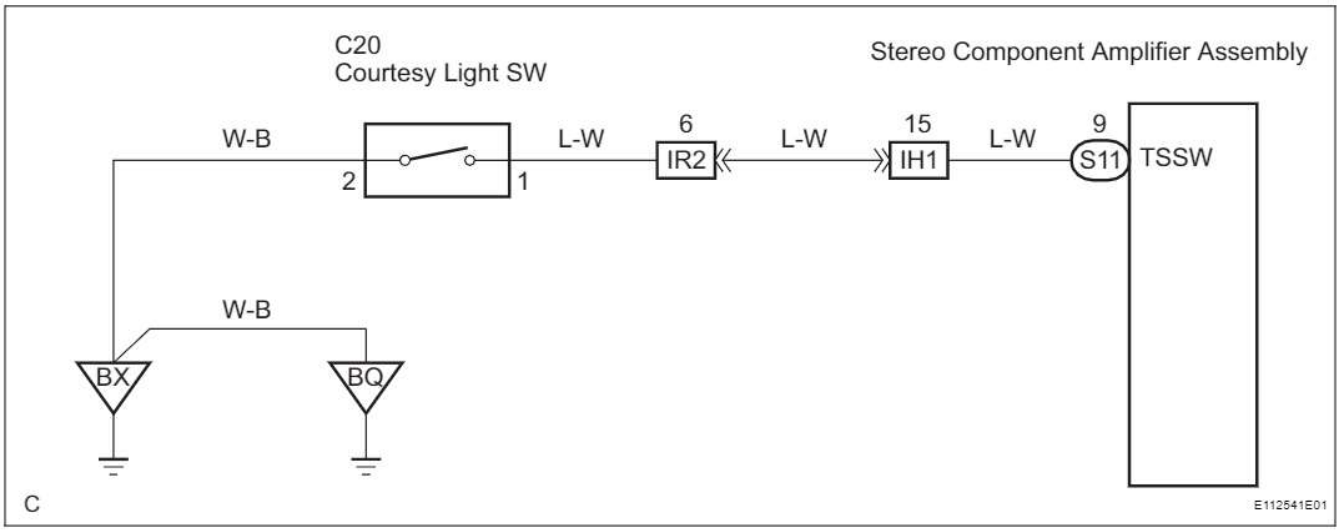
NS

Convertible Roof Open / Close Signal Circuit

DESCRIPTION

This circuit detects the convertible top open/close condition and automatically switches sound characteristic to the appropriate type (between two types). Sound is momentarily muted while the convertible top is opening or closing. If an open or short occurs in this circuit, sound characteristic is not switched even though the convertible top is opened or closed.

WIRING DIAGRAM



1	CHECK SYMPTOM

(a) Check if sound is momentarily muted while opening or closing the convertible top.
OK:
Sound is momentarily muted.

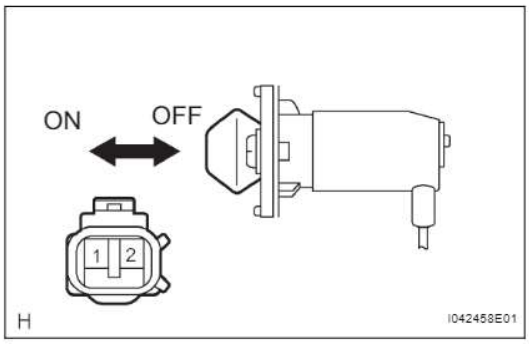
NG → **Go to step 2**

OK

REPLACE STEREO COMPONENT AMPLIFIER ASSEMBLY

NS

2 INSPECT COURTESY LIGHT SWITCH



(a) Disconnect the courtesy lamp switch.
(b) Measure the resistance according to the value(s) in the table below.

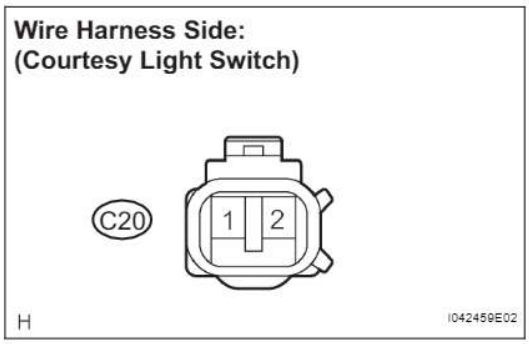
Standard resistance

Tester Connection	Condition	Specified Condition
1 - 2	ON (Shaft is not pressed)	Below 1 Ω
1 - 2	OFF (Shaft is pressed)	10 kΩ or higher

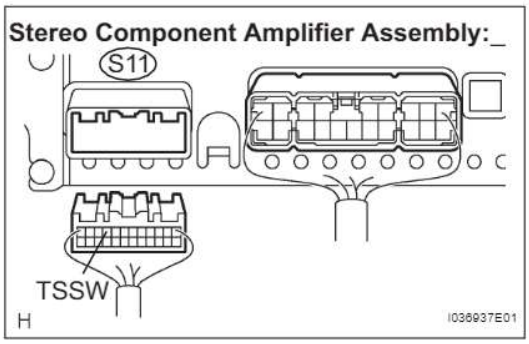
NG → **REPLACE COURTESY LIGHT SWITCH**

OK

3 CHECK HARNESS AND CONNECTOR (COURTESY LIGHT SWITCH - STEREO COMPONENT AMPLIFIER)



(a) Disconnect the connectors from the stereo component amplifier assembly and courtesy light switch.



(b) Measure the resistance according to the values in the table below.

Standard resistance

Tester Connection	Condition	Specified Condition
TSSW - 1	Always	Below 1 Ω
TSSW - Body ground	Always	10 kΩ or higher

NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK

REPAIR OR REPLACE HARNESS OR CONNECTOR (COURTESY LIGHT SWITCH - BODY GROUND)

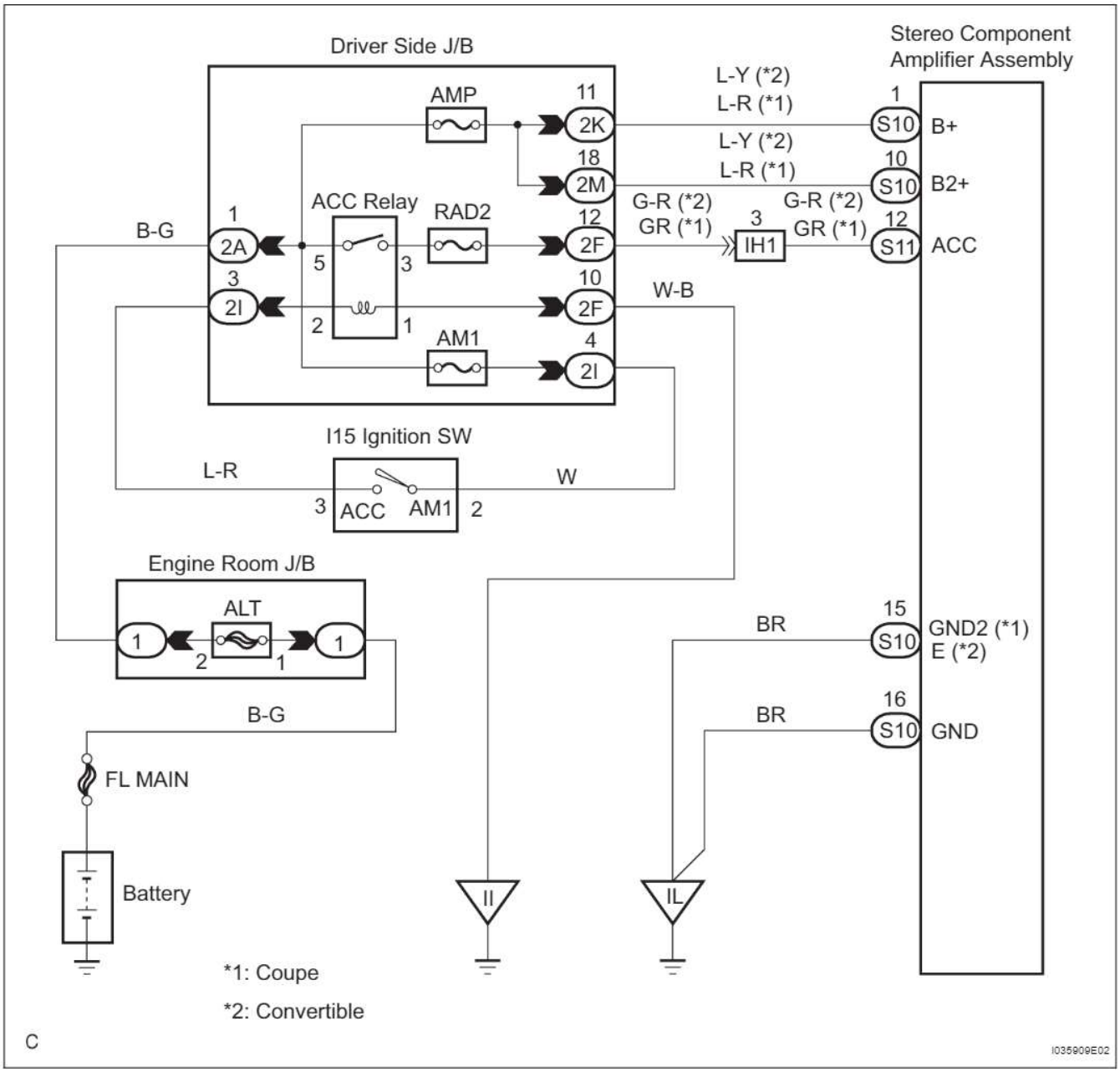
NS

Stereo Component Amplifier Power Source Circuit

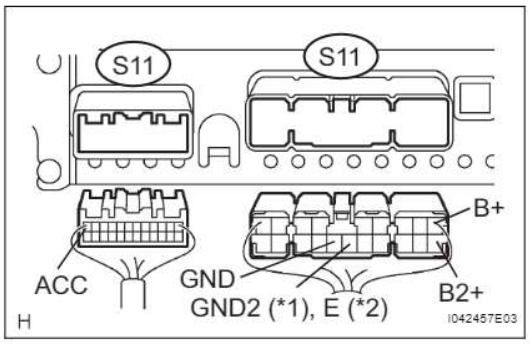
DESCRIPTION

This circuit provides power to the stereo component amplifier assembly.

WIRING DIAGRAM



1	INSPECT STEREO COMPONENT AMPLIFIER ASSEMBLY (B+, B2+, ACC, GND, GND2/E)



(a) Disconnect the stereo component amplifier assembly S10 and S11 connectors.

(b) Measure the resistance according to the value(s) in the table below.

Standard resistance

Tester Connection	Condition	Specified Condition
GND - Body ground	Always	Below 1 Ω
GND2 (*1), E (*2) - Body ground	Always	Below 1 Ω

*1: Coupe

*2: Convertible

(c) Measure the voltage according to the value(s) in the table below.

Standard voltage

Tester Connection	Condition	Specified Condition
B+ - GND	Always	10 to 14 V
B2+ - GND	Always	10 to 14 V
ACC - GND	Ignition SW ACC	10 to 14 V

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE OR DIAGNOSTIC TROUBLE CODE CHART

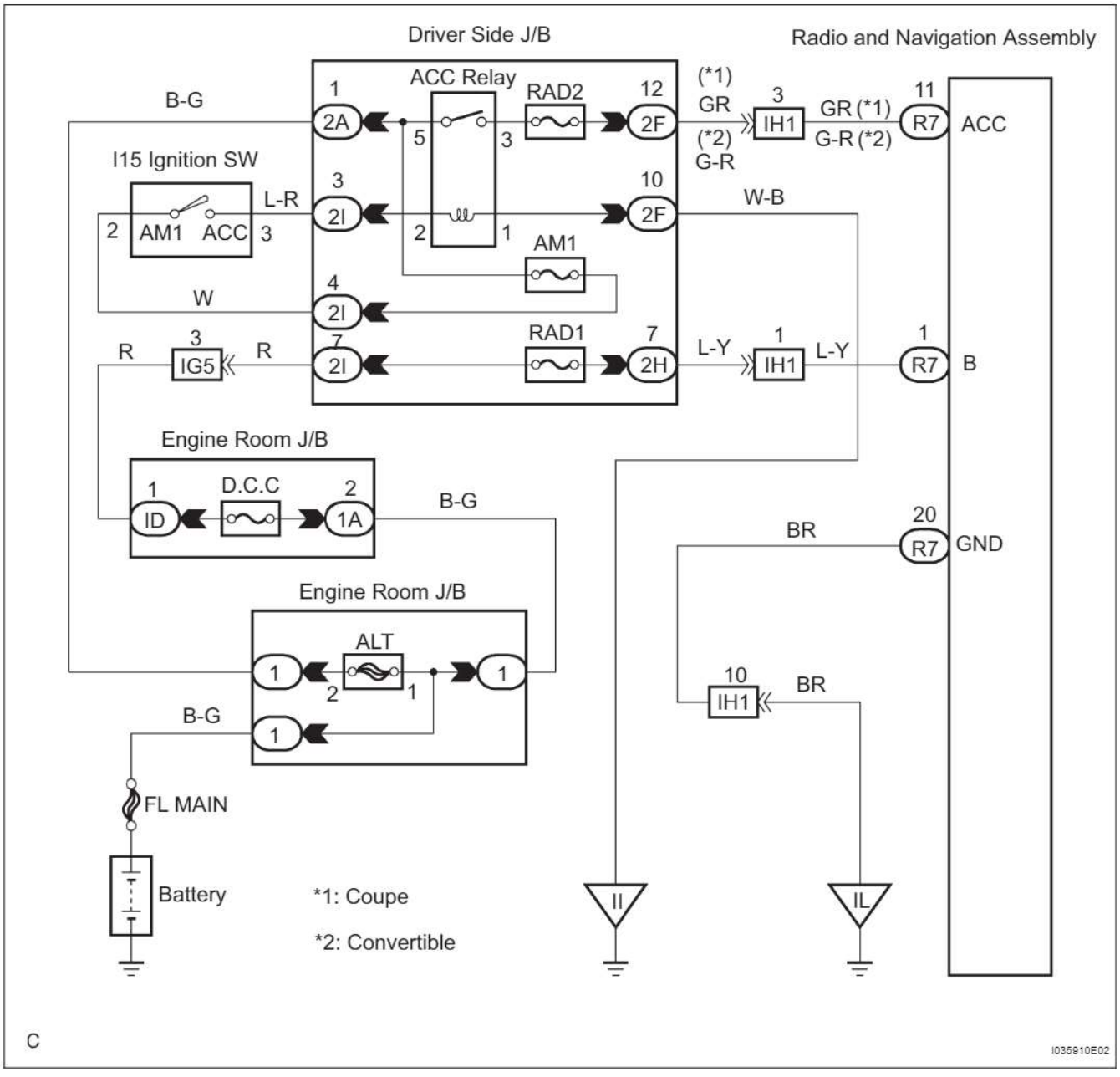
NS

Power Source Circuit (Radio and Navigation Assembly)

DESCRIPTION

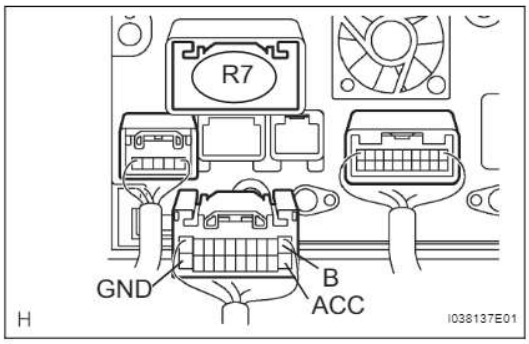
This circuit provides power to the radio and navigation assembly.

WIRING DIAGRAM



NS

1	INSPECT RADIO AND NAVIGATION ASSEMBLY (B, ACC, GND)



(a) Disconnect the radio and navigation assembly connector R7.

(b) Measure the resistance according to the value(s) in the table below.

Standard resistance

Tester Connection	Condition	Specified Condition
GND - Body ground	Always	Below 1 Ω

(c) Measure the voltage according to the value(s) in the table below.

Standard voltage

Tester Connection	Condition	Specified Condition
B - GND	Always	10 to 14 V
ACC - GND	Ignition SW ACC	10 to 14 V

NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE OR DIAGNOSTIC TROUBLE CODE CHART

NS

NAVIGATION CHECK MODE

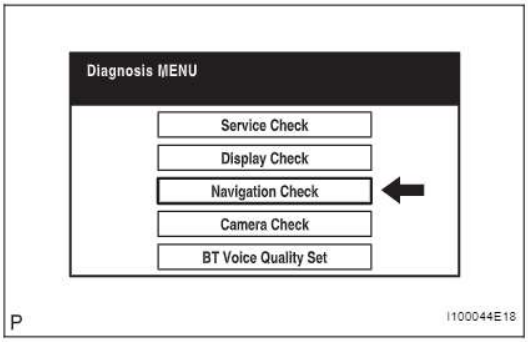
HINT:

- This mode displays GPS satellite information.
- Illustrations may differ from the actual vehicle depending on the device settings and options. Therefore, some detailed areas may not be shown exactly the same as on the actual vehicle.

1. **ENTER DIAGNOSTIC MODE (See page NS-42).**

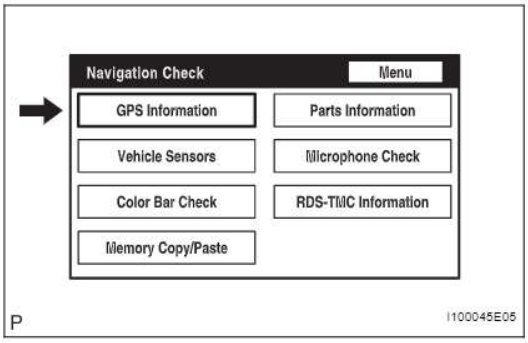
2. **NAVIGATION CHECK**

   (a) Select "Navigation Check" from the "Diagnosis MENU" screen.



3. **GPS INFORMATION**

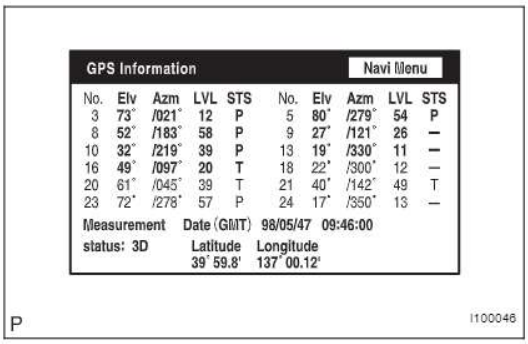
   (a) Select "GPS Information" from the "Navigation Check" screen.



   (b) When GPS information is displayed, check the GPS conditions.

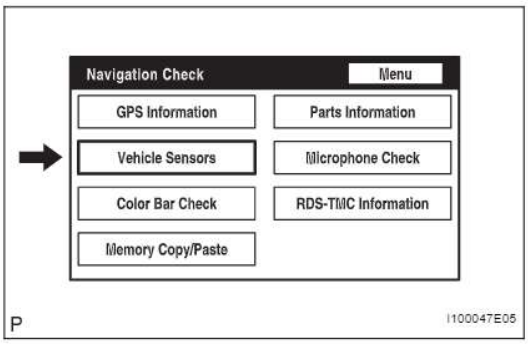
   HINT:

   This screen is updated once per second when input signals to the vehicle are changed.

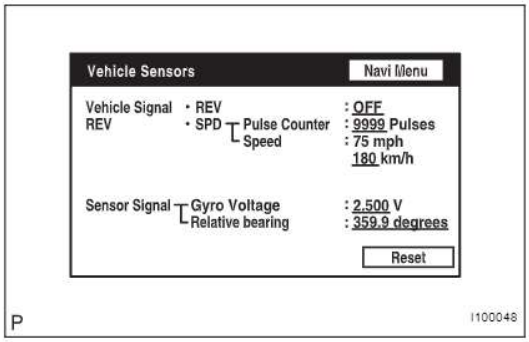


4. **VEHICLE SENSORS**

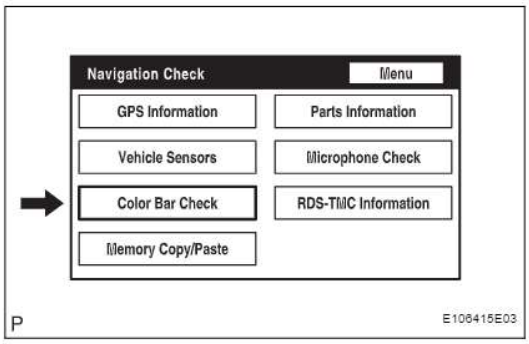
   (a) Select "Vehicle Sensors" from the "Navigation Check" screen.



NS

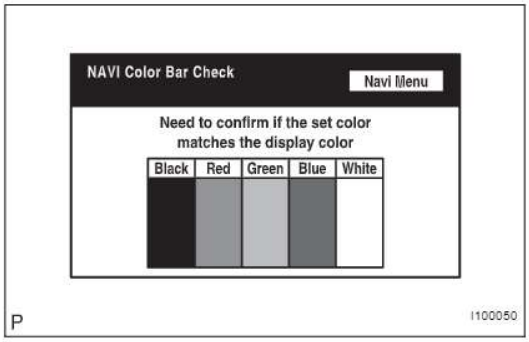


(b) Check all the signals and sensors when vehicle signal information is displayed.
HINT:
This screen is updated once per second when input signals to the vehicle are changed.

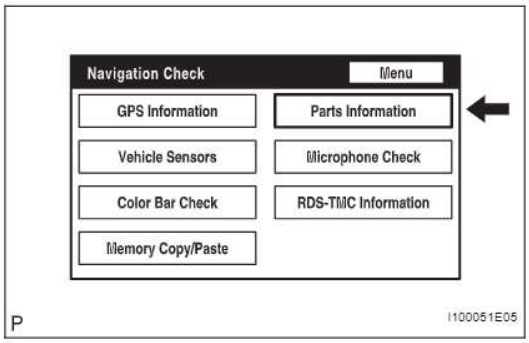


5. COLOR BAR CHECK

(a) Select "Color Bar Check" from the "Navigation Check" screen.



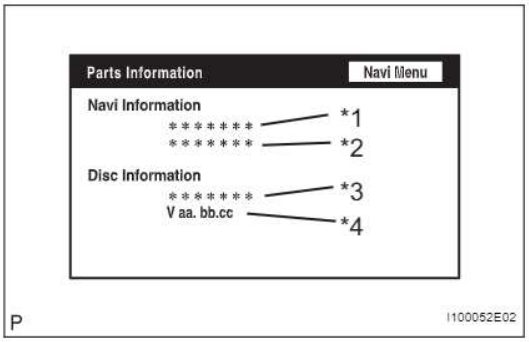
(b) Check each color of the color bar when the "NAVI Color Bar Check" screen is displayed.
HINT:
Colors will not be displayed full-screen as in "Display Check Mode".



6. PARTS INFORMATION

(a) Select "Parts Information" from the "Navigation Check" screen.

NS



(b) Check the navigation and disc information when the "Parts Information" screen is displayed.

Display	Contents
Navigation Manufacturer/*1	Radio and navigation assembly manufacturer name is displayed.
Navigation Version/*2	Radio and navigation assembly version is displayed.
Disc Manufacturer/*3	Map disc manufacturer is displayed.
Disc Version/*4	Map disc version is displayed.

NS

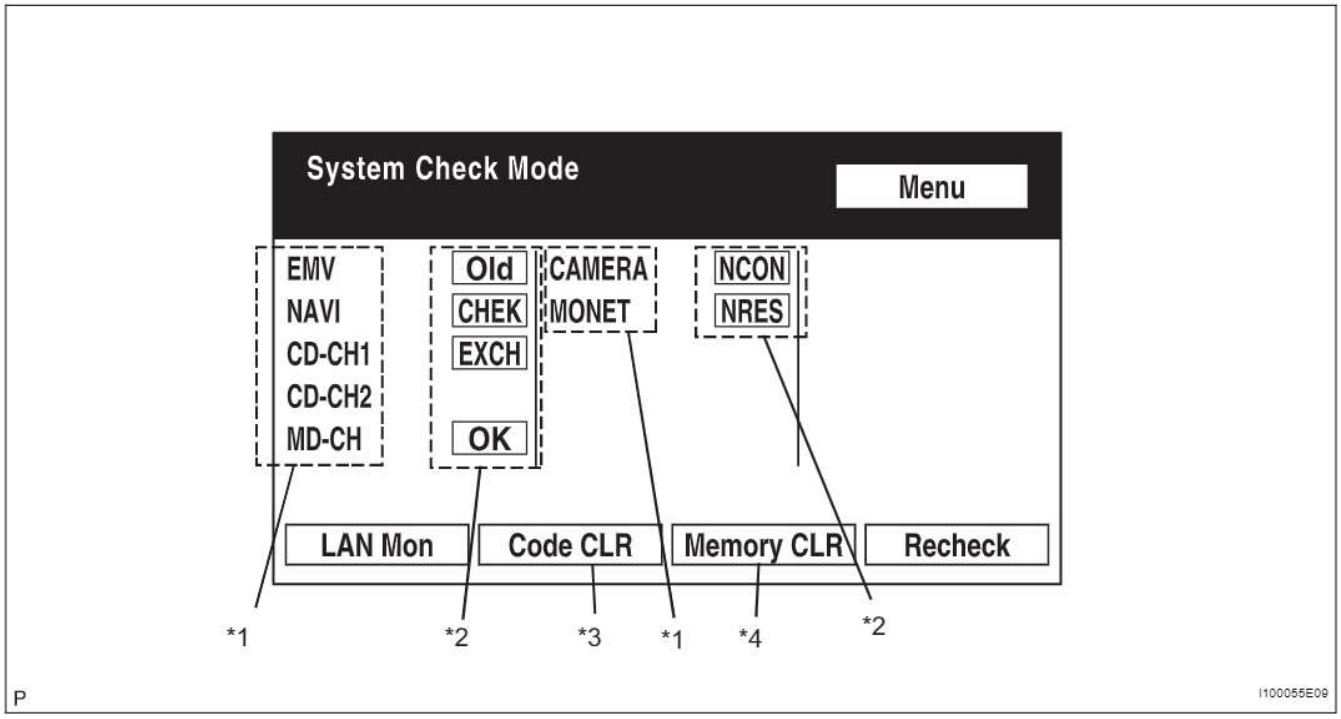
DIAGNOSIS DISPLAY DETAILED DESCRIPTION

HINT:

- This section contains a detailed description of displays within diagnostic mode.
- Illustrations may differ from the actual vehicle depending on the device settings and options. Therefore, some detailed areas may not be shown exactly the same as on the actual vehicle.

1. SYSTEM CHECK

(a) System Check Mode Screen



(1) Device Names and Hardware Address/*1

HINT:

- Registered device names are displayed.
- If a device name is unknown to the system, its physical address is shown instead.

Address No.	Name	Address No.	Name
110	EMV	120	AVX
128	1DIN TV	140	AVN
144	G-BOOK	178	NAVI
17C	MONET	190	AUDIO H/U
1AC	CAMERA-C	1B0	Rr-TV
1C0	Rr-CONT	1C2	TV-TUNER2
1C4	PANEL	1C6	G/W
1C8	FM-M-LCD	1D8	CONT-SW
1EC	Body	1F0	RADIO TUNER
1F1	XM	1F2	SIRIUS
230	TV-TUNER	240	CD-CH2
250	DVD-CH	280	CAMERA

NS

Address No.	Name	Address No.	Name
360	CD-CH1	3A0	MD-CH
17D	TEL	440	DSP-AMP
530	ETC	5C8	MAYDAY
1A0	DVD-P	1D6	CLOCK
1F4	RSA	1F6	RSE
480	AMP	-	-

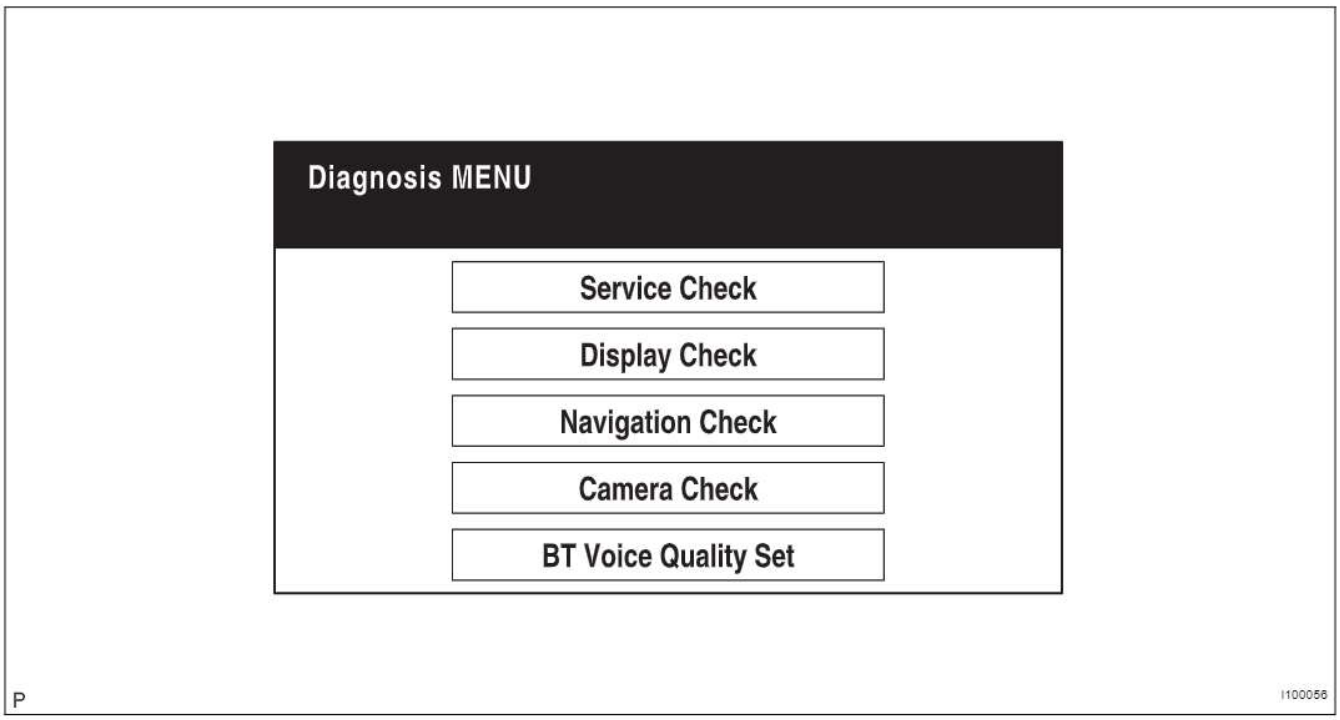
(2) Check Result/*2
HINT:
Result codes for all devices are displayed.

Result	Meaning	Action
OK	The device did not respond with a DTC (excluding communication DTCs from the AVC-LAN).	-
EXCH	The device responds with a "replace"-type DTC.	Look up the DTC in "Unit Check Mode" and replace the device.
CHEK	The device responds with a "check"-type DTC.	Look up the DTC in "Unit Check Mode".
NCON	The device was previously present, but does not respond in diagnostic mode.	1. Check power supply wire harness of the device. 2. Check the AVC-LAN of the device.
Old	The device responds with an "old"-type DTC.	Look up the DTC in "Unit Check Mode".
NRES	The device responds in diagnostic mode, but gives no DTC information.	1. Check power supply wire harness of the device. 2. Check the AVC-LAN of the device.

(3) Code Clear/*3
Present DTCs are cleared.

(4) Memory Clear/*4
Present and past DTCs and registered connected device names are cleared.

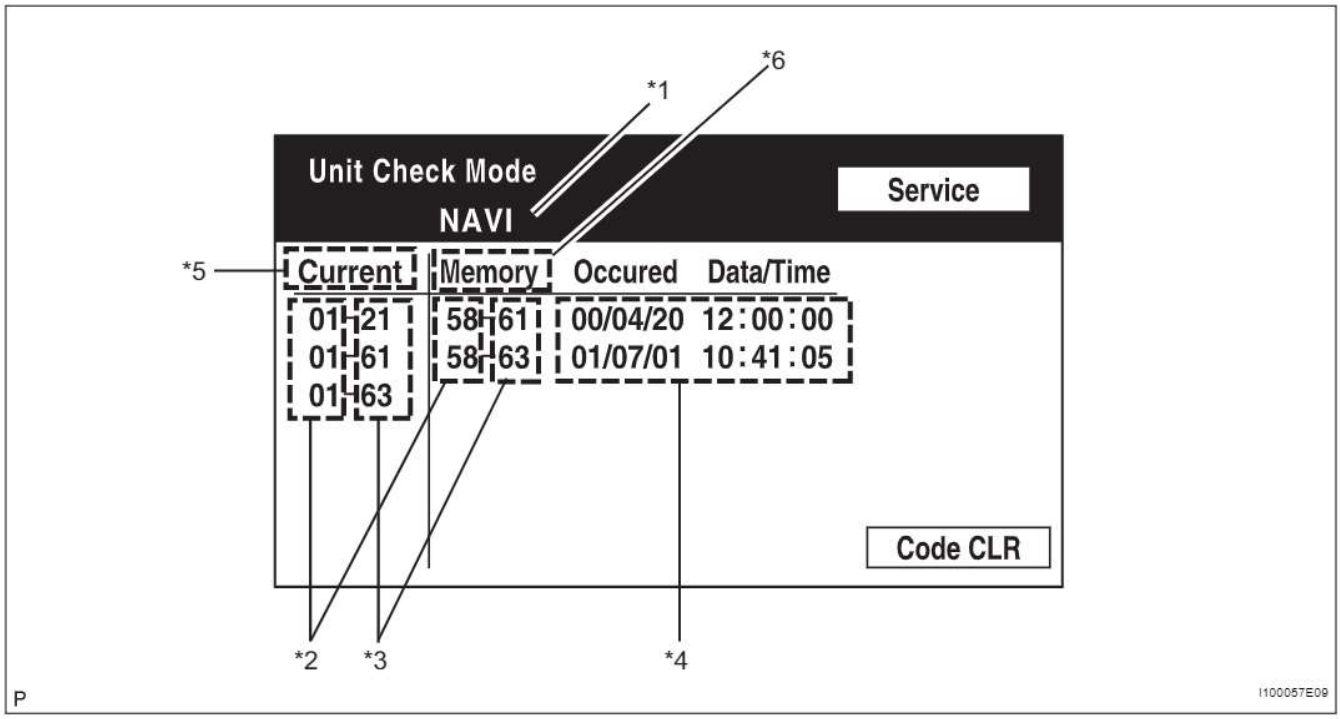
(b) Diagnosis MENU Screen



NS

HINT:
Each item is grayed out or not displayed based on the device settings.

(c) Unit Check Mode Screen

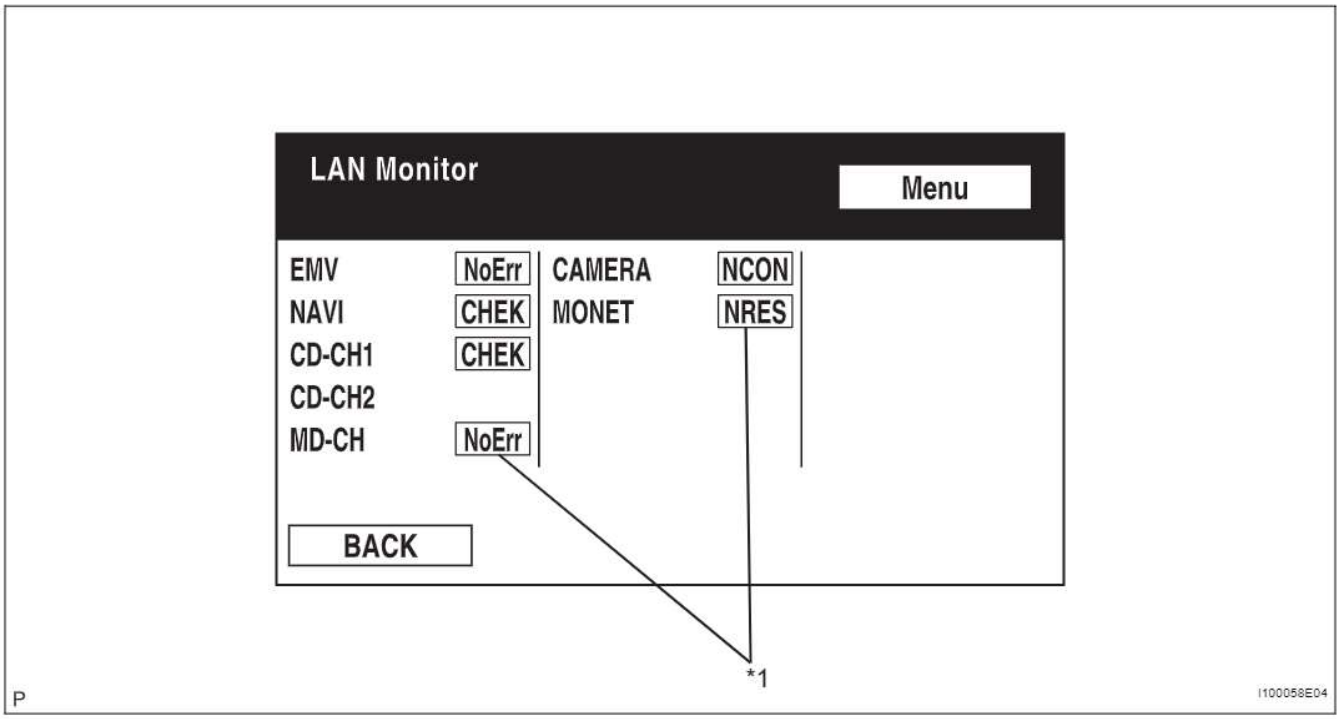


Screen Description

Display	Contents
Device name/*1	Target device
Segment/*2	Target device logical address
DTC/*3	DTC (Diagnostic Trouble Code)
Timestamp/*4	The time and date of past DTCs are displayed. (The year is displayed in 2 digit-format.)
Present Code/*5	The DTC output at the service check is displayed.
Past Code/*6	Diagnostic memory results and recorded DTCs are displayed.

NS

(d) LAN Monitor (Original) Screen/*1

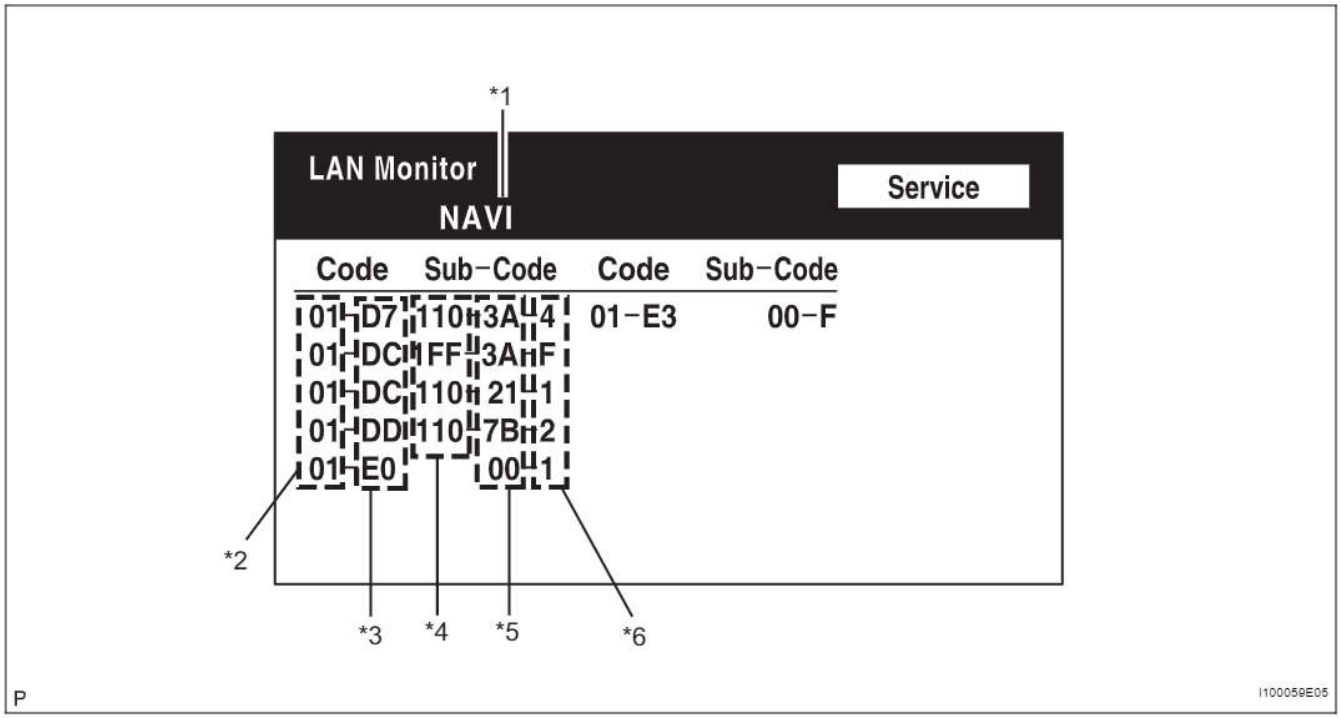


(1) Check Result/*1
HINT:
Check results of all the devices are displayed.

Result	Meaning	Action
No Err (OK)	There are no communication DTCs.	-
CHEK	The device responds with a "check"-type DTC.	Look up the DTC in "Unit Check Mode".
NCON	The device was previously present, but does not respond in diagnostic mode.	1. Check power supply wire harness of the device. 2. Check the AVC-LAN of the device.
Old	The device responded with an "old"-type DTC.	Look up the DTC in "Unit Check Mode".
NRES	Device responds in diagnostic mode, but gives no DTC information.	1. Check power supply wire harness of the device. 2. Check the AVC-LAN of the device.

NS

(e) LAN Monitor (Individual) Screen



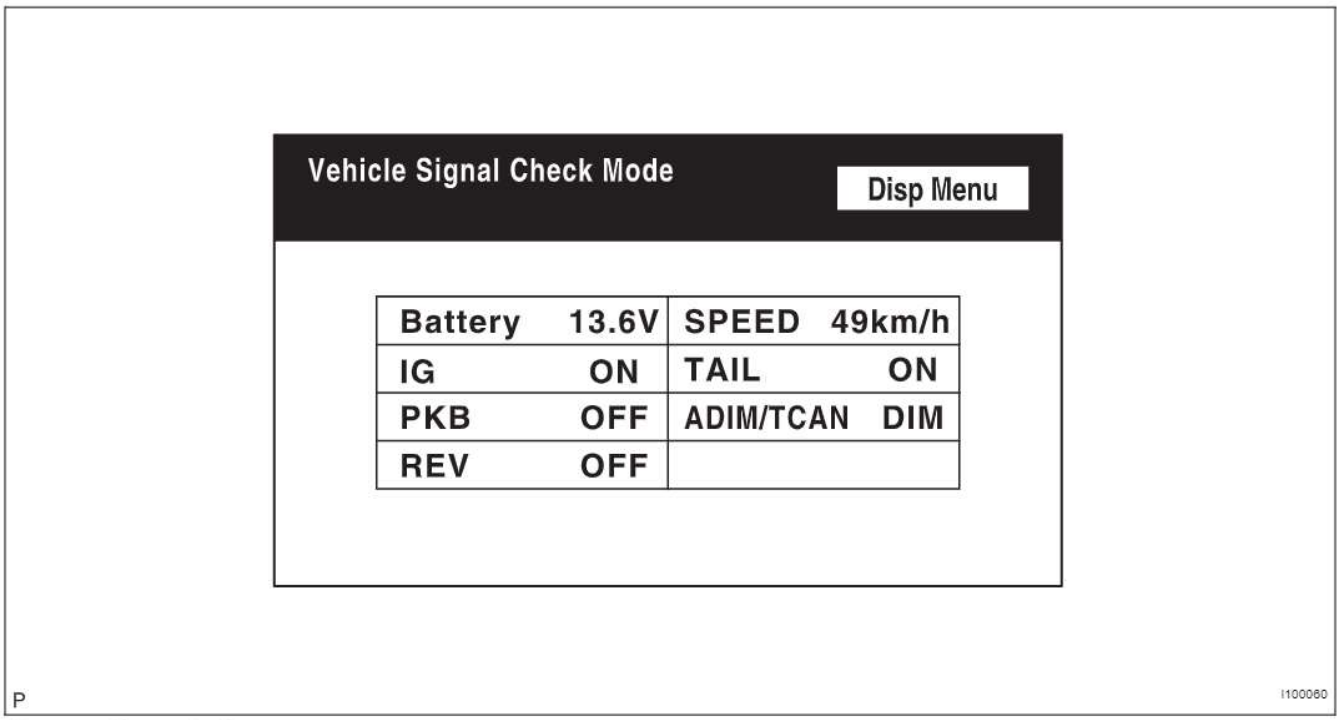
Screen Description

Display	Contents
Device name/*1	Target device
Segment/*2	Target logical address
DTC/*3	DTC (Diagnostic Trouble Code)
Sub-code (device address)/*4	Physical address stored with DTC (If there is no address, nothing is displayed.)
Connection check No./*5	Connection check number stored with DTC
DTC occurrence/*6	Number of times the same DTC has been recorded.

NS

2. DISPLAY CHECK

(a) Vehicle Signal Check Mode Screen



Screen Description

Name	Contents
Battery	Battery voltage is displayed.
PKB	Parking brake ON/OFF state is displayed.
REV	Reverse signal ON/OFF state is displayed.
IG	IG switch ON/OFF state is displayed.
ADIM/TCAN	Brightness state DIM (with)/BRIGHT (without) is displayed.
SPEED	Vehicle speed is displayed in km/h.
TAIL	TAIL signal (Headlight dimmer switch) ON/OFF state is displayed.

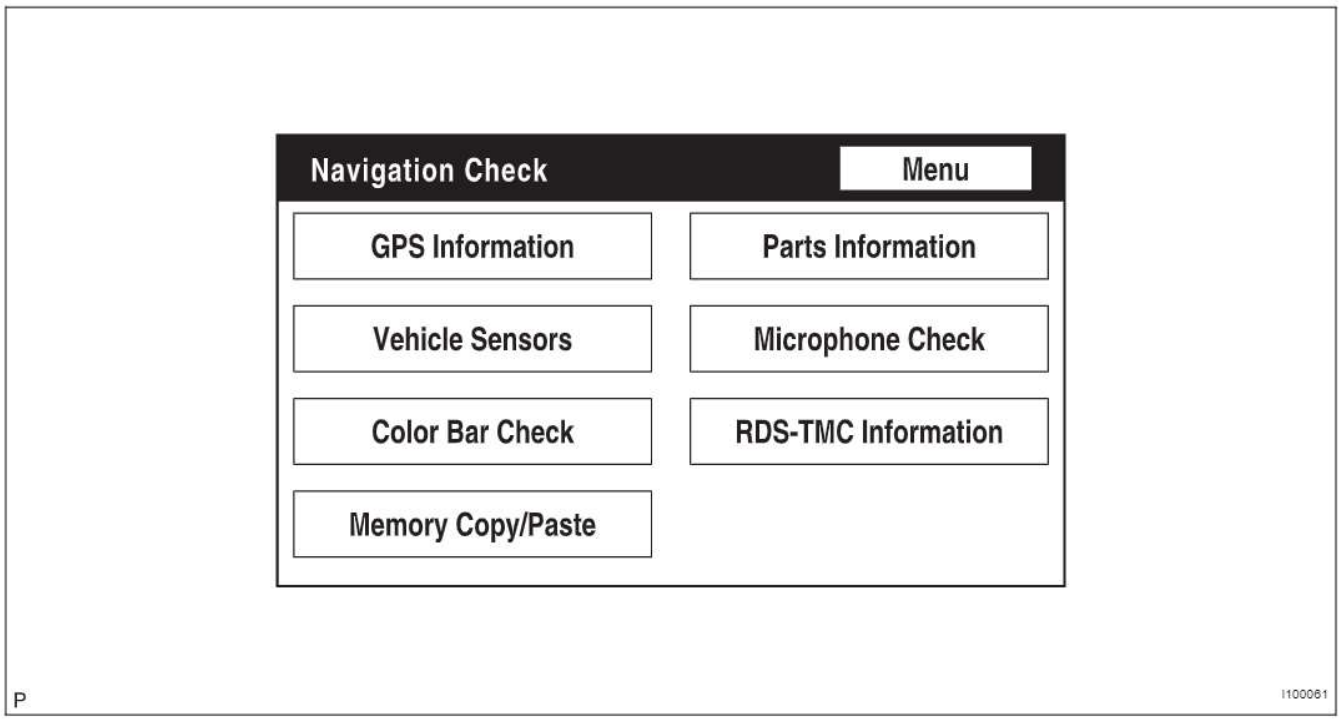
HINT:

- Only items sending a vehicle signal will be displayed.
- This screen is updated once per second when input signals to the vehicle are changed.

NS

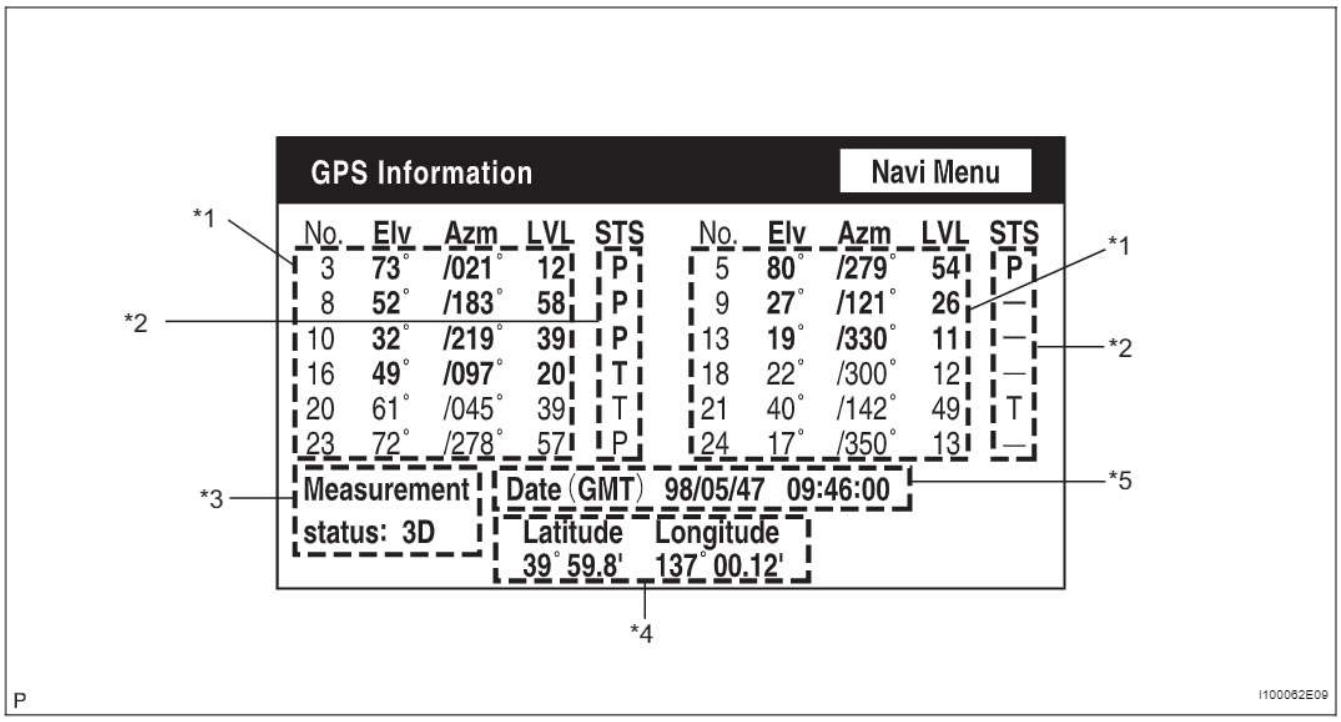
3. NAVIGATION CHECK

(a) Navigation Check Screen



HINT:
Each item is grayed out or not displayed based on the device settings.

(b) GPS Information Screen



(1) Satellite information/*1
Information from a maximum of 12 satellites is displayed on the screen. This information includes the target GPS satellite number, elevation angle, direction and signal level.

(2) Receiving condition/*2

(DENSO model)

Display	Contents
T	The system is receiving a GPS signal, but is not using it for location.
P	The system is using the GPS signal for location.
-	The system cannot receive a GPS signal.

(AISIN AW model)

Display	Contents
01H	The system cannot receive a GPS signal.
02H	The system is tracing a satellite.
03H	The system is receiving a GPS signal, but is not using it for location.
04H	The system is using the GPS signal for location.

Measurement information/*3

Display	Contents
2D	2-dimensional location method is being used.
3D	3-dimensional location method is being used.
NG	Location data cannot be used.
Error	Reception error has occurred.
-	Any other state.

Position information/*4

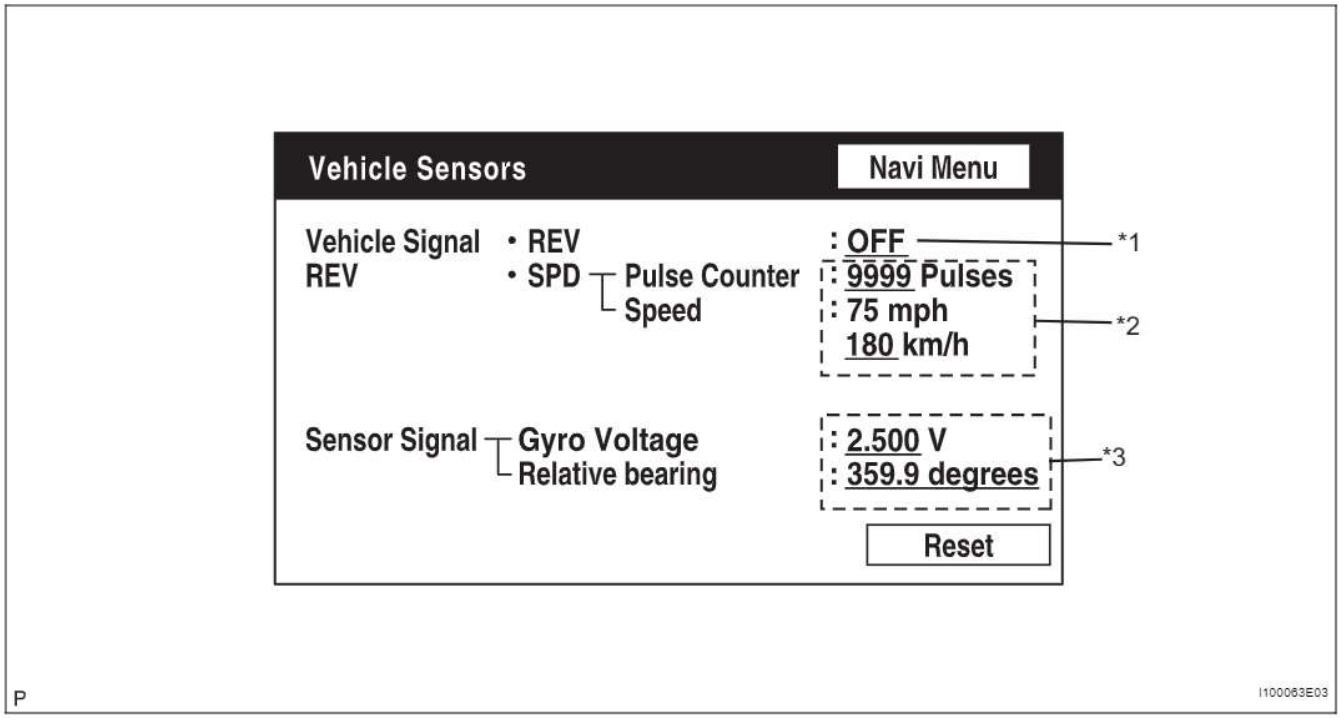
Display	Contents
Position	Latitude and longitude information on the current position is displayed.

Date information/*5

Display	Contents
Date	The date/time information obtained from GPS signal is displayed in Greenwich mean time (GMT). The last 4 digits are displayed.

NS

(c) Vehicle Sensors Screen



Vehicle signal

Display	Contents
REV/*1	REV signal ON/OFF state is displayed.
SPD/*2	SPD signal condition is displayed.

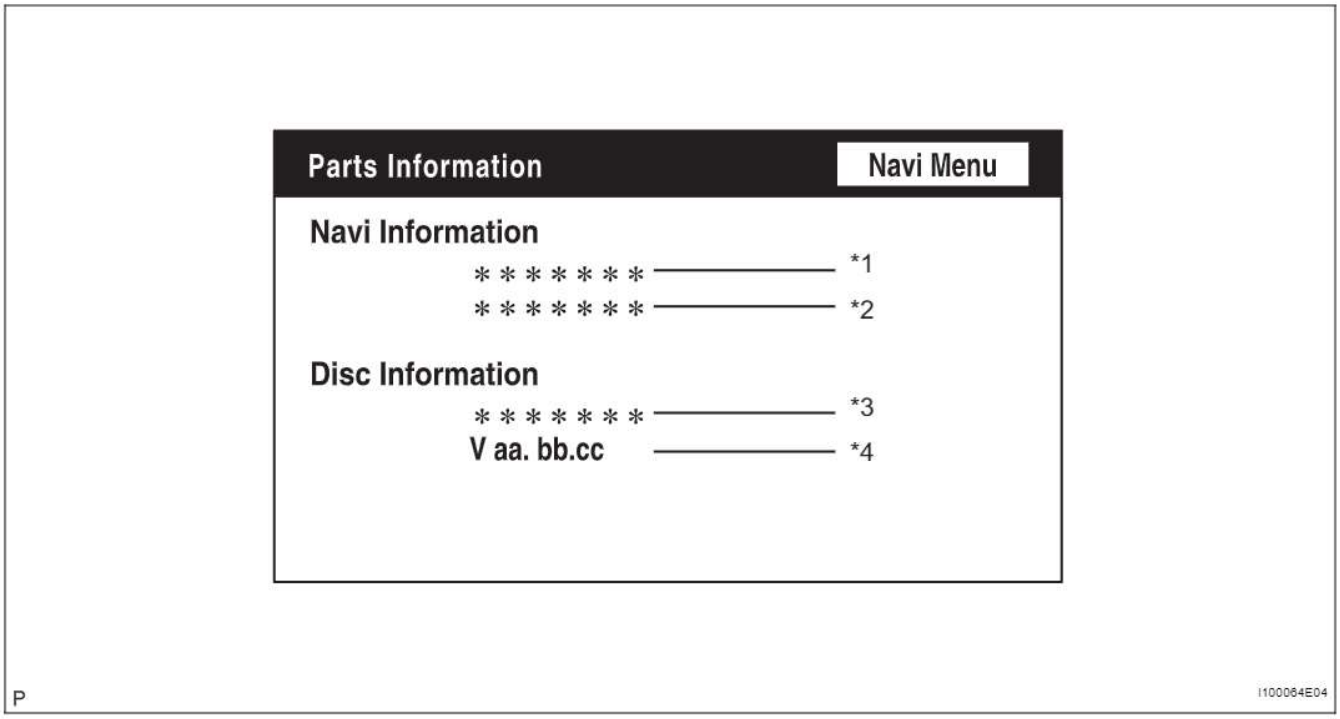
Sensor signal

Display	Contents
Gyro sensor/*3	Gyro sensor output condition is displayed (when the vehicle runs straight or is stationary, the voltage is approximately 2.5 V).

HINT:
Signals are updated once per second only when vehicle sensor signals are changed.

NS

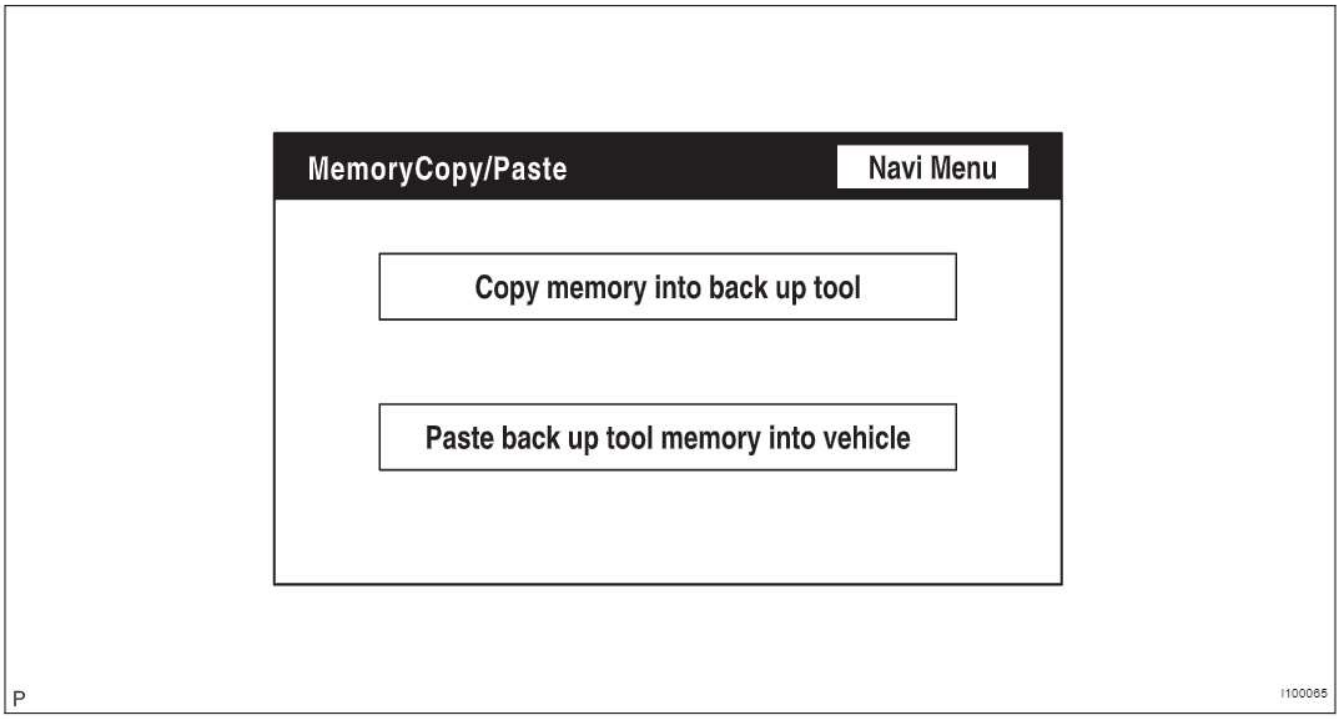
(d) Parts Information Screen



Screen Description

Display	Contents
Navigation Manufacturer/*1	Radio and navigation assembly manufacturer is displayed.
Navigation Version No./*2	Radio and navigation assembly version is displayed.
Disc Manufacturer/*3	Map disc manufacturer is displayed.
Disc Version No./*4	Map disc version is displayed.

(e) Memory Copy/Paste Screen



NS

4. DIAGNOSTIC TROUBLE CODE CHART

Terms	Description
Physical address	3-digit, hexadecimal code assigned to all components connected to the AVC-LAN. Individual symbols are specified based on function. Units whose names are unknown or relevant units are displayed with physical addresses.
Logical address	2-digit, hexadecimal code assigned to all the functions in the AVC-LAN system.

HINT:
Titles for each unit are stated in the following order: parts name (physical address) [Name indicated by DTC]

(a) RADIO AND NAVIGATION ASSEMBLY (physical address: 140) [AVN]

(1) Logical address: 01 (Communication control)

HINT:
Methods used to verify the cause of the problem are listed in order of probability in the verification column.

DTC	Name	Diagnosis	Verification
D5 *1 *5	Absence of registration unit	A device that the sub code shows is (was) disconnected from the system when turning the ignition switch to the ACC or ON position. The communication condition with the device that the code shows cannot be obtained when the engine starts.	1.Power source circuit (stereo component amplifier assembly) 2.AVC-LAN circuit 3.Replace stereo component amplifier assembly
D8 *2 *5	No response to connection check	The device indicated by the sub code is (was) disconnected from the system after engine start.	1.Power source circuit (stereo component amplifier assembly) 2.AVC-LAN circuit 3.Replace stereo component amplifier assembly
D9 *1 *5	Last mode error	The device (for audio visual system) that had functioned before the engine stopped is (was) disconnected from the system when the ignition switch is (was) in the ACC or ON position.	1.Power source circuit (stereo component amplifier assembly) 2.AVC-LAN circuit 3.Replace stereo component amplifier assembly
DA *5	No response to ON/OFF command	No response is identified when changing mode (audio and visual mode change). Sound and image do not change by switch operation.	1.Power source circuit (stereo component amplifier assembly) 2.AVC-LAN circuit 3.Replace stereo component amplifier assembly
DB *1 *5	Mode status error	A dual alarm is detected.	1.Power source circuit (stereo component amplifier assembly) 2.AVC-LAN circuit 3.Replace stereo component amplifier assembly
DC *3 *5	Failure in transmission	A transmission failure to the device indicated by the sub code has occurred. NOTE: This DTC may have no direct relationship with the malfunction.	1.Power source circuit (stereo component amplifier assembly) 2.AVC-LAN circuit 3.Replace stereo component amplifier assembly
DE *4 *5	Slave reset	A slave device has been disconnected after engine start.	1.Power source circuit (stereo component amplifier assembly) 2.AVC-LAN circuit 3.Replace stereo component amplifier assembly
21	ROM error	A malfunction exists in ROM.	Replace radio and navigation assembly

DTC	Name	Diagnosis	Verification
22	RAM error	A malfunction exists in RAM.	Replace radio and navigation assembly

HINT:

- *1: This code may be recorded depending on the battery condition or engine start voltage even if no failure is detected.
- *2: If the power connector is disconnected after the engine starts, this code is recorded after 180 seconds.
- *3: This code may be stored if the ignition key is turned to the START position again with the engine running.
- *4: This code may be stored if the ignition key is held in the START position for 1 minute or more before returning to the ON position.
- *5: If the device is reported as not existing during verification, check the power source circuit and AVC-LAN circuit for the device.

(2) Logical address: 21 (SW): 23 (SW with name): 24 (SW converting): 25 (command SW)
HINT:
Methods used to verify the cause of the problem are listed in order of probability in the verification column.

DTC	Name	Diagnosis	Verification
10	Panel switch error	The panel SW detection circuit has a failure.	Replace radio and navigation assembly

(3) Logical address: 58 (Navigation): 80 (GPS)
HINT:
Methods used to verify the cause of the problem are listed in order of probability in the verification column.

DTC	Name	Diagnosis	Verification
10	Gyro error	Ground short, power supply short, open circuit in the gyro signal,or gyro failure.	1.Inspect gyro error 2.Replace GPS antenna 3.Replace radio and navigation assembly
11	GPS receiver error	RTC, ROM, and RAM of the GPS receiver and TCXO errors. GPS receiver is failed.	Replace radio and navigation assembly
40	GPS antenna error	GPS antenna error	1.Replace GPS antenna 2.Replace radio and navigation assembly
41	GPS antenna power source error	Error of the power source to the GPS antenna	1.Replace GPS antenna 2.Replace radio and navigation assembly
42	Map disc read error	Player error. A scratch or dirt on the disc. Access to an invalid address due to software error.	1.Inspect map disc read error 2.Replace map disc 3.Replace radio and navigation assembly
43	SPD signal error	A difference between the GPS speed and SPD pulse is detected.	1.Inspect speed signal error 2.Speed signal circuit 3.Replace radio and navigation assembly

NS

(4) Logical address: 58 (Navigation): 80 (GPS)

DTC	Name	Diagnosis	Verification
44	Player error	Map player error is detected.	1.Check if the disc can be inserted and ejected. If a malfunction is found, replace the radio and navigation assembly. 2.If the same code is detected again, replace the radio and navigation assembly.
45	High temperature	High map player temperature is detected.	1.Park the vehicle in a cool place. Turn the engine off. After checking that the temperature of the radio and navigation assembly becomes sufficiently low, turn the engine on to verify the malfunction symptom. 2.If the same code is detected, replace the radio and navigation assembly.

(b) STEREO COMPONENT AMPLIFIER ASSEMBLY (Physical address: 440) [DSP AMP]

(1) Logical address: 01 (Communication control)

HINT:
Methods used to verify the cause of the problem are listed in order of probability in the verification column.

DTC	Name	Diagnosis	Verification
D7	Connection check error	When either of the following conditions is met. • The device that stored this code has (had) been disconnected after the engine starts (started). • The master device has (had) been disconnected when this code is (was) stored.	1.Power source circuit (radio and navigation assembly) 2.AVC-LAN circuit 3.Power source circuit (stereo component amplifier assembly) 4.Replace radio and navigation assembly 5.Replace stereo component amplifier assembly
DC *2 *5	Transmission error	The device stores the fact that transmission to the device indicated by the sub code has failed. NOTE: This DTC may not be directly related to the problem.	1.Power source circuit (radio and navigation assembly) 2.AVC-LAN circuit 3.Power source circuit (stereo component amplifier assembly) 4.Replace radio and navigation assembly 5.Replace stereo component amplifier assembly
E0 *1	Registration complete indication error	"Registration complete" command from the master device cannot be received. NOTE: This DTC may not be directly related to the problem.	-
E1 *1	Voice processing device ON error	The AMP device records that the AMP output does not function even while the source device operates.	1.Power source circuit (radio and navigation assembly) 2.AVC-LAN circuit 3.Replace radio and navigation assembly
E2	ON/OFF indication parameter error	A command for ON/OFF control from the master device has a problem.	Replace radio and navigation assembly

NS

(2) Logical address: 01 (Communication control)

DTC	Name	Diagnosis	Verification
E3 *1	Registration demand transmission	A registration demand command from the slave device is output, or the registration demand command is output by receiving connection confirmation command from the sub master device. NOTE: This DTC may not be directly related to the problem.	-
E4	Multiple frame incomplete	The multiple frame transmission ends incomplete. NOTE: This DTC may not be directly related to the problem.	-

HINT:

- *1: This code may be recorded depending on the battery condition or engine start voltage even if no failure is detected.
- *2: If the power connector is disconnected after the engine starts, this code is recorded after 180 seconds.
- *3: This code may be stored if the ignition key is turned to the START position again with the engine running.
- *4: This code may be stored if the ignition key is held in the START position for 1 minute or more before returning to the ON position.
- *5: If the device is reported as not existing during verification, check the power source circuit and AVC-LAN circuit for the device.

NS

PROBLEM SYMPTOMS TABLE

HINT:

- Before performing verification listed in the table below, check the fuse and relay.
- Methods used to verify the cause of the problem are listed in order of probability in the suspected area column.

Display function

Symptom	Suspected area	See page
Pressing PWR switch does not turn on system.	1."PRESSING POWER SWITCH DOES NOT TURN ON SYSTEM"	NS-49
	2.Power source circuit (Radio and navigation assembly)	NS-117
	3.Replace radio and navigation assembly	NS-119
Black screen (no image appears on navigation/audio screen).	1."BLACK SCREEN (NO IMAGE APPEARS ON NAVIGATION AND AUDIO SCREEN)"	NS-59
	2.Dimmer signal circuit	NS-109
	3.Power source circuit (Radio and navigation assembly)	NS-117
	4.Replace radio and navigation assembly	NS-119
Illumination for panel switch does not come on with TAIL switch on.	1."ILLUMINATION FOR PANEL SWITCH DOES NOT COME ON WITH TAIL SWITCH ON"	NS-60
	2.Dimmer signal circuit	NS-109
	3.Replace radio and navigation assembly	NS-119
Display does not dim (night screen) with TAIL switch on.	1."DISPLAY DOES NOT DIM (NIGHT SCREEN) WITH TAIL SWITCH ON"	NS-61
	2.Dimmer signal circuit	NS-109
	3.Replace radio and navigation assembly	NS-119
Power does not turn off (the screen remains on).	1.Power source circuit (Radio and navigation assembly)	NS-117
	2.Replace radio and navigation assembly	NS-119
Panel switches does not function.	1."PANEL SWITCH DOES NOT FUNCTION"	NS-62
Touch panel switch does not function.	1."TOUCH PANEL SWITCH DOES NOT FUNCTION"	NS-63
	2.Steering pad switch circuit	NS-85
	3.Power source circuit (Radio and navigation assembly)	NS-117
	4.Replace radio and navigation assembly	NS-119
Display panel does not open, tilt, or tilts improperly.	1."DISPLAY PANEL DOES NOT OPEN, TILT, OR TILTS IMPROPERLY"	NS-64
	2.Power source circuit (Radio and navigation assembly)	NS-117
	3.Replace radio and navigation assembly	NS-119
Screen is distorted.	1.Power source circuit (Radio and navigation assembly)	NS-117
	2.Replace radio and navigation assembly	NS-119
Screen flicker or color distortion.	1."SCREEN FLICKER OR COLOR DISTORTION"	NS-65
	2.Power source circuit (Radio and navigation assembly)	NS-117
	3.Replace radio and navigation assembly	NS-119

Audio function

Symptom	Suspected area	See page
No sound can be heard from speakers (audio is mute).	1."NO SOUND CAN BE HEARD FROM SPEAKERS (AUDIO IS MUTE)"	NS-50
	2.Mute signal circuit	NS-111
	3.Amp sound signal circuit	NS-94
	4.Speaker circuit	NS-89
	5.Power source circuit (Stereo component amplifier assembly)	NS-115
	6.Replace stereo component amplifier assembly	AV-85
	7.Replace radio and navigation assembly	NS-119

NS

Symptom	Suspected area	See page
Radio broadcast cannot be received (poor reception).	1."RADIO BROADCAST CANNOT BE RECEIVED (POOR RECEPTION)"	NS-56
CD cannot be inserted/played or CD is ejected right after insertion.	1."CD CANNOT BE INSERTED/PLAYED OR CD IS EJECTED RIGHT AFTER INSERTION"	NS-52
	2.Power source circuit (Radio and navigation assembly)	NS-117
	3.Replace radio and navigation assembly	NS-119
CD cannot be ejected.	1."CD CANNOT BE EJECTED"	NS-51
	2.Power source circuit (Radio and navigation assembly)	NS-117
	3.Replace radio and navigation assembly	NS-119
Abnormal noise occurs.	1."NOISE OCCURS"	NS-48
	2.Mute signal circuit	NS-111
	3.Power source circuit (Stereo component amplifier assembly)	NS-115
	4.Power source circuit (Radio and navigation assembly)	NS-117
	5.Replace stereo component amplifier assembly	AV-85
	6.Replace radio and navigation assembly	NS-119
CD sound skips.	1."CD SOUND SKIPS"	NS-54
	2.Replace radio and navigation assembly	NS-119
Poor sound quality in all modes (low volume).	1."POOR SOUND QUALITY IN ALL MODES (LOW VOLUME)"	NS-67
	2.Mute signal circuit	NS-111
	3.Power source circuit (Stereo component amplifier assembly)	NS-115
	4.Power source circuit (Radio and navigation assembly)	NS-117
	5.Replace stereo component amplifier assembly	AV-85
	6.Replace radio and navigation assembly	NS-119
Automatic sound characteristic function does not operate normally.	1.Convertible top open/close signal circuit	NS-113

Navigation function

Symptom	Suspected area	See page
Map disc cannot be inserted.	1."MAP DISC CANNOT BE INSERTED"	NS-68
	2.Power source circuit (Radio and navigation assembly)	NS-117
	3.Replace radio and navigation assembly	NS-119
Map disc cannot be ejected.	1."MAP DISC CANNOT BE EJECTED"	NS-69
	2.Power source circuit (Radio and navigation assembly)	NS-117
	3.Replace radio and navigation assembly	NS-119
Vehicle position mark deviates greatly.	1."VEHICLE POSITION MARK DEVIATES GREATLY"	NS-70
	2.Replace GPS antenna assembly	NS-121
	3.Replace radio and navigation assembly	NS-119
Cursor or map rotates when vehicle stopped.	1."CURSOR OR MAP ROTATES WHEN VEHICLE IS STOPPED"	NS-72
	2.Replace radio and navigation assembly	NS-119
Vehicle position mark is not updated.	1."VEHICLE POSITION MARK IS NOT UPDATED"	NS-73
	2.Replace map disc	-
	3.Replace radio and navigation assembly	NS-119
Current position display does not appear.	1."CURRENT POSITION DISPLAY DOES NOT APPEAR"	NS-74
	2.Replace map disc	-
	3.Replace radio and navigation assembly	NS-119
GPS mark is not displayed.	1."GPS MARK IS NOT DISPLAYED"	NS-75
	2.Replace GPS antenna assembly	NS-121
	3.Replace radio and navigation assembly	NS-119

NS

Symptom	Suspected area	See page
Voice guidance does not function.	1."VOICE GUIDANCE DOES NOT FUNCTION"	NS-78
	2.Speaker circuit (navigation voice)	NS-102
	3.Replace map disc	-
	4.Replace stereo component amplifier assembly	AV-85
	5.Replace radio and navigation assembly	NS-119
Map display incomplete.	1."MAP DISPLAY INCOMPLETE"	NS-80
	2.Replace map disc	-
	3.Replace radio and navigation assembly	NS-119
Route cannot be calculated.	1."ROUTE CANNOT BE CALCULATED"	NS-81
	2.Replace map disc	-
	3.Replace radio and navigation assembly	NS-119

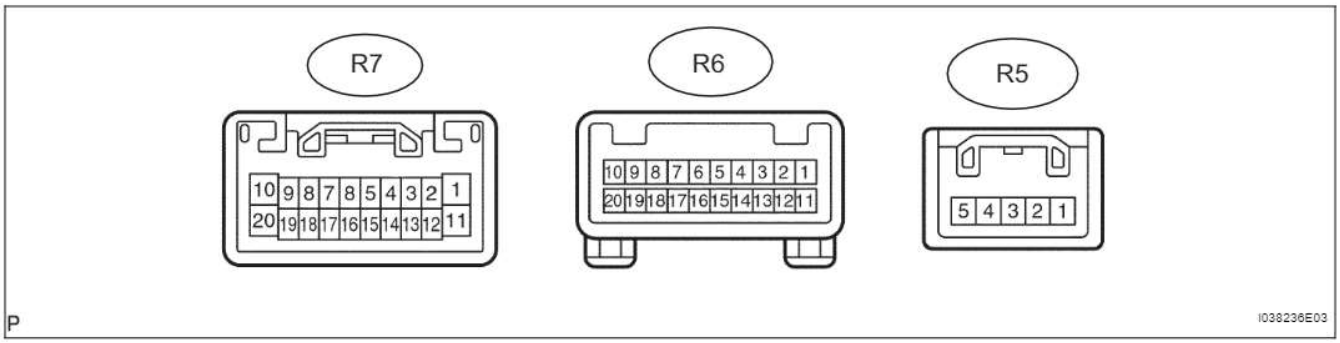
Steering pad switch function

Symptom	Suspected area	See page
The system cannot be operate by the steering pad switch.	1.Steering pad switch circuit	NS-85
	2.Replace radio and navigation assembly	NS-119

NS

TERMINALS OF ECU

1. RADIO AND NAVIGATION ASSEMBLY

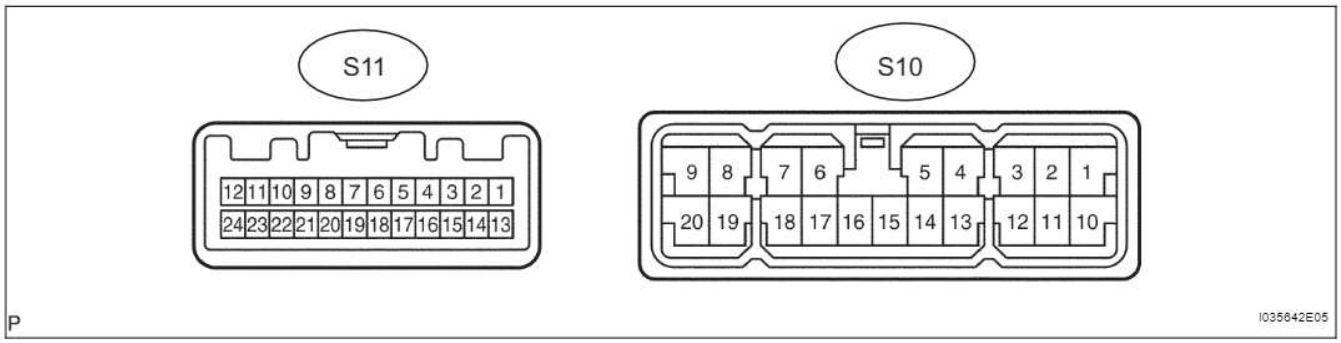


Symbols (Terminal No.)	Wiring Color	Terminal Description	Condition	Specification
SPD (R5-3) - GND (R7-20)	V-W - BR	Speed signal from combination meter	See "Vehicle Signal Check Mode" (See page NS-19)	-
REV (R5-5) - GND (R7-20)	R-B - BR	Reverse signal from combination meter	See "Vehicle Signal Check Mode" (See page NS-19)	-
SWG (R6-6) - Body ground	Y (*1), P-L (*2) - Body ground	Steering pad switch ground	Always	Below 1 V
SW1 (R6-7) - SWG (R6-6)	LG-B - Y (*1) P-B - P-L (*2)	Steering pad switch signal	Steering pad switch not operated →SEEK+ switch pushed →SEEK- switch pushed → VOL+ switch pushed →VOL- switch pushed	4 V or more → Approx. 0.5 V → Approx. 0.9 V → Approx. 2.0 V → Approx. 3.4 V
SW2 (R6-8) - SWG (R6-6)	L - Y (*1) P-B - P-L (*2)	Steering pad switch signal	Steering pad switch not operated → MODE switch pushed	4 V or more → Below 2.5 V
IVO+ (R6-11) - SLD1 (R6-13)	V - BR	Voice guidance signal	Voice guidance	-
IVO- (R6-12) - SLD1 (R6-13)	LG - BR	Voice guidance signal	Voice guidance	-
SLD1 (R6-13) - Body ground	BR - Body ground	Voice sound signal shielded ground	Always	Below 1.0 V
B (R7-1) - GND (R7-20)	L-Y - BR	Battery	Always	10 to 14 V
ILL+ (R7-2) - GND (R7-20)	G - BR	Illumination signal	Turn ignition switch ON Light control switch OFF → TAIL or ON	Below 1.0 V → 10 to 14 V
ATX+ (R7-5) - GND (R7-20)	B (*1), R (*2) - BR	AVC-LAN communication signal	Turn ignition switch to ACC	2 to 3 V
MUTE (R7-7) - GND (R7-20)	BR-B (*1), L (*2) - BR	Mute signal	Audio system is playing → Changing	Above 3.5 V → Below 1 V
R+ (R7-8) - GND (R7-20)	W (*1), B (*2) - BR	Sound signal (Right)	Audio system is playing	-
L+ (R7-9) - GND (R7-20)	G - BR	Sound signal (Left)	Audio system is playing	-
SLD (R7-10) - Body ground	Shielded - Body ground	Shielded ground	Always	Below 1 V
ACC (R7-11) - GND (R7-20)	GR (*1), G-R (*2) - BR	Accessory (ON)	Turn ignition switch OFF → ACC or ON	Below 1 V → 10 to 14 V
ILL- (R7-12) - GND (R7-20)	W-G - BR	Illumination signal	Turn ignition switch ON Light control switch OFF → TAIL or ON	Below 1.0 V → 10 to 14 V
ANT (R7-13) - GND (R7-20)	B-R - BR	Power source of antenna	Radio switch ON and AM or FM	10 to 14 V
ATX- (R7-15) - GND (R7-20)	Y (*1), W (*2) - BR	AVC-LAN communication signal	Turn ignition switch to ACC	2 to 3 V
R- (R7-18) - GND (R7-20)	B (*1), W (*2) - BR	Sound signal (Right)	Audio system is playing	-
L- (R7-19) - GND (R7-20)	R - BR	Sound signal (Left)	Audio system is playing	-
GND (R7-20) - Body ground	BR - Body ground	Ground	Always	Below 1 V

NS

*1: Coupe
*2: Convertible

2. STEREO COMPONENT AMPLIFIER ASSEMBLY



Symbols (Terminal No.)	Wiring Color	Terminal Description	Condition	Specification
B+ (S10-1) - GND (S10-16)	L-R (*1) L-Y (*2) - BR	Battery	Always	10 to 14 V
TWL+ (S10-2) (*1) - GND (S10-16)	G (*1) - BR	Sound signal (Front Left)	Audio system is playing	-
WF2+ (S10-2) (*3) - GND (S10-16)	G-W (*3) - BR	Sound signal (Woofer Box)	Audio system is playing	-
TWR+ (S10-3) (*1) - GND (S10-16)	L-B (*1) - BR	Sound signal (Front Right)	Audio system is playing	-
WF1+ (S10-3) (*3) - GND (S10-16)	L-R (*3) - BR	Sound signal (Woofer Box)	Audio system is playing	-
RL+ (S10-4) - GND (S10-16)	B - BR	Sound signal (Rear Left)	Audio system is playing	-
RR+ (S10-5) - GND (S10-16)	R - BR	Sound signal (Rear Right)	Audio system is playing	-
FL+ (S10-6) - GND (S10-16)	P - BR	Sound signal (Front Left)	Audio system is playing	-
FR+ (S10-7) - GND (S10-16)	LG - BR	Sound signal (Front Right)	Audio system is playing	-
B2+ (S10-10) - GND (S10-16)	L-R (*1), L-Y (*2) - BR	Battery	Always	10 to 14 V
TWL- (S10-11) (*1) - GND (S10-16)	G-B (*1) - BR	Sound signal (Front Left)	Audio system is playing	-
WF2- (S10-11) (*3) - GND (S10-16)	BR (*3) - BR	Sound signal (Woofer Box)	Audio system is playing	-
TWR- (S10-12) (*1) - GND (S10-16)	L-R (*1) - BR	Sound signal (Front Right)	Audio system is playing	-
WF1- (S10-12) (*3) - GND (S10-16)	L-B (*3) - BR	Sound signal (Woofer Box)	Audio system is playing	-
RL- (S10-13) - GND (S10-16)	Y - BR	Sound signal (Rear Left)	Audio system is playing	-
RR- (S10-14) - GND (S10-16)	W - BR	Sound signal (Rear Right)	Audio system is playing	-
GND2 (S10-15) (*1) - Body ground	BR - Body ground	Ground	Always	Below 1 V
E (S10-15) (*2) - Body ground	BR - Body ground	Ground	Always	Below 1 V
GND (S10-16) - Body ground	BR - Body ground	Ground	Always	Below 1 V
FL- (S10-17) - GND (S10-16)	V - BR	Sound signal (Front Left)	Audio system is playing	-
FR- (S10-18) - GND (S10-16)	L - BR	Sound signal (Front Right)	Audio system is playing	-
MUTE (S11-1) - GND (S10-16)	BR-B (*1), L (*2) - BR	Mute signal from radio receiver	Audio system is playing	Above 3.5 V → Below 3.5 V
L- (S11-2) - GND (S10-16)	R - BR	Sound signal from radio receiver (Left)	Audio system is playing	-

NS

Symbols (Terminal No.)	Wiring Color	Terminal Description	Condition	Specification
L+ (S11-3) - GND (S10-16)	G - BR	Sound signal from radio receiver (Left)	Audio system is playing	-
R- (S11-4) - GND (S10-16)	B (*1), W (*2) - BR	Sound signal from radio receiver (Right)	Audio system is playing	-
R+ (S11-5) - GND (S10-16)	W (*1), B (*2) - BR	Sound signal from radio receiver (Right)	Audio system is playing	-
TX- (S11-7) (*1) - GND (S10-16)	Y (*1) - BR	AVC-LAN communication signal	Turn ignition switch to ACC	2 to 3 V
TX+ (S11-8) (*1) - GND (S10-16)	B (*1) - BR	AVC-LAN communication signal	Turn ignition switch to ACC	2 to 3 V
TSSW (S11-9) (*2) - GND (S10-16)	L-W (*2) - BR	Convertible top open/ close signal	Convertible top is open	Below 1 Ω
ACC (S11-12) - GND (S10-16)	GR (*1), G-R (*2) - BR	Accessory (ON)	Turn ignition switch OFF → ACC	Below 1 V → 10 to 14 V
TX- (S11-19) (*2) - GND (S10-16)	W (*2) - BR	AVC-LAN communication signal	Turn ignition switch to ACC	2 to 3 V
TX+ (S11-20) (*2) - GND (S10-16)	R (*2) - BR	AVC-LAN communication signal	Turn ignition switch to ACC	2 to 3 V
INT- (S11-22) - Body ground	LG - Body ground	Voice guidance signal	Voice guidance	-
INT+ (S11-23) - Body ground	V - Body ground	Voice guidance signal	Voice guidance	-

*1: Coupe
*2: Convertible
*3: Convertible (only w/ woofer box speaker assembly No.1)

NS

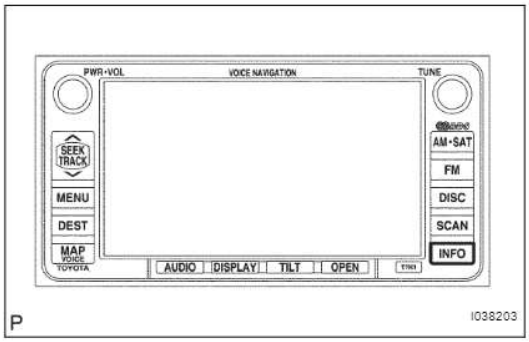
DTC CHECK / CLEAR

HINT:

- Illustrations may differ from the actual vehicle depending on the device settings and options. Therefore, some detailed areas may not be shown exactly the same as on the actual vehicle.
- After the ignition switch is turned on, check that the map is displayed before starting the diagnostic mode. Otherwise, some items cannot be checked.

1. START DIAGNOSTIC MODE

(a) There are 2 methods to start diagnostic mode. Start the mode by using one of them.

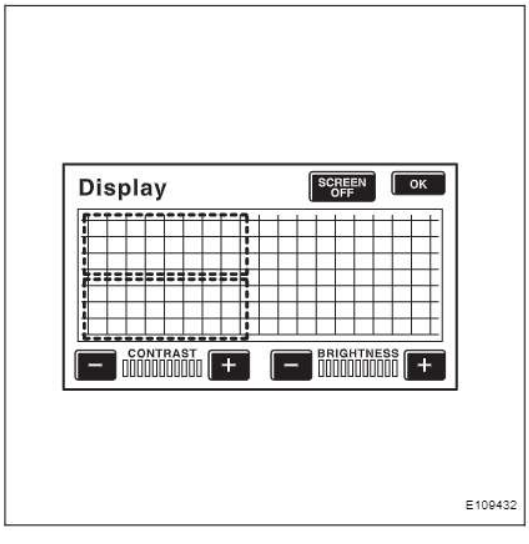


(b) Method 1

(1) Start the engine.

(2) While pressing and holding the "INFO" switch, operate the light control switch: OFF → Turn ON → Turn OFF → Turn ON → Turn OFF → Turn ON → Turn OFF.

(3) The diagnostic mode starts and the "System Check Mode" screen will be displayed. Service inspection starts automatically and the result will be displayed.



(c) Method 2

(1) Start the engine.

(2) Switch to the "Display Check" screen.

(3) From the display quality adjustment screen, touch the corners of the screen in the following order: upper left → lower left → upper left → lower left → upper left → lower left.

(4) The diagnostic mode starts and the "System Check Mode" screen will be displayed. Service inspection starts automatically and the result will be displayed.

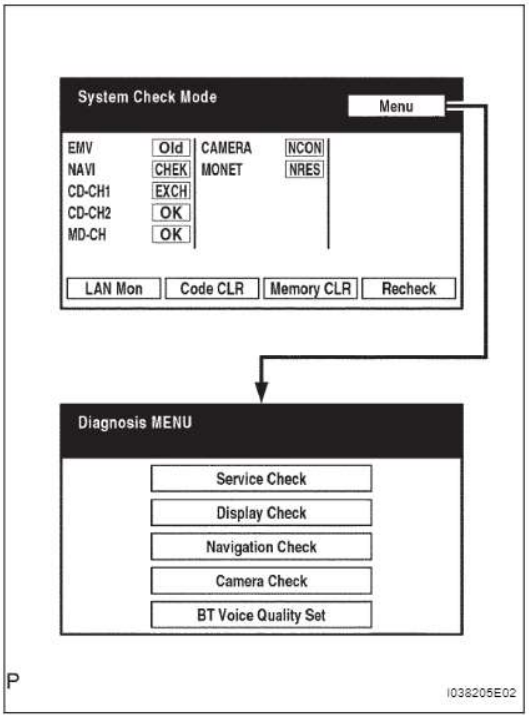
2. FINISH DIAGNOSTIC MODE

(a) There are 2 methods to end diagnostic mode. Use one of them.

(1) Turn the ignition switch off.

(2) Press and hold the "DISP" switch for 3 seconds.

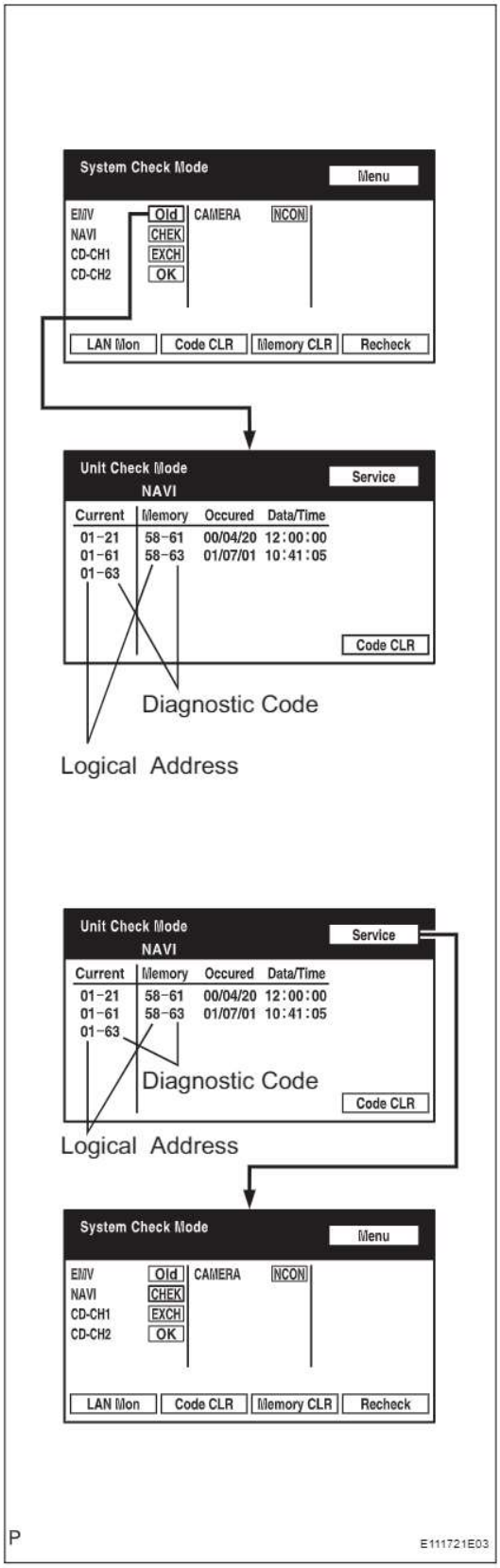
NS



3. DIAGNOSIS MENU

(a) The "Diagnostic MENU" screen will be displayed by pressing the menu switch on the "System Check Mode" screen.

NS



4. CHECK DTC

(a) Read the system check result.

(1) If the check result is "EXCH", "CHEK" or "Old", touch the displayed check result to view the results on the "Unit Check Mode" screen and record them. (*1)

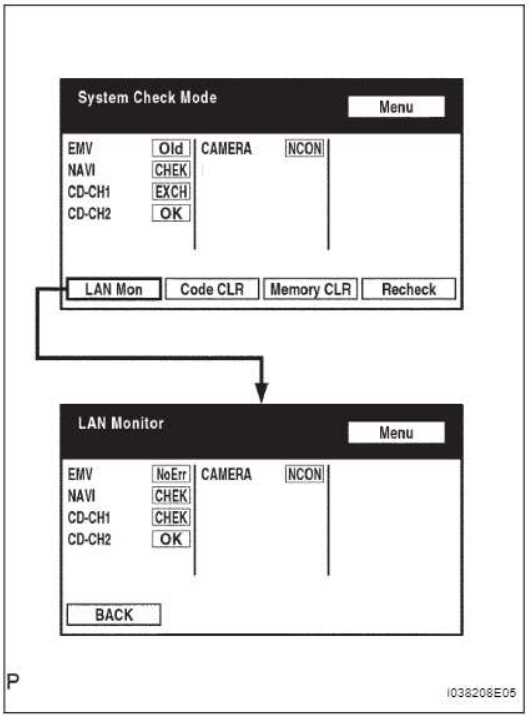
HINT:

- If all check results are "OK", go to communication DTC check (go to step 3).
- If a device name is not known, its physical address is displayed.

HINT:

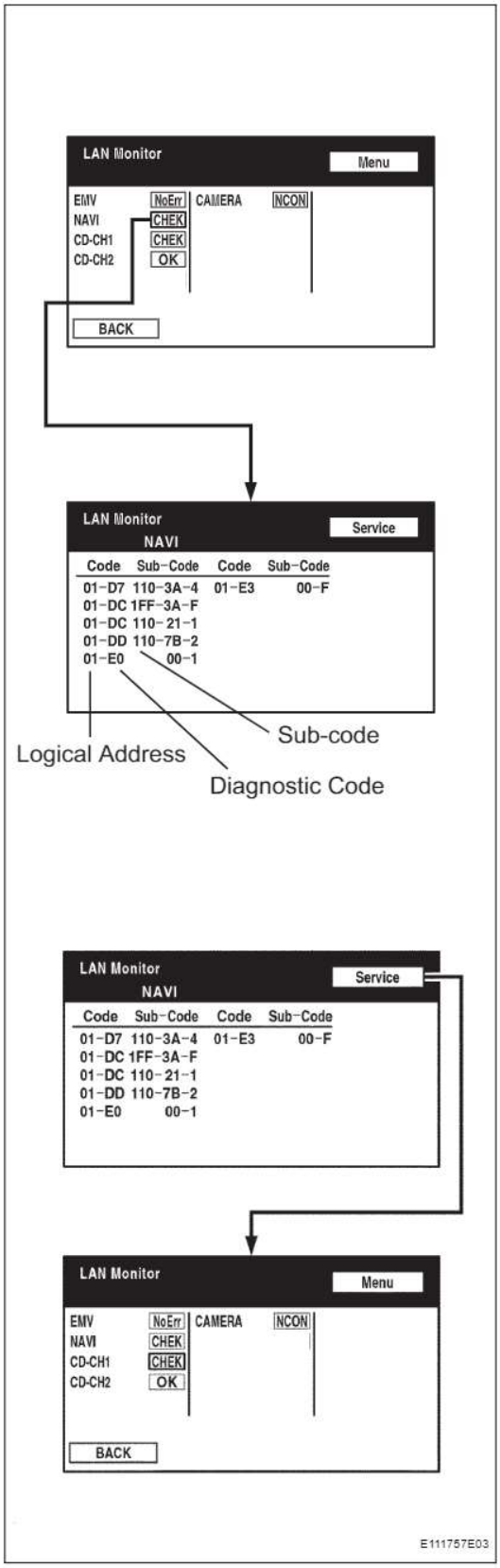
When proceeding to view the results of another device, press the service switch to return to the "System Check Mode" screen. Repeat procedure (*1).

NS



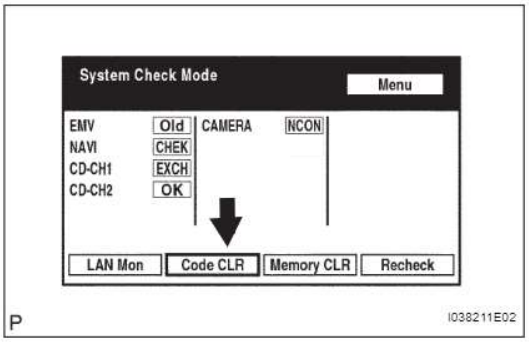
(b) Read the communication diagnostic check result.
(1) Return to the "System Check Mode" screen, and press the "LAN Mon" switch to enter the "LAN Monitor" screen.

NS



(2) If the check result is "CHEK" or "Old", touch the displayed check result to view the results on the individual communication diagnostic screen and record them. (*2)
HINT:
- If all check results are "No Err", the system judges that no DTC exists.
- The sub-code (relevant device) will be indicated by its physical address.
- When proceeding to view the results of another device, press the "Service" switch to return to the original "LAN Monitor" screen. Repeat procedure (*2).

NS

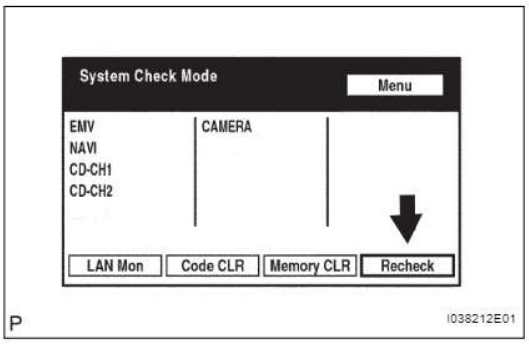


5. DTC CLEAR/RECHECK

(a) Clear DTC

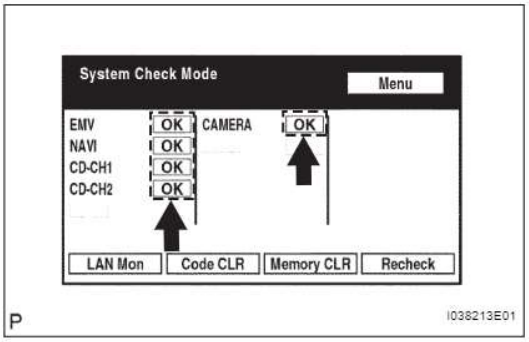
(1) Press the "Code CLR" switch for 3 seconds.

(2) The check results are cleared.

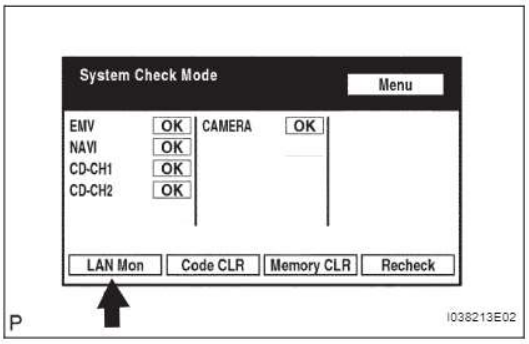


(b) Recheck

(1) Press the "Recheck" switch.

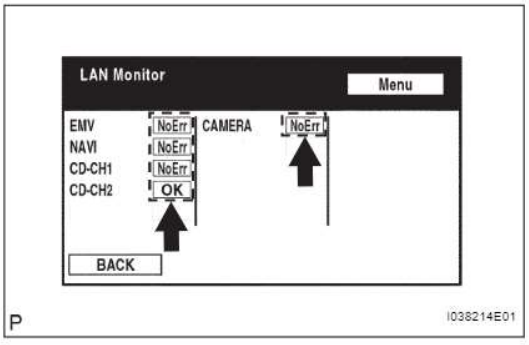


(2) Confirm that all diagnostic codes are "OK" when the check results are displayed. If a code other than "OK" is displayed, troubleshoot again.



(3) Press the "LAN Mon" switch to change to the "LAN Monitor" screen.

NS



(4) Confirm that all diagnostic codes are "No Err". If a code other than "No Err" is displayed, troubleshoot again.

Noise Occurs

1	CHECK SPEAKERS

(a) Check the speaker installation condition.
(1) Check that each speaker is securely installed.
OK:
Malfunction disappears.
HINT:
The radio is equipped with a noise prevention system that blocks excessively loud noise. If such noise occurs, check that all wiring is proper and that the antenna installation part ground and noise-prevention equipment are installed.

Conditions under which noise occurs	Noise type
Noise increases when the accelerator pedal is depressed, but stops when the engine is stopped.	Generator noise
Noise occurs during A/C or heater operation.	Blower motor noise
Noise occurs when the vehicle accelerates rapidly on an unpaved road or after the ignition switch is turned on.	Fuel pump noise
Noise occurs when the horn switch is pressed and released or when pressed and held.	Horn noise
Quiet noise occurs while the engine is running, but stops when the engine is stopped.	Ignition noise
Noise occurs synchronously with the blink of the turn signal.	Flasher noise
Noise occurs during window washer operation.	Washer noise
Noise occurs while the engine is running, and continues even after the engine is stopped.	Water temperature sensor noise
Noise occurs during wiper operation.	Wiper noise
Noise occurs when the brake pedal is depressed.	Stop light switch noise
Others	Static electricity stored on the vehicle

HINT:
- Identify the conditions under which the noise occurs, and check the noise filter on the relevant part.
- First ensure that the noise is not coming from the outside. Failure to do so makes noise source detection difficult and may lead to a misdiagnosis.
- Noise should be removed in descending order of loudness.

NG → **REINSTALL SPEAKER PROPERLY**

OK

PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

NS

Pressing Power Switch does not Turn on System

1	CHECK CABIN

(a) Check that conditions in the cabin are not likely to cause condensation.
HINT:
This problem occurs when the cabin is humid and the temperature rapidly changes. This condition may produce condensation, resulting in a short circuit.
OK:
Condensation is not likely.

NG → **DRY CABIN AND RECHECK CONDITIONS**

OK

PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

NS

INSTALLATION

1. INSTALL NAVIGATION RECEIVER ASSEMBLY
2. INSTALL RADIO RECEIVER BRACKET NO.1
3. INSTALL RADIO RECEIVER BRACKET NO.1
4. INSTALL INSTRUMENT CLUSTER FINISH PANEL ASSEMBLY CENTER
5. INSTALL CENTER CLUSTER INTEGRATION PANEL ASSEMBLY
6. INSTALL INSTRUMENT CLUSTER FINISH PANEL SUB-ASSEMBLY CENTER
7. INSTALL CONSOLE PANEL SUB-ASSEMBLY UPPER
8. INSTALL CONSOLE UPPER REAR PANEL SUB-ASSEMBLY
9. INSTALL SHIFT LEVER KNOB SUB-ASSEMBLY

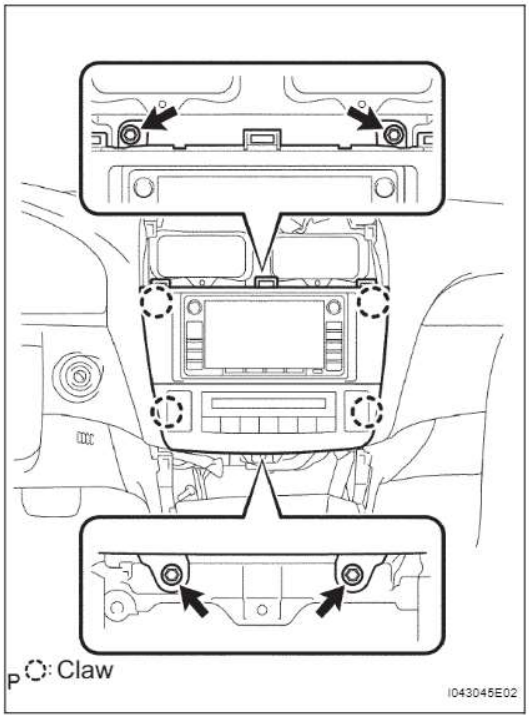
NAVIGATION RECEIVER

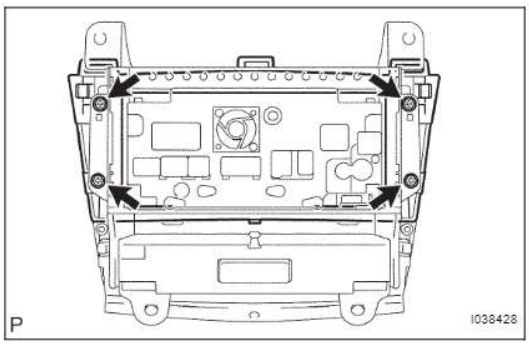
REMOVAL

HINT:

- COMPONENTS: See page AV-78
- Installation is in the reverse order of removal.

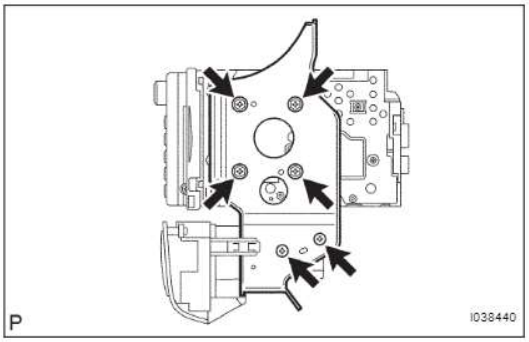
1. **REMOVE SHIFT LEVER KNOB SUB-ASSEMBLY (See page IP-9)**
2. **REMOVE CONSOLE UPPER REAR PANEL SUB-ASSEMBLY (See page IP-9)**
3. **REMOVE CONSOLE PANEL SUB-ASSEMBLY UPPER (See page IP-10)**
4. **REMOVE INSTRUMENT CLUSTER FINISH PANEL SUB-ASSEMBLY CENTER (See page IP-10)**
5. **REMOVE CENTER CLUSTER INTEGRATION PANEL ASSEMBLY**
   (a) Remove the 4 bolts.
   (b) Disconnect the connector.
   (c) Disengage the 4 claws and remove the center cluster integration panel assembly.





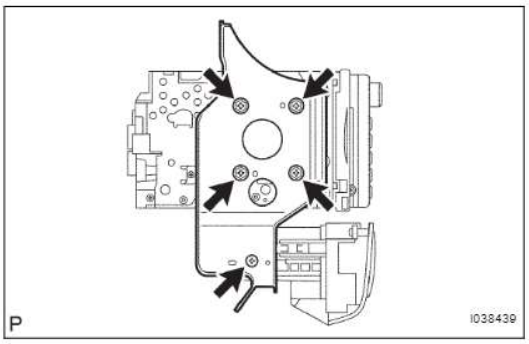
6. **REMOVE INSTRUMENT CLUSTER FINISH PANEL ASSEMBLY CENTER**
   (a) Remove the 4 bolts and instrument cluster finish panel assembly center.

NS



7. REMOVE RADIO RECEIVER BRACKET NO.1

(a) Remove the 6 screws and radio receiver bracket No.1.



8. REMOVE RADIO RECEIVER BRACKET NO.1

(a) Remove the 5 screws and radio receiver bracket No.1.

9. REMOVE NAVIGATION RECEIVER ASSEMBLY

NS

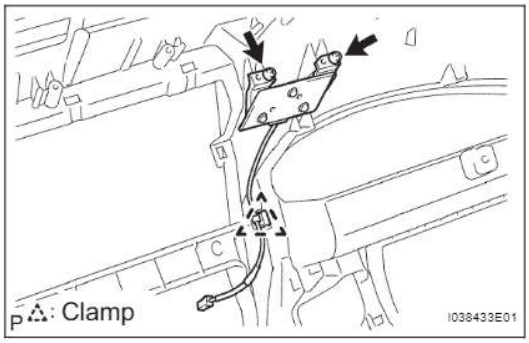
NAVIGATION ANTENNA

REMOVAL

HINT:

- COMPONENTS: See page AV-78
- Installation is in the reverse order of removal.

1. **REMOVE INSTRUMENT PANEL SAFETY PAD SUB-ASSEMBLY W/PASSENGER AIR BAG ASSEMBLY (See page IP-12)**



2. **REMOVE NAVIGATION ANTENNA ASSEMBLY**
   (a) Remove the 2 screws.
   (b) Remove the clamp and navigation antenna assembly.

NS

INSTALLATION

1. INSTALL NAVIGATION ANTENNA ASSEMBLY
2. INSTALL INSTRUMENT PANEL SAFETY PAD SUB-ASSEMBLY W/PASSENGER AIR BAG ASSEMBLY (See page IP-14)