NAVIGATION SYSTEM (FOR DVD WITH USB AUDIO SYSTEM)

DTC B1561: XM TUNER DISCONNECTED (COMMAND LINE); DTC B159F: NO RESPONSE FROM XM TUNER

DESCRIPTION

The stereo component tuner assembly is connected by the AVC-LAN communication line.

The navigation receiver assembly is also connected to the stereo component tuner assembly by the AVC-LAN communication line.

These DTCs will be stored when an AVC-LAN communication error occurs between the multi-media interface ECU and stereo component tuner assembly.

DTC Code	DTC Detection Condition	Trouble Area
B1561*	When either condition below is met: • Stereo component tuner assembly is not/was not connected while the ignition switch is ON or ACC. • Communication between the master unit and the stereo component tuner assembly is not possible when the engine is started.	• Stereo component tuner assembly power source circuit • AVC-LAN circuit between navigation receiver assembly and stereo component tuner assembly • Navigation receiver assembly • Stereo component tuner assembly • Multi-media interface ECU
B159F	Within the time-out period, there was no response from the stereo component tuner assembly to the following requests from the master unit: • System inspection request • System inspection result request • Diagnostic memory request	

HINT:

- *: Even if no fault is present, this DTC may be stored depending on the battery condition or engine start voltage.
- The navigation receiver assembly is the master unit.

WIRING DIAGRAM

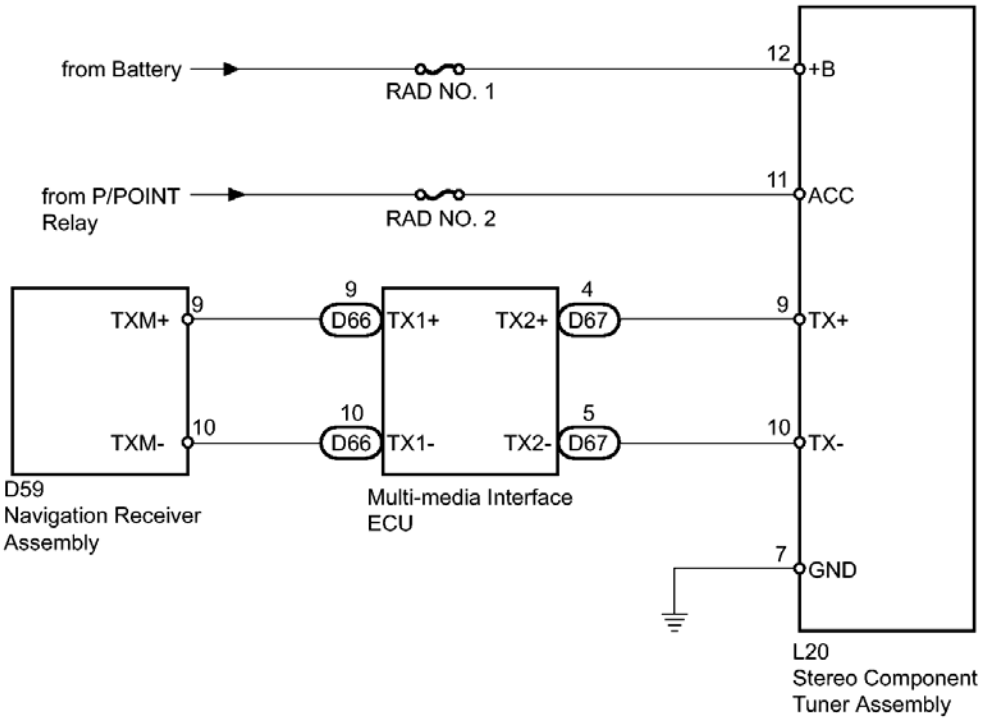


Fig. 1: Component Tuner Assembly - Wiring Diagram
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

NOTE:

- **After replacing the stereo component tuner assembly of vehicles subscribed to pay-type satellite radio broadcasts, registration of the XM radio ID is necessary.**
- **Inspect the fuses for circuits related to this system before performing the following inspection procedure.**

PROCEDURE

1. **CHECK OPTIONAL COMPONENTS (INCLUDING ASSOCIATED WIRING)**
   a. Check for optional components
      1. Check that optional components (including associated wiring) which generate radio waves are not installed.

RESULT

Result	Proceed

	to
Optional components (including associated wiring) are installed.	A
Optional components (including associated wiring) are not installed.	B

HINT:

- Electrical noise from radio waves generated by optional components or the wiring for those components may affect AVC-LAN communication.
- This DTC may be stored when an AVC-LAN communication error occurs due to electrical noise.

B --> See step 3

A: Go to next step

2. **REMOVE OPTIONAL COMPONENTS (INCLUDING ASSOCIATED WIRING)**
   a. Remove optional components (including associated wiring).

NOTE: Do not remove optional components or associated wiring without the permission of the customer.

NEXT: Go to next step

3. **CHECK FOR DTC**
   a. Clear the DTCs. Refer to **DTC CHECK / CLEAR** .
   b. Check for DTCs and check if the same trouble occurs again.

OK

No DTCs are output.

NG --> See step 4

OK --> END (STEREO COMPONENT TUNER ASSEMBLY IS FAULTY)

4. **CHECK HARNESS AND CONNECTOR (STEREO COMPONENT TUNER POWER SOURCE)**

a. Disconnect the L20 stereo component tuner assembly connector.

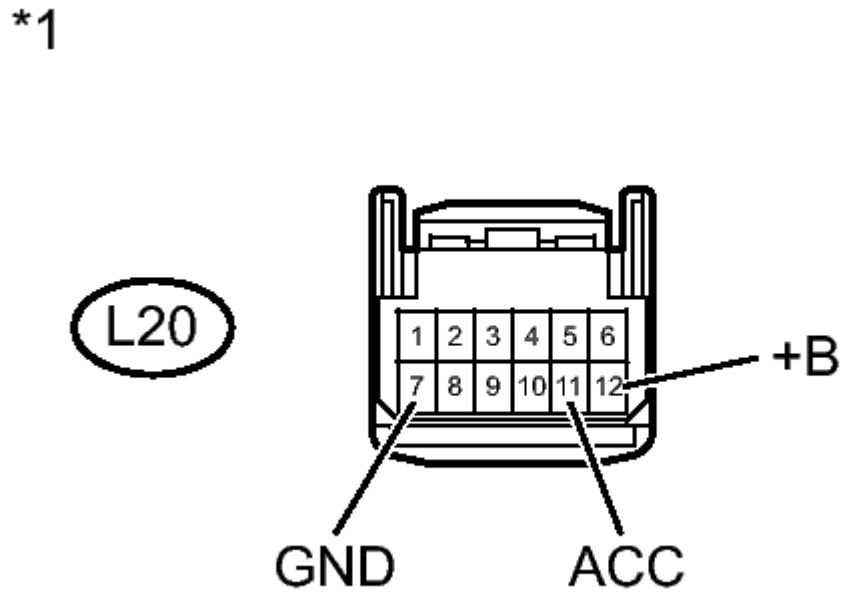


Fig. 2: Checking Harness And Connector (Stereo Component Tuner Power Source)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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

Standard Resistance

Tester Connection	Condition	Specified Condition
L20-7 (GND) - Body ground	Always	Below 1 ohms

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

Standard Voltage

Tester Connection	Switch Condition	Specified Condition
L20-12 (+B) - Body	Always	11 to 14 V

ground		
L20-11 (ACC) - Body ground	Ignition switch ACC	11 to 14 V

TEXT IN ILLUSTRATION

*1	Front view of wire harness connector (to Stereo Component Tuner Assembly)

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK: Go to next step

5. **CHECK HARNESS AND CONNECTOR (STEREO COMPONENT TUNER - MULTI-MEDIA INTERFACE ECU)**
   a. Disconnect the L20 stereo component tuner assembly connector.
   b. Disconnect the D67 multi-media interface ECU connector.
   c. Measure the resistance according to the value(s) in the table below.

   Standard Resistance

Tester Connection	Condition	Specified Condition
L20-9 (TX+) - D67-4 (TX2+)	Always	Below 1 ohms
L20-10 (TX-) - D67-5 (TX2-)	Always	Below 1 ohms
L20-9 (TX+) - Body ground	Always	10 kohms or higher
L20-10 (TX-) - Body	Always	10 kohms or higher

ground		

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK: Go to next step

6. **CHECK HARNESS AND CONNECTOR (NAVIGATION RECEIVER - MULTI-MEDIA INTERFACE ECU)**
   a. Disconnect the D59 navigation receiver assembly connector.
   b. Disconnect the D66 multi-media interface ECU connector.
   c. Measure the resistance according to the value(s) in the table below.

   Standard Resistance

Tester Connection	Condition	Specified Condition
D59-9 (TXM+) - D66-9 (TX1+)	Always	Below 1 ohms
D59-10 (TXM-) - D66-10 (TX1-)	Always	Below 1 ohms
D59-9 (TXM+) - Body ground	Always	10 kohms or higher
D59-10 (TXM-) - Body ground	Always	10 kohms or higher

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK: Go to next step

7. **REPLACE STEREO COMPONENT TUNER ASSEMBLY**
   a. Temporarily replace the stereo component tuner assembly with new or normally one. Refer to **REMOVAL** .
   b. Clear the DTCs. Refer to **DTC CHECK / CLEAR** .
   c. Recheck for DTCs and check if the same trouble occurs again.

   OK

No DTCs are output.

NG --> See step 8

OK --> END (STEREO COMPONENT TUNER ASSEMBLY IS FAULTY)

8. **REPLACE MULTI-MEDIA INTERFACE ECU**
   a. Temporarily replace the multi-media interface ECU with new or normally one. Refer to **REMOVAL** .
   b. Clear the DTCs. Refer to **DTC CHECK / CLEAR** .
   c. Recheck for DTCs and check if the same trouble occurs again.

      OK

      No DTCs are output.

   NG --> See step 9

   OK --> END (MULTI-MEDIA INTERFACE ECU IS FAULTY)

9. **REPLACE NAVIGATION RECEIVER ASSEMBLY. Refer to REMOVAL**

DTC B1562: XM TUNER DISCONNECTED (BURST MODE)

DESCRIPTION

The stereo component tuner assembly is connected by the AVC-LAN plus communication lines.

When an AVC-LAN plus communication error occurs between the navigation receiver assembly and stereo component tuner assembly, this DTC will be stored.

DTC Code	DTC Detection Condition	Trouble Area
B1562	When the master unit deletes the satellite radio tuner from the system components device list due to an AVC-LAN plus communication error.	• AVC-LAN plus circuit between navigation receiver assembly and stereo component tuner assembly • Stereo component tuner assembly • Navigation receiver assembly

HINT:

The navigation receiver assembly is the master unit.

WIRING DIAGRAM

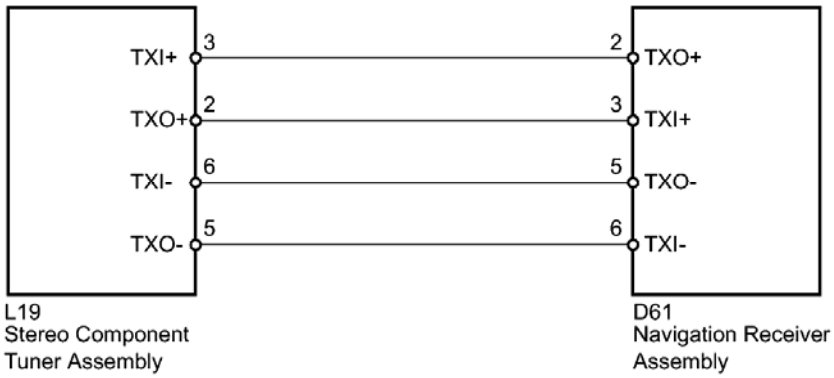


Fig. 3: Stereo Component Tuner - Wiring Diagram
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

NOTE: After replacing the stereo component tuner assembly of vehicles subscribed to pay-type satellite radio broadcasts, registration of the XM radio ID is necessary.

PROCEDURE

1. **CHECK FOR DTC**
   a. Clear the DTC. Refer to **DTC CHECK / CLEAR** .
   b. Check for DTC and check if the same trouble occurs again.

      OK

      No DTC is output.

   NG --> See step 2

   OK --> See step 5

2. **CHECK HARNESS AND CONNECTOR (NAVIGATION RECEIVER - STEREO COMPONENT TUNER)**
   a. Disconnect the D61 navigation receiver assembly connector.
   b. Disconnect the L19 stereo component tuner assembly connector.
   c. Measure the resistance according to the value(s) in the table below.

      Standard Resistance

Tester Connection	Condition	Specified Condition
D61-2 (TXO+) - L19-3 (TXI+)	Always	Below 1 ohms
D61-3 (TXI+) - L19-2 (TXO+)	Always	Below 1 ohms
D61-5 (TXO-) - L19-6 (TXI-)	Always	Below 1 ohms
D61-6 (TXI-) - L19-5 (TXO-)	Always	Below 1 ohms
D61-2 (TXO+) - Body ground	Always	10 kohms or higher
D61-3 (TXI+) - Body ground	Always	10 kohms or higher
D61-5 (TXO-) - Body ground	Always	10 kohms or higher
D61-6 (TXI-) - Body ground	Always	10 kohms or higher

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK: Go to next step

3. **INSPECT STEREO COMPONENT TUNER ASSEMBLY**
   a. Disconnect the L19 stereo component tuner assembly connector.

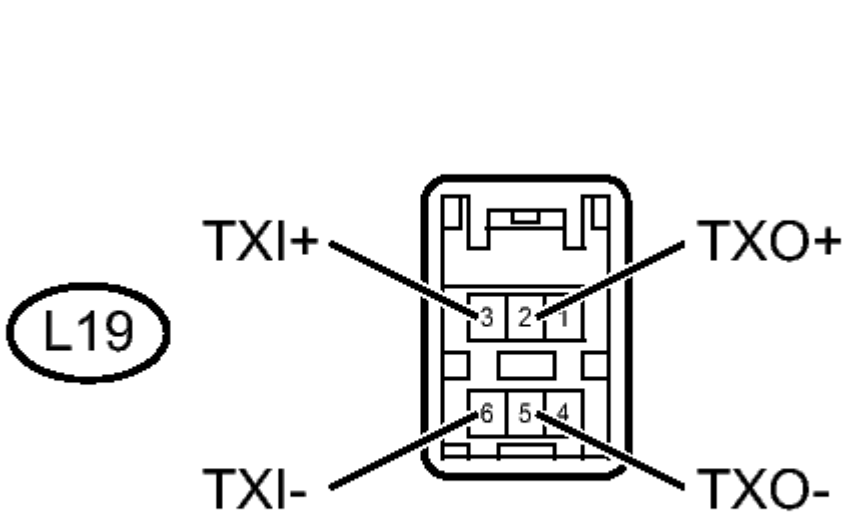


Fig. 4: Checking Stereo Component Tuner Assembly
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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

Standard Resistance

Tester Connection	Condition	Specified Condition
L19-2 (TXO+) - L19-3 (TXI+)	Always	Below 1 ohms
L19-5 (TXO-) - L19-6 (TXI-)	Always	Below 1 ohms

TEXT IN ILLUSTRATION

*1	Component without harness connected (Stereo Component Tuner Assembly)

NG --> See step 6

OK --> See step 4

4. **REPLACE NAVIGATION RECEIVER ASSEMBLY. Refer to REMOVAL**
5. **USE SIMULATION METHOD TO CHECK. Refer to HOW TO PROCEED WITH TROUBLESHOOTING**
6. **REPLACE STEREO COMPONENT TUNER ASSEMBLY. Refer to REMOVAL**

DTC B156B: MULTI-MEDIA INTERFACE ECU DISCONNECTED; DTC B156E: NO RESPONSE FROM MULTI-MEDIA INTERFACE ECU

DESCRIPTION

The navigation receiver assembly and multi-media interface ECU are connected by the AVC-LAN communication line.

When an AVC-LAN communication error occurs between the navigation receiver assembly and multi-media interface ECU, these DTCs will be stored.

DTC Code	DTC Detection Condition	Trouble Area
B156B*	When either condition below is met: • Stereo component amplifier is/was not connected while the ignition switch is ON or ACC. • Communication between the master unit and the stereo component amplifier is not possible when the engine is started.	• Multi-media interface ECU power source circuit • AVC-LAN circuit between navigation receiver assembly and multi-media interface ECU • Multi-media interface ECU • Navigation receiver assembly
B156E	Within the time-out period, there was no response from the stereo component amplifier to the following requests from the master unit: • System inspection request • System inspection result request • Diagnostic memory request	

HINT:

- *: Even if no fault is present, this DTC may be stored depending on the battery condition or engine start voltage.
- The navigation receiver assembly is the master unit.

WIRING DIAGRAM

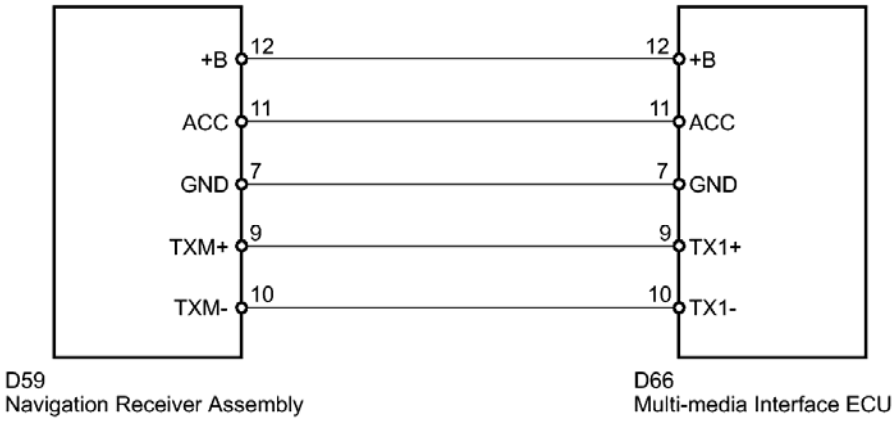


Fig. 5: Multi-Media Interface ECU - Wiring Diagram
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

PROCEDURE

1. **CHECK OPTIONAL COMPONENTS (INCLUDING ASSOCIATED WIRING)**
    a. Check for optional components.
        1. Check that optional components (including associated wiring) which generate radio waves are not installed.

RESULT

Result	Proceed to
Optional components (including associated wiring) are installed.	A
Optional components (including associated wiring) are not installed.	B

HINT:

- Electrical noise from radio waves generated by optional components or the wiring for those components may affect AVC-LAN communication.
- This DTC may be stored when an AVC-LAN communication error occurs due to electrical noise.

B --> See step 3

A: Go to next step

2. **REMOVE OPTIONAL COMPONENTS (INCLUDING ASSOCIATED WIRING)**
   a. Remove optional components (including associated wiring).

      NOTE: Do not remove optional components or associated wiring without the permission of the customer.

   NEXT: Go to next step

3. **CHECK FOR DTC**
   a. Clear the DTCs. Refer to **DTC CHECK / CLEAR** .
   b. Recheck for DTCs and check if the same trouble occurs again.

      OK

      No DTCs are output.

   NG --> See step 4

   OK --> END

4. **CHECK HARNESS AND CONNECTOR (MULTI-MEDIA INTERFACE ECU - BATTERY AND BODY GROUND)**
   a. Disconnect the D66 multi-media interface ECU connector.

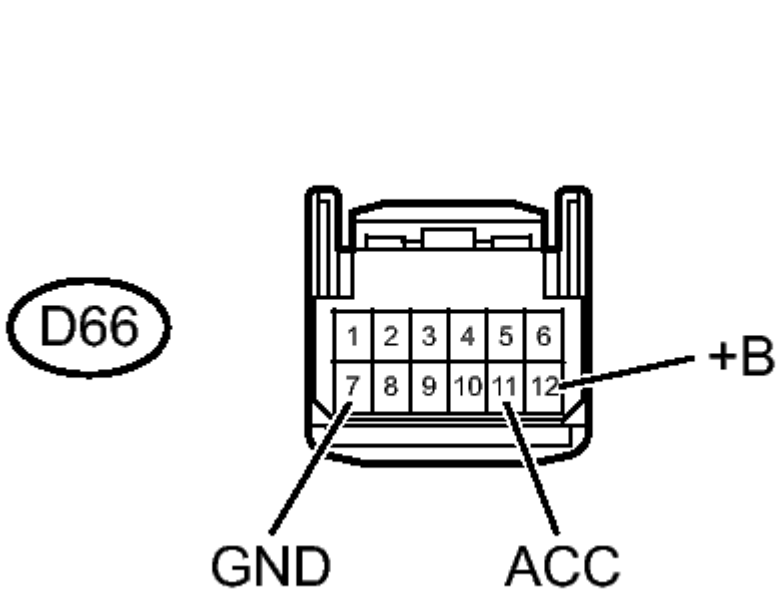


Fig. 6: Measuring Resistance Of Multi-Media Interface ECU
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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

Standard Resistance

Tester Connection	Condition	Specified Condition
D66-7 (GND) - Body ground	Always	Below 1 ohms

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

Standard Voltage

Tester Connection	Switch Condition	Specified Condition
D66-12 (+B) - D66-7 (GND)	Always	11 to 14 V
D66-11 (ACC) - D66-7	Ignition switch ACC	11 to 14 V

(GND)		

TEXT IN ILLUSTRATION

*1	Front view of wire harness connector (to Multi-media Interface ECU)

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK: Go to next step

5. **CHECK HARNESS AND CONNECTOR (MULTI-MEDIA INTERFACE ECU - NAVIGATION RECEIVER ASSEMBLY)**
   a. Disconnect the D66 multi-media interface ECU connector.
   b. Disconnect the D59 navigation receiver assembly connector.
   c. Measure the resistance according to the value(s) in the table below.

   Standard Resistance

Tester Connection	Condition	Specified Condition
D66-9 (TX1+) - D59-9 (TXM+)	Always	Below 1 ohms
D66-10 (TX1-) - D59-10 (TXM-)	Always	Below 1 ohms
D66-9 (TX1+) - Body ground	Always	10 kohms or higher
D66-10 (TX1-) - Body ground	Always	10 kohms or higher

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK: Go to next step

6. **REPLACE MULTI-MEDIA INTERFACE ECU**
   a. Replace the multi-media interface ECU. Refer to **REMOVAL** .
   b. Clear the DTCs. Refer to **DTC CHECK / CLEAR** .
   c. Recheck for DTCs and check if the same trouble occurs again.

      OK

      No DTCs are output.

   NG --> See step 7

   OK --> END

7. **REPLACE NAVIGATION RECEIVER ASSEMBLY. Refer to REMOVAL**

DTC B1582: MAP DISK READING MALFUNCTION

DESCRIPTION

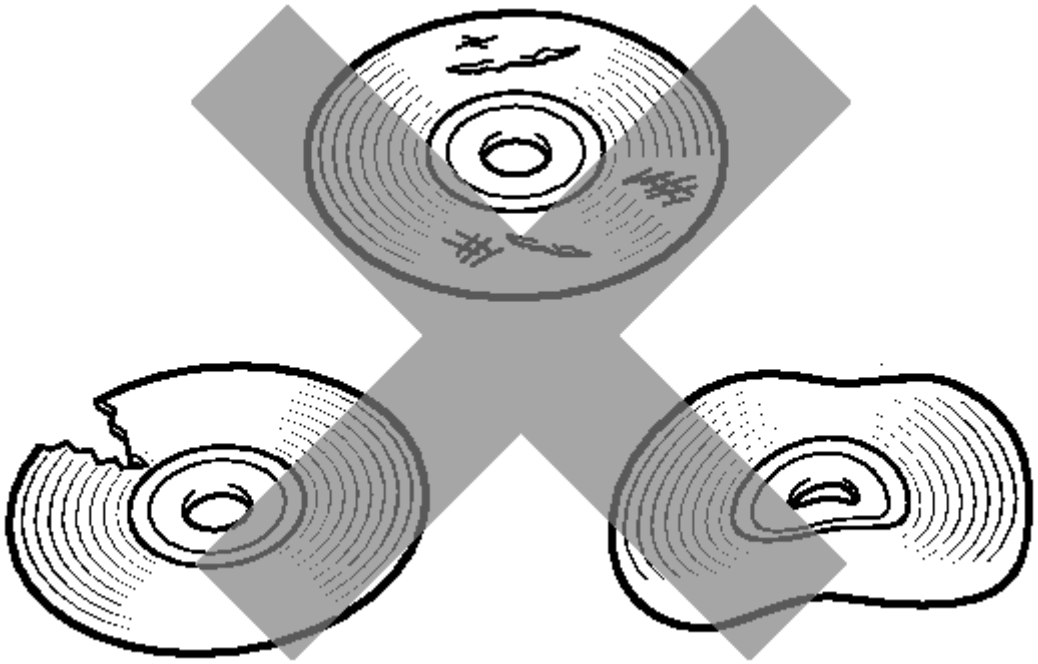
This DTC is stored when the navigation receiver assembly cannot read the map disc.

DTC Code	DTC Detection Condition	Trouble Area
B1582	• Player error • Scratches or dirt on the disc • Access to an invalid address due to software error	• Map disc • Navigation receiver assembly

INSPECTION PROCEDURE

PROCEDURE

1. **CHECK MAP DISC**
   a. Check that the map disc is not deformed or cracked.



P

Fig. 7: Identifying Deformed Or Cracked Disc
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

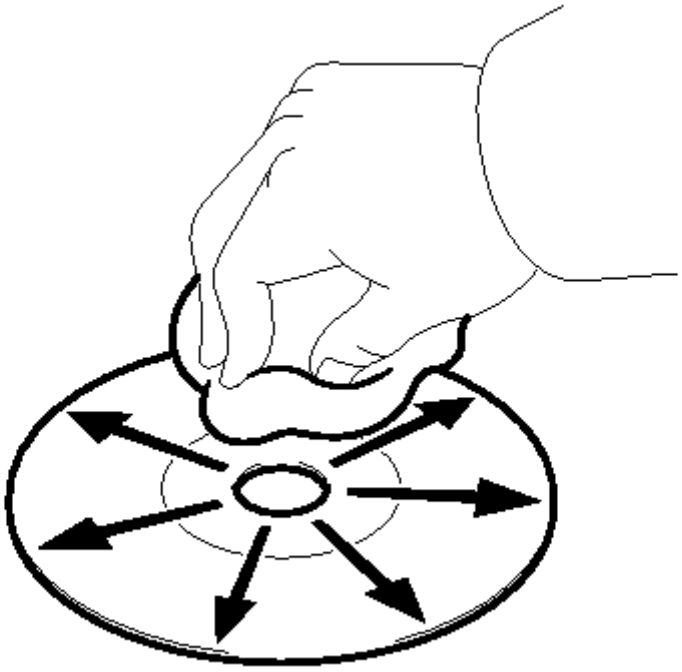
OK

No deformations or cracks on the map disc.

NG --> See step 4

OK: Go to next step

2. **DISC CLEANING**
   a. Disc cleaning



P

Fig. 8: Cleaning Disc With Soft Cloth
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

1. If dirt is on the disc surface, wipe it clean with a soft cloth from the inside to the outside in a radial direction.

NOTE: **Do not use a conventional record cleaner or anti-static preservative.**

NEXT: Go to next step

3. **CHECK FOR DTC**
   a. Clear the DTC. Refer to **DTC CHECK / CLEAR** .
   b. Check for DTCs and check if the same trouble occurs again.

   OK

   No DTC is output.

   NG --> See step 4

   OK --> END (CD WAS DIRTY)

4. **REPLACE MAP DISC**
   a. Replace the map disc.
   b. Clear the DTC. Refer to **DTC CHECK / CLEAR** .

c. Recheck for DTCs and check if the same trouble occurs again.

OK

No DTC is output.

NG --> See step 5

OK --> END (MAP DISC IS FAULTY)

5. **REPLACE NAVIGATION RECEIVER ASSEMBLY. Refer to REMOVAL**

DTC B1585: USB MEDIA MALFUNCTION

DESCRIPTION

This DTC is stored when a malfunction occurs in a connected device.

DTC Code	DTC Detection Condition	Trouble Area
B1585	USB Device Malfunction • Non mass-storage class or incompatible protocol USB device • USB device with an incompatible file system, corrupted or incompatible File Allocation Table (FAT) • "iPod" malfunction • "iPod" with unsupported firmware • Unsupported "iPod" model	• USB device • "iPod" • Multi-media interface ECU

INSPECTION PROCEDURE

PROCEDURE

1. **REPLACE USB DEVICE OR "iPod"**
   a. Disconnect the USB device or "iPod" from the No. 1 stereo jack adapter assembly.
   b. Turn the ignition switch off.

      HINT:

      When one of these DTCs has been stored, is necessary to turn off the engine switch to make it possible for the vehicle to recognize a new device when it is connected.

   c. Turn the ignition switch to ACC.
   d. Connect a known good USB device or "iPod" to the No. 1 stereo jack adapter assembly.

HINT:

- If the malfunction occurred when a USB device was in use, use another USB device for the inspection. If the malfunction occurred when an "iPod" was in use, use another "iPod" for the inspection.
- Refer to System Description for compatible formats and versions. Refer to **SYSTEM DESCRIPTION** .

NEXT: Go to next step

2. **CLEAR DTC**
   a. Clear the DTCs. Refer to **DTC CHECK / CLEAR** .

NEXT: Go to next step

3. **RECHECK DTC**
   a. Recheck for DTCs.

HINT:

If DTCs are detected frequently, replace the multi-media interface ECU.

OK

Malfunction disappears.

NG --> See step 4

OK --> USB DEVICE FORMAT WAS INCOMPATIBLE, "iPod" VERSION WAS INCOMPATIBLE, OR USB DEVICE OR "iPod" WAS DEFECTIVE

4. **REPLACE MULTI-MEDIA INTERFACE ECU. Refer to REMOVAL**

DTC B1592: NO RESPONSE FROM DVD PLAYER; DTC B15D2: DVD PLAYER DISCONNECTED

DESCRIPTION

The disc player assembly is connected by the AVC-LAN communication line.

The navigation receiver assembly is also connected to the disc player assembly by the AVC-LAN communication line.

These DTCs will be stored when an AVC-LAN communication error occurs between the television display assembly and disc player assembly.

DTC Code	DTC Detection Condition	Trouble Area

B1592	No response to the diagnostic memory request from the master unit.	• Disc player assembly power source circuit • AVC-LAN circuit between television display assembly and disc player assembly • Disc player assembly • Navigation receiver assembly • Television display assembly • Stereo component tuner assembly • Multi-media interface ECU
B15D2	A device that is listed in the AVC-LAN network connected device record of the master unit is missing.	

HINT:

The navigation receiver assembly is the master unit.

WIRING DIAGRAM

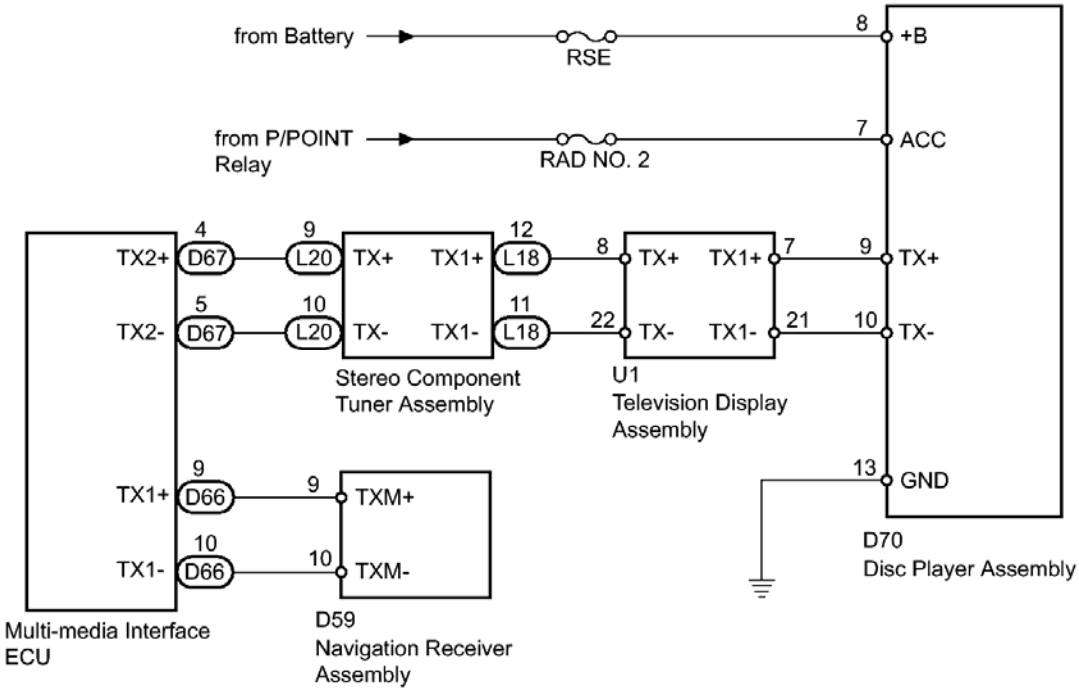


Fig. 9: Disc Player Assembly - Wiring Diagram
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

NOTE: Inspect the fuses for circuits related to this system before performing the following inspection procedure.

PROCEDURE

1. **CHECK OPTIONAL COMPONENTS (INCLUDING ASSOCIATED WIRING)**
   a. Check for optional components.
      1. Check that optional components (including associated wiring) which generate radio waves are not installed.

RESULT

Result	Proceed to
Optional components (including associated wiring) are installed.	A
Optional components (including associated wiring) are not installed.	B

HINT:

- Electrical noise from radio waves generated by optional components or the wiring for those components may affect AVC-LAN communication.
- This DTC may be stored when an AVC-LAN communication error occurs due to electrical noise.

B --> See step 3

A: Go to next step

2. **REMOVE OPTIONAL COMPONENTS (INCLUDING ASSOCIATED WIRING)**
   a. Remove optional components (including associated wiring).

NOTE: Do not remove optional components or associated wiring without the permission of the customer.

NEXT: Go to next step

3. **CHECK FOR DTC**
   a. Clear the DTCs. Refer to **DTC CHECK / CLEAR** .
   b. Check for DTCs and check if the same trouble occurs again.

OK

No DTCs are output.

NG --> See step 4

OK --> END

4. **CHECK HARNESS AND CONNECTOR (DISC PLAYER - BATTERY AND BODY GROUND)**
   a. Disconnect the D70 disc player assembly connector.

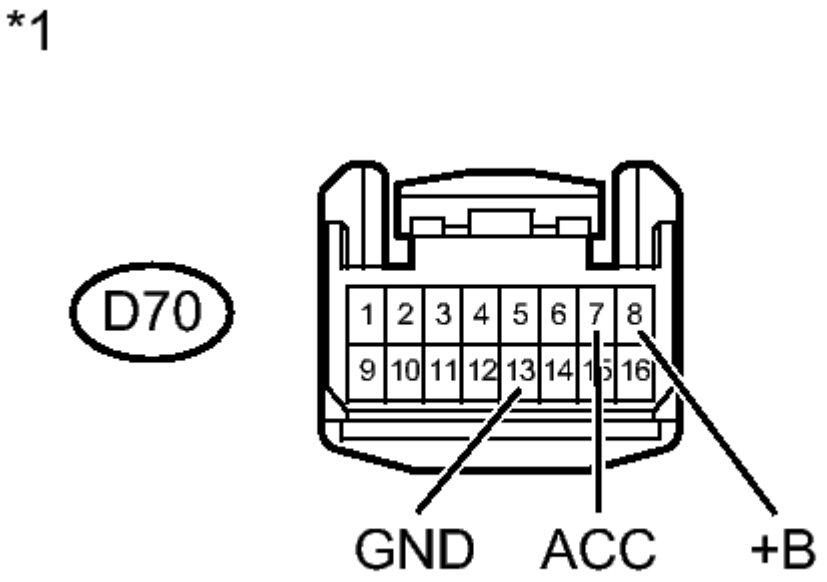


Fig. 10: Checking Harness And Connector (Disc Player - Battery And Body Ground)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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

Standard Resistance

Tester Connection	Condition	Specified Condition
D70-13 (GND) - Body ground	Always	Below 1 ohms

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

Standard Voltage

Tester Connection	Switch Condition	Specified Condition
D70-8 (+B) - Body ground	Always	11 to 14 V
D70-7 (ACC) - Body ground	Ignition switch ACC	11 to 14 V

TEXT IN ILLUSTRATION

*1	Front view of wire harness connector (to Disc Player Assembly)

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK: Go to next step

5. **CHECK HARNESS AND CONNECTOR (DISC PLAYER - TELEVISION DISPLAY)**
   a. Disconnect the D70 disc player assembly connector.
   b. Disconnect the U1 television assembly connector.
   c. Measure the resistance according to the value(s) in the table below.

Standard Resistance

Tester Connection	Condition	Specified Condition
D70-9 (TX+) - U1-7 (TX1+)	Always	Below 1 ohms
D70-10 (TX-) - U1-21 (TX1-)	Always	Below 1 ohms
D70-9 (TX+) - Body	Always	10 kohms or higher

ground		
D70-10 (TX-) - Body ground	Always	10 kohms or higher

NG --> See step 9

OK: Go to next step

6. **CHECK HARNESS AND CONNECTOR (TELEVISION DISPLAY - STEREO COMPONENT TUNER)**
   a. Disconnect the U1 television display assembly connector.
   b. Disconnect the L18 stereo component tuner assembly connector.
   c. Measure the resistance according to the value(s) in the table below.

   Standard Resistance

Tester Connection	Condition	Specified Condition
U1-8 (TX+) - L18-12 (TX1+)	Always	Below 1 ohms
U1-22 (TX-) - L18-11 (TX1-)	Always	Below 1 ohms
U1-8 (TX+) - Body ground	Always	10 kohms or higher
U1-22 (TX-) - Body ground	Always	10 kohms or higher

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK: Go to next step

7. **CHECK HARNESS AND CONNECTOR (STEREO COMPONENT TUNER - MULTI-MEDIA INTERFACE ECU)**
   a. Disconnect the L20 stereo component tuner assembly connector.
   b. Disconnect the D67 multi-media interface ECU connector.
   c. Measure the resistance according to the value(s) in the table below.

   Standard Resistance

Tester Connection	Condition	Specified Condition
L20-9 (TX+) - D67-4 (TX2+)	Always	Below 1 ohms
L20-10 (TX-) - D67-5 (TX2-)	Always	Below 1 ohms
L20-9 (TX+) - Body ground	Always	10 kohms or higher
L20-10 (TX-) - Body ground	Always	10 kohms or higher

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK: Go to next step

8. **CHECK HARNESS AND CONNECTOR (MULTI-MEDIA INTERFACE ECU - NAVIGATION RECEIVER)**
   a. Disconnect the D66 multi-media interface ECU connector.
   b. Disconnect the D59 navigation receiver assembly connector.
   c. Measure the resistance according to the value(s) in the table below.

   Standard Resistance

Tester Connection	Condition	Specified Condition
D66-9 (TX1+) - D59-9 (TXM+)	Always	Below 1 ohms
D66-10 (TX1-) - D59-10 (TXM-)	Always	Below 1 ohms
D66-9 (TX1+) - Body ground	Always	10 kohms or higher

D66-10 (TX1-) - Body ground	Always	10 kohms or higher

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK: Go to next step

9. **REPLACE DISC PLAYER ASSEMBLY**
   a. Replace the disc player assembly with a new one. Refer to **REMOVAL** .
   b. Clear the DTCs. Refer to **DTC CHECK / CLEAR** .
   c. Recheck for DTCs and check if the same trouble occurs again.

      OK

      No DTCs are output.

NG --> See step 10

OK --> END (DISC PLAYER ASSEMBLY IS FAULTY)

10. **REPLACE TELEVISION DISPLAY ASSEMBLY**
    a. Replace the television display assembly with a new one. Refer to **REMOVAL** .
    b. Clear the DTCs. Refer to **DTC CHECK / CLEAR** .
    c. Recheck for DTCs and check if the same trouble occurs again.

       OK

       No DTCs are output.

NG --> See step 11

OK --> END (TELEVISION DISPLAY ASSEMBLY IS FAULTY)

11. **REPLACE STEREO COMPONENT TUNER ASSEMBLY**
    a. Replace the stereo component tuner assembly with a new one. Refer to **REMOVAL** .
    b. Clear the DTCs. Refer to **DTC CHECK / CLEAR** .
    c. Recheck for DTCs and check if the same trouble occurs again.

       OK

       No DTCs are output.

NG --> See step 12

OK --> END (STEREO COMPONENT TUNER ASSEMBLY IS FAULTY)

12. **REPLACE MULTI-MEDIA INTERFACE ECU**
    a. Replace the multi-media interface ECU with a new one. Refer to **REMOVAL** .
    b. Clear the DTCs. Refer to **DTC CHECK / CLEAR** .
    c. Recheck for DTCs and check if the same trouble occurs again.

    OK

    No DTCs are output.

NG --> See step 13

OK --> END (MULTI-MEDIA INTERFACE ECU IS FAULTY)

13. **REPLACE NAVIGATION RECEIVER ASSEMBLY. Refer to REMOVAL**

DTC B1593: NO RESPONSE FROM STEREO COMPONENT AMPLIFIER; DTC B15D3: STEREO COMPONENT AMPLIFIER DISCONNECTED

DESCRIPTION

The navigation receiver assembly and stereo component amplifier are connected by the AVC-LAN communication line.

When an AVC-LAN communication error occurs between the navigation receiver assembly and stereo component amplifier, these DTCs will be stored.

DTC Code	DTC Detection Condition	Trouble Area
B1593	Within the time-out period, there was no response from the stereo component amplifier to the following requests from the master unit: • System inspection request • System inspection result request • Diagnostic memory request	• Stereo component amplifier power source circuit • AVC-LAN circuit between navigation receiver assembly and stereo component amplifier assembly • Navigation receiver assembly • Stereo component amplifier assembly
B15D3*	When either condition below is met: • Stereo component amplifier is/was not connected while the ignition switch is ON or ACC. • Communication between the master unit and the stereo component amplifier is not possible when the engine is started.	

HINT:

- *: Even if no fault is present, this DTC may be stored depending on the battery condition or engine start voltage.
- The navigation receiver assembly is the master unit.

WIRING DIAGRAM

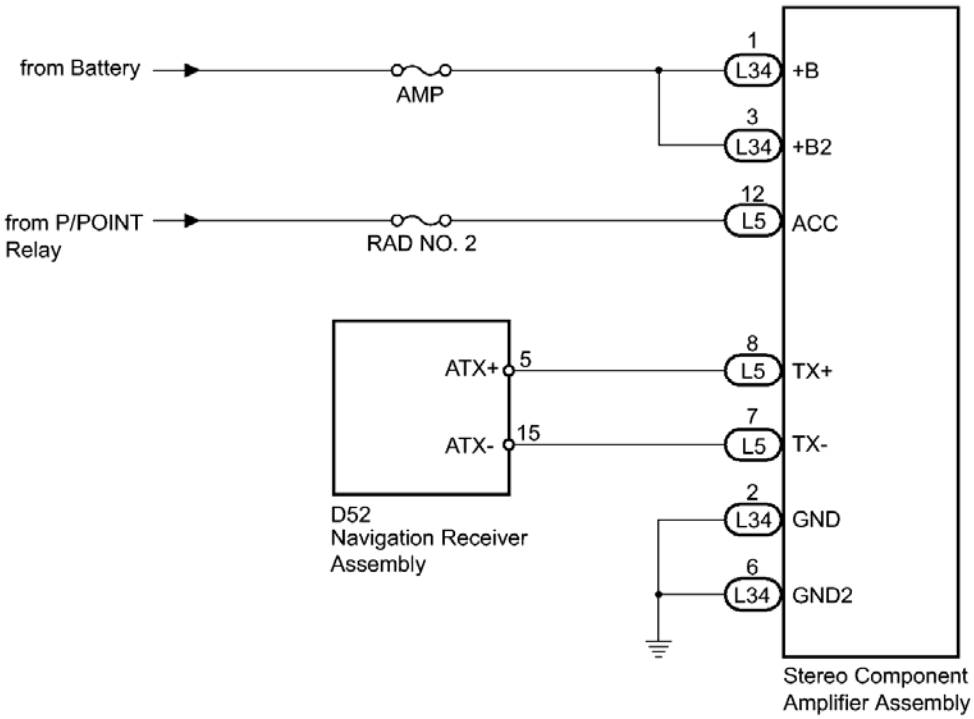


Fig. 11: Stereo Component Amplifier Power Source Circuit - Wiring Diagram
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

NOTE: Inspect the fuses for circuits related to this system before performing the following inspection procedure.

PROCEDURE

1. **CHECK OPTIONAL COMPONENTS (INCLUDING ASSOCIATED WIRING)**
    a. Check for optional components
        1. Check that optional components (including associated wiring) which generate radio waves

are not installed.

RESULT

Result	Proceed to
Optional components (including associated wiring) are installed.	A
Optional components (including associated wiring) are not installed.	B

HINT:

- Electrical noise from radio waves generated by optional components or the wiring for those components may affect AVC-LAN communication.
- This DTC may be stored when an AVC-LAN communication error occurs due to electrical noise.

B --> See step 3

A: Go to next step

2. **REMOVE OPTIONAL COMPONENTS (INCLUDING ASSOCIATED WIRING)**
   a. Remove optional components (including associated wiring).

      NOTE: Do not remove optional components or associated wiring without the permission of the customer.

   NEXT: Go to next step

3. **CHECK FOR DTC**
   a. Clear the DTCs. Refer to **DTC CHECK / CLEAR** .
   b. Check for DTCs and check if the same trouble occurs again.

      OK

      No DTCs are output.

NG --> See step 4

OK --> END

4. **CHECK HARNESS AND CONNECTOR (STEREO COMPONENT AMPLIFIER - BATTERY AND BODY GROUND)**
   a. Disconnect the L5 and L34 stereo component amplifier assembly connectors.

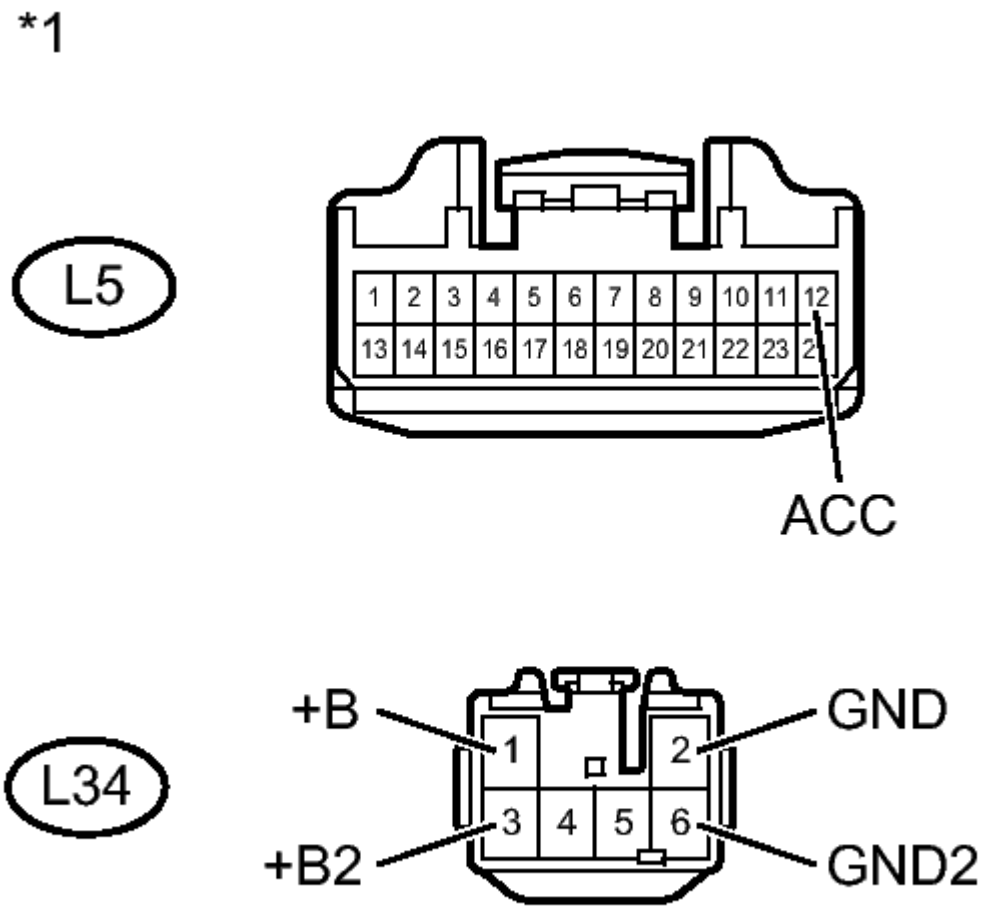


Fig. 12: Checking Harness And Connector (Stereo Component Amplifier - Battery And Body Ground)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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

Standard Resistance

Tester Connection	Condition	Specified Condition
L34-2 (GND) - Body ground	Always	Below 1 ohms
L34-6 (GND2) - Body ground		

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

Standard Voltage

Tester Connection	Switch Condition	Specified Condition
L34-1 (+B) - Body ground	Always	11 to 14 V
L34-3 (+B2) - Body ground		
L5-12 (ACC) - Body ground	Ignition switch ACC	

TEXT IN ILLUSTRATION

*1	Front view of wire harness connector (to Stereo Component Amplifier Assembly)

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK: Go to next step

5. **CHECK HARNESS AND CONNECTOR (NAVIGATION RECEIVER - STEREO COMPONENT AMPLIFIER)**
   a. Disconnect the D52 navigation receiver assembly connector.

b. Disconnect the L5 stereo component amplifier assembly connector.
c. Measure the resistance according to the value(s) in the table below.

Standard Resistance

Tester Connection	Condition	Specified Condition
D52-5 (ATX+) - L5-8 (TX+)	Always	Below 1 ohms
D52-15 (ATX-) - L5-7 (TX-)	Always	Below 1 ohms
D52-5 (ATX+) - Body ground	Always	10 kohms or higher
D52-15 (ATX-) - Body ground	Always	10 kohms or higher

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK: Go to next step

6. **REPLACE STEREO COMPONENT AMPLIFIER**
   a. Replace the stereo component amplifier. Refer to **REMOVAL** .
   b. Clear the DTCs. Refer to **DTC CHECK / CLEAR** .
   c. Recheck for DTCs and check if the same trouble occurs again.

      OK

      No DTCs are output.

   NG --> See step 7

   OK --> END (STEREO COMPONENT AMPLIFIER IS FAULTY)

7. **REPLACE NAVIGATION RECEIVER ASSEMBLY. Refer to REMOVAL**

DTC B1595: NO RESPONSE FROM REAR SEAT ENTERTAINMENT SYSTEM; DTC B15D5: REAR SEAT ENTERTAINMENT SYSTEM DISCONNECTED

DESCRIPTION

The television display assembly is connected by the AVC-LAN communication line.

The navigation receiver assembly is also connected to the television display assembly by the AVC-LAN communication line.

These DTCs will be stored when an AVC-LAN communication error occurs between the stereo component tuner assembly and television display assembly.

DTC Code	DTC Detection Condition	Trouble Area
B1595	Within the time-out period, there was no response from the television display assembly to the following requests from the master unit: • System inspection request • System inspection result request • Diagnostic memory request	• Television display assembly power source circuit • AVC-LAN circuit between stereo component tuner assembly and television display assembly • Television display assembly • Stereo component tuner assembly • Navigation receiver assembly
B15D5*	When either condition below is met: • The television display assembly is/was not connected while the ignition switch is ON or ACC. • Communication between the master unit and the television display assembly is not possible when the engine is started.	

HINT:

- *: Even if no fault is present, this DTC may be stored depending on the battery condition or engine start voltage.
- The navigation receiver assembly is the master unit.

WIRING DIAGRAM

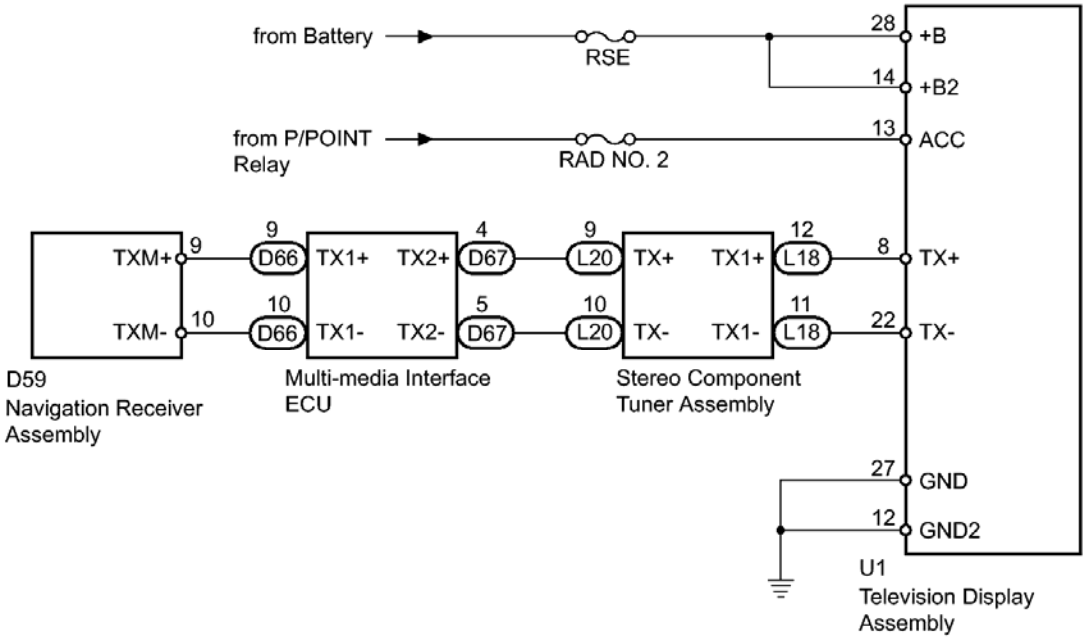


Fig. 13: Television Display Assembly - Wiring Diagram
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

NOTE:

- **After replacing the stereo component tuner assembly of vehicles subscribed to pay-type satellite radio broadcasts, registration of the XM radio ID is necessary.**
- **Inspect the fuses for circuits related to this system before performing the following inspection procedure.**

PROCEDURE

1. **CHECK OPTIONAL COMPONENTS (INCLUDING ASSOCIATED WIRING)**
    a. Check for optional components.
        1. Check that optional components (including associated wiring) which generate radio waves are not installed.

RESULT

Result	Proceed to
Optional components (including associated	A

wiring) are installed.	
Optional components (including associated wiring) are not installed.	B

HINT:

- Electrical noise from radio waves generated by optional components or the wiring for those components may affect AVC-LAN communication.
- This DTC may be stored when an AVC-LAN communication error occurs due to electrical noise.

B --> See step 3

A: Go to next step

2. **REMOVE OPTIONAL COMPONENTS (INCLUDING ASSOCIATED WIRING)**
   a. Remove optional components (including associated wiring).

   NOTE: Do not remove optional components or associated wiring without the permission of the customer.

   NEXT: Go to next step

3. **CHECK FOR DTC**
   a. Clear the DTCs. Refer to **DTC CHECK / CLEAR** .
   b. Recheck for DTCs and check if the same trouble occurs again.

      OK

      No DTCs are output.

   NG --> See step 4

   OK --> END

4. **CHECK HARNESS AND CONNECTOR (TELEVISION DISPLAY ASSEMBLY POWER SOURCE)**
   a. Disconnect the U1 television display assembly connector.

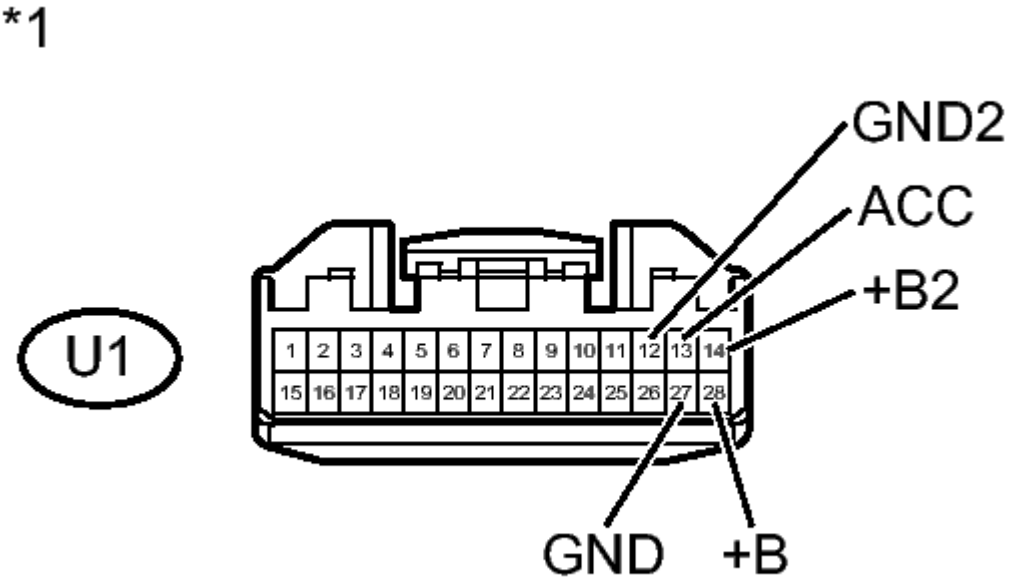


Fig. 14: Checking Harness And Connector (Television Display Assembly Power Source)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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

Standard Resistance

Tester Connection	Condition	Specified Condition
U1-27 (GND) - Body ground	Always	Below 1 ohms
U1-12 (GND2) - Body ground	Always	Below 1 ohms

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

Standard Voltage

Tester Connection	Switch Condition	Specified Condition
U1-28 (+B) - Body	Always	11 to 14 V

ground		
U1-14 (+B2) - Body ground	Always	11 to 14 V
U1-13 (ACC) - Body ground	Ignition switch ACC	11 to 14 V

TEXT IN ILLUSTRATION

*1	Front view of wire harness connector (to Television Display Assembly)

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK: Go to next step

5. **CHECK HARNESS AND CONNECTOR (TELEVISION DISPLAY - STEREO COMPONENT TUNER)**
   a. Disconnect the U1 television display assembly connector.
   b. Disconnect the L18 stereo component tuner assembly connector.
   c. Measure the resistance according to the value(s) in the table below.

   Standard Resistance

Tester Connection	Condition	Specified Condition
U1-8 (TX+) - L18-12 (TX1+)	Always	Below 1 ohms
U1-22 (TX-) - L18-11 (TX1-)	Always	Below 1 ohms
U1-8 (TX+) - Body ground	Always	10 kohms or higher
U1-22 (TX-		10 kohms

) - Body ground	Always	or higher

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK: Go to next step

6. **CHECK HARNESS AND CONNECTOR (STEREO COMPONENT TUNER - MULTI-MEDIA INTERFACE ECU)**
   a. Disconnect the L20 stereo component tuner assembly connector.
   b. Disconnect the D67 multi-media interface ECU connector.
   c. Measure the resistance according to the value(s) in the table below.

   Standard Resistance

Tester Connection	Condition	Specified Condition
L20-9 (TX+) - D67-4 (TX2+)	Always	Below 1 ohms
L20-10 (TX-) - D67-5 (TX2-)	Always	Below 1 ohms
L20-9 (TX+) - Body ground	Always	10 kohms or higher
L20-10 (TX-) - Body ground	Always	10 kohms or higher

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK: Go to next step

7. **CHECK HARNESS AND CONNECTOR (MULTI-MEDIA INTERFACE ECU - NAVIGATION RECEIVER)**
   a. Disconnect the D66 multi-media interface ECU connector.
   b. Disconnect the D59 navigation receiver assembly connector.
   c. Measure the resistance according to the value(s) in the table below.

   Standard Resistance

Tester Connection	Condition	Specified Condition
D66-9 (TX1+) - D59-9 (TXM+)	Always	Below 1 ohms
D66-10 (TX1-) - D59-10 (TXM-)	Always	Below 1 ohms
D66-9 (TX1+) - Body ground	Always	10 kohms or higher
D66-10 (TX1-) - Body ground	Always	10 kohms or higher

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK: Go to next step

8. **REPLACE TELEVISION DISPLAY ASSEMBLY**
   a. Replace the television display assembly with a new one. Refer to **REMOVAL** .
   b. Clear the DTCs. Refer to **DTC CHECK / CLEAR** .
   c. Recheck for DTCs and check if the same trouble occurs again.

      OK

      No DTCs are output.

   NG --> See step 9

   OK --> END (TELEVISION DISPLAY IS FAULTY)

9. **REPLACE STEREO COMPONENT TUNER ASSEMBLY**
   a. Replace the stereo component tuner assembly with a new one. Refer to **REMOVAL** .
   b. Clear the DTCs. Refer to **DTC CHECK / CLEAR** .
   c. Recheck for DTCs and check if the same trouble occurs again.

      OK

      No DTCs are output.

NG --> See step 10

OK --> END (STEREO COMPONENT TUNER ASSEMBLY IS FAULTY)

10. **REPLACE MULTI-MEDIA INTERFACE ECU**
    a. Replace the multi-media interface ECU with a new one. Refer to **REMOVAL** .
    b. Clear the DTCs. Refer to **DTC CHECK / CLEAR** .
    c. Recheck for DTCs and check if the same trouble occurs again.

       OK

       No DTCs are output.

NG --> See step 11

OK --> END (MULTI-MEDIA INTERFACE ECU IS FAULTY)

11. **REPLACE NAVIGATION RECEIVER ASSEMBLY. Refer to REMOVAL**

DTC B15A0: LAN MASTER MALFUNCTION; DTC B15AD: NAVIGATION PROCESSOR MALFUNCTION; DTC B15B3: RADIO TUNER MALFUNCTION; DTC B15B7: BLUETOOTH MODULE MALFUNCTION

DESCRIPTION

This DTC is stored when a malfunction occurs in the navigation receiver assembly.

DTC Code	DTC Detection Condition	Trouble Area
B15A0	When either condition below is met: • Bus malfunction • Sub-microprocessor malfunction	Navigation receiver assembly
B15AD	When either condition below is met: • A short to ground, short to +B or open occurs in the gyro signal circuit • Gyro sensor malfunction	
B15B3	Tuner communication error	
B15B7	"Bluetooth" module malfunction	

INSPECTION PROCEDURE

PROCEDURE

1. **CHECK FOR DTC**

a. Clear the DTCs. Refer to **DTC CHECK / CLEAR** .
b. Check for DTCs and check if the same trouble occurs again.

OK

No DTCs are output.

NG --> See step 3

OK --> See step 2

2. **USE SIMULATION METHOD TO CHECK. Refer to HOW TO PROCEED WITH TROUBLESHOOTING**
3. **REPLACE NAVIGATION RECEIVER ASSEMBLY. Refer to REMOVAL**

DTC B15A3: STEREO COMPONENT AMPLIFIER MALFUNCTION

DESCRIPTION

This DTC is stored when a malfunction occurs in the stereo component amplifier assembly.

DTC Code	DTC Detection Condition	Trouble Area
B15A3	When one of the conditions below is met: • Internal power supply malfunction • DSP error • EEPROM error	Stereo component amplifier assembly

INSPECTION PROCEDURE

PROCEDURE

1. **CHECK FOR DTC**
   a. Clear the DTC. Refer to **DTC CHECK / CLEAR** .
   b. Check for DTCs and check if the same trouble occurs again.

   OK

   No DTC is output.

   NG --> See step 3

   OK --> See step 2

2. **USE SIMULATION METHOD TO CHECK. Refer to HOW TO PROCEED WITH**

TROUBLESHOOTING

3. **REPLACE STEREO COMPONENT AMPLIFIER ASSEMBLY. Refer to REMOVAL**

DTC B15A5: REAR SEAT ENTERTAINMENT SYSTEM MALFUNCTION

DESCRIPTION

This DTC is stored when a malfunction occurs in the television display assembly.

DTC Code	DTC Detection Condition	Trouble Area
B15A5	When one of the conditions below is met: • RAM error • Bus malfunction • Sub-microprocessor malfunction • Drawing controller malfunction • Internal hardware malfunction • EEPROM error	Television display assembly

INSPECTION PROCEDURE

PROCEDURE

1. **CHECK FOR DTC**
   a. Clear the DTC. Refer to **DTC CHECK / CLEAR** .
   b. Check for DTCs and check if the same trouble occurs again.

      OK

      No DTC is output.

   NG --> See step 3

   OK --> See step 2

2. **USE SIMULATION METHOD TO CHECK. Refer to HOW TO PROCEED WITH TROUBLESHOOTING**
3. **REPLACE TELEVISION DISPLAY ASSEMBLY. Refer to REMOVAL**

DTC B15B0: DISPLAY SCREEN MALFUNCTION

DESCRIPTION

This DTC is stored when a malfunction occurs in the navigation receiver assembly.

DTC Code	DTC Detection Condition	Trouble Area
B15B0	When either condition below is met: • Picture circuit (TFT unit) malfunction • Back light malfunction (excess current)	Navigation receiver assembly

INSPECTION PROCEDURE

PROCEDURE

1. **CHECK FOR DTC**
   a. Clear the DTC. Refer to **DTC CHECK / CLEAR** .
   b. Check for DTCs and check if the same trouble occurs again.

      OK

      No DTC is output.

   NG --> See step 3

   OK --> See step 2

2. **USE SIMULATION METHOD TO CHECK. Refer to HOW TO PROCEED WITH TROUBLESHOOTING**
3. **REPLACE NAVIGATION RECEIVER ASSEMBLY. Refer to REMOVAL**

DTC B15BA: XM TUNER MALFUNCTION

DESCRIPTION

This DTC is stored when a malfunction occurs in the stereo component tuner assembly.

DTC Code	DTC Detection Condition	Trouble Area
B15BA	When either condition below is met: • Internal IC malfunction • Stereo component tuner assembly malfunction	Stereo component tuner assembly

INSPECTION PROCEDURE

NOTE: After replacing the stereo component tuner assembly of vehicles subscribed to pay-type satellite radio broadcasts, registration of the XM radio ID is necessary.

PROCEDURE

1. **CHECK FOR DTC**
   a. Clear the DTC. Refer to **DTC CHECK / CLEAR** .
   b. Check for DTCs and check if the same trouble occurs again.

      OK

      No DTC is output.

   NG --> See step 3

   OK --> See step 2

2. **USE SIMULATION METHOD TO CHECK. Refer to HOW TO PROCEED WITH TROUBLESHOOTING**
3. **REPLACE STEREO COMPONENT TUNER ASSEMBLY. Refer to REMOVAL**

DTC B15BB: MULTI-MEDIA INTERFACE ECU MALFUNCTION

DESCRIPTION

This DTC is stored when a malfunction occurs in the multi-media interface ECU.

DTC Code	DTC Detection Condition	Trouble Area
B15BB	When one of the conditions below is met: • System microprocessor malfunction • Media interface microprocessor malfunction • CD-LSI (Large Scale Integration) malfunction • Internal power supply malfunction	• "iPod" or USB device • Harness or connector between multi-media interface ECU and No. 1 stereo jack adapter assembly • No. 1 stereo jack adapter assembly • Multi-media interface ECU

WIRING DIAGRAM

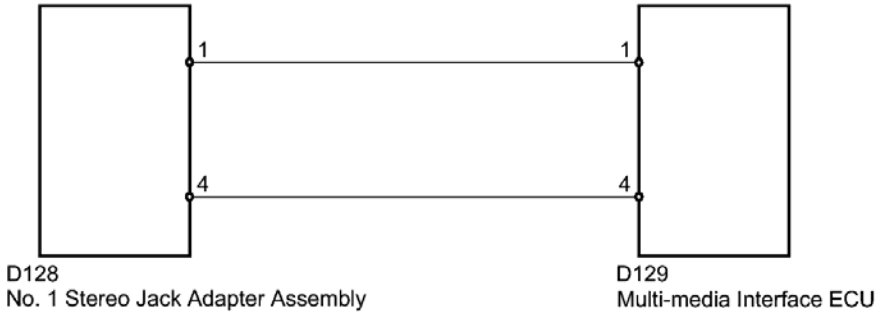


Fig. 15: Stereo Jack Adapter Circuit Wiring Diagram
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

HINT:

After the inspection is completed, clear the DTC.

PROCEDURE

1. **REPLACE "iPod" OR USB DEVICE**
   a. Disconnect the USB device or "iPod" from the No. 1 stereo jack adapter assembly.
   b. Turn the ignition switch off.

      HINT:

      When one of these DTCs has been stored, is necessary to turn off the ignition switch to make it possible for the vehicle to recognize a new device when it is connected.

   c. Turn the ignition switch to ACC.
   d. Connect a known good USB device or "iPod" to the No. 1 stereo jack adapter assembly.

      HINT:

      If the malfunction occurred when a USB device was in use, use another USB device for the inspection. If the malfunction occurred when an "iPod" was in use, use another "iPod" for the inspection.

   NEXT: Go to next step

2. **CLEAR DTC**
   a. Clear the DTCs. Refer to **DTC CHECK / CLEAR** .

NEXT: Go to next step

3. **RECHECK DTC**
   a. Recheck DTCs and check if the same DTC occurs again.

      OK

      Malfunction disappears.

   NG --> See step 4

   OK --> USB DEVICE OR "iPod" WAS DEFECTIVE

4. **INSPECT MULTI-MEDIA INTERFACE ECU**
   a. Disconnect the D128 No. 1 stereo jack adapter assembly connector.

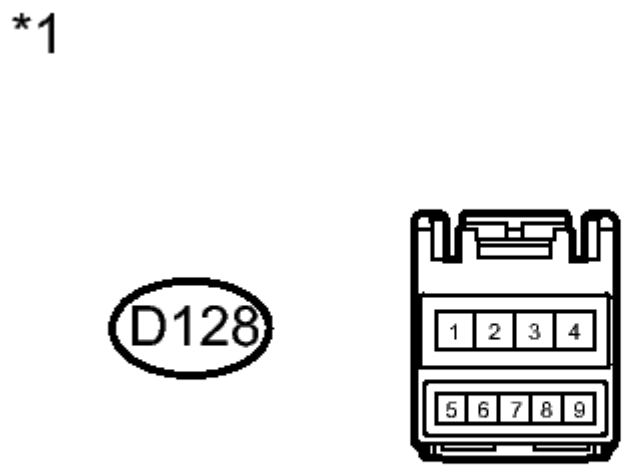


Fig. 16: Measuring Resistance Of Multi-Media Interface ECU
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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

      Standard Voltage

Tester Connection	Condition	Specified Condition
D128-1 -	Always	5 V

D128-4		

TEXT IN ILLUSTRATION

*1	Front view of wire harness connector (to No. 1 Stereo Jack Adapter Assembly)

NG --> See step 6

OK --> See step 5

5. **REPLACE NO. 1 STEREO JACK ADAPTER ASSEMBLY. Refer to REMOVAL**
6. **CHECK HARNESS AND CONNECTOR (MULTI-MEDIA INTERFACE ECU - STEREO JACK ADAPTER)**
   a. Disconnect the D129 multi-media interface ECU connector.
   b. Disconnect the D128 No. 1 stereo jack adapter assembly connector.
   c. Measure the resistance according to the value(s) in the table below.

   Standard Resistance

Tester Connection	Condition	Specified Condition
D129-1 - D128-1	Always	Below 1 ohms
D129-4 - D128-4	Always	Below 1 ohms
D129-1 - Body ground	Always	10 kohms or higher
D129-4 - Body ground	Always	10 kohms or higher

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK --> See step 7

7. **REPLACE MULTI-MEDIA INTERFACE ECU. Refer to REMOVAL**

DTC B15C0: SHORT IN GPS ANTENNA; DTC B15C1: OPEN IN GPS ANTENNA

DESCRIPTION

This DTC is stored when a malfunction occurs in the navigation antenna assembly.

DTC Code	DTC Detection Condition	Trouble Area
B15C0	GPS antenna error.	• Navigation antenna assembly • Navigation receiver assembly
B15C1	Error of the power source to the GPS antenna.	

INSPECTION PROCEDURE

PROCEDURE

1. **CHECK NAVIGATION ANTENNA ASSEMBLY**
   a. Check if the navigation antenna assembly is securely connected to the navigation receiver assembly.

      OK

      Navigation antenna assembly is securely connected.

   NG --> SECURELY CONNECT NAVIGATION ANTENNA ASSEMBLY

   OK: Go to next step

2. **REPLACE NAVIGATION ANTENNA ASSEMBLY**
   a. Replace the navigation antenna assembly with a normal one and check if the same problem occurs again. Refer to **REMOVAL** .
      1. Clear the DTCs. Refer to **DTC CHECK / CLEAR** .
      2. Recheck for DTCs and check if the same trouble occurs again.

         OK

         No DTCs are output.

   NG --> See step 3

   OK --> END (NAVIGATION ANTENNA ASSEMBLY IS FAULTY)

3. **REPLACE NAVIGATION RECEIVER ASSEMBLY. Refer to REMOVAL**

DTC B15C2: SPEED SIGNAL MALFUNCTION

DESCRIPTION

The navigation receiver assembly receives a vehicle speed signal from the combination meter assembly and information about the navigation antenna assembly, and then adjusts vehicle position.

The navigation receiver assembly stores this DTC when the difference between the speed information that the navigation antenna assembly receives and the SPD pulse received from the combination meter assembly becomes large.

HINT:

- A voltage of 12 V or 5 V is output from each ECU and then input to the combination meter assembly. The signal is changed to a pulse signal at the transistor in the combination meter assembly. Each ECU controls the respective systems based on the pulse signal.
- If a short occurs in any of the ECUs or in the wire harness connected to an ECU, all systems in the diagram below will not operate normally.

DTC Code	DTC Detection Condition	Trouble Area
B15C2	A difference between the GPS speed and SPD pulse is detected.	• Combination meter assembly • Harness or connector • Navigation receiver assembly

WIRING DIAGRAM

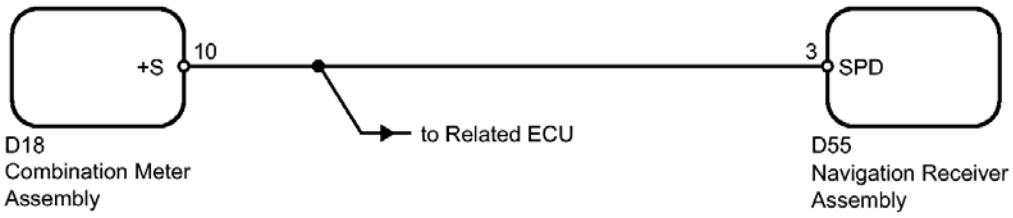
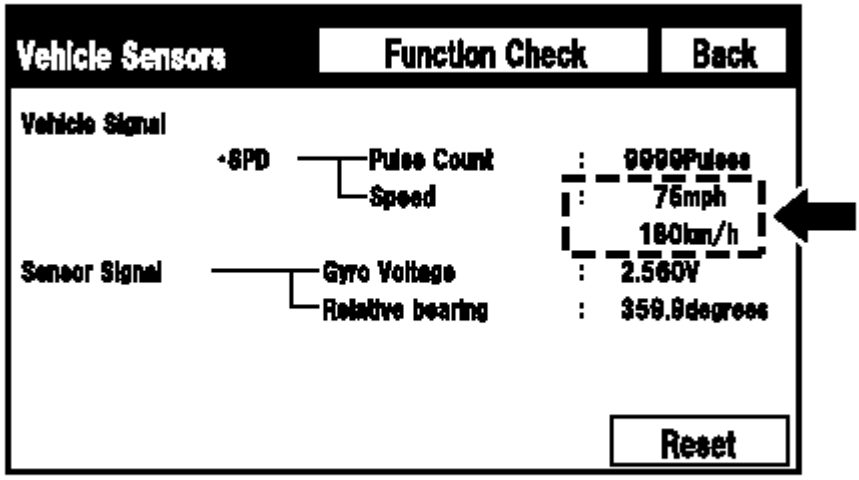


Fig. 17: Combination Meter Assembly - Wiring Diagram
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

PROCEDURE

1. **CHECK VEHICLE SENSOR (OPERATION CHECK)**
   a. Enter the "GPS & Vehicle Sensor" (Vehicle Sensors). Refer to **OPERATION CHECK** .



H

Fig. 18: Screen Display - GPS & Vehicle Sensor
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

b. While driving the vehicle, compare the "SPD" indicator to the reading on the speedometer. Check if these readings are equal or almost equal.

OK

The readings are equal or almost equal.

NG --> See step 4

OK: Go to next step

2. **CHECK HARNESS AND CONNECTOR (NAVIGATION RECEIVER - COMBINATION METER)**
   a. Disconnect the D55 navigation receiver assembly connector.
   b. Disconnect the D18 combination meter assembly connector.
   c. Measure the resistance according to the value(s) in the table below.

Standard Resistance

Tester Connection	Condition	Specified Condition
D55-3 (SPD) -	Always	Below 1

D18-10 (+S)		ohms
D55-3 (SPD) - Body ground	Always	10 kohms or higher

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK: Go to next step

3. **CHECK COMBINATION METER ASSEMBLY (SPEED SIGNAL)**
   a. Remove the combination meter assembly with the connector(s) still connected.

*1

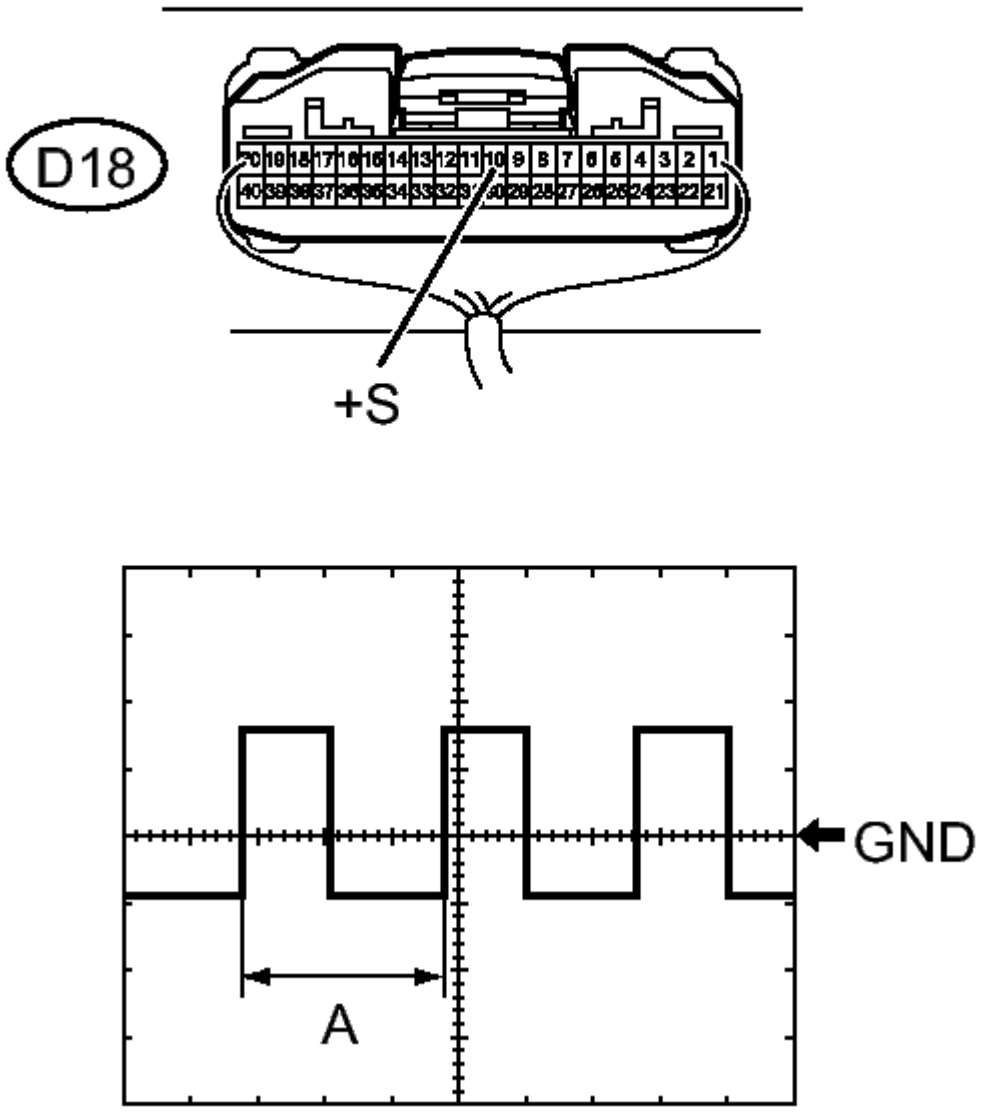


Fig. 19: Inspecting Combination Meter Assembly (Speed Signal) With Input Waveform
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

b. Connect an oscilloscope to terminal D18-10 (+S) and body ground.
c. Turn the ignition switch to ON.

d. Check the signal waveform according to the condition(s) in the table below.

MEASUREMENT CONDITION

Item	Condition
Terminal No. (Symbol)	D18-10 (+S) - Body ground
Tool setting	5 V/DIV., 20 ms./DIV.
Condition	Vehicle being driven at approx, 20 km/h (12 mph)

OK

The waveform display is as shown in the illustration.

HINT:

When the system is function normally, one wheel revolution generates 4 pulses.

As the vehicle speed increases, the width indicated by (A) in the illustration narrows.

TEXT IN ILLUSTRATION

*1	Component with harness connected (Combination Meter Assembly)

NG --> See step 6

OK --> See step 5

4. **GO TO METER / GAUGE SYSTEM. Refer to HOW TO PROCEED WITH TROUBLESHOOTING**
5. **REPLACE NAVIGATION RECEIVER ASSEMBLY. Refer to REMOVAL**
6. **REPLACE COMBINATION METER ASSEMBLY. Refer to REMOVAL**

DTC B15D8: MONITOR DISCONNECTED

DESCRIPTION

The navigation receiver assembly and parking assist ECU are connected by the AVC-LAN communication line.

When an AVC-LAN communication error occurs between the navigation receiver assembly and parking assist ECU, this DTC will be stored.

DTC Code	DTC Detection Condition	Trouble Area
B15D8	When either of the conditions below is met: • Parking assist ECU is/was not connected while the ignition switch is on (IG or ACC). • Communication between the master unit and the parking assist ECU is not possible when the engine is started.	• Parking assist ECU power source circuit • AVC-LAN circuit between navigation receiver assembly and parking assist ECU • Navigation receiver assembly • Parking assist ECU • Harness or connector

HINT:

- Even if no fault is present, this DTC may be stored depending on the battery condition or engine start voltage.
- The navigation receiver assembly is the master unit.

WIRING DIAGRAM

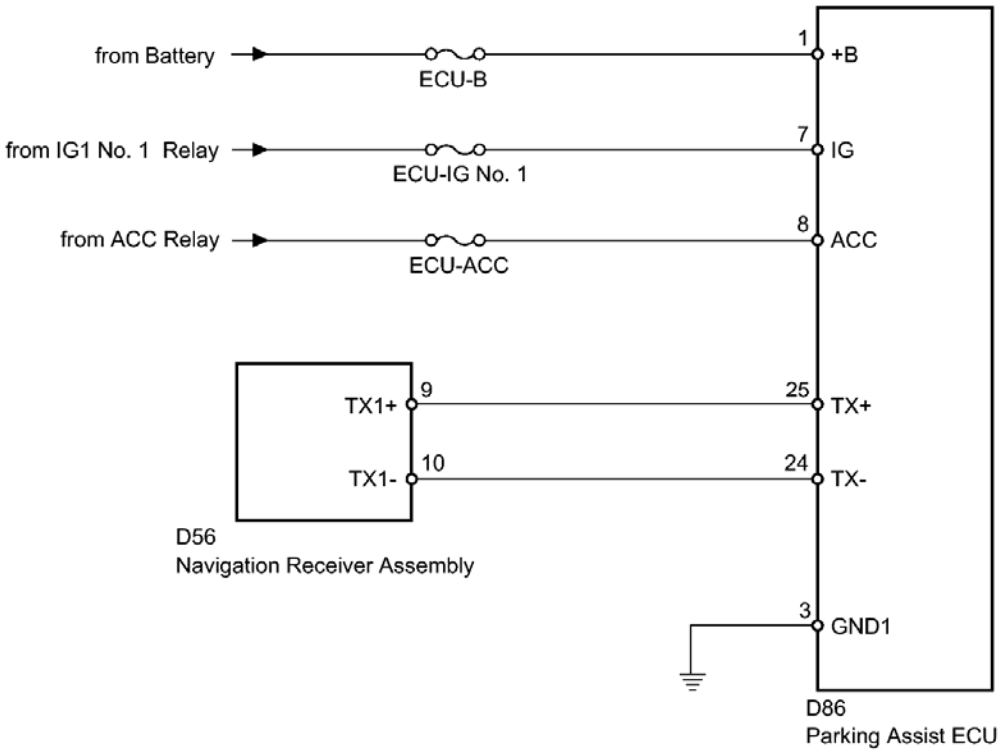


Fig. 20: Parking Assist ECU - Wiring Diagram
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

NOTE: Inspect the fuses for circuits related to this system before performing the following inspection procedure.

PROCEDURE

1. **CHECK OPTIONAL COMPONENTS (INCLUDING ASSOCIATED WIRING)**
    a. Check for optional components.
        1. Check that optional components (including associated wiring) which generate radio waves are not installed.

RESULT

Result	Proceed to
Optional components (including	

associated wiring) are installed.	A
Optional components (including associated wiring) are not installed.	B

HINT:

- Electrical noise from radio waves generated by optional components or the wiring for those components may affect AVC-LAN communication.
- This DTC may be stored when an AVC-LAN communication error occurs due to electrical noise.

B --> See step 3

A: Go to next step

2. **REMOVE OPTIONAL COMPONENTS**
   a. Remove optional components (including associated wiring).

NOTE: Do not remove optional components or associated wiring without the permission of the customer.

NEXT: Go to next step

3. **CHECK FOR DTC**
   a. Clear the DTCs. Refer to **DTC CHECK / CLEAR** .
   b. Check for DTCs and check if the same trouble occurs again.

OK

No DTCs are output.

NG --> See step 4

OK --> END (PARKING ASSIST ECU IS FAULTY)

4. **CHECK HARNESS AND CONNECTOR (PARKING ASSIST ECU - BATTERY AND BODY GROUND)**
   a. Disconnect the D86 parking assist ECU connector.

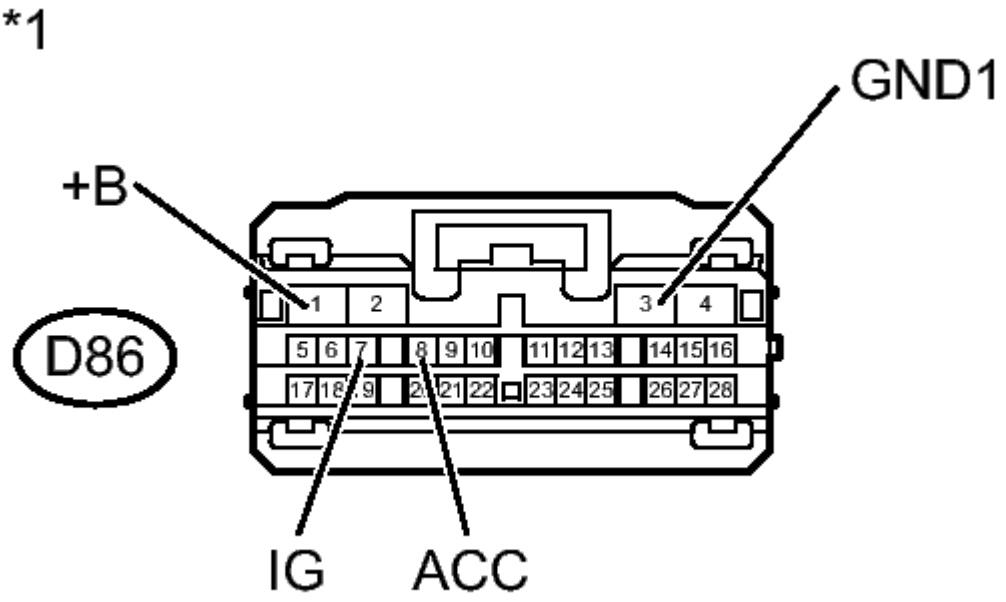


Fig. 21: Checking Harness And Connector (Parking Assist ECU - Battery And Body Ground)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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

Standard Resistance

Tester Connection	Condition	Specified Condition
D86-3 (GND1) - Body ground	Always	Below 1 ohms

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

Standard Voltage

Tester Connection	Switch Condition	Specified Condition
D86-1 (+B) - Body ground	Always	11 to 14 V
D86-8 (ACC) - Body	Ignition switch ACC	11 to 14 V

ground		
D86-7 (IG) - Body ground	Ignition switch ON	11 to 14 V

TEXT IN ILLUSTRATION

*1	Front view of wire harness connector (to Parking Assist ECU)

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK: Go to next step

5. **CHECK HARNESS AND CONNECTOR (PARKING ASSIST ECU - NAVIGATION RECEIVER ASSEMBLY)**
   a. Disconnect the D86 parking assist ECU connector.
   b. Disconnect the D56 navigation receiver assembly connector.
   c. Measure the resistance according to the value(s) in the table below.

   Standard Resistance

Tester Connection	Condition	Specified Condition
D56-9 (TX1+) - D86-25 (TX+)	Always	Below 1 ohms
D56-10 (TX1-) - D86-24 (TX-)	Always	Below 1 ohms
D56-9 (TX1+) - Body ground	Always	10 kohms or higher
D56-10 (TX1-) - Body	Always	10 kohms or higher

ground		

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK: Go to next step

6. **REPLACE PARKING ASSIST ECU**
   a. Temporarily replace the parking assist ECU with a new or normally functioning one. Refer to **REMOVAL** .
   b. Clear the DTCs. Refer to **DTC CHECK / CLEAR** .
   c. Check for DTCs and check if the same trouble occurs again.

      OK

      No DTCs are output.

   NG --> See step 7

   OK --> END (PARKING ASSIST ECU IS FAULTY)

7. **REPLACE NAVIGATION RECEIVER ASSEMBLY. Refer to REMOVAL**

DTC B15DF: USB COMMUNICATION MALFUNCTION

DESCRIPTION

This DTC is stored when a malfunction occurs in communication error with USB device or "iPod".

DTC Code	DTC Detection Condition	Trouble Area
B15DF	When one of the conditions below is met: • Communication error with USB device • "iPod" control software of system microprocessor malfunction • Communication error with "iPod"	• USB device • "iPod" • Multi-media interface ECU

INSPECTION PROCEDURE

PROCEDURE

1. **REPLACE "iPod" OR USB DEVICE**
   a. Disconnect the USB device or "iPod" from the No. 1 stereo jack adapter assembly.
   b. Turn the ignition switch off.

      HINT:

When one of these DTCs has been stored, is necessary to turn off the ignition switch to make it possible for the vehicle to recognize a new device when it is connected.

c. Turn the ignition switch to ACC.

d. Connect a known good USB device or "iPod" to the No. 1 stereo jack adapter assembly.

HINT:

If the malfunction occurred when a USB device was in use, use another USB device for the inspection. If the malfunction occurred when an "iPod" was in use, use another "iPod" for the inspection.

NEXT: Go to next step

2. **CLEAR DTC**
   a. Clear the DTCs. Refer to **DTC CHECK / CLEAR** .

NEXT: Go to next step

3. **RECHECK DTC**
   a. Recheck for DTCs.

HINT:

If DTCs are detected frequently, replace the multi-media interface ECU.

OK

Malfunction disappears.

NG --> See step 4

OK --> USB DEVICE OR "iPod" WAS DEFECTIVE

4. **REPLACE MULTI-MEDIA INTERFACE ECU. Refer to REMOVAL**

DTC B15E1: MEDIA MALFUNCTION

DESCRIPTION

This DTC is output when signals from disc in the navigation receiver assembly cannot be read.

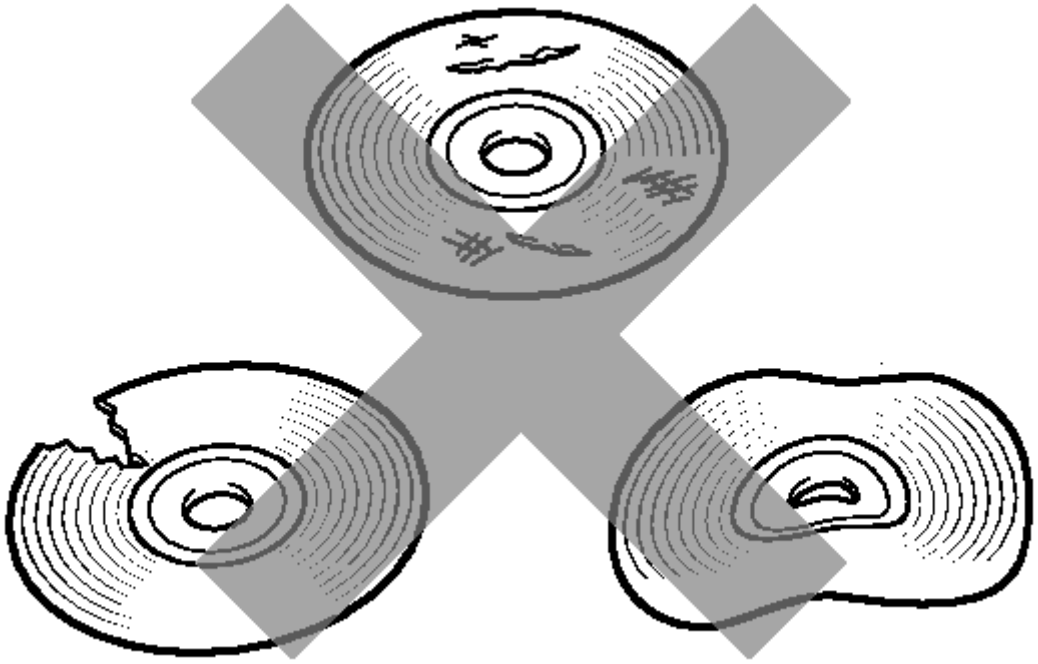
DTC Code	DTC Detection Condition	Trouble Area
	When one of the conditions below is met: • An unsuitable disc is inserted.	

B15E1	• The disc cannot be read. • The disc cannot be read because of dirt or scratches. • The disc cannot be read because it is inserted upside down.	• Disc • Navigation receiver assembly

INSPECTION PROCEDURE

PROCEDURE

1. **CHECK DISC**
   a. Check that the disc is not deformed or cracked.



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Fig. 22: Identifying Deformed Or Cracked Disc
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

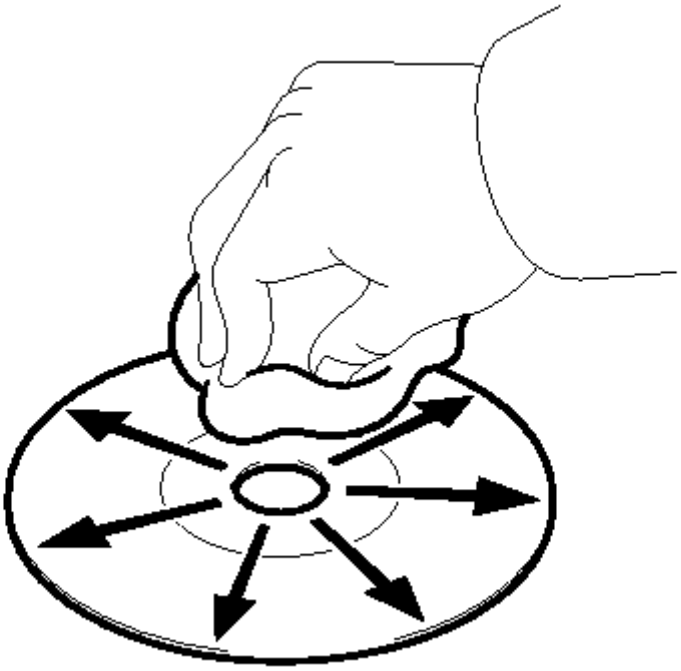
OK

No deformation or cracks on the disc.

NG --> CHANGE DISC

OK: Go to next step

2. **DISC CLEANING**
   a. Disc cleaning



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Fig. 23: Cleaning Disc Surface With Soft Dry Cloth
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

1. If dirt is on the disc surface, wipe it clean with a soft cloth from the inside to the outside in a radial direction.

NOTE: **Do not use a conventional record cleaner or anti-static preservative.**

NEXT: Go to next step

3. **REPLACE DISC WITH ANOTHER AND RECHECK**
   a. Replace the disc with another and recheck.
   b. Clear the DTC. Refer to **DTC CHECK / CLEAR** .
   c. Recheck for DTC and check if the same trouble occurs again.

   OK

   No DTC is output.

   NG --> See step 4

   OK --> END

4. **REPLACE NAVIGATION RECEIVER ASSEMBLY. Refer to REMOVAL**

DTC B15FE: XM TUNER ANTENNA DISCONNECTED; DTC B15FF: XM TUNER ANTENNA SHORT

DESCRIPTION

This DTC is stored when a malfunction occurs in the satellite radio antenna which is connected to the stereo component tuner assembly.

DTC Code	DTC Detection Condition	Trouble Area
B15FE	The satellite radio antenna is not connected.	• Satellite radio antenna assembly • Stereo component tuner assembly • No. 2 antenna cord sub-assembly
B15FF	A short occurs in the satellite radio antenna.	

INSPECTION PROCEDURE

NOTE: After replacing the stereo component tuner assembly of vehicles subscribed to pay-type satellite radio broadcasts, registration of the XM radio ID is necessary.

PROCEDURE

1. **CHECK CONNECTION OF ANTENNA CABLE**
   a. Check if the satellite radio antenna cord sub-assembly is securely connected to the stereo component tuner assembly.

      OK

      Satellite radio antenna cord sub-assembly is securely connected.

   NG --> SECURELY CONNECT SATELLITE RADIO ANTENNA CABLE

   OK: Go to next step

2. **CHECK NO. 2 ANTENNA CORD SUB-ASSEMBLY**
   a. Disconnect the No. 2 antenna cord sub-assembly connector from the stereo component tuner assembly.

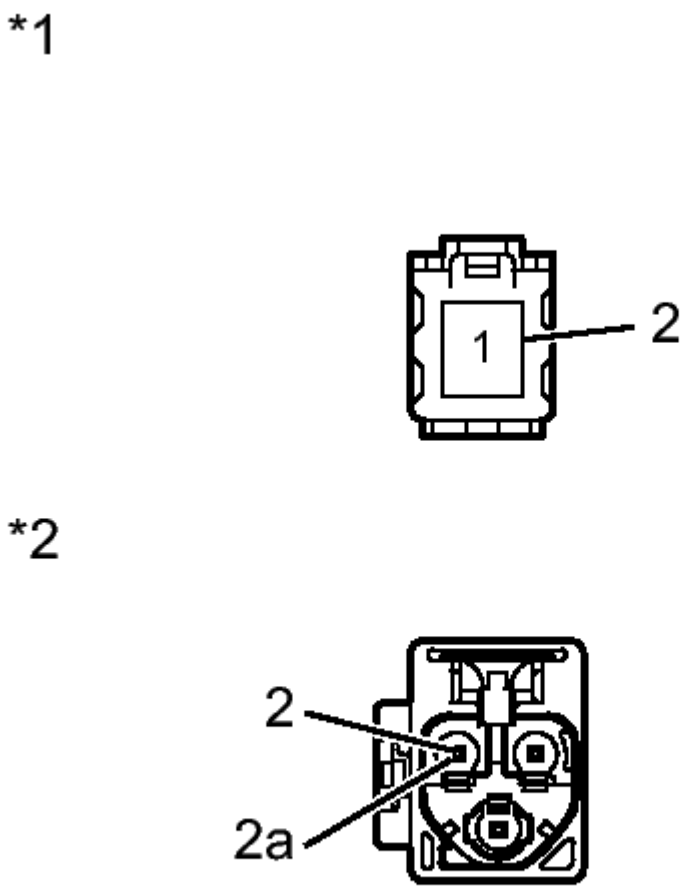


Fig. 24: Checking No. 2 Antenna Cord Sub-Assembly
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

b. Disconnect the No. 2 antenna cord sub-assembly connector from the satellite radio antenna assembly.
c. Measure the resistance according to the value(s) in the table below.

Standard Resistance

(STEREO COMPONENT TUNER ASSEMBLY - SATELLITE RADIO ANTENNA ASSEMBLY)

Tester Connection	Condition	Specified Condition
1 - 2	Always	Below 1 ohms

2 - 2a	Always	Below 1 ohms
1 - Body ground	Always	10 kohms or higher
2 - Body ground	Always	10 kohms or higher

TEXT IN ILLUSTRATION

*1	Front view of antenna cord sub-assembly connector (to Stereo Component Tuner Assembly)
*2	Front view of antenna cord sub-assembly connector (to Satellite Radio Antenna Assembly)

NG --> REPLACE NO. 2 ANTENNA CORD SUB-ASSEMBLY

OK: Go to next step

3. **REPLACE SATELLITE RADIO ANTENNA ASSEMBLY**
   a. Replace the satellite radio antenna assembly. Refer to **REMOVAL** .
   b. Clear the DTCs. Refer to **DTC CHECK / CLEAR** .
   c. Recheck for DTCs and check if the same trouble occurs again.

      OK

      No DTCs are output.

NG --> See step 4

OK --> END (SATELLITE RADIO ANTENNA ASSEMBLY IS FAULTY)

4. **REPLACE STEREO COMPONENT TUNER ASSEMBLY. Refer to REMOVAL**

SYMPTOM TESTS

Satellite Radio Broadcast cannot be Received

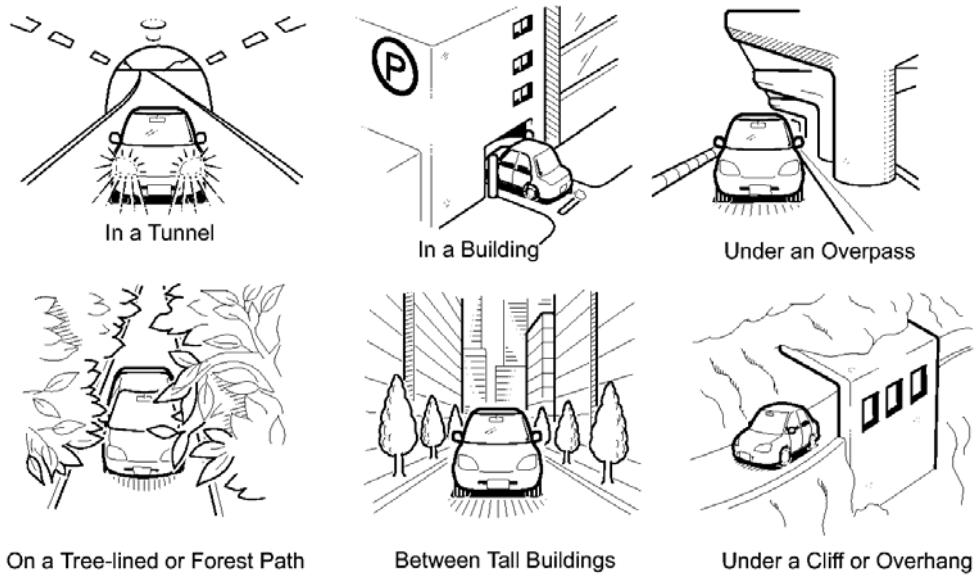
INSPECTION PROCEDURE

NOTE:

- **Some satellite radio broadcasts require payment. A contract must be made between a satellite radio service and the user. If the contract expires, it will not be possible to listen to the broadcast.**
- **After replacing the stereo component tuner assembly of vehicles subscribed to pay-type satellite radio broadcasts, registration of the XM radio ID is necessary.**

PROCEDURE

1. **CHECK SURROUNDINGS**
   a. Check if the vehicle is in an environment where reception is difficult due to something blocking the area above the vehicle.



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Fig. 25: Reasons For Poor Reception
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

HINT:

If the area above the vehicle is blocked, such as when in a building or tunnel, reception may not be

possible.

OK

Area above the vehicle is not blocked.

NG --> END (MOVE VEHICLE TO LOCATION WHERE RECEPTION IS BETTER)

OK: Go to next step

2. **CHECK STEREO COMPONENT TUNER ASSEMBLY**
   a. Check if CH001 (free broadcast) can be received.

      OK

      CH001 can be received.

   NG --> See step 6

   OK: Go to next step

3. **CHECK DISPLAY SETTING**
   a. Check the display content.

      RESULT

Result	Proceed to
"UPDATING" is displayed	A
"-----" is displayed	B
None of the displays above are shown	C

   B --> THERE IS NO SONG/PROGRAM TITLE OR ARTIST NAME/FEATURE ASSOCIATED WITH CHANNEL AT THAT TIME

   C --> See step 6

   A: Go to next step

4. **CHECK CONTRACT CONDITIONS**
   a. Check if the pay-type contract has been extended, or if the contract period has ended.

      OK

Pay-type contract is valid.

NG --> TO RECEIVE PAY-TYPE BROADCASTS, CONTRACT MUST BE MADE WITH SATELLITE RADIO SERVICE

OK: Go to next step

5. **PERFORM ACTIVATION REFRESH**
   a. Perform activation refresh by referring to the satellite radio service web site (http://www.xmradio.com/refresh/).

      HINT:

      The XM radio ID that is necessary to perform activation refresh can be displayed when CH000 is selected on the satellite radio.

      OK

      Malfunction disappears.

NG --> See step 10

OK --> END

6. **CHECK DISPLAY**
   a. Check the display content.

      RESULT

Result	Proceed to
"ANTENNA" is displayed	A
"NO SIGNAL" is displayed	B
"LOADING" is displayed	B
"OFF AIR" is displayed	C
After "---" is displayed, display automatically switches to CH001	D
None of the	

displays above are shown	E

B --> END (MOVE VEHICLE TO LOCATION WHERE RECEPTION IS BETTER)

C --> CHANNEL IS CURRENTLY NOT BEING BROADCAST. BROADCAST CAN BE LISTENED TO OR VIEWED WHEN IT IS BACK ON AIR (CONFIRM WITH RADIO STATION)

D --> CHANNEL BROADCAST HAS ENDED (CONFIRM WITH RADIO STATION)

E --> See step 9

A: Go to next step

7. **CHECK CONNECTION OF ANTENNA CABLE**
   a. Check if the satellite radio antenna cable is securely connected to the stereo component tuner assembly.

      OK

      Satellite radio antenna cable is securely connected.

   NG --> SECURELY CONNECT SATELLITE RADIO ANTENNA CABLE

   OK --> See step 8

8. **REPLACE SATELLITE RADIO ANTENNA ASSEMBLY. Refer to REMOVAL**
9. **CONFIRM CURRENTLY SELECTED CHANNEL**
   a. Confirm if CH000 is currently selected.

      OK

      CH000 is selected.

   NG --> See step 11

   OK --> END (CH000 HAS NO SOUND. SELECT ANOTHER CHANNEL.)

10. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**
11. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**

Satellite Radio Broadcast cannot be Selected or After Selecting Broadcast, Broadcast cannot be Added into Memory

INSPECTION PROCEDURE

NOTE:

- **Some satellite radio broadcasts require payment. A contract must be made between a satellite radio service and the user. If the contract expires, it will not be possible to listen to the broadcast.**
- **After replacing the stereo component tuner assembly of vehicles subscribed to pay-type satellite radio broadcasts, registration of the XM radio ID is necessary.**

PROCEDURE

1. **CHECK SATELLITE RADIO**
   a. Check radio condition.

RESULT

Result	Proceed to
Broadcast cannot be selected	A
Broadcast can be selected, but selection cannot be memorized	B

B --> See step 3

A --> See step 2

2. **REPLACE STEREO COMPONENT TUNER ASSEMBLY. Refer to REMOVAL**
3. **CHECK SATELLITE RADIO**
   a. Check the number of preset channels.

   OK

   18 channels have already been preset.

NG --> See step 4

OK --> END (ONLY 18 CHANNELS CAN BE PRESET)

4. **CHECK BATTERY**

a. Check if the battery was replaced.

OK

Battery was not replaced.

NG --> See step 5

OK --> See step 6

5. **ADD PRESET CHANNEL INTO MEMORY AGAIN**
   a. Check if the preset channels that have been cleared can be added into memory again.

   OK

   Preset channels can be added into memory.

   NG --> See step 7

   OK --> END

6. **REPLACE STEREO COMPONENT TUNER ASSEMBLY. Refer to REMOVAL**
7. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**

Traffic Information is not Displayed

INSPECTION PROCEDURE

NOTE:

- **Traffic information requires payment. An "XM Nav Traffic Premium Package" contract must be made between the satellite radio service and the user. If the contract expires, traffic information will not be available.**
- **Traffic information does not apply to all roads, only main roads. For the latest information on coverage areas, contact the satellite radio service.**
- **After replacing the stereo component tuner assembly of vehicles subscribed to pay-type satellite radio broadcasts, registration of the XM radio ID is necessary.**

PROCEDURE

1. **CHECK DISPLAY**
   a. Check the traffic information screen.

   RESULT

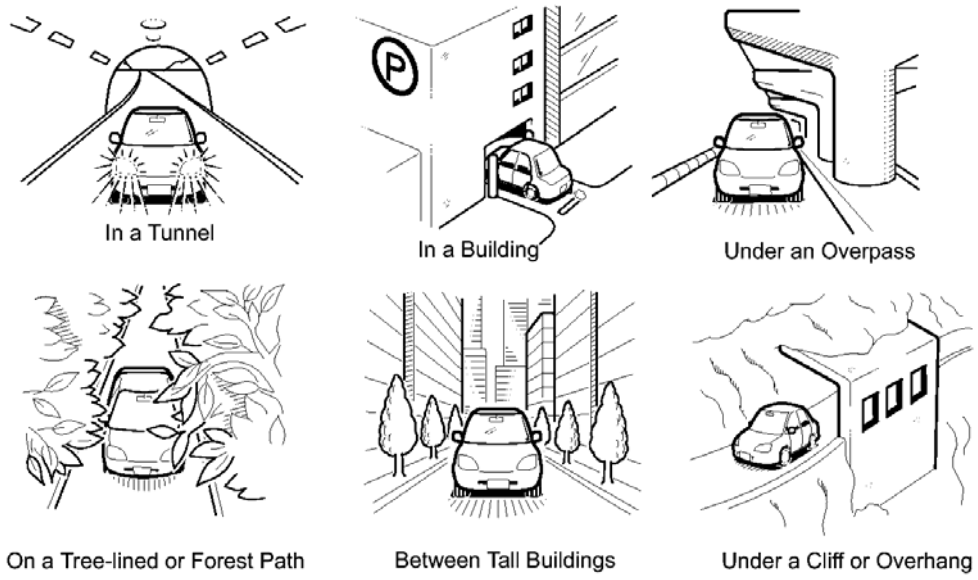
Result	Proceed

	to
Traffic information is not displayed	A
Traffic information is displayed but is not updated	B

B --> See step 7

A: Go to next step

2. **CHECK SURROUNDINGS**



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Fig. 26: Reasons For Poor Reception
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

a. Check if the vehicle is in an environment where reception is difficult due to something blocking the area above the vehicle.

HINT:

If the area above the vehicle is blocked, such as when in a building or tunnel, reception may not be possible.

OK

Area above vehicle is not blocked.

NG --> END (MOVE VEHICLE TO LOCATION WHERE RECEPTION IS BETTER)

OK: Go to next step

3. **CHECK COVERAGE AREA**
   a. Check that your current position is within the traffic information coverage area.

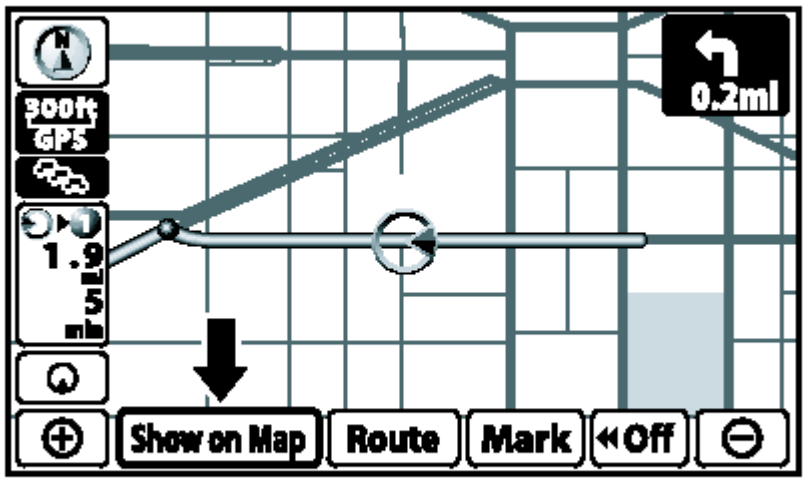
      OK

      Vehicle is within coverage area.

   NG --> MOVE TO WITHIN COVERAGE AREA (FOR LATEST COVERAGE AREA, CONFIRM WITH RADIO STATION)

   OK: Go to next step

4. **CHECK SETTINGS OF TRAFFIC INFORMATION**
   a. Press "Show on Map".

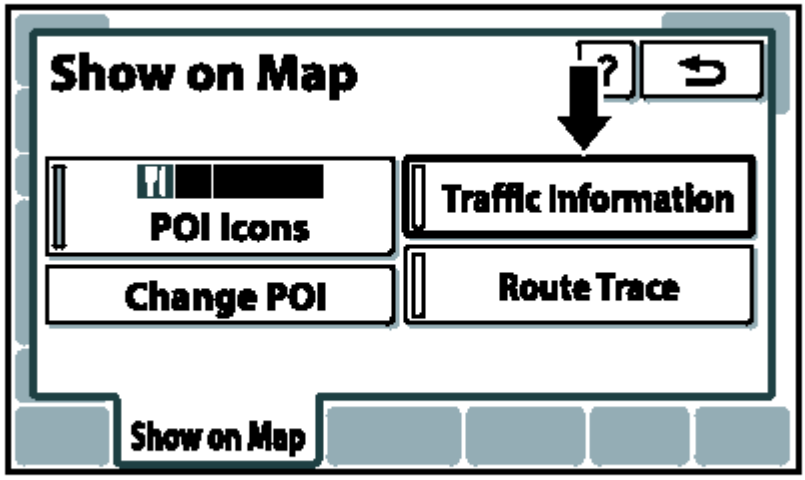


H

Fig. 27: Show on Map Display Screen

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

b. Check if "Traffic Information" is on.



H

Fig. 28: Traffic Information Display Screen
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK

"Traffic Information" is on.

NG --> TURN "Traffic Information" on

OK: Go to next step

5. **CHECK CONTRACT CONDITIONS**
   a. Check if the "XM Nav Traffic Premium Package" contract has been extended, or if the contract period has ended.

      OK

      Contract is valid.

NG --> TO RECEIVE TRAFFIC INFORMATION, CONTRACT MUST BE MADE WITH SATELLITE RADIO SERVICE

OK: Go to next step

6. **PERFORM ACTIVATION REFRESH**
   a. Perform activation refresh by referring to the satellite radio service web site (http://www.xmradio.com/refresh/).

      HINT:

      The XM radio ID that is necessary to perform activation refresh can be displayed when CH000 is selected on the satellite radio.

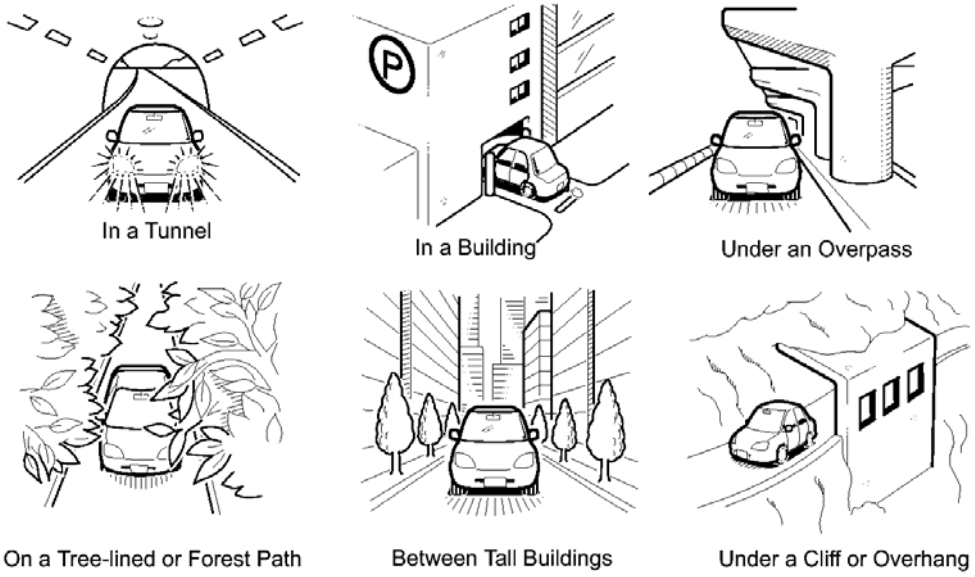
      OK

      Malfunction disappears.

   NG --> See step 13

   OK --> END

7. **CHECK SURROUNDINGS**



P

Fig. 29: Reasons For Poor Reception
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

   a. Check if the vehicle is in an environment where reception is difficult due to something blocking the area above the vehicle.

      HINT:

If the area above the vehicle is blocked, such as when in a building or tunnel, reception may not be possible.

OK

Area above vehicle is not blocked.

NG --> END (TRAFFIC INFORMATION IS NOT DISPLAYED BECAUSE AREA IS NOT IN COVERAGE AREA)

OK: Go to next step

8. **CHECK COVERAGE AREA**
   a. Check if the area on the display that does not match actual traffic conditions is within the XM Nav Traffic coverage area.

      OK

      Area that does not match is within coverage area.

   NG --> END (MOVE VEHICLE TO LOCATION WHERE RECEPTION IS BETTER)

   OK: Go to next step

9. **CHECK CONTRACT CONDITIONS**
   a. Check if the "XM Nav Traffic Premium Package" contract has been extended, or if the contract period has ended.

      OK

      Contract is valid.

   NG --> TO RECEIVE TRAFFIC INFORMATION, CONTRACT MUST BE MADE WITH SATELLITE RADIO SERVICE

   OK: Go to next step

10. **PERFORM ACTIVATION REFRESH**
    a. Perform activation refresh by referring to the satellite radio service web site (http://www.xmradio.com/refresh/).

       OK

       Malfunction disappears.

    NG --> See step 11

OK --> END

11. **CHECK DISPLAY AGAIN**
    a. Wait for 2.5 minutes, and check again if the actual traffic conditions match the display.

       OK

       Actual traffic conditions match display.

    NG --> See step 12

    OK --> END (NAVTEQ HAS UPDATED DATA OF TRAFFIC CONDITIONS)

12. **CHECK DISPLAY AGAIN**
    a. After 30 minutes have passed, check if all traffic information disappears.

       HINT:

       After traffic information updates have stopped, the navigation system continues displaying traffic information for a maximum of 30 minutes.

       RESULT

Result	Proceed to
All traffic information disappears.	A
Some traffic information is wrong.	B
Actual traffic conditions match display.	C

    B --> NAVTEQ MAY NOT BE PROVIDING DATA VERSION OF CERTAIN TRAFFIC INFORMATION (DATA ERROR, PROBLEM, ETC.)

    C --> NAVTEQ HAS UPDATED DATA OF TRAFFIC CONDITIONS

    A --> END (MOVE VEHICLE TO LOCATION WHERE RECEPTION IS BETTER)

13. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**

Noise Occurs

INSPECTION PROCEDURE

PROCEDURE

1. **NOISE CONDITION**
   a. Check from which direction the noise comes (front left or right, or rear left or right).
      1. Check from which direction the noise comes.

         OK

         The location of the noise source can be determined.

   NG --> See step 3

   OK: Go to next step

2. **CHECK SPEAKERS**
   a. Check the installation conditions of the speaker units that are located near the noise source and that there are no cracks, scratches, deformation or other failures.

   RESULT

Result	Proceed to
No malfunction is found	A
A speaker is installed incorrectly	B
Foreign objects are in the speaker	C
A speaker cone paper is broken	D

   B --> REINSTALL SPEAKER

   C --> REMOVE FOREIGN OBJECT

   D --> REPLACE SPEAKER

   A: Go to next step

3. **CHECK NOISE CONDITIONS**

a. Check the noise condition.

HINT:

The radio has a noise prevention function to reduce noise when listening to the radio. If a loud noise occurs, check whether the ground at the antenna mounting base and the noise prevention unit are installed and wired correctly.

Conditions under which noise occurs	Noise source
Noise increases when the accelerator pedal is depressed, but stops when the engine is stopped.	Generator
Noise occurs during A/C or heater operation.	Blower motor
Noise occurs when the horn switch is pressed and released or when pressed and held.	Horn
Noise occurs synchronously with the turn signal blinking pattern.	Flasher
Noise occurs during window washer operation.	Washer
Noise occurs during wiper operation.	Wiper

Noise occurs when the brake pedal is depressed.	Stop light switch
Others	Static electricity

HINT:

- In the chart's left column, find the situation that matches the customer's complaint. Then, in the right column, find the part that is causing the noise. Check the respective noise filter.
- To save time and avoid a misdiagnosis, first make sure that the noise is not coming from outside the vehicle.
- Troubleshoot noises in descending order of loudness.
- Setting the radio to a frequency where no signal is received may make recognition of the noise problem easier.

OK

The noise source cannot be determined.

NG --> REPAIR OR REPLACE NOISE SOURCE

OK --> See step 4

4. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**

Pressing Power Switch does not Turn on System

INSPECTION PROCEDURE

PROCEDURE

1. **CHECK CABIN**
   a. Check that conditions in the cabin are not likely to cause condensation.

      HINT:

      This problem occurs if the cabin is humid and the temperature rapidly changes. This condition may produce condensation, resulting in a short circuit.

      OK

      Condensation is not likely to occur.

NG --> DRY CABIN AND RECHECK CONDITIONS

OK --> See step 2

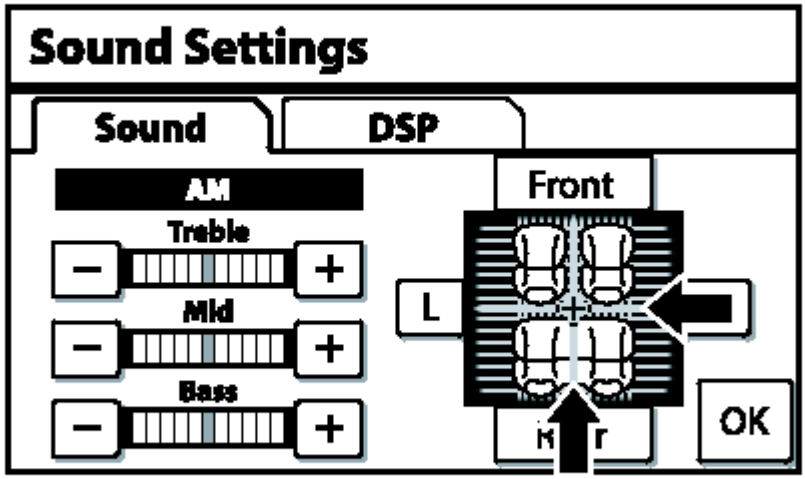
2. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**

No Sound can be Heard from Speakers

INSPECTION PROCEDURE

PROCEDURE

1. **CHECK AUDIO SETTINGS**
   a. Enter the "Sound Settings" screen by pressing the "Sound" switch on the audio display.



H

Fig. 30: Screen Display - Sound Settings
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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

      OK

      Audio system returns to normal.

      HINT:

Sound quality adjustment measures vary according to the type of the amplifier.

NG --> See step 2

OK --> END

2. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**

CD cannot be Ejected

INSPECTION PROCEDURE

PROCEDURE

1. **CHECK OPERATION**
   a. Press the disc eject switch of the navigation receiver assembly for 5 seconds or more and check that the CD is ejected.

      OK

      CD is ejected.

   NG --> See step 3

   OK: Go to next step

2. **REPLACE CD WITH ANOTHER AND RECHECK**
   a. Insert another CD and check if it is ejected.

      OK

      The CD is ejected.

   NG --> See step 3

   OK --> CD IS FAULTY

3. **REPLACE NAVIGATION RECEIVER ASSEMBLY. Refer to REMOVAL**

CD cannot be Inserted / Played or CD is Ejected Right After Insertion

INSPECTION PROCEDURE

PROCEDURE

1. **CHECK IF A PROPER CD IS INSERTED**

a. Make sure that the CD is an audio CD or a CD with an MP3 or WMA file, and that it is not burred flawed, stained, burred or otherwise defective.

OK

The CD is normal.

HINT:

- Translucent or uniquely-shaped CDs cannot be played.
- Commercial audio CDs can be played.
- CD-DA files on CD-ROMs, CD-Rs, and CD-RWs can be played.
- MP3 and WMA files on CD-ROMs, CD-Rs and CD-RWs can be played.
- For details on playable CDs, refer to the Owner's Manual.

NG --> CD IS FAULTY

OK: Go to next step

2. **CHECK THAT CD IS INSERTED PROPERLY**
   a. Check whether or not the CD is inserted upside down.

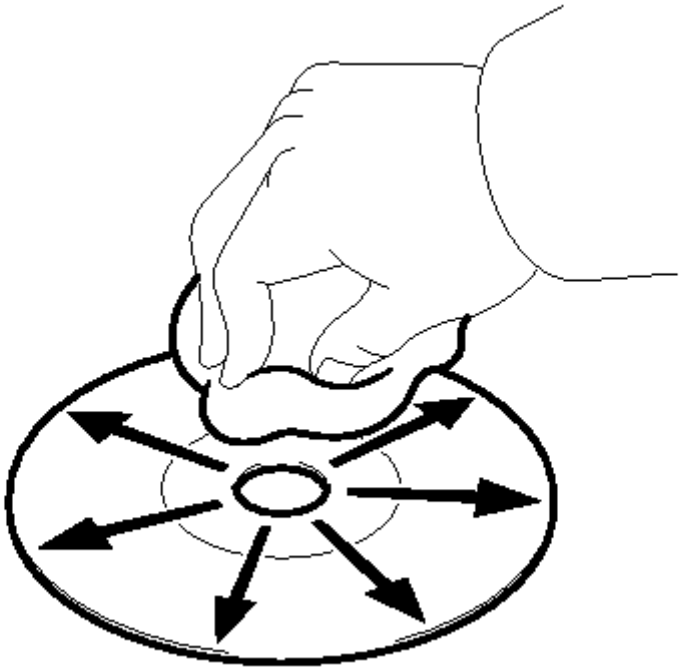
   OK

   The CD is properly inserted.

   NG --> INSERT CD PROPERLY

   OK: Go to next step

3. **CHECK CD**
   a. Check for dirt on the CD surface.



P

Fig. 31: Cleaning Disc With Soft Cloth
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK

Dirt is on the CD surface.

HINT:

If the CD is dirty, clean the CD by wiping the CD surface radially with a soft cloth.

NOTE: Do not use a conventional record cleaner or antistatic preservative

NG --> See step 4

OK --> CD WAS DIRTY

4. **REPLACE CD WITH ANOTHER AND RECHECK**
   a. Replace the CD with a normal one and check that the same trouble does not occur.

      OK

      The same trouble does not occur.

NG --> See step 5

OK --> CD IS FAULTY

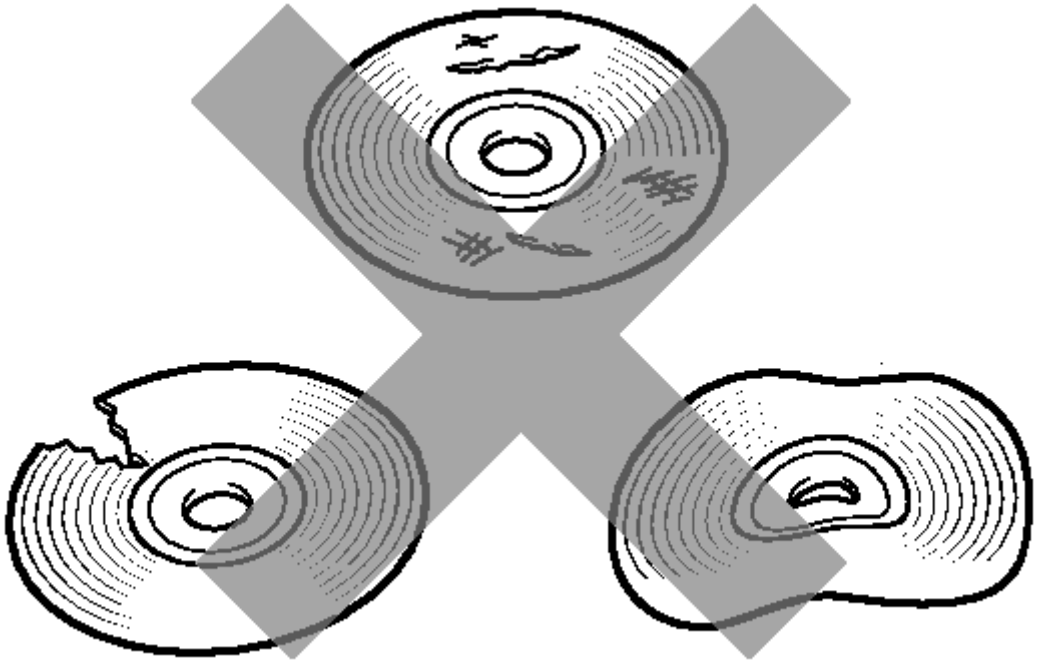
5. **REPLACE NAVIGATION RECEIVER ASSEMBLY. Refer to REMOVAL**

CD Sound Skips

INSPECTION PROCEDURE

PROCEDURE

1. **CHECK CD**
   a. Check that the CD is not deformed or cracked.



P

Fig. 32: Identifying Deformed Or Cracked Disc
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

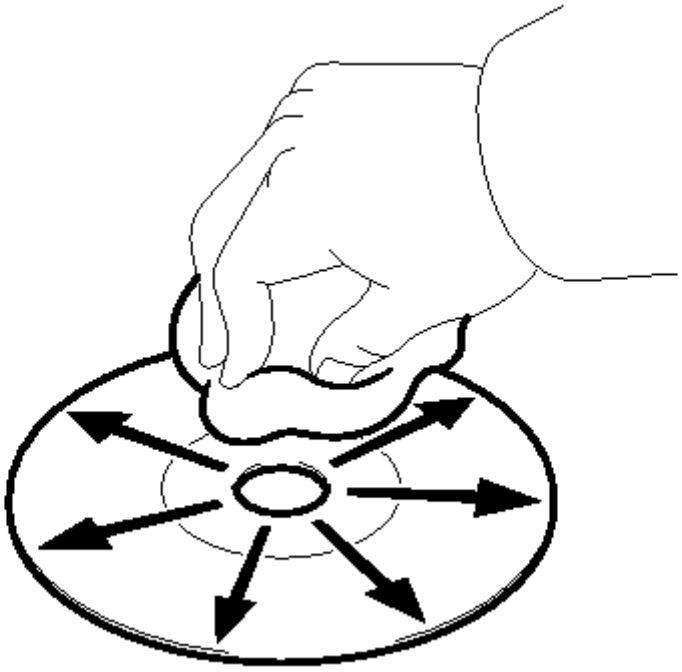
OK

No deformation or cracks in the CD.

NG --> CD IS FAULTY

OK: Go to next step

2. **CHECK CD**
   a. Check the CD



P

Fig. 33: Cleaning Disc With Soft Cloth
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK

The CD is clean.

HINT:

If dirt is on the CD surface, wipe it clean with a soft cloth from the inside to the outside in a radial direction.

NOTE: Do not use a conventional record cleaner or anti-static preservative.

NG --> CLEAN CD

OK: Go to next step

3. **CHECK OPERATION OF ANOTHER CD**
   a. Check using another CD.
      1. Check if the problem recurs using another CD.

         OK

         The problem does not occur.

NG --> See step 4

OK --> CD IS FAULTY

4. **CHECK NAVIGATION RECEIVER ASSEMBLY**
    a. Check the navigation receiver assembly installation condition.
        1. Check that the navigation receiver assembly is properly installed.

            OK

            The navigation receiver assembly is properly installed.

NG --> See step 6

OK --> See step 5

5. **REPLACE NAVIGATION RECEIVER ASSEMBLY. Refer to REMOVAL**
6. **REINSTALL NAVIGATION RECEIVER ASSEMBLY. Refer to INSTALLATION**

Radio Broadcast cannot be Received or Poor Reception

INSPECTION PROCEDURE

PROCEDURE

1. **CHECK NAVIGATION RECEIVER ASSEMBLY**
    a. Check the radio's automatic station search function.
        1. Check the radio's automatic station search function by activating it.

            OK

            The radio's automatic station search function works properly.

NG --> See step 2

OK --> See step 12

2. **CHECK OPTIONAL COMPONENTS**
    a. Check optional components (sun-shade film, telephone antenna, etc.).
        1. Check if any optional components, such as a sunshade film or telephone antenna that may decrease reception capacity, are installed.

            OK

            Optional components are installed.

            NOTE: Do not remove any optional components installed by the

customer without his or her consent.

NG --> See step 3

OK --> REMOVE AND RECHECK OPTIONAL COMPONENTS (SEE NOTE ABOVE)

3. **CHECK NAVIGATION RECEIVER ASSEMBLY**
   a. Remove the antenna plug of the navigation receiver.

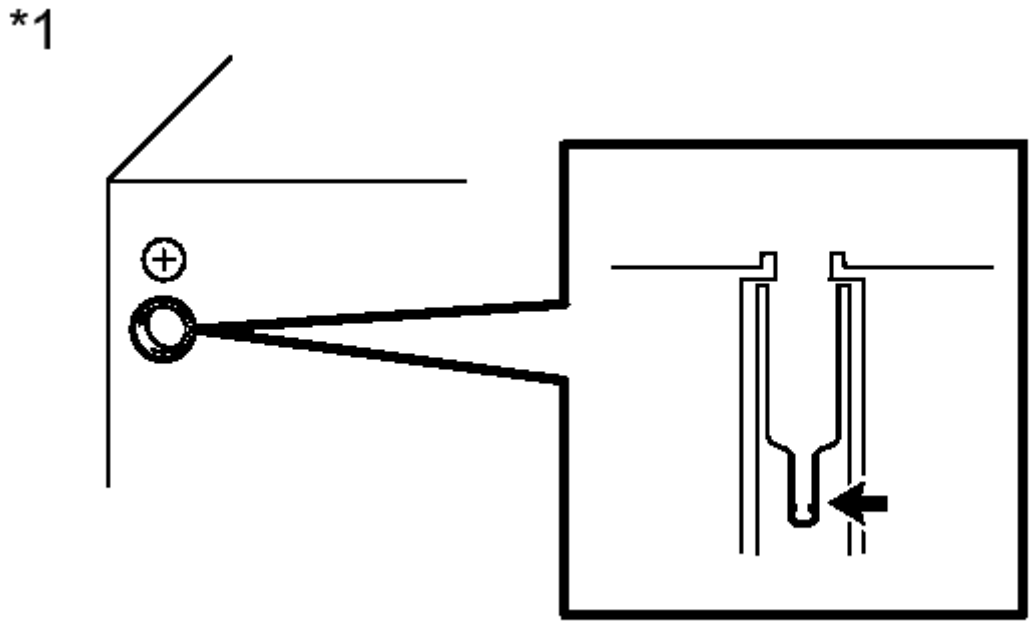


Fig. 34: Identifying Antenna Plug Of The Radio Receiver Assembly
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

   b. Turn the ignition switch ACC with the navigation receiver connector connected.
   c. Turn on the radio and select the AM mode.
   d. Place the tip of a screwdriver or a piece of metal, such as a thin wire, on the antenna jack of the navigation receiver assembly. Check that noise is heard from the speakers.

   OK

   Noise occurs.

TEXT IN ILLUSTRATION

*1	Component without harness connected

	(Navigation Receiver Assembly)

NG --> See step 13

OK: Go to next step

4. **CHECK HARNESS AND CONNECTOR (NAVIGATION RECEIVER - AMPLIFIER ANTENNA)**
   a. Disconnect the D52 navigation receiver assembly connector.

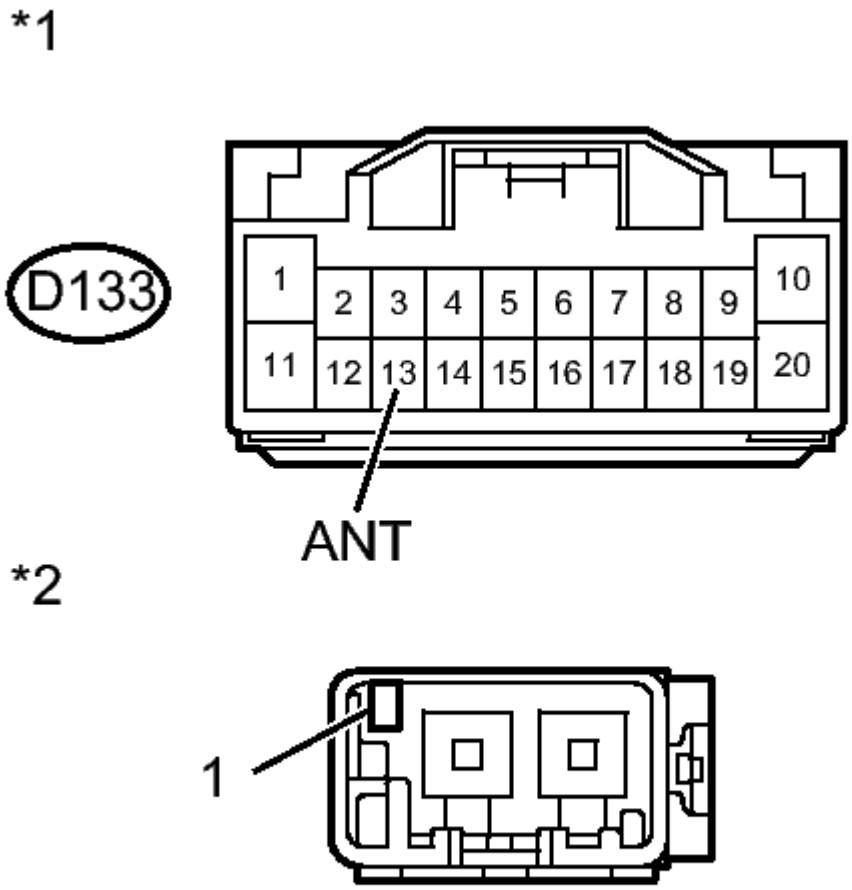


Fig. 35: Checking Harness And Connector (Navigation Receiver - Amplifier Antenna)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

   b. Disconnect the amplifier antenna assembly connector.

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

Standard Resistance

Tester Connection	Condition	Specified Condition
D52-13 (ANT) - 1	Always	Below 1 ohms
D52-13 (ANT) - Body ground	Always	10 kohms or higher

TEXT IN ILLUSTRATION

*1	Front view of wire harness connector (to Navigation Receiver Assembly)
*2	Front view of No. 2 antenna cord sub-assembly connector (to Amplifier Antenna Assembly)

NG --> See step 9

OK: Go to next step

5. **INSPECT NAVIGATION RECEIVER ASSEMBLY**
   a. Reconnect the D52 navigation receiver assembly connector.

*1

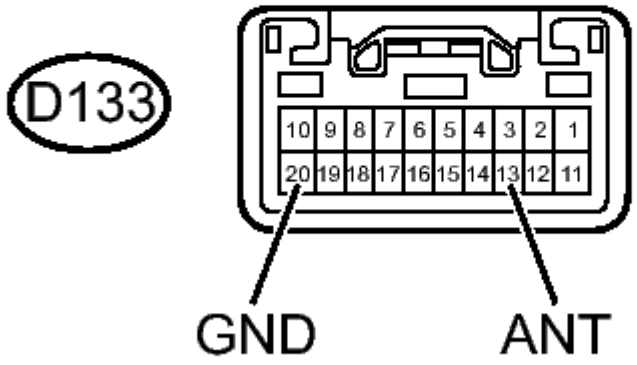


Fig. 36: Measuring Resistance Of Navigation Receiver Assembly
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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

Standard Voltage

Tester Connection	Condition	Specified Condition
D52-13 (ANT) - D52-20 (GND)	During radio (AM) reception	11 to 14 V

TEXT IN ILLUSTRATION

*1	Component with harness connected (Navigation Receiver Assembly)

NG --> See step 12

OK: Go to next step

6. **CHECK ANTENNA CORD SUB-ASSEMBLY AND NO. 2 ANTENNA CORD SUB-ASSEMBLY**
   a. Disconnect the amplifier antenna assembly connector.

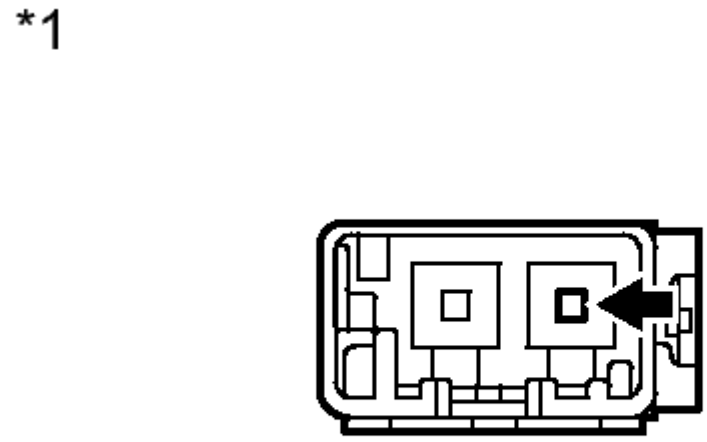


Fig. 37: Identifying Amplifier Antenna Assembly Connector
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

   b. With the ignition switch to ON, turn on the radio and select the AM mode.
   c. Place the tip of a screwdriver against the metal terminal of the No. 2 antenna cord sub-assembly and check that noise is heard from the speakers.

      OK

      Noise occurs.

TEXT IN ILLUSTRATION

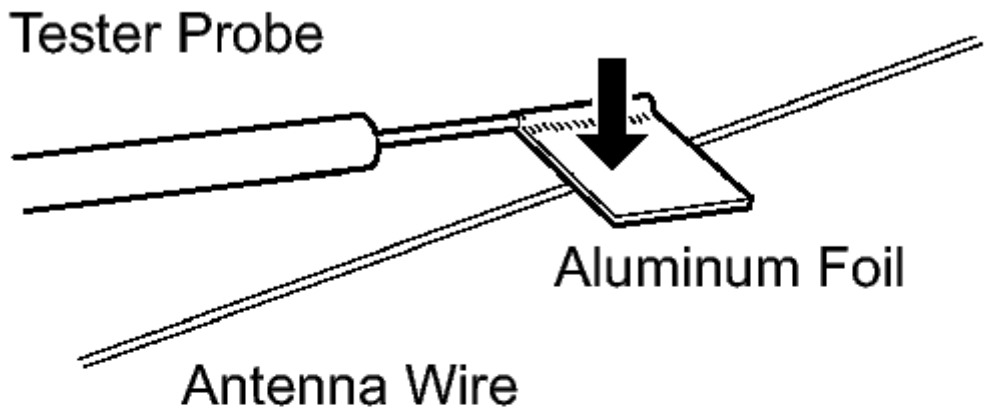
*1	Front view of No. 2 antenna cord sub-assembly connector (to Amplifier Antenna Assembly)

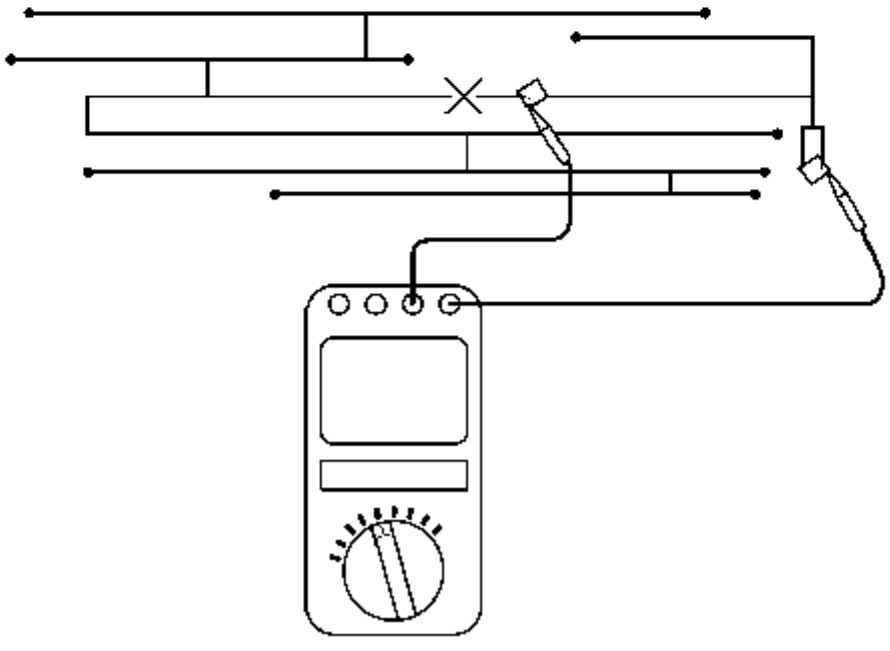
d. Reconnect the amplifier antenna assembly connector.

NG --> See step 11

OK: Go to next step

7. **CHECK GLASS ANTENNA**
   a. Check for continuity of the antenna.





H

Fig. 38: Checking Continuity At The Center Of Each Antenna Wire
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

HINT:

Check for continuity at the center of each antenna wire as shown in the illustration.

NOTE:

- **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 resistance, wrap a piece of aluminum foil around the tip of each 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 GLASS ANTENNA

OK: Go to next step

8. **REPLACE AMPLIFIER ANTENNA ASSEMBLY**
   a. Replace the amplifier antenna assembly and check if radio broadcasts can be received normally.

      OK

      Radio broadcasts can be received.

   NG --> See step 12

   OK --> END

9. **CHECK HARNESS AND CONNECTOR (NAVIGATION RECEIVER - NO. 2 ANTENNA CORD)**
   a. Disconnect the D52 navigation receiver assembly connector.

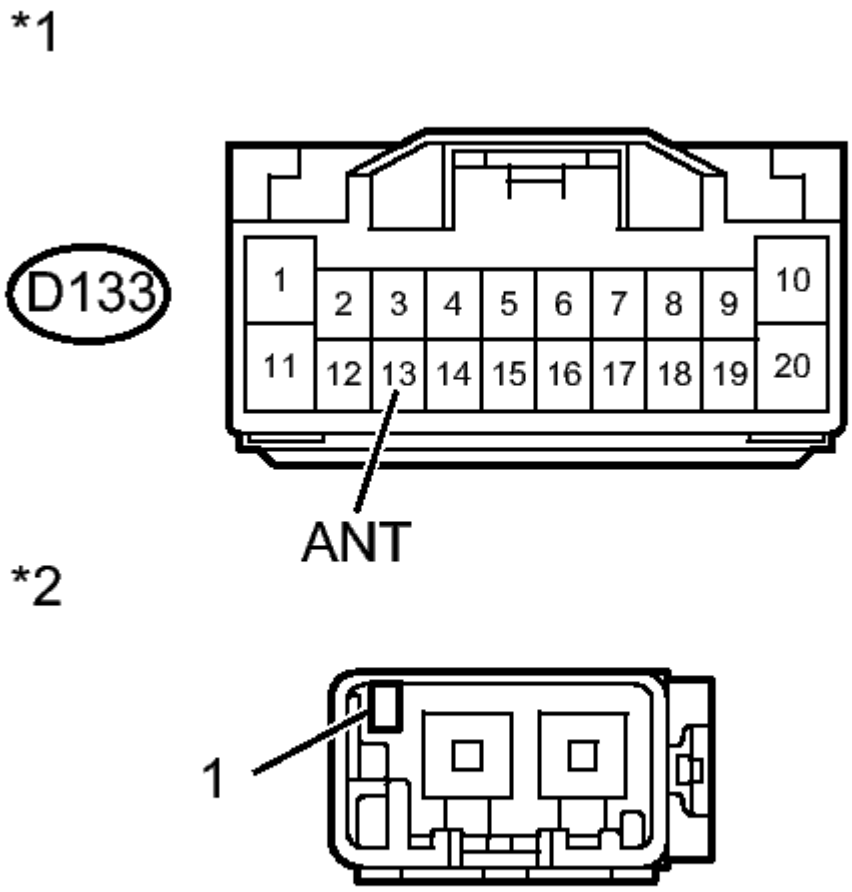


Fig. 39: Checking Harness And Connector (Navigation Receiver - Amplifier Antenna)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

b. Disconnect the No. 2 antenna cord sub-assembly (antenna cord sub-assembly side) connector.
c. Measure the resistance according to the value(s) in the table below.

Standard Resistance

Tester Connection	Condition	Specified Condition
D52-13 (ANT) - 1	Always	Below 1 ohms
D52-13 (ANT) - Body	Always	10 kohms or higher

ground		

TEXT IN ILLUSTRATION

*1	Front view of wire harness connector (to Navigation Receiver Assembly)
*2	Front view of antenna cord sub-assembly connector (to No. 2 Antenna Cord Sub-Assembly)

NG --> See step 10

OK --> See step 14

10. **CHECK HARNESS AND CONNECTOR (NAVIGATION RECEIVER - ANTENNA CORD)**
    a. Disconnect the D52 navigation receiver assembly connector.

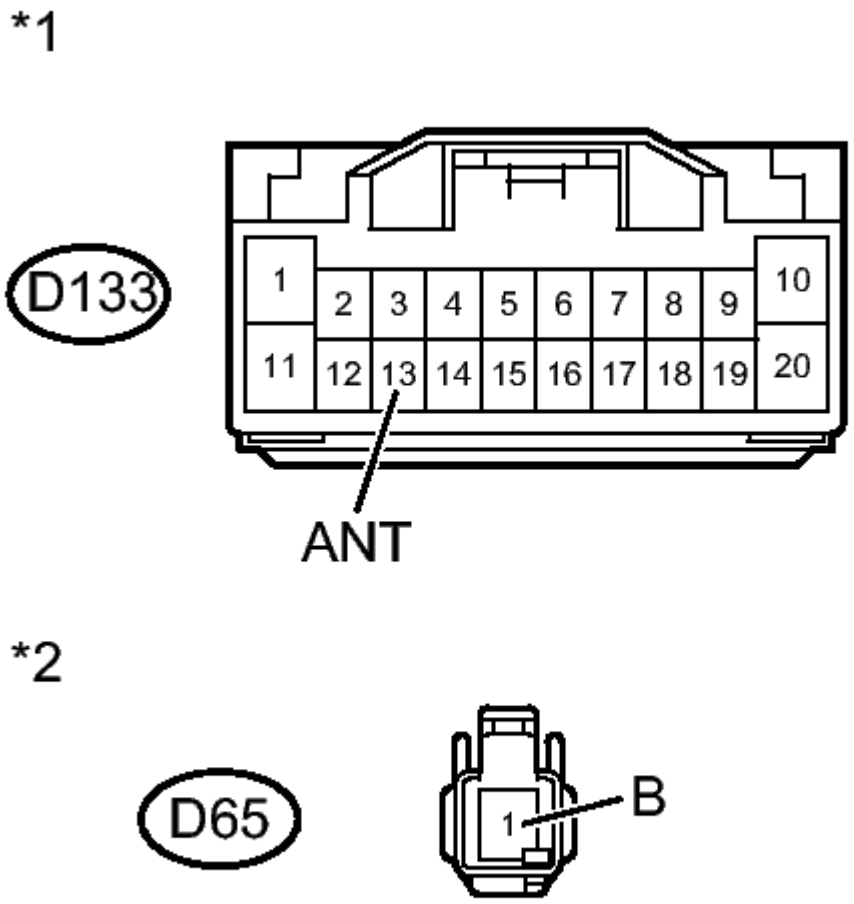


Fig. 40: Checking Harness And Connector (Navigation Receiver - Antenna Cord)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

b. Disconnect the D65 antenna cord sub-assembly connector.
c. Measure the resistance according to the value(s) in the table below.

Standard Resistance

Tester Connection	Condition	Specified Condition
D52-13 (ANT) - D65-1 (B)	Always	Below 1 ohms
D52-13 (ANT) -	Always	10 kohms

Body ground		or higher

TEXT IN ILLUSTRATION

*1	Front view of wire harness connector (to Navigation Receiver Assembly)
*2	Front view of wire harness connector (to Antenna Cord Sub-Assembly)

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK --> See step 15

11. **CHECK ANTENNA CORD SUB-ASSEMBLY**
    a. Disconnect the No. 2 antenna cord sub-assembly (antenna cord sub-assembly side) connector.

*1

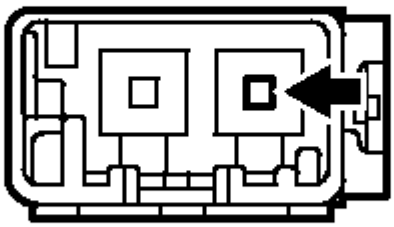


Fig. 41: Identifying Amplifier Antenna Assembly Connector
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

b. With the ignition switch to ON, turn on the radio and select the AM mode.
c. Place the tip of a screwdriver against the metal terminal of the antenna cord sub-assembly and check that noise is heard from the speakers.

OK

Noise occurs.

TEXT IN ILLUSTRATION

*1	Front view of antenna cord sub-assembly connector (to No. 2 Antenna Cord Sub-Assembly)

NG --> See step 15

OK --> See step 14

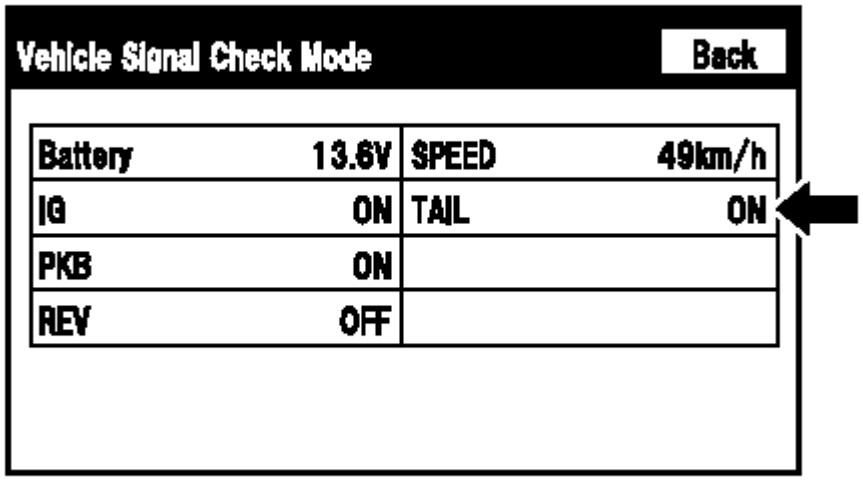
12. **REPLACE NAVIGATION RECEIVER ASSEMBLY. Refer to REMOVAL**
13. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**
14. **REPLACE NO. 2 ANTENNA CORD SUB-ASSEMBLY. Refer to REMOVAL**
15. **REPLACE ANTENNA CORD SUB-ASSEMBLY. Refer to REMOVAL**

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

INSPECTION PROCEDURE

PROCEDURE

1. **CHECK VEHICLE SIGNAL**
   a. Enter the "Vehicle Signal Check" mode and select "Vehicle Signal Check". Refer to **OPERATION CHECK** .



H

Fig. 42: Identifying Vehicle Signal Check Mode Screen Display
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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

   OK

Light Control	Display

Switch Condition	Condition
TAIL or HEAD	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 switch operation.

NG --> See step 3

OK --> See step 2

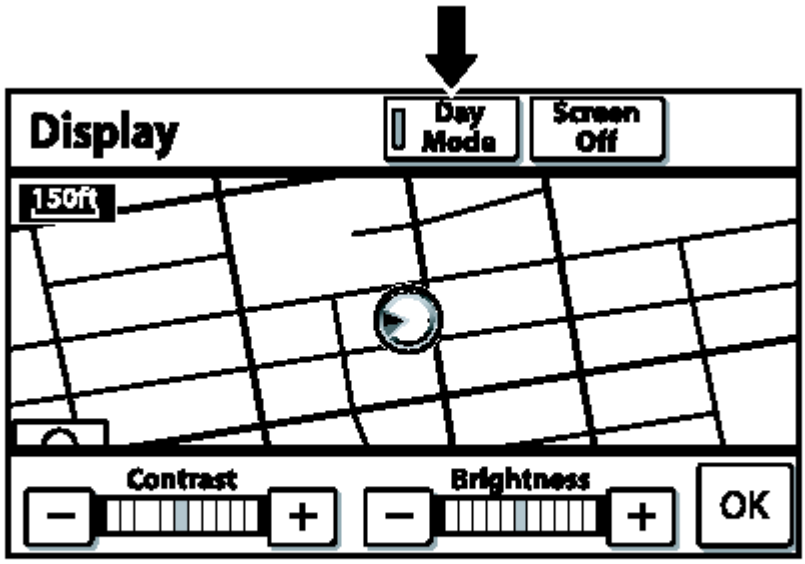
2. **REPLACE NAVIGATION RECEIVER ASSEMBLY. Refer to REMOVAL**
3. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**

Display does not Dim when Light Control Switch is Turned ON

INSPECTION PROCEDURE

PROCEDURE

1. **CHECK IMAGE QUALITY SETTING**
   a. Enter the display adjustment screen by pressing the "DISP" switch.



H

Fig. 43: Screen Display - Day Mode
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

b. Turn the light control switch to the TAIL position.
c. Check if "Day Mode" on the display adjustment is off.

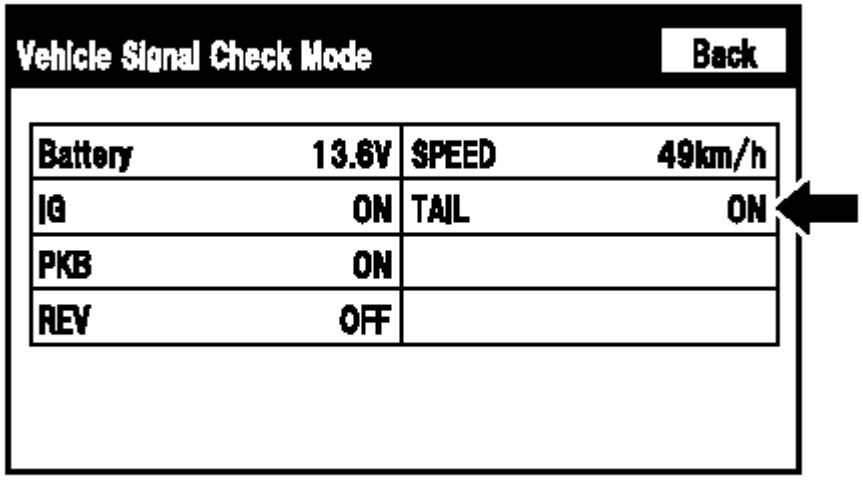
OK

"Day Mode" is off.

NG --> TURN "Day Mode" SETTING OFF

OK: Go to next step

2. **CHECK VEHICLE SIGNAL**
   a. Enter the "Display Check" mode and select "Vehicle Signal Check". Refer to **OPERATION CHECK** .



H

Fig. 44: Identifying Vehicle Signal Check Mode Screen Display
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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

OK

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 switch operation.

NG --> See step 3

OK --> See step 4

3. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**

4. **REPLACE NAVIGATION RECEIVER ASSEMBLY. Refer to REMOVAL**

Panel Switches do not Function

INSPECTION PROCEDURE

PROCEDURE

1. **CHECK PANEL SWITCH**
   a. Check for foreign matter around the switches that might prevent operation.

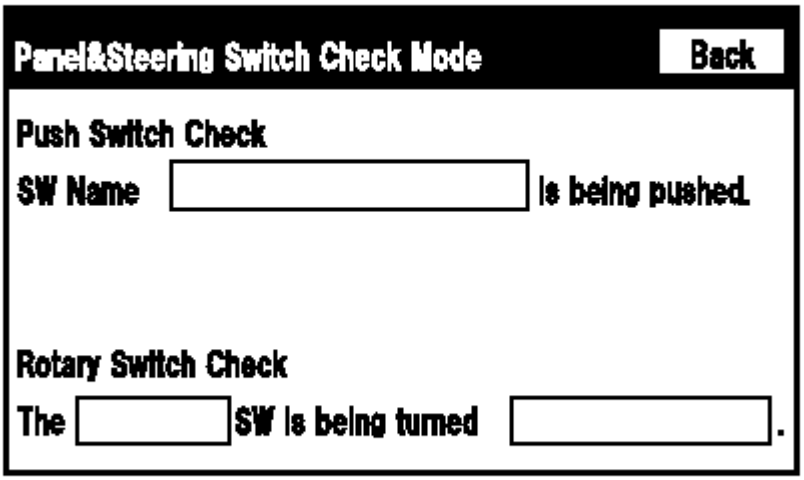
      OK

      No foreign matter is found.

   NG --> REMOVE ANY FOREIGN MATTER FOUND

   OK: Go to next step

2. **CHECK PANEL SWITCH**



H

Fig. 45: Screen Display - Panel & Steering Switch Check Mode
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

   a. Enter the "Display Check" mode and select "Panel Switch Check". Refer to **OPERATION CHECK** .
   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 --> See step 3

OK --> See step 4

3. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**
4. **REPLACE NAVIGATION RECEIVER ASSEMBLY. Refer to REMOVAL**

Touch Panel Switch does not Function

INSPECTION PROCEDURE

PROCEDURE

1. **CHECK TOUCH PANEL**
   a. Check for foreign matter on the display.

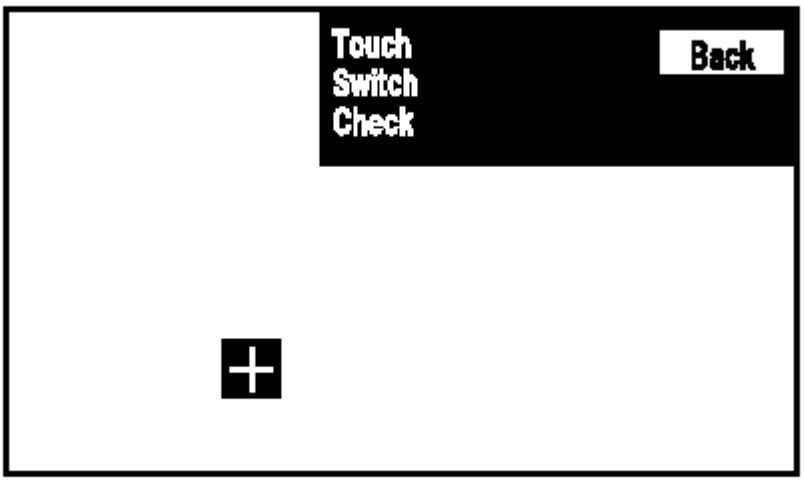
      OK

      The display is clean.

   NG --> CLEAN DISPLAY AND RECHECK TOUCH PANEL

   OK: Go to next step

2. **CHECK TOUCH SWITCH (OPERATION CHECK)**



H

Fig. 46: Screen Display - Touch Switch Check
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

a. Enter the "Display Check" mode and select "Touch Switch Check". Refer to **OPERATION CHECK** .
b. Touch the display in the area where the switch malfunction occurs.

   OK

   A "+" mark appears at the touched position.

NG --> See step 3

OK --> See step 4

3. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**
4. **REPLACE NAVIGATION RECEIVER ASSEMBLY. Refer to REMOVAL**

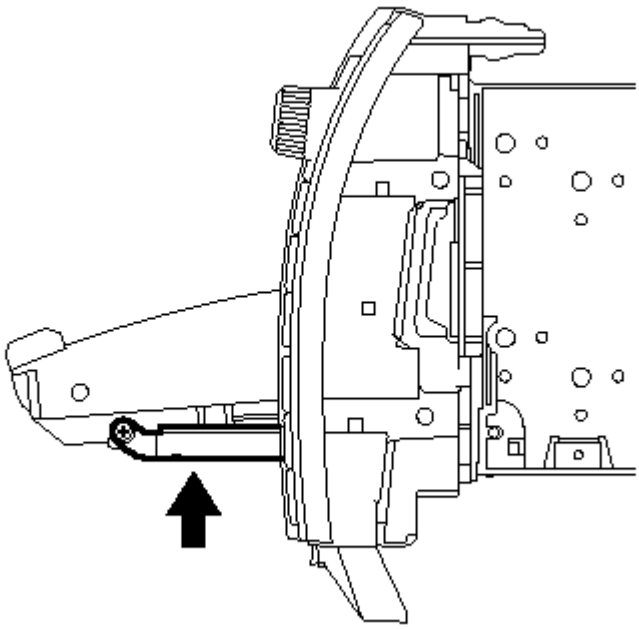
Display Panel does not Open, Tilt or Tilts Improperly

INSPECTION PROCEDURE

PROCEDURE

1. **CHECK NAVIGATION RECEIVER ASSEMBLY**
   a. Check for foreign matter or obstructions caught in the moving parts of the panel.

Example:



N

Fig. 47: Checking Navigation Receiver Assembly
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK

No obstruction or foreign matter is found.

NG --> REMOVE ANY OBSTRUCTION OR FOREIGN MATTER FOUND

OK: Go to next step

2. **CHECK OPERATION**
   a. Check if the navigation and audio systems function properly.

      OK

      Navigation and audio systems function properly.

   NG --> See step 3

   OK --> See step 4

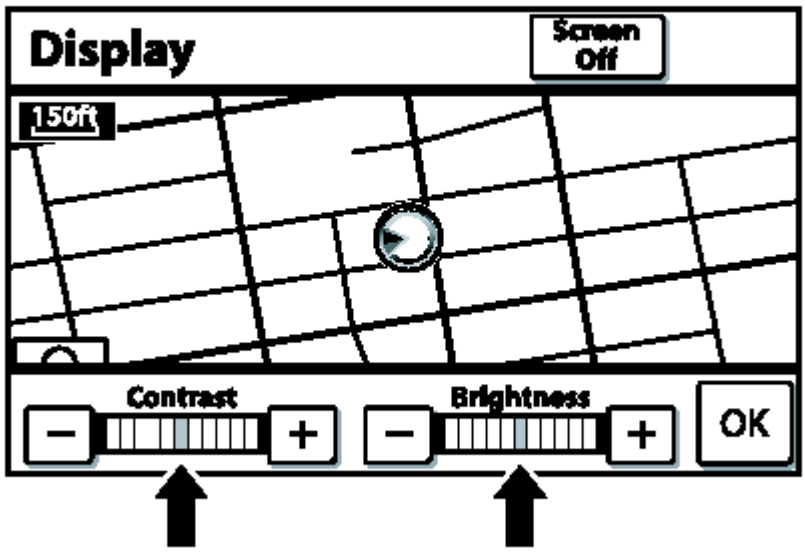
3. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**
4. **REPLACE NAVIGATION RECEIVER ASSEMBLY. Refer to REMOVAL**

Screen Flicker or Color Distortion

INSPECTION PROCEDURE

PROCEDURE

1. **CHECK DISPLAY SETTING**
   a. Enter the display adjustment screen by pressing the "DISP" switch.



H

Fig. 48: Display Adjustment Display Screen
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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

      OK

      The display returns to normal.

NG --> See step 2

OK --> END

2. **CHECK CABIN**
   a. Check that the cabin temperature is higher than -20°C (-4°F).

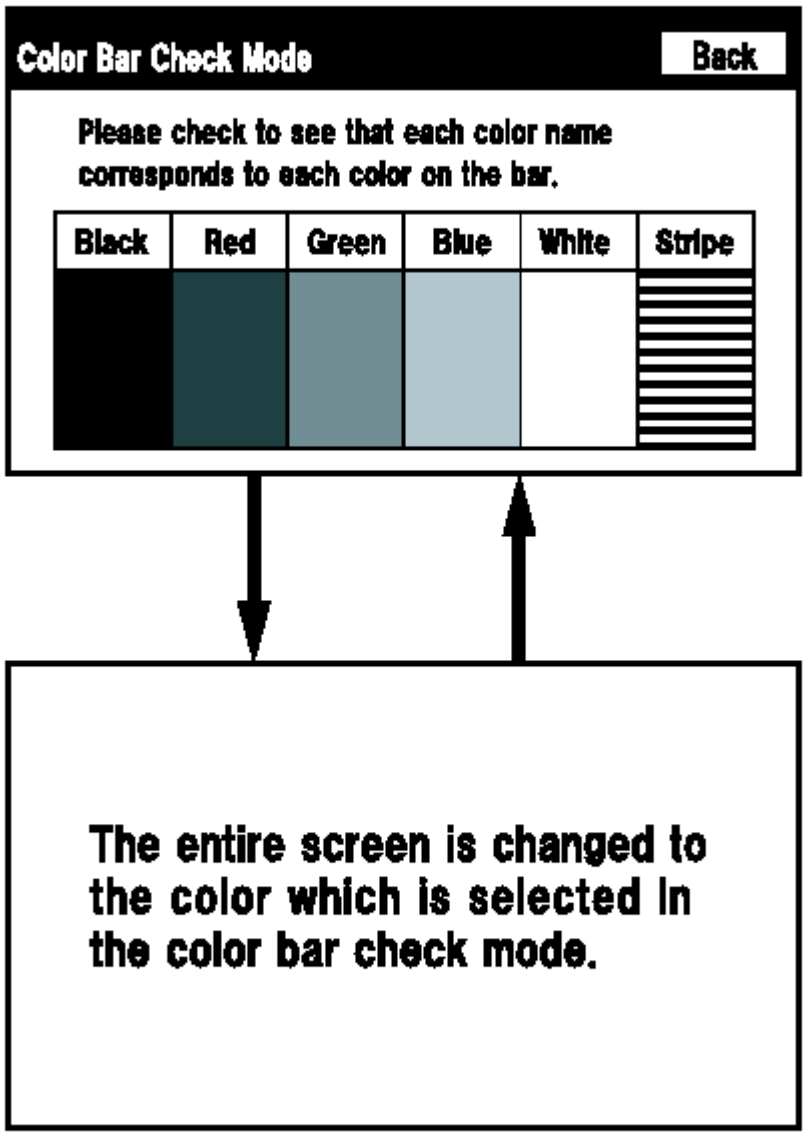
      OK

      The cabin temperature is higher than -20°C (-4°F).

NG --> HEAT CABIN AND RECHECK TEMPERATURE

OK: Go to next step

3. **CHECK COLOR BAR**
   a. Enter the "Display Check" mode and select "Color Bar Check". Refer to **OPERATION CHECK** .



H

Fig. 49: Screen Display - Color Bar Check Mode
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

b. Check that the color bars match the displayed names.

OK

Color bars match the displayed names.

NG --> See step 4

OK --> See step 5

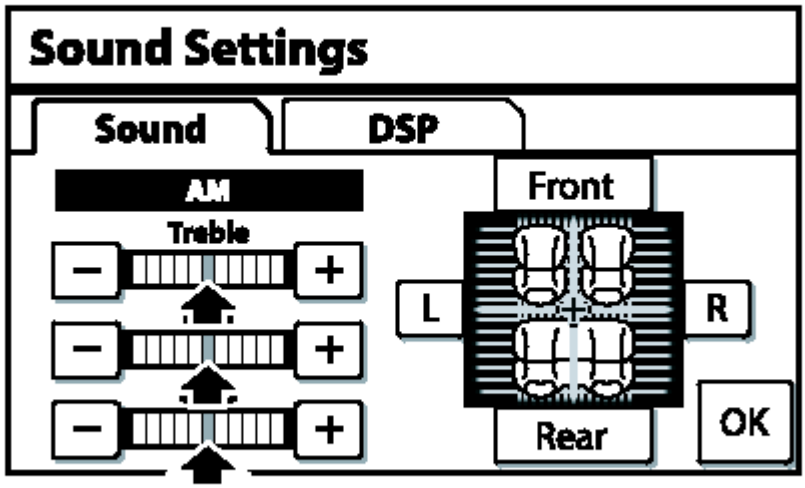
4. **REPLACE NAVIGATION RECEIVER ASSEMBLY. Refer to REMOVAL**
5. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**

Poor Sound Quality in All Modes (Low Volume)

INSPECTION PROCEDURE

PROCEDURE

1. **CHECK AUDIO SETTINGS**
   a. Enter the "Sound Settings" screen by pressing the "Sound" switch on the audio display.



H

Fig. 50: Checking Audio Settings
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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

OK

Malfunction disappears.

HINT:

Sound quality adjustment measures vary according to the type of amplifier.

NG --> See step 2

OK --> END

2. **COMPARE WITH ANOTHER VEHICLE OF SAME MODEL**
   a. Compare with another vehicle of the same model.
      1. Compare with another vehicle of the same model which does not have trouble to see if there is any difference in the sound quality.

         OK

         No difference is found.

NG --> See step 3

OK --> END

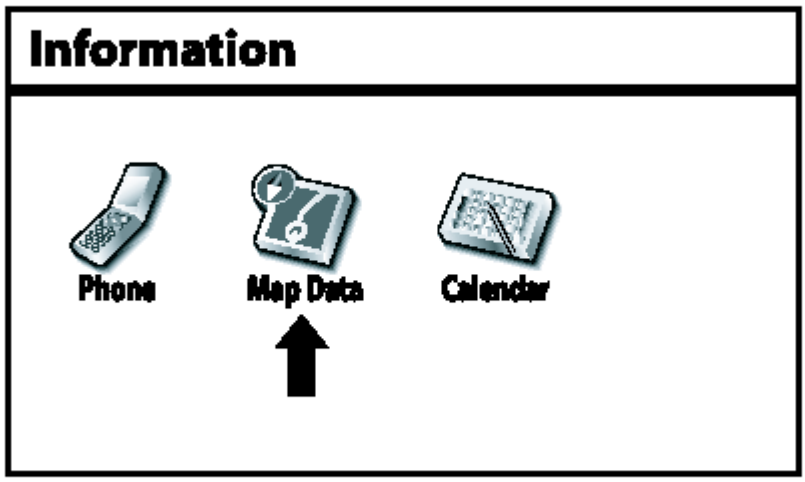
3. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**

Map Disc cannot be Inserted

INSPECTION PROCEDURE

PROCEDURE

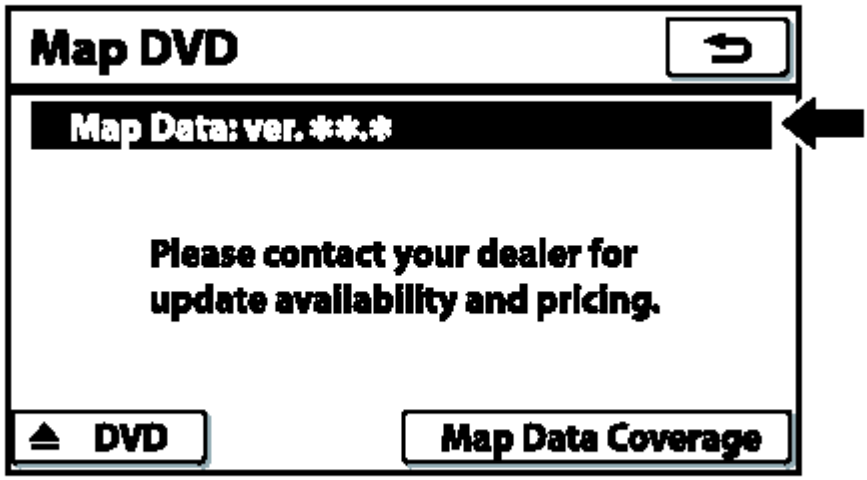
1. **CHECK NAVIGATION RECEIVER ASSEMBLY**
   a. Press the "INFO" switch and then select "Map Data".



H

Fig. 51: Screen Display - "INFO" Switch
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

b. Check if a disc is inserted into the map disc slot.



H

Fig. 52: Screen Display - Map Data
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

1. Check if the map data version is displayed in the "Map Data" section.

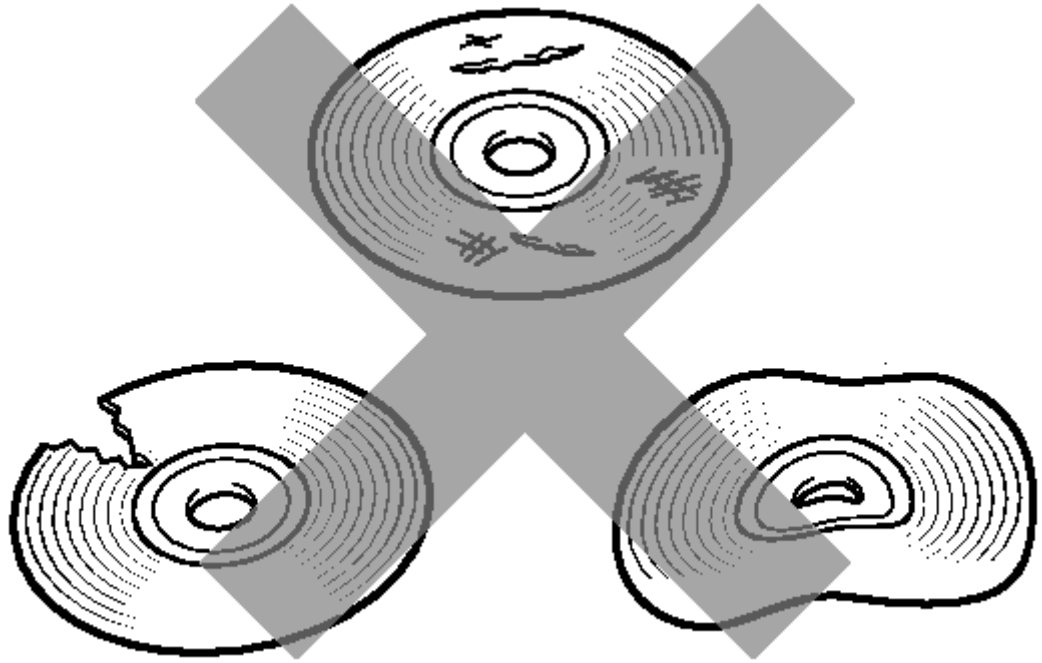
   OK

   The map data version is displayed.

NG --> EJECT DISC

OK: Go to next step

2. **CHECK MAP DISC**



P

Fig. 53: Identifying Cracked Or Deformed Disc
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

   a. Check that the map disc is not deformed or cracked.

      OK

      No deformations or cracks on the map disc

NG --> REPLACE MAP DISC

OK --> See step 3

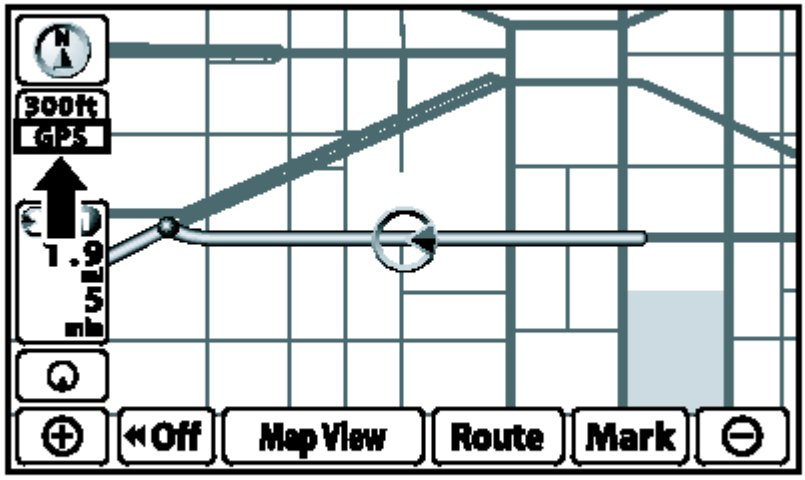
3. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**

Vehicle Position Mark Deviates Greatly

INSPECTION PROCEDURE

PROCEDURE

1. **CHECK GPS MARK**
    a. Check that the GPS mark is displayed.



H

Fig. 54: Screen Display - GPS Mark
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

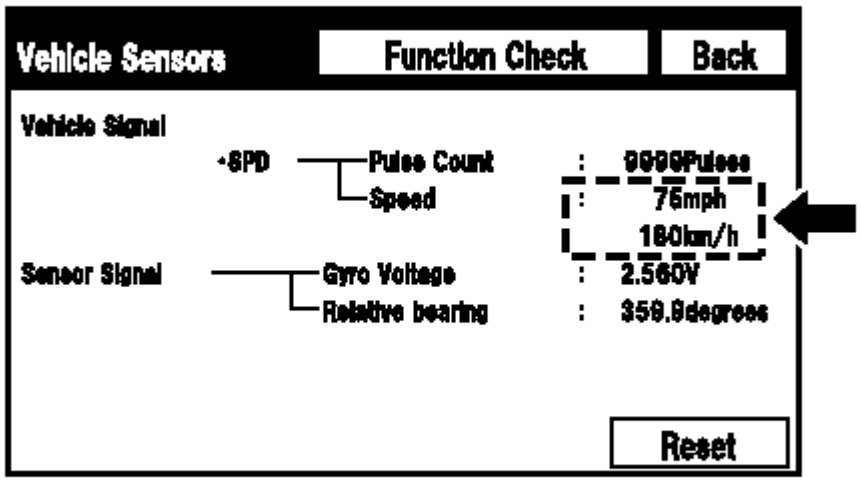
OK

GPS mark is displayed.

NG --> See step 2

OK: Go to next step

2. **GO TO "GPS MARK IS NOT DISPLAYED" IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**
3. **CHECK VEHICLE SENSOR (NAVIGATION CHECK MODE)**
    a. Enter the "Navigation Check" mode and select "Vehicle Sensors". Refer to **OPERATION CHECK** .



H

Fig. 55: Screen Display - GPS & Vehicle Sensor
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

b. While driving the vehicle, compare the "Speed" indicator to the reading on the speedometer. Check that these readings are equal or almost equal.

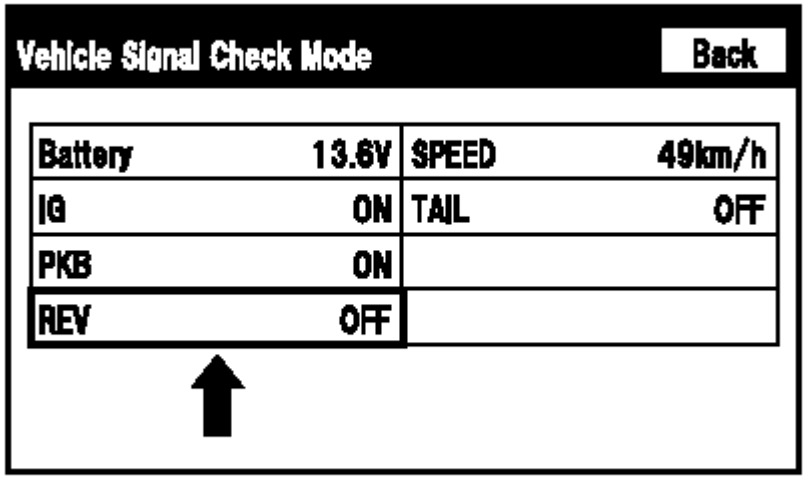
OK

The readings are equal or almost equal.

NG --> See step 4

OK: Go to next step

4. **CHECK DTC OUTPUT. Refer to DTC CHECK / CLEAR**
5. **CHECK VEHICLE SIGNAL (NAVIGATION CHECK MODE)**
   a. Enter the "Display Check" mode and select "Vehicle Signal Check". Refer to **OPERATION CHECK** .
   b. Check that the display changes between ON and OFF according to the shift lever operation.



H

Fig. 56: Identifying Vehicle Signal Check Mode Screen
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK

Shift Lever Position	Display
Except R	OFF
R	ON

HINT:

The display is updated once per second. As a result, it is normal for the display to lag behind the actual shift lever operation.

NG --> See step 6

OK --> See step 7

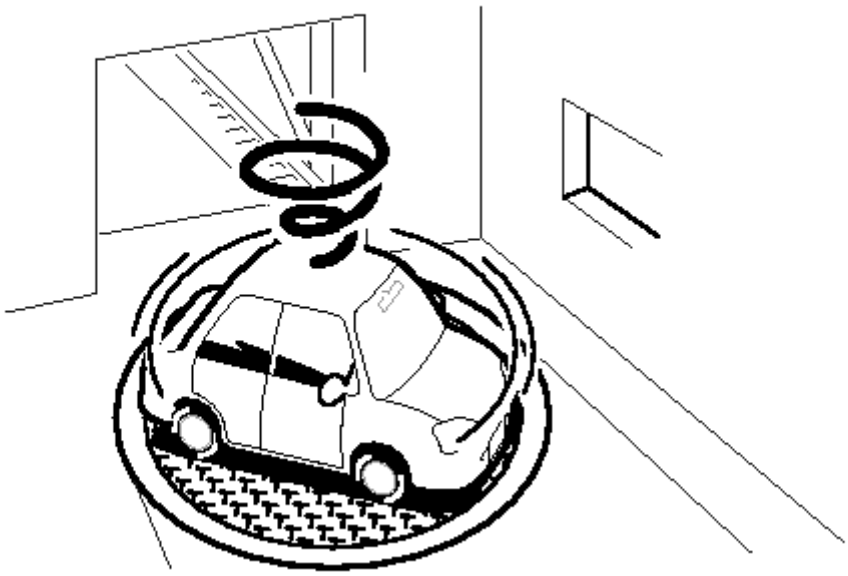
6. **GO TO "REVERSE SIGNAL DOES NOT CHANGE IN NAVIGATION CHECK MODE" IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**
7. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**

Cursor or Map Rotates when Vehicle Stopped

INSPECTION PROCEDURE

PROCEDURE

1. **CHECK CONDITION**
   a. Check with the customer if the vehicle has been turned by a turntable.



P

Fig. 57: Checking Vehicle Condition
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK

Vehicle has not been turned by turntable.

HINT:

If the vehicle is turned 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 WHEN VEHICLE IS COMPLETELY STOPPED

OK --> See step 2

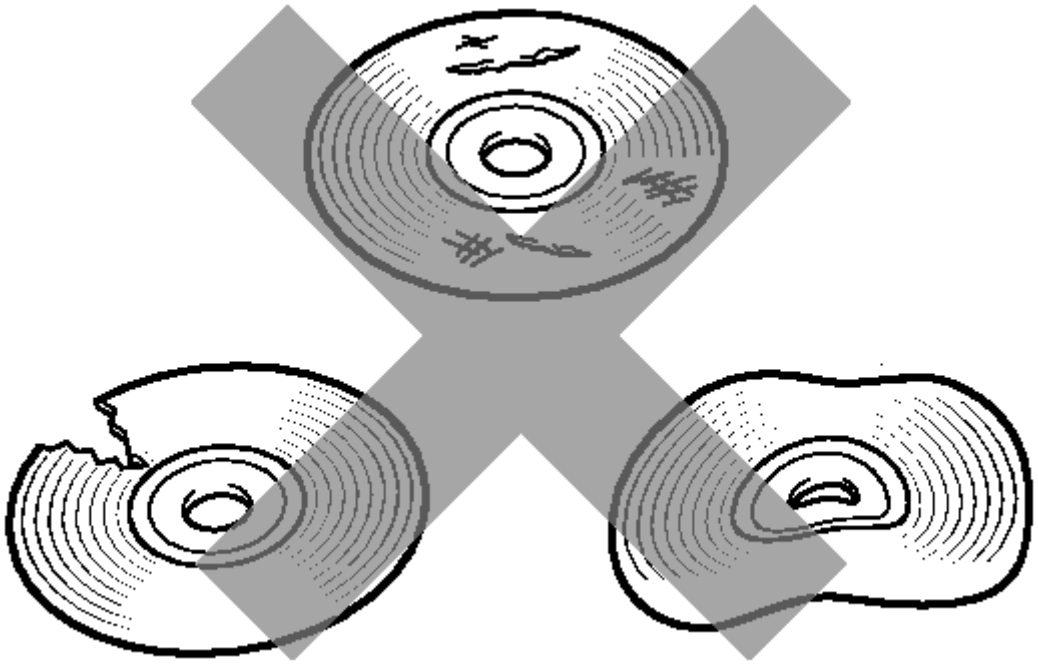
2. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**

Vehicle Position Mark is not Updated

INSPECTION PROCEDURE

PROCEDURE

1. **CHECK MAP DISC**
   a. Check that the map disc is not deformed or cracked.



P

Fig. 58: Identifying Cracked Or Deformed Disc
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK

No deformations or cracks in the map disc

NG --> REPLACE MAP DISC

OK: Go to next step

2. **CHECK NAVIGATION DISPLAY**
   a. Check if touch scrolling can be performed on the map display.

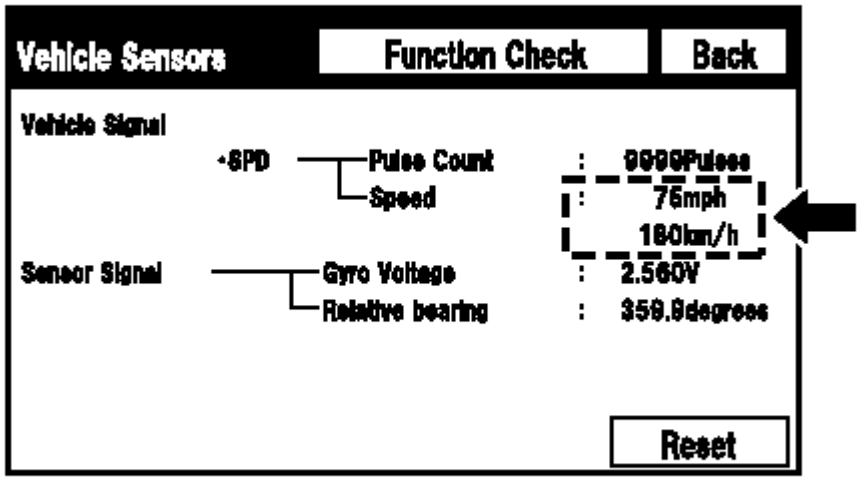
OK

Touch scroll can be performed.

NG --> See step 3

OK: Go to next step

3. **REPLACE NAVIGATION RECEIVER ASSEMBLY. Refer to REMOVAL**
4. **CHECK VEHICLE SENSOR (NAVIGATION CHECK MODE)**
   a. Enter the "Navigation Check" mode and select "Vehicle Sensors". Refer to **OPERATION CHECK** .



H

Fig. 59: Screen Display - GPS & Vehicle Sensor
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

   b. While driving the vehicle, compare the "Speed" indicator to the reading on the speedometer. Check if these readings are equal or almost equal.

      OK

      The readings are equal or almost equal.

NG --> See step 5

OK --> END

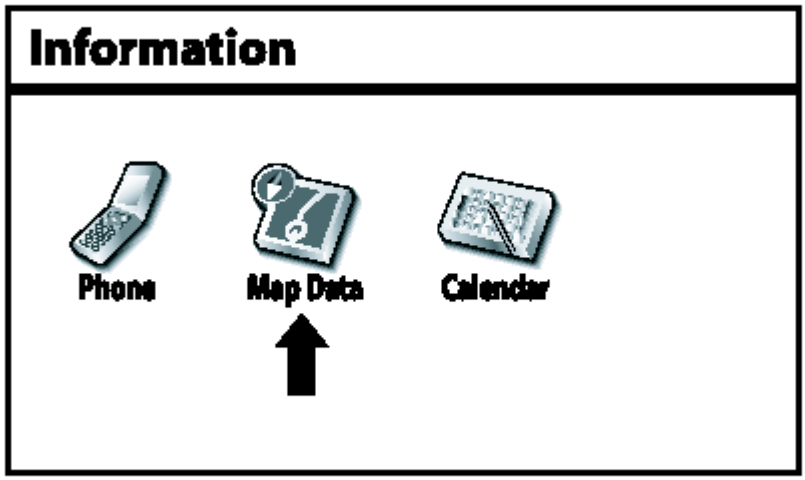
5. **CHECK DTC OUTPUT. Refer to DTC CHECK / CLEAR**

Current Position Display does not Appear

INSPECTION PROCEDURE

PROCEDURE

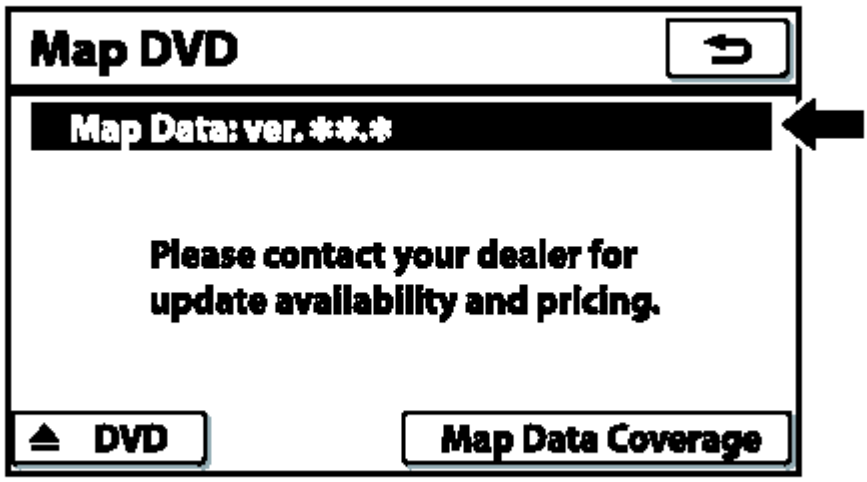
1. **CHECK NAVIGATION RECEIVER ASSEMBLY**
    a. Press the "INFO" switch and then select "Map Data".



H

Fig. 60: Screen Display - "INFO" Switch
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

    b. Check if a disc is inserted into the map disc slot.



H

Fig. 61: Screen Display - Map Data
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

1. Check if the map data version is displayed in the "Map Data" section.

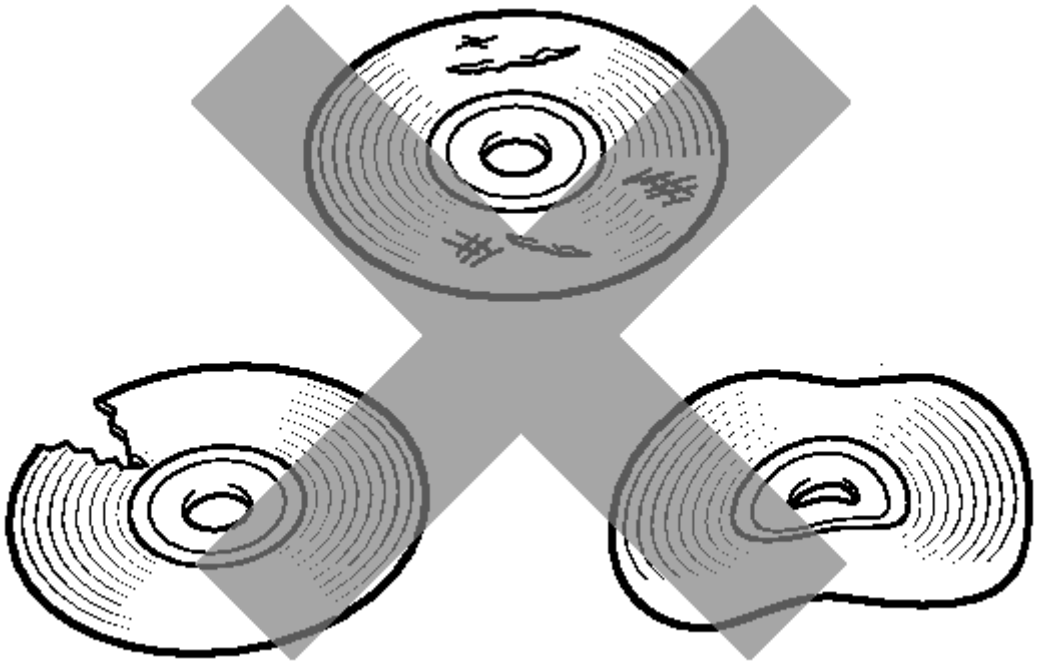
   OK

   The map data version is displayed.

NG --> INSERT MAP DISC INTO MAP SIDE SLOT

OK: Go to next step

2. **CHECK MAP DISC**
   a. Check that the map disc is not deformed or cracked.



P

Fig. 62: Identifying Cracked Or Deformed Disc
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK

No deformations or cracks in the map disc

NG --> REPLACE MAP DISC

OK --> See step 3

3. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**

GPS Mark is not Displayed

INSPECTION PROCEDURE

PROCEDURE

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.

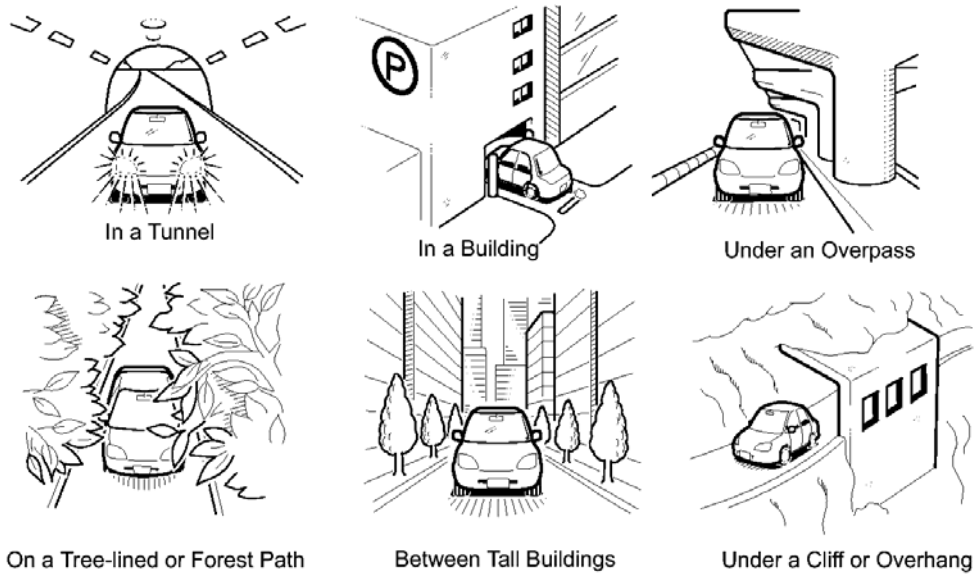
NG --> See step 2

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 examples, see the illustration below.



P

Fig. 63: Reasons For Poor Reception
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

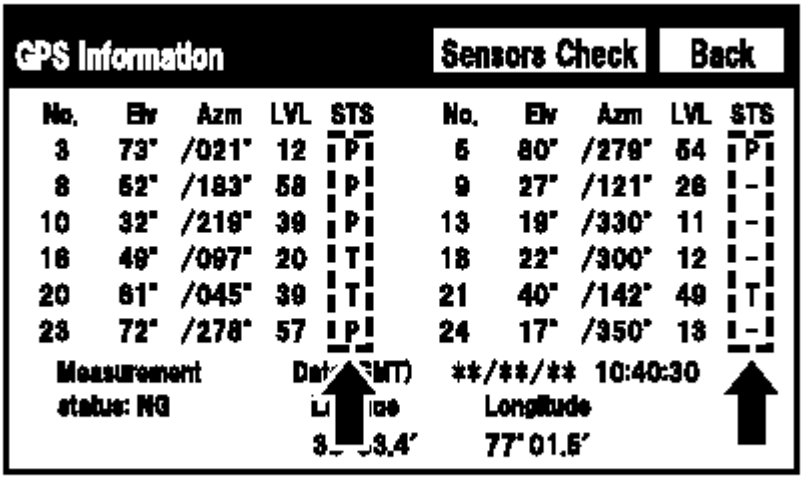
OK

GPS mark is displayed.

NG --> See step 3

OK --> SYSTEM RETURNS TO NORMAL

3. **CHECK GPS INFORMATION (NAVIGATION CHECK MODE)**



H

Fig. 64: Screen Display - GPS Information
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

a. Enter the "Navigation Check" mode and select "GPS Information". Refer to **OPERATION CHECK** .
b. Check how many of the following codes appear in the "STS" column.

   HINT:

   T or P appears.

   OK

   At least 3 codes appear.

NG --> See step 4

OK --> See step 5

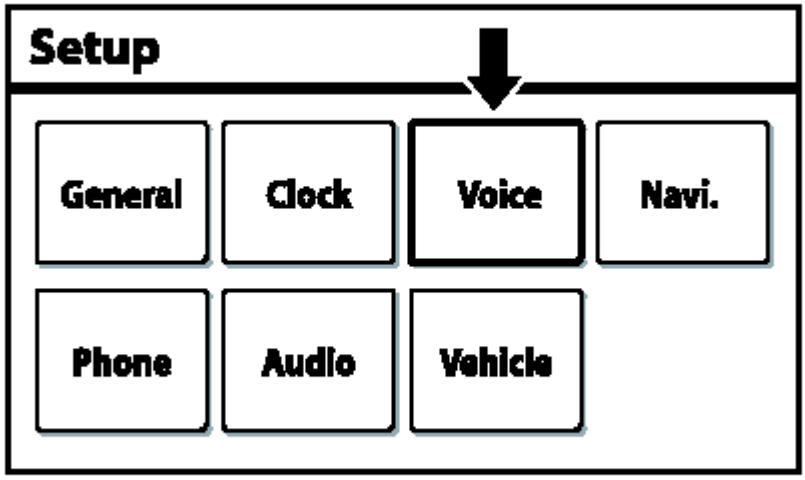
4. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**
5. **REPLACE NAVIGATION RECEIVER ASSEMBLY. Refer to REMOVAL**

Voice Guidance does not Function

INSPECTION PROCEDURE

PROCEDURE

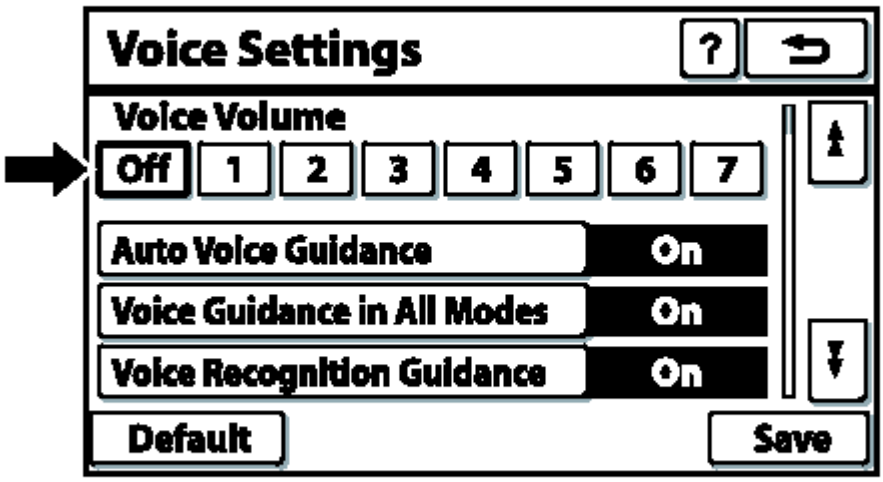
1. **CHECK NAVIGATION SETTING**
   a. Enter the "Setup" screen by pressing the "Setup" switch.



H

Fig. 65: Screen Display - Voice
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

   b. Select "Voice".
   c. Check that "Off" is not selected.



H

Fig. 66: Screen Display - OFF
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

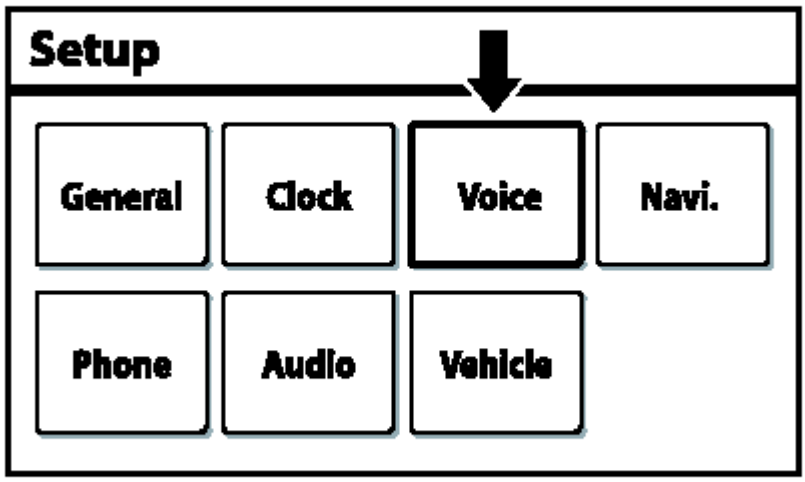
OK

"Off" is not selected.

NG --> TURN UP VOICE VOLUME

OK: Go to next step

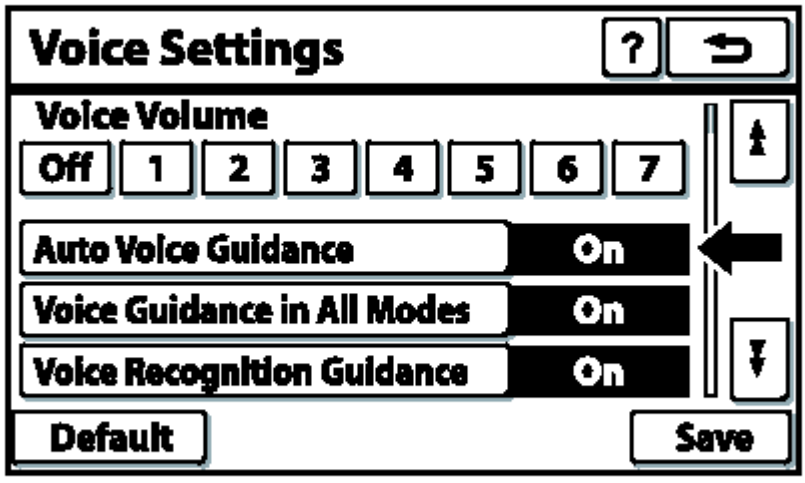
2. **CHECK NAVIGATION SETTING**
   a. Enter the "Setup" screen by pressing the "Setup" switch.



H

Fig. 67: Screen Display - Voice
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

b. Select "Voice".
c. Check that "Auto Voice Guidance" is not "Off".



H

Fig. 68: Screen Display - Auto Voice Guidance

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

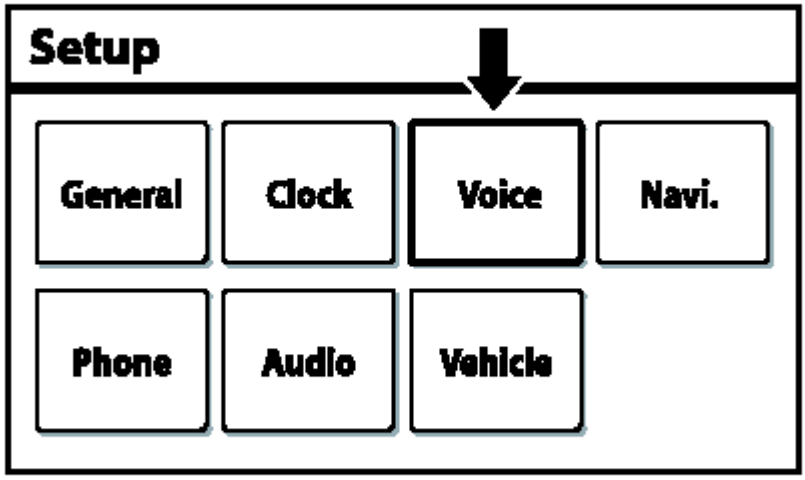
OK

"Auto Voice Guidance" is not off.

NG --> TURN Auto Voice Guidance ON

OK: Go to next step

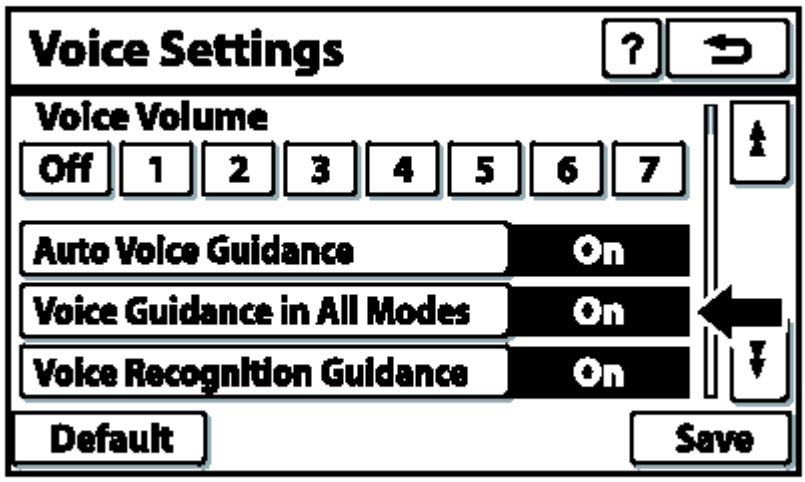
3. **CHECK NAVIGATION SETTING**
   a. Enter the "Setup" screen by pressing the "Setup" switch.



H

Fig. 69: Screen Display - Voice
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

   b. Select "Voice".
   c. Check that "Voice Guidance in All Modes" is not "Off".



H

Fig. 70: Voice Settings Display Screen
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

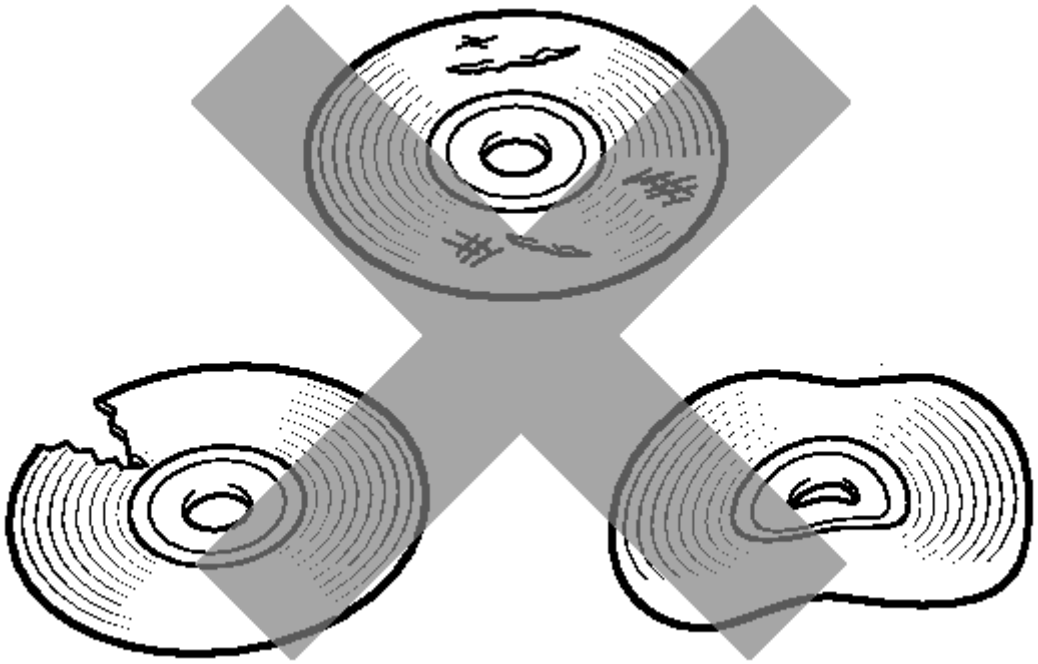
OK

"Voice Guidance in All Modes" is not off.

NG --> TURN "Voice Guidance in All Modes" ON

OK: Go to next step

4. **CHECK MAP DISC**
   a. Check that the map disc is not deformed or cracked.



P

Fig. 71: Identifying Cracked Or Deformed Disc
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK

No deformations or cracks on the map disc

NG --> REPLACE MAP DISC

OK: Go to next step

5. **CHECK AUDIO FUNCTION**
   a. Check that audio can be heard from the driver side speaker.

      OK

      Audio can be heard.

   NG --> See step 7

   OK --> See step 6

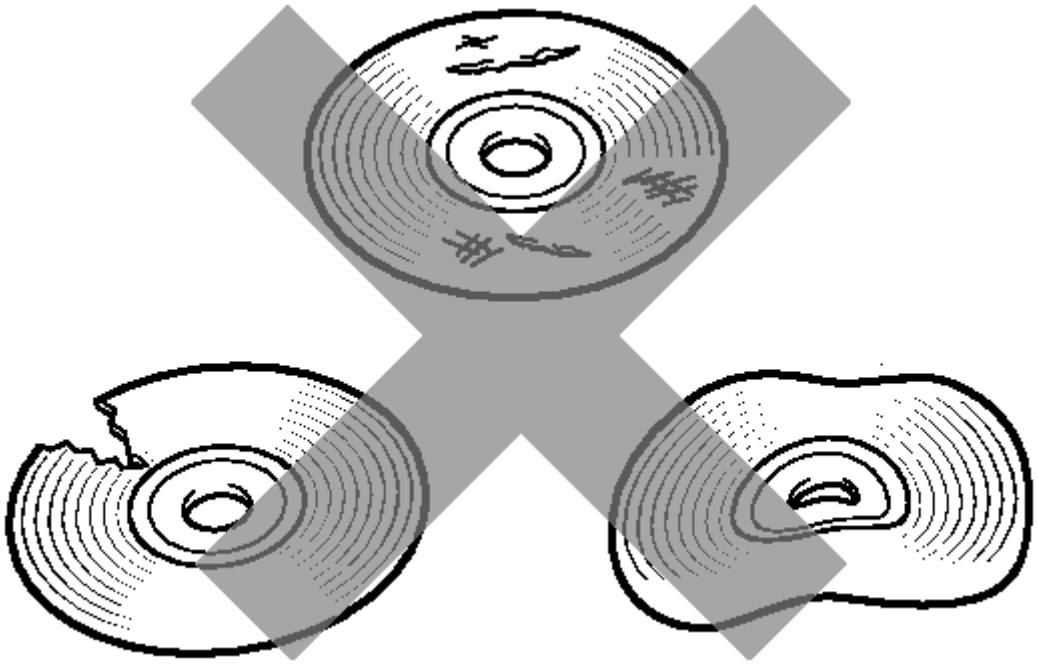
6. **REPLACE NAVIGATION RECEIVER ASSEMBLY. Refer to REMOVAL**
7. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**

Map Display Incomplete

INSPECTION PROCEDURE

PROCEDURE

1. **CHECK MAP DISC**
   a. Check that the map disc is not deformed or cracked.



P

Fig. 72: Identifying Cracked Or Deformed Disc
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK

No deformations or cracks in the map disc

NG --> REPLACE MAP DISC

OK: Go to next step

2. **CHECK NAVIGATION DISPLAY**
   a. Check that displays other than the navigation display are complete.

OK

No other incomplete displays are found.

NG --> See step 4

OK --> See step 3

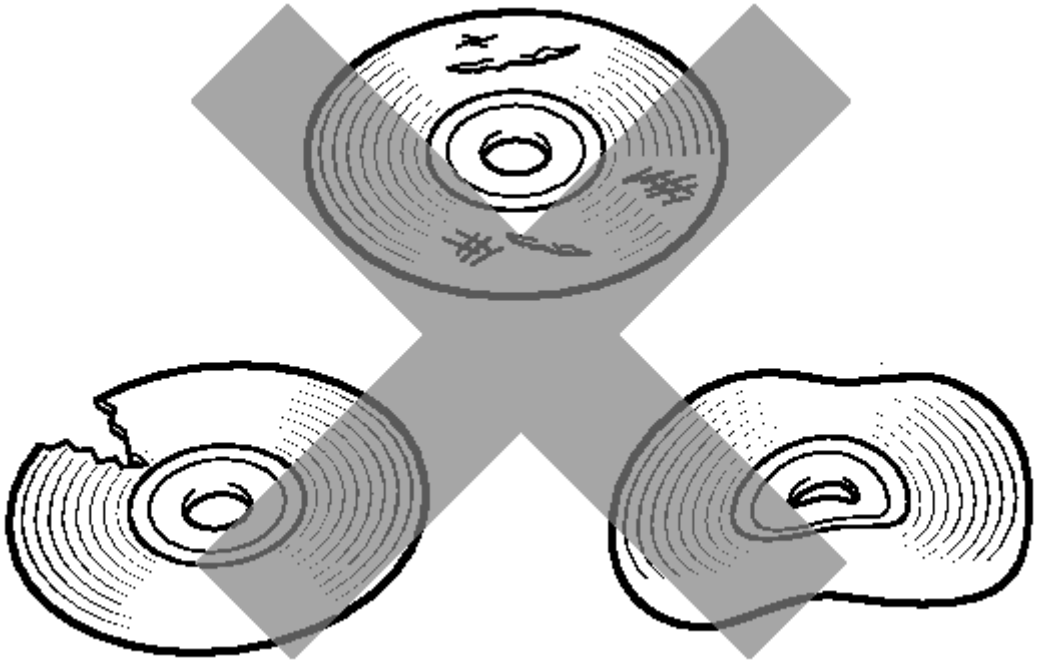
3. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**
4. **REPLACE NAVIGATION RECEIVER ASSEMBLY. Refer to REMOVAL**

Route cannot be Calculated

INSPECTION PROCEDURE

PROCEDURE

1. **CHECK MAP DISC**
   a. Check that the map disc is not deformed or cracked.



P

Fig. 73: Identifying Cracked Or Deformed Disc
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK

No deformations or cracks in the map disc

NG --> REPLACE MAP DISC

OK: Go to next step

2. **SET DESTINATION**

a. Set another destination and check if the system can calculate the route correctly.

OK

Route can be correctly calculated.

NG --> See step 3

OK --> NORMAL OPERATION

3. **REPLACE NAVIGATION RECEIVER ASSEMBLY. Refer to REMOVAL**

Map Disc Read Error

INSPECTION PROCEDURE

PROCEDURE

1. **CHECK MAP DISC**
   a. Check that the map disc is not deformed or cracked.

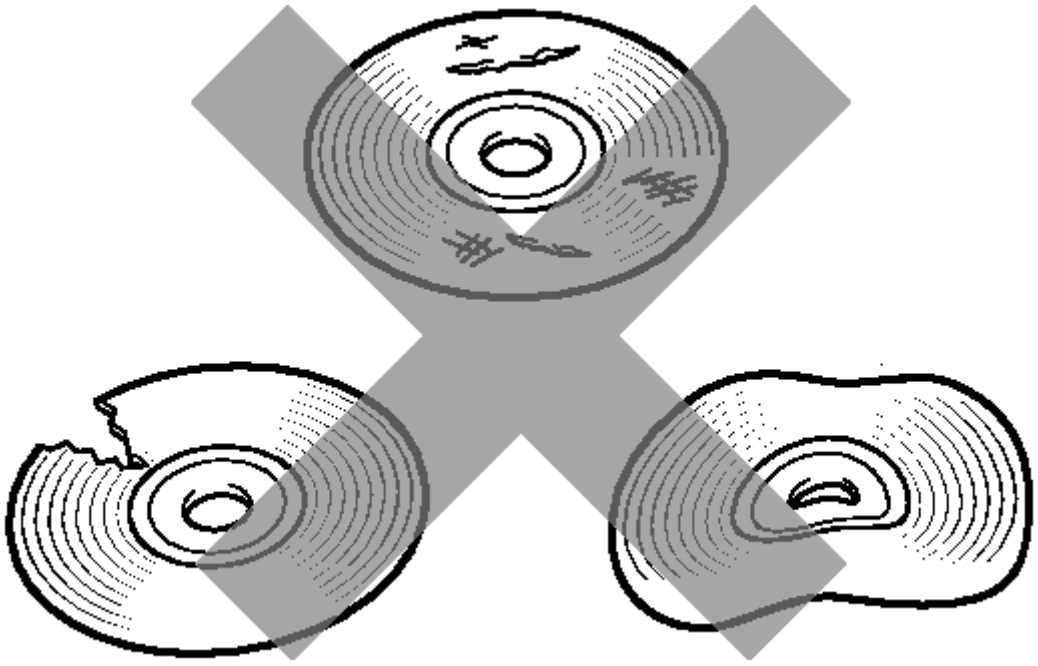


Fig. 74: Identifying Deformed Or Cracked Disc
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

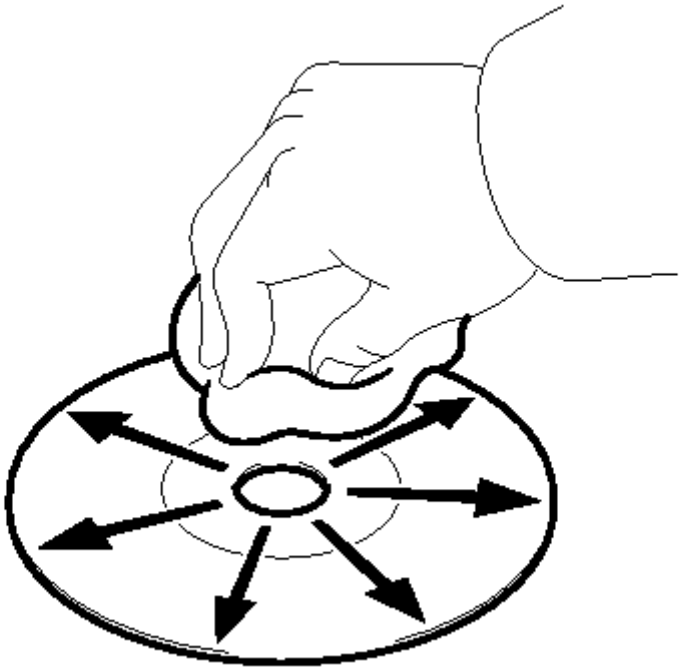
OK

No deformations or cracks appear on the map disc.

NG --> REPLACE MAP DISC

OK: Go to next step

2. **CHECK MAP DISC**
   a. Check for dirt on the map disc surface.



P

Fig. 75: Cleaning Disc With Soft Cloth
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK

No dirt is on the map disc surface.

NOTE: Do not use a conventional record cleaner or anti-static preservative.

HINT:

If the disc is dirty, clean the disc by wiping the disc surface radially with a soft cloth.

NG --> CLEAN MAP DISC

OK --> See step 3

3. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**

Voice Recognition Difficulty

INSPECTION PROCEDURE

PROCEDURE

1. **CHECK CONDITION**
   a. Check if the system's voice recognition level is low when recognizing a particular voice.

      OK

      System's voice recognition level is low with any voice.

      HINT:

      System's voice recognition level varies depending on voice and pronunciation. This is not a malfunction.

   NG --> END

   OK: Go to next step

2. **CHECK MAP DISC**
   a. Check that the map disc is not deformed or cracked.

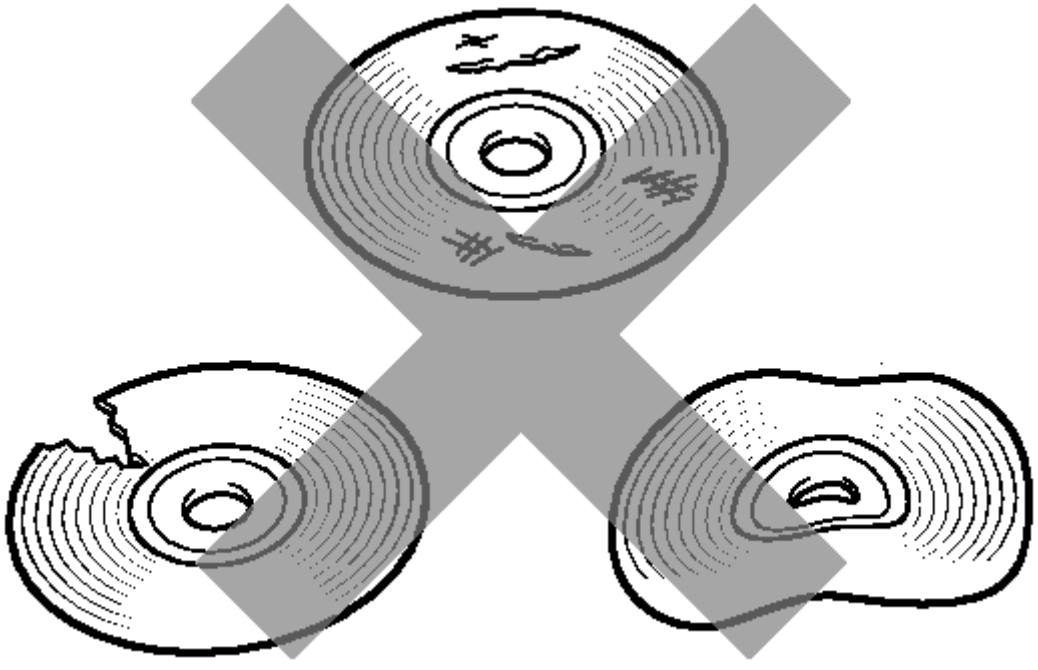


Fig. 76: Identifying Cracked Or Deformed Disc
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

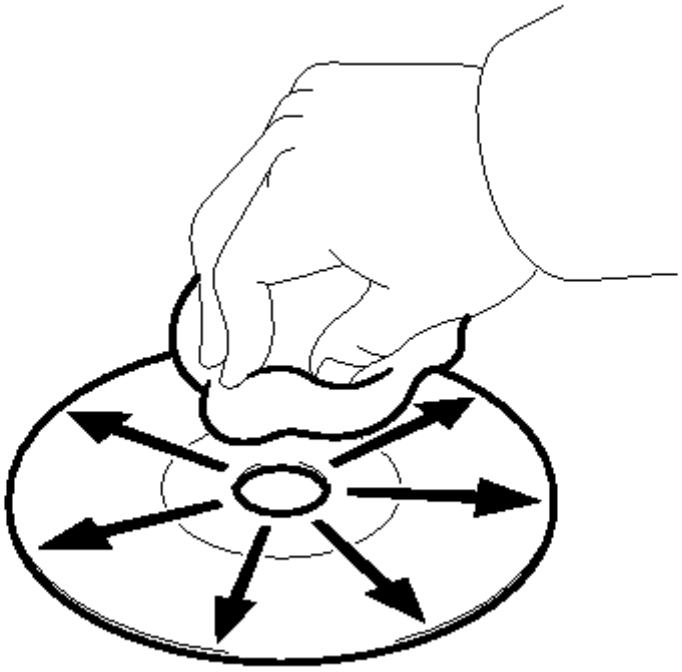
OK

No deformations or cracks on the map disc

NG --> REPLACE MAP DISC

OK: Go to next step

3. **CHECK MAP DISC**
   a. Check for dirt on the map disc surface.



P

Fig. 77: Cleaning Disc With Soft Cloth
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK

No dirt is on the map disc surface.

HINT:

If the disc is dirty, clean the disc by wiping the disc's surface radially with a soft cloth.

NOTE: Do not use a conventional record cleaner or antistatic preservative.

NG --> CLEAN MAP DISC

OK: Go to next step

4. **CHECK MICROPHONE (NAVIGATION CHECK MODE)**
   a. Enter the "Microphone & Voice Recognition Check" (Check Mic & Voice Recognition). Refer to **OPERATION CHECK** .

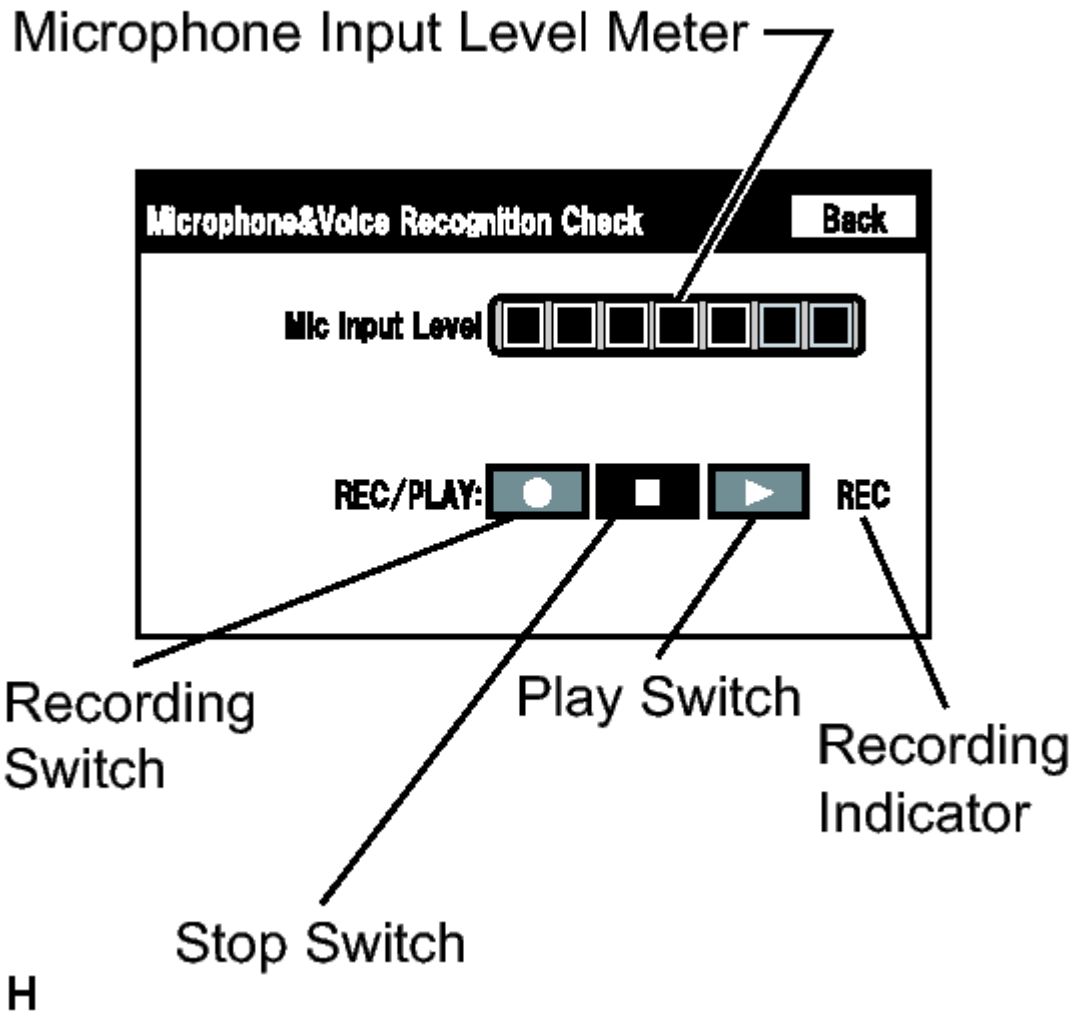


Fig. 78: Screen Display - Microphone & Voice Recognition Check
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

   b. When voice is input into the microphone, check that the microphone input level meter changes according to the input voice.
   c. Push the recording switch and perform voice recording.

HINT:

Voice can be recorded up to 5 seconds.

d. Check that the recording indicator remains on while recording and that the recorded voice is played normally without noise or distortion.

OK

All check results are normal.

NG --> See step 5

OK --> END

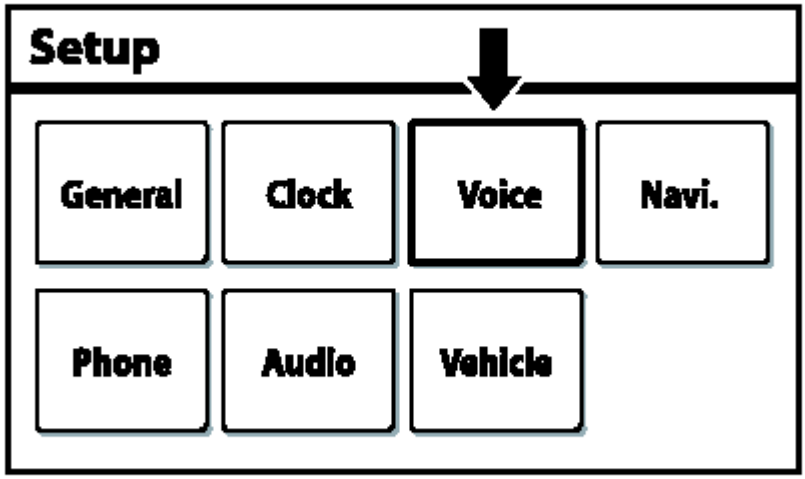
5. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**

Voice is not Recognized

INSPECTION PROCEDURE

PROCEDURE

1. **CHECK NAVIGATION SETTING**
   a. Enter the "Setup" screen by pressing the "Setup" switch.

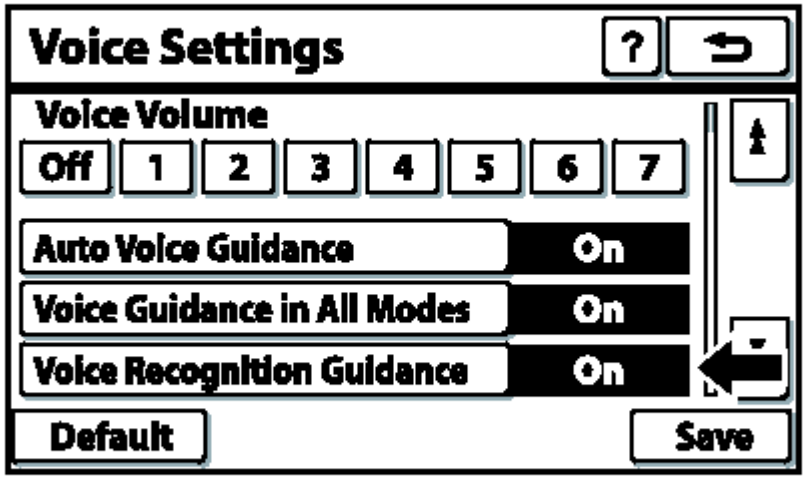


H

Fig. 79: Screen Display - Voice
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

   b. Select "Voice".

c. Check that "Voice Recognition Guidance" is not "Off".



H

Fig. 80: Screen Display - Voice Recognition Guidance
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

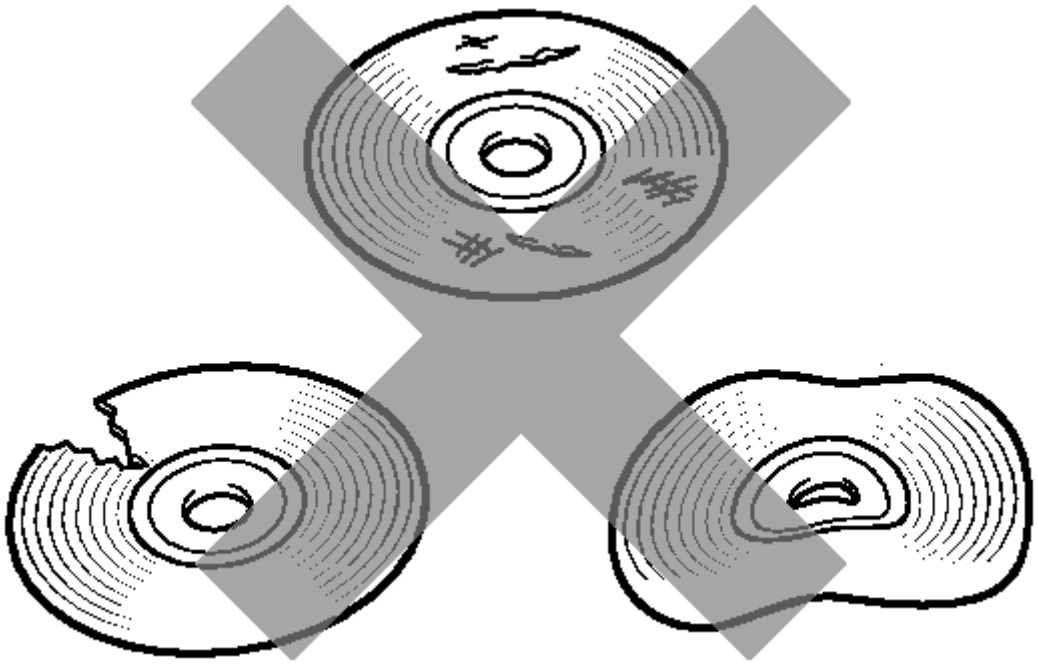
OK

"Voice Recognition Guidance" is not off.

NG --> TURN "Voice Recognition Guidance" ON

OK: Go to next step

2. **CHECK MAP DISC**
   a. Check that the map disc is not deformed or cracked.



P

Fig. 81: Identifying Cracked Or Deformed Disc
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

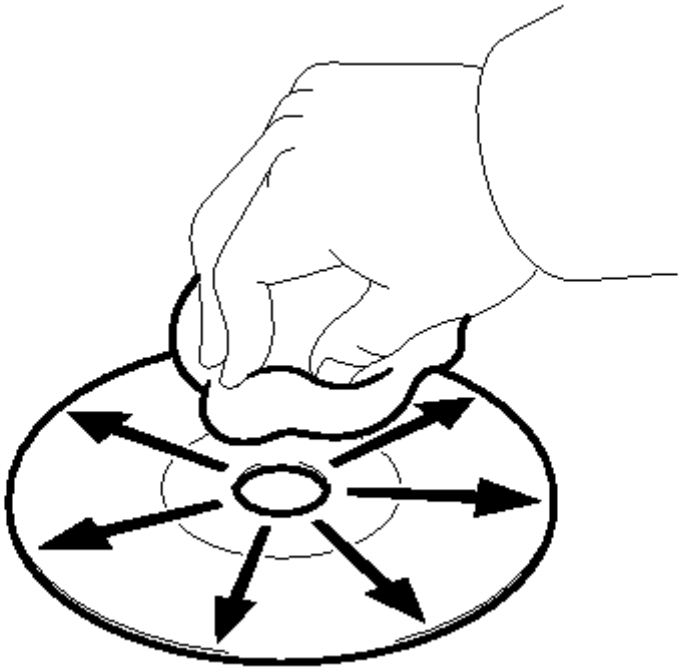
OK

No deformations or cracks on the map disc

NG --> REPLACE MAP DISC

OK: Go to next step

3. **CHECK MAP DISC**
   a. Check for dirt on the map disc surface.



P

Fig. 82: Cleaning Disc With Soft Cloth
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK

No dirt is on the map disc surface.

HINT:

If the disc is dirty, clean the disc by wiping the disc surface radially with a soft cloth.

NOTE: Do not use a conventional record cleaner or anti-static preservative.

NG --> CLEAN MAP DISC

OK: Go to next step

4. **CHECK MICROPHONE (OPERATION CHECK)**
   a. Enter the "Microphone & Voice Recognition Check" (Check Mic & Voice Recognition). Refer to **OPERATION CHECK** .

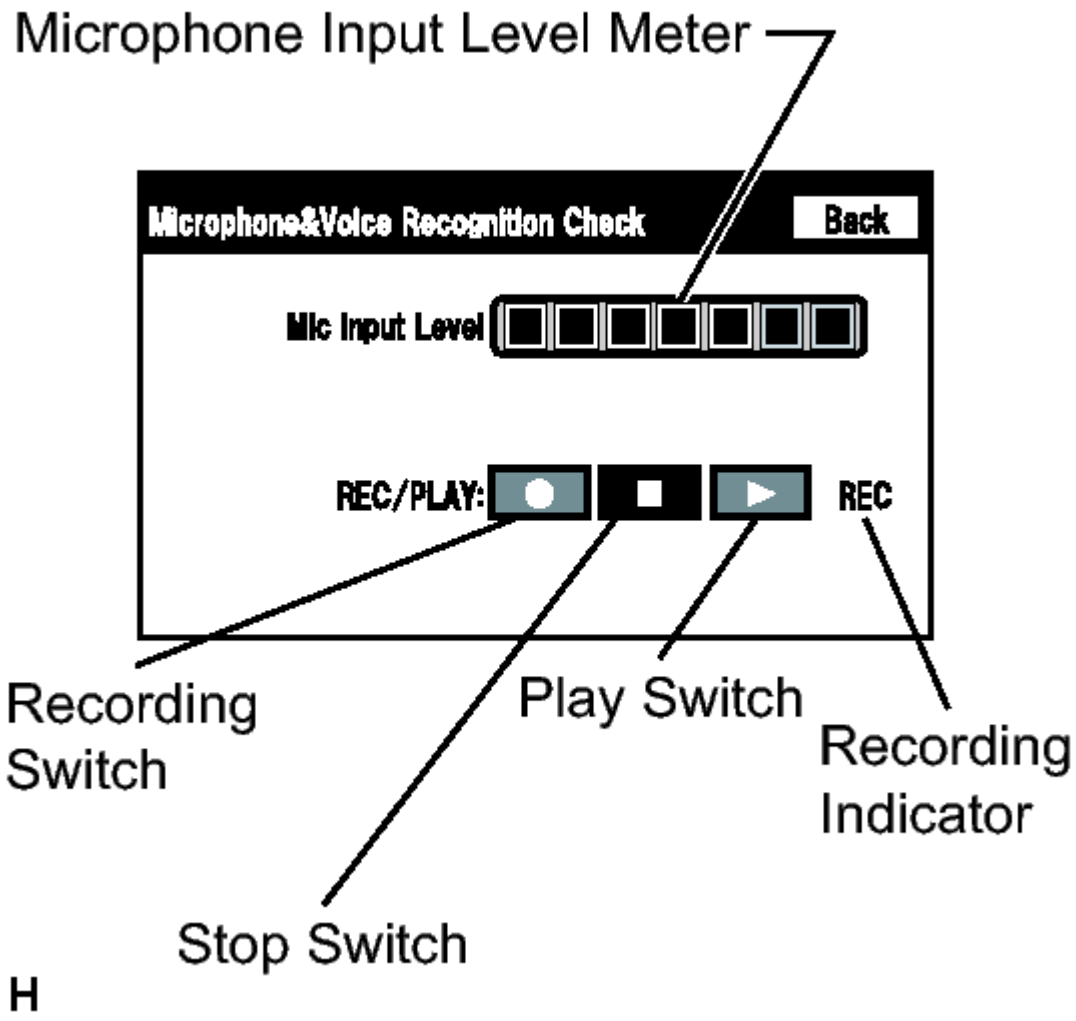


Fig. 83: Screen Display - Microphone & Voice Recognition Check
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

b. When voice is input into the microphone, check that the microphone input level meter changes according to the input voice.
c. Push the recording switch and perform voice recording.

HINT:

Voice can be recorded up to 5 seconds.

d. Check that the recording indicator remains on while recording and that the recorded voice is played normally without noise or distortion.

OK

All check results are normal.

NG --> See step 5

OK --> See step 6

5. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**
6. **REPLACE NAVIGATION RECEIVER ASSEMBLY. Refer to REMOVAL**

Cellular Phone Registration Failure, Phone Directory Transfer Failure

INSPECTION PROCEDURE

PROCEDURE

1. **CHECK CURRENT CONDITIONS**
   a. Proceed to the next step according to the table below.

RESULT

Result	Proceed to
Another "Bluetooth" compatible cellular phone is present.	A
Another "Bluetooth" compatible vehicle is present.	B
None of the above	C

B --> See step 3

C --> See step 4

A: Go to next step

2. **CHECK USING ANOTHER CELLULAR PHONE**
   a. Check if the system functions using another "Bluetooth" compatible cellular phone.

HINT:

- Confirm that either the same or a different version of another "Bluetooth" compatible cellular phone complies with the system.
- Some "Bluetooth" compatible cellular phones may not function.

OK

The system functions.

NG --> See step 6

OK --> USE A "BLUETOOTH" COMPATIBLE CELLULAR PHONE

3. **CHECK USING ANOTHER "BLUETOOTH" COMPATIBLE VEHICLE**
   a. Register the cellular phone with another vehicle and check if the system functions normally.

      HINT:

      Some "Bluetooth" compatible cellular phones may not function.

      OK

      The system functions.

   NG --> USE A "BLUETOOTH" COMPATIBLE CELLULAR PHONE

   OK --> See step 6

4. **CHECK CELLULAR PHONE**
   a. Check if a call cam be made from the cellular phone.

      OK

      A call can be made from the cellular phone.

      HINT:

      - Make sure the "Bluetooth" function is on.
      - Make sure the handsfree function is selected when profiles can be selected.

   NG --> USE A "BLUETOOTH" COMPATIBLE CELLULAR PHONE

   OK: Go to next step

5. **CHECK CELLULAR PHONE**
   a. Check if a call can be made from the cellular phone.

HINT:

When the battery is low, registration or directory transfer cannot be done.

OK

A call can be made from the cellular phone.

NG --> CELLULAR PHONE IS FAULTY

OK --> See step 6

6. **REPLACE NAVIGATION RECEIVER ASSEMBLY. Refer to REMOVAL**

Cellular Phone cannot Send/Receive

INSPECTION PROCEDURE

PROCEDURE

1. **CHECK "BLUETOOTH" SETTINGS**
   a. Check if the "Bluetooth" settings are correct.

      OK

      "Bluetooth" settings are correct.

   NG --> SET SETTINGS CORRECTLY

   OK: Go to next step

2. **CHECK CELLULAR PHONE**
   a. Check if the cellular phone is "Bluetooth" compatible.

      HINT:

      Some versions of "Bluetooth" compatible cellular phones may not function.

      OK

      Cellular phone is "Bluetooth" compatible.

   NG --> END (ONLY A "BLUETOOTH" COMPATIBLE CELLULAR PHONE CAN BE USED)

   OK: Go to next step

3. **CHECK SETTINGS**

HINT:

The cellular phone is unable to call under any of the following conditions:

- The cellular phone is locked.
- The directory is being transferred.
- The line is crossed.
- Outside service range
- The power is off.
- The cellular phone is not connected to "Bluetooth" ("BT" is displayed while connected).

a. Check the cellular phone functions.

OK

Cellular phone settings are set correctly.

NG --> SET SETTINGS CORRECTLY

OK: Go to next step

4. **CHECK CELLULAR PHONE**
   a. Check if the cellular phone can make a call.

OK

Cellular phone can make a call.

NG --> REPAIR OR REPLACE CELLULAR PHONE

OK: Go to next step

5. **CHECK RECEPTION**
   a. Set the cellular phone so that it can receive calls.
   b. Place the cellular phone close to the navigation receiver assembly.
   c. Check if the navigation receiver to confirm that a "Bluetooth" connection exists between the navigation receiver and phone.

OK

Cellular phone has reception.

NG --> See step 6

OK --> See step 7

6. **REPLACE NAVIGATION RECEIVER ASSEMBLY. Refer to REMOVAL**
7. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**

Cannot Call in a Certain Place

INSPECTION PROCEDURE

PROCEDURE

1. **CHECK SURROUNDING CONDITIONS**
   a. Check if the cellular phone can make calls in the place where the problem occurred.

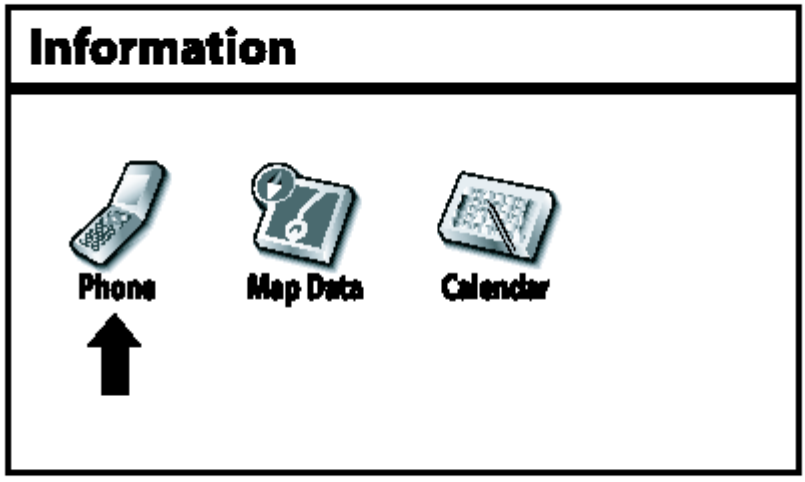
      OK

      The cellular phone can make calls.

   NG --> END (CELLULAR PHONES CAN ONLY FUNCTION IN CELLULAR SERVICE AREAS)

   OK: Go to next step

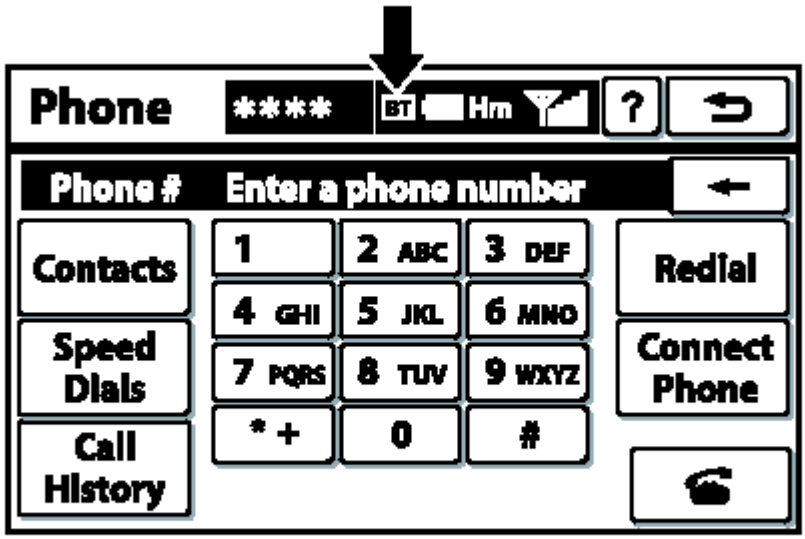
2. **CHECK RECEPTION**
   a. Press the "INFO" switch and then select "Phone".



H

Fig. 84: Screen Display - Phone
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

b. Check the "Bluetooth" connection indicator ("BT" indicator).



H

Fig. 85: Screen Display - "Bluetooth" Connection Indicator
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

RESULT

Result	Proceed to
Yellow color	Bring the cellular phone to a location where the "BT" indicator turns blue.
Blue color	Replace navigation receiver assembly.
No connection indicator is displayed	Select a registered cellular phone or register a "Bluetooth" compatible phone.

NEXT --> END

The Other Caller's Voice cannot be Heard, is too Quiet, or Distorted

INSPECTION PROCEDURE

PROCEDURE

1. **CHECK CELLULAR PHONE**
   a. Check if the voice on the other side can be heard using a cellular phone.

      OK

      The voice can be heard.

   NG --> CELLULAR PHONE IS FAULTY

   OK: Go to next step

2. **CHECK NAVIGATION SYSTEM**
   a. Check that navigation sound can be heard from the front speaker.

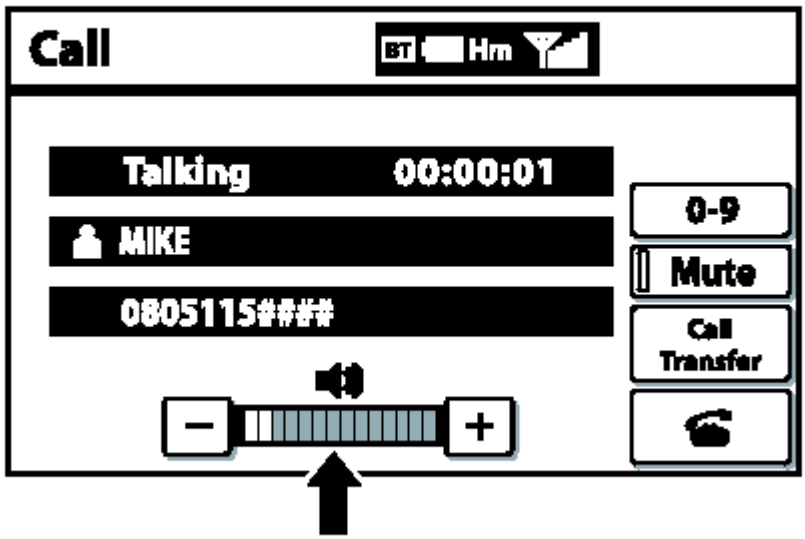
      OK

      The voice guidance can be heard.

   NG --> See step 6

   OK: Go to next step

3. **CHECK SETTINGS**
   a. Check if the volume level is low on the "Call" screen.



H

Fig. 86: Screen Display - Volume Level
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

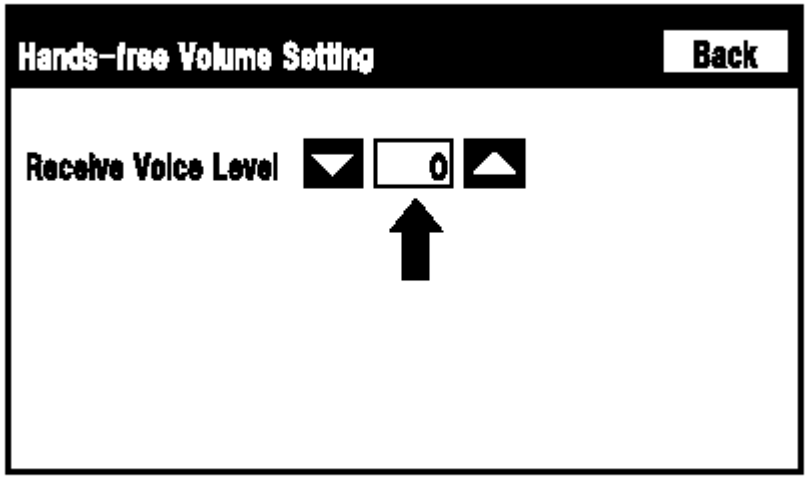
OK

The level is not set low.

NG --> TURN VOLUME UP

OK: Go to next step

4. **CHECK SETTINGS (OPERATION CHECK)**
   a. Enter the "Hands-free Volume Setting" (Check Hands-free Volume Setting). Refer to **OPERATION CHECK** .



H

Fig. 87: Identifying Hands-Free Volume Setting Screen
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

b. Check if the Receive Voice Level is set to "0".

HINT:

The Receive Voice Level can be set to 11 different levels, -5 to +5, with a 3 dB difference.

c. Check if the Receive Voice Level is set to the minimum or maximum level.

HINT:

When the Receive Voice Level is set to the minimum or maximum level, the sound may be distorted.

OK

The Receive Voice Level is set to "0".

NG --> SET RECEIVE VOICE LEVEL TO "0"

OK --> See step 5

5. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**
6. **GO TO "VOICE GUIDANCE DOES NOT FUNCTION" IN PROBLEM SYMPTOMS TABLE.**

Refer to PROBLEM SYMPTOMS TABLE

The Other Caller cannot Hear Your Voice, or Your Voice is too Quiet or Distorted

INSPECTION PROCEDURE

PROCEDURE

1. **CHECK CELLULAR PHONE**
   a. Check if the other caller can hear your voice properly.

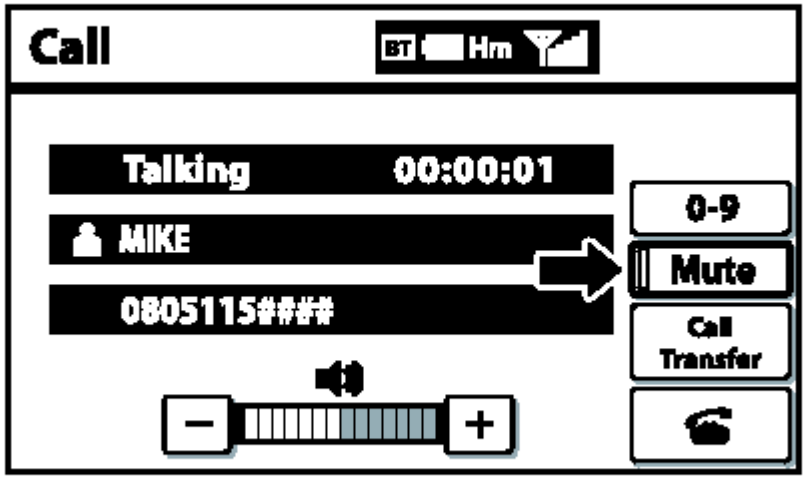
      OK

      Your voice can be heard correctly.

   NG --> CELLULAR PHONE IS FAULTY

   OK: Go to next step

2. **CHECK SETTINGS**
   a. Check if the mute switch is set to on.



H

Fig. 88: Screen Display - Mute Switch
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK

Mute switch is not set to on.

NG --> TURN MUTE SWITCH OFF

OK: Go to next step

3. **CHECK MICROPHONE (NAVIGATION CHECK MODE)**
   a. Enter the "Microphone & Voice Recognition Check" (Check Mic & Voice Recognition). Refer to **OPERATION CHECK** .

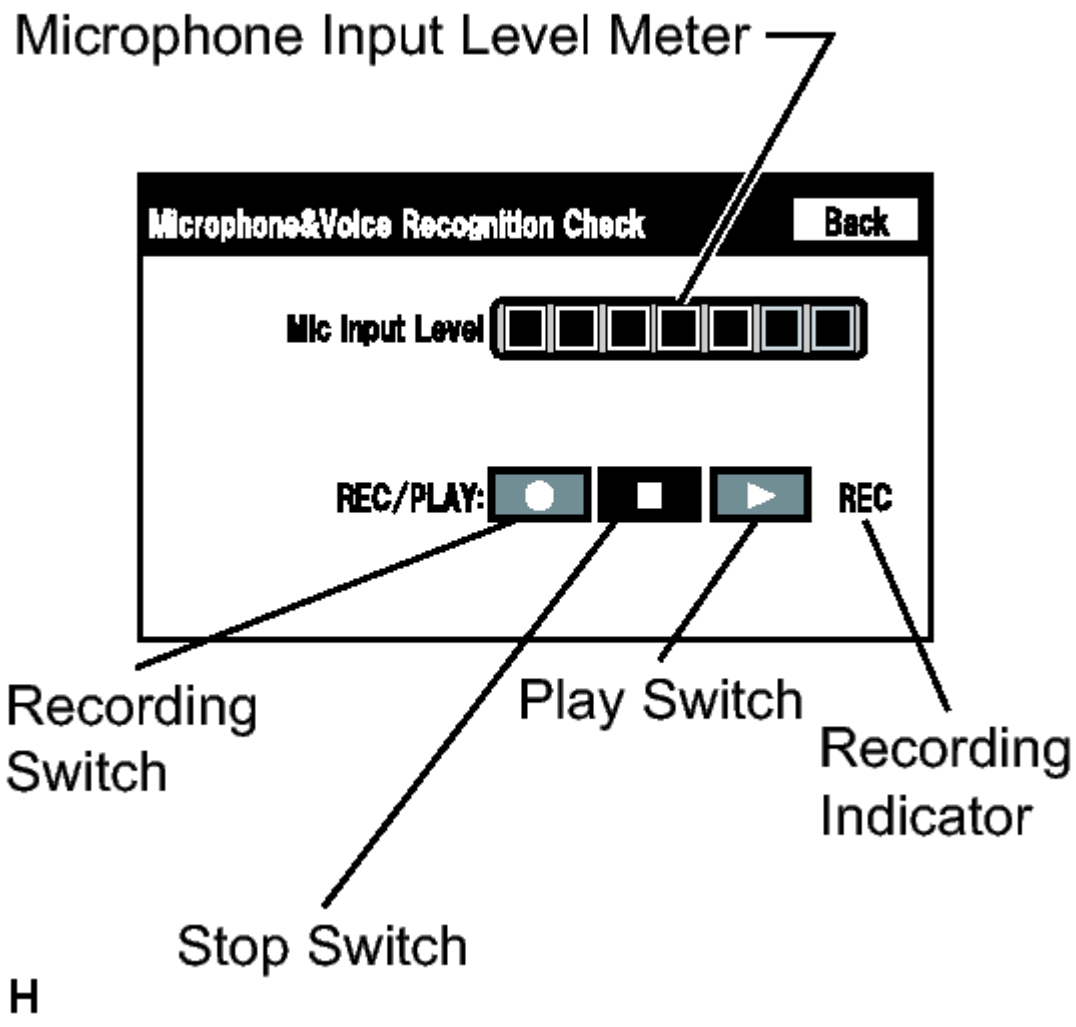


Fig. 89: Screen Display - Microphone & Voice Recognition Check
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

   b. When voice is input into the microphone, check that the microphone input level meter changes according to the input voice.
   c. Push the recording switch and perform voice recording.

HINT:

Voice can be recorded up to 5 seconds.

d. Check that the recording indicator remains on while recording and that the recorded voice is played normally without noise or distortion.

OK

All check results are normal.

NG --> See step 5

OK --> See step 4

4. **REPLACE NAVIGATION RECEIVER ASSEMBLY. Refer to REMOVAL**
5. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**

Sound of Portable Player cannot be Heard from Speakers or Sound is Low

INSPECTION PROCEDURE

PROCEDURE

1. **CHECK PORTABLE PLAYER SETTINGS**
   a. Check the portable player settings.
      1. Check that the volume is not set to "0".
      2. Check that the mute is off.
   b. Check that the sound of the portable player can be heard from the speakers.

OK

Sound of the portable player can be heard from the speakers.

HINT:

If the portable player volume can be adjusted, adjust the volume.

NG --> See step 2

OK --> END

2. **CHECK AUDIO SETTINGS**
   a. Check the audio settings.
      1. Check that the volume is not set to "0".

b. Check that the sound of the portable player can be heard from the speakers.

OK

Sound of the portable player can be heard from the speakers.

NG --> See step 3

OK --> END

3. **CHECK USING ANOTHER "BLUETOOTH" AUDIO COMPATIBLE VEHICLE OF SAME MODEL**
   a. Check that the sound of the portable player can be heard from the speakers on another "Bluetooth" audio compatible vehicle of the same model.

      OK

      Sound of the portable player can be heard from the speakers.

   NG --> MALFUNCTION IN PORTABLE PLAYER

   OK --> See step 4

4. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**

Does not Play even after Bluetooth Audio Mode is Selected

INSPECTION PROCEDURE

HINT:

Even if the portable player can play audio content, it may not be able to play via the in-vehicle device. This does not necessarily indicate a malfunction of the in-vehicle device.

PROCEDURE

1. **CHECK OPERATION**
   a. Check if the portable player operates normally.

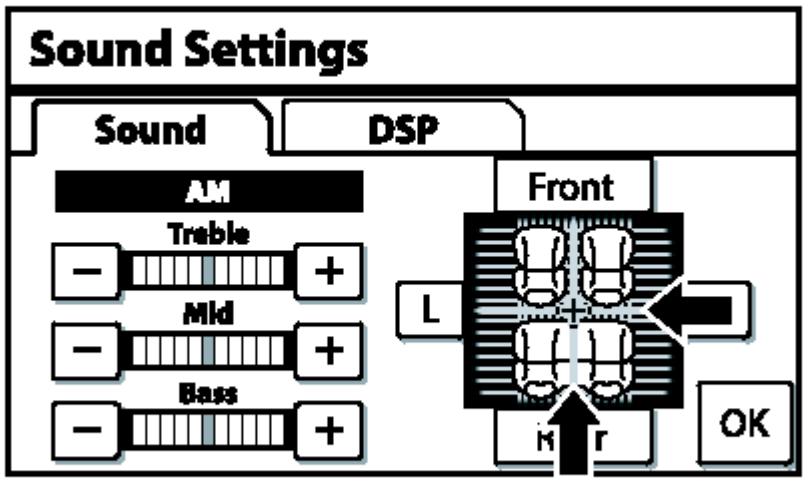
      OK

      The portable player operates normally.

   NG --> MALFUNCTION IN PORTABLE PLAYER

   OK: Go to next step

2. **CHECK AUDIO SETTINGS**
   a. Enter the "Sound Settings" screen by pressing the "Sound" switch on the audio display.



H

Fig. 90: Screen Display - Sound Settings
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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

      OK

      Audio system returns to normal.

      HINT:

      Sound quality adjustment measures vary according to the type of the amplifier.

NG --> See step 5

OK: Go to next step

3. **CHECK USING ANOTHER "BLUETOOTH" AUDIO COMPATIBLE VEHICLE OF SAME MODEL**
   a. Check if the portable player plays normally on another "Bluetooth" audio compatible vehicle of the same model.

      OK

The portable player operates normally.

NG --> MALFUNCTION IN PORTABLE PLAYER

OK --> See step 4

4. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**
5. **REPLACE NAVIGATION RECEIVER ASSEMBLY. Refer to REMOVAL**

Portable Player cannot be Operated Using In-vehicle Device or Track Information is not Displayed on In-vehicle Device

INSPECTION PROCEDURE

PROCEDURE

1. **CHECK USING ANOTHER "BLUETOOTH" AUDIO COMPATIBLE VEHICLE OF SAME MODEL**
   a. Check if track information is displayed normally on another "Bluetooth" audio compatible vehicle of the same model.

      OK

      Track information is displayed normally.

      HINT:

      - Some versions of portable player may not be able to operate the "Bluetooth" function, or music may play, but functions available using the navigation receiver assembly may be limited.
      - For details of "Bluetooth" audio functions, refer to the owner's Manual.

   NG --> PORTABLE PLAYER IS NOT COMPATIBLE

   OK --> See step 2

2. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**

Noise Occurs or Sound Skips when Portable Player Plays

INSPECTION PROCEDURE

HINT:

- Perform this check with the portable player volume set at an appropriate level.
- Make sure there are no obstructions between the portable player and navigation receiver that may block

signals, and that the portable player and navigation receiver are not excessively far apart.

- Make sure devices other than the navigation receiver are not connected to the portable player.
- Make sure there is no interference from a wireless LAN, etc.

PROCEDURE

1. **CHECK USING ANOTHER "BLUETOOTH" AUDIO COMPATIBLE VEHICLE OF SAME MODEL**
   a. Check that the same problem does not occur in the sound heard from the speakers on another "Bluetooth" audio compatible vehicle of the same model.

      OK

      The same problem does not occur in the sound heard from the speakers.

   NG --> MALFUNCTION IN PORTABLE PLAYER

   OK: Go to next step

2. **REMOVE ADDITIONAL DEVICES WHICH USE RADIO WAVES**
   a. Remove additional devices which use radio waves.
   b. Play the portable player and check that the same problem does not occur in the sound heard from the speakers.

      OK

      The same problem does not occur in the sound heard from the speakers.

   NG --> See step 3

   OK --> END

3. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**

Portable Player cannot be Connected Manually/Automatically

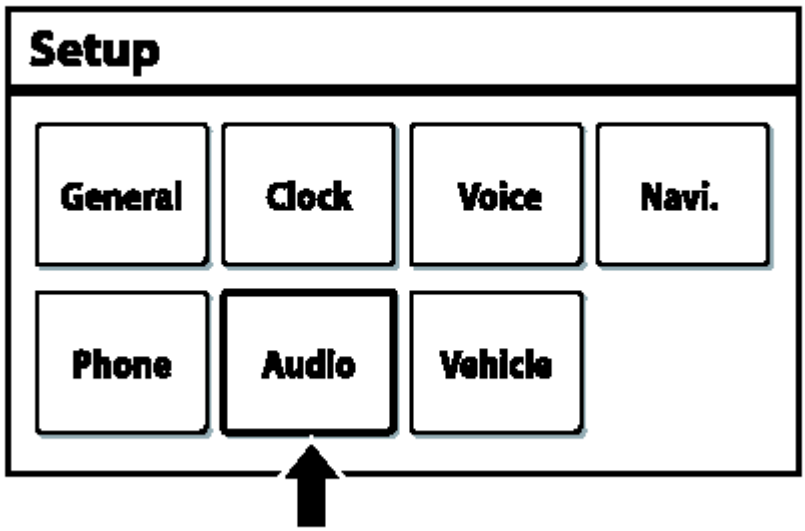
INSPECTION PROCEDURE

HINT:

Some versions of "Bluetooth" compatible audio players may not function, or the function may be limited using the navigation receiver assembly, even if the portable audio player itself can play files. Refer to **SYSTEM DESCRIPTION** .

PROCEDURE

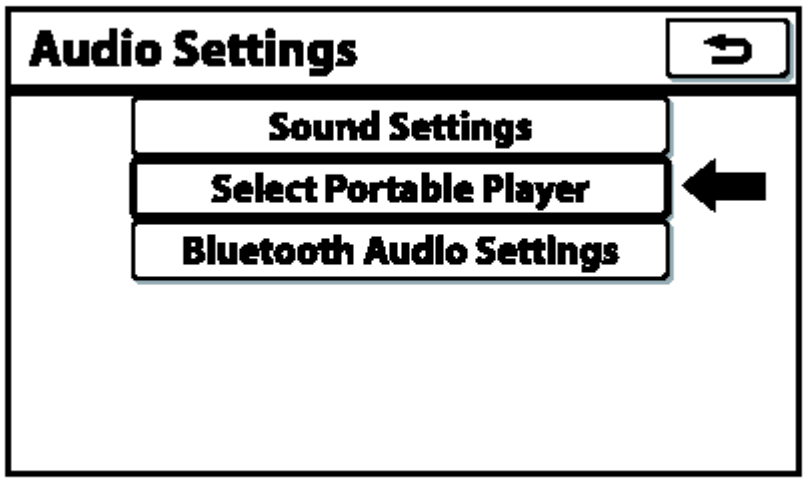
1. **CHECK CONNECTED DEVICE SETTINGS**
    a. Enter the "Setup" screen by pressing the "SETUP" switch.



H

Fig. 91: Screen Display - Audio
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

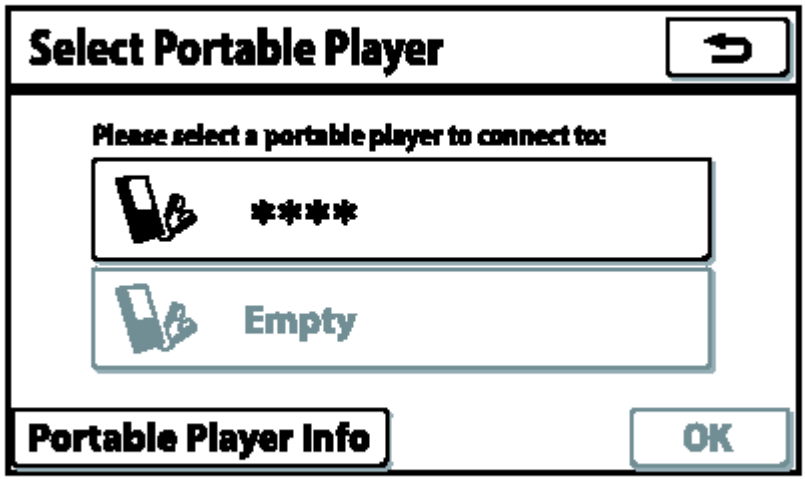
    b. Select "Audio".
    c. Select "Select Portable Player".



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Fig. 92: Screen Display - Select Portable Player
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

d. Check if the portable player is registered as a connected device.



H

Fig. 93: Screen Display - Connected Device
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

NOTE: **If a cellular phone is used as a portable player, it must be registered independently from the registration that is performed for the handsfree system.**

HINT:

Only 2 portable players can be registered.

RESULT

Result	Proceed to
The portable player is registered as a connected device.	A
The portable player is not registered as a connected device.	B

B --> REGISTER PORTABLE PLAYER AS CONNECTED DEVICE

A: Go to next step

2. **CHECK SYMPTOMS**
   a. Check the connection condition between the portable player and navigation receiver assembly.

HINT:

The portable player cannot be connected under any of the following conditions:

- The portable player is connected to another device.
- The portable player is connected to the navigation receiver using the handsfree function.
- The navigation receiver has cleared the portable player registration.
- The portable player is off.

RESULT

Result	Proceed

	to
The portable player cannot connect automatically.	A
The portable player cannot be connected manually.	B

B --> See step 4

A: Go to next step

3. **CHECK AUTOMATIC CONNECTION SETTINGS**
   a. Enter the "Setup" screen by pressing the "SETUP" switch.

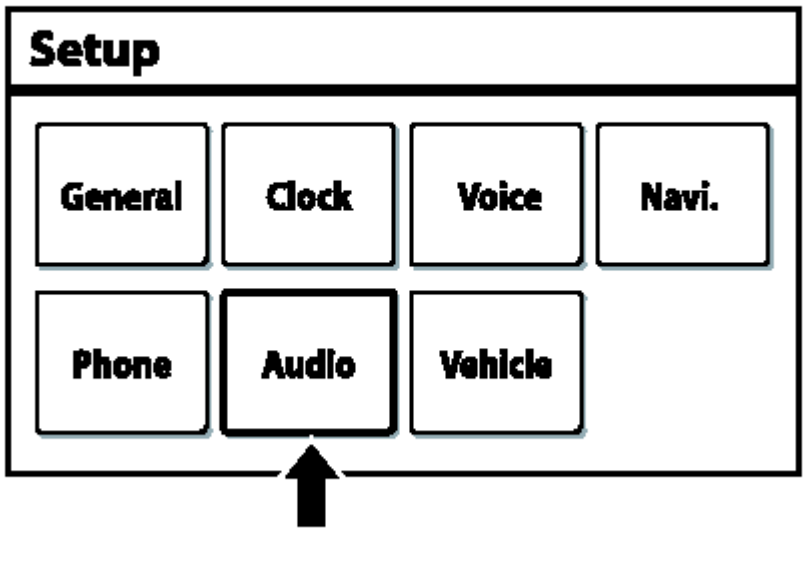
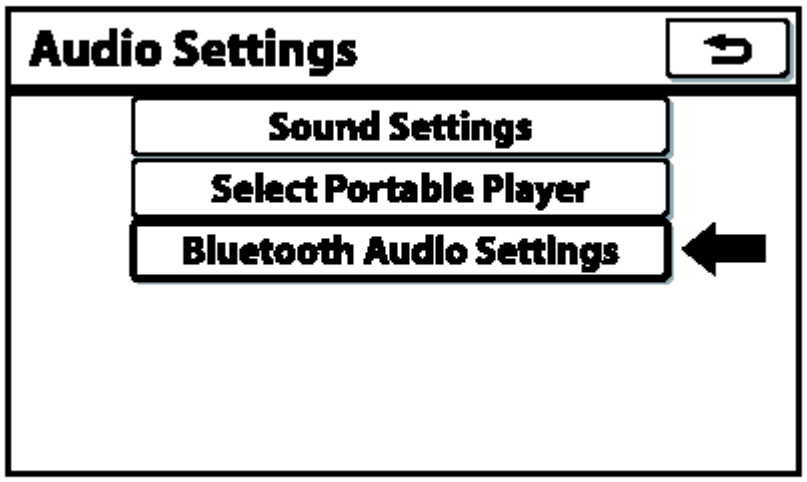


Fig. 94: Screen Display - Audio
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

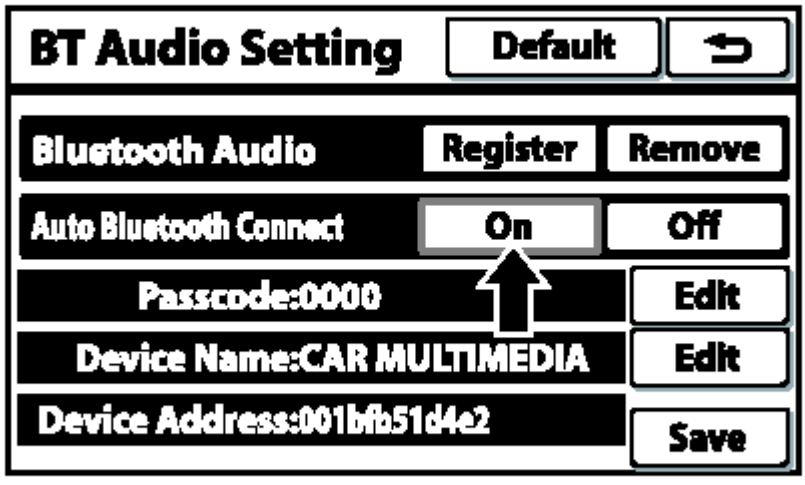
   b. Select "Audio".
   c. Select "Bluetooth Audio Settings".



H

Fig. 95: Screen Display - Bluetooth Audio Settings
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

d. Check automatic connection settings of the "Bluetooth" audio.
    1. Check if On is displayed for "Auto Bluetooth Connect" on the "BT Audio Setting" screen.



H

Fig. 96: Screen Display - On

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK

On is displayed for "Auto Bluetooth Connect".

NG --> CHANGE "AUTO BLUETOOTH CONNECT" TO ON

OK: Go to next step

4. **CHECK PORTABLE PLAYER STATUS**
   a. Check the status of the portable player.
      1. Check that the portable player is in standby mode.
      2. Check that the portable player is not connected to another device (headphones etc.).

      OK

      The portable player is in standby mode or connected to another device (headphones etc.).

   NG --> CHANGE PORTABLE PLAYER TO STANDBY MODE AND DISCONNECT OTHER DEVICES (HEADPHONES etc.)

   OK: Go to next step

5. **CHECK USING ANOTHER "BLUETOOTH" AUDIO COMPATIBLE VEHICLE OF SAME MODEL**
   a. Check if the portable player can be connected manually/automatically on another "Bluetooth" audio compatible vehicle of the same model.

      OK

      The portable player can be connected manually/automatically.

   NG --> PORTABLE PLAYER IS NOT COMPATIBLE

   OK: Go to next step

6. **REMOVE ADDITIONAL DEVICES WHICH USE RADIO WAVES**
   a. Remove additional devices which use radio waves.
   b. Check if the portable player can be connected manually/automatically.

      OK

      The portable player can be connected manually/automatically.

   NG --> See step 7

OK --> END

7. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**

Registered Device cannot be Deleted

INSPECTION PROCEDURE

PROCEDURE

1. **DELETE OPERATION**
   a. Check if a registered portable player can be deleted normally.

      OK

      Registered portable player can be deleted normally.

   NG --> See step 2

   OK --> END

2. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**

Portable Player cannot be Registered

INSPECTION PROCEDURE

HINT:

Some versions of "Bluetooth" compatible audio players may not function, or the function using the navigation receiver assembly may be limited even if the portable audio player itself can play files.

PROCEDURE

1. **CHECK THAT PORTABLE PLAYER IS "BLUETOOTH" AUDIO COMPATIBLE**
   a. Check if the portable player is "Bluetooth" audio compatible.

      RESULT

Result	Proceed to
The portable player is "Bluetooth" audio	A

compatible.	
The portable player is not "Bluetooth" audio compatible.	B

B --> USE A "BLUETOOTH" AUDIO COMPATIBLE PORTABLE PLAYER

A: Go to next step

2. **CHECK CONNECTION PROCEDURE OF CONNECTED DEVICE**
   a. Referring to the owner's manual, correctly register the portable player.
   b. Check that the portable player has been registered as a connected device.

      HINT:

      The portable player cannot be registered under any of the following conditions:

      - The A2DP (Advanced Audio Distribution Profile) is not used when registering a cellular phone.
      - The number of portable players registered in the navigation receiver has reached the maximum.
      - A different navigation receiver registration remains in the portable player.
      - The portable player is off.

      OK

      The portable player has been registered as a connected device.

NG --> See step 3

OK --> END

3. **CHECK USING ANOTHER "BLUETOOTH" AUDIO COMPATIBLE VEHICLE OF SAME MODEL**
   a. Check if the portable player can be registered normally on another "Bluetooth" audio compatible vehicle of the same model.

      OK

      The portable player can be registered.

NG --> MALFUNCTION IN PORTABLE PLAYER

OK: Go to next step

4. **REMOVE ADDITIONAL DEVICES WHICH USE RADIO WAVES**
   a. Remove additional devices which use radio waves.
   b. Check that the portable player can be registered as a connected device.

      OK

      The portable player can be registered.

   NG --> See step 5

   OK --> END

5. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**

USB Audio System Recognition/Play Error

INSPECTION PROCEDURE

- When a large amount of data is in a USB device, it may take a while to begin playing.
- When using a USB device, files that are protected by content protection cannot be played.
- When files are not played in the sorted order, perform the following procedure before inspection.
  a. Add numbers in front of the file names.
  b. Put the files in a folder and copy the folder data to the USB device.

PROCEDURE

1. **CHECK USB DEVICE OR "iPod"**
   a. Disconnect the USB device or "iPod" from the No. 1 stereo jack adapter assembly.
   b. Check if playable files are present on the USB device or "iPod".

      HINT:

      Refer to System Description for playable files. Refer to **SYSTEM DESCRIPTION** .

   c. Check if the USB device is a compatible format or "iPod" is a compatible version.

      HINT:

      Refer to System Description for compatible formats and versions.

      RESULT

Result	Proceed to
No playable files exist, or incompatible device format or version	A
Playable files exist, and compatible device format or version	B

B --> See step 2

A --> USB DEVICE FORMAT WAS INCOMPATIBLE, "iPod" VERSION WAS INCOMPATIBLE, OR NO PLAYABLE FILES PRESENT

2. **FORMAT USB DEVICE OR RESTORE "iPod" AND RECHECK**
   a. Delete all files in the USB device or "iPod" and format/restore it.
   b. Save the data again and check if it can be played on the in-vehicle device.

NOTE: **Formatting a USB device or restoring an "iPod" erases all music on the device.**

Ensure that backup music data is available before performing this operation.

OK

Malfunction disappears.

NG --> See step 3

OK --> END

3. **REPLACE USB DEVICE OR "iPod"**
   a. Turn the ignition switch off.

HINT:

When this malfunction occurs, it is necessary to turn off the ignition switch to make it possible for the vehicle to recognize a new device when it is connected.

b. Turn the ignition switch to ACC.

c. Connect a known good USB device or "iPod" to the No. 1 stereo jack adapter assembly.

HINT:

- If the malfunction occurred when a USB device was in use, use another USB device for the inspection. If the malfunction occurred when an "iPod" was in use, use another "iPod" for the inspection.
- Refer to System Description for compatible formats and versions. Refer to **SYSTEM DESCRIPTION** .

NEXT: Go to next step

4. **CHECK USB DEVICE OR "iPod"**

a. Check if USB device or "iPod" is recognized by radio receiver, or if information such as track, artist and album names are displayed on screen.

OK

USB device or "iPod" is recognized or track information such as track, artist and album names are displayed.

NG --> See step 5

OK --> USB DEVICE OR "iPod" WAS INCOMPATIBLE OR DEFECTIVE

5. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**

Black Screen

INSPECTION PROCEDURE

PROCEDURE

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: Go to next step

2. **CHECK IMAGE QUALITY SETTING**
    a. Check that the screen color quality can be set.

        OK

        Setting is possible.

    NG --> See 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 cause a short circuit.
        - The appropriate cabin temperature is 20 to 30°C (68 to 86°F).

        OK

        Condensation is not likely being produced and the temperature is not high or extremely low.

    NG --> HEAT OR COOL CABIN TO APPROPRIATE TEMPERATURE AND/OR DRY CABIN

    OK --> See step 4

4. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**

CIRCUIT TESTS

Steering Pad Switch Circuit

DESCRIPTION

This circuit sends an operation signal from the steering pad switch assembly to the navigation receiver assembly.

If there is an open in the circuit, the audio system cannot be operated using the steering pad switch assembly.

If there is a short in the circuit, the same condition as when the switch is continuously depressed occurs.

Therefore, the navigation receiver assembly cannot be operated using the steering pad switch assembly, and the navigation receiver assembly itself cannot function.

WIRING DIAGRAM

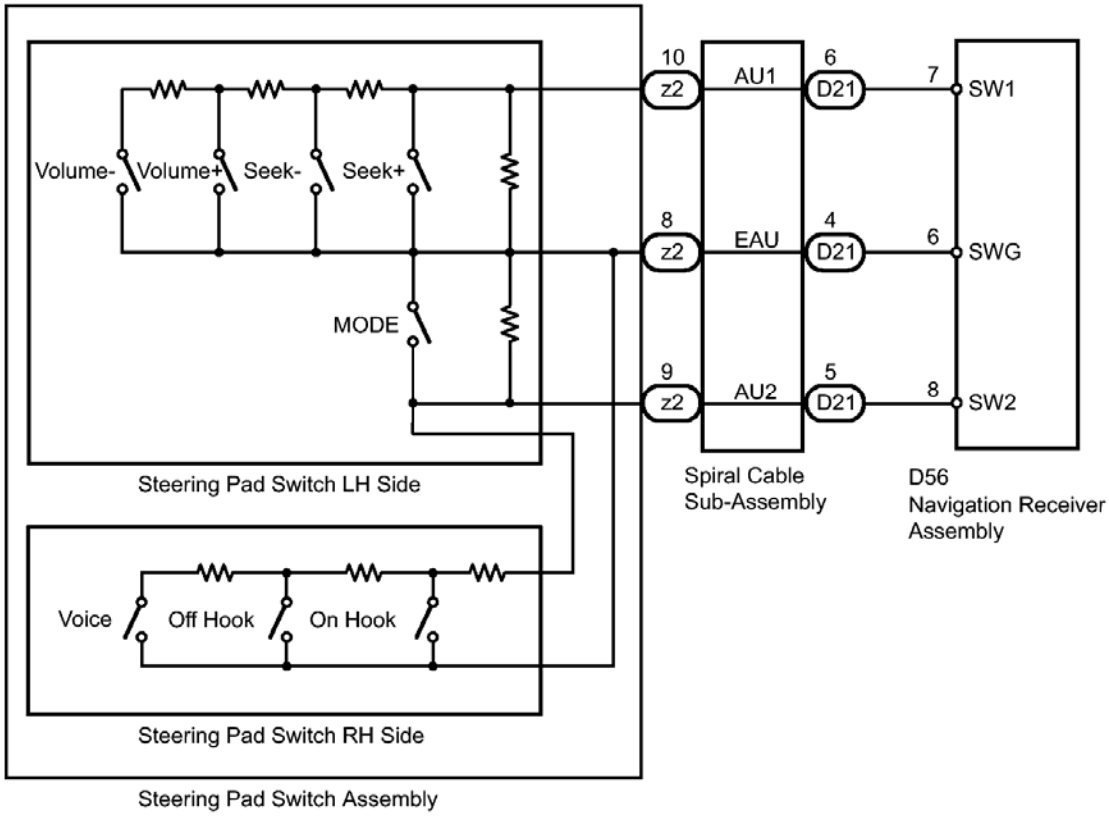


Fig. 97: Steering Pad Switch Circuit - Wiring Diagram
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

WARNING: The vehicle is equipped with an SRS (Supplemental Restraint System) which includes components such as airbags. Before servicing (including removal or installation of parts), be sure to read the Precaution in the SRS. Refer to PRECAUTION .

PROCEDURE

1. **INSPECT STEERING PAD SWITCH ASSEMBLY**
   a. Remove the steering pad switch assembly. Refer to **REMOVAL** .

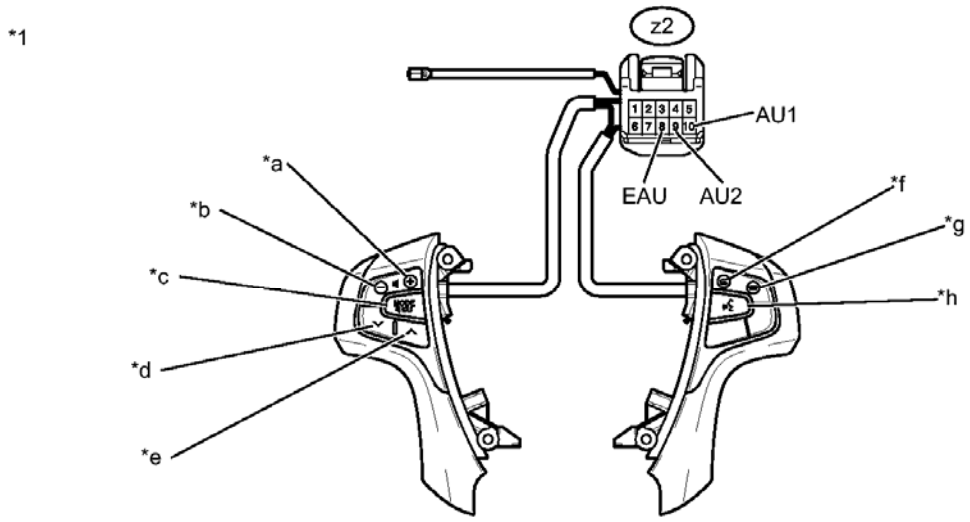


Fig. 98: Inspecting Steering Pad Switch Assembly
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

TEXT IN ILLUSTRATION

*1	Component without harness connected (Steering Pad Switch Assembly)	-	-
*a	Volume+ Switch	*b	Volume- Switch
*c	MODE Switch	*d	Seek- Switch
*e	Seek+ Switch	*f	Off Hook Switch
*g	On Hook Switch	*h	Voice Switch

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

Standard Resistance

Tester Connection	Switch Condition	Specified Condition
	No switch is pushed	95 to 105 kohms

z2-10 (AU1) - z2-8 (EAU)	Seek+ switch is pushed	Below 2.5 ohms
	Seek- switch is pushed	313 to 345 ohms
	Volume+ switch is pushed	950 to 1050 ohms
	Volume- switch is pushed	2955 to 3265 ohms
z2-9 (AU2) - z2-8 (EAU)	No switch is pushed	95 to 105 kohms
	MODE switch is pushed	Below 2.5 ohms
	On Hook switch is pushed	313 to 345 ohms
	Off Hook switch is pushed	950 to 1050 ohms
	Voice switch is pushed	2955 to 3265 ohms

NG --> See step 4

OK: Go to next step

2. **INSPECT SPIRAL CABLE SUB-ASSEMBLY**
   a. Remove the spiral cable sub-assembly. Refer to **PRECAUTION** .

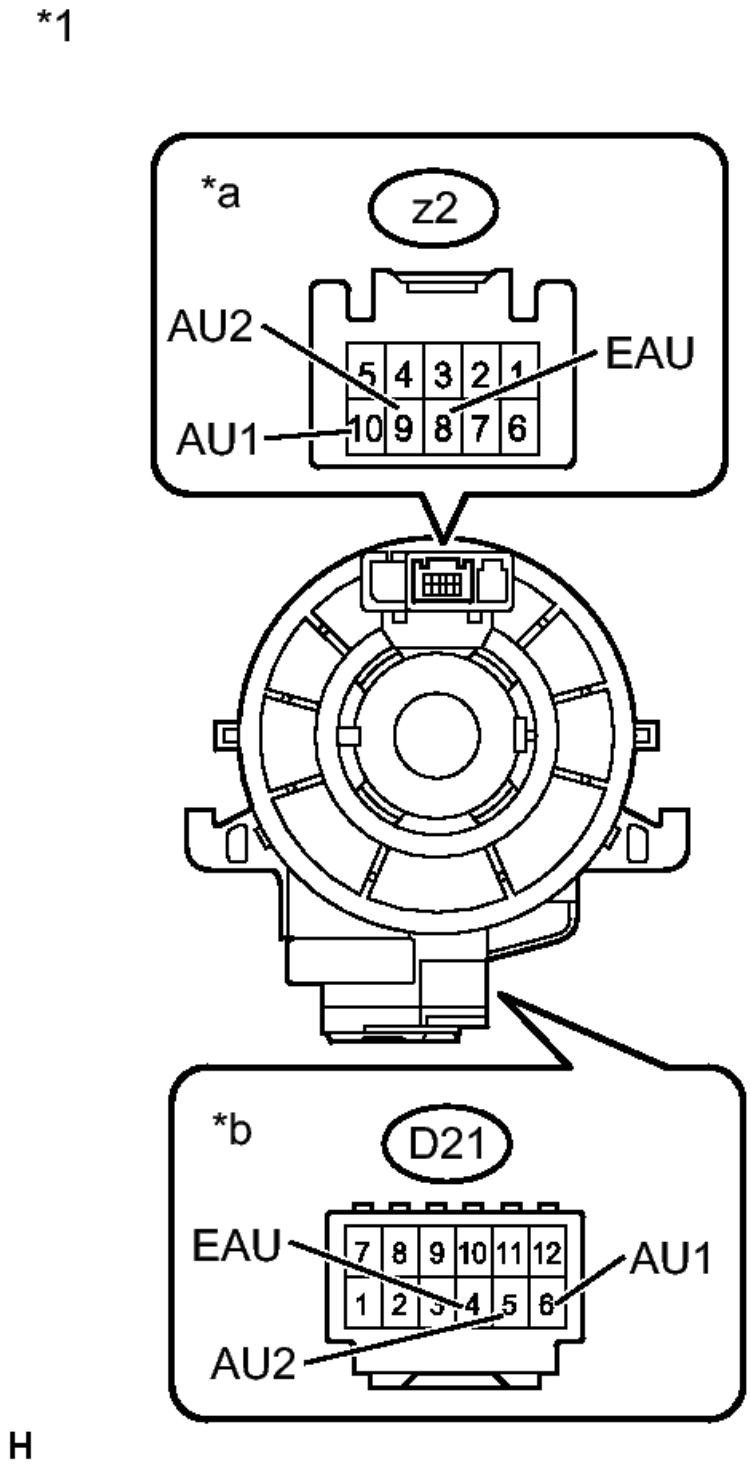


Fig. 99: Inspecting Spiral Cable Sub-Assembly
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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

Standard Resistance

Tester Connection	Condition	Specified Condition
z2-8 (EAU) - D21-4 (EAU)	Spiral cable is turned 2.5 rotations counterclockwise	Below 1 ohms
	Spiral cable is centered	
	Spiral cable is turned 2.5 rotations clockwise	
z2-10 (AU1) - D21-6 (AU1)	Spiral cable is turned 2.5 rotations counterclockwise	
	Spiral cable is centered	
	Spiral cable is turned 2.5 rotations clockwise	
z2-9 (AU2) - D21-5 (AU2)	Spiral cable is turned 2.5 rotations counterclockwise	
	Spiral cable is centered	
	Spiral cable is turned 2.5 rotations clockwise	

TEXT IN ILLUSTRATION

*1	Component without harness connected (Spiral Cable Sub-Assembly)
*a	Steering Pad Switch Assembly

	Side
*b	Vehicle Wire Harness Side

WARNING: The spiral cable is an important part of the SRS airbag system. Incorrect removal or installation of the spiral cable may prevent the airbag from deploying. Be sure to read the Precaution in the SRS. Refer to REMOVAL .

NG --> See step 5

OK: Go to next step

3. **CHECK HARNESS AND CONNECTOR (NAVIGATION RECEIVER - SPIRAL CABLE)**
   a. Disconnect the D56 navigation receiver assembly connector.
   b. Disconnect the D21 spiral cable connector.
   c. Measure the resistance according to the value(s) in the table below.

   Standard Resistance

Tester Connection	Condition	Specified Condition
D56-7 (SW1) - D21-6 (AU1)	Always	Below 1 ohms
D56-8 (SW2) - D21-5 (AU2)	Always	Below 1 ohms
D56-6 (SWG) - D21-4 (EAU)	Always	Below 1 ohms
D56-7 (SW1) - Body ground	Always	10 kohms or higher
D56-8 (SW2) - Body ground	Always	10 kohms or higher
D56-6		

(SWG) - Body ground	Always	10 kohms or higher

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK --> See step 6

4. **REPLACE STEERING PAD SWITCH ASSEMBLY. Refer to REMOVAL**
5. **REPLACE SPIRAL CABLE SUB-ASSEMBLY. Refer to REMOVAL**
6. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**

Illumination Circuit

DESCRIPTION

Power is supplied to the navigation receiver assembly and steering pad switch assembly illumination when the light control switch is in the TAIL or HEAD position.

WIRING DIAGRAM

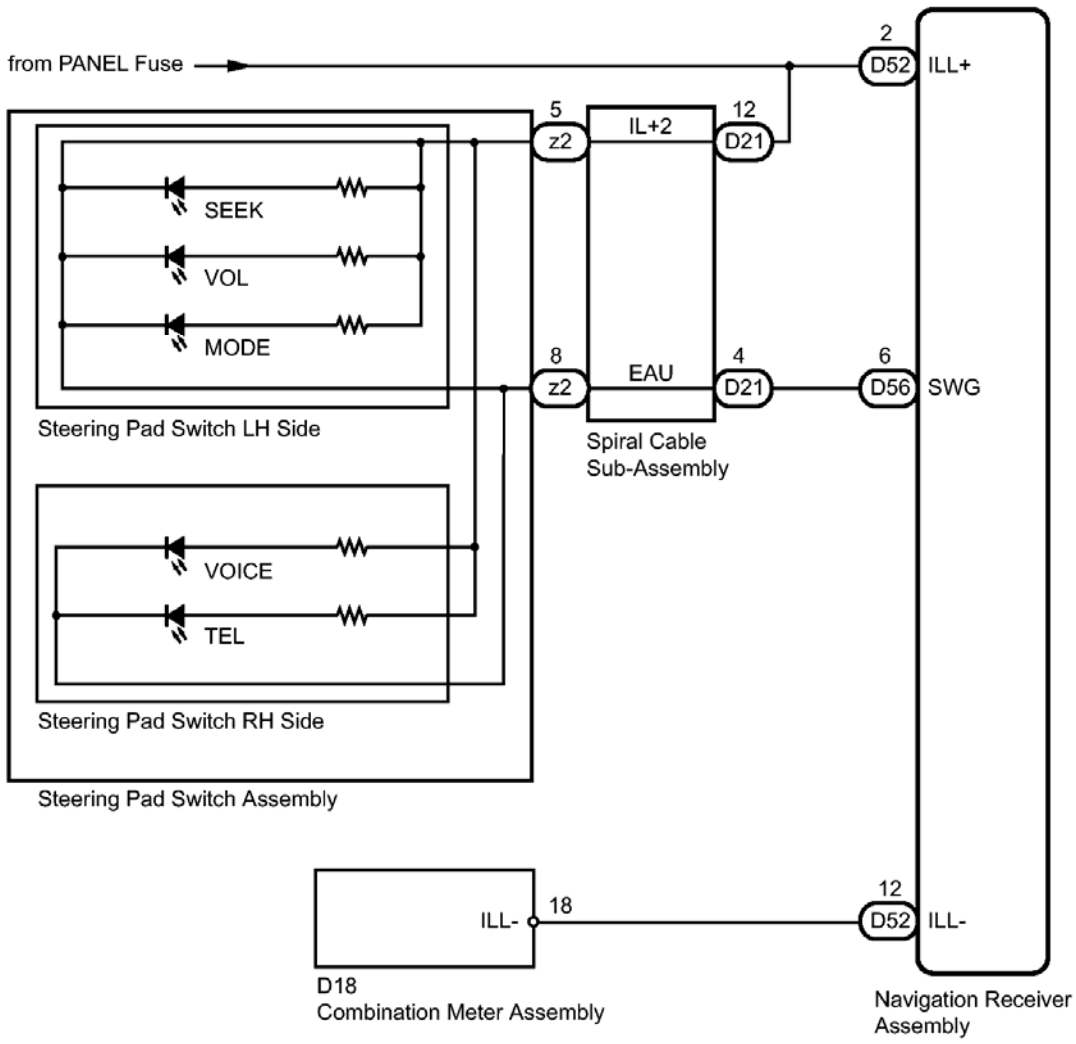


Fig. 100: Steering Pad Switch Circuit - Wiring Diagram
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

WARNING: The vehicle is equipped with an SRS (Supplemental Restraint System) which includes components such as airbags. Before servicing (including removal or installation of parts), be sure to read the Precaution in the SRS. Refer to PRECAUTION .

PROCEDURE

1. **CHECK ILLUMINATION**

a. Check if the illumination for the navigation receiver assembly, steering pad switch, glove box or other parts (hazard switch, transmission control switch, etc.) come on when the light control switch is turned to the HEAD or TAIL position.

RESULT

Result	Proceed to
Illumination comes on for all components except steering pad switch.	A
Illumination comes on for all components except navigation receiver assembly.	B
No illumination comes on (navigation receiver, hazard switch, glove box, etc.).	C
Illumination comes on for all components except steering pad switch and navigation receiver assembly.	D

B --> See step 6

C --> See step 8

D --> See step 7

A: Go to next step

2. **CHECK HARNESS AND CONNECTOR (SPIRAL CABLE - BATTERY)**
   a. Disconnect the D21 spiral cable sub-assembly connector.

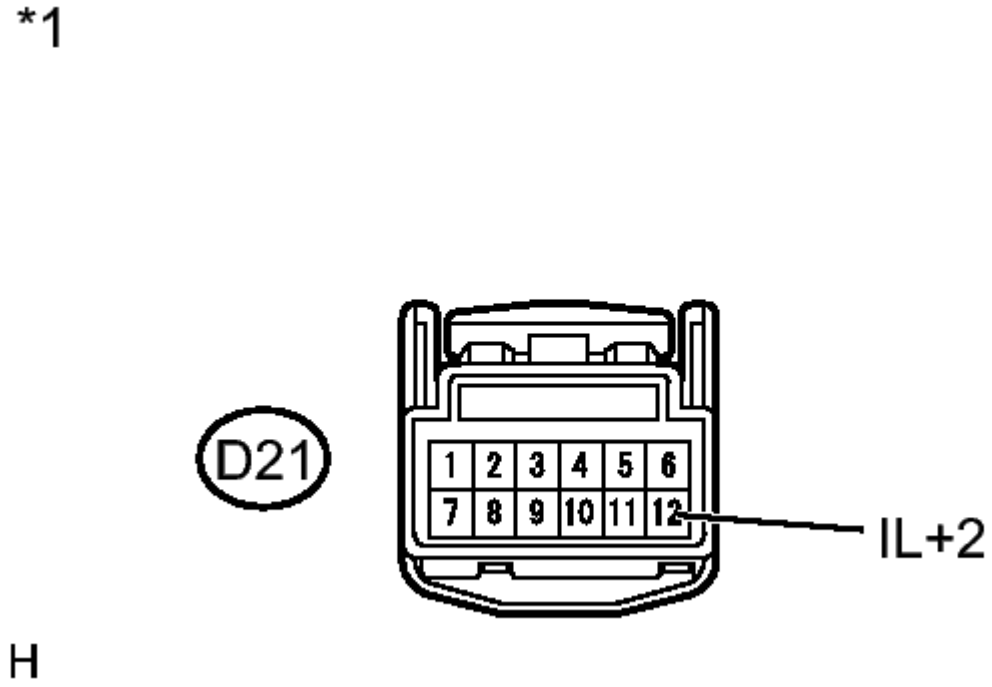


Fig. 101: Checking Harness And Connector (Spiral Cable - Battery)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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

Standard Voltage

Tester Connection	Switch Condition	Specified Condition
D21-12 (IL+2) - Body ground	Light control switch TAIL or HEAD	11 to 14 V

TEXT IN ILLUSTRATION

*1	Front view of wire harness connector

	(to Spiral Cable Sub-Assembly)

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK: Go to next step

3. **INSPECT STEERING PAD SWITCH ASSEMBLY**
   a. Remove the steering pad switch assembly. Refer to **REMOVAL** .

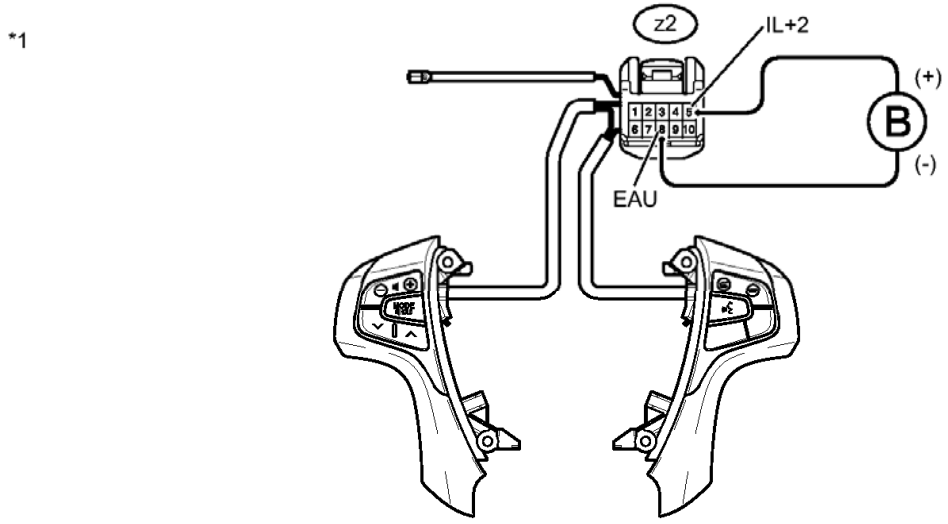


Fig. 102: Inspecting Steering Pad Switch Assembly
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

TEXT IN ILLUSTRATION

*1	Component without harness connected (Steering Pad Switch Assembly)	-	-

   b. Connect the positive (+) lead of the battery to terminal z2-5 (IL+2) and the negative (-) lead of the battery to terminal z2-8 (EAU) of the steering pad switch assembly connector.
   c. Check if the illumination for the steering pad switch assembly comes on.

OK

Illumination for the steering pad switch assembly comes on.

NG --> See step 9

OK: Go to next step

4. **INSPECT SPIRAL CABLE SUB-ASSEMBLY**
   a. Remove the spiral cable sub-assembly. Refer to **REMOVAL** .

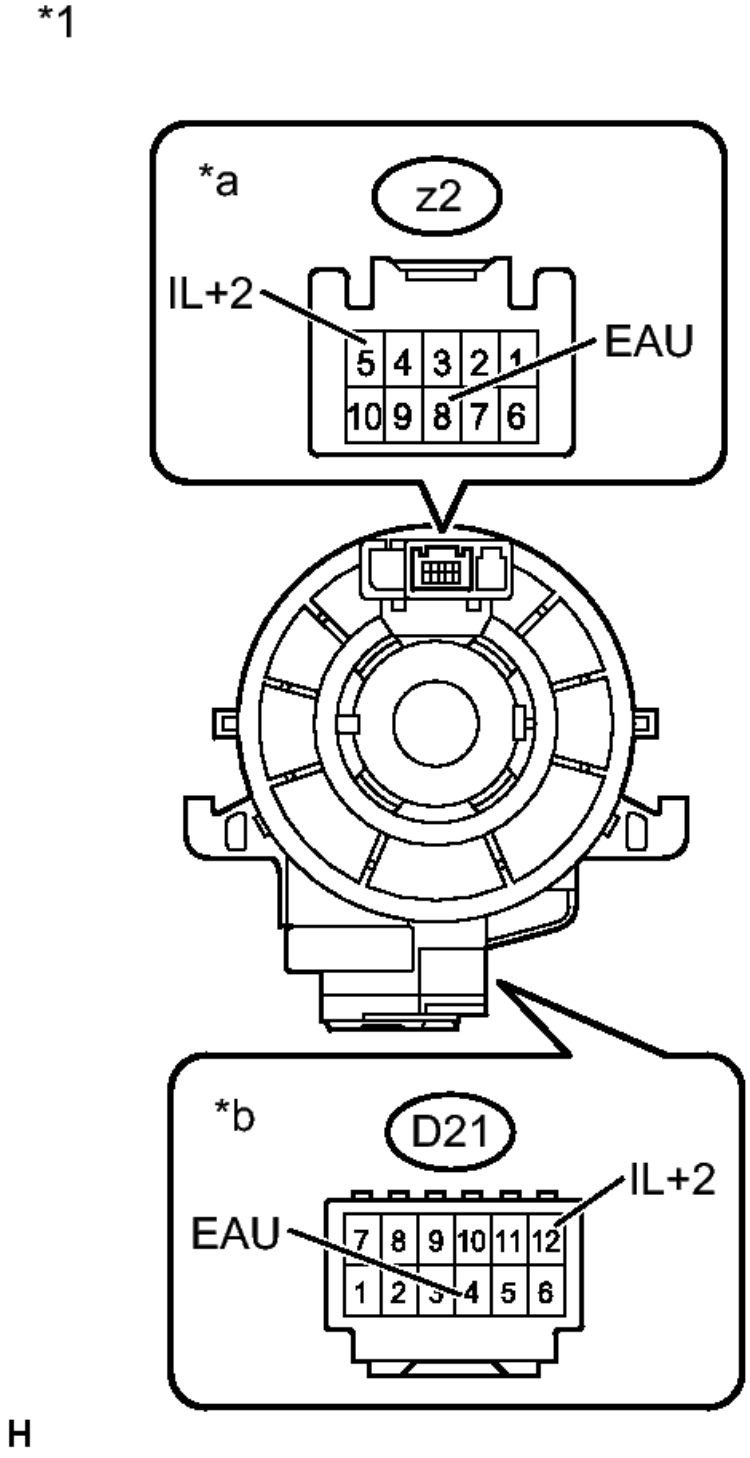


Fig. 103: Inspecting Spiral Cable Sub-Assembly
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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

Standard Resistance

Tester Connection	Condition	Specified Condition
z2-8 (EAU) - D21-4 (EAU)	Spiral cable is turned 2.5 rotations counterclockwise	Below 1 ohms
	Spiral cable is centered	
	Spiral cable is turned 2.5 rotations clockwise	
z2-5 (IL+2) - D21-12 (IL+2)	Spiral cable is turned 2.5 rotations counterclockwise	
	Spiral cable is centered	
	Spiral cable is turned 2.5 rotations clockwise	

TEXT IN ILLUSTRATION

*1	Component without harness connected (Spiral Cable Sub-Assembly)
*a	Steering Pad Switch Assembly Side
*b	Vehicle Wire Harness Side

WARNING: The spiral cable is an important part of the SRS airbag system. Incorrect removal or installation of the spiral cable may prevent the airbag from deploying. Be sure to read Precaution in the SRS. Refer to PRECAUTION .

NG --> See step 10

OK: Go to next step

5. **CHECK HARNESS AND CONNECTOR (NAVIGATION RECEIVER - SPIRAL CABLE)**
   a. Disconnect the D56 navigation receiver assembly connector.
   b. Disconnect the D21 spiral cable sub-assembly connector.
   c. Measure the resistance according to the value(s) in the table below.

   Standard Resistance

Tester Connection	Condition	Specified Condition
D56-6 (SWG) - D21-4 (EAU)	Always	Below 1 ohms
D56-6 (SWG) - Body ground	Always	10 kohms or higher

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK --> See step 11

6. **CHECK HARNESS AND CONNECTOR (NAVIGATION RECEIVER - BATTERY)**
   a. Disconnect the D52 navigation receiver assembly connector.

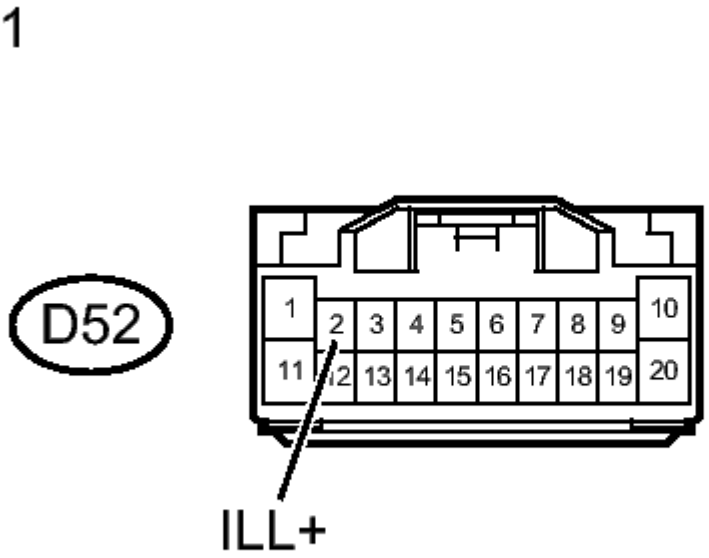


Fig. 104: Checking Harness And Connector (Navigation Receiver - Battery)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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

Standard Voltage

Tester Connection	Switch Condition	Specified Condition
D52-2 (ILL+) - Body ground	Light control switch TAIL or HEAD	11 to 14 V

TEXT IN ILLUSTRATION

*1	Front view of wire harness connector (to Navigation Receiver Assembly)

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK --> See step 11

7. **CHECK HARNESS AND CONNECTOR (NAVIGATION RECEIVER - COMBINATION METER)**
   a. Disconnect the D52 navigation receiver assembly connector.
   b. Disconnect the D18 combination meter assembly connector.
   c. Measure the resistance according to the value(s) in the table below.

   Standard Resistance

Tester Connection	Condition	Specified Condition
D52-12 (ILL-) - D18-18 (ILL-)	Always	Below 1 ohms
D52-12 (ILL-) - Body ground	Always	10 kohms or higher

   NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

   OK --> See step 11

8. **GO TO LIGHTING SYSTEM. Refer to HOW TO PROCEED WITH TROUBLESHOOTING**
9. **REPLACE STEERING PAD SWITCH ASSEMBLY. Refer to REMOVAL**
10. **REPLACE SPIRAL CABLE SUB-ASSEMBLY. Refer to REMOVAL**
11. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**

Parking Brake Switch Circuit

DESCRIPTION

This circuit is from the parking brake switch to the navigation receiver assembly.

WIRING DIAGRAM

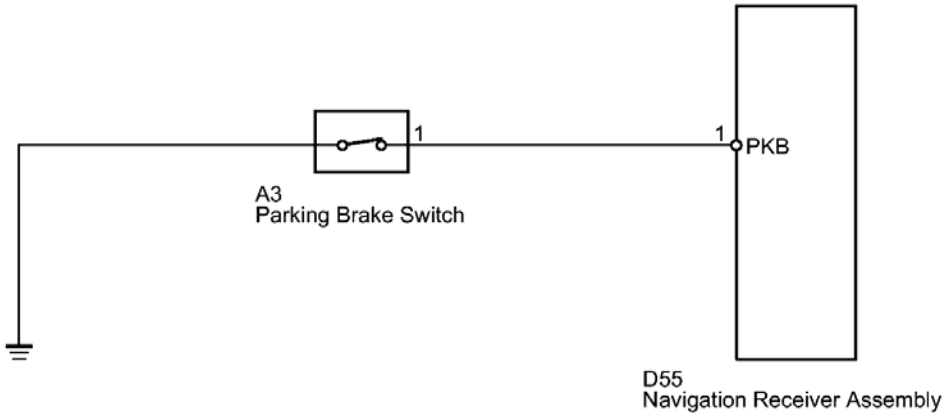


Fig. 105: Parking Brake Switch Circuit - Wiring Diagram
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

PROCEDURE

1. **CHECK PARKING BRAKE SWITCH ASSEMBLY (DISPLAY CHECK MODE)**
    a. Enter the "Display Check" mode and select "Vehicle Signal Check". Refer to **OPERATION CHECK** .

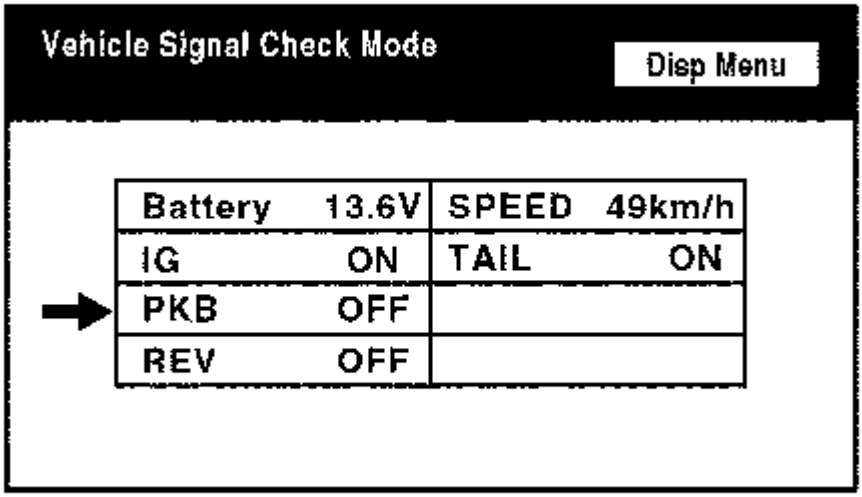


Fig. 106: Display - Parking Brake Signal
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

b. Check that the display changes between ON and OFF according to the parking brake operation.

OK

Parking Brake Position	Display
Applied	ON
Released	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.

NG --> See step 2

OK --> See step 4

2. **CHECK HARNESS AND CONNECTOR (NAVIGATION RECEIVER - PARKING BRAKE SWITCH)**
   a. Disconnect the D55 navigation receiver assembly connector.
   b. Disconnect the A3 parking brake switch assembly connector.
   c. Measure the resistance according to the value(s) in the table below.

Standard Resistance

Tester connection	Condition	Specified condition
D55-1 (PKB) - A3-1	Always	Below 1 ohms
D55-1 (PKB) - Body ground	Always	10 kohms or higher

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK: Go to next step

3. **INSPECT PARKING BRAKE SWITCH ASSEMBLY**

a. Remove the parking brake switch assembly. Refer to **REMOVAL** .

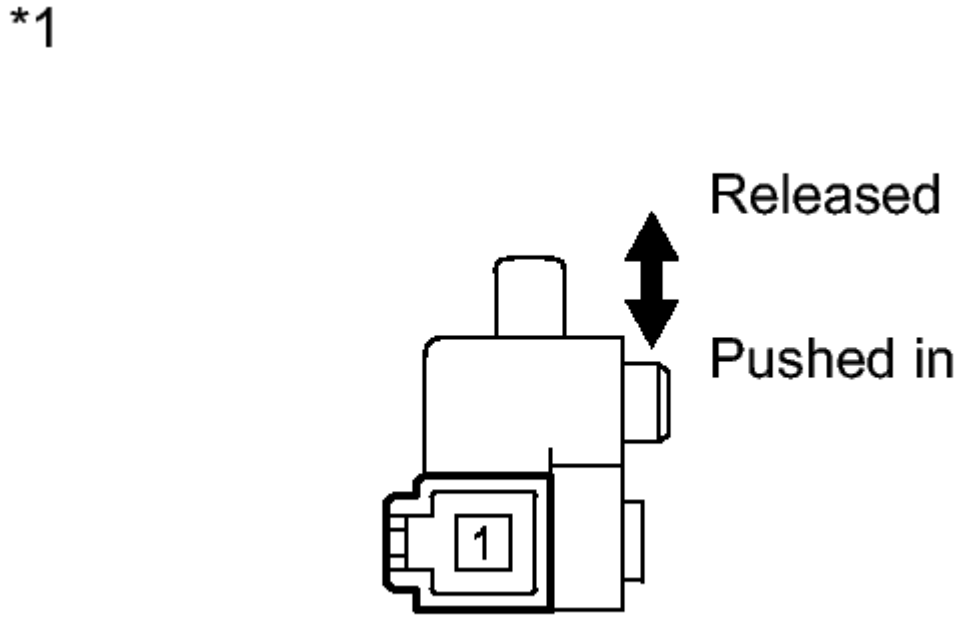


Fig. 107: Inspecting Parking Brake Switch Assembly
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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

Standard Resistance

Tester Connection	Switch Condition	Specified Condition
1 - Body ground	Parking brake switch ON (Switch pin released)	Below 1 ohms
	Parking brake switch OFF (Switch pin pushed in)	10 kohms or higher

TEXT IN ILLUSTRATION

*1	Component without harness connected (Parking Brake Switch Assembly)

NG --> See step 5

OK --> See step 4

4. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**
5. **REPLACE PARKING BRAKE SWITCH ASSEMBLY. Refer to REMOVAL**

Speaker Circuit

DESCRIPTION

The stereo component amplifier assembly sends sound signals to the speaker.

WIRING DIAGRAM

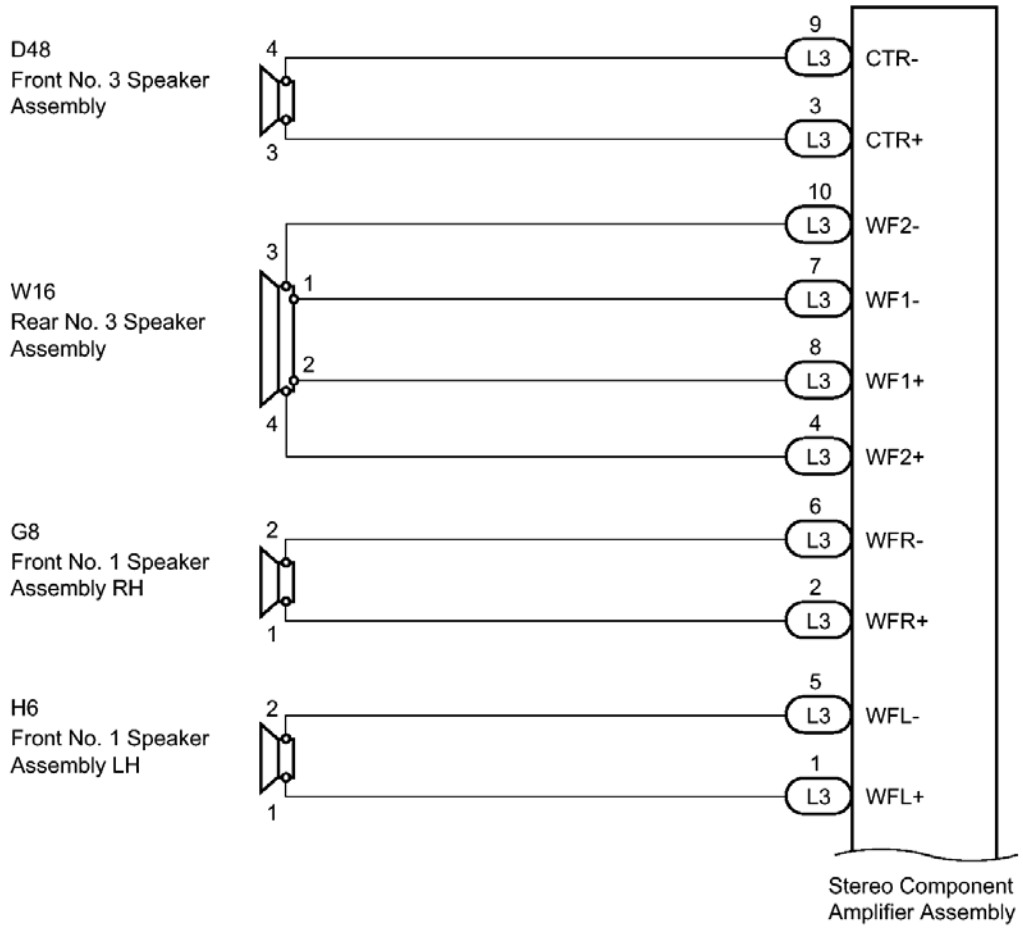


Fig. 108: Speaker Circuit - Wiring Diagram (1 Of 3)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

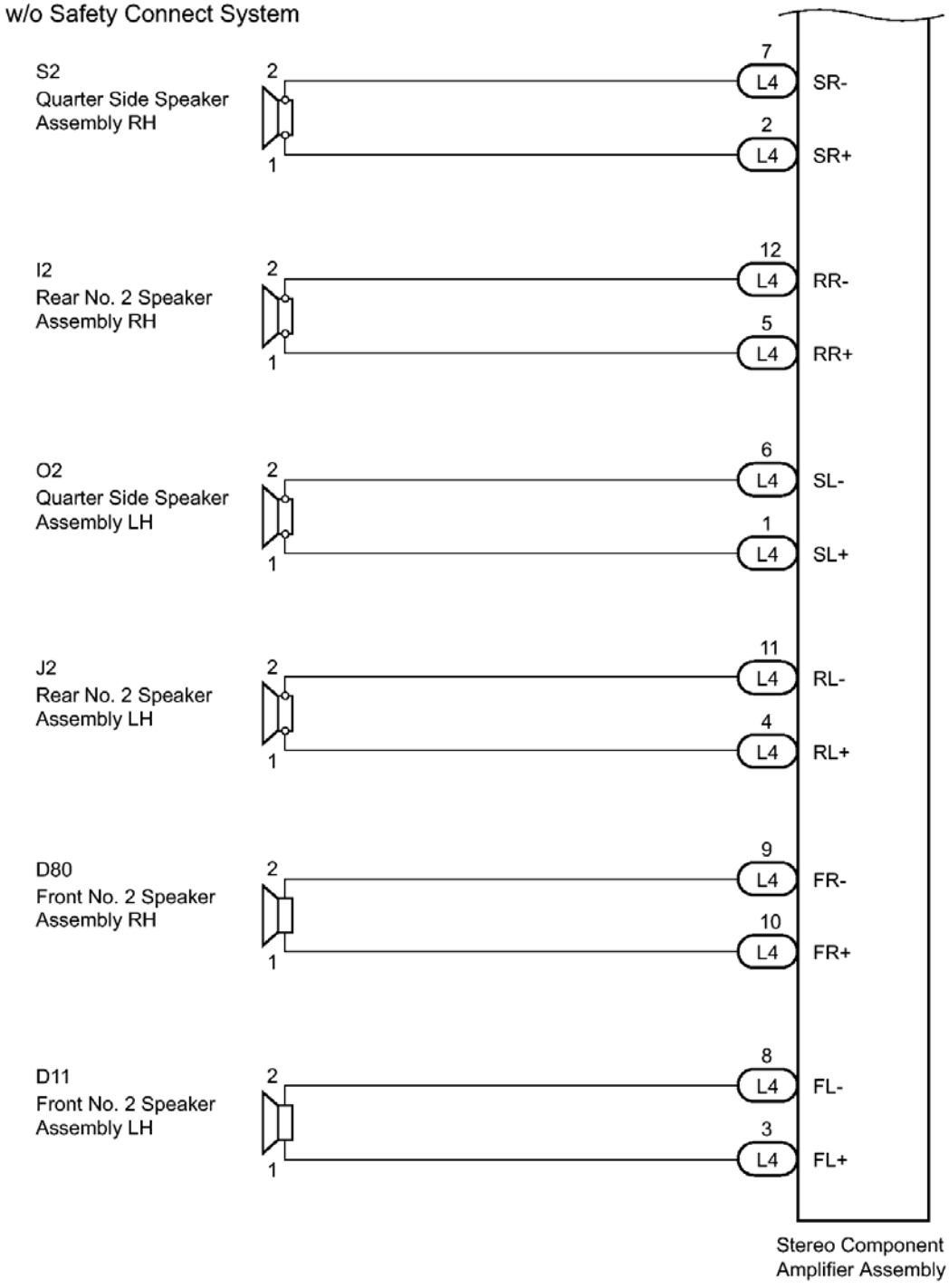


Fig. 109: Speaker Circuit (w/o Safety Connect System) - Wiring Diagram (2 Of 3)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

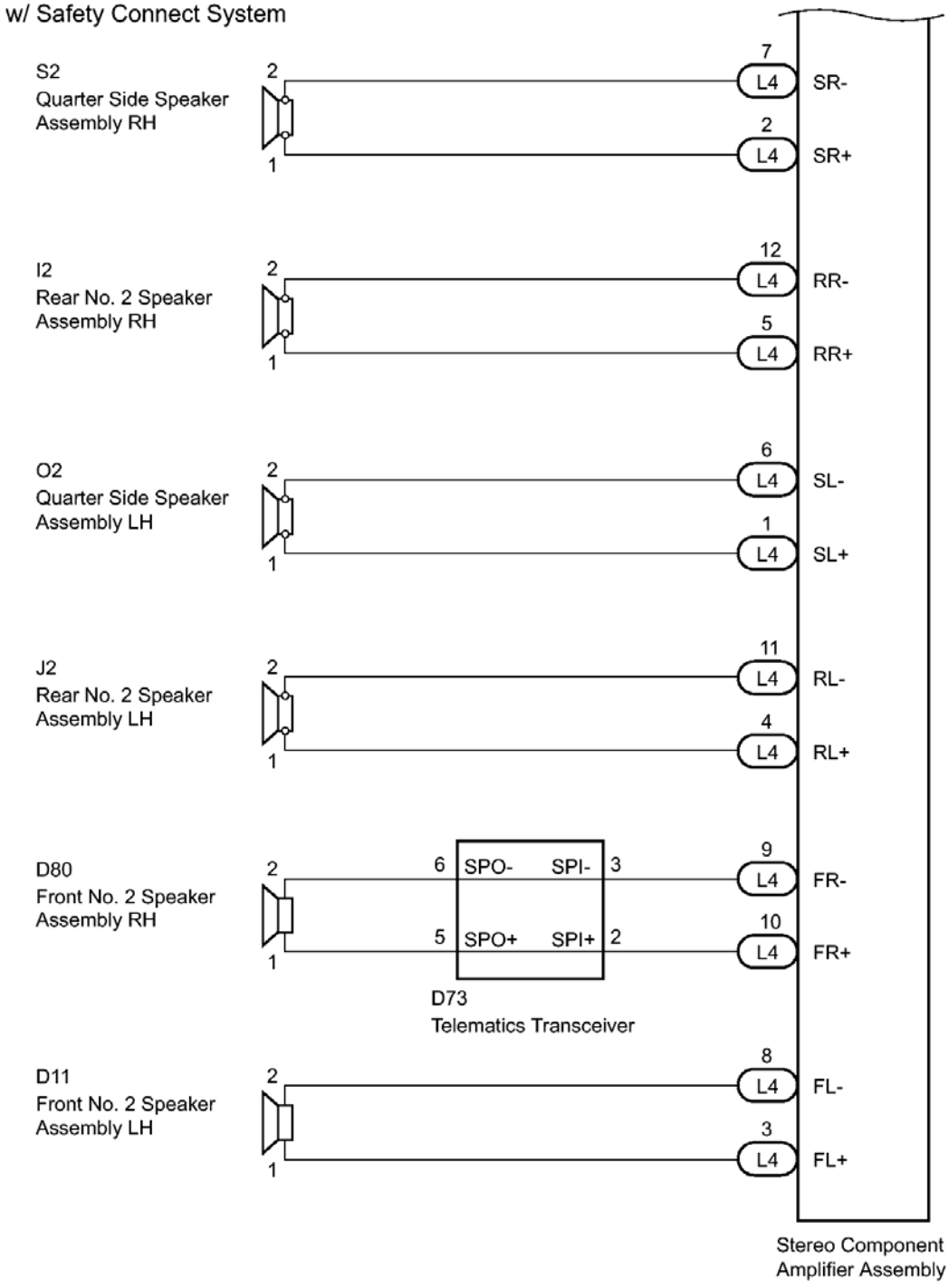


Fig. 110: Speaker Circuit (w/ Safety Connect System - Wiring Diagram (3 Of 3)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

NOTE: **If the telematics transceiver has been replaced, perform the Activate DCM procedure using the Techstream. Refer to DCM ACTIVATION .**

PROCEDURE

1. **CHECK SPEAKER**
   a. Check the malfunctioning speakers.

RESULT

Result	Proceed to
Malfunction in front speaker area	A
Malfunction in rear speaker area	B

B --> See step 11

A: Go to next step

2. **CHECK SPEAKER**
   a. Check the malfunctioning speakers.

RESULT

Result	Proceed to
Front No. 1 speaker assembly	A
Front No. 2 speaker assembly	B
Front No. 3 speaker assembly	C

B --> See step 5

C --> See step 9

A: Go to next step

3. **INSPECT FRONT NO. 1 SPEAKER ASSEMBLY**
   a. Disconnect the G8*1 and/or H6*2 front No. 1 speaker assembly connector.

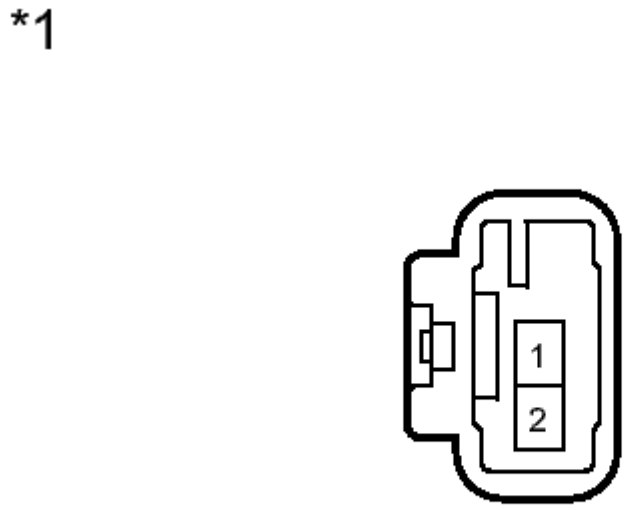


Fig. 111: Measuring Resistance Of Front No. 1 Speaker Assembly
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

*1: for RH
*2: for LH

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

Standard Resistance

Tester Connection	Condition	Specified Condition
1 - 2	Always	1.65 to 2.15 ohms

TEXT IN ILLUSTRATION

*1	Component without harness connected (Front No. 1 Speaker

Assembly)

NG --> See step 18

OK: Go to next step

4. **CHECK HARNESS AND CONNECTOR (STEREO COMPONENT AMPLIFIER - FRONT NO. 1 SPEAKER)**
   a. Disconnect the L3 stereo component amplifier assembly connector.
   b. Disconnect the G8*1 and/or H6*2 front No. 1 speaker assembly connector.
      *1: for RH
      *2: for LH
   c. Measure the resistance according to the value(s) in the table below.

      Standard Resistance

      for RH

      for LH

Tester Connection	Condition	Specified Condition
L3-2 (WFR+) - G8-1	Always	Below 1 ohms
L3-6 (WFR-) - G8-2	Always	Below 1 ohms
L3-2 (WFR+) - Body ground	Always	10 kohms or higher
L3-6 (WFR-) - Body ground	Always	10 kohms or higher

Tester Connection	Condition	Specified Condition
L3-1 (WFL+) - H6-1	Always	Below 1 ohms
L3-5 (WFL-) -	Always	Below 1 ohms

H6-2		
L3-1 (WFL+) - Body ground	Always	10 kohms or higher
L3-5 (WFL-) - Body ground	Always	10 kohms or higher

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK --> See step 19

5. **INSPECT FRONT NO. 2 SPEAKER ASSEMBLY**
   a. Disconnect the D80*1 and/or D11*2 front No. 2 speaker assembly connector.

*1

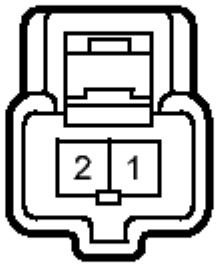


Fig. 112: Measuring Resistance Of Front No. 2 Speaker Assembly
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

*1: for RH
*2: for LH

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

Standard Resistance

Tester Connection	Condition	Specified Condition
1 - 2	Always	1.5 to 2.5 ohms

TEXT IN ILLUSTRATION

*1	Component without harness connected (Front No. 2 Speaker Assembly)

NG --> See step 20

OK: Go to next step

6. **SYSTEM CHECK**
   a. Check the vehicle specifications.

RESULT

Result	Proceed to
w/ Safety Connect System	A
w/o Safety Connect System	B

B --> See step 8

A: Go to next step

7. **INSPECT TELEMATICS TRANSCEIVER**
   a. Disconnect the D73 telematics transceiver connector.

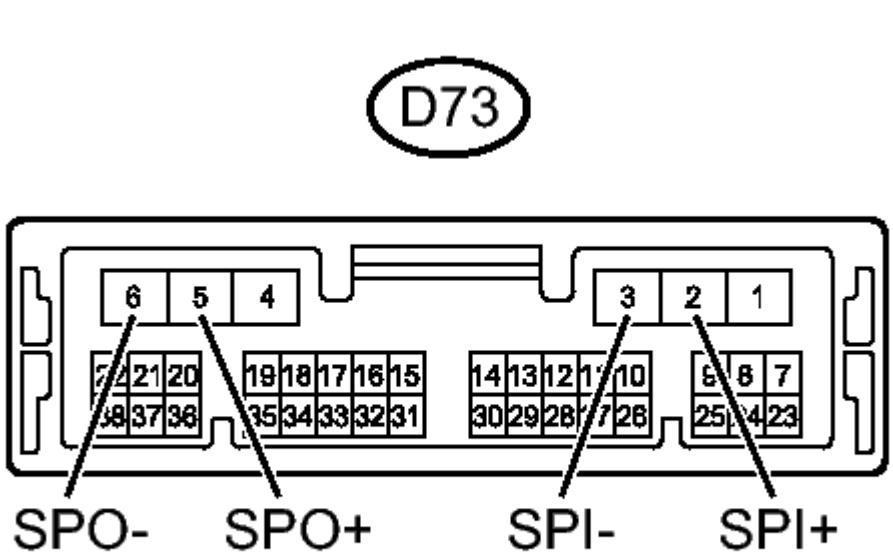


Fig. 113: Checking Telematics Transceiver
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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

Standard Resistance

Tester Connection	Condition	Specified Condition
D73-2 (SPI+) - D73-5 (SPO+)	Always	Below 1 ohms
D73-3 (SPI-) - D73-6 (SPO-)	Always	Below 1 ohms
D73-2 (SPI+) - Body ground	Always	10 kohms or higher
D73-3 (SPI-) - Body ground	Always	10 kohms or higher

TEXT IN ILLUSTRATION

*1	Component without harness connected (Telematics Transceiver)

c. Reconnect the telematics transceiver connector.

NG --> See step 21

OK: Go to next step

8. **CHECK HARNESS AND CONNECTOR (STEREO COMPONENT AMPLIFIER - FRONT NO. 2 SPEAKER)**
   a. Disconnect the L4 stereo component amplifier assembly connector.
   b. Disconnect the D80*1 and/or D11*2 front No. 2 speaker assembly connector.
      *1: for RH
      *2: for LH
   c. Measure the resistance according to the value(s) in the table below.

   Standard Resistance

   for RH

   for LH

Tester Connection	Condition	Specified Condition
L4-10 (FR+) - D80-1	Always	Below 1 ohms
L4-9 (FR-) - D80-2	Always	Below 1 ohms
L4-10 (FR+) - Body ground	Always	10 kohms or higher
L4-9 (FR-) - Body ground	Always	10 kohms or higher

Tester Connection	Condition	Specified Condition
L4-3 (FL+)		Below 1

- D11-1	Always	ohms
L4-8 (FL-) - D11-2	Always	Below 1 ohms
L4-3 (FL+) - Body ground	Always	10 kohms or higher
L4-8 (FL-) - Body ground	Always	10 kohms or higher

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK --> See step 22

9. **INSPECT FRONT NO. 3 SPEAKER ASSEMBLY**
   a. Disconnect the D48 front No. 3 speaker assembly connector.

*1

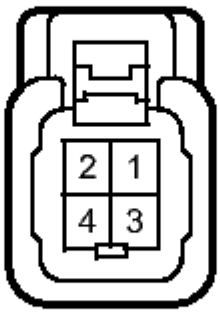


Fig. 114: Checking Front No. 3 Speaker Assembly
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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

Standard Resistance

Tester Connection	Condition	Specified Condition

3 - 4	Always	1.5 to 2.5 ohms

TEXT IN ILLUSTRATION

*1	Component without harness connected (Front No. 3 Speaker Assembly)

NG --> See step 23

OK: Go to next step

10. **CHECK HARNESS AND CONNECTOR (STEREO COMPONENT AMPLIFIER - FRONT NO. 3 SPEAKER)**
    a. Disconnect the L3 stereo component amplifier assembly connector.
    b. Disconnect the D48 front No. 3 speaker assembly connector.
    c. Measure the resistance according to the value(s) in the table below.

    Standard Resistance

Tester Connection	Condition	Specified Condition
L3-3 (CTR+) - D48-3	Always	Below 1 ohms
L3-9 (CTR-) - D48-4	Always	Below 1 ohms
L3-3 (CTR+) - Body ground	Always	10 kohms or higher
L3-9 (CTR-) - Body ground	Always	10 kohms or higher

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK --> See step 24

11. **CHECK SPEAKER**
    a. Check the malfunctioning speakers.

RESULT

Result	Proceed to
Quarter side speaker assembly	A
Rear No. 2 speaker assembly	B
Rear No. 3 speaker assembly	C

B --> See step 14

C --> See step 16

A: Go to next step

12. **INSPECT QUARTER SIDE SPEAKER ASSEMBLY**
    a. Disconnect the S2*1 and/or O2*2 quarter side speaker assembly connector.

*1

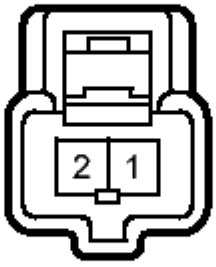


Fig. 115: Measuring Resistance Of Front No. 2 Speaker Assembly

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

*1: for RH

*2: for LH

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

Standard Resistance

Tester Connection	Condition	Specified Condition
1 - 2	Always	1.5 to 2.5 ohms

TEXT IN ILLUSTRATION

*1	Component without harness connected (Quarter Side Speaker Assembly)

NG --> See step 25

OK: Go to next step

13. **CHECK HARNESS AND CONNECTOR (STEREO COMPONENT AMPLIFIER - QUARTER SIDE SPEAKER)**

a. Disconnect the L4 stereo component amplifier assembly connector.

b. Disconnect the S2*1 and/or O2*2 quarter side speaker assembly connector.

*1: for RH

*2: for LH

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

Standard Resistance

for RH

for LH

Tester Connection	Condition	Specified Condition
L4-2 (SR+)	Always	Below 1

- S2-1		ohms
L4-7 (SR-) - S2-2	Always	Below 1 ohms
L4-2 (SR+) - Body ground	Always	10 kohms or higher
L4-7 (SR-) - Body ground	Always	10 kohms or higher

Tester Connection	Condition	Specified Condition
L4-1 (SL+) - O2-1	Always	Below 1 ohms
L4-6 (SL-) - O2-2	Always	Below 1 ohms
L4-1 (SL+) - Body ground	Always	10 kohms or higher
L4-6 (SL-) - Body ground	Always	10 kohms or higher

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK --> See step 26

14. **INSPECT REAR NO. 2 SPEAKER ASSEMBLY**
    a. Disconnect the I2*1 and/or J2*2 rear No. 2 speaker assembly connector.

*1

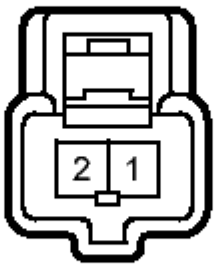


Fig. 116: Measuring Resistance Of Front No. 2 Speaker Assembly
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

*1: for RH

*2: for LH

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

Standard Resistance

Tester Connection	Condition	Specified Condition
1 - 2	Always	1.5 to 2.5 ohms

TEXT IN ILLUSTRATION

*1	Component without harness connected (Rear No. 2 Speaker Assembly)

NG --> See step 27

OK: Go to next step

15. **CHECK HARNESS AND CONNECTOR (STEREO COMPONENT AMPLIFIER - REAR NO. 2 SPEAKER)**

a. Disconnect the L4 stereo component amplifier assembly connector.

b. Disconnect the I2*1 and/or J2*2 rear No. 2 speaker assembly connector.

*1: for RH

*2: for LH

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

Standard Resistance

for RH

for LH

Tester Connection	Condition	Specified Condition
L4-5 (RR+) - I2-1	Always	Below 1 ohms
L4-12 (RR-) - I2-2	Always	Below 1 ohms
L4-5 (RR+) - Body ground	Always	10 kohms or higher
L4-12 (RR-) - Body ground	Always	10 kohms or higher

Tester Connection	Condition	Specified Condition
L4-4 (RL+) - J2-1	Always	Below 1 ohms
L4-11 (RL-) - J2-2	Always	Below 1 ohms
L4-4 (RL+) - Body ground	Always	10 kohms or higher
L4-11 (RL-) - Body ground	Always	10 kohms or higher

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK --> See step 28

16. **INSPECT REAR NO. 3 SPEAKER ASSEMBLY**

a. Disconnect the W16 rear No. 3 speaker assembly connector.

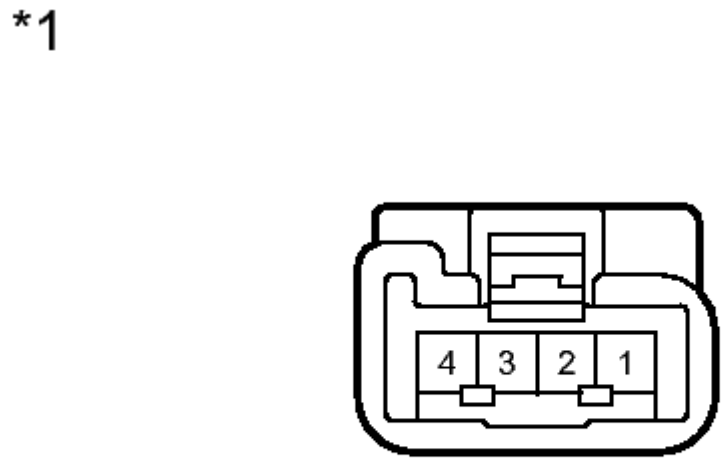


Fig. 117: Checking Rear No. 3 Speaker Assembly
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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

Standard Resistance

Tester Connection	Condition	Specified Condition
1 - 2	Always	1.5 to 2.5 ohms
3 - 4	Always	1.5 to 2.5 ohms

TEXT IN ILLUSTRATION

*1	Component without harness connected (Rear No. 3 Speaker Assembly)

NG --> See step 29

OK: Go to next step

17. **CHECK HARNESS AND CONNECTOR (STEREO COMPONENT AMPLIFIER - REAR NO. 3 SPEAKER)**
    a. Disconnect the L3 stereo component amplifier assembly connector.
    b. Disconnect the W16 rear No. 3 speaker assembly connector.
    c. Measure the resistance according to the value(s) in the table below.

    Standard Resistance

Tester Connection	Condition	Specified Condition
L3-8 (WF1+) - W16-2	Always	Below 1 ohms
L3-7 (WF1-) - W16-1	Always	Below 1 ohms
L3-4 (WF2+) - W16-4	Always	Below 1 ohms
L3-10 (WF2-) - W16-3	Always	Below 1 ohms
L3-8 (WF1+) - Body ground	Always	10 kohms or higher
L3-7 (WF1-) - Body ground	Always	10 kohms or higher
L3-4 (WF2+) - Body ground	Always	10 kohms or higher
L3-10 (WF2-) - Body ground	Always	10 kohms or higher

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK --> See step 30

18. **REPLACE FRONT NO. 1 SPEAKER ASSEMBLY. Refer to REMOVAL**
19. **REPLACE STEREO COMPONENT AMPLIFIER ASSEMBLY. Refer to REMOVAL**
20. **REPLACE FRONT NO. 2 SPEAKER ASSEMBLY. Refer to REMOVAL**
21. **REPLACE TELEMATICS TRANSCEIVER. Refer to REMOVAL**
22. **REPLACE STEREO COMPONENT AMPLIFIER ASSEMBLY. Refer to REMOVAL**
23. **REPLACE FRONT NO. 3 SPEAKER ASSEMBLY. Refer to REMOVAL**
24. **REPLACE STEREO COMPONENT AMPLIFIER ASSEMBLY. Refer to REMOVAL**
25. **REPLACE QUARTER SIDE SPEAKER ASSEMBLY. Refer to REMOVAL**
26. **REPLACE STEREO COMPONENT AMPLIFIER ASSEMBLY. Refer to REMOVAL**
27. **REPLACE REAR NO. 2 SPEAKER ASSEMBLY. Refer to REMOVAL**
28. **REPLACE STEREO COMPONENT AMPLIFIER ASSEMBLY. Refer to REMOVAL**
29. **REPLACE REAR NO. 3 SPEAKER ASSEMBLY. Refer to REMOVAL**
30. **REPLACE STEREO COMPONENT AMPLIFIER ASSEMBLY. Refer to REMOVAL**

Sound Signal Circuit between Navigation Receiver Assembly and Multi-media Interface ECU

DESCRIPTION

The multi-media interface ECU sends sound signals to the navigation receiver assembly through this circuit. If there is an open or short in the circuit, sound cannot be heard from the speakers even if there is no malfunction in the stereo component amplifier assembly, navigation receiver assembly or speakers.

WIRING DIAGRAM

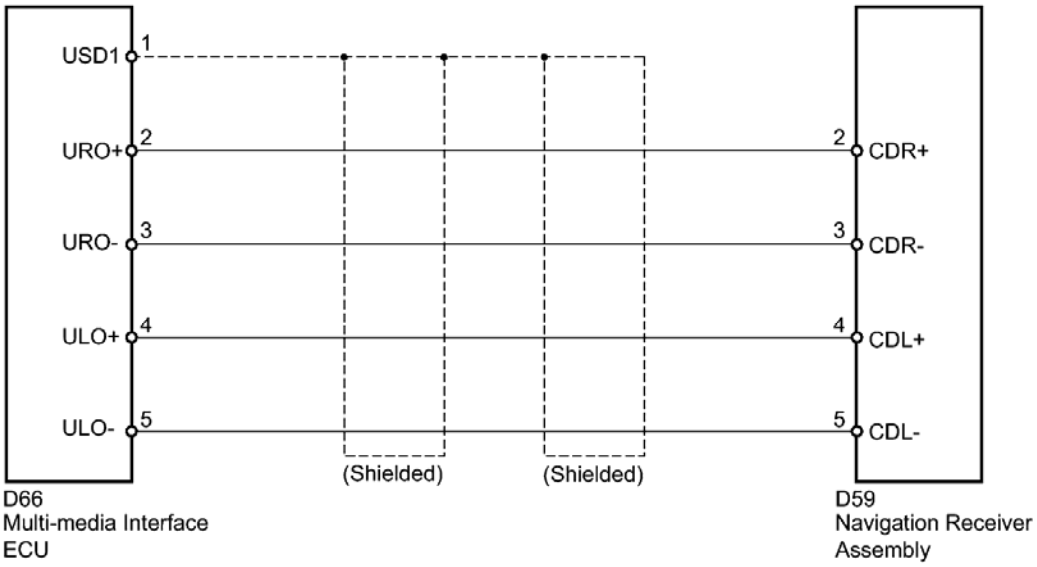


Fig. 118: Sound Signal Circuit Between Navigation Receiver Assembly And Multi-Media Interface ECU Wiring Diagram
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

PROCEDURE

1. **CHECK NAVIGATION RECEIVER ASSEMBLY**
    a. Using an oscilloscope, check the signal waveform between each terminal and the body ground according to the conditions, as shown in the chart below.

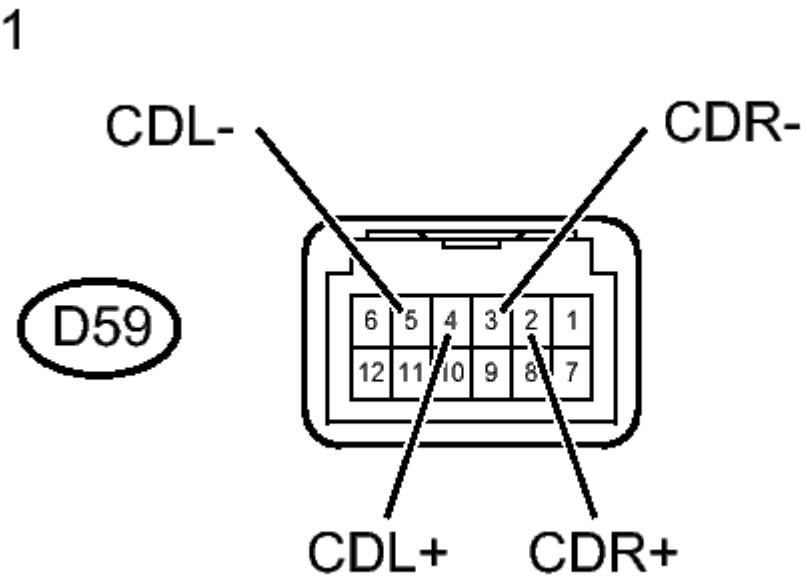


Fig. 119: Checking Navigation Receiver Assembly
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK

Tester Connection	Condition	Specified Condition
D59-2 (CDR+) - Body ground	Audio sound is being produced	A waveform synchronized with sound is output
D59-3 (CDR-) - Body ground		
D59-4 (CDL+) - Body ground		
D59-5 (CDL-) - Body ground		

TEXT IN ILLUSTRATION

	Component

*1	with harness connected (Navigation Receiver Assembly)

NG --> See step 2

OK --> See step 3

2. **CHECK HARNESS AND CONNECTOR (NAVIGATION RECEIVER - MULTI-MEDIA INTERFACE ECU)**
   a. Disconnect the D59 navigation receiver assembly connector.
   b. Disconnect the D66 multi-media interface ECU connector.
   c. Measure the resistance according to the value(s) in the table below.

   Standard Resistance

Tester Connection	Condition	Specified Condition
D66-2 (URO+) - D59-2 (CDR+)	Always	Below 1 ohms
D66-3 (URO-) - D59-3 (CDR-)	Always	Below 1 ohms
D66-4 (ULO+) - D59-4 (CDL+)	Always	Below 1 ohms
D66-5 (ULO-) - D59-5 (CDL-)	Always	Below 1 ohms
D66-1 (USD1) - Body ground	Always	10 kohms or higher
D66-2 (URO+) - Body ground	Always	10 kohms or higher

D66-3 (URO-) - Body ground	Always	10 kohms or higher
D66-4 (ULO+) - Body ground	Always	10 kohms or higher
D66-5 (ULO-) - Body ground	Always	10 kohms or higher

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK --> See step 4

3. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**
4. **REPLACE MULTI-MEDIA INTERFACE ECU. Refer to REMOVAL**

Sound Signal Circuit Between Stereo Component Tuner Assembly And Multi-Media Interface ECU

DESCRIPTION

The stereo component tuner assembly sends sound signals to the multi-media interface ECU through this circuit. If there is an open or short in the circuit, sound cannot be heard from the speakers even if there is no malfunction in the stereo component amplifier assembly, navigation receiver assembly or speakers.

WIRING DIAGRAM

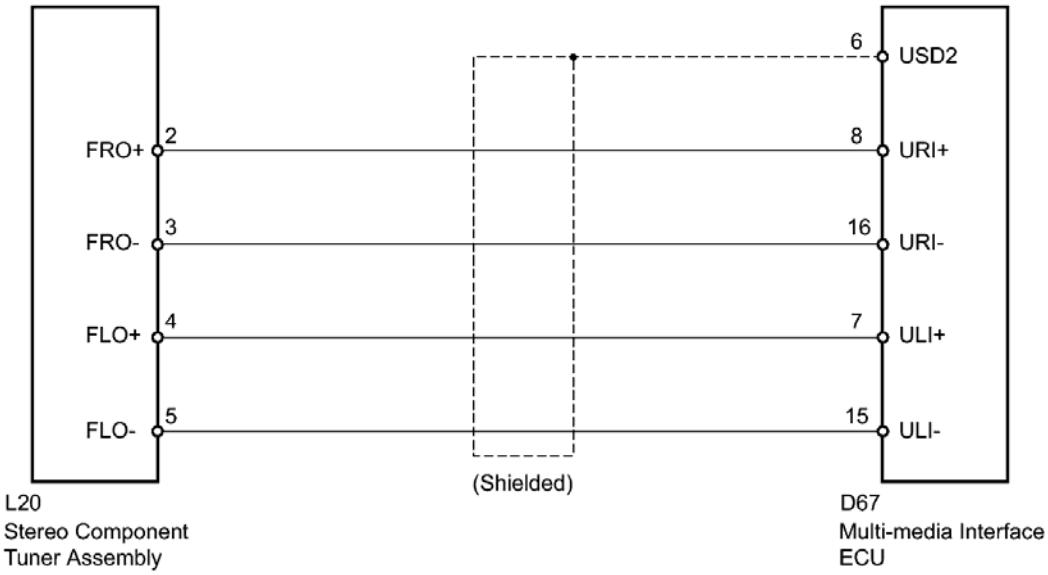


Fig. 120: Sound Signal Circuit Between Stereo Component Tuner Assembly And Multi-Media Interface ECU Wiring Diagram
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

PROCEDURE

1. **CHECK MULTI-MEDIA INTERFACE ECU**
    a. Disconnect the D67 multi-media interface ECU connector.

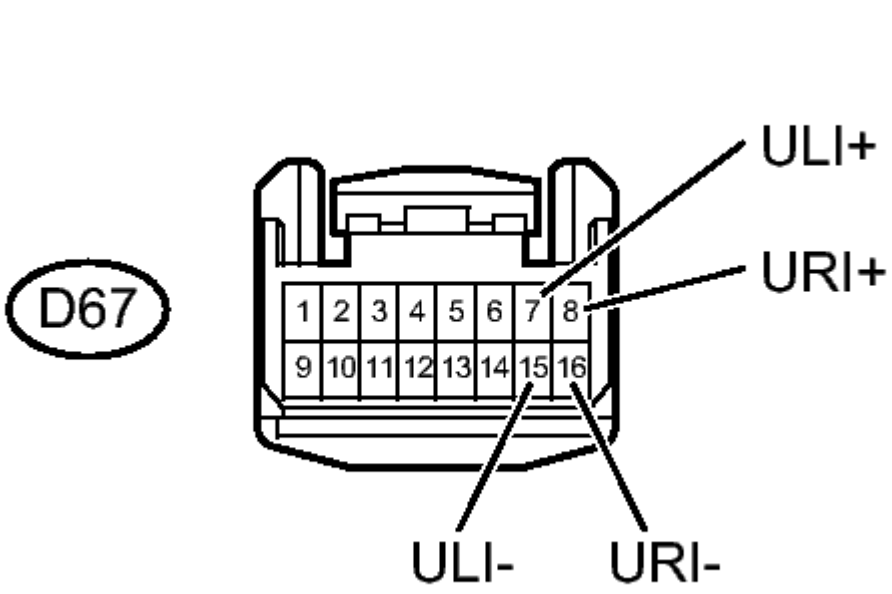


Fig. 121: Checking Multi-Media Interface ECU
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

b. Using an oscilloscope, check the signal waveform between each terminal and the body ground according to the conditions, as shown in the chart below.

OK

Tester Connection	Condition	Specified Condition
D67-7 (ULI+) - Body ground	Audio sound is being produced	A waveform synchronized with sound is output
D67-8 (URI+) - Body ground		
D67-15 (ULI-) - Body ground		
D67-16 (URI-) - Body ground		

TEXT IN ILLUSTRATION

*1	Front view of wire harness connector (to Multi-Media Interface ECU)

NG --> See step 2

OK --> See step 3

2. **CHECK HARNESS AND CONNECTOR (STEREO COMPONENT TUNER - MULTI-MEDIA INTERFACE ECU)**
   a. Disconnect the L20 stereo component tuner assembly connector.
   b. Disconnect the D67 multi-media interface ECU connector.
   c. Measure the resistance according to the value(s) in the table below.

   Standard Resistance

Tester Connection	Condition	Specified Condition
D67-7 (ULI+) - L20-4 (FLO+)	Always	Below 1 ohms
D67-8 (URI+) - L20-2 (FRO+)	Always	Below 1 ohms
D67-15 (ULI-) - L20-5 (FLO-)	Always	Below 1 ohms
D67-16 (URI-) - L20-3 (FRO-)	Always	Below 1 ohms
L67-6 (USD2) - Body ground	Always	10 kohms or higher

D67-7 (ULI+) - Body ground	Always	10 kohms or higher
D67-8 (URI+) - Body ground	Always	10 kohms or higher
D67-15 (ULI-) - Body ground	Always	10 kohms or higher
D67-16 (URI-) - Body ground	Always	10 kohms or higher

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK --> See step 4

3. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**
4. **REPLACE STEREO COMPONENT AMPLIFIER ASSEMBLY. Refer to REMOVAL**

Sound Signal Circuit Between Navigation Receiver Assembly And Stereo Component Amplifier

DESCRIPTION

The navigation receiver assembly sends sound signals to the stereo component amplifier assembly through this circuit. If there is an open or short in the circuit, sound cannot be heard from the speakers even if there is no malfunction in the stereo component amplifier assembly, navigation receiver assembly or speakers.

WIRING DIAGRAM

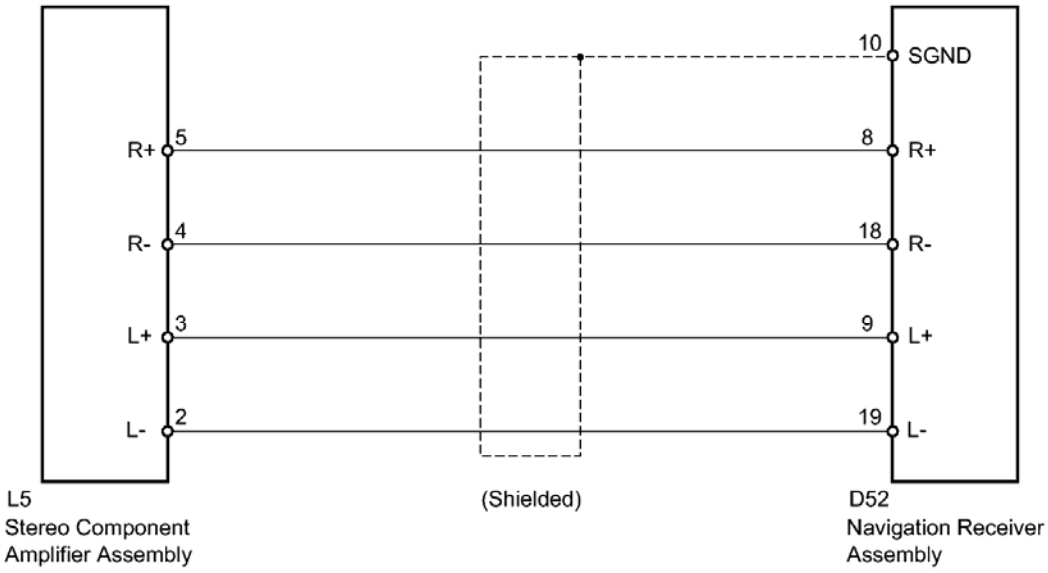


Fig. 122: Sound Signal Circuit Between Navigation Receiver Assembly And Stereo Component Amplifier Wiring Diagram
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

PROCEDURE

1. **CHECK STEREO COMPONENT AMPLIFIER ASSEMBLY**
    a. Disconnect the L5 stereo component amplifier assembly connector.

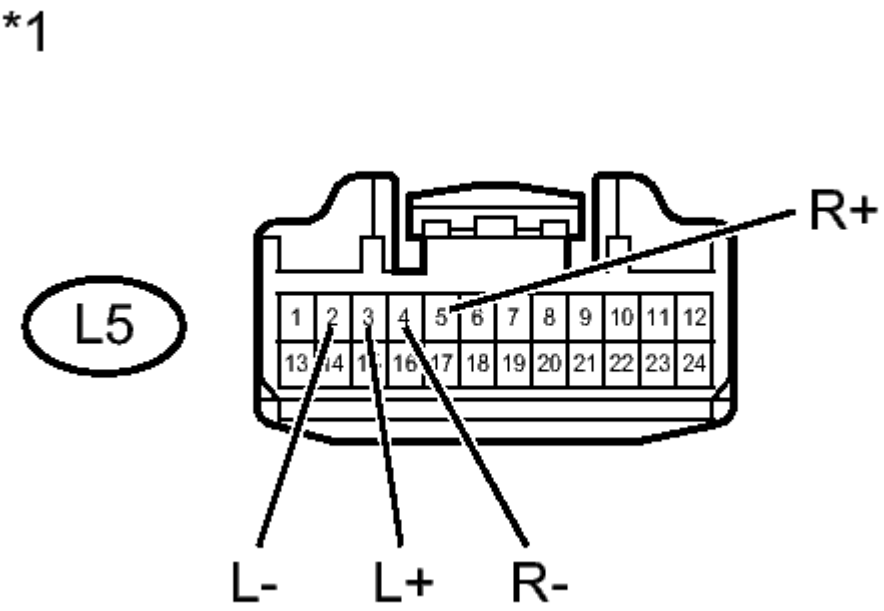


Fig. 123: Checking Stereo Component Amplifier Assembly
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

b. Using an oscilloscope, check the signal waveform between each terminal and the body ground according to the conditions, as shown in the chart below.

OK

Tester Connection	Condition	Specified Condition
L5-5 (R+) - Body ground	Audio sound is being produced	A waveform synchronized with sound is output
L5-4 (R-) - Body ground		
L5-3 (L+) - Body ground		
L5-2 (L-) - Body ground		

TEXT IN ILLUSTRATION

	Front view of wire

*1	harness connector (to Stereo Component Amplifier Assembly)

NG --> See step 2

OK --> See step 3

2. **CHECK HARNESS AND CONNECTOR (NAVIGATION RECEIVER - STEREO COMPONENT AMPLIFIER)**
   a. Disconnect the D52 navigation receiver assembly connector.
   b. Disconnect the L5 stereo component amplifier assembly connector.
   c. Measure the resistance according to the value(s) in the table below.

   Standard Resistance

Tester Connection	Condition	Specified Condition
D52-8 (R+) - L5-5 (R+)	Always	Below 1 ohms
D52-18 (R-) - L5-4 (R-)	Always	Below 1 ohms
D52-9 (L+) - L5-3 (L+)	Always	Below 1 ohms
D52-19 (L-) - L5-2 (L-)	Always	Below 1 ohms
D52-10 (SGND) - Body ground	Always	10 kohms or higher
D52-8 (R+) - Body ground	Always	10 kohms or higher
D52-18 (R-) - Body ground	Always	10 kohms or higher
D52-9 (L+) - Body ground	Always	10 kohms or higher
D52-19 (L-		

) - Body ground	Always	10 kohms or higher

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK --> See step 4

3. **REPLACE STEREO COMPONENT AMPLIFIER ASSEMBLY. Refer to REMOVAL**
4. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**

Sound Signal Circuit Between Navigation Receiver Assembly And Stereo Jack Adapter

DESCRIPTION

The No. 1 stereo jack adapter assembly sends an external device sound signal to the navigation receiver assembly through this circuit.

The sound signal that has been sent is amplified by the navigation receiver assembly and then is sent to the speakers.

If there is an open or short in the circuit, sound cannot be heard from the speakers even if there is no malfunction in the navigation receiver assembly or speakers.

WIRING DIAGRAM

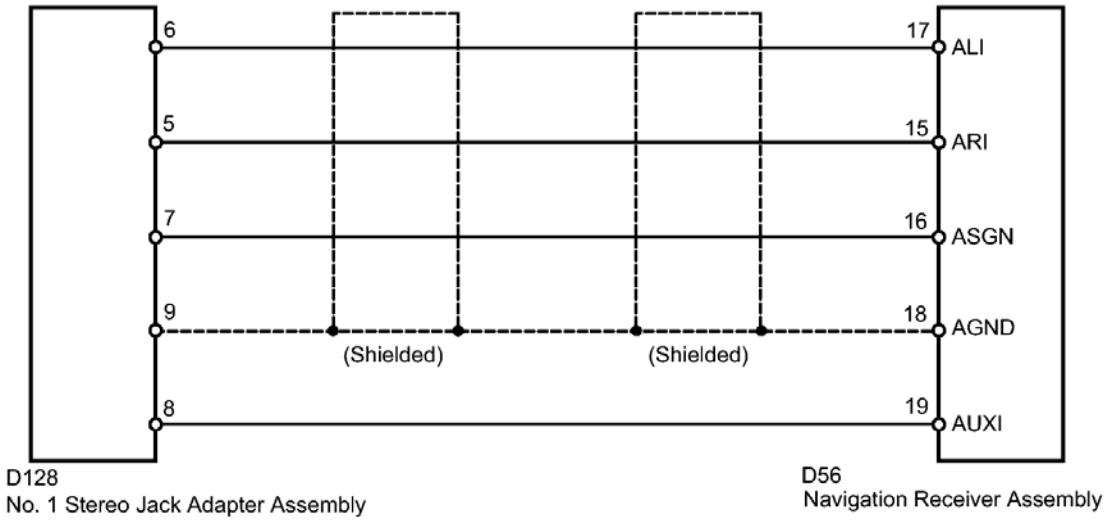


Fig. 124: Sound Signal Circuit Between Navigation Receiver Assembly And Stereo Jack Adapter Wiring Diagram
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

PROCEDURE

1. **CHECK NAVIGATION RECEIVER ASSEMBLY**
   a. Disconnect the D56 navigation receiver assembly connector.

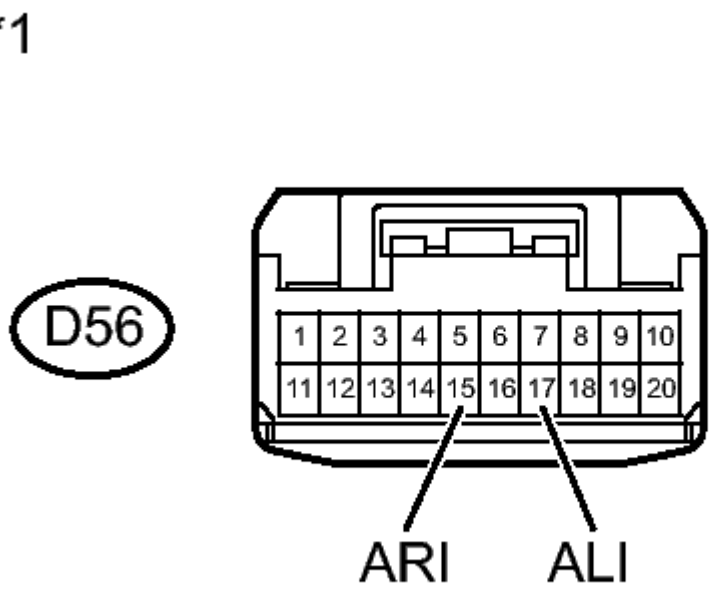


Fig. 125: Checking Navigation Receiver Assembly
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

   b. Using an oscilloscope, check the signal waveform between each terminal and the body ground according to the conditions, as shown in the chart below.

   OK

Tester Connection	Condition	Specified Condition
D56-15 (ARI) - Body ground	Audio sound is being produced	A waveform synchronized with sound is output
D56-17 (ALI) - Body ground		

TEXT IN ILLUSTRATION

	Front view

*1	of wire harness connector (to Navigation Receiver Assembly)

NG --> See step 2

OK --> See step 3

2. **CHECK HARNESS AND CONNECTOR (NAVIGATION RECEIVER - STEREO JACK ADAPTER)**
   a. Disconnect the D56 navigation receiver assembly connector.
   b. Disconnect the D128 No. 1 stereo jack adapter assembly connector.
   c. Measure the resistance according to the value(s) in the table below.

   Standard Resistance

Tester Connection	Condition	Specified Condition
D56-15 (ARI) - D128-5	Always	Below 1 ohms
D56-16 (ASGN) - D128-7	Always	Below 1 ohms
D56-17 (ALI) - D128-6	Always	Below 1 ohms
D56-18 (AGND) - D128-9	Always	Below 1 ohms
D56-19 (AUXI) - D128-8	Always	Below 1 ohms
D56-15 (ARI) - Body ground	Always	10 kohms or higher
D56-16 (ASGN) - Body ground	Always	10 kohms or higher

D56-17 (ALI) - Body ground	Always	10 kohms or higher
D56-18 (AGND) - Body ground	Always	10 kohms or higher
D56-19 (AUXI) - Body ground	Always	10 kohms or higher

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK --> See step 4

3. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**
4. **REPLACE NO. 1 STEREO JACK ADAPTER ASSEMBLY. Refer to REMOVAL**

Sound Signal Circuit Between Multi-Media Interface ECU And Stereo Jack Adapter

DESCRIPTION

The No. 1 stereo jack adapter assembly sends the sound data signal of an external device to the multi-media interface ECU through this circuit.

WIRING DIAGRAM

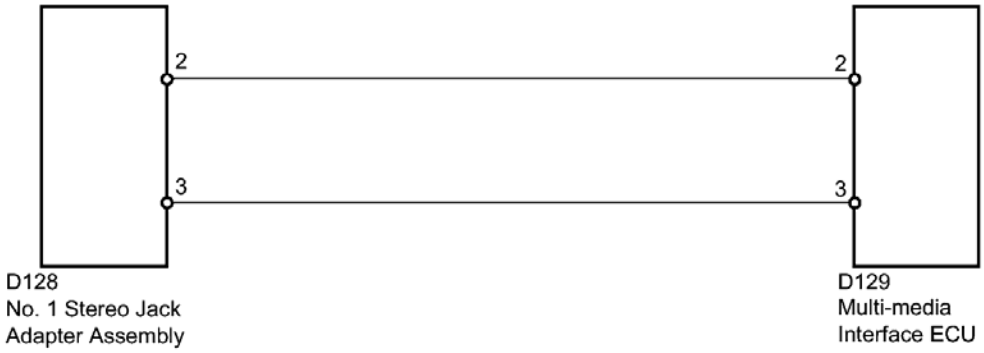


Fig. 126: Sound Signal Circuit Between Multi-Media Interface ECU And Stereo Jack Adapter Wiring Diagram
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

PROCEDURE

1. **CHECK HARNESS AND CONNECTOR (MULTI-MEDIA INTERFACE ECU - STEREO JACK ADAPTER)**
   a. Disconnect the D129 multi-media interface ECU connector.
   b. Disconnect the D128 No. 1 stereo jack adapter assembly connector.
   c. Measure the resistance according to the value(s) in the table below.

   Standard Resistance

Tester Connection	Condition	Specified Condition
D129-2 - D128-2	Always	Below 1 ohms
D129-3 - D128-3	Always	Below 1 ohms
D129-2 - Body ground	Always	10 kohms or higher
D129-3 - Body ground	Always	10 kohms or higher

   NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

   OK --> See step 2

2. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**

Mute Signal Circuit Between Navigation Receiver Assembly And Stereo Component Amplifier

DESCRIPTION

This circuit sends a signal to the stereo component amplifier assembly to mute noise. Because of that, the noise produced by changing the sound source is muted.

If there is an open in the circuit, noise can be heard from the speakers when changing the sound source.

If there is a short in the circuit, even though the stereo component amplifier assembly is functioning normally, no sound or only an extremely small sound can be heard.

WIRING DIAGRAM



Fig. 127: Mute Signal Circuit Between Navigation Receiver Assembly And Stereo Component Amplifier Wiring Diagram
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

PROCEDURE

1. **CHECK STEREO COMPONENT AMPLIFIER ASSEMBLY**
    a. Measure the voltage according to the value(s) in the table below.

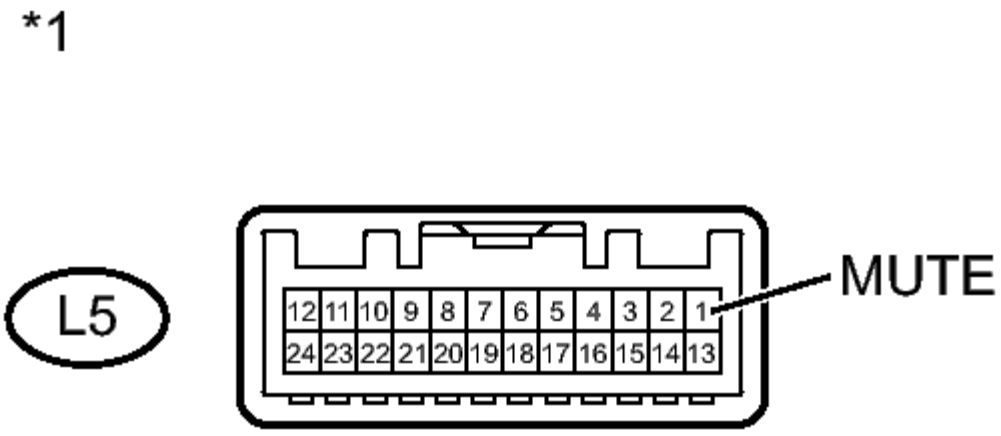


Fig. 128: Checking Stereo Component Amplifier Assembly
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

Standard Voltage

Tester Connection	Switch Condition	Specified Condition
L5-1 (MUTE) - Body ground	Ignition switch ACC, Audio system playing --> Changing source	Above 3.5 V --> Below 1 V

TEXT IN ILLUSTRATION

*1	Component with harness connected (Stereo Component Amplifier Assembly)

NG --> See step 2

OK --> See step 4

2. **CHECK HARNESS AND CONNECTOR (NAVIGATION RECEIVER - STEREO COMPONENT AMPLIFIER)**
   a. Disconnect the D52 navigation receiver assembly connector.
   b. Disconnect the L5 stereo component amplifier assembly connector.
   c. Measure the resistance according to the value(s) in the table below.

   Standard Resistance

Tester Connection	Condition	Specified Condition
D52-7 (MUTE) - L5-1 (MUTE)	Always	Below 1 ohms
D52-7 (MUTE) - Body ground	Always	10 kohms or higher

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK --> See step 3

3. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**
4. **REPLACE STEREO COMPONENT AMPLIFIER ASSEMBLY. Refer to REMOVAL**

Mute Signal Circuit Between Stereo Component Amplifier And Telematics Transceiver

DESCRIPTION

The telematics transceiver sends a mute signal to the stereo component amplifier assembly.

The stereo component amplifier assembly controls the volume according to the mute signal from the telematics transceiver.

WIRING DIAGRAM

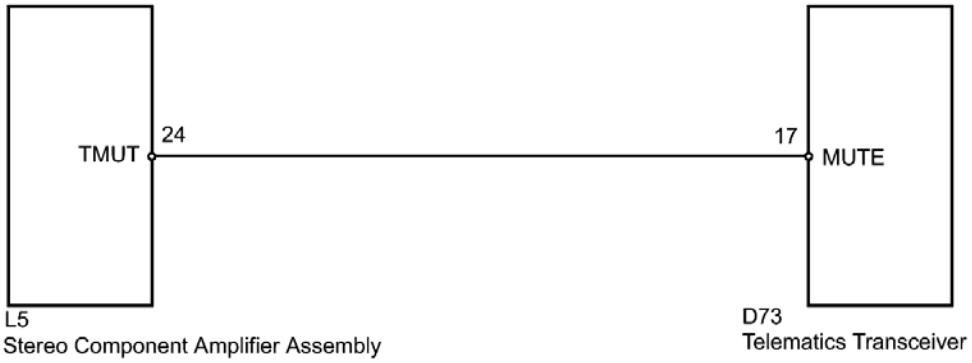


Fig. 129: Mute Signal Circuit Between Stereo Component Amplifier And Telematics Transceiver Wiring Diagram
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

NOTE: If the telematics transceiver has been replaced, perform the Activate DCM procedure using the Techstream. Refer to DCM ACTIVATION .

PROCEDURE

1. **INSPECT TELEMATICS TRANSCEIVER**
   a. Measure the voltage according to the value(s) in the table below.

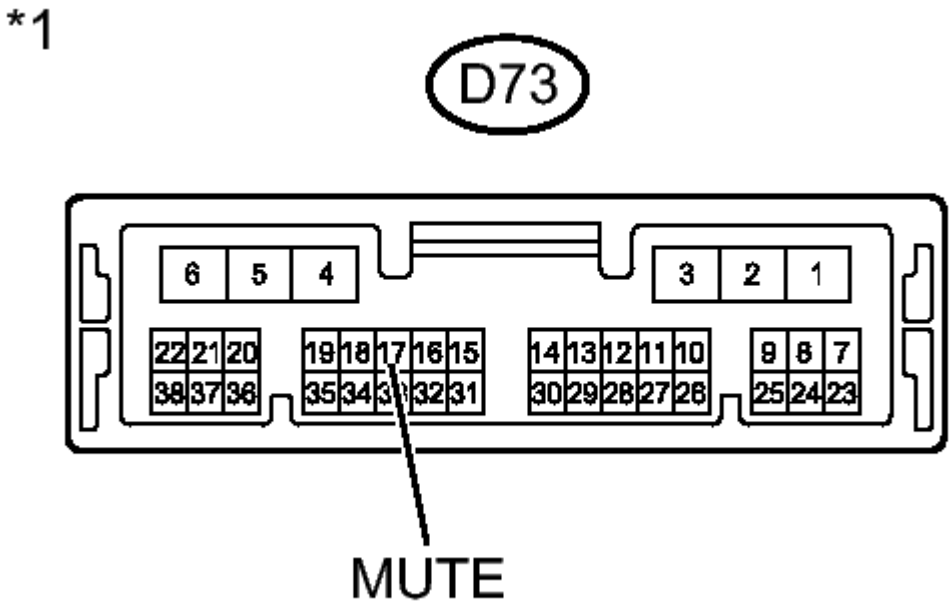


Fig. 130: Checking Telematics Transceiver
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

Standard Voltage

Tester Connection	Switch Condition	Specified Condition
D73-17 (MUTE) - Body ground	Ignition switch ACC, audio system is playing --> Emergency call mode	Above 3.5 V --> Below 1 V

TEXT IN ILLUSTRATION

*1	Component with harness connected (Telematics Transceiver)

NG --> See step 2

OK --> See step 4

2. **CHECK HARNESS AND CONNECTOR (STEREO COMPONENT AMPLIFIER - TELEMATICS TRANSCEIVER)**
   a. Disconnect the L5 stereo component amplifier assembly connector.
   b. Disconnect the D73 telematics transceiver connector.
   c. Measure the resistance according to the value(s) in the table below.

   Standard Resistance

Tester Connection	Condition	Specified Condition
L5-24 (TMUT) - D73-17 (MUTE)	Always	Below 1 ohms
L5-24 (TMUT) - Body ground	Always	10 kohms or higher

   NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

   OK: Go to next step

3. **INSPECT STEREO COMPONENT AMPLIFIER ASSEMBLY**
   a. Reconnect the L5 stereo component amplifier assembly connector.
   b. Measure the voltage according to the value(s) in the table below.

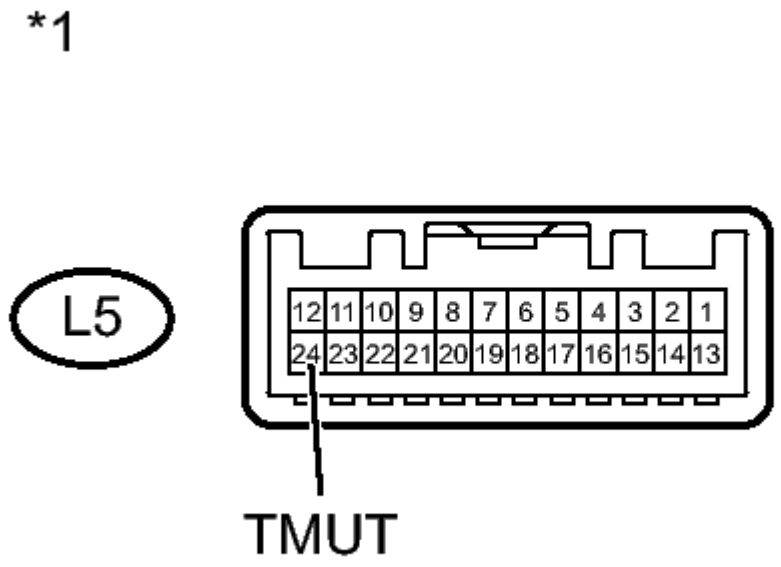


Fig. 131: Checking Stereo Component Amplifier Assembly
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

Standard Voltage

Tester Connection	Switch Condition	Specified Condition
L5-24 (TMUT) - Body ground	Ignition switch ACC	3.5 V or higher

TEXT IN ILLUSTRATION

*1	Component without harness connected (Stereo Component Amplifier Assembly)

NG --> See step 6

OK --> See step 5

4. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer**

to PROBLEM SYMPTOMS TABLE

5. **REPLACE TELEMATICS TRANSCEIVER. Refer to REMOVAL**
6. **REPLACE STEREO COMPONENT AMPLIFIER ASSEMBLY. Refer to REMOVAL**

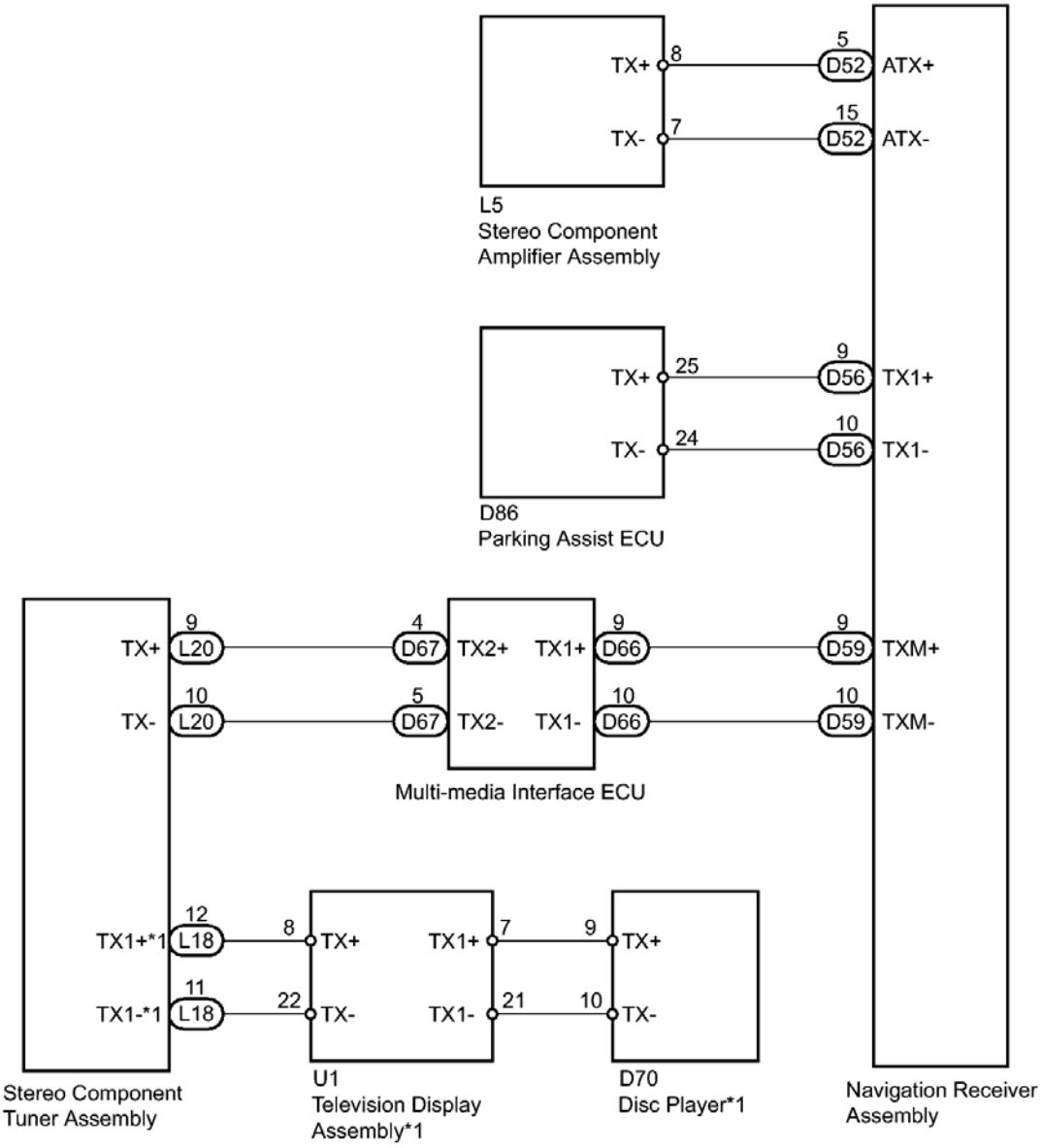
AVC-LAN Circuit

DESCRIPTION

Each unit of the navigation system connected to the AVC-LAN (communication bus) transfers switch signals by the audio visual communication local area network.

If a short to +B or short to ground occurs in this AVC-LAN, the navigation system will not function normally as communication is stopped.

WIRING DIAGRAM



*1: w/ Rear Seat Entertainment System

Fig. 132: AVC-LAN Circuit - Wiring Diagram
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

NOTE:

- **The navigation receiver assembly is the master unit.**
- **After replacing the stereo component tuner assembly of vehicles subscribed to pay-type satellite radio broadcasts, registration of the XM**

radio ID is necessary.

PROCEDURE

1. **INSPECT NAVIGATION RECEIVER ASSEMBLY**
    a. Disconnect the D52, D56 and D59 navigation receiver assembly connectors.

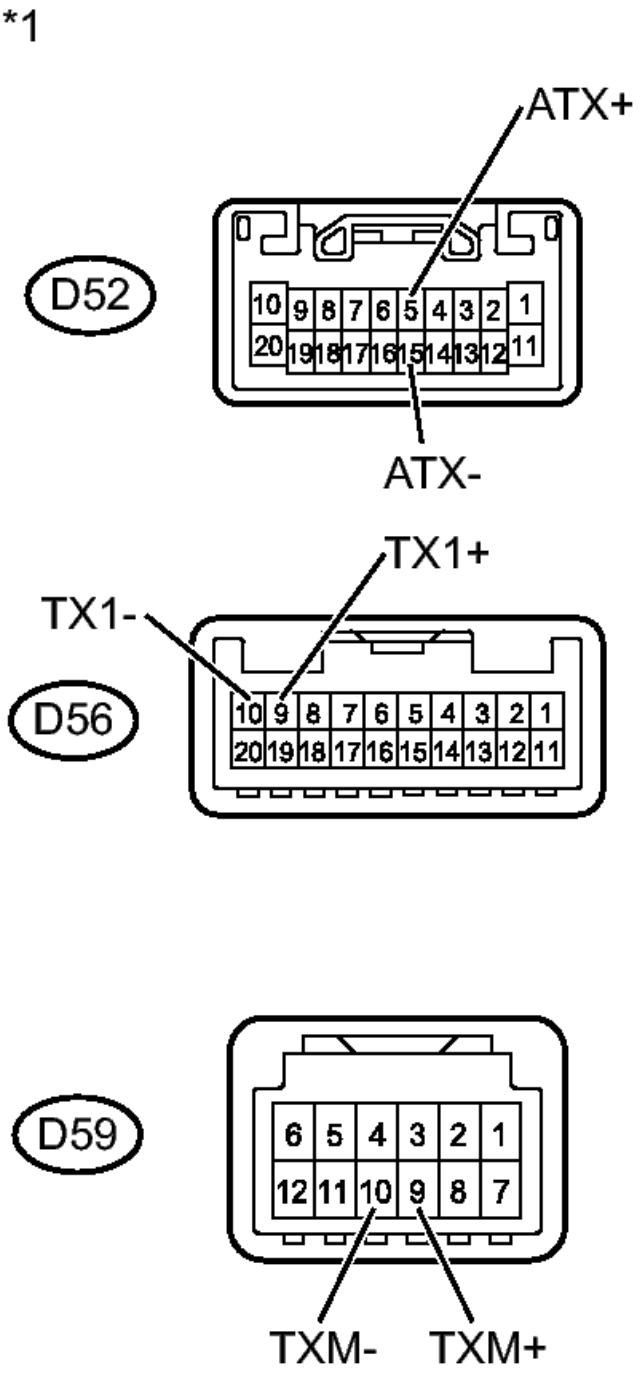


Fig. 133: Checking Navigation Receiver Assembly
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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

Standard Resistance

Tester Connection	Condition	Specified Condition
D52-5 (ATX+) - D52-15 (ATX-)	Always	60 to 80 ohms
D56-9 (TX1+) - D56-10 (TX1-)	Always	60 to 80 ohms
D59-9 (TXM+) - D59-10 (TXM-)	Always	60 to 80 ohms

TEXT IN ILLUSTRATION

*1	Component without harness connected (Navigation Receiver Assembly)

NG --> See step 4

OK: Go to next step

2. **CHECK HARNESS AND CONNECTOR (NAVIGATION RECEIVER - COMPONENT WHICH HAS STEREO THIS CODE)**

HINT:

For details of the connectors, refer to Terminals of ECU. Refer to **TERMINALS OF ECU** .

a. Referring to the AVC-LAN wiring diagram below, check all AVC-LAN circuits.
   1. Disconnect all connectors in all AVC-LAN circuits.
   2. Check for an open or short in all AVC-LAN circuits.

      OK

      There is no open or short circuit.

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK: Go to next step

3. **REPLACE NAVIGATION RECEIVER ASSEMBLY. Refer to REMOVAL**
4. **REPLACE NAVIGATION RECEIVER ASSEMBLY. Refer to REMOVAL**
5. **INSPECT MALFUNCTIONING PARTS**
    a. Disconnect and reconnect each slave unit one by one until the master unit returns to normal operation.

    HINT:

    - Check all slave units.
    - If disconnecting a slave unit causes the master unit to return to normal operation, the slave unit is defective and should be replaced.

    OK

    Master unit returns to normal operation.

NG --> See step 3

OK --> REPLACE MALFUNCTIONING PARTS

Reverse Signal Circuit

DESCRIPTION

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

WIRING DIAGRAM

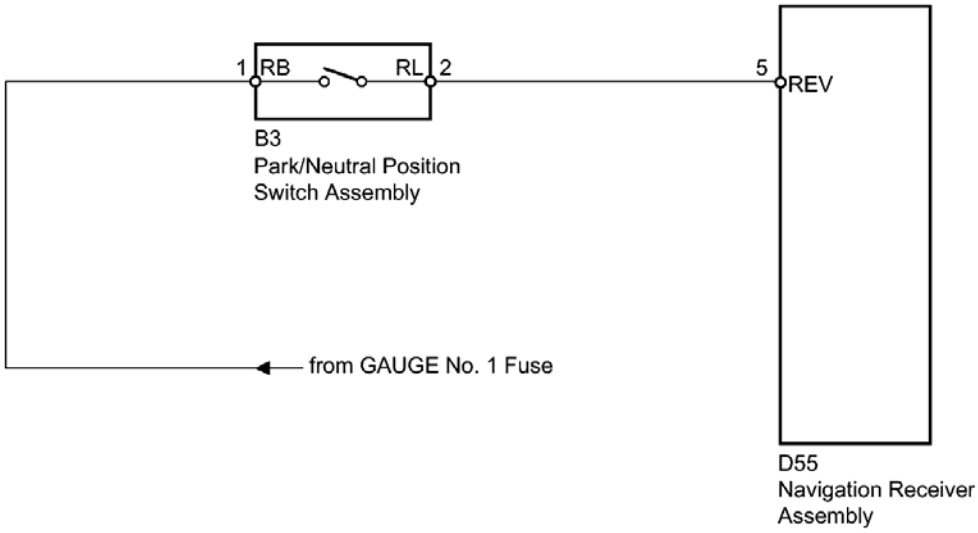


Fig. 134: Reverse Signal Circuit - Wiring Diagram
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

NOTE: Inspect the fuses for circuits related to this system before performing the following inspection procedure.

PROCEDURE

1. **CHECK NAVIGATION RECEIVER ASSEMBLY (DISPLAY CHECK MODE)**
   a. Enter the "Display Check" mode and select "Vehicle Signal Check". Refer to **OPERATION CHECK** .

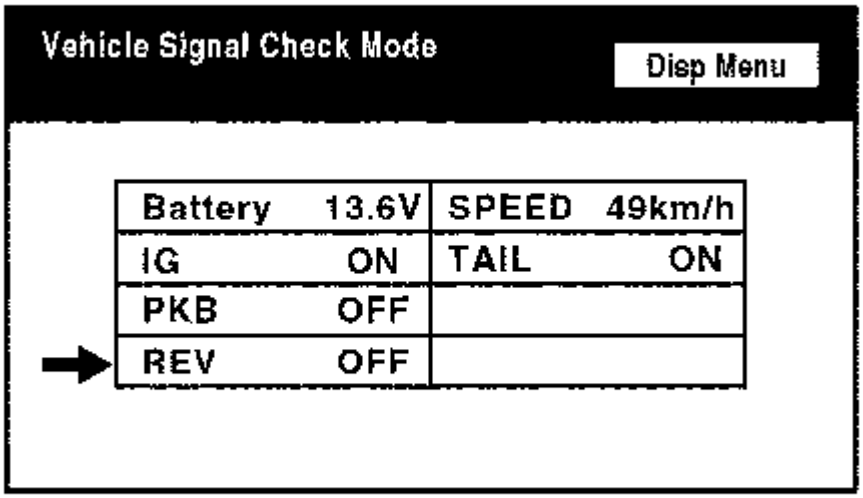


Fig. 135: Display - Vehicle Signal Check Mode
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

b. Check that the display changes between ON and OFF according to the shift lever operation.

OK

Shift Lever Position	Display
R	ON
Except R	OFF

HINT:

This display is updated once per second. As a result, it is normal for the display to lag behind the actual shift lever operation.

NG --> See step 2

OK --> See step 5

2. **CHECK NAVIGATION RECEIVER ASSEMBLY**
   a. Measure the voltage according to the value(s) in the table below.

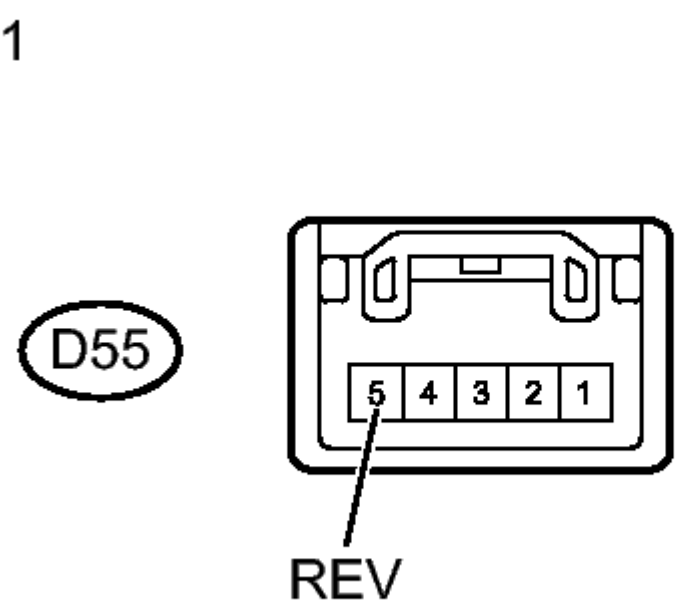


Fig. 136: Checking Navigation Receiver Assembly
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

Standard Voltage

Tester Connection	Switch Condition	Specified Condition
D55-5 (REV) - Body ground	Ignition switch ON Shift lever in R	11 to 14 V
D55-5 (REV) - Body ground	Ignition switch ON Shift lever in any position except R	Below 1 V

TEXT IN ILLUSTRATION

*1	Component with harness connected (Navigation Receiver

Assembly)

NG --> See step 3

OK --> See step 6

3. **CHECK HARNESS AND CONNECTOR (NAVIGATION RECEIVER - PARK/NEUTRAL POSITION SWITCH)**
   a. Disconnect the D55 navigation receiver assembly connector.
   b. Disconnect the B3 park/neutral position switch assembly connector.
   c. Measure the resistance according to the value(s) in the table below.

   Standard Resistance

Tester Connection	Condition	Specified Condition
D55-5 (REV) - B3-2 (RL)	Always	Below 1 ohms
D55-5 (REV) - Body ground	Always	10 kohms or higher

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK: Go to next step

4. **INSPECT PARK/NEUTRAL POSITION SWITCH ASSEMBLY**
   a. Disconnect the B3 park/neutral position switch assembly.

*1

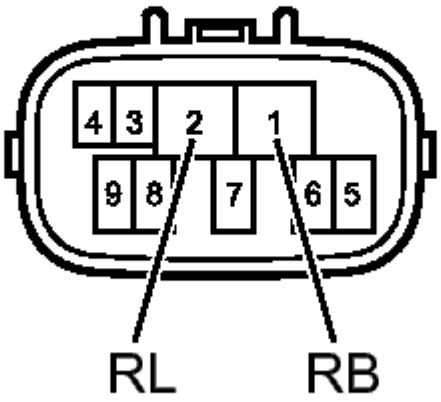


Fig. 137: Checking Park/Neutral Position Switch Assembly
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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

Standard Resistance

Tester Connection	Condition	Specified Condition
2 (RL) - 1 (RB)	Shift lever in R	Below 1 ohms
	Shift lever in P	10 kohms or higher

TEXT IN ILLUSTRATION

*1	Component without harness connected (Park/Neutral Position Switch Assembly)

NG --> See step 7

OK --> REPAIR OR REPLACE HARNESS OR CONNECTOR

5. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**
6. **REPLACE NAVIGATION RECEIVER ASSEMBLY. Refer to REMOVAL**
7. **REPLACE PARK/NEUTRAL POSITION SWITCH ASSEMBLY. Refer to REMOVAL**

Navigation Voice Circuit

DESCRIPTION

This circuit is used when the voice guidance in the navigation system is on.

WIRING DIAGRAM

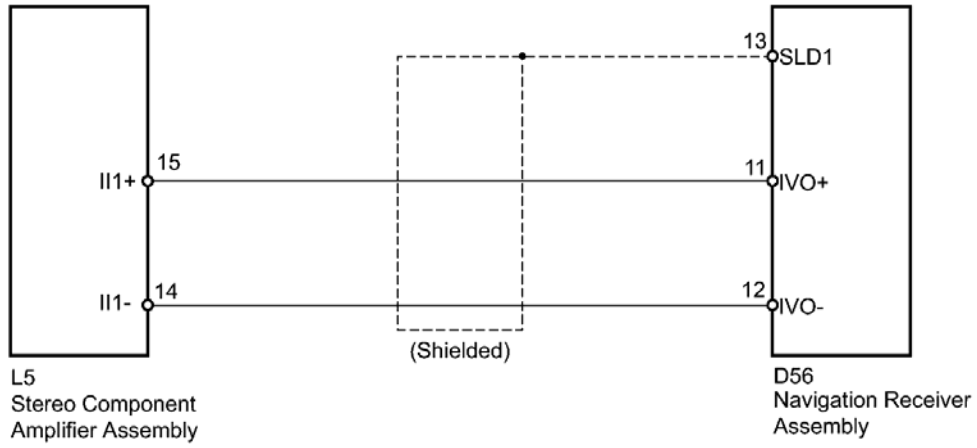


Fig. 138: Navigation Voice Circuit - Wiring Diagram
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

PROCEDURE

1. **CHECK HARNESS AND CONNECTOR (NAVIGATION RECEIVER - STEREO COMPONENT AMPLIFIER)**
   a. Disconnect the D56 navigation receiver assembly connector.
   b. Disconnect the L5 stereo component amplifier assembly connector.
   c. Measure the resistance according to the value(s) in the table below.

   Standard Resistance

Tester	Condition	Specified

connection		condition
D56-11 (IVO+) - L5-15 (II1+)	Always	Below 1 ohms
D56-12 (IVO-) - L5-14 (II1-)	Always	Below 1 ohms
D56-11 (IVO+) - Body ground	Always	10 kohms or higher
D56-12 (IVO-) - Body ground	Always	10 kohms or higher
D56-13 (SLD1) - Body ground	Always	10 kohms or higher

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK --> See step 2

2. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**

Mute Signal Circuit Between Stereo Component Tuner Assembly And Multi-Media Interface ECU

DESCRIPTION

The navigation receiver assembly controls the volume according to the MUTE signal from the stereo component tuner assembly.

The MUTE signal is sent to reduce noise and popping sounds generated when switching the mode etc. If there is an open in the circuit, noise can be heard from the speakers when changing the sound source. If there is a short in the circuit, even though the navigation receiver assembly is functioning normally, no sound or only an extremely faint sound can be heard.

WIRING DIAGRAM



Fig. 139: Mute Signal Circuit Between Stereo Component Tuner Assembly And Multi-Media Interface ECU Wiring Diagram
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

PROCEDURE

1. **CHECK STEREO COMPONENT TUNER ASSEMBLY**
   a. Measure the voltage according to the value(s) in the table below.

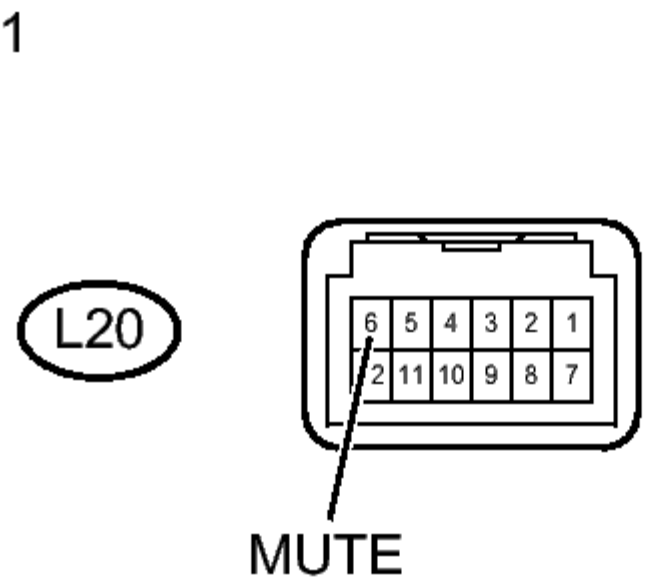


Fig. 140: Checking Stereo Component Tuner Assembly
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

Standard Voltage

Tester Connection	Switch Condition	Specified Condition
L20-6 (MUTE) - Body ground	Ignition switch ACC, Satellite radio playing --> Changing source	Above 3.5 V --> Below 1 V

TEXT IN ILLUSTRATION

*1	Component with harness connected (Stereo Component Tuner Assembly)

NG --> See step 3

OK: Go to next step

2. **CHECK HARNESS AND CONNECTOR (STEREO COMPONENT TUNER - MULTI-MEDIA INTERFACE ECU)**
   a. Disconnect the L20 stereo component tuner assembly connector.
   b. Disconnect the D67 multi-media interface ECU connector.
   c. Measure the resistance according to the value(s) in the table below.

   Standard Resistance

Tester Connection	Condition	Specified Condition
L20-6 (MUTE) - D67-14 (MUT2)	Always	Below 1 ohms
L20-6 (MUTE) - Body ground	Always	10 kohms or higher

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK --> See step 4

3. **REPLACE STEREO COMPONENT TUNER ASSEMBLY. Refer to REMOVAL**
4. **REPLACE MULTI-MEDIA INTERFACE ECU. Refer to REMOVAL**

Mute Signal Circuit Between Navigation Receiver Assembly And Multi-Media Interface ECU

DESCRIPTION

The navigation receiver assembly controls the volume according to the MUTE signal from the stereo component tuner assembly.

The MUTE signal is sent to reduce noise and popping sounds generated when switching the mode etc. If there is an open in the circuit, noise can be heard from the speakers when changing the sound source. If there is a short in the circuit, even though the navigation receiver assembly is functioning normally, no sound or only an extremely faint sound can be heard.

WIRING DIAGRAM



Fig. 141: Mute Signal Circuit Between Navigation Receiver Assembly And Multi-Media Interface ECU Wiring Diagram
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

PROCEDURE

1. **CHECK NAVIGATION RECEIVER ASSEMBLY**
   a. Measure the voltage according to the value(s) in the table below.

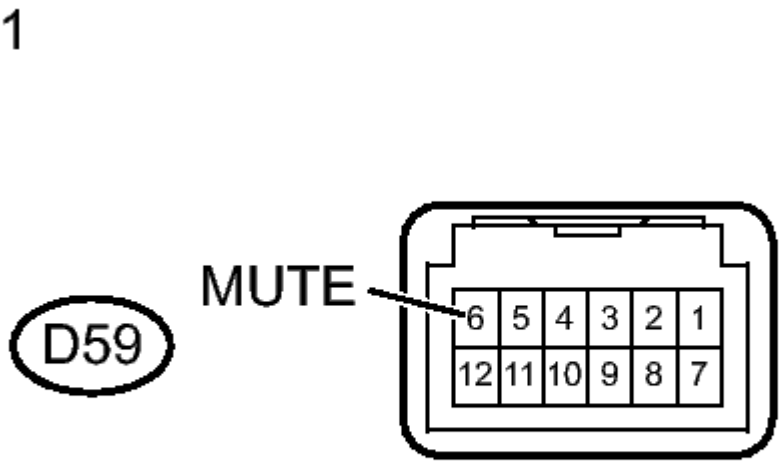


Fig. 142: Checking Navigation Receiver Assembly
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

Standard Voltage

Tester Connection	Switch Condition	Specified Condition
D59-6 (MUTE) - Body ground	Ignition switch ACC, Satellite radio playing --> Changing source	Above 3.5 V --> Below 1 V

TEXT IN ILLUSTRATION

*1	Component with harness connected (Navigation Receiver Assembly)

NG --> See step 2

OK --> See step 3

2. **CHECK HARNESS AND CONNECTOR (NAVIGATION RECEIVER - MULTI-MEDIA INTERFACE ECU)**
   a. Disconnect the D59 navigation receiver assembly connector.
   b. Disconnect the D66 multi-media interface ECU connector.
   c. Measure the resistance according to the value(s) in the table below.

   Standard Resistance

Tester Connection	Condition	Specified Condition
D59-6 (MUTE) - D66-6 (MUT1)	Always	Below 1 ohms
D59-6 (MUTE) - Body ground	Always	10 kohms or higher

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK --> See step 4

3. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**
4. **REPLACE MULTI-MEDIA INTERFACE ECU. Refer to REMOVAL**

Microphone Circuit between Microphone and Navigation Receiver Assembly

DESCRIPTION

- Using this circuit, the navigation receiver assembly sends power to the roof console box assembly (telephone microphone assembly), and the roof console box assembly sends microphone signals to the navigation receiver assembly (w/o Manual (SOS) Switch).
- Using this circuit, the telematics transceiver sends power to the roof console box assembly (telephone microphone assembly), and the roof console box assembly (telephone microphone assembly) sends microphone signals to the navigation receiver assembly via the telematics transceiver. The navigation receiver assembly and roof console box assembly (telephone microphone assembly) are connected to each other using the microphone connection detection signal lines (w/ Manual (SOS) Switch).

WIRING DIAGRAM

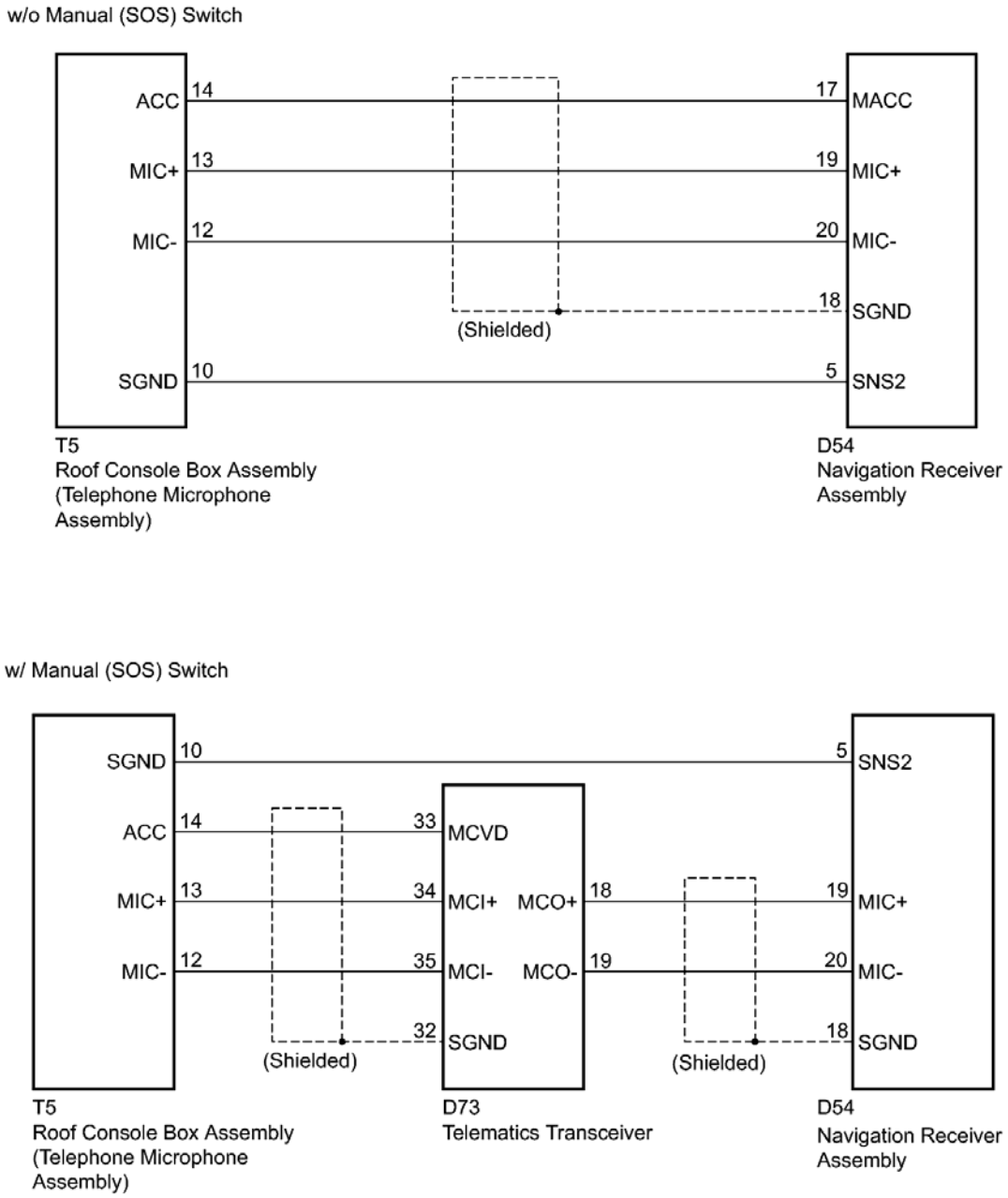


Fig. 143: Microphone Circuit (Microphone And Navigation Receiver Assembly) - Wiring Diagram
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

NOTE: **If the telematics transceiver has been replaced, perform the Activate DCM procedure using the Techstream. Refer to DCM ACTIVATION .**

PROCEDURE

1. **CONFIRM MODEL**
   a. Choose the model to be inspected.

RESULT

Model	Proceed to
w/o Manual (SOS) Switch	A
w/ Manual (SOS) Switch	B

B --> See step 4

A: Go to next step

2. **INSPECT NAVIGATION RECEIVER ASSEMBLY**
   a. Measure the voltage according to the value(s) in the table below.

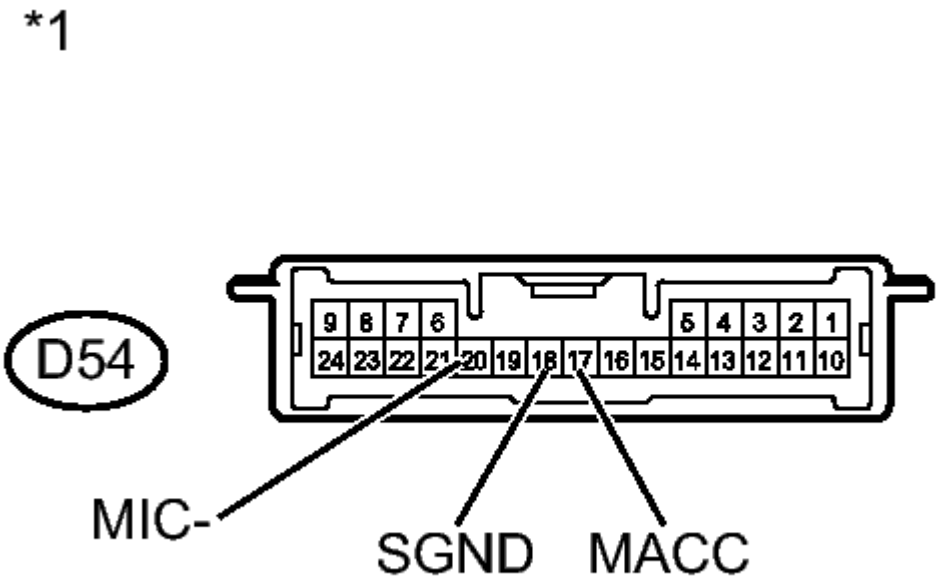


Fig. 144: Checking Navigation Receiver Assembly
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

Standard Voltage

Tester Connection	Switch Condition	Specified Condition
D54-17 (MACC) - Body ground	Ignition switch ACC	5 V

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

Standard Resistance

Tester Connection	Condition	Specified Condition
D54-18 (SGND) - Body ground	Always	Below 1 ohms
D54-20 (MIC-) - Body ground	Always	Below 1 ohms

TEXT IN ILLUSTRATION

*1	Component with harness connected (Navigation Receiver Assembly)

NG --> See step 11

OK: Go to next step

3. **CHECK HARNESS AND CONNECTOR (NAVIGATION RECEIVER - ROOF CONSOLE BOX)**
   a. Disconnect the D54 navigation receiver assembly connector.
   b. Disconnect the T5 roof console box assembly connector.
   c. Measure the resistance according to the value(s) in the table below.

Standard Resistance

Tester	Condition	Specified

Connection		Condition
D54-5 (SNS2) - T5-10 (SGND)	Always	Below 1 ohms
D54-17 (MACC) - T5-14 (ACC)	Always	Below 1 ohms
D54-19 (MIC+) - T5-13 (MIC+)	Always	Below 1 ohms
D54-20 (MIC-) - T5-12 (MIC-)	Always	Below 1 ohms
D54-5 (SNS2) - Body ground	Always	10 kohms or higher
D54-17 (MACC) - Body ground	Always	10 kohms or higher
D54-19 (MIC+) - Body ground	Always	10 kohms or higher
D54-20 (MIC-) - Body ground	Always	10 kohms or higher
D54-18 (SGND) - Body ground	Always	10 kohms or higher

d. Proceed to the next step based on the inspection result.

RESULT

Result	Proceed to
NG	A
OK	B

B --> See step 9

A --> REPAIR OR REPLACE HARNESS OR CONNECTOR

4. **INSPECT NAVIGATION RECEIVER ASSEMBLY**
   a. Measure the resistance according to the value(s) in the table below.

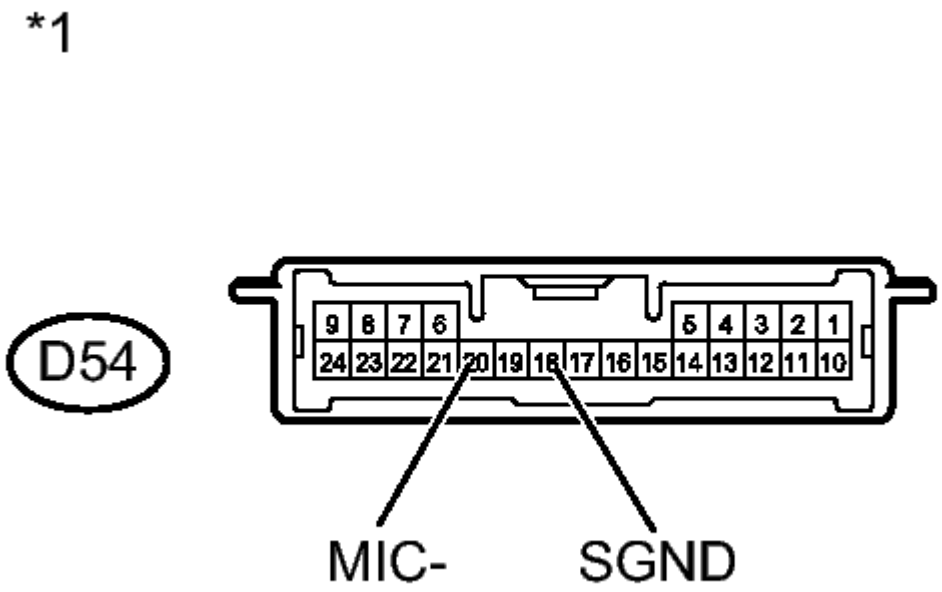


Fig. 145: Checking Navigation Receiver Assembly
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

Standard Resistance

Tester Connection	Condition	Specified Condition
D54-18 (SGND) - Body ground	Always	Below 1 ohms
D54-20 (MIC-) - Body ground	Always	Below 1 ohms

TEXT IN ILLUSTRATION

	Component with

*1	harness connected (Navigation Receiver Assembly)

NG --> See step 12

OK: Go to next step

5. **CHECK HARNESS AND CONNECTOR (NAVIGATION RECEIVER - ROOF CONSOLE BOX)**
   a. Disconnect the D54 navigation receiver assembly connector.
   b. Disconnect the T5 roof console box assembly connector.
   c. Measure the resistance according to the value(s) in the table below.

   Standard Resistance

Tester Connection	Condition	Specified Condition
D54-5 (SNS2) - T5-10 (SGND)	Always	Below 1 ohms

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK: Go to next step

6. **CHECK HARNESS AND CONNECTOR (NAVIGATION RECEIVER - TELEMATICS TRANSCEIVER)**
   a. Disconnect the D54 navigation receiver assembly connector.
   b. Disconnect the D73 telematics transceiver connector.
   c. Measure the resistance according to the value(s) in the table below.

   Standard Resistance

Tester Connection	Condition	Specified Condition
D54-19 (MIC+) - D73-18 (MCO+)	Always	Below 1 ohms
D54-20 (MIC-) - D73-19	Always	Below 1 ohms

(MCO-)		
D54-19 (MIC+) - Body ground	Always	10 kohms or higher
D54-20 (MIC-) - Body ground	Always	10 kohms or higher
D54-18 (SGND) - Body ground	Always	10 kohms or higher

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK: Go to next step

7. **CHECK HARNESS AND CONNECTOR (TELEMATICS TRANSCEIVER - ROOF CONSOLE BOX)**
   a. Disconnect the D73 telematics transceiver connector.
   b. Disconnect the T5 roof console box assembly connector.
   c. Measure the resistance according to the value(s) in the table below.

   Standard Resistance

Tester Connection	Condition	Specified Condition
D73-33 (MCVD) - T5-14 (ACC)	Always	Below 1 ohms
D73-34 (MCI+) - T5-13 (MIC+)	Always	Below 1 ohms
D73-35 (MCI-) - T5-12 (MIC-)	Always	Below 1 ohms
D73-33 (MCVD) - Body ground	Always	10 kohms or higher
D73-34		

(MCI+) - Body ground	Always	10 kohms or higher
D73-35 (MCI-) - Body ground	Always	10 kohms or higher
D73-32 (SGND) - Body ground	Always	10 kohms or higher

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK: Go to next step

8. **INSPECT TELEMATICS TRANSCEIVER**
   a. Measure the voltage according to the value(s) in the table below.

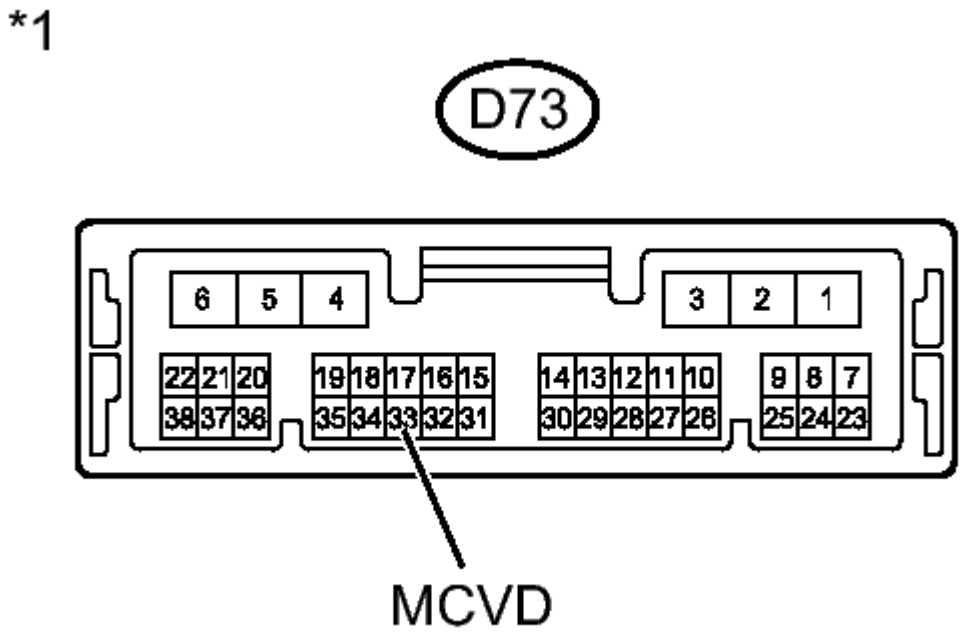


Fig. 146: Checking Telematics Transceiver
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

Standard Voltage

Tester Connection	Switch Condition	Specified Condition

D73-33 (MCVD) - Body ground	Ignition switch ACC	5 V

TEXT IN ILLUSTRATION

*1	Component with harness connected (Telematics Transceiver)

NG --> See step 13

OK: Go to next step

9. **INSPECT ROOF CONSOLE BOX ASSEMBLY**
   a. Measure the resistance according to the value(s) in the table below.

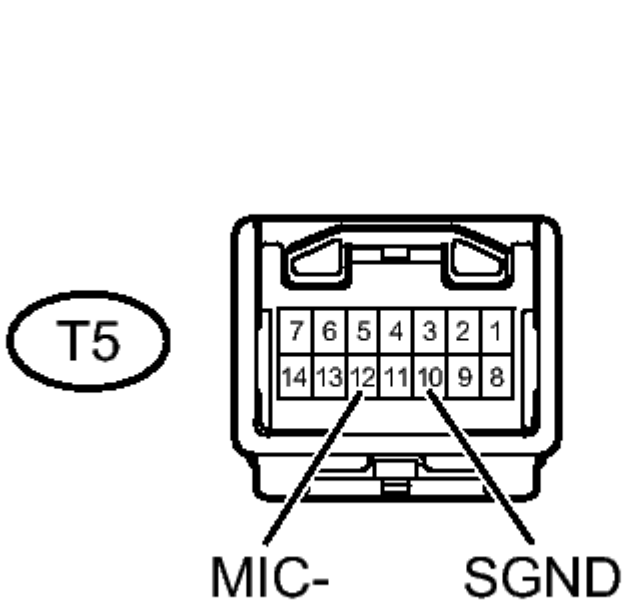


Fig. 147: Checking Roof Console Box Assembly
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

Standard Resistance

Tester Connection	Condition	Specified Condition

T5-10 (SGND) - T5-12 (MIC-)	Always	Below 1 ohms

TEXT IN ILLUSTRATION

*1	Component without harness connected (Roof Console Box Assembly)

NG --> See step 14

OK: Go to next step

10. **INSPECT ROOF CONSOLE BOX ASSEMBLY**
    a. Reconnect the D54 navigation receiver assembly connector.
    b. Reconnect the D73 telematics transceiver connector (w/ Manual(SOS) Switch).
    c. Reconnect the T5 roof console box assembly connector.

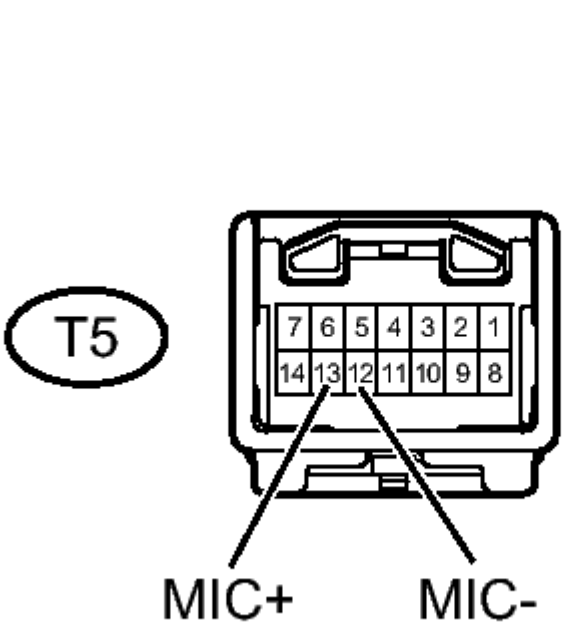


Fig. 148: Checking Roof Console Box Assembly
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

d. Turn the ignition switch to ACC.

e. Connect an oscilloscope to terminals 13 (MIC+) and 12 (MIC-) of the T5 roof console box assembly connector.

f. Check the waveform of the telephone microphone assembly using an oscilloscope.

RESULT

Result	Proceed to
A waveform synchronized with the voice input to the telephone microphone assembly is output	A
A waveform synchronized with the voice input to the telephone microphone assembly is not output	B

TEXT IN ILLUSTRATION

*1	Component with harness connected (Roof Console Box Assembly)

B --> See step 14

A --> See step 15

11. **REPLACE NAVIGATION RECEIVER ASSEMBLY. Refer to REMOVAL**
12. **REPLACE NAVIGATION RECEIVER ASSEMBLY. Refer to REMOVAL**
13. **REPLACE TELEMATICS TRANSCEIVER. Refer to REMOVAL**
14. **REPLACE ROOF CONSOLE BOX ASSEMBLY. Refer to REMOVAL**

15. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**

Stereo Component Amplifier Power Source Circuit

DESCRIPTION

This circuit provides power to the stereo component amplifier assembly.

WIRING DIAGRAM

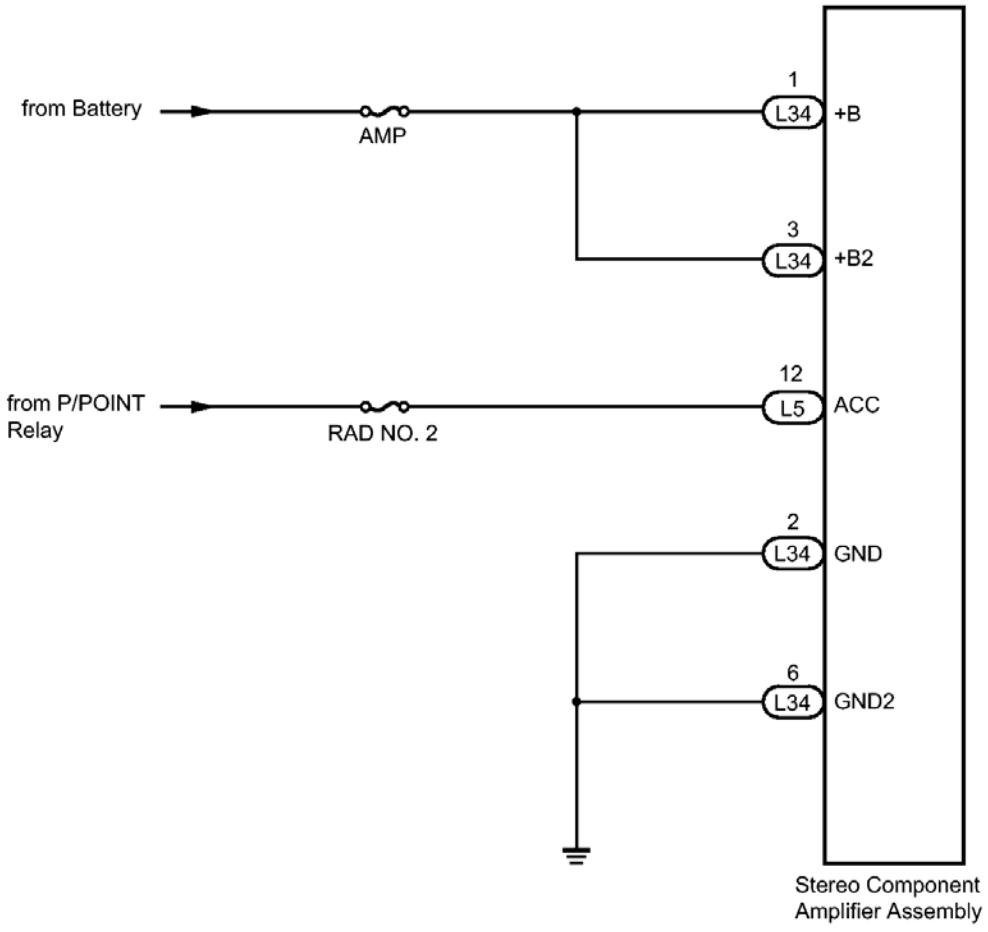


Fig. 149: Stereo Component Amplifier Power Source Circuit - Wiring Diagram
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

NOTE: Inspect the fuses for circuits related to this system before performing the

following inspection procedure.

PROCEDURE

1. **CHECK HARNESS AND CONNECTOR (STEREO COMPONENT AMPLIFIER - BATTERY AND BODY GROUND)**
   a. Disconnect the L5 and L34 stereo component amplifier assembly connectors.

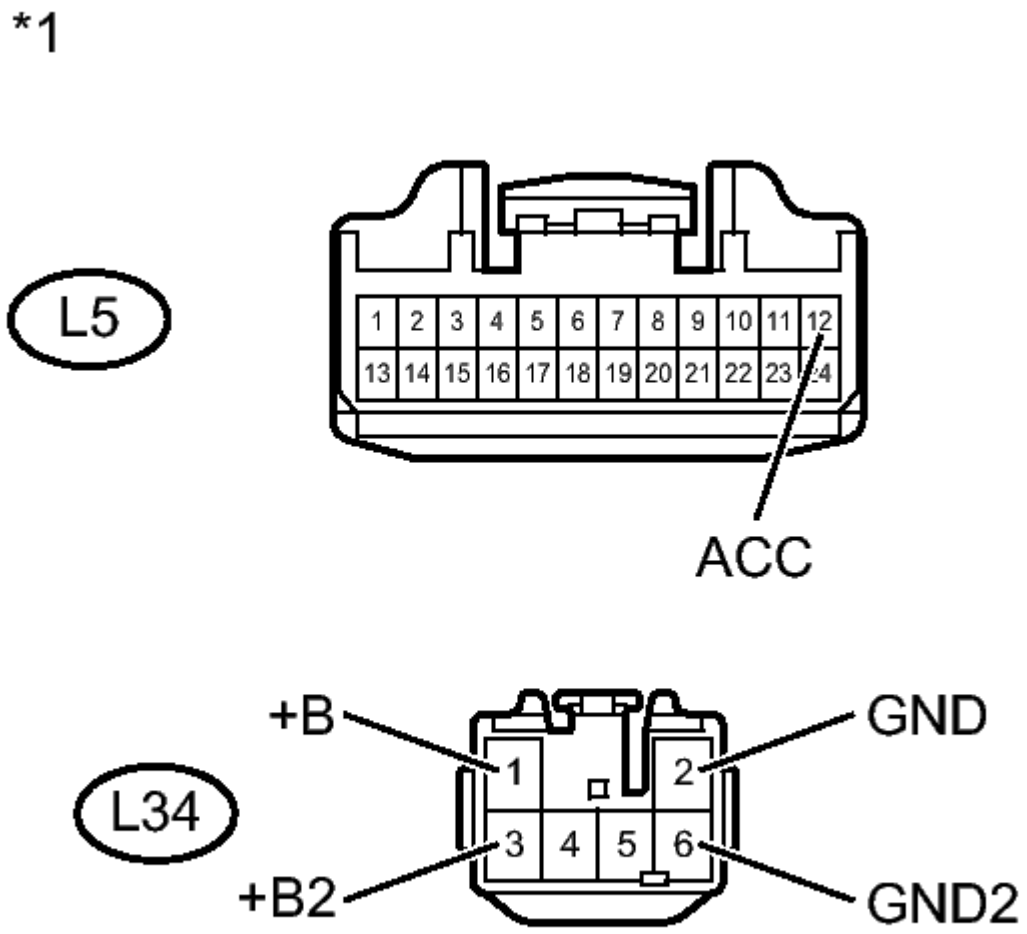


Fig. 150: Checking Harness And Connector (Stereo Component Amplifier - Battery And Body Ground)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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

Standard Resistance

Tester Connection	Condition	Specified Condition
L34-2 (GND) - Body ground	Always	Below 1 ohms
L34-6 (GND2) - Body ground	Always	Below 1 ohms

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

Standard Voltage

Tester Connection	Switch Condition	Specified Condition
L34-1 (+B) - Body ground	Always	11 to 14 V
L34-3 (+B2) - Body ground)	Always	11 to 14 V
L5-12 (ACC) - Body ground	Ignition switch ACC	11 to 14 V

TEXT IN ILLUSTRATION

*1	Front view of wire harness connector (to Stereo Component Amplifier Assembly)

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK --> See step 2

2. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**

Stereo Component Tuner Power Source Circuit

DESCRIPTION

This is the power source circuit to operate the stereo component tuner assembly.

WIRING DIAGRAM

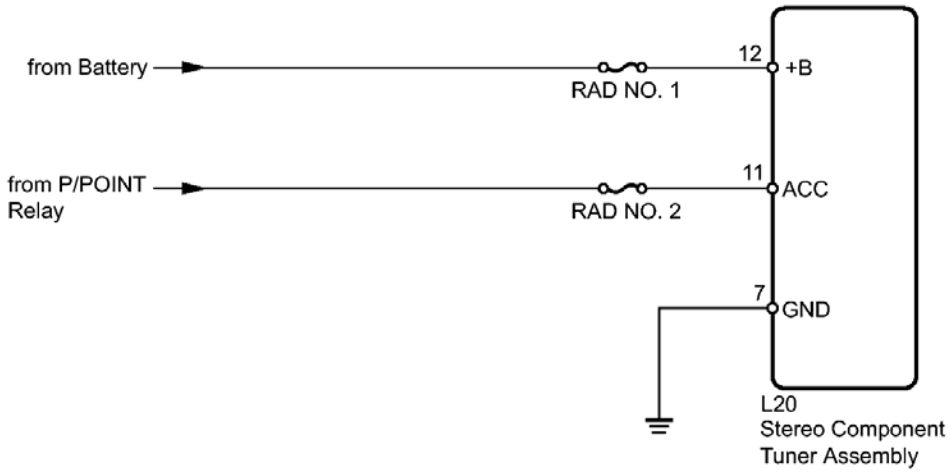


Fig. 151: Stereo Component Tuner Power Source Circuit - Wiring Diagram
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

NOTE: Inspect the fuses for circuits related to this system before performing the following inspection procedure.

PROCEDURE

1. **CHECK HARNESS AND CONNECTOR (STEREO COMPONENT TUNER - BATTERY AND BODY GROUND)**
    a. Disconnect the L20 stereo component tuner assembly connector.

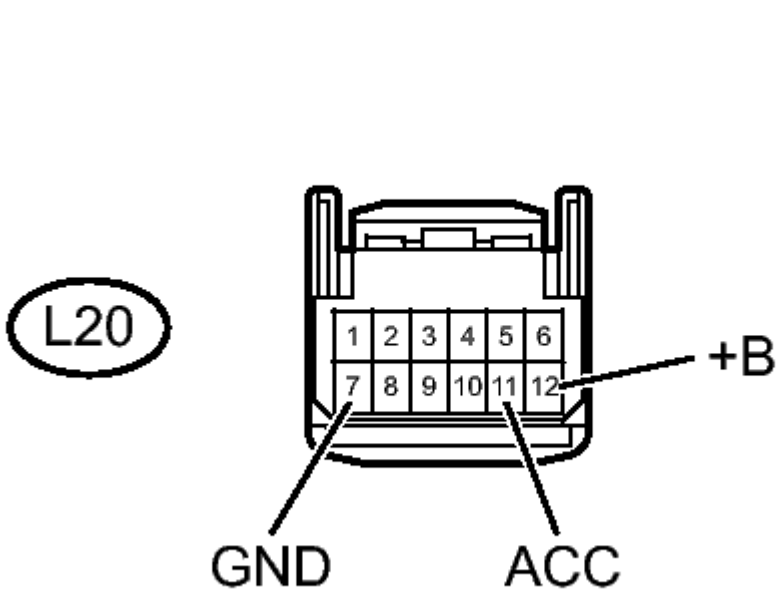


Fig. 152: Checking Harness And Connector (Stereo Component Tuner - Battery And Body Ground)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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

Standard Resistance

Tester Connection	Condition	Specified Condition
L20-7 (GND) - Body ground	Always	Below 1 ohms

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

Standard Voltage

Tester Connection	Switch Condition	Specified Condition
L20-12 (+B) - Body ground	Always	11 to 14 V
L20-11	Ignition	

(ACC) - Body ground	switch ACC	11 to 14 V

TEXT IN ILLUSTRATION

*1	Front view of wire harness connector (to Stereo Component Tuner Assembly)

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK --> See step 2

2. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**

Navigation Receiver Assembly Power Source Circuit

DESCRIPTION

This is the power source circuit to operate the navigation receiver assembly.

WIRING DIAGRAM

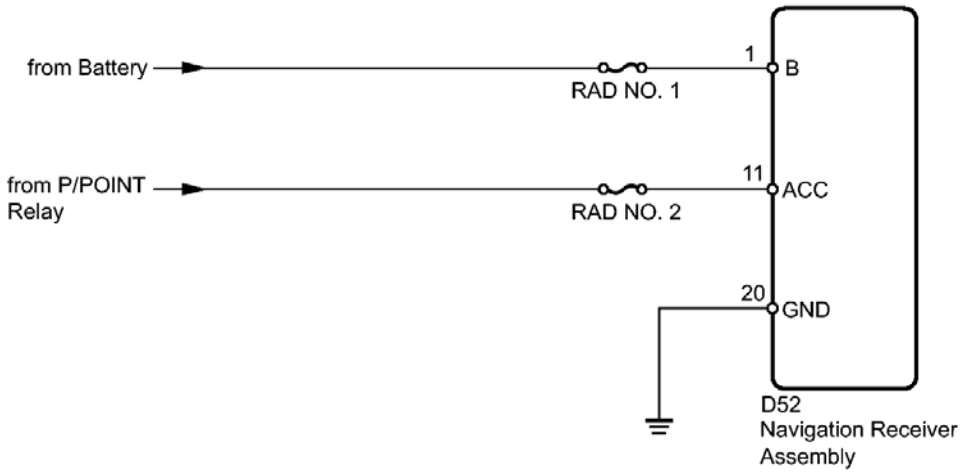


Fig. 153: Navigation Receiver Assembly Power Source Circuit - Wiring Diagram

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

NOTE: Inspect the fuses for circuits related to this system before performing the following inspection procedure.

PROCEDURE

1. **CHECK HARNESS AND CONNECTOR (NAVIGATION RECEIVER - BATTERY AND BODY GROUND)**
   a. Disconnect the D52 navigation receiver assembly connector.

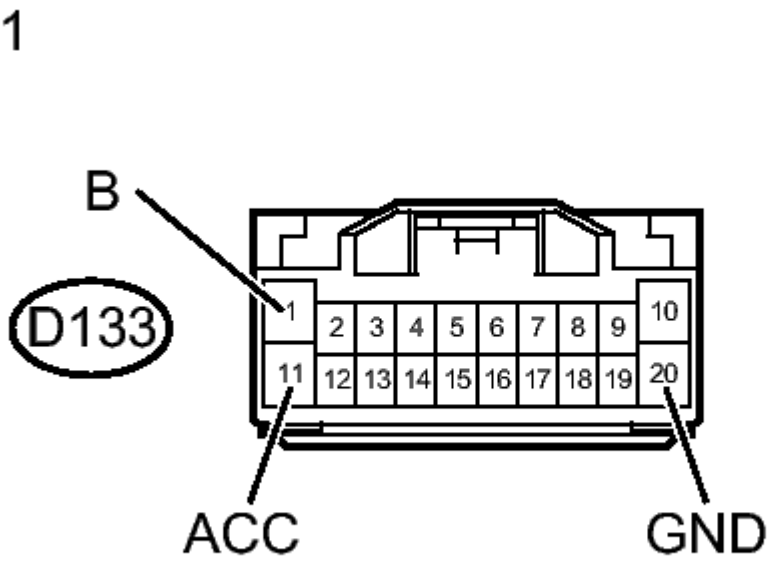


Fig. 154: Checking Harness And Connector (Navigation Receiver - Battery And Body Ground)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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

Standard Resistance

Tester Connection	Condition	Specified Condition
D52-20 (GND) - Body ground	Always	Below 1 ohms

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

Standard Voltage

Tester Connection	Switch Condition	Specified Condition
D52-1 (B) - Body ground	Always	11 to 14 V
D52-11 (ACC) - Body ground	Ignition switch ACC	11 to 14 V

TEXT IN ILLUSTRATION

*1	Front view of wire harness connector (to Navigation Receiver Assembly)

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK --> See step 2

2. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**

Multi-media Interface ECU Power Source Circuit

DESCRIPTION

This circuit provides power to multi-media interface ECU.

WIRING DIAGRAM

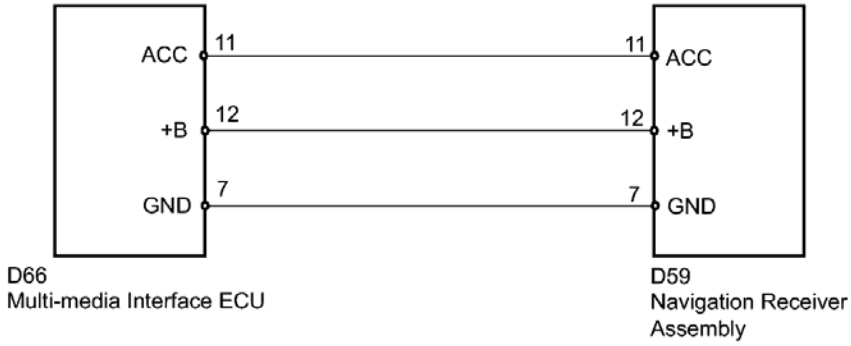


Fig. 155: Multi-Media Interface ECU Power Source Circuit - Wiring Diagram
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

PROCEDURE

1. **CHECK HARNESS AND CONNECTOR (NAVIGATION RECEIVER - MULTI-MEDIA INTERFACE ECU)**
   a. Disconnect the D66 multi-media interface ECU connector.

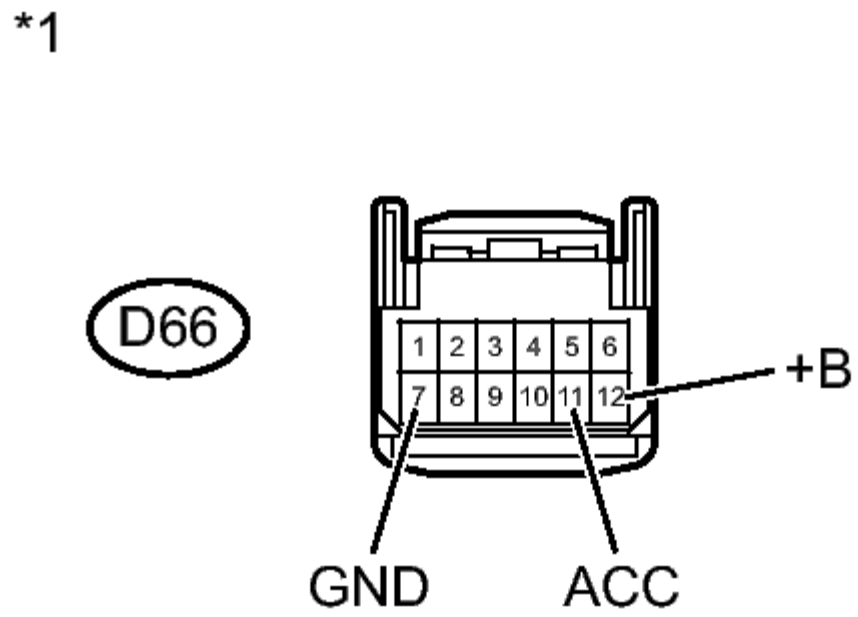


Fig. 156: Measuring Voltage Of Navigation Receiver - Multi-Media Interface ECU
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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

Standard Voltage

Tester Connection	Switch Condition	Specified Condition
D66-12 (+B) - D66-7 (GND)	Always	11 to 14 V
D66-11 (ACC) - D66-7 (GND)	Ignition switch ACC	11 to 14 V

TEXT IN ILLUSTRATION

*1	Front view of wire harness connector (to Multi-media Interface ECU)

NG --> See step 2

OK --> See step 3

2. **CHECK HARNESS AND CONNECTOR (NAVIGATION RECEIVER - MULTI-MEDIA INTERFACE ECU)**
   a. Disconnect the D59 navigation receiver assembly connector.
   b. Disconnect the D66 multi-media interface ECU connector.
   c. Measure the resistance according to the value(s) in the table below.

Standard Resistance

Tester Connection	Condition	Specified Condition
D59-11 (ACC) - D66-11 (ACC)	Always	Below 1 ohms
D59-12 (+B) - D66-12 (+B)	Always	Below 1 ohms
D59-7		

(GND) - D66-7 (GND)	Always	Below 1 ohms
D59-11 (ACC) - Body ground	Always	10 kohms or higher
D59-12 (+B) - Body ground	Always	10 kohms or higher
D59-7 (GND) - Body ground	Always	10 kohms or higher

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK --> See step 3

3. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**

NAVIGATION SYSTEM (FOR DVD WITHOUT USB AUDIO SYSTEM)

DTC 01-21: ROM ERROR; DTC 01-22: RAM ERROR

DESCRIPTION

DTC Code	DTC Detection Condition	Trouble Area
01-21	Malfunction exists in ROM.	Navigation receiver assembly
01-22	Malfunction exists in RAM.	

INSPECTION PROCEDURE

HINT:

After the inspection is completed, clear the DTCs. Refer to **DTC CHECK / CLEAR** .

PROCEDURE

1. **REPLACE NAVIGATION RECEIVER ASSEMBLY**
   a. Replace the navigation receiver assembly. Refer to **REMOVAL** .

NEXT --> END

DTC 21-10: PANEL SWITCH ERROR; DTC 21-11: TOUCH SWITCH ERROR; DTC 23-10: PANEL SWITCH ERROR; DTC 23-11: TOUCH SWITCH ERROR; DTC 24-10: PANEL SWITCH ERROR; DTC 24-11: TOUCH SWITCH ERROR; DTC 25-10: PANEL SWITCH ERROR; DTC 25-11: TOUCH SWITCH ERROR

DESCRIPTION

DTC Code	DTC Detection Condition	Trouble Area
21-10	Panel switch detection circuit has a problem.	Navigation receiver assembly
21-11	Touch panel switch has a problem.	
23-10	Panel switch detection circuit has a problem.	
23-11	Touch panel switch has a problem.	
24-10	Panel switch detection circuit has a problem.	
24-11	Touch panel switch has a problem.	
25-10	Panel switch detection circuit has a	

	problem.	
25-11	Touch panel switch has a problem.	

INSPECTION PROCEDURE

HINT:

After the inspection is completed, clear the DTCs. Refer to **DTC CHECK / CLEAR** .

PROCEDURE

1. **REPLACE NAVIGATION RECEIVER ASSEMBLY**
   a. Replace the navigation receiver assembly. Refer to **REMOVAL** .

NEXT --> END

DTC 34-10: ERROR IN PICTURE CIRCUIT; DTC 34-11: NO CURRENT IN BACK-LIGHT; DTC 34-12: EXCESS CURRENT IN BACK-LIGHT

DESCRIPTION

DTC Code	DTC Detection Condition	Trouble Area
34-10	Error in power supply system for picture circuit.	Navigation receiver assembly
34-11	Decline in power output from inverter circuit for back-light.	
34-12	Excess power output from inverter circuit for back-light.	

INSPECTION PROCEDURE

HINT:

After the inspection is completed, clear the DTCs. Refer to **DTC CHECK / CLEAR** .

PROCEDURE

1. **REPLACE NAVIGATION RECEIVER ASSEMBLY**
   a. Replace the navigation receiver assembly. Refer to **REMOVAL** .

NEXT --> END

DTC 58-10: GYRO ERROR; DTC 80-10: GYRO ERROR

DESCRIPTION

DTC Code	DTC Detection Condition	Trouble Area
58-10	Ground short, power supply short, or open circuit in gyro signal.	Navigation receiver assembly (Gyro sensor)
80-10		

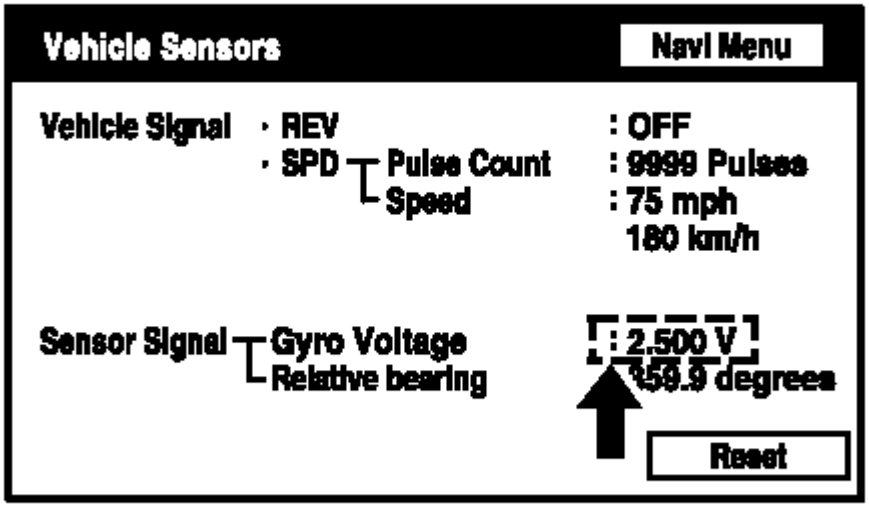
INSPECTION PROCEDURE

HINT:

After the inspection is completed, clear the DTCs. Refer to **DTC CHECK / CLEAR** .

PROCEDURE

1. **CHECK VEHICLE SENSOR (NAVIGATION CHECK MODE)**
   a. Enter the "Navigation Check" mode and select "Vehicle Sensors". Refer to **OPERATION CHECK** .



P

Fig. 1: Screen Display - Vehicle Sensors Screen
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

   b. Check the gyro voltage.

      Standard voltage

      0.5 to 4.5 V

NG --> See step 4

OK: Go to next step

2. **CLEAR DTC**
   a. Clear the DTCs. Refer to **DTC CHECK / CLEAR** .

   NEXT: Go to next step

3. **RECHECK FOR DTC**
   a. Recheck for DTCs and check if the same trouble occurs again.

      HINT:

      If DTCs are detected frequently, replace the navigation receiver.

      OK

      No DTC is output.

   NG --> See step 5

   OK --> END

4. **REPLACE NAVIGATION RECEIVER ASSEMBLY. Refer to REMOVAL**
5. **REPLACE NAVIGATION RECEIVER ASSEMBLY. Refer to REMOVAL**

DTC 58-11: GPS RECEIVER ERROR; DTC 80-11: GPS RECEIVER ERROR

DESCRIPTION

DTC Code	DTC Detection Condition	Trouble Area
58-11	Either condition is met: • An RTC, ROM, and RAM of the GPS receiver, and a TCXO error. • The GPS receiver has failed.	Navigation receiver assembly
80-11		

INSPECTION PROCEDURE

HINT:

After the inspection is completed, clear the DTCs. Refer to **DTC CHECK / CLEAR** .

PROCEDURE

1. **REPLACE NAVIGATION RECEIVER ASSEMBLY**
   a. Replace the navigation receiver assembly. Refer to **REMOVAL** .

NEXT --> END

DTC 58-40: GPS ANTENNA ERROR; DTC 58-41: GPS ANTENNA POWER SOURCE ERROR; DTC 80-40: GPS ANTENNA ERROR; DTC 80-41: GPS ANTENNA POWER SOURCE ERROR

DESCRIPTION

DTC Code	DTC Detection Condition	Trouble Area
58-40	A navigation antenna error	• Navigation antenna assembly • Navigation receiver assembly
58-41	An error of the power source to the navigation antenna	
80-40	A navigation antenna error	
80-41	An error of the power source to the navigation antenna	

INSPECTION PROCEDURE

HINT:

After the inspection is completed, clear the DTCs. Refer to **DTC CHECK / CLEAR** .

PROCEDURE

1. **CHECK NAVIGATION ANTENNA ASSEMBLY**
   a. Check that the navigation antenna cord is securely connected to the navigation receiver assembly.

      OK

      The cord is securely connected.

   NG --> REINSTALL NAVIGATION ANTENNA ASSEMBLY

   OK: Go to next step

2. **REPLACE NAVIGATION ANTENNA ASSEMBLY**
   a. Replace the navigation antenna assembly with a normal one. Refer to **REMOVAL** .
   b. Clear the DTCs. Refer to **DTC CHECK / CLEAR** .
   c. Recheck for DTCs and check if the same trouble occurs again.

      OK

      Same problem does not occur.

   NG --> See step 3

   OK --> END

3. **REPLACE NAVIGATION RECEIVER ASSEMBLY. Refer to REMOVAL**

DTC 58-42: MAP DISC READ ERROR; DTC 80-42: MAP DISC READ ERROR

DESCRIPTION

DTC Code	DTC Detection Condition	Trouble Area
58-42	One of the following conditions is met: • A player error • Scratches or dirt on the disc • Access to an invalid address due to a software error	• Map disc • Navigation receiver assembly
80-42		

INSPECTION PROCEDURE

HINT:

After the inspection is completed, clear the DTCs. Refer to **DTC CHECK / CLEAR** .

PROCEDURE

1. **CHECK MAP DISC**
   a. Check that the map disc is not deformed or cracked.

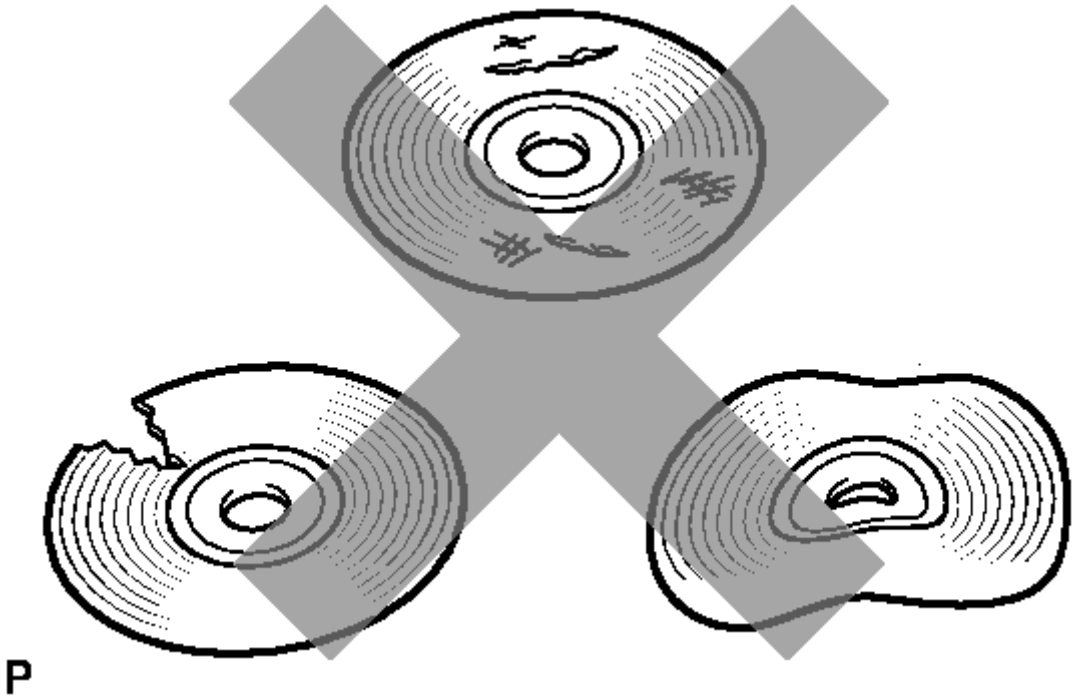


Fig. 2: Identifying Deformed Or Cracked Disc

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

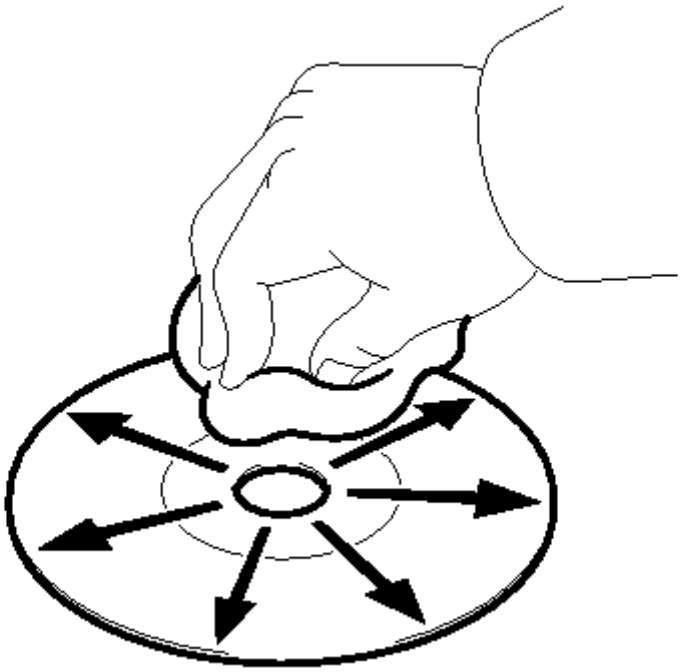
OK

No deformations or cracks in the map disc.

NG --> CHANGE DISC

OK: Go to next step

2. **DISC CLEANING**
   a. If dirt is on the disc surface, wipe it clean with a soft cloth from the inside to the outside in a radial direction.



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Fig. 3: Cleaning Disc Surface With Soft Cloth
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

NOTE: Do not use a conventional record cleaner or antistatic preservative.

NEXT: Go to next step

3. **CLEAR DTC**
   a. Clear the DTCs. Refer to **DTC CHECK / CLEAR** .

NEXT: Go to next step

4. **RECHECK DTC**

a. Recheck for DTCs and check if the same trouble occurs again.

OK

Same problem does not occur.

NG --> See step 5

OK --> END (DISC WAS DIRTY)

5. **REPLACE MAP DISC**
   a. Replace the map disc.
   b. Clear the DTCs and recheck for DTCs.
   c. Check if the same trouble occurs again.

OK

Same problem does not occur.

NG --> See step 6

OK --> END (DISC IS FAULTY)

6. **REPLACE NAVIGATION RECEIVER ASSEMBLY. Refer to REMOVAL**

DTC 58-43: SPD SIGNAL ERROR; DTC 80-43: SPD SIGNAL ERROR

DESCRIPTION

DTC Code	DTC Detection Condition	Trouble Area
58-43	A difference between the GPS speed and SPD pulse is detected.	• Speed signal circuit • Navigation receiver assembly
80-43		

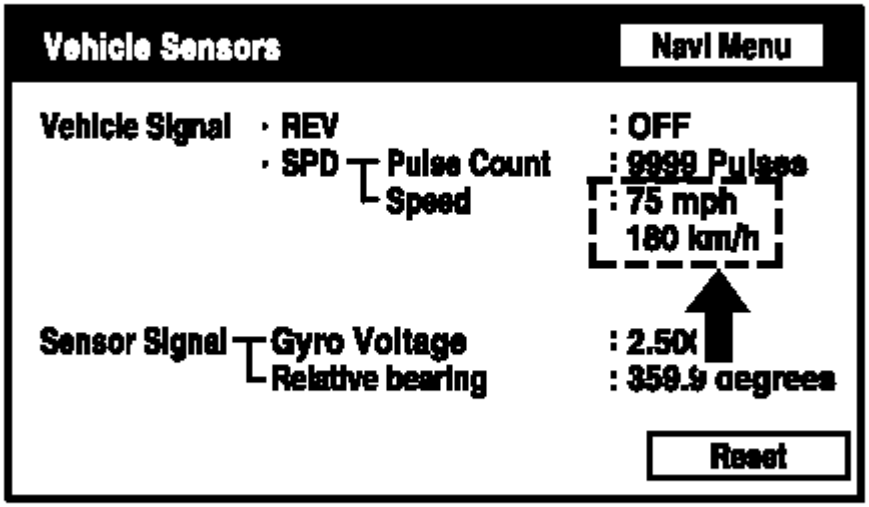
INSPECTION PROCEDURE

HINT:

After the inspection is completed, clear the DTCs. Refer to **DTC CHECK / CLEAR** .

PROCEDURE

1. **CHECK VEHICLE SENSOR (NAVIGATION CHECK MODE)**
   a. Enter the "Navigation Check" mode and select "Vehicle Sensors". Refer to **OPERATION CHECK** .



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Fig. 4: Screen Display - Navigation Check Mode
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

b. While driving the vehicle, compare the "SPD" indicator to the reading on the speedometer. Check if these readings are equal or almost equal.

OK

The readings are equal or almost equal.

NG --> See step 3

OK --> See step 2

2. **REPLACE NAVIGATION RECEIVER ASSEMBLY. Refer to REMOVAL**
3. **GO TO "SPEED SIGNAL DOES NOT CHANGE IN THE NAVIGATION CHECK MODE" IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**

DTC 58-44: PLAYER ERROR; DTC 80-44: PLAYER ERROR

DESCRIPTION

DTC Code	DTC Detection Condition	Trouble Area
58-44	A map player error is detected.	Navigation receiver assembly
80-44		

INSPECTION PROCEDURE

HINT:

After the inspection is completed, clear the DTCs. Refer to **DTC CHECK / CLEAR** .

PROCEDURE

1. **CHECK NAVIGATION RECEIVER ASSEMBLY**
   a. Check if a disc can be inserted or ejected normally.

      OK

      A disc can be inserted or ejected normally.

   NG --> See step 4

   OK: Go to next step

2. **CLEAR DTC**
   a. Clear the DTCs. Refer to **DTC CHECK / CLEAR** .

   NEXT: Go to next step

3. **RECHECK FOR DTC**
   a. Recheck for DTCs and check if the same trouble occurs again.

      OK

      Same problem does not occur.

   NG --> See step 5

   OK --> END

4. **REPLACE NAVIGATION RECEIVER ASSEMBLY. Refer to REMOVAL**
5. **REPLACE NAVIGATION RECEIVER ASSEMBLY. Refer to REMOVAL**

DTC 58-45: HIGH TEMPERATURE; DTC 80-45: HIGH TEMPERATURE

DESCRIPTION

DTC Code	DTC Detection Condition	Trouble Area
58-45	The temperature of the map disc player is high (higher than 80°C ([176°F])	Navigation receiver assembly
80-45		

INSPECTION PROCEDURE

HINT:

After the inspection is completed, clear the DTCs. Refer to **DTC CHECK / CLEAR** .

PROCEDURE

1. **CHECK NAVIGATION RECEIVER ASSEMBLY**
   a. Park the vehicle in a cool place.
   b. Operate the navigation receiver assembly after it has sufficiently cooled down. Check if the malfunction occurs.

      OK

      Same problem does not occur.

   NG --> See step 2

   OK --> END

2. **REPLACE NAVIGATION RECEIVER ASSEMBLY. Refer to REMOVAL**

DTC 5C-40: CAMERA PICTURE ERROR

DESCRIPTION

DTC Code	DTC Detection Condition	Trouble Area
5C-40	Synchronous signal from camera cannot be transmitted.	• Harness or connector • Television camera assembly • Navigation receiver assembly

WIRING DIAGRAM

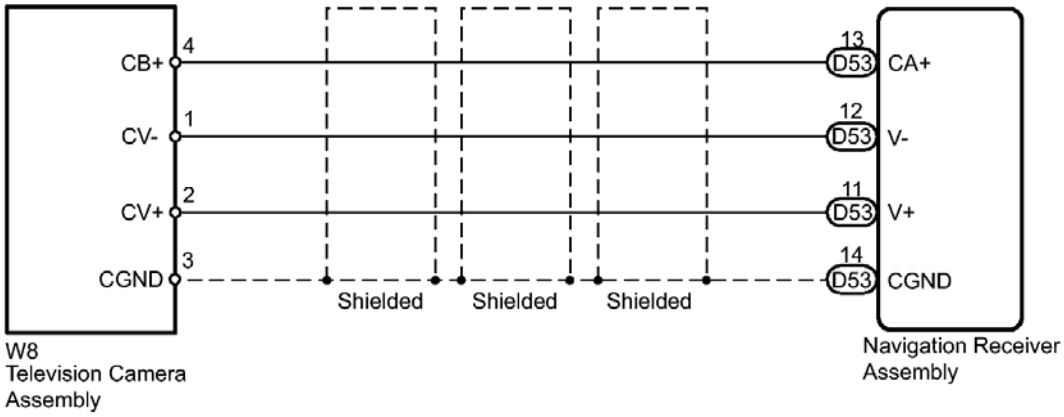


Fig. 5: Television Camera Assembly - Wiring Diagram
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

HINT:

After the inspection is completed, clear the DTCs. Refer to **DTC CHECK / CLEAR** .

PROCEDURE

1. **CHECK HARNESS AND CONNECTOR (NAVIGATION RECEIVER ASSEMBLY - TELEVISION CAMERA ASSEMBLY)**
   a. Disconnect the D53 navigation receiver assembly connector.
   b. Disconnect the W8 television camera assembly connector.
   c. Measure the resistance according to the value(s) in the table below.

   Standard Resistance (Check for Open)

Tester Connection	Condition	Specified Condition
W8-4 (CB+) - D53-13 (CA+)	Always	Below 1 ohms
W8-3 (CGND) - D53-14 (CGND)	Always	Below 1 ohms

W8-2 (CV+) - D53-11 (V+)	Always	Below 1 ohms
W8-1 (CV-) - D53-12 (V-)	Always	Below 1 ohms

Standard Resistance (Check for Short)

Tester Connection	Condition	Specified Condition
W8-4 (CB+) - Body ground	Always	10 kohms or higher
W8-3 (CGND) - Body ground	Always	10 kohms or higher
W8-2 (CV+) - Body ground	Always	10 kohms or higher
W8-1 (CV-) - Body ground	Always	10 kohms or higher

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK: Go to next step

2. **CHECK NAVIGATION RECEIVER ASSEMBLY (CA+ VOLTAGE)**
   a. Measure the voltage according to the value(s) in the table below.

*a

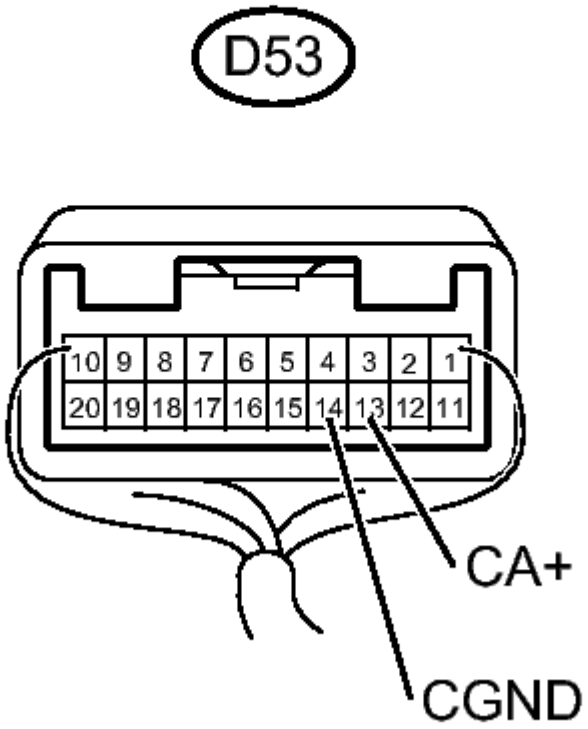


Fig. 6: Checking Navigation Receiver Assembly (CA+ Voltage)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

Standard Voltage

Tester Connection	Switch Condition	Specified Condition
D53-13 (CA+) - D53-14 (CGND)	Ignition switch ON, shift lever in R	5.5 to 7.05 V

TEXT IN ILLUSTRATION

	Component with harness

*a	connected (Navigation Receiver Assembly)

NG --> See step 4

OK --> See step 3

3. **REPLACE TELEVISION CAMERA ASSEMBLY. Refer to REMOVAL**
4. **REPLACE NAVIGATION RECEIVER ASSEMBLY. Refer to REMOVAL**

DTC 60-10: AM TUNER PLL DOES NOT LOCK; DTC 60-11: FM TUNER PLL DOES NOT LOCK

DESCRIPTION

DTC Code	DTC Detection Condition	Trouble Area
60-10	AM tuner PLL (phase-locked loop) synchronization is impossible.	Navigation receiver assembly
60-11	FM tuner PLL (phase-locked loop) synchronization is impossible.	

INSPECTION PROCEDURE

HINT:

After the inspection is completed, clear the DTCs. Refer to **DTC CHECK / CLEAR** .

PROCEDURE

1. **REPLACE NAVIGATION RECEIVER ASSEMBLY**
   a. Replace the navigation receiver assembly. Refer to **REMOVAL** .

NEXT --> END

DTC 60-42: TUNER POWER SOURCE ERROR; DTC 60-43: AM TUNER ERROR; DTC 60-44: FM TUNER ERROR; DTC 60-50: MALFUNCTION IN INTERNAL IC

DESCRIPTION

DTC Code	DTC Detection Condition	Trouble Area
60-42	The power source of tuner is abnormal.	Navigation receiver assembly
60-43	The AM tuner is abnormal.	
60-44	The FM tuner is abnormal.	
	A problem occurs in the IC inside of the	

60-50	tuner unit and radio reception is not normal.	

INSPECTION PROCEDURE

HINT:

After the inspection is completed, clear the DTCs. Refer to **DTC CHECK / CLEAR** .

PROCEDURE

1. **CLEAR DTC**
   a. Clear the DTCs. Refer to **DTC CHECK / CLEAR** .

   NEXT: Go to next step

2. **RECHECK FOR DTC**
   a. Recheck for DTCs and check if the same trouble occurs again.

      HINT:

      If DTCs are detected frequently, replace the navigation receiver assembly.

      OK

      NO DTC is output.

   NG --> See step 3

   OK --> END

3. **REPLACE NAVIGATION RECEIVER ASSEMBLY. Refer to REMOVAL**

DTC 62-10: CD PLAYER MECHANICAL ERROR; DTC 62-11: CD INSERTION AND EJECTION ERROR; DTC 62-12: CD READING ABNORMAL

DESCRIPTION

DTC Code	DTC Detection Condition	Trouble Area
62-10	A mechanical error in the CD player is detected while a CD is not being inserted or ejected.	Navigation receiver assembly
62-11	CD insertion or ejection fails.	
62-12	A CD read problem occurs.	

INSPECTION PROCEDURE

HINT:

After the inspection is completed, clear the DTCs. Refer to **DTC CHECK / CLEAR** .

PROCEDURE

1. **REPLACE NAVIGATION RECEIVER ASSEMBLY**
    a. Replace the navigation receiver assembly. Refer to **REMOVAL** .

NEXT --> END

DTC 62-41: WRONG DISC; DTC 62-42: DISC CANNOT BE READ

DESCRIPTION

DTC Code	DTC Detection Condition	Trouble Area
62-41	An unsuitable disc is inserted.	• Disc • Navigation receiver assembly
62-42	The disc cannot be read.	

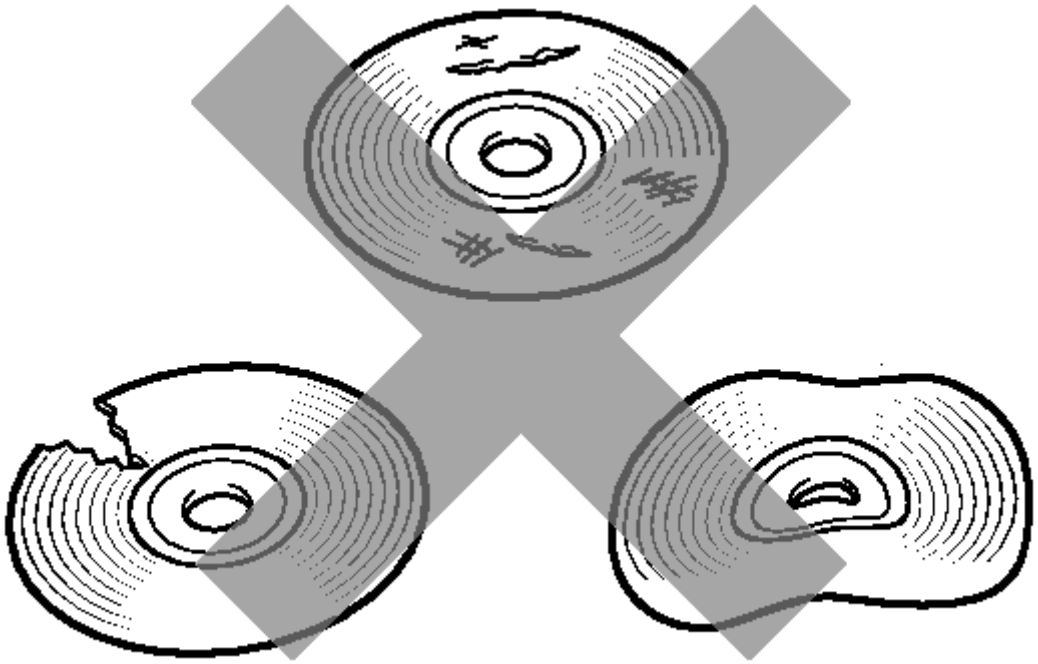
INSPECTION PROCEDURE

HINT:

After the inspection is completed, clear the DTCs. Refer to **DTC CHECK / CLEAR** .

PROCEDURE

1. **CHECK DISC**
    a. Check that the disc is not deformed or cracked.



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Fig. 7: Identifying Deformed Or Cracked Disc
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

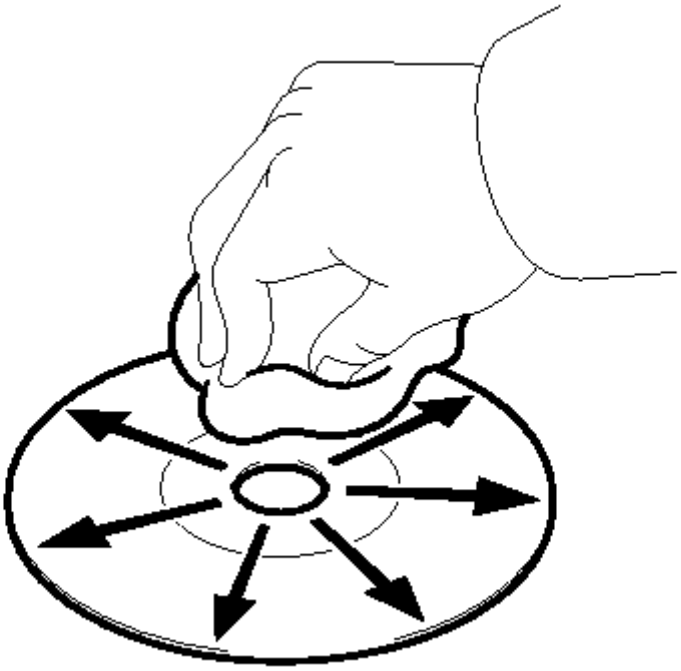
OK

No deformation or cracks in the disc.

NG --> CHANGE DISC

OK: Go to next step

2. **DISC CLEANING**
   a. Disc cleaning



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Fig. 8: Cleaning Disc Surface With Soft Dry Cloth
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

1. If dirt is on the disc surface, wipe it clean with a soft cloth from the inside to outside in a radial direction.

NOTE: **Do not use a conventional record cleaner or antistatic preservative.**

NEXT: Go to next step

3. **CLEAR DTC**
   a. Clear the DTCs. Refer to **DTC CHECK / CLEAR** .

NEXT: Go to next step

4. **RECHECK FOR DTC**
   a. Recheck for DTCs and check if the same trouble occurs again.

OK

No DTC is output.

NG --> See step 5

OK --> END

5. **REPLACE DISC WITH ANOTHER AND RECHECK**
    a. Replace the disc and recheck.
        1. Replace the disc with a normal one.
        2. Clear the DTCs. Refer to **DTC CHECK / CLEAR** .
        3. Recheck for DTCs and check if the same trouble code is output.

            OK

            No DTC is output.

    NG --> See step 6

    OK --> END

6. **REPLACE NAVIGATION RECEIVER ASSEMBLY. Refer to REMOVAL**

DTC 62-43: CD-ROM ABNORMAL

DESCRIPTION

DTC Code	DTC Detection Condition	Trouble Area
62-43	CD-ROM operation is abnormal.	• CD • Navigation receiver assembly

INSPECTION PROCEDURE

HINT:

After the inspection is completed, clear the DTCs. Refer to **DTC CHECK / CLEAR** .

PROCEDURE

1. **CHECK IF A PROPER CD IS INSERTED**
    a. Make sure that the CD is an audio CD, or a CD with an MP3 or WMA file, and that it is not deformed, flawed, stained, deteriorated or otherwise defective.

        OK

        CD is normal.

        HINT:

        - Translucent or uniquely-shaped CDs cannot be played.
        - For details on playable CDs, refer to the Owner's Manual.

NG --> CD IS FAULTY

OK: Go to next step

2. **REPLACE CD WITH ANOTHER AND RECHECK**
   a. Replace the CD with another and recheck.
      1. Replace the CD with a normal one.
      2. Clear the DTCs. Refer to **DTC CHECK / CLEAR** .
      3. Recheck for DTCs and check if the same trouble occurs again.

         OK

         Same trouble does not occur.

NG --> See step 3

OK --> END

3. **REPLACE NAVIGATION RECEIVER ASSEMBLY. Refer to REMOVAL**

DTC 62-44: CD ABNORMAL; DTC 62-48: EXCESS CURRENT; DTC 62-50: TRAY INSERTION / EJECTION ERROR

DESCRIPTION

DTC Code	DTC Detection Condition	Trouble Area
62-44	An operation error in the CD mechanism.	Navigation receiver assembly
62-48	Excess current is present in the CD player.	
62-50	A malfunction in the insertion/ejection system.	

INSPECTION PROCEDURE

HINT:

After the inspection is completed, clear the DTCs. Refer to **DTC CHECK / CLEAR** .

PROCEDURE

1. **CLEAR DTC**
   a. Clear the DTCs. Refer to **DTC CHECK / CLEAR** .

NEXT: Go to next step

2. **RECHECK FOR DTC**
   a. Recheck for DTCs and check if the same trouble occurs again.

HINT:

If DTCs are output frequently, replace the navigation receiver assembly.

OK

No DTC is output.

NG --> See step 3

OK --> END

3. **REPLACE NAVIGATION RECEIVER ASSEMBLY. Refer to REMOVAL**

DTC 62-45: EJECT ERROR; DTC 62-51: ELEVATOR ERROR; DTC 62-52: CLAMP ERROR

DESCRIPTION

DTC Code	DTC Detection Condition	Trouble Area
62-45	The disc cannot be ejected.	Navigation receiver assembly
62-51	A mechanical error occurs during elevator operation.	
62-52	An error occurs in the CD player clamp.	

INSPECTION PROCEDURE

HINT:

After the inspection is completed, clear the DTCs. Refer to **DTC CHECK / CLEAR** .

PROCEDURE

1. **CHECK NAVIGATION RECEIVER ASSEMBLY**
   a. Check if a disc can be changed, inserted or ejected normally.

      OK

      The disc can be changed, inserted or ejected normally.

   NG --> See step 2

   OK --> END

2. **REPLACE NAVIGATION RECEIVER ASSEMBLY. Refer to REMOVAL**

DTC 62-46: SCRATCHED / REVERSED DISC

DESCRIPTION

DTC Code	DTC Detection Condition	Trouble Area
62-46	Scratches or dirt is found on the disc surface or the disc is inserted upside down.	• Disc • Navigation receiver assembly

INSPECTION PROCEDURE

HINT:

After the inspection is completed, clear the DTCs. Refer to **DTC CHECK / CLEAR** .

PROCEDURE

1. **CHECK THAT DISC IS INSERTED PROPERLY**
   a. Check whether or not the disc is inserted upside down.

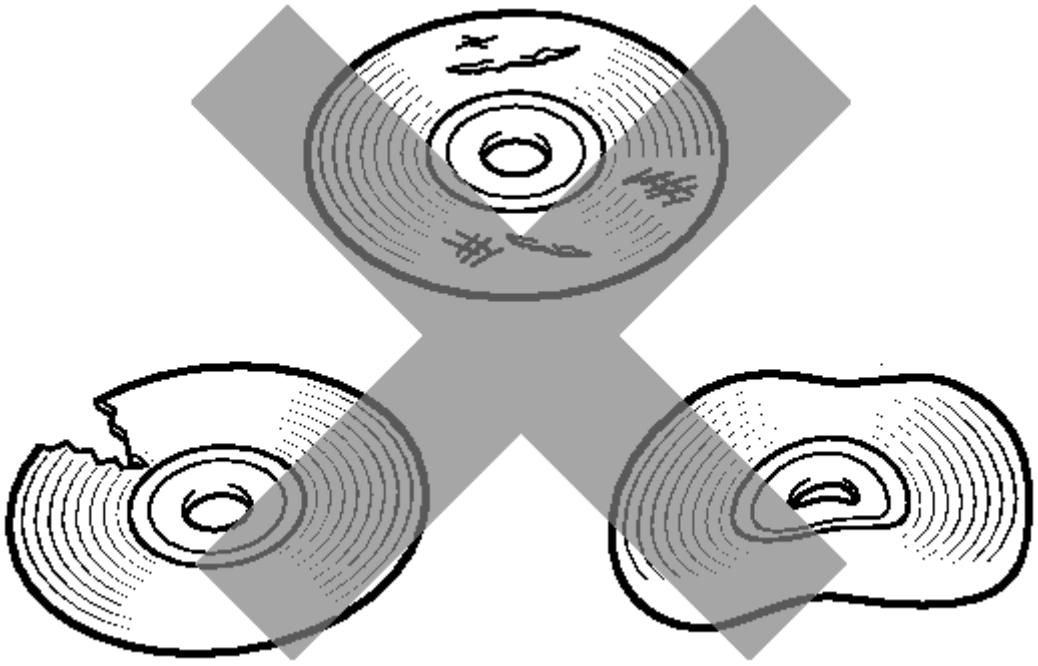
      OK

      Disc is properly inserted.

   NG --> INSERT DISC PROPERLY

   OK: Go to next step

2. **CHECK DISC**
   a. Check that the disc is not deformed or cracked.



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Fig. 9: Identifying Deformed Or Cracked Disc
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

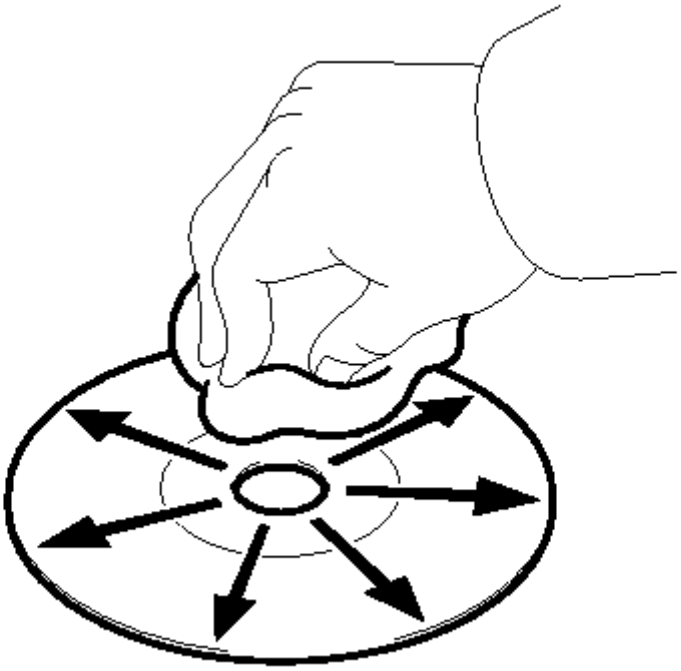
OK

No deformation or cracks in the disc.

NG --> CHANGE DISC

OK: Go to next step

3. **DISC CLEANING**
   a. Disc cleaning



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Fig. 10: Cleaning Disc Surface With Soft Dry Cloth
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

1. If dirt is on the disc surface, wipe it clean with a soft cloth from the inside to the outside in a radial direction.

NOTE: **Do not use a conventional record cleaner or antistatic preservative.**

NEXT: Go to next step

4. **CLEAR DTC**
   a. Clear the DTCs. Refer to **DTC CHECK / CLEAR** .

NEXT: Go to next step

5. **RECHECK FOR DTC**
   a. Recheck for DTCs and check if the same trouble code is output.

OK

No DTC is output.

NG --> See step 6

OK --> END

6. **REPLACE DISC WITH ANOTHER AND RECHECK**
    a. Replace the disc and recheck.
        1. Replace the disc with a normal one.
        2. Clear the DTCs. Refer to **DTC CHECK / CLEAR** .
        3. Recheck for DTCs and check if the same trouble occurs again.

            OK

            No DTC is output.

    NG --> See step 7

    OK --> END

7. **REPLACE NAVIGATION RECEIVER ASSEMBLY. Refer to REMOVAL**

DTC 62-47: HIGH TEMPERATURE

DESCRIPTION

DTC Code	DTC Detection Condition	Trouble Area
62-47	The sensor detects that the CD unit temperature is high (higher than 80°C ([176°F]).	Navigation receiver assembly

INSPECTION PROCEDURE

HINT:

After the inspection is completed, clear the DTCs. Refer to **DTC CHECK / CLEAR** .

PROCEDURE

1. **CHECK NAVIGATION RECEIVER ASSEMBLY**
    a. Park the vehicle in a cool place.
    b. Check that the temperature of the navigation receiver assembly has become sufficiently low, and then start the engine. Check that the malfunction disappears.

        OK

        Malfunction disappears.

    NG --> See step 2

    OK --> END

2. **REPLACE NAVIGATION RECEIVER ASSEMBLY. Refer to REMOVAL**

DTC 62-78: DSP ERROR

DESCRIPTION

DTC Code	DTC Detection Condition	Trouble Area
62-78	An error occurs during the decode process (MP3/WMA).	Navigation receiver assembly

INSPECTION PROCEDURE

HINT:

After the inspection is completed, clear the DTCs. Refer to **DTC CHECK / CLEAR** .

NOTE:

- **This code may be output even if there is no malfunction.**
- **If this code is output frequently, replace the navigation receiver assembly.**

PROCEDURE

1. **CLEAR DTC**
   a. Clear the DTCs. Refer to **DTC CHECK / CLEAR** .

   NEXT: Go to next step

2. **RECHECK FOR DTC**
   a. Recheck for DTCs and check if the same trouble occurs again.

      OK

      No DTC is output.

   NG --> See step 3

   OK --> END

3. **REPLACE NAVIGATION RECEIVER ASSEMBLY. Refer to REMOVAL**

DTC 62-7D: DISC CANNOT BE PLAYED; DTC 62-7E: NO PLAYABLE FILES; DTC 62-7F: COPYRIGHT PROTECTION ERROR

DESCRIPTION

DTC Code	DTC Detection Condition	Trouble Area

62-7D	Either condition is met: • An incompatible MP3/WMA file is used. • Although the file has an extension of ".mp3" or ".wma", the header information cannot be read.	• Disc • Navigation receiver assembly
62-7E	Either condition is met: • A disc with no music data is used. • Playable files are not on the disc (MP3/WMA).	
62-7F	A copy-protected file, which cannot be played, is used.	

INSPECTION PROCEDURE

HINT:

After the inspection is completed, clear the DTCs. Refer to **DTC CHECK / CLEAR** .

PROCEDURE

1. **CHANGE DISC**
   a. Insert a disc with a playable file and check if the disc can be played correctly.

      HINT:

      For details on playable files and discs, refer to the Owner's Manual.

      OK

      The disc can be played correctly.

   NG --> See step 2

   OK --> END

2. **REPLACE NAVIGATION RECEIVER ASSEMBLY. Refer to REMOVAL**

DTC C0-11: SATELLITE RADIO TUNER INTERNAL CIRCUIT ERROR 1; DTC C0-12: SATELLITE RADIO TUNER INTERNAL CIRCUIT ERROR 2; DTC C0-13: SATELLITE RADIO TUNER INTERNAL CIRCUIT ERROR 3; DTC C0-14: SATELLITE RADIO TUNER INTERNAL CIRCUIT ERROR 4; DTC C0-15: SATELLITE RADIO TUNER INTERNAL CIRCUIT ERROR 5; DTC C0-16: SATELLITE RADIO TUNER INTERNAL CIRCUIT ERROR 6

DESCRIPTION

DTC Code	DTC Detection Condition	Trouble Area
C0-11	Tuner PLL synchronization is impossible.	Stereo Component Tuner Assembly
C0-12	A communication error occurred in CDEC.	
C0-13	A communication error occurred in SSDEC.	
C0-14	No response received from SSDEC.	
C0-15	An error occurred in CAP internal NVM.	
C0-16	An error occurred in CAP.	

INSPECTION PROCEDURE

NOTE: After replacing the stereo component tuner assembly of vehicle subscribed to pay-type satellite radio broadcasts, registration of the XM radio ID is necessary.

HINT:

After the inspection is completed, clear the DTCs.

PROCEDURE

1. **REPLACE STEREO COMPONENT TUNER ASSEMBLY**
   a. Replace stereo component tuner assembly. Refer to **REMOVAL** .

   NEXT --> END

DTC C0-40: ANTENNA NOT CONNECTED; DTC C0-41: ANTENNA SHORTED

DESCRIPTION

DTC Code	DTC Detection Condition	Trouble Area
C0-40	Antenna is not connected.	• Antenna cord sub-assembly • Satellite radio antenna assembly • Stereo component tuner assembly
C0-41	Short in antenna circuit.	

INSPECTION PROCEDURE

NOTE: After replacing the stereo component tuner assembly of vehicle subscribed to pay-type satellite radio broadcasts, registration of the XM radio ID is necessary.

HINT:

After the inspection is completed, clear the DTCs.

PROCEDURE

1. **CHECK CONNECTOR CONNECTION CONDITION**
    a. Check that the satellite radio antenna cord sub-assembly is securely connected to the stereo component tuner assembly connector.

        OK

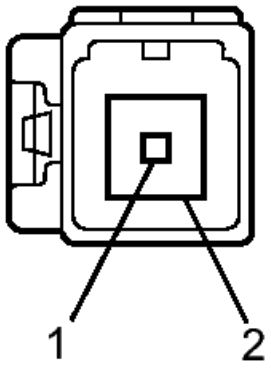
        The cord is securely connected.

    NG --> RECONNECT CONNECTOR CORRECTLY

    OK: Go to next step

2. **CHECK ANTENNA CORD SUB-ASSEMBLY**
    a. Disconnect the satellite radio antenna assembly and stereo component tuner assembly connectors.

*a



*b

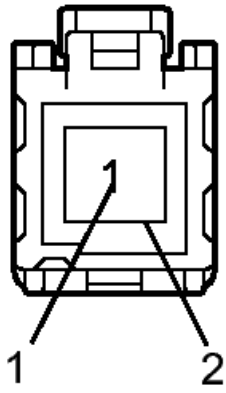


Fig. 11: Checking Antenna Cord Sub-Assembly
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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

Standard Resistance (Check for Open)

Tester Connection	Condition	Specified Condition
1 - 1	Always	Below 1 ohms
2 - 2	Always	Below 1 ohms

Standard Resistance (Check for Short)

Tester Connection	Condition	Specified Condition
1 - Body ground	Always	10 kohms or higher
2 - Body ground	Always	10 kohms or higher

TEXT IN ILLUSTRATION

*a	Front view of Antenna Cord (to Satellite Radio Antenna Assembly)
*b	Front view of Antenna Cord (to Stereo Component Tuner Assembly)

NG --> REPLACE ANTENNA CORD SUB-ASSEMBLY

OK: Go to next step

3. **INSPECT SATELLITE RADIO ANTENNA ASSEMBLY**
   a. Remove the satellite radio antenna assembly. Refer to **REMOVAL** .

*a

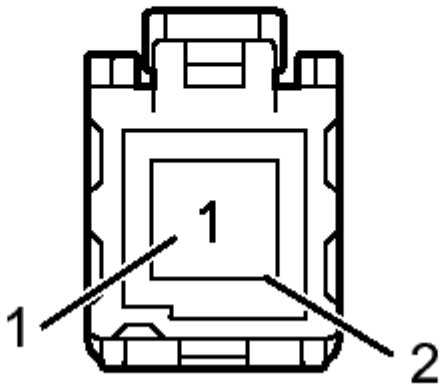


Fig. 12: Inspecting Satellite Radio Antenna Assembly
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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

Standard Resistance

Tester Connection	Condition	Specified Condition
1 - 2	Always	45 to 55 ohms

TEXT IN ILLUSTRATION

*a	Component without harness connected (Satellite Radio Antenna Assembly)

NG --> See step 5

OK: Go to next step

4. **REPLACE STEREO COMPONENT TUNER ASSEMBLY**

a. Replace the stereo component tuner assembly with a normal one.
b. Clear the DTCs. Refer to **DTC CHECK / CLEAR** .
c. Recheck for DTCs and check if the same trouble occurs again.

OK

Malfunction disappears.

NG --> See step 5

OK --> END

5. **REPLACE SATELLITE RADIO ANTENNA ASSEMBLY. Refer to REMOVAL**

SYMPTOM TESTS

Satellite Radio Broadcast cannot be Received

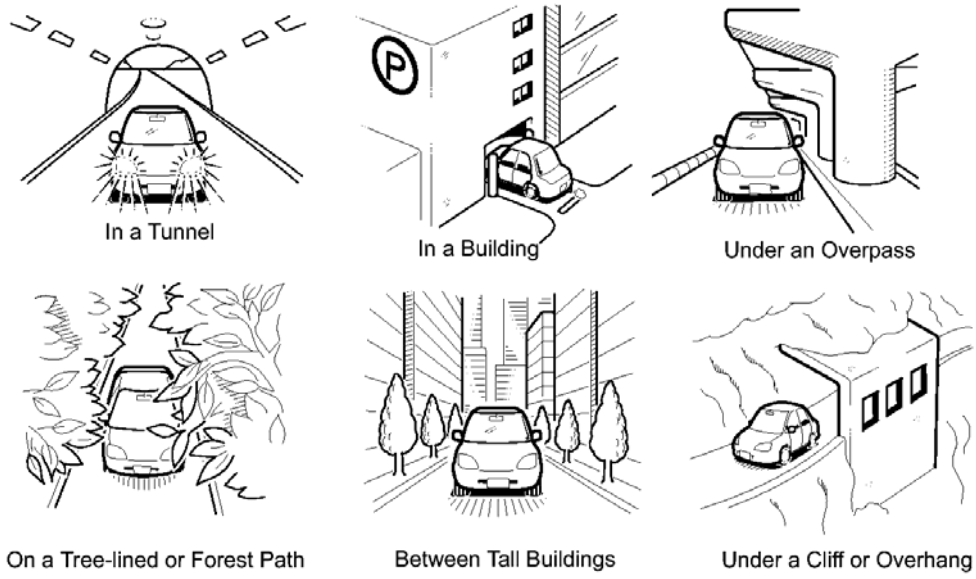
INSPECTION PROCEDURE

NOTE:

- **Some satellite radio broadcasts require payment. A contract must be made between a satellite radio service and the user. If the contract expires, it will not be possible to listen to the broadcast.**
- **After replacing the stereo component tuner assembly of vehicles subscribed to pay-type satellite radio broadcasts, registration of the XM radio ID is necessary.**

PROCEDURE

1. **CHECK SURROUNDINGS**
   a. Check if the vehicle is in an environment where reception is difficult due to something blocking the area above the vehicle.



P

Fig. 13: Reasons For Poor Reception
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

HINT:

If the area above the vehicle is blocked, such as when in a building or tunnel, reception may not be possible.

OK

Area above the vehicle is not blocked.

NG --> END (MOVE VEHICLE TO LOCATION WHERE RECEPTION IS BETTER)

OK: Go to next step

2. **CHECK STEREO COMPONENT TUNER ASSEMBLY**
   a. Check if CH001 (free broadcast) can be received.

      OK

      CH001 can be received.

NG --> See step 6

OK: Go to next step

3. **CHECK DISPLAY SETTING**
   a. Check the display content.

RESULT

Result	Proceed to
"UPDATING" is displayed	A
"-----" is displayed	B
None of the displays above are shown	C

B --> THERE IS NO SONG/PROGRAM TITLE OR ARTIST NAME/FEATURE ASSOCIATED WITH CHANNEL AT THAT TIME

C --> See step 6

A: Go to next step

4. **CHECK CONTRACT CONDITIONS**
   a. Check if the pay-type contract has been extended, or if the contract period has ended.

OK

Pay-type contract is valid.

NG --> TO RECEIVE PAY-TYPE BROADCASTS, CONTRACT MUST BE MADE WITH SATELLITE RADIO SERVICE

OK: Go to next step

5. **PERFORM ACTIVATION REFRESH**
   a. Perform activation refresh by referring to the satellite radio service web site (http://www.xmradio.com/refresh/).

HINT:

The XM radio ID that is necessary to perform activation refresh can be displayed when CH000 is selected on the satellite radio.

OK

Malfunction disappears.

NG --> See step 10

OK --> END

6. **CHECK DISPLAY**
   a. Check the display content.

RESULT

Result	Proceed to
"ANTENNA" is displayed	A
"NO SIGNAL" is displayed	B
"LOADING" is displayed	B
"OFF AIR" is displayed	C
After "---" is displayed, display automatically switches to CH001	D
None of the displays above are shown	E

B --> END (MOVE VEHICLE TO LOCATION WHERE RECEPTION IS BETTER)

C --> CHANNEL IS CURRENTLY NOT BEING BROADCAST. BROADCAST CAN BE LISTENED TO OR VIEWED WHEN IT IS BACK ON AIR (CONFIRM WITH RADIO STATION)

D --> CHANNEL BROADCAST HAS ENDED (CONFIRM WITH RADIO STATION)

E --> See step 9

A: Go to next step

7. **CHECK CONNECTION OF ANTENNA CABLE**
   a. Check if the satellite radio antenna cable is securely connected to the stereo component tuner assembly.

OK

Satellite radio antenna cable is securely connected.

NG --> SECURELY CONNECT SATELLITE RADIO ANTENNA CABLE

OK --> See step 8

8. **REPLACE SATELLITE RADIO ANTENNA ASSEMBLY. Refer to REMOVAL**
9. **CONFIRM CURRENTLY SELECTED CHANNEL**
   a. Confirm if CH000 is currently selected.

      OK

      CH000 is selected.

   NG --> See step 11

   OK --> END (CH000 HAS NO SOUND. SELECT ANOTHER CHANNEL.)

10. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**
11. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**

Satellite Radio Broadcast cannot be Selected or After Selecting Broadcast, Broadcast cannot be Added into Memory

INSPECTION PROCEDURE

NOTE:

- **Some satellite radio broadcasts require payment. A contract must be made between a satellite radio service and the user. If the contract expires, it will not be possible to listen to the broadcast.**
- **After replacing the stereo component tuner assembly of vehicles subscribed to pay-type satellite radio broadcasts, registration of the XM radio ID is necessary.**

PROCEDURE

1. **CHECK SATELLITE RADIO**
   a. Check radio condition.

      RESULT

Result	Proceed to
Broadcast	

cannot be selected	A
Broadcast can be selected, but selection cannot be memorized	B

B --> See step 3

A --> See step 2

2. **REPLACE STEREO COMPONENT TUNER ASSEMBLY. Refer to REMOVAL**
3. **CHECK SATELLITE RADIO**
   a. Check the number of preset channels.

      OK

      18 channels have already been preset.

   NG --> See step 4

   OK --> END (ONLY 18 CHANNELS CAN BE PRESET)

4. **CHECK BATTERY**
   a. Check if the battery was replaced.

      OK

      Battery was not replaced.

   NG --> See step 5

   OK --> See step 6

5. **ADD PRESET CHANNEL INTO MEMORY AGAIN**
   a. Check if the preset channels that have been cleared can be added into memory again.

      OK

      Preset channels can be added into memory.

   NG --> See step 7

OK --> END

6. **REPLACE STEREO COMPONENT TUNER ASSEMBLY. Refer to REMOVAL**
7. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**

Traffic Information is not Displayed

INSPECTION PROCEDURE

NOTE:

- **XM NavTraffic information requires payment. An "XM NavTraffic Premium Package" contract must be made between the satellite radio service and the user. If the contract expires, XM navtraffic information will not be available.**
- **XM NavTraffic information does not apply to all roads, only main roads. For the latest information on coverage areas, contact the satellite radio service.**
- **After replacing the stereo component tuner assembly of vehicles subscribed to pay-type satellite radio broadcasts, registration of the XM radio ID is necessary.**

PROCEDURE

1. **CHECK DISPLAY**
   a. Check the XM navtraffic information screen.

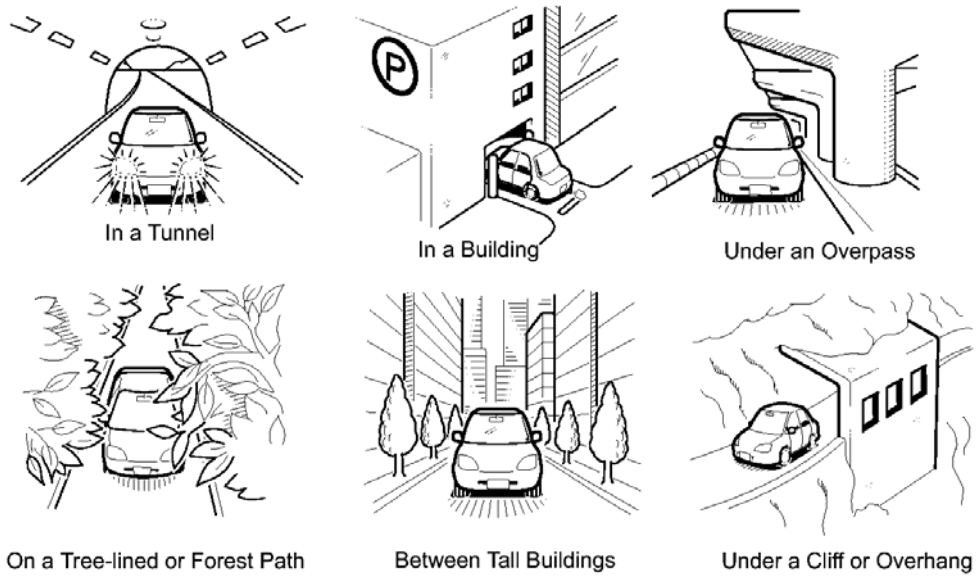
RESULT

Result	Proceed to
XM NavTraffic information is not displayed	A
XM NavTraffic information is displayed but is not updated	B

B --> See step 7

A: Go to next step

2. **CHECK SURROUNDINGS**



P

Fig. 14: Reasons For Poor Reception
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

a. Check if the vehicle is in an environment where reception is difficult due to something blocking the area above the vehicle.

HINT:

If the area above the vehicle is blocked, such as when in a building or tunnel, reception may not be possible.

OK

Area above vehicle is not blocked.

NG --> END (MOVE VEHICLE TO LOCATION WHERE RECEPTION IS BETTER)

OK: Go to next step

3. **CHECK COVERAGE AREA**
   a. Check that your current position is within the XM navtraffic information coverage area.

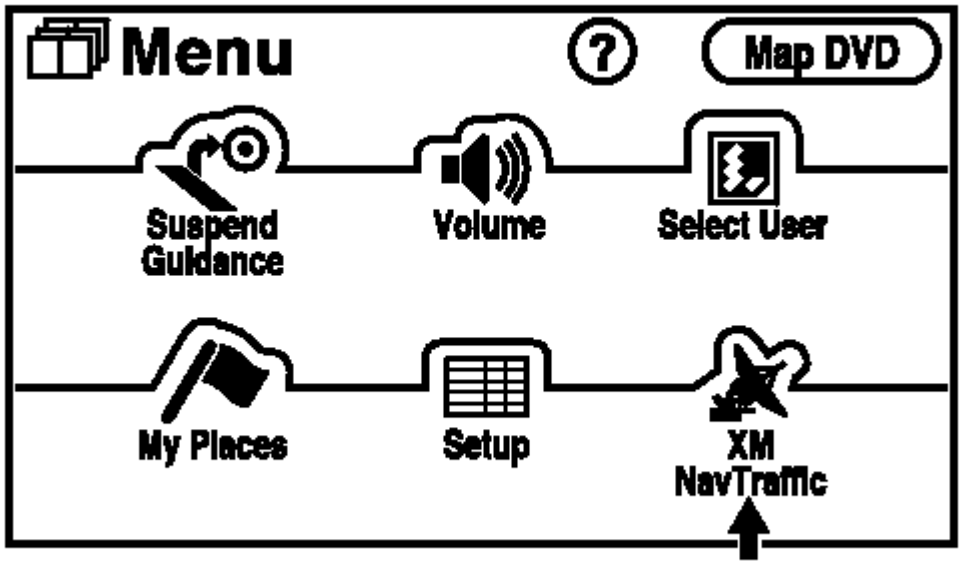
OK

Vehicle is within coverage area.

NG --> MOVE TO WITHIN COVERAGE AREA (FOR LATEST COVERAGE AREA, CONFIRM WITH RADIO STATION)

OK: Go to next step

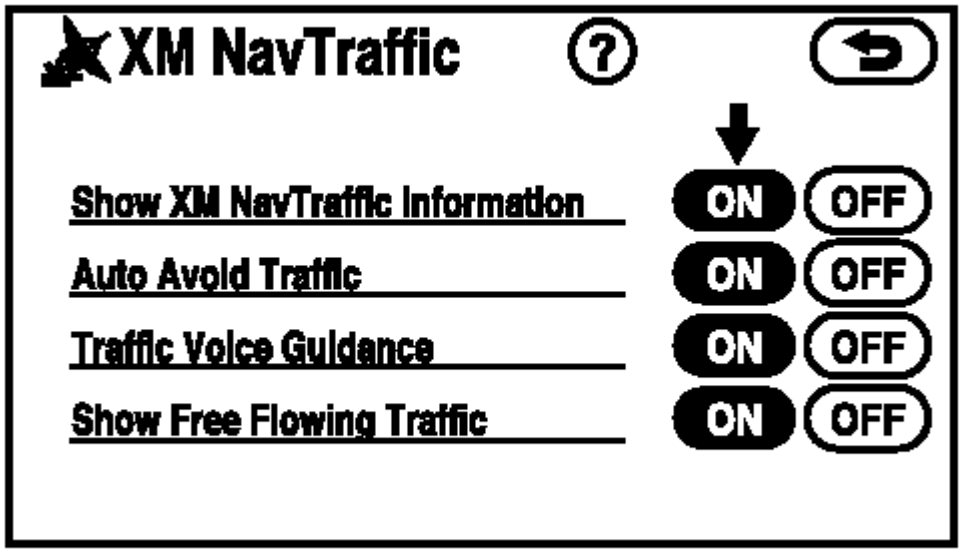
4. **CHECK SETTINGS OF XM TRAFFIC INFORMATION**
   a. Enter the "Menu" screen by pressing the "MENU" switch.
   b. Select "XM NavTraffic".



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Fig. 15: Screen Display - XM NavTraffic
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

   c. Check if "Show XM NavTraffic Information" is on.



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Fig. 16: Screen Display - Show XM NavTraffic Information (On)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK

"Show XM NavTraffic Information" is on.

NG --> TURN "Show XM NavTraffic Information" on

OK: Go to next step

5. **CHECK CONTRACT CONDITIONS**
   a. Check if the "XM NavTraffic Premium Package" contract has been extended, or if the contract period has ended.

      OK

      Contract is valid.

   NG --> TO RECEIVE XM NAVTRAFFIC INFORMATION, CONTRACT MUST BE MADE WITH SATELLITE RADIO SERVICE

   OK: Go to next step

6. **PERFORM ACTIVATION REFRESH**
   a. Perform activation refresh by referring to the satellite radio service web site (http://www.xmradio.com/refresh/).

HINT:

The XM radio ID that is necessary to perform activation refresh can be displayed when CH000 is selected on the satellite radio.

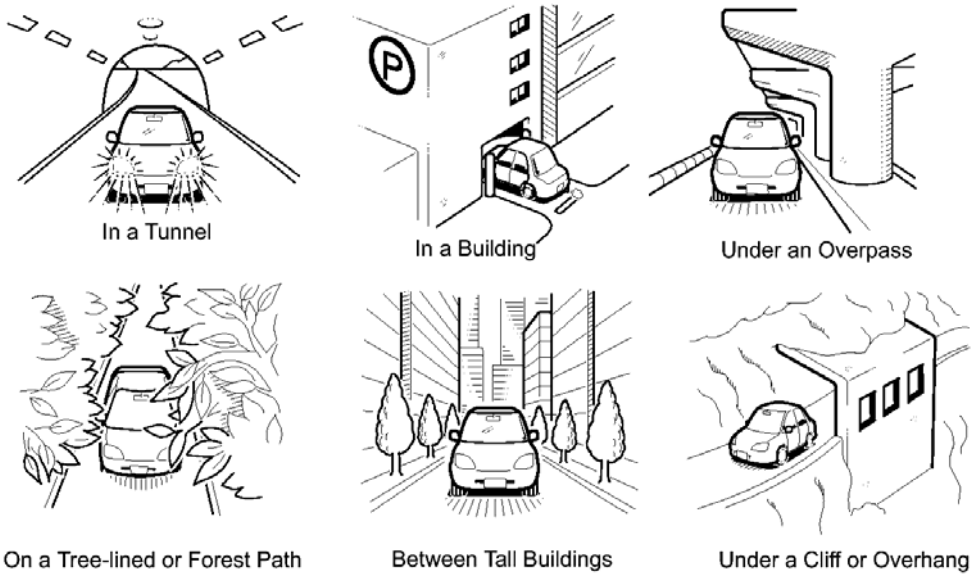
OK

Malfunction disappears.

NG --> See step 13

OK --> END

7. **CHECK SURROUNDINGS**



P

Fig. 17: Reasons For Poor Reception
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

a. Check if the vehicle is in an environment where reception is difficult due to something blocking the area above the vehicle.

HINT:

If the area above the vehicle is blocked, such as when in a building or tunnel, reception may not be possible.

OK

Area above vehicle is not blocked.

NG --> END (XM NAVTRAFFIC INFORMATION IS NOT DISPLAYED BECAUSE AREA IS NOT IN COVERAGE AREA)

OK: Go to next step

8. **CHECK COVERAGE AREA**
   a. Check if the area on the display that does not match actual traffic conditions is within the XM NavTraffic coverage area.

      OK

      Area that does not match is within coverage area.

   NG --> END (MOVE VEHICLE TO LOCATION WHERE RECEPTION IS BETTER)

   OK: Go to next step

9. **CHECK CONTRACT CONDITIONS**
   a. Check if the "XM NavTraffic Premium Package" contract has been extended, or if the contract period has ended.

      OK

      Contract is valid.

   NG --> TO RECEIVE XM NAVTRAFFIC INFORMATION, CONTRACT MUST BE MADE WITH SATELLITE RADIO SERVICE

   OK: Go to next step

10. **PERFORM ACTIVATION REFRESH**
    a. Perform activation refresh by referring to the satellite radio service web site (http://www.xmradio.com/refresh/).

       OK

       Malfunction disappears.

    NG --> See step 11

    OK --> END

11. **CHECK DISPLAY AGAIN**
    a. Wait for 2.5 minutes, and check again if the actual traffic conditions match the display.

       OK

       Actual traffic conditions match display.

    NG --> See step 12

    OK --> END (NAVTEQ HAS UPDATED DATA OF TRAFFIC CONDITIONS)

12. **CHECK DISPLAY AGAIN**
    a. After 30 minutes have passed, check if all XM navtraffic information disappears.

       HINT:

       After XM navtraffic information updates have stopped, the navigation system continues displaying XM navtraffic information for a maximum of 30 minutes.

       RESULT

Result	Proceed to
All XM navtraffic information disappears.	A
Some XM navtraffic information is wrong.	B
Actual traffic conditions match display.	C

    B --> NAVTEQ MAY NOT BE PROVIDING DATA VERSION OF CERTAIN XM NAVTRAFFIC INFORMATION (DATA ERROR, PROBLEM, ETC.)

    C --> NAVTEQ HAS UPDATED DATA OF TRAFFIC CONDITIONS

    A --> END (MOVE VEHICLE TO LOCATION WHERE RECEPTION IS BETTER)

13. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**

Noise Occurs

INSPECTION PROCEDURE

PROCEDURE

1. **NOISE CONDITION**
   a. Check from which direction the noise comes.
      - Front No. 1 speaker assembly LH
      - Front No. 1 speaker assembly RH
      - Front No. 2 speaker assembly LH
      - Front No. 2 speaker assembly RH
      - Rear speaker assembly LH
      - Rear speaker assembly RH

      OK

      The location of the noise source can be determined.

   NG --> See step 3

   OK: Go to next step

2. **CHECK SPEAKERS**
   a. Check the installation conditions of the speaker units that are located near the noise source and that there are no cracks, scratches, deformation or other malfunctions.

      RESULT

Result	Proceed to
A speaker is installed incorrectly	A
Foreign objects are in the speaker	B
A speaker cone is broken	C
No malfunction is found	D

   A --> REINSTALL SPEAKER

B --> REMOVE FOREIGN OBJECT

C --> REPLACE SPEAKER

D: Go to next step

3. **CHECK NOISE CONDITIONS**
   a. Check the noise condition.

      HINT:

      The radio has a noise prevention function to reduce noise when listening to the radio. If a loud noise occurs, check whether the ground at the antenna mounting base and the noise prevention unit are installed and wired correctly.

Condition Under Which Noise Occurs	Noise Source
Noise increases when the accelerator pedal is depressed, but stops when the engine is stopped.	Generator
Noise occurs during A/C or heater operation.	Blower motor
Noise occurs when the horn switch is pressed and released or when pressed and held.	Horn
Noise occurs synchronously with the blink of the turn signal.	Flasher
Noise occurs during window	Washer

washer operation.	
Noise occurs during wiper operation.	Wiper
Noise occurs when the brake pedal is depressed.	Stop light switch
Others	Static electricity

HINT:

- In the left column of the chart, find the situation that matches the customer complaint. Then, in the right column, find the part that is causing the noise. Check the noise filter on or for the part.
- To save time and avoid a misdiagnosis, first make sure that the noise is not coming from outside the vehicle.
- Noise should be removed in descending order of loudness.
- Setting the radio to a frequency where no signal is received may make recognition of the noise problem easier.

OK

The noise source cannot be determined.

NG --> REPAIR OR REPLACE NOISE SOURCE

OK --> See step 4

4. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**

No Sound can be Heard from Speakers

INSPECTION PROCEDURE

PROCEDURE

1. **CHECK AUDIO SETTING**
   a. Enter the sound adjustment screen by pressing the "SOUND" switch on the AUDIO display.

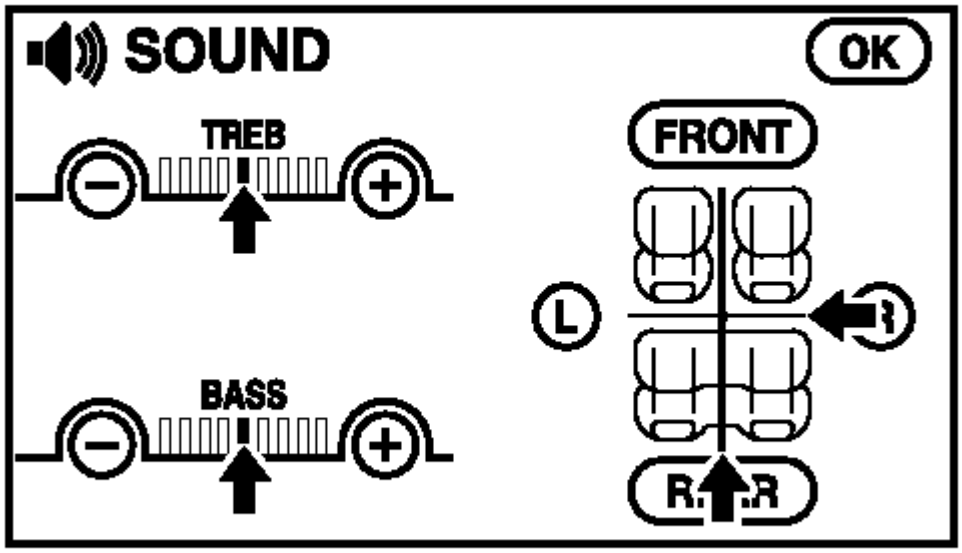


Fig. 18: View Of Audio Setting Display
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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

OK

Audio system returns to normal.

HINT:

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

NG --> See step 2

OK --> END

2. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**

CD cannot be Ejected

INSPECTION PROCEDURE

PROCEDURE

1. **PRESS "EJECT" AND CHECK OPERATION**

a. Press the CD eject switch of the navigation receiver assembly for 5 seconds or more and check that the CD is ejected.

OK

The CD is ejected.

NG --> See step 3

OK: Go to next step

2. **REPLACE CD WITH ANOTHER AND RECHECK**
   a. Replace CD with another and check that it can be ejected.

OK

The CD can be ejected.

NG --> See step 4

OK --> CD IS FAULTY

3. **REPLACE NAVIGATION RECEIVER ASSEMBLY. Refer to REMOVAL**
4. **REPLACE NAVIGATION RECEIVER ASSEMBLY. Refer to REMOVAL**

CD cannot be Inserted or is Ejected Right After Insertion

INSPECTION PROCEDURE

PROCEDURE

1. **CHECK IF PROPER CD IS INSERTED**
   a. Make sure that the CD is an audio CD, or a CD with an MP3 or WMA file, and that it is not deformed, flawed, stained, burred or otherwise defective.

OK

The CD is normal.

HINT:

- Translucent or uniquely-shaped CDs cannot be played.
- Commercial audio CDs can be played.
- CD-DA files on CD-ROMs, CD-Rs, and CD-RWs can be played.
- MP3 and WMA files on CD-ROMs, CD-Rs and CD-RWs can be played.
- For details on playable CDs, refer to the Owner's Manual.

NG --> CD IS FAULTY

OK: Go to next step

2. **CHECK THAT CD IS INSERTED PROPERLY**
   a. Check whether or not the CD is inserted upside down.

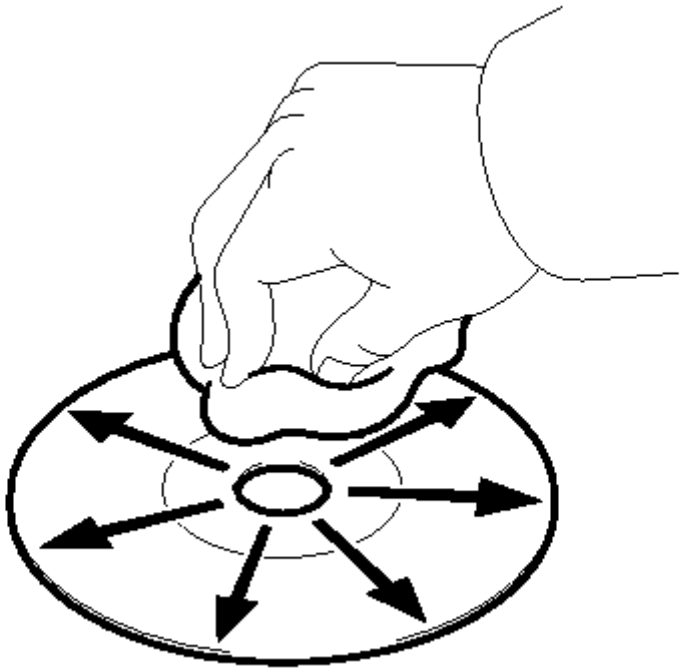
      OK

      The CD is properly inserted.

   NG --> INSERT CD PROPERLY

   OK: Go to next step

3. **CHECK CD**
   a. Check for dirt on the CD surface.



P

Fig. 19: Cleaning Disc Surface With Soft Dry Cloth
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK

Dirt is on the CD surface.

NOTE: Do not use a conventional record cleaner or antistatic preservative.

HINT:

If the CD is dirty, clean the CD by wiping the CD surface radially with a soft cloth.

NG --> See step 4

OK --> CD WAS DIRTY

4. **REPLACE CD WITH ANOTHER AND RECHECK**
   a. Replace the CD with a normal one and check that the same trouble does not occur.

      OK

      Same trouble does not occur.

   NG --> See step 5

   OK --> CD IS FAULTY

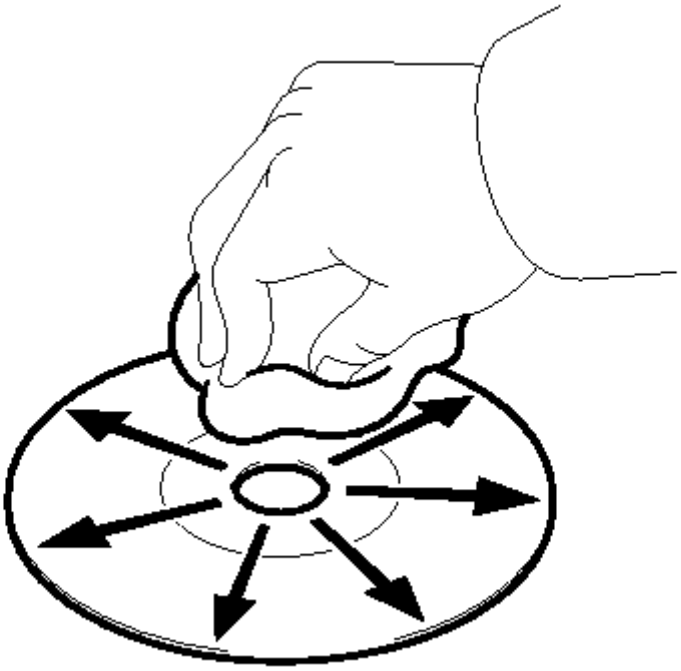
5. **REPLACE NAVIGATION RECEIVER ASSEMBLY. Refer to <u>REMOVAL</u>**

CD Sound Skips

INSPECTION PROCEDURE

PROCEDURE

1. **CHECK CD**
   a. Check the CD.



P

Fig. 20: Cleaning Disc Surface With Soft Dry Cloth
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK

The CD is clean.

NOTE: Do not use a conventional record cleaner or antistatic preservative.

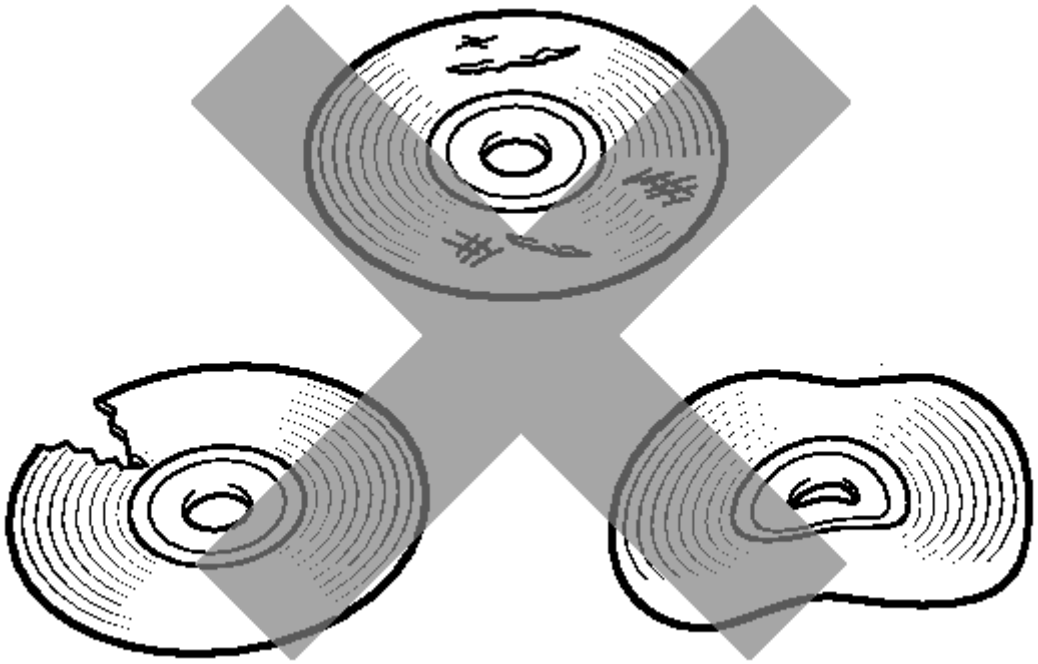
HINT:

If the CD is dirty, clean the CD by wiping the CD surface radially with a soft cloth.

NG --> CLEAN CD

OK: Go to next step

2. **CHECK CD**
   a. Check that the CD is not deformed or cracked.



P

Fig. 21: Identifying Deformed Or Cracked Disc
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK

No deformation or cracks in the CD.

NG --> CD IS FAULTY

OK: Go to next step

3. **CHECK OPERATION OF ANOTHER CD**
   a. Check using another CD.
      1. Check if the problem recurs using another CD.

         OK

         The problem does not occur.

NG --> See step 4

OK --> CD IS FAULTY

4. **CHECK NAVIGATION RECEIVER ASSEMBLY**
   a. Check the navigation receiver assembly installation condition.
      1. Check that the navigation receiver assembly is properly installed.

OK

The navigation receiver assembly is properly installed.

NG --> See step 6

OK --> See step 5

5. **REPLACE NAVIGATION RECEIVER ASSEMBLY. Refer to REMOVAL**
6. **REINSTALL NAVIGATION RECEIVER ASSEMBLY. Refer to INSTALLATION**

Radio Broadcast cannot be Received or Poor Reception

INSPECTION PROCEDURE

PROCEDURE

1. **CHECK NAVIGATION RECEIVER ASSEMBLY**
   a. Check the radio automatic station search function.
      1. Check the radio automatic station search function by activating it.

         OK

         The radio automatic station search function works properly.

NG --> See step 2

OK --> See step 5

2. **CHECK OPTIONAL COMPONENTS**
   a. Check for optional components (sun-shade film, telephone antenna, etc.).
      1. Check if any optional components, that may decrease reception capacity, such as a sunshade film or telephone antenna, are installed.

         OK

         Optional components are installed.

         NOTE: Do not remove any optional components installed by the customer without his or her consent.

NG --> See step 3

OK --> REMOVE OPTIONAL COMPONENTS AND CHECK AGAIN (SEE NOTE ABOVE)

3. **CHECK NAVIGATION RECEIVER ASSEMBLY (ANTENNA)**

a. Preparation for check

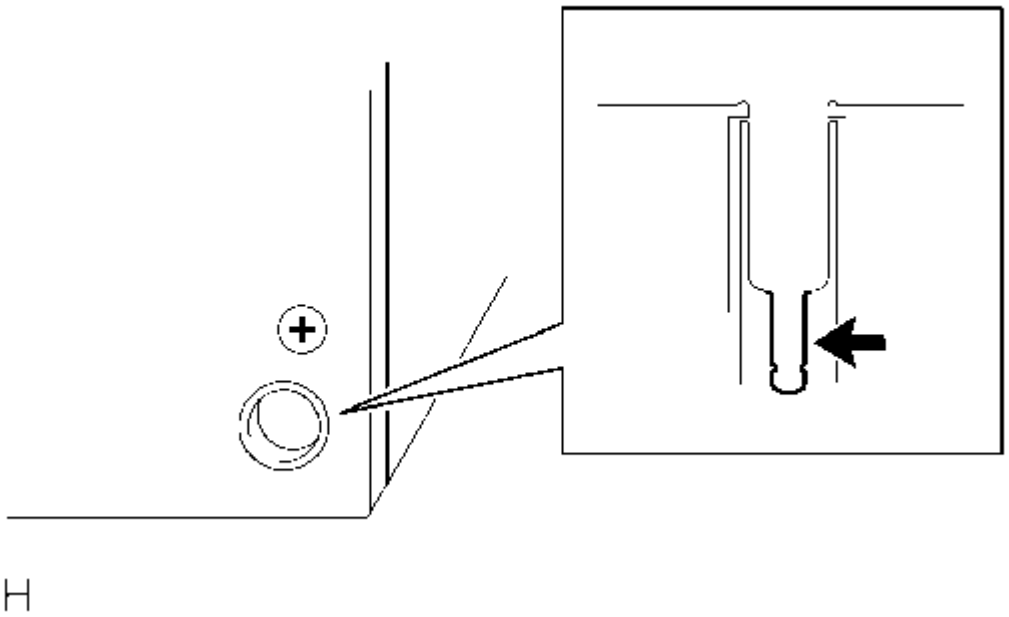


Fig. 22: Identifying Antenna Plug On Radio And Navigation Assembly
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

1. Remove the antenna plug from the navigation receiver assembly.

b. Check for noise

1. Turn the ignition switch to ACC with the navigation receiver assembly connector connected.
2. Turn the radio on and change to AM mode.
3. Place a screwdriver, thin wire, or other metal object on the navigation receiver's antenna jack and check that noise can be heard from the speaker.

OK

Noise occurs.

NG --> See step 6

OK: Go to next step

4. **REPLACE FENDER ANTENNA ASSEMBLY**

a. Replace the fender antenna assembly with a normally functioning part. Refer to **REMOVAL** .

b. Check for noise

OK

Radio broadcasts can be received.

NG --> REPLACE ANTENNA CORD SUB-ASSEMBLY

OK --> END (FENDER ANTENNA ASSEMBLY IS MALFUNCTION)

5. **REPLACE NAVIGATION RECEIVER ASSEMBLY. Refer to REMOVAL**
6. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**

No Image Appears on Multi-display

INSPECTION PROCEDURE

PROCEDURE

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: Go to next step

2. **CHECK IMAGE QUALITY SETTING**
   a. Check that the screen color quality can be set.

      OK

      Setting is possible.

   NG --> See 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 cabin temperature 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

OK --> See step 4

4. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**

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

INSPECTION PROCEDURE

PROCEDURE

1. **CHECK VEHICLE SIGNAL (DISPLAY CHECK MODE)**
   a. Enter the "Display Check" mode and select "Vehicle Signal Check Mode". Refer to **OPERATION CHECK** .

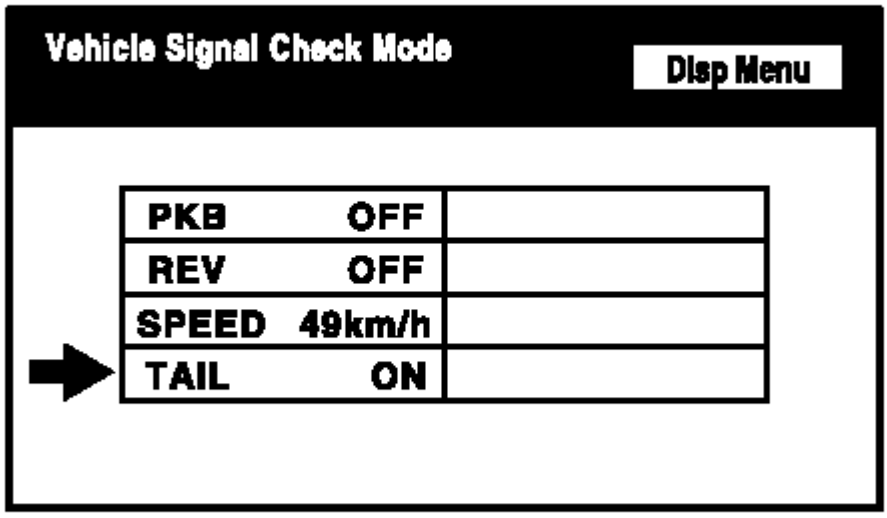


Fig. 23: Screen Display - Vehicle Signal Check Mode
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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

operation.

OK

Light Control Switch Condition	Display Condition
TAIL or HEAD	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 switch operation.

NG --> See step 3

OK --> See step 2

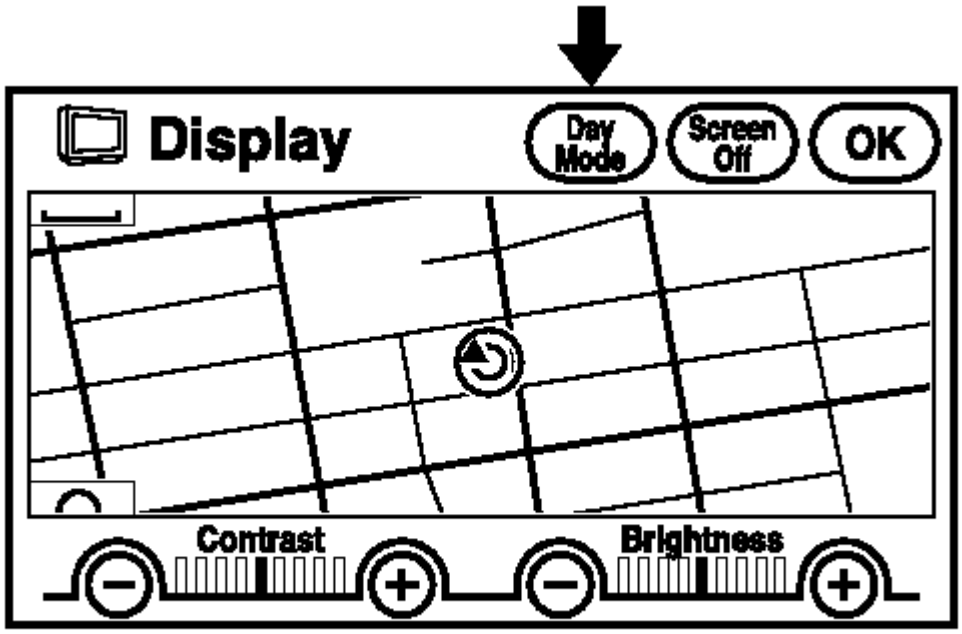
2. **REPLACE NAVIGATION RECEIVER ASSEMBLY. Refer to REMOVAL**
3. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**

Display does not Dim when Light Control Switch is Turned ON

INSPECTION PROCEDURE

PROCEDURE

1. **CHECK IMAGE QUALITY SETTING**
   a. Enter the display adjustment screen by pressing the "DISP" switch.



P

Fig. 24: Screen Display - Day Mode
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

b. Turn the light control switch to the TAIL position.
c. Check if "Day Mode" on the display is off.

OK

"Day Mode" is off.

NG --> TURN "DAY MODE" SETTING OFF

OK: Go to next step

2. **CHECK VEHICLE SIGNAL (DISPLAY VEHICLE SIGNAL)**
   a. Enter the "Display Check" mode and select "Vehicle Signal Check Mode". Refer to **OPERATION CHECK** .

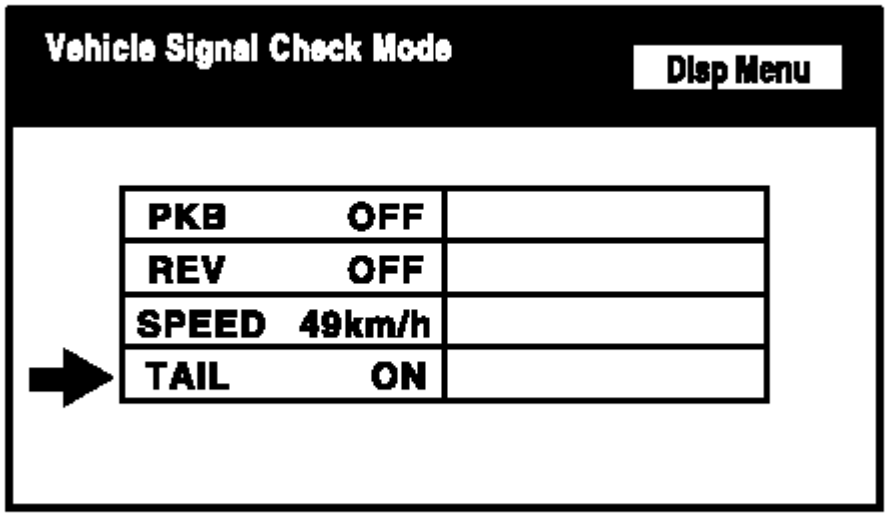


Fig. 25: Screen Display - Vehicle Signal Check Mode (Tail On)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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

OK

Light Control Switch Condition	Display Condition
TAIL or HEAD	ON
OFF	OFF

HINT:

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

NG --> See step 4

OK --> See step 3

3. **REPLACE NAVIGATION RECEIVER ASSEMBLY. Refer to REMOVAL**
4. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer**

to PROBLEM SYMPTOMS TABLE

Panel Switches do not Function

INSPECTION PROCEDURE

PROCEDURE

1. **CHECK PANEL SWITCH**
   a. Check for foreign matter around the switch that might prevent operation.

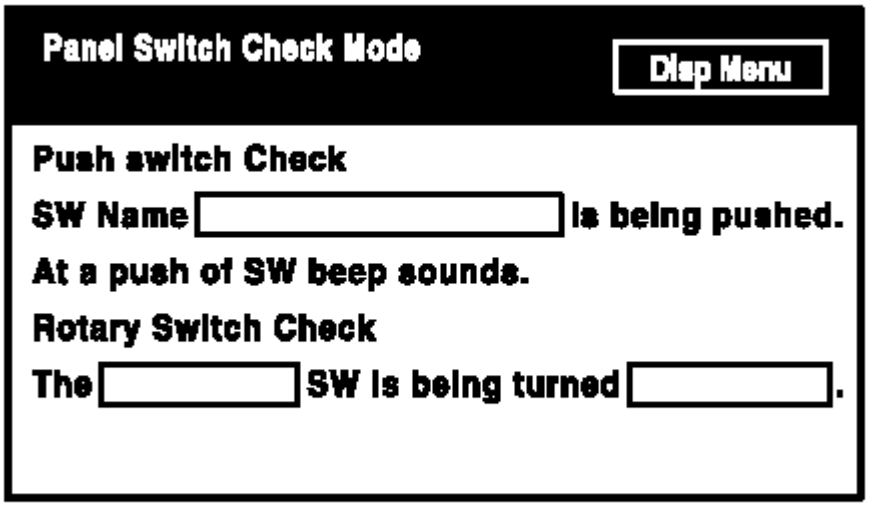
      OK

      No foreign matter is found.

   NG --> REMOVE ANY FOREIGN MATTER FOUND

   OK: Go to next step

2. **CHECK PANEL SWITCH (DISPLAY CHECK MODE)**
   a. Enter the "Display Check" mode and select "Panel Switch Check". Refer to **OPERATION CHECK** .



P

Fig. 26: Screen Display - Panel Switch Check Mode
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

   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 --> See step 4

OK --> See step 3

3. **REPLACE NAVIGATION RECEIVER ASSEMBLY. Refer to REMOVAL**
4. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**

Touch Panel Switch does not Function

INSPECTION PROCEDURE

PROCEDURE

1. **CHECK TOUCH PANEL**
   a. Check for foreign matter on the display.

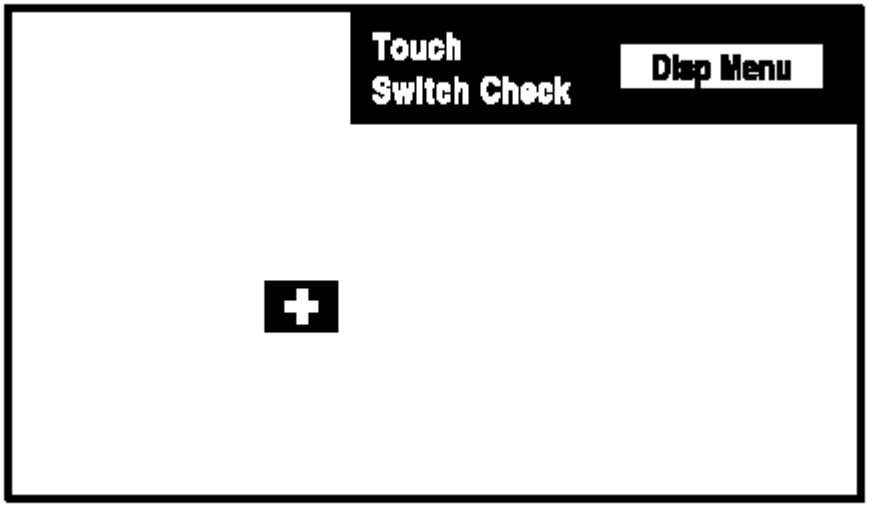
      OK

      The display is clean.

   NG --> CLEAN DISPLAY AND RECHECK TOUCH PANEL

   OK: Go to next step

2. **CHECK TOUCH SWITCH (DISPLAY CHECK MODE)**
   a. Enter the "Display Check" mode and select "Touch Switch Check". Refer to **OPERATION CHECK** .



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Fig. 27: Screen Display - Touch Switch Check
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

b. Touch the display in the area where the switch malfunction occurs.

OK

A "+" mark appears at the touched position.

NG --> See step 3

OK --> See step 4

3. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**
4. **REPLACE NAVIGATION RECEIVER ASSEMBLY. Refer to REMOVAL**

Display Panel does not Open, Tilt or Tilts Improperly

INSPECTION PROCEDURE

PROCEDURE

1. **CHECK NAVIGATION RECEIVER ASSEMBLY**
   a. Check the installation condition of the navigation receiver assembly.

   OK

Installed properly.

NG --> See step 4

OK: Go to next step

2. **CHECK NAVIGATION RECEIVER ASSEMBLY**
   a. Check for foreign matter or obstructions caught in the moving parts of the panel.

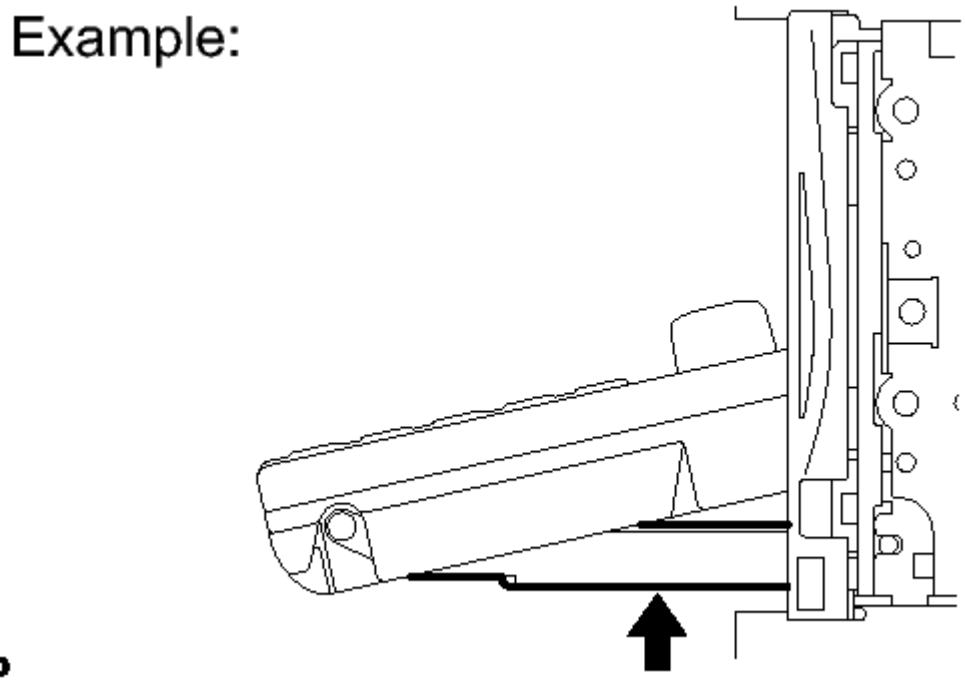


Fig. 28: Checking For Foreign Matter Or Obstructions At Navigation Receiver Assembly (Example)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK

No obstruction or foreign matter found.

NG --> REMOVE ANY OBSTRUCTION OR FOREIGN MATTER FOUND

OK: Go to next step

3. **CHECK OPERATION**
   a. Check if the navigation and audio systems function properly.

OK

Navigation and audio systems function properly.

NG --> See step 6

OK --> See step 5

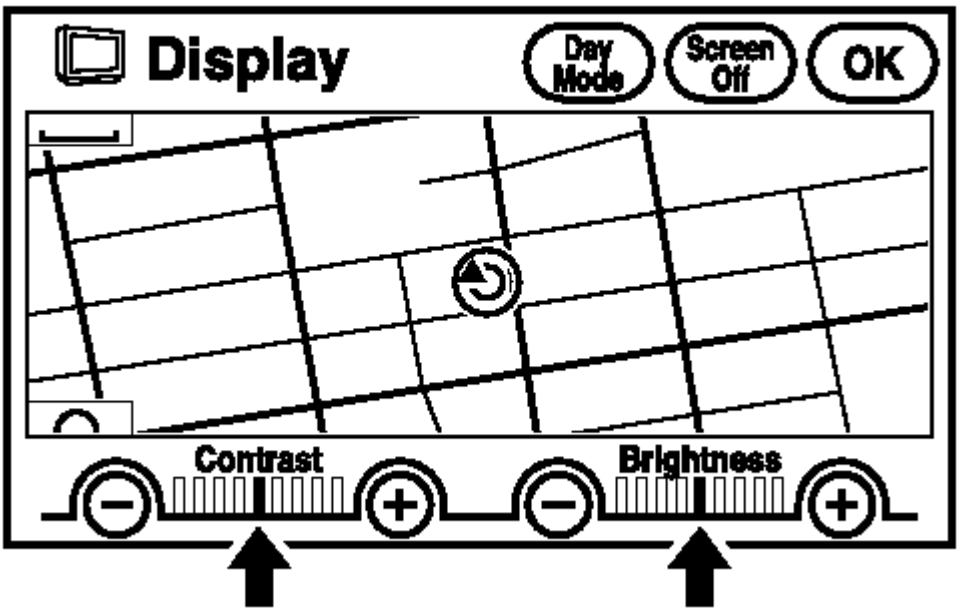
4. **INSTALL NAVIGATION RECEIVER ASSEMBLY PROPERLY. Refer to INSTALLATION**
5. **REPLACE NAVIGATION RECEIVER ASSEMBLY. Refer to REMOVAL**
6. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**

Screen Flicker or Color Distortion

INSPECTION PROCEDURE

PROCEDURE

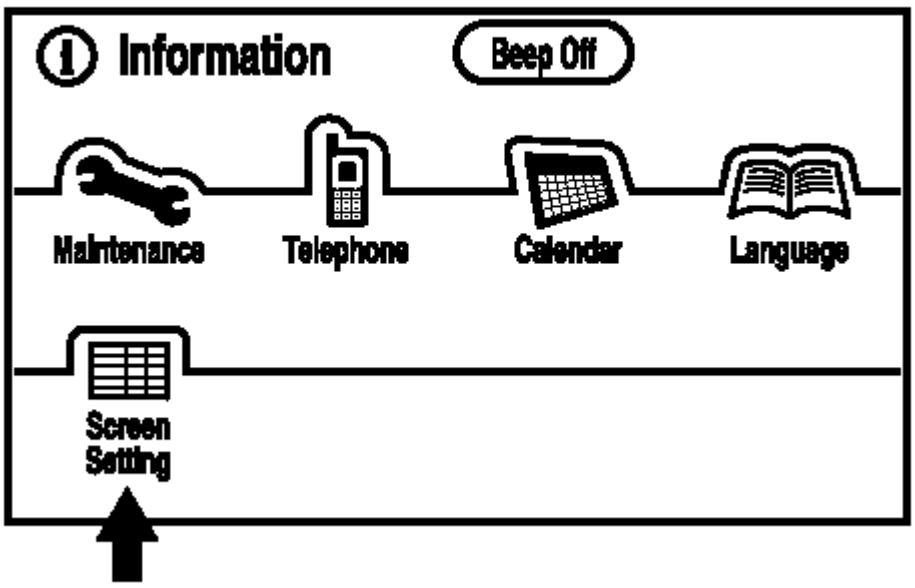
1. **CHECK DISPLAY SETTING**
   a. Enter the display adjustment screen by pressing the "DISP" switch.



P

Fig. 29: Screen Display - Display Settings (Contrast And Brightness)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

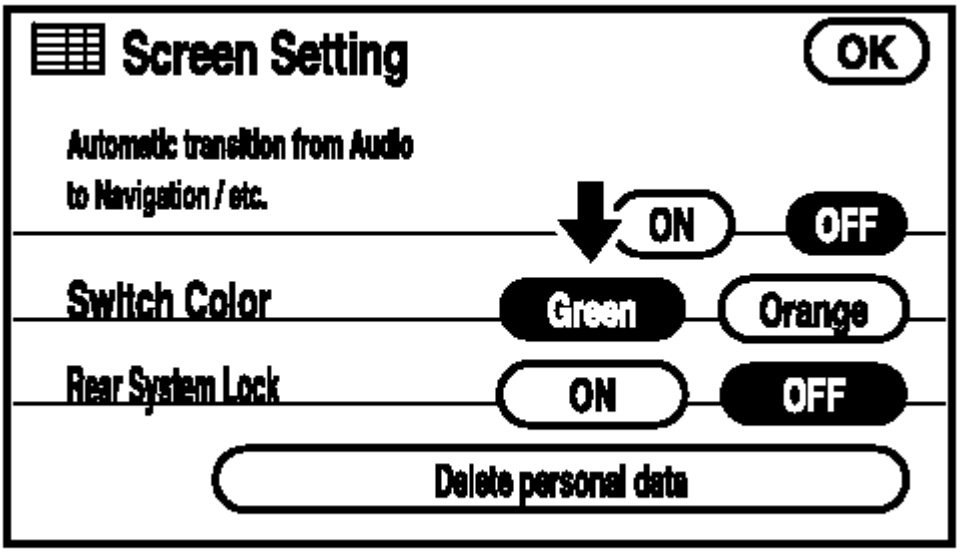
   b. Reset display settings (contrast and brightness) and check that the screen appears normal.
   c. Press the "INFO" switch and then select "Screen Setting".



P

Fig. 30: Screen Display - Screen Setting
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

d. Set the "Switch Color" to "Green" (initial setting) and check if the display returns to normal.



P

Fig. 31: Screen Display - Switch Color to Green (Initial Setting)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK

The display returns to normal.

NG --> See step 2

OK --> END

2. **CHECK CABIN**
   a. Check that the cabin temperature is higher than -20°C (-4°F).

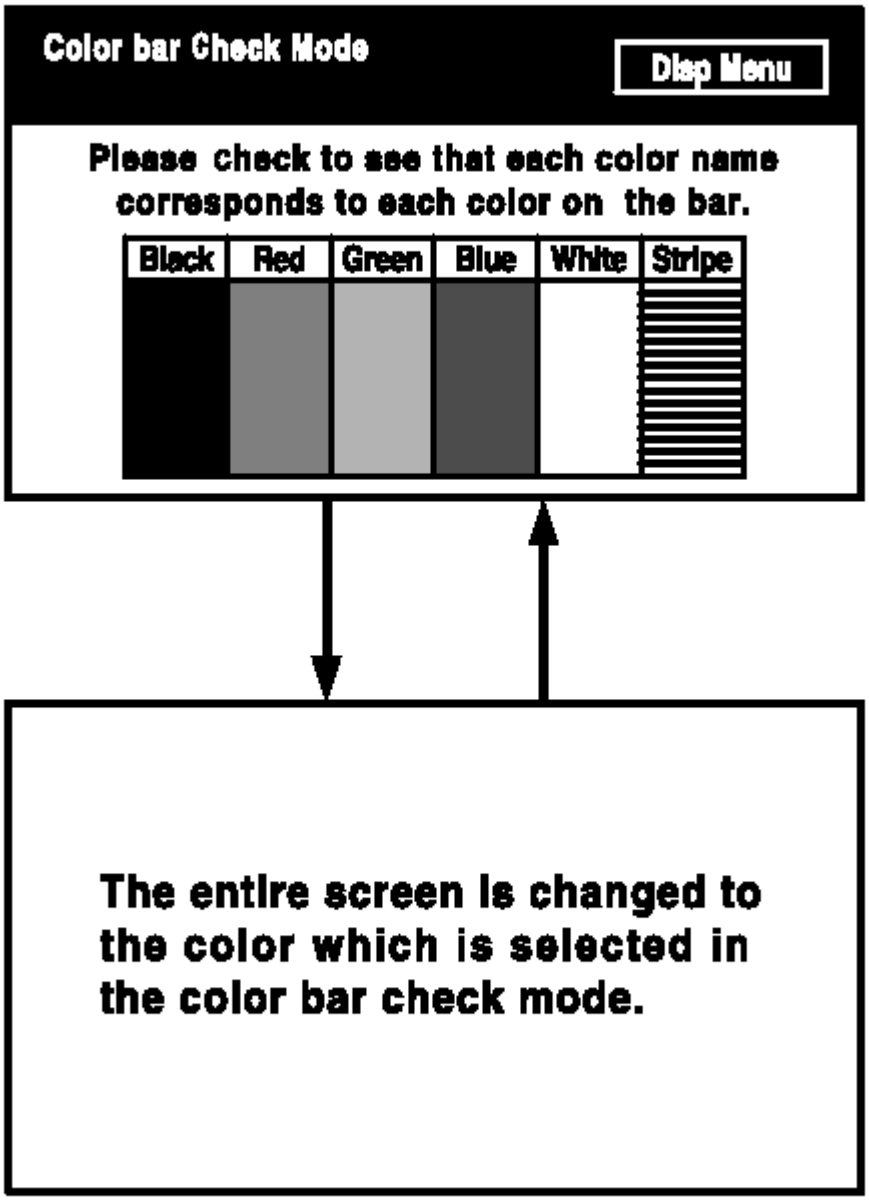
      OK

      The cabin temperature is higher than -20°C (-4°F).

   NG --> HEAT CABIN AND RECHECK TEMPERATURE

   OK: Go to next step

3. **CHECK COLOR BAR (DISPLAY CHECK MODE)**
   a. Enter the "Display Check" mode and select "Color Bar Check". Refer to **OPERATION CHECK** .



P

Fig. 32: Screen Display - Color Bar Check Mode
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

b. Check that the color bars match the displayed names.

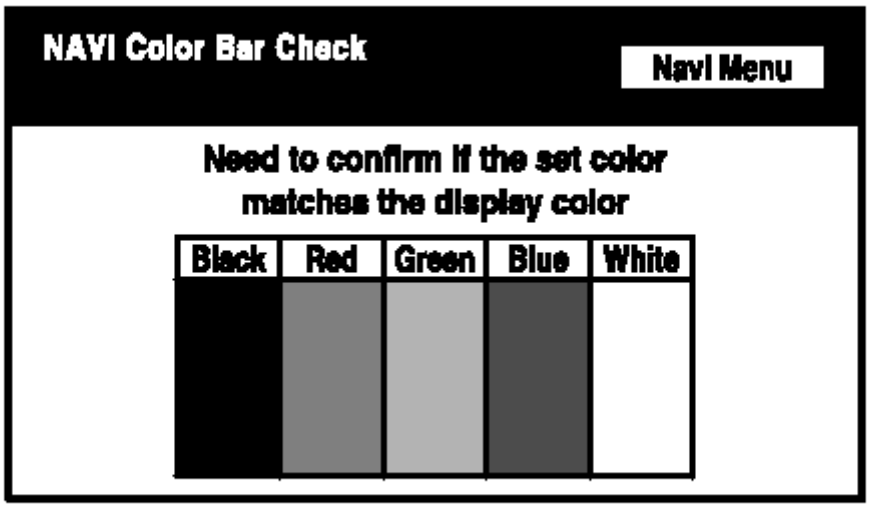
OK

Color bars match the displayed names.

NG --> See step 5

OK: Go to next step

4. **CHECK NAVI COLOR BAR (NAVIGATION CHECK MODE)**



P

Fig. 33: Screen Display - NAVI Color Bar Check
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

a. Enter the "Navigation Check" mode and select "NAVI Color Bar Check". Refer to **OPERATION CHECK** .
b. Check that the color bars match the displayed names.

OK

Color bars match the displayed names.

NG --> See step 5

OK --> See step 6

5. **REPLACE NAVIGATION RECEIVER ASSEMBLY. Refer to REMOVAL**
6. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer**

to PROBLEM SYMPTOMS TABLE

Poor Sound Quality in All Modes (Low Volume)

INSPECTION PROCEDURE

PROCEDURE

1. **ADJUST SOUND QUALITY**
   a. Set "BASS" and "TREB" to the initial values and check that the sound is normal.

      OK

      Malfunction disappears.

   NG --> See step 2

   OK --> SYSTEM IS OK (BAD SOUND QUALITY)

2. **COMPARE VEHICLE WITH ANOTHER VEHICLE OF SAME MODEL**
   a. Compare with another vehicle of the same model which does not have trouble to see if there is any difference in the sound quality.

      OK

      No difference is found.

   NG --> See step 3

   OK --> END

3. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**

Map Disc cannot be Inserted

INSPECTION PROCEDURE

PROCEDURE

1. **CHECK NAVIGATION RECEIVER ASSEMBLY**
   a. Check if a disc is inserted into the map disc slot.
      1. Check if "MAP" comes on.

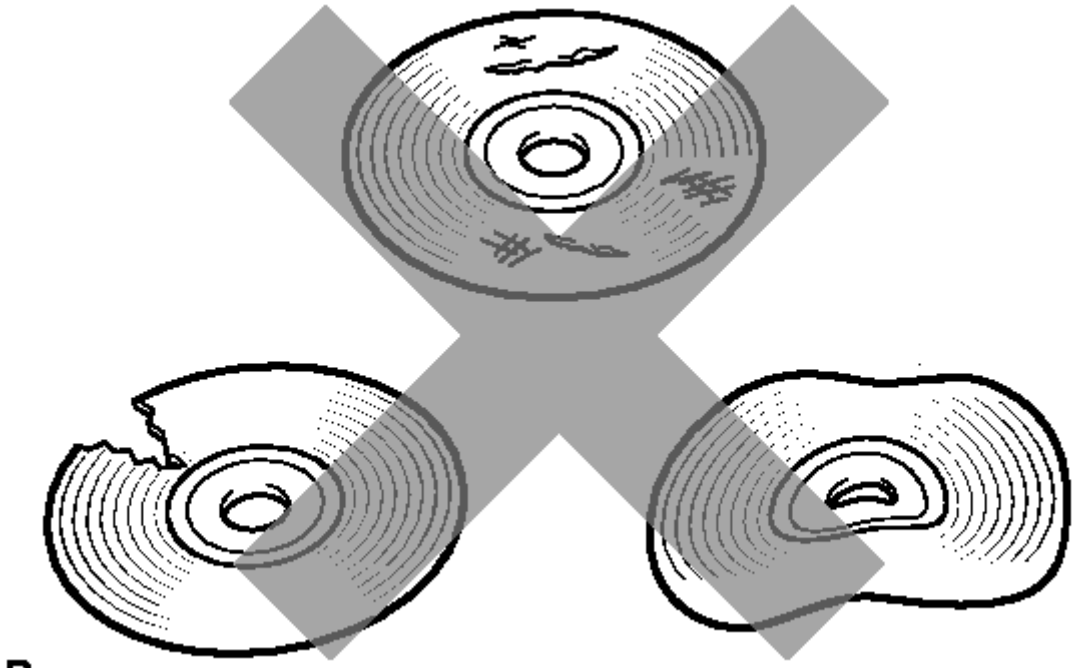
         OK

         "MAP" comes on.

NG --> EJECT INSERTED DISC

OK: Go to next step

2. **CHECK MAP DISC**



P

Fig. 34: Identifying Cracked Or Deformed Map Discs
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

a. Check that the map disc is not deformed or cracked.

OK

No deformations or cracks on the map disc.

NG --> REPLACE MAP DISC

OK --> See step 3

3. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**

Map Disc cannot be Ejected

INSPECTION PROCEDURE

PROCEDURE

1. **CHECK NAVIGATION RECEIVER ASSEMBLY**
   a. Turn the ignition switch to ACC.
   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 --> See step 3

   OK: Go to next step

2. **CHECK MAP DISC**
   a. Check that the map disc is not deformed or cracked.

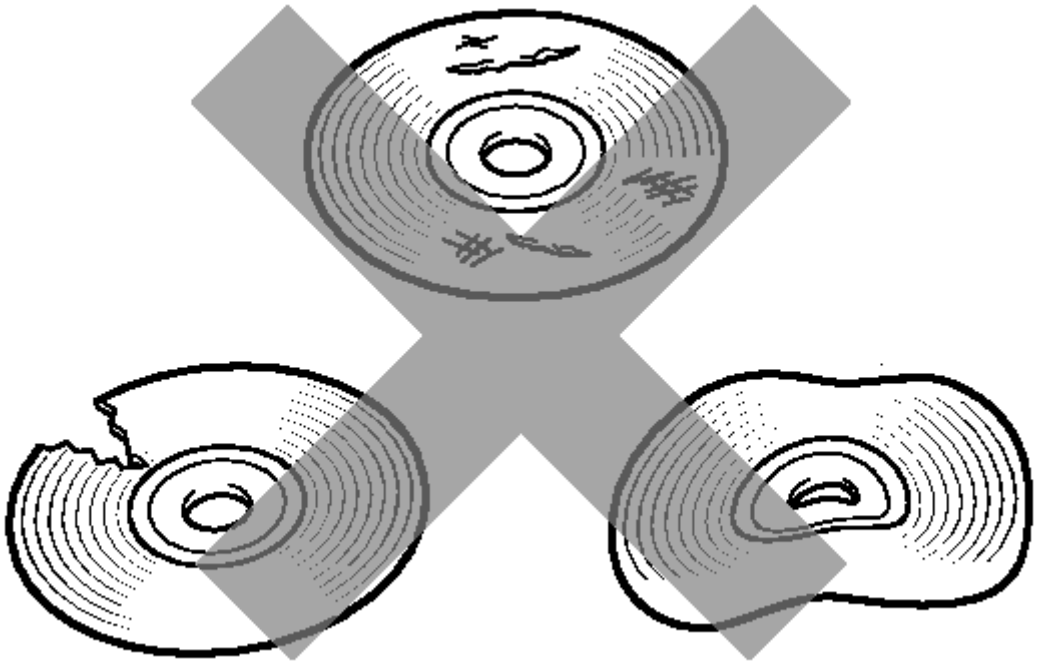


Fig. 35: Identifying Deformed Or Cracked Disc
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

      OK

      No deformations or cracks on the map disc.

   NG --> REPLACE MAP DISC

   OK --> END

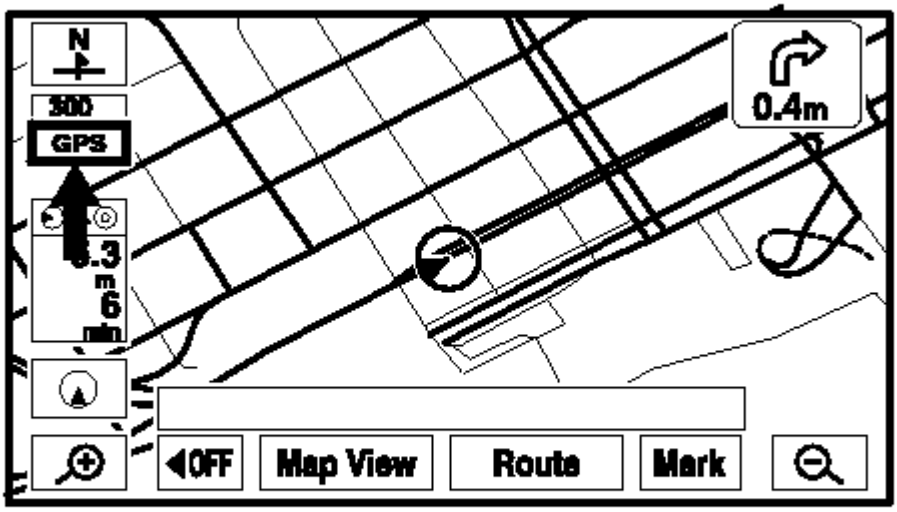
3. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**

Vehicle Position Mark Deviates Greatly

INSPECTION PROCEDURE

PROCEDURE

1. **CHECK GPS MARK**
   a. Check that the GPS mark is displayed.



P

Fig. 36: Checking GPS Mark Is Displayed
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK

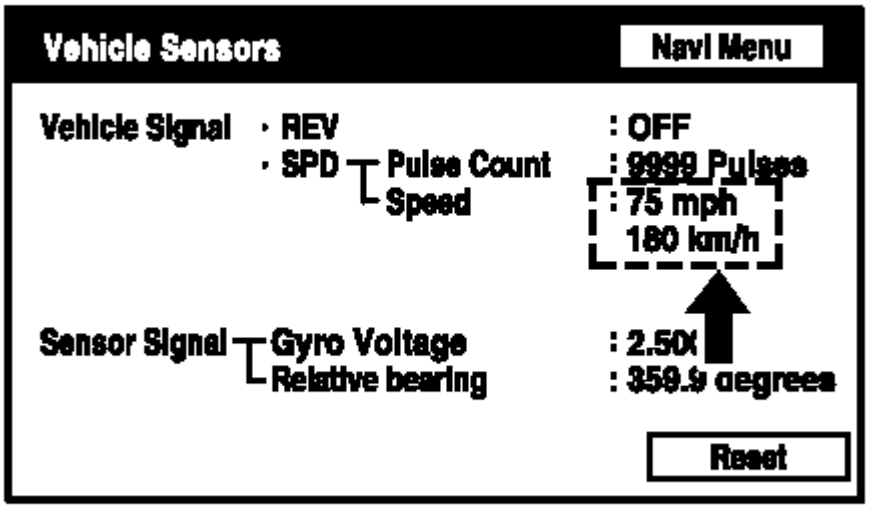
GPS mark is displayed.

NG --> See step 2

OK: Go to next step

2. **GO TO "GPS MARK IS NOT DISPLAYED" IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**
3. **CHECK VEHICLE SENSOR (NAVIGATION CHECK MODE)**
   a. Enter the "Navigation Check" mode and select "Vehicle Sensors". Refer to **OPERATION**

CHECK .



P

Fig. 37: Screen Display - Navigation Check Mode
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

b. While driving the vehicle, compare the "Speed" indicator to the reading on the speedometer. Check that these readings are equal or almost equal.

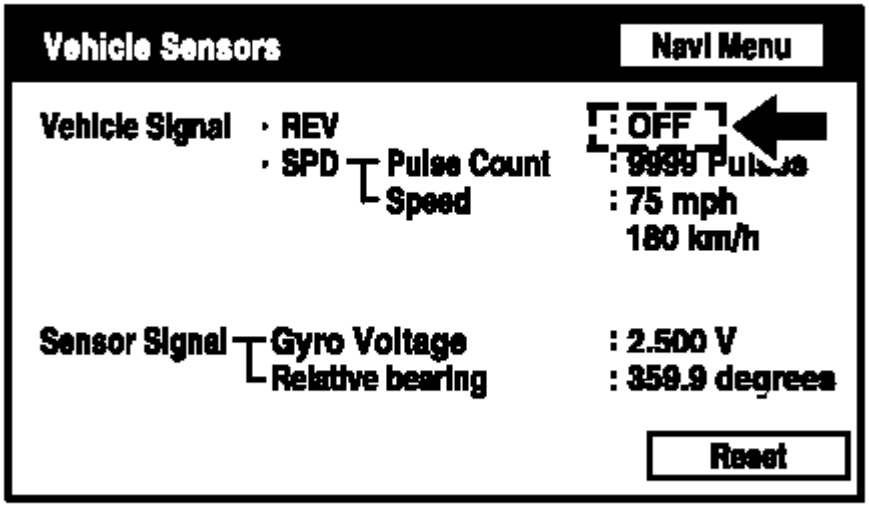
OK

The readings are equal or almost equal.

NG --> See step 4

OK: Go to next step

4. **GO TO "SPEED SIGNAL DOES NOT CHANGE IN NAVIGATION CHECK MODE" IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**
5. **CHECK VEHICLE SENSOR (NAVIGATION CHECK MODE)**
   a. Check that the display changes between ON and OFF according to the shift lever operation.



P

Fig. 38: Screen Display - Shift Lever Operation
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK

Shift Lever Position Condition	Display Condition
Except R	OFF
R	ON

HINT:

The display is updated once per second. It is normal for the display to lag behind the actual shift lever operation.

NG --> See step 6

OK --> END

6. **GO TO "REVERSE SIGNAL DOES NOT CHANGE IN THE NAVIGATION CHECK MODE" IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**

Cursor or Map Rotates when Vehicle Stopped

INSPECTION PROCEDURE

PROCEDURE

1. **CHECK CONDITION**
    a. Check with the customer if the vehicle has been turned by a turntable.

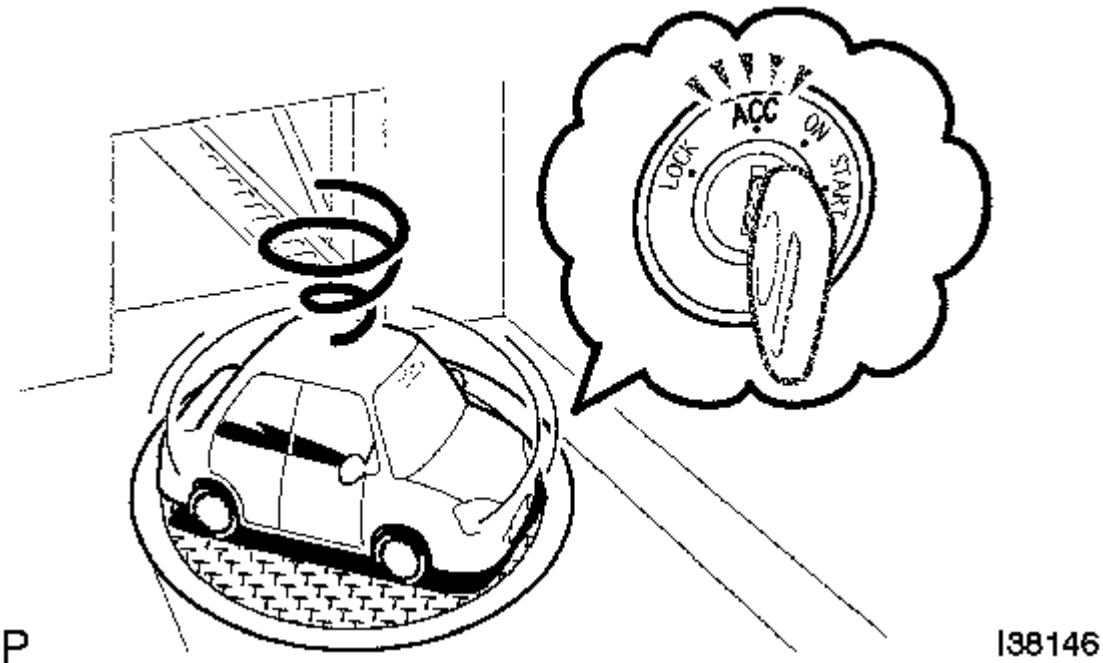


Fig. 39: Condition Check - Ignition Switch Turned To ACC On Position
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK

Vehicle has not been turned by turntable.

HINT:

If the vehicle is being turned by 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 WHEN VEHICLE IS COMPLETELY STOPPED

OK --> See step 2

2. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**

Vehicle Position Mark is not Updated

INSPECTION PROCEDURE

PROCEDURE

1. **CHECK MAP DISC**
    a. Check that the map disc is not deformed or cracked.

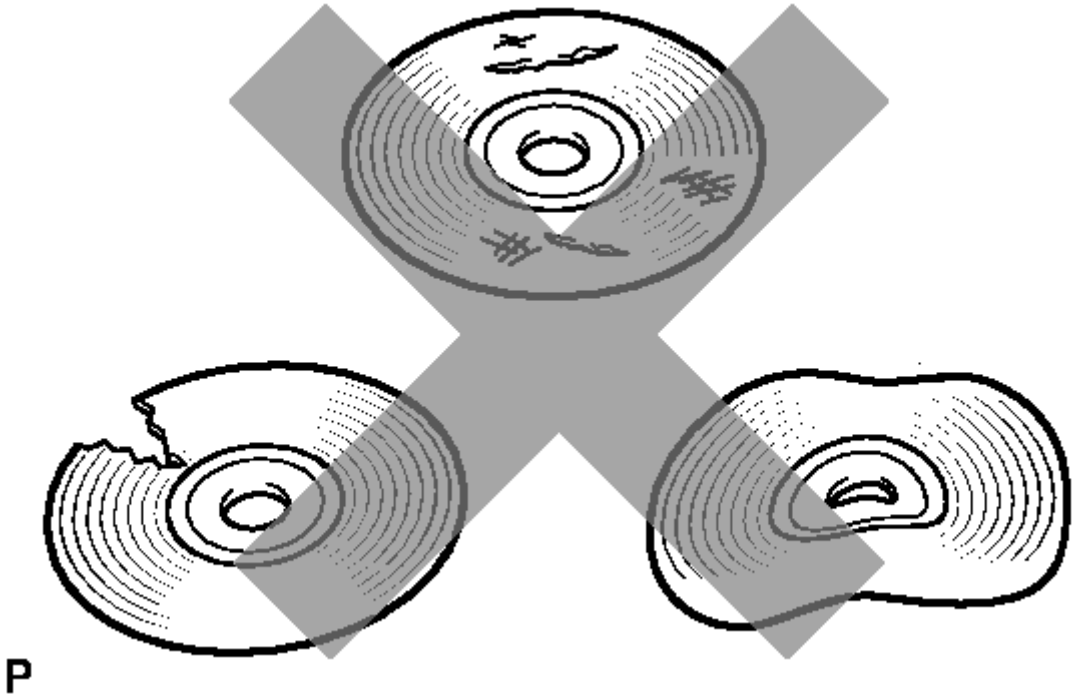


Fig. 40: Identifying Cracked Or Deformed Map Discs
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK

No deformations or cracks on map disc.

NG --> REPLACE MAP DISC

OK: Go to next step

2. **CHECK NAVIGATION DISPLAY**
    a. Check if a touch scroll can be performed on the map display.

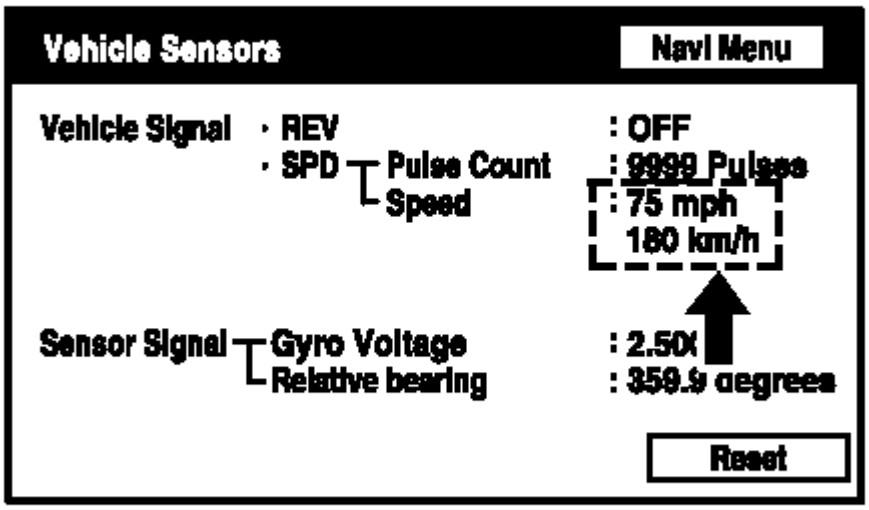
OK

Touch scroll can be performed.

NG --> See step 4

OK: Go to next step

3. **CHECK VEHICLE SENSOR (NAVIGATION CHECK MODE)**
    a. Enter the "Navigation Check" mode and select "Vehicle Sensors". Refer to **OPERATION CHECK** .



P

Fig. 41: Screen Display - Navigation Check Mode
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

    b. While driving the vehicle, compare the "Speed" indicator to the reading on the speedometer. Check if these readings are equal or almost equal.

    OK

    The readings are equal or almost equal.

NG --> See step 5

OK --> END

4. **REPLACE NAVIGATION RECEIVER ASSEMBLY. Refer to REMOVAL**
5. **GO TO "SPEED SIGNAL DOES NOT CHANGE IN NAVIGATION CHECK MODE" IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**

Current Position Display does not Appear

INSPECTION PROCEDURE

PROCEDURE

1. **CHECK NAVIGATION RECEIVER ASSEMBLY**
   a. Check if a map disc is inserted into the map disc slot.

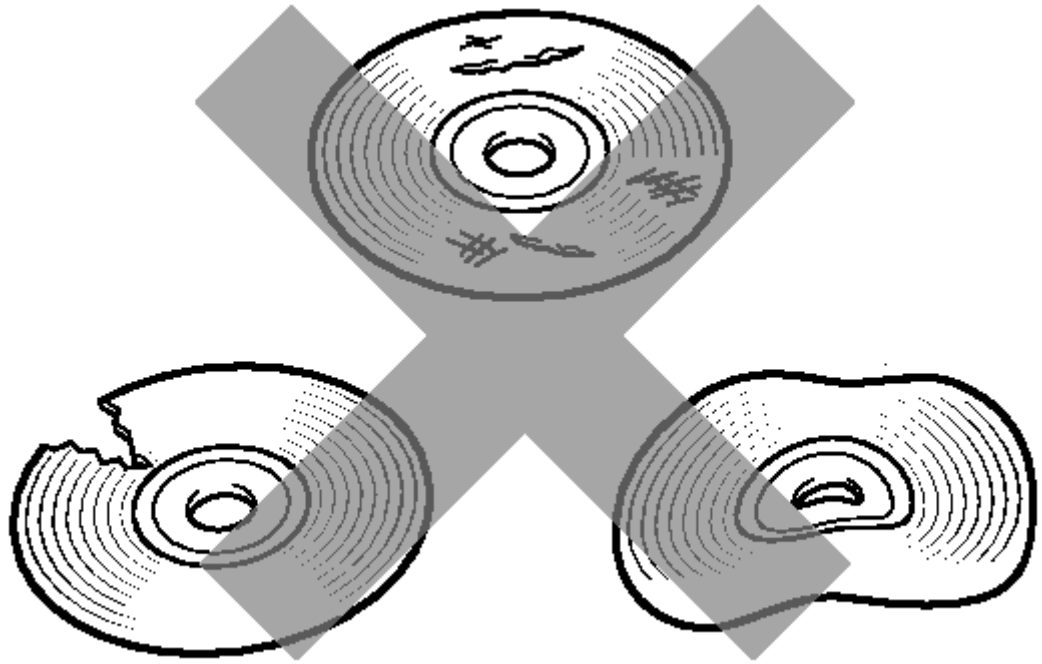
      OK

      A map disc is inserted.

   NG --> INSERT MAP DISC IN MAP DISC SLOT

   OK: Go to next step

2. **CHECK MAP DISC**



P

Fig. 42: Identifying Cracked Or Deformed Map Discs
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

   a. Check that the map disc is not deformed or cracked.

      OK

      No deformations or cracks in the map disc.

   NG --> REPLACE MAP DISC

   OK --> See step 3

3. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer**

to PROBLEM SYMPTOMS TABLE

GPS Mark is not Displayed

INSPECTION PROCEDURE

PROCEDURE

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.

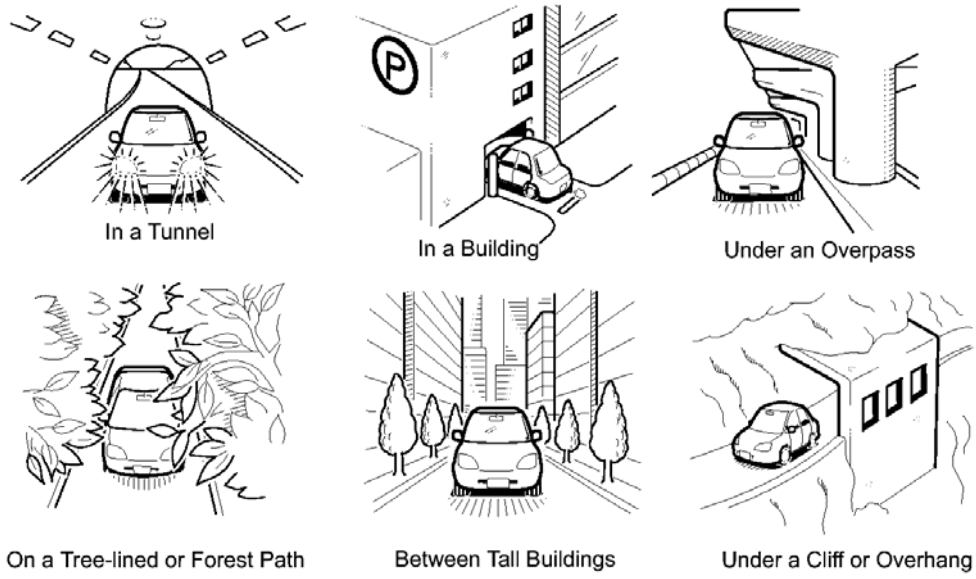
   NG --> See step 2

   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 the vehicle. However, GPS signals may not reach the vehicle due to influence from the surroundings, vehicle direction, and time. For examples, see the illustration below.



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Fig. 43: Reasons For Poor Reception
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK

GPS mark is displayed.

NG --> See step 3

OK --> SYSTEM RETURN TO NORMAL

3. **CHECK GPS INFORMATION (NAVIGATION CHECK MODE)**

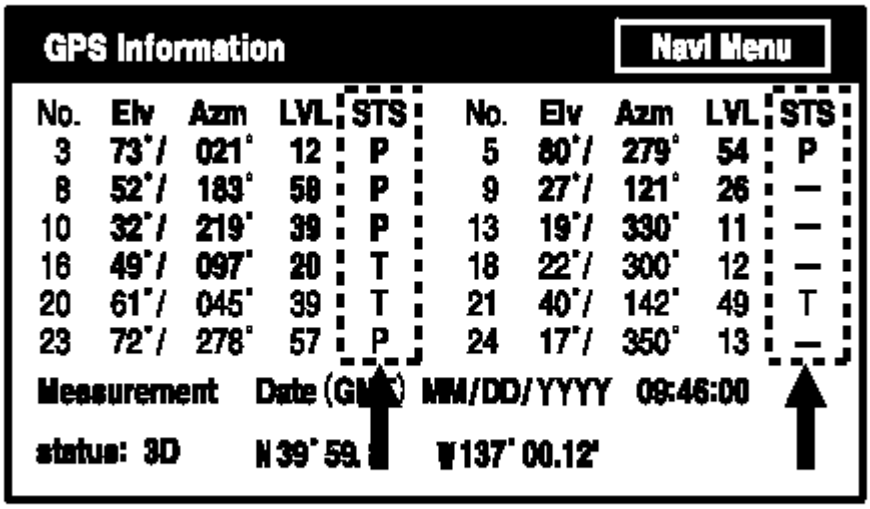


Fig. 44: Screen Display - GPS Information
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

a. Enter the "Navigation Check" mode and select "GPS Information". Refer to **OPERATION CHECK** .
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 --> See step 5

OK --> See step 4

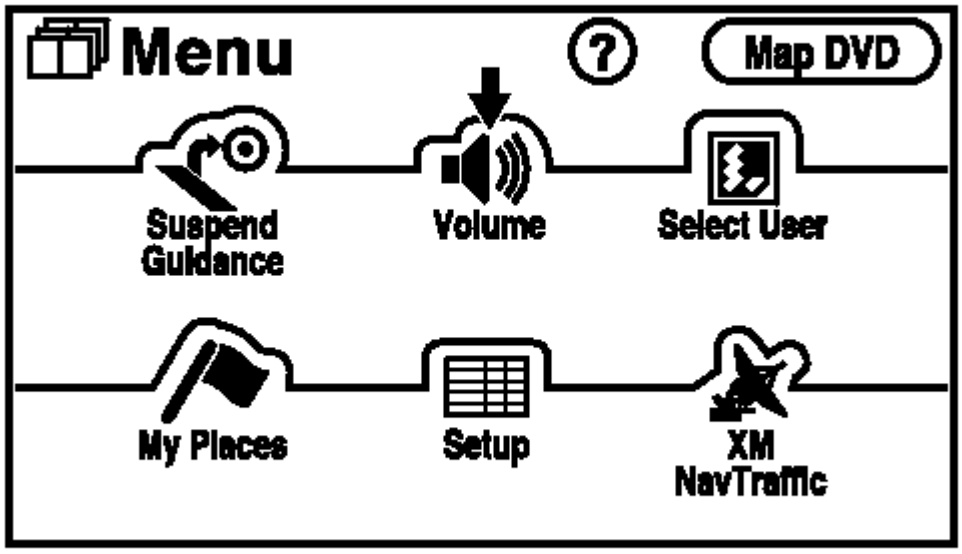
4. **REPLACE NAVIGATION RECEIVER ASSEMBLY. Refer to REMOVAL**
5. **REPLACE NAVIGATION ANTENNA ASSEMBLY. Refer to REMOVAL**

Voice Guidance does not Function

INSPECTION PROCEDURE

PROCEDURE

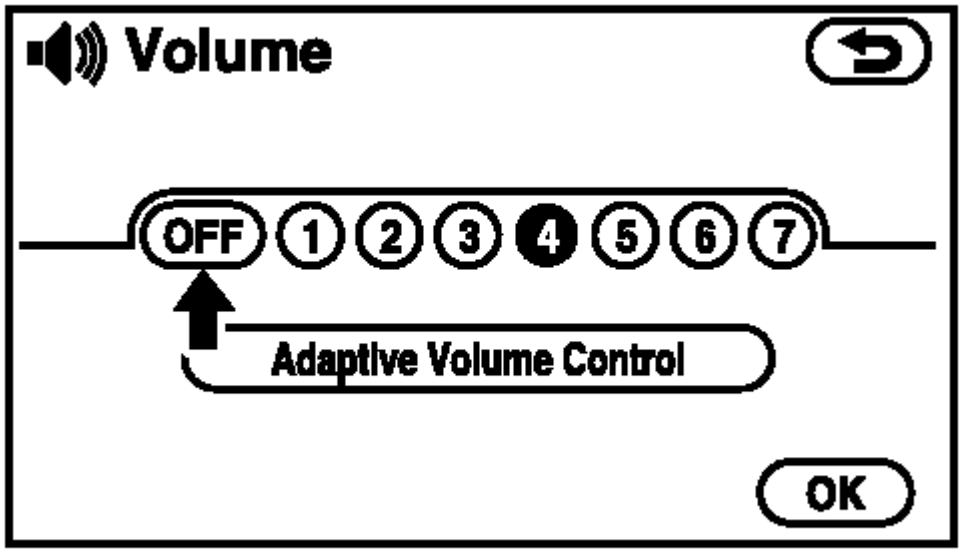
1. **CHECK NAVIGATION SYSTEM SETTING**
   a. Enter the "Menu" screen by pressing the "MENU" switch.



P

Fig. 45: Screen Display - Select Volume
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

   b. Select "Volume".
   c. Check that "OFF" is not selected.



P

Fig. 46: Screen Display - Volume OFF Switch
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

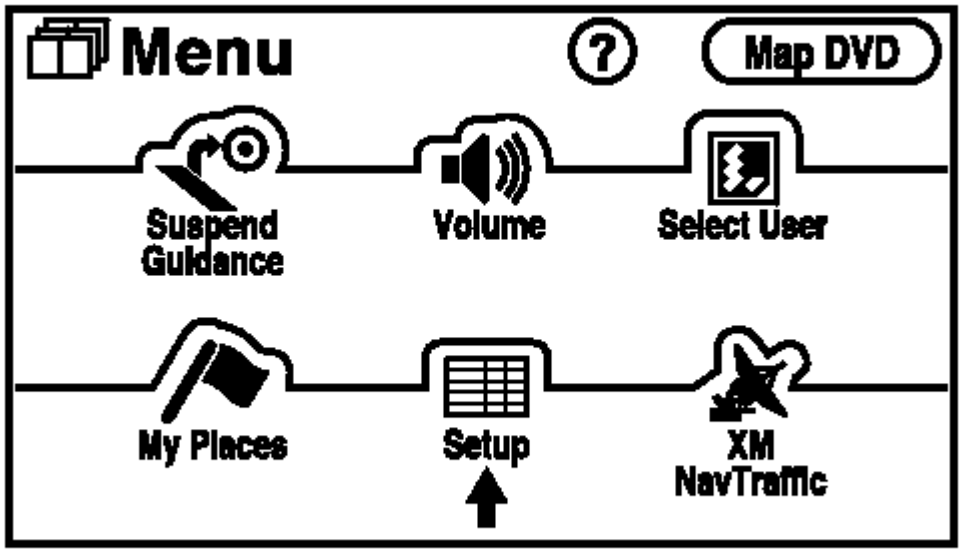
OK

OFF is not selected.

NG --> TURN UP "ADAPTIVE VOLUME CONTROL"

OK: Go to next step

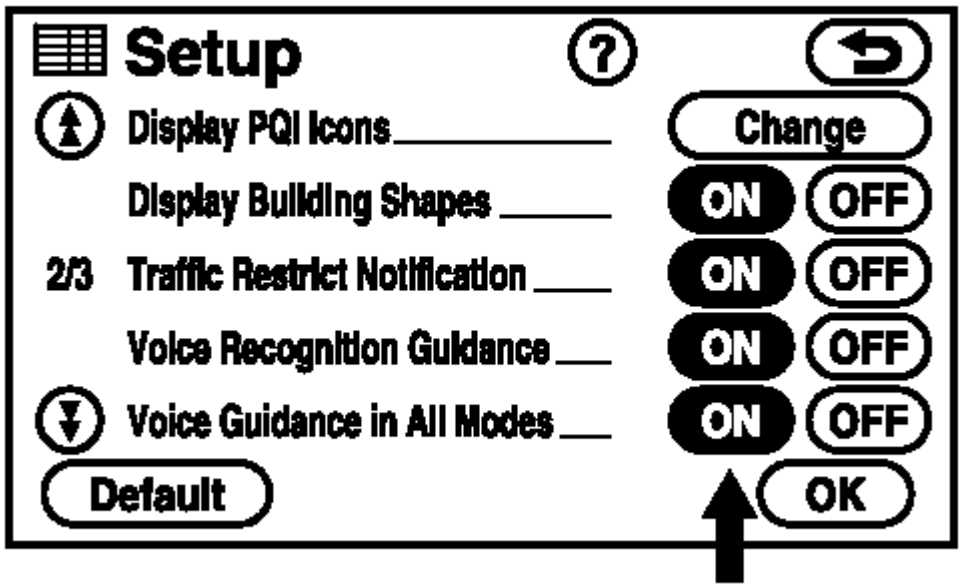
2. **CHECK NAVIGATION SETTING**
   a. Enter the "Menu" screen by pressing the "MENU" switch.



P

Fig. 47: Screen Display - Menu (Setup)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

b. Select "Setup".
c. Check that "Voice Guidance in All Modes" is not OFF.



P

Fig. 48: Screen Display - Voice Guidance In All Modes

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

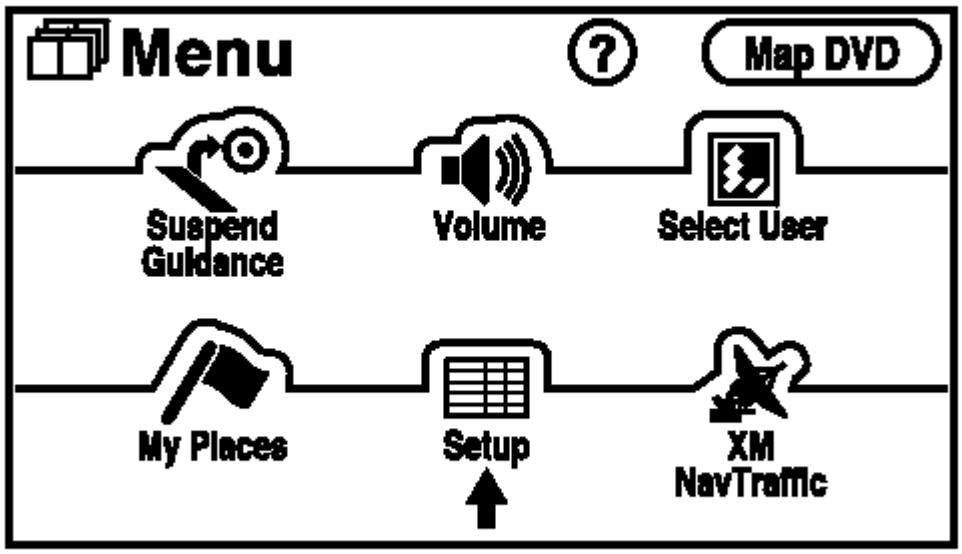
OK

"Voice Guidance in All Modes" is not OFF.

NG --> TURN VOICE GUIDANCE IN ALL MODES "ON"

OK: Go to next step

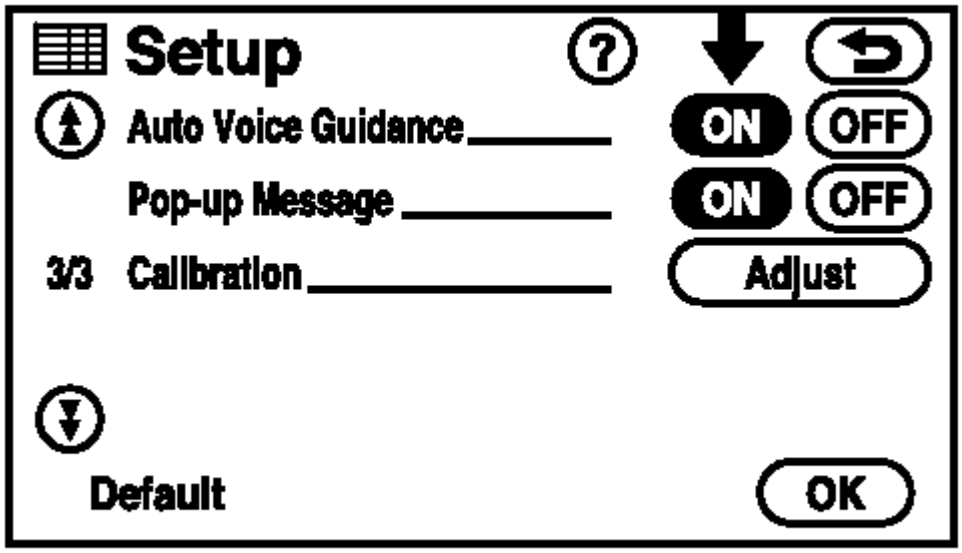
3. **CHECK NAVIGATION SETTING**
   a. Enter the "Menu" screen by pressing the "MENU" switch.



P

Fig. 49: Screen Display - Menu (Setup)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

   b. Select "Setup".
   c. Check that "Auto Voice Guidance" is not OFF.



P

Fig. 50: Screen Display - Auto Voice Guidance
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

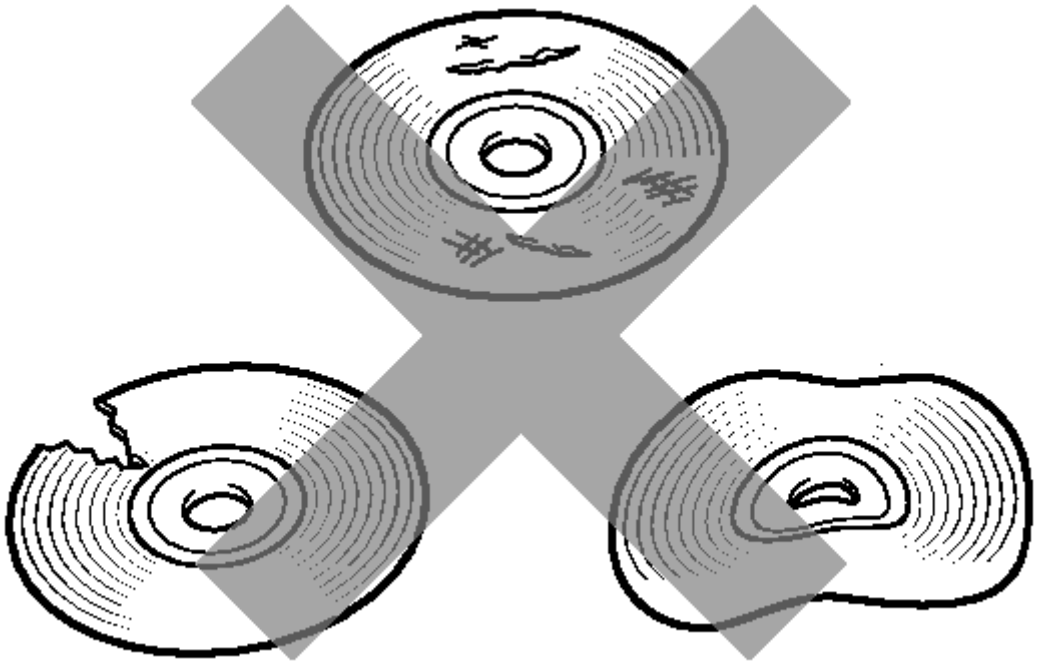
OK

"Auto Voice Guidance" is not OFF.

NG --> TURN AUTO VOICE GUIDANCE "ON"

OK: Go to next step

4. **CHECK MAP DISC**
   a. Check that the map disc is not deformed or cracked.



P

Fig. 51: Identifying Deformed Or Cracked Disc
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK

No deformations or cracks on map disc.

NG --> REPLACE MAP DISC

OK: Go to next step

5. **CHECK NAVIGATION RECEIVER ASSEMBLY**
   a. Check that audio can be heard from the speakers.

      OK

      Audio can be heard.

   NG --> See step 7

   OK --> See step 6

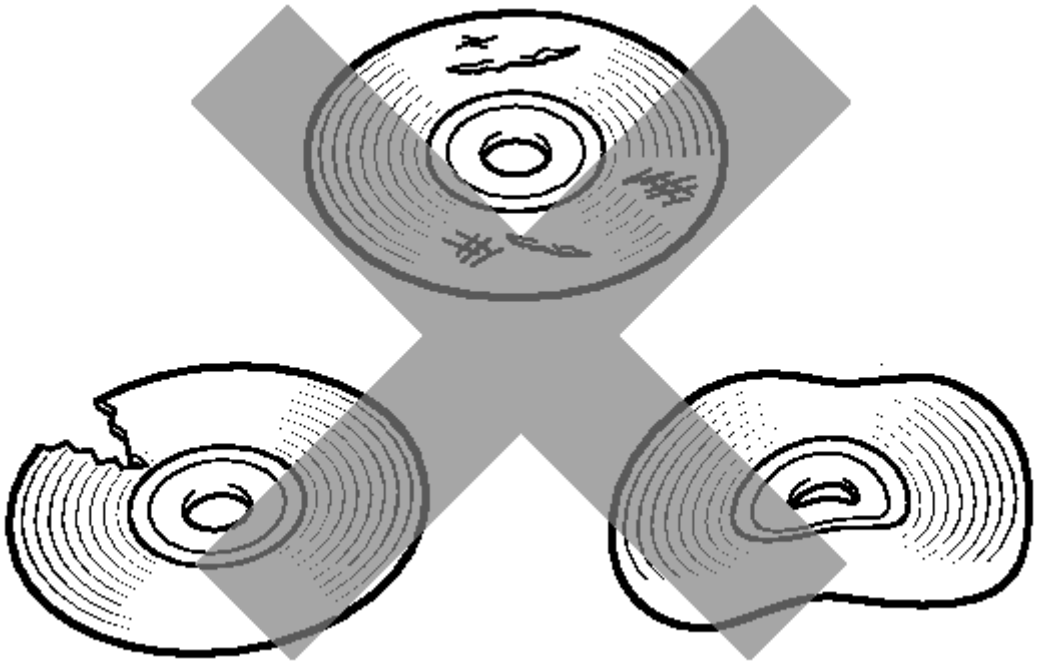
6. **REPLACE NAVIGATION RECEIVER ASSEMBLY. Refer to REMOVAL**
7. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**

Map Display Incomplete

INSPECTION PROCEDURE

PROCEDURE

1. **CHECK MAP DISC**
   a. Check that the map disc is not deformed or cracked.



P

Fig. 52: Identifying Cracked Or Deformed Map Discs
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK

No deformations or cracks on map disc.

NG --> REPLACE MAP DISC

OK: Go to next step

2. **CHECK NAVIGATION DISPLAY**
   a. Check that displays other than the navigation display are complete.

OK

No other incomplete displays are found.

NG --> See step 3

OK --> See step 4

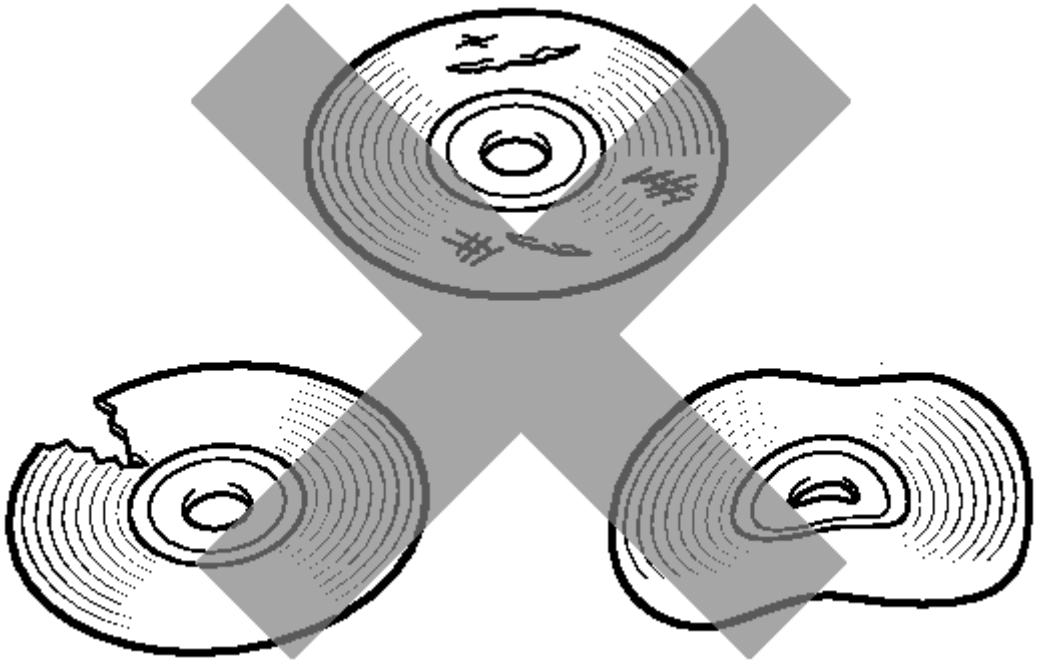
3. **REPLACE NAVIGATION RECEIVER ASSEMBLY. Refer to REMOVAL**
4. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**

Route cannot be Calculated

INSPECTION PROCEDURE

PROCEDURE

1. **CHECK MAP DISC**
   a. Check that the map disc is not deformed or cracked.



P

Fig. 53: Identifying Cracked Or Deformed Map Discs
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK

No deformations or cracks on map disc.

NG --> REPLACE MAP DISC

OK: Go to next step

2. **SET DESTINATION**

a. Set another destination and check if the system can calculate the route correctly.

OK

Route can be correctly calculated.

NG --> See step 3

OK --> END

3. **REPLACE NAVIGATION RECEIVER ASSEMBLY. Refer to REMOVAL**

Black Screen

INSPECTION PROCEDURE

PROCEDURE

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 --> SET SCREEN TO "SCREEN ON" MODE

   OK: Go to next step

2. **CHECK IMAGE QUALITY SETTING**
   a. Check that the screen color quality can be set.

   OK

   Setting is possible.

   NG --> See 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 cause a short circuit.
- The appropriate cabin temperature is 20 to 30°C (68 to 86°F).

OK

Condensation is not likely and the temperature is not high or extremely low.

NG --> HEAT OR COOL CABIN TO APPROPRIATE TEMPERATURE AND/OR DRY CABIN

OK --> See step 4

4. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**

CIRCUIT TESTS

Vehicle Speed Signal Circuit Between Navigation Receiver Assembly And Combination Meter

DESCRIPTION

This circuit sends a speed signal from the combination meter assembly to the navigation receiver assembly.

HINT:

- A voltage of 12 V or 5 V is output from each ECU and then input to the combination meter assembly. The signal is changed to a pulse signal at the transistor in the combination meter assembly. Each ECU controls its respective system based on the pulse signal.
- If a short occurs in any of the ECUs or in the wire harness connected to an ECU, both systems in the diagram below will not operate normally.

WIRING DIAGRAM

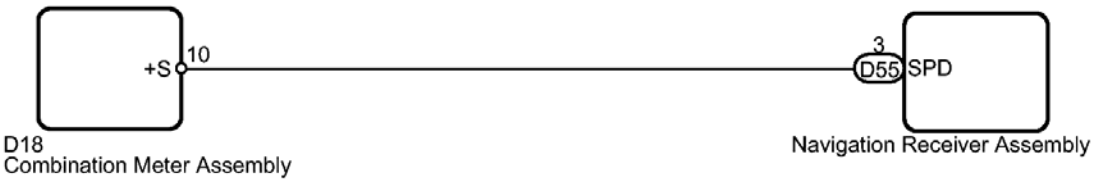


Fig. 54: Vehicle Speed Signal Circuit Between Navigation Receiver Assembly And Combination Meter Wiring Diagram
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

PROCEDURE

1. **CHECK OPERATION OF SPEEDOMETER**
   a. Drive the vehicle and check if the function of the speedometer in the combination meter assembly is normal.

      OK

      Actual vehicle speed and the speed indicated on the speedometer are the same.

      HINT:

      - The speed indicated on the speedometer has an allowable margin of error. This can be tested using a speedometer tester (calibrated chassis dynamometer). For details about testing and the margin of error, refer to "Operation Check" in the meter/gauge system. Refer to **HOW TO PROCEED WITH TROUBLESHOOTING** .
      - The vehicle speed sensor is functioning normally when the indication on the speedometer is normal.

   NG --> See step 4

   OK: Go to next step

2. **INSPECT COMBINATION METER ASSEMBLY (SPEED SIGNAL)**
   a. Remove the combination meter assembly with the connector(s) still connected.

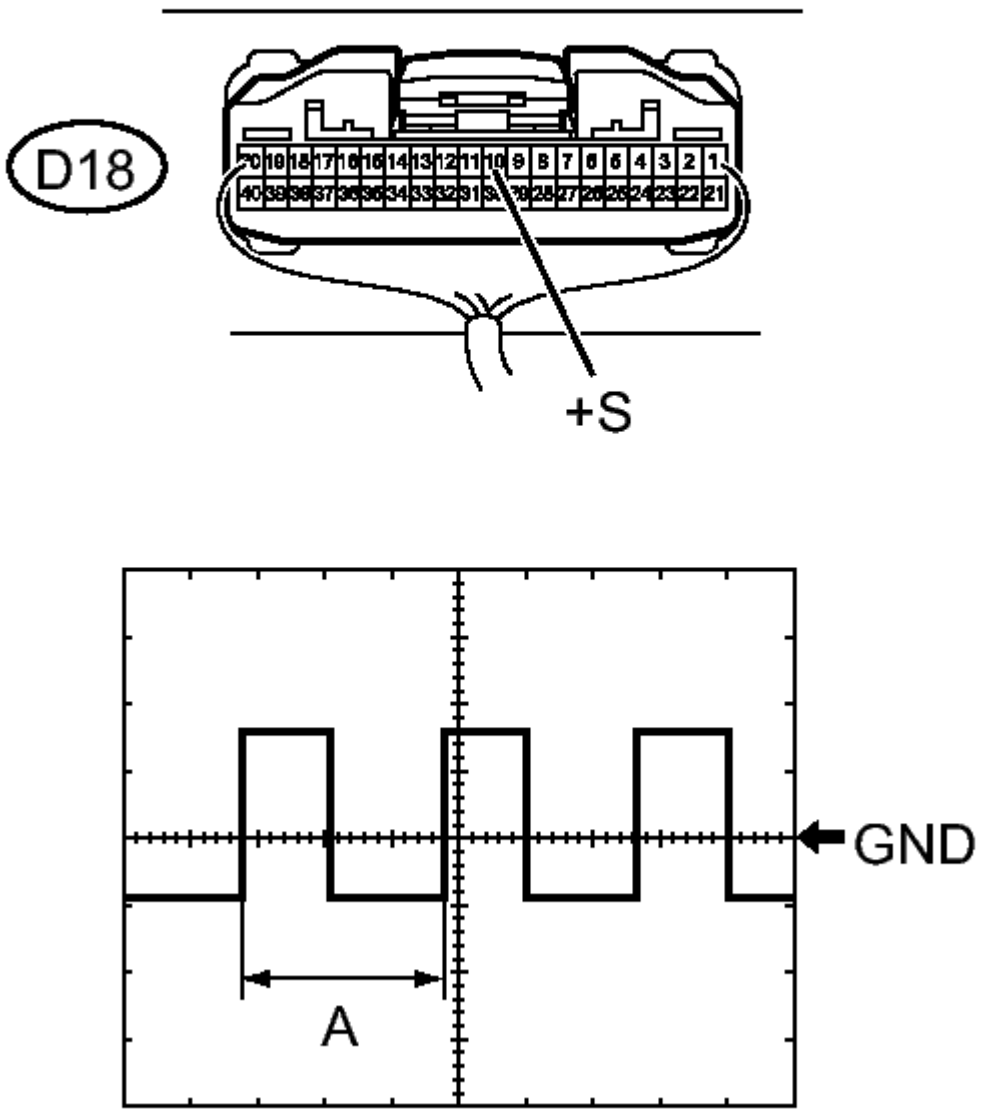


Fig. 55: Inspecting Combination Meter Assembly (Speed Signal) With Signal Waveform
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

b. Connect an oscilloscope to terminal D18-10 (+S) and body ground.
c. Turn the ignition switch to ON.

d. Check the signal waveform according to the condition(s) in the table below.

MEASUREMENT CONDITION

Item	Condition
Terminal No. (Symbols)	D18-10 (+S) - Body ground
Tool setting	5 V/DIV., 20 msec./ DIV.
Condition	Being driven at approx. 20 km/h (12 mph)

HINT:

When the system is functioning normally, one wheel revolution generates 4 pulses. As the vehicle speed increases, the width indicated by (A) in the illustration narrows.

OK

The waveform displayed is as shown in the illustration

TEXT IN ILLUSTRATION

*a	Component with harness connected (Combination Meter Assembly)

NG --> See step 4

OK: Go to next step

3. **CHECK HARNESS AND CONNECTOR (NAVIGATION RECEIVER - COMBINATION METER)**
   a. Disconnect the D55 navigation receiver assembly connector.
   b. Disconnect the D18 combination meter assembly connector.
   c. Measure the resistance according to the value(s) in the table below.

   Standard Resistance (Check for Open)

Tester Connection	Condition	Specified Condition
D55-3 (SPD) - D18-10 (+S)	Always	Below 1 ohms

Standard Resistance (Check for Short)

Tester Connection	Condition	Specified Condition
D55-3 (SPD) - Body ground	Always	10 kohms or higher

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK --> See step 5

4. **GO TO METER / GAUGE SYSTEM. Refer to PROBLEM SYMPTOMS TABLE**
5. **REPLACE NAVIGATION RECEIVER ASSEMBLY. Refer to REMOVAL**

Steering Pad Switch Circuit

DESCRIPTION

This circuit sends an operation signal from the steering pad switch assembly to the navigation receiver assembly.

If there is an open in the circuit, the audio system cannot be operated using the steering pad switch assembly.

If there is a short in the circuit, the same condition as when the switch is continuously depressed occurs.

Therefore, the navigation receiver assembly cannot be operated using the steering pad switch assembly, and the navigation receiver assembly itself cannot function.

WIRING DIAGRAM

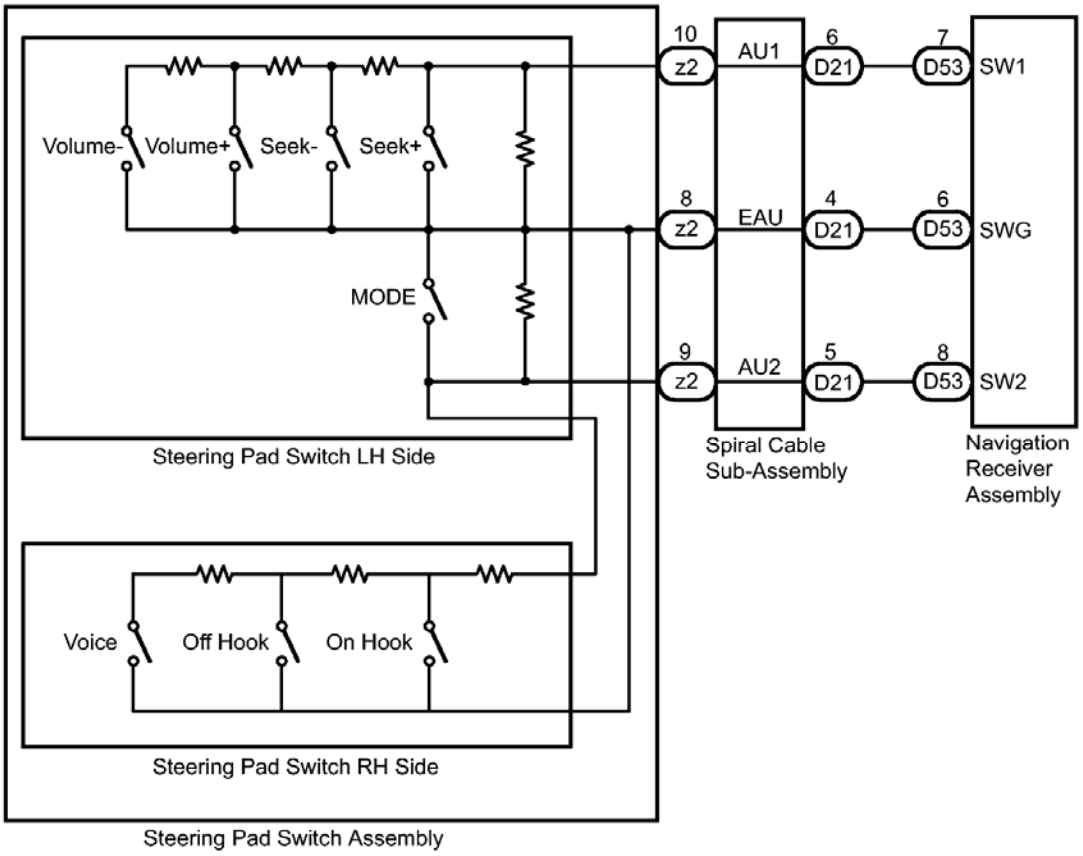


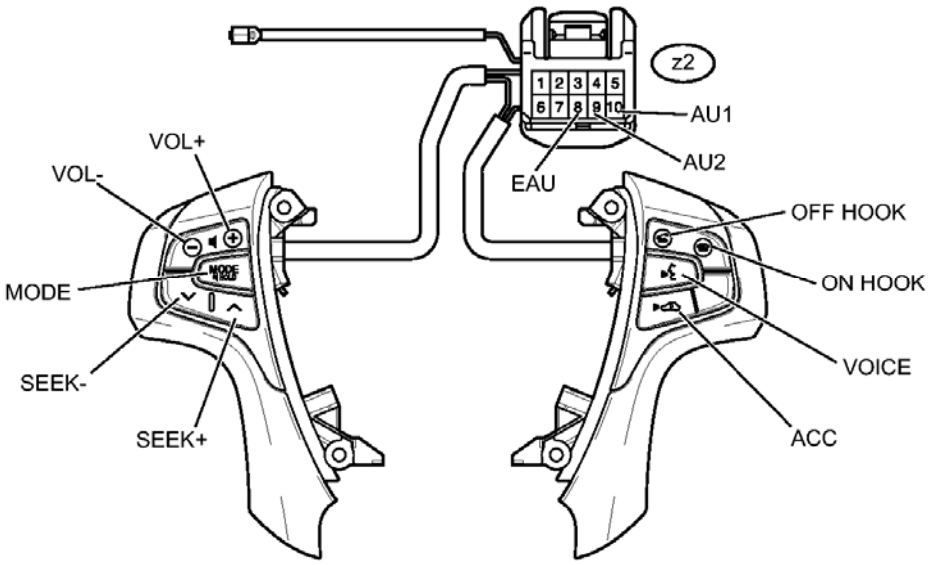
Fig. 56: Steering Pad Switch Circuit - Wiring Diagram
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

WARNING: The vehicle is equipped with an SRS (Supplemental Restraint System) which includes components such as airbags. Before servicing (including removal or installation of parts), be sure to read the Precaution in the SRS. Refer to PRECAUTION .

PROCEDURE

1. **INSPECT STEERING PAD SWITCH ASSEMBLY**
   a. Remove the steering pad switch assembly. Refer to **REMOVAL** .



P

Fig. 57: Inspecting Steering Pad Switch Assembly
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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

Standard Resistance

Tester Connection	Switch Condition	Specified Condition
z2-10 (AU1) - z2-8 (EAU)	No switch is pushed	95 to 105 kohms
	SEEK+ switch is pushed	Below 2.5 ohms
	SEEK- switch is pushed	313 to 345 ohms
	VOL+ switch is pushed	950 to 1050 ohms
	VOL- switch is pushed	2955 to 3265 ohms
	No switch is pushed	95 to 105 kohms
	MODE switch is pushed	Below 2.5 ohms
	ON	

z2-9 (AU2) - z2-8 (EAU)	HOOK switch is pushed	313 to 345 ohms
	OFF HOOK switch is pushed	950 to 1050 ohms
	VOICE switch is pushed	2955 to 3265 ohms

NG --> See step 4

OK: Go to next step

2. **INSPECT SPIRAL CABLE SUB-ASSEMBLY**
   a. Remove the spiral cable sub-assembly. Refer to **PRECAUTION** .

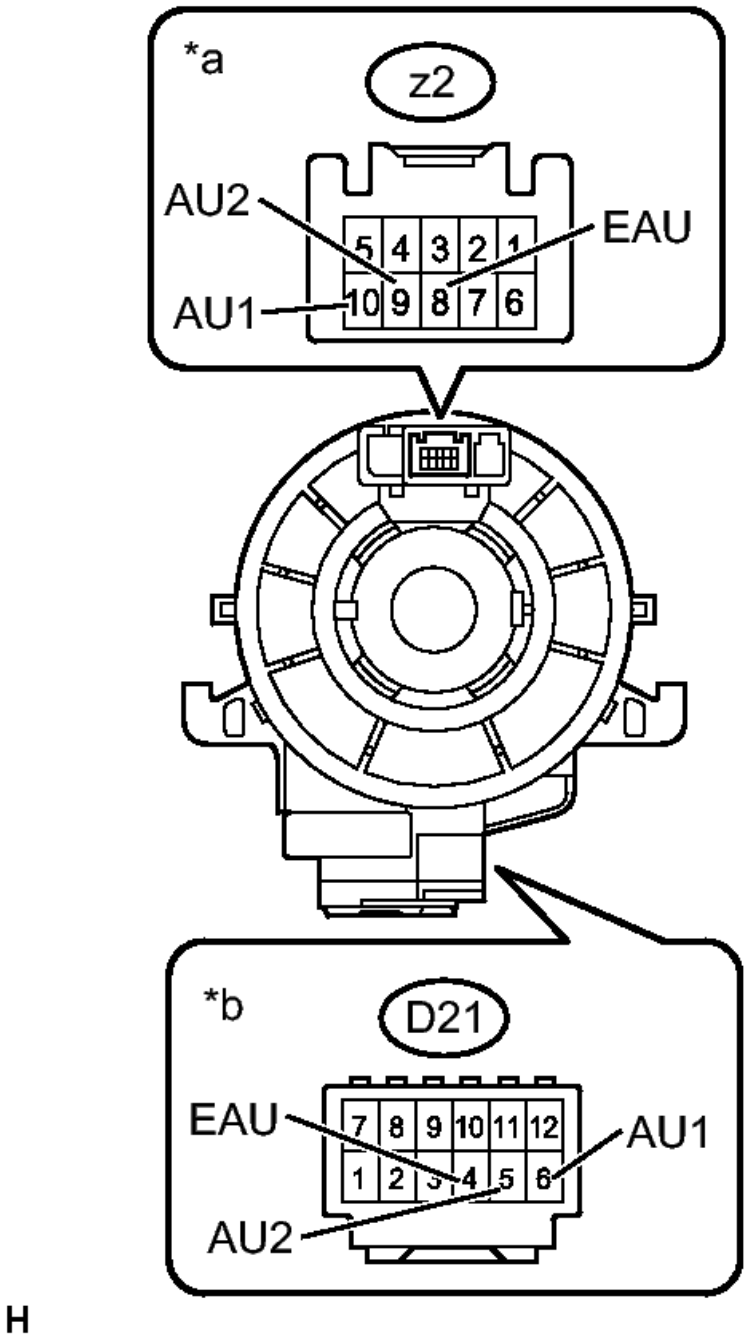


Fig. 58: Inspecting Spiral Cable Sub-Assembly
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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

Standard Resistance

Tester Connection	Condition	Specified Condition
z2-8 (EAU) - D21-4 (EAU)	Spiral cable is turned 2.5 rotations counterclockwise	Below 1 ohms
	Spiral cable is centered	
	Spiral cable is turned 2.5 rotations clockwise	
z2-10 (AU1) - D21-6 (AU1)	Spiral cable is turned 2.5 rotations counterclockwise	
	Spiral cable is centered	
	Spiral cable is turned 2.5 rotations clockwise	
z2-9 (AU2) - D21-5 (AU2)	Spiral cable is turned 2.5 rotations counterclockwise	
	Spiral cable is centered	
	Spiral cable is turned 2.5 rotations clockwise	

WARNING: The spiral cable sub-assembly is an important part of the SRS airbag system. Incorrect removal or installation of the spiral cable sub-assembly may prevent the airbag from deploying. Be sure to read the Precaution in the SRS. Refer to REMOVAL .

TEXT IN ILLUSTRATION

*1	Spiral Cable Assembly
	Component

*a	without harness connected (Spiral Cable Sub-Assembly (for Steering Pad Switch Side))
*b	Component without harness connected (Spiral Cable Sub-Assembly (for Vehicle Side))

NG --> See step 5

OK: Go to next step

3. **CHECK HARNESS AND CONNECTOR (NAVIGATION RECEIVER - SPIRAL CABLE)**
   a. Disconnect the D53 navigation receiver assembly connector.
   b. Disconnect the D21 spiral cable sub-assembly connector.
   c. Measure the resistance according to the value(s) in the table below.

   Standard Resistance (Check for Open)

Tester Connection	Condition	Specified Condition
D53-7 (SW1) - D21-6 (AU1)	Always	Below 1 ohms
D53-8 (SW2) - D21-5 (AU2)	Always	Below 1 ohms
D53-6 (SWG) - D21-4 (EAU)	Always	Below 1 ohms

Standard Resistance (Check for Short)

Tester Connection	Condition	Specified Condition
D53-7 (SW1) - Body ground	Always	10 kohms or higher
D53-8 (SW2) - Body ground	Always	10 kohms or higher
D53-6 (SWG) - Body ground	Always	10 kohms or higher

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK --> See step 6

4. **REPLACE STEERING PAD SWITCH ASSEMBLY. Refer to REMOVAL**
5. **REPLACE SPIRAL CABLE SUB-ASSEMBLY. Refer to REMOVAL**
6. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**

Illumination Circuit

DESCRIPTION

Power is supplied to the navigation receiver assembly and steering pad switch assembly illumination when the light control switch is in the TAIL or HEAD position.

WIRING DIAGRAM

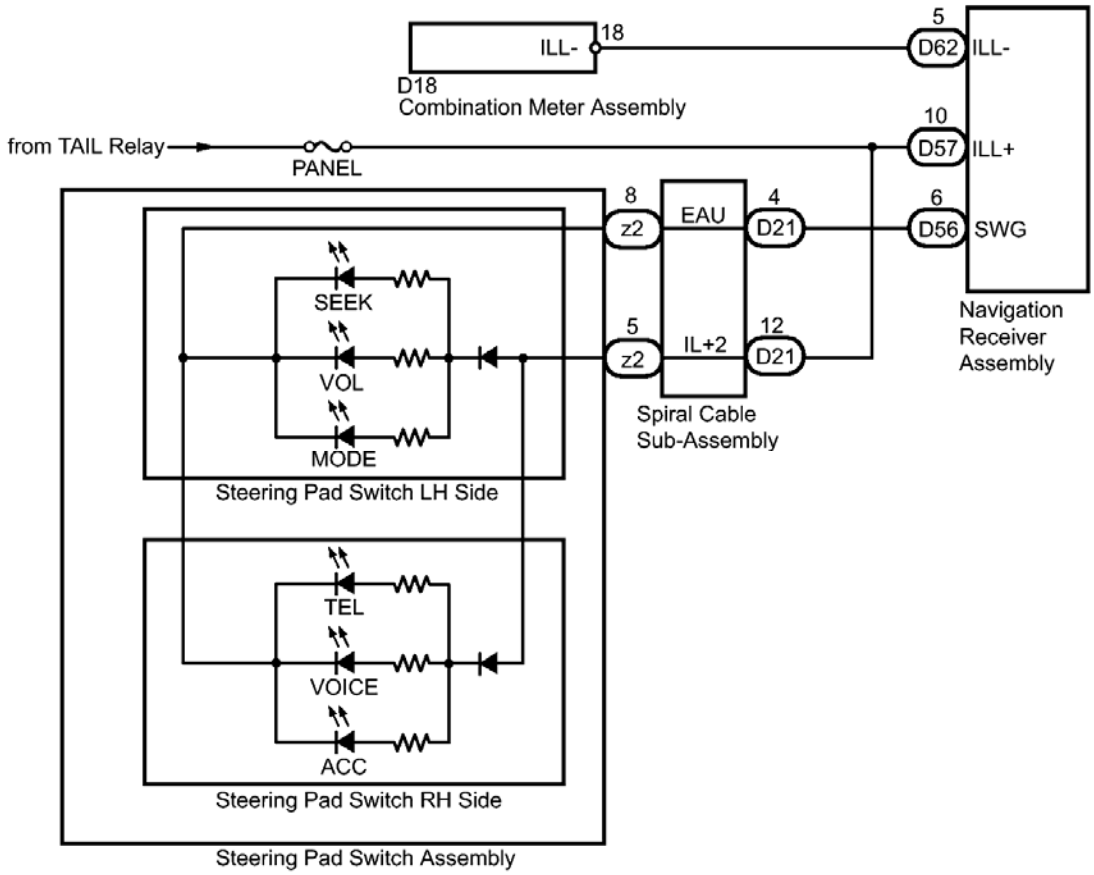


Fig. 59: Illumination Circuit - Wiring Diagram
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

WARNING: The vehicle is equipped with an SRS (Supplemental Restraint System) which includes components such as airbags. Before servicing (including removal or installation of parts), be sure to read the Precaution in the SRS. Refer to PRECAUTION .

PROCEDURE

1. **CHECK ILLUMINATION**
   a. Check if the illumination for the navigation receiver assembly, steering pad switch assembly, glove box or other parts (hazard switch, transmission control switch, etc.) comes on when the light control switch is turned to the HEAD or TAIL position.

RESULT

Result	Proceed to
Illumination	

comes on for all components except steering pad switch.	A
Illumination comes on for all components except navigation receiver assembly.	B
No illumination comes on (navigation receiver, hazard switch, glove box, etc.).	C
Illumination comes on for all components except steering pad switch and navigation receiver assembly.	D

B --> See step 6

C --> See step 8

D --> See step 7

A: Go to next step

2. **CHECK HARNESS AND CONNECTOR (SPIRAL CABLE - BATTERY)**
   a. Disconnect the D21 spiral cable sub-assembly connector.

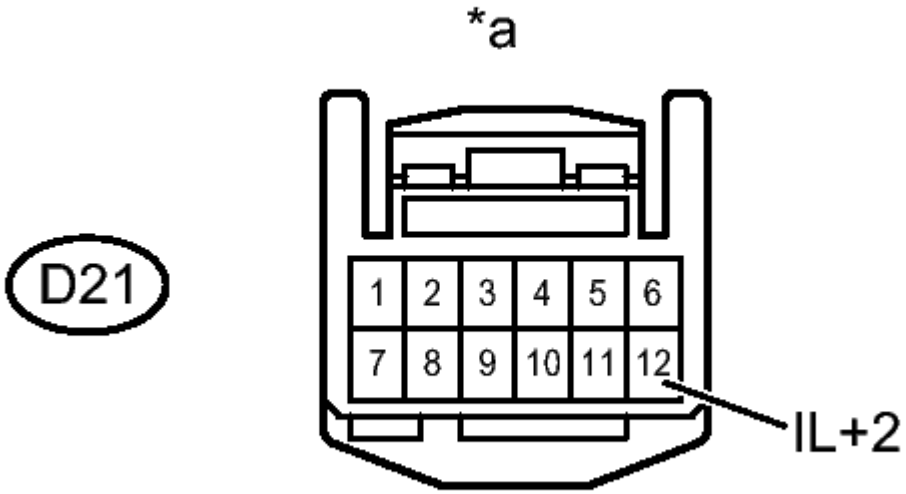


Fig. 60: Measuring Voltage Of Spiral Cable - Battery
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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

Standard Voltage

Tester Connection	Switch Condition	Specified Condition
D21-12 (IL+2) - Body ground	Light control switch TAIL or HEAD	11 to 14 V

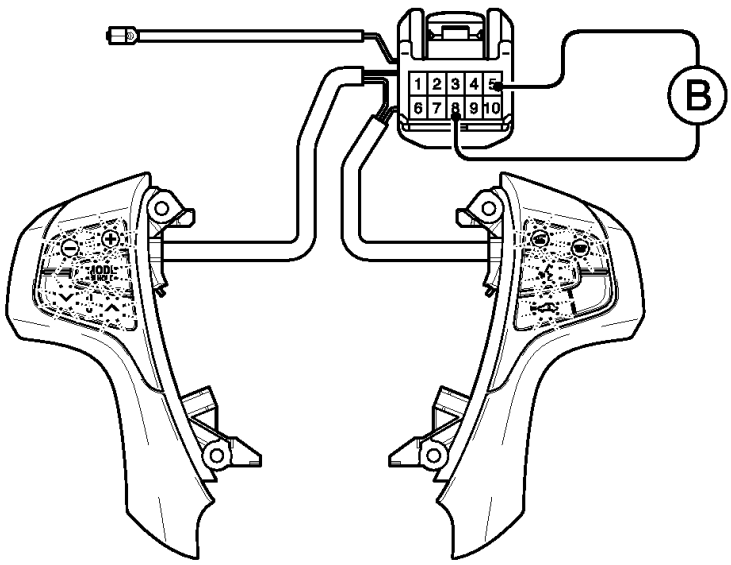
TEXT IN ILLUSTRATION

*a	Front view of wire harness connector (to Spiral Cable Sub-Assembly)

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK: Go to next step

3. **INSPECT STEERING PAD SWITCH ASSEMBLY**
   a. Remove the steering pad switch assembly. Refer to **REMOVAL** .



P

Fig. 61: Inspecting Steering Pad Switch Assembly
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

   b. Connect the positive (+) lead of the battery to terminal 5 (IL+2) and the negative (-) lead of the battery to terminal 8 (EAU) of the steering pad switch assembly connector.
   c. Check if the illumination for the steering pad switch assembly comes on.

      OK

      Illumination for the steering pad switch assembly comes on.

NG --> See step 9

OK: Go to next step

4. **INSPECT SPIRAL CABLE SUB-ASSEMBLY**
   a. Remove the spiral cable sub-assembly. Refer to **REMOVAL** .

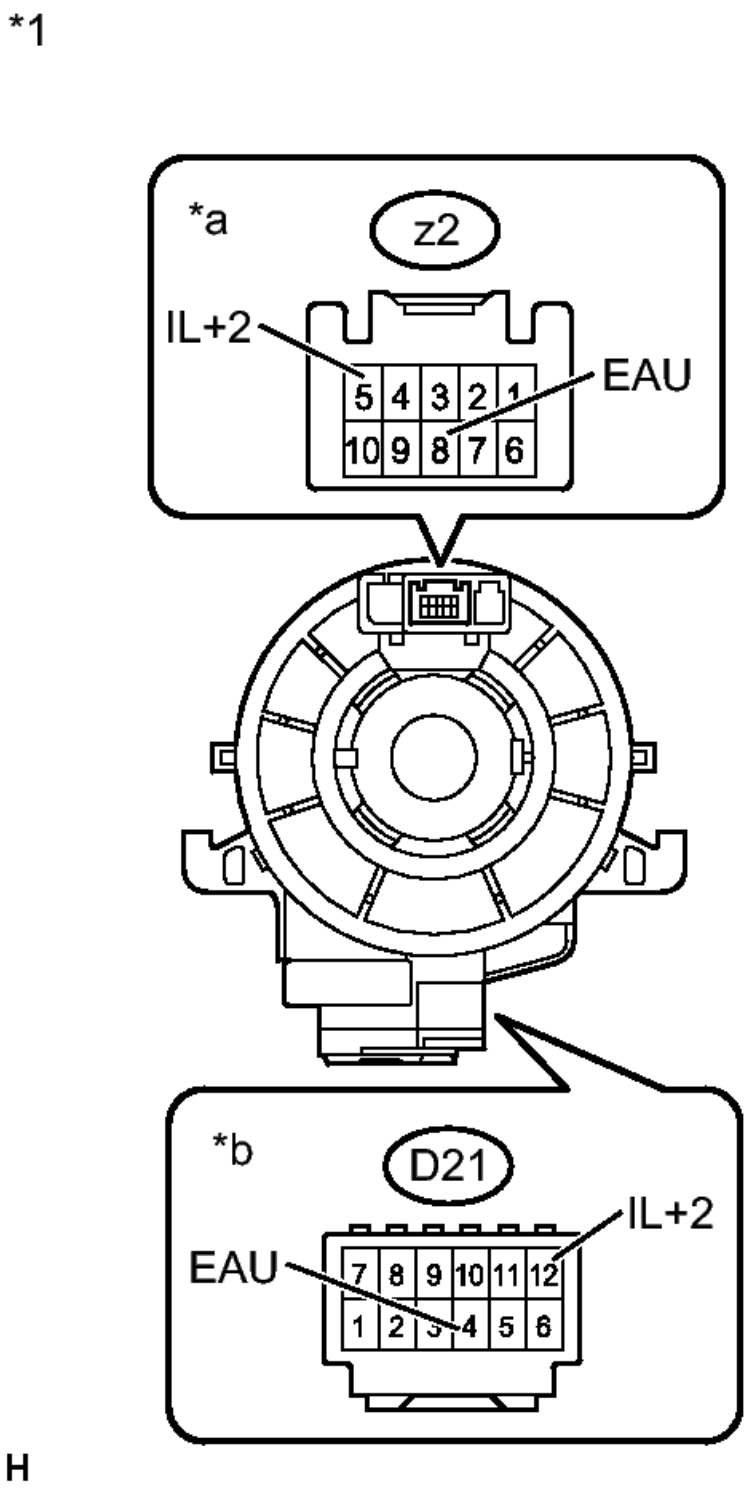


Fig. 62: Inspecting Spiral Cable Sub-Assembly
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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

Standard Resistance

Tester Connection	Condition	Specified Condition
z2-8 (EAU) - D21-4 (EAU)	Spiral cable is turned 2.5 rotations counterclockwise	Below 1 ohms
	Spiral cable is centered	
	Spiral cable is turned 2.5 rotations clockwise	
z2-5 (IL+2) - D21-12 (IL+2)	Spiral cable is turned 2.5 rotations counterclockwise	
	Spiral cable is centered	
	Spiral cable is turned 2.5 rotations clockwise	

WARNING: The spiral cable is an important part of the SRS airbag system. Incorrect removal or installation of the spiral cable sub-assembly may prevent the airbag from deploying. Be sure to read Precaution in the SRS. Refer to PRECAUTION .

TEXT IN ILLUSTRATION

*1	Spiral Cable Sub-Assembly
*a	Component without harness connected (Spiral Cable Sub-Assembly (for Steering Pad Switch Side))
	Component

*b	without harness connected (Spiral Cable Sub-Assembly (for Vehicle Side))

NG --> See step 10

OK: Go to next step

5. **CHECK HARNESS AND CONNECTOR (NAVIGATION RECEIVER - SPIRAL CABLE)**
   a. Disconnect the D56 navigation receiver assembly connector.
   b. Disconnect the D21 spiral cable sub-assembly connector.
   c. Measure the resistance according to the value(s) in the table below.

   Standard Resistance (Check for Open)

Tester Connection	Condition	Specified Condition
D56-6 (SWG) - D21-4 (EAU)	Always	Below 1 ohms

   Standard Resistance (Check for Short)

Tester Connection	Condition	Specified Condition
D56-6 (SWG) - Body ground	Always	10 kohms or higher

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK --> See step 11

6. **CHECK HARNESS AND CONNECTOR (NAVIGATION RECEIVER - BATTERY)**
   a. Disconnect the D57 navigation receiver assembly connector.

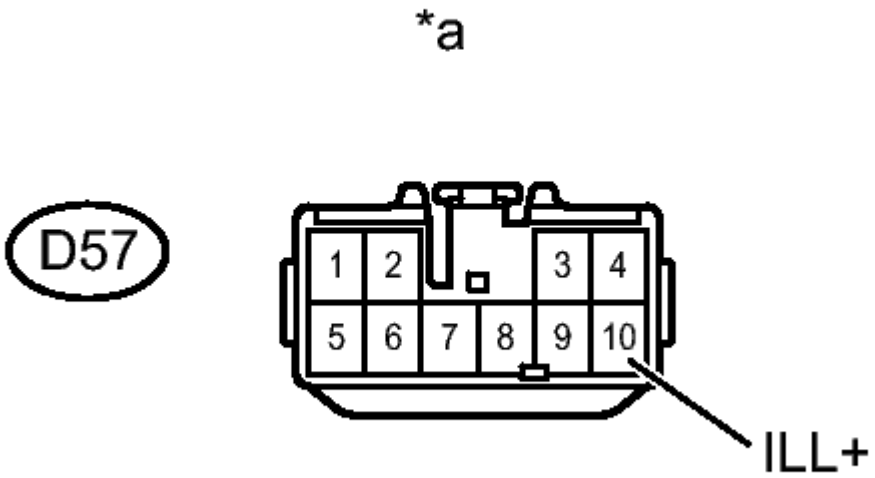


Fig. 63: Measuring Voltage Of Navigation Receiver - Battery
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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

Standard Voltage

Tester Connection	Switch Condition	Specified Condition
D57-10 (ILL+) - Body ground	Light control switch TAIL or HEAD	11 to 14 V

TEXT IN ILLUSTRATION

*a	Front view of wire harness connector (to Navigation Receiver Assembly)

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK --> See step 11

7. **CHECK HARNESS AND CONNECTOR (NAVIGATION RECEIVER - COMBINATION METER)**
   a. Disconnect the D62 navigation receiver assembly connector.
   b. Disconnect the D18 combination meter assembly connector.
   c. Measure the resistance according to the value(s) in the table below.

   Standard Resistance (Check for Open)

Tester Connection	Condition	Specified Condition
D62-5 (ILL-) - D18-18 (ILL-)	Always	Below 1 ohms

   Standard Resistance (Check for Short)

Tester Connection	Condition	Specified Condition
D62-5 (ILL-) - Body ground	Always	10 kohms or higher

   NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

   OK --> See step 11

8. **GO TO LIGHTING SYSTEM. Refer to PROBLEM SYMPTOMS TABLE**
9. **REPLACE STEERING PAD SWITCH ASSEMBLY. Refer to REMOVAL**
10. **REPLACE SPIRAL CABLE SUB-ASSEMBLY. Refer to REMOVAL**
11. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**

Parking Brake Switch Circuit

DESCRIPTION

This circuit is from the parking brake switch assembly to the navigation receiver assembly.

WIRING DIAGRAM

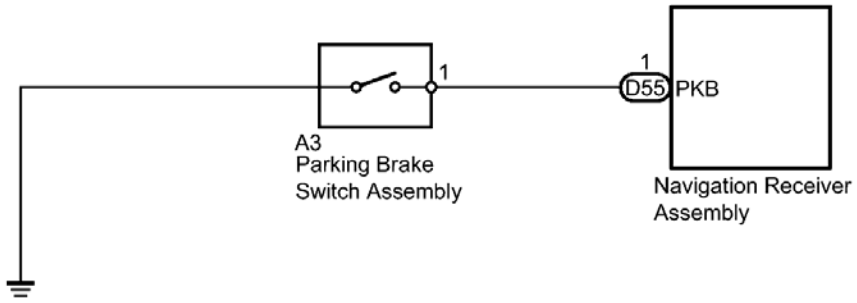


Fig. 64: Parking Brake Switch Circuit - Wiring Diagram
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

PROCEDURE

1. **CHECK BRAKE WARNING SWITCH ASSEMBLY (DISPLAY CHECK MODE)**
   a. Enter the "Display Check" mode and select "Vehicle Signal Check". Refer to **OPERATION CHECK** .

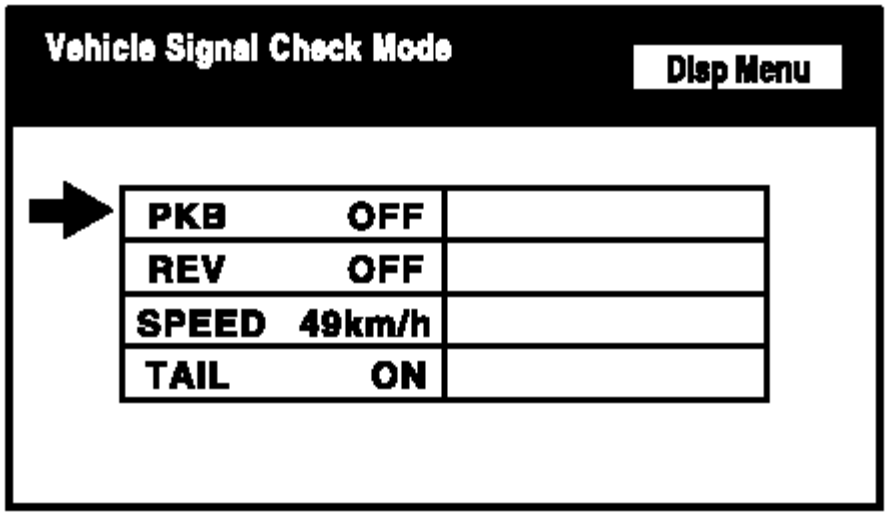


Fig. 65: Screen Display - Vehicle Signal Check Mode (PKB)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

   b. Check that the display changes between ON and OFF according to the parking brake operation.

OK

Parking Brake Position	Display
Applied	ON
Released	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.

NG --> See step 2

OK --> See step 5

2. **INSPECT PARKING BRAKE SWITCH ASSEMBLY**
   a. Remove the parking brake switch assembly connector. Refer to **REMOVAL** .

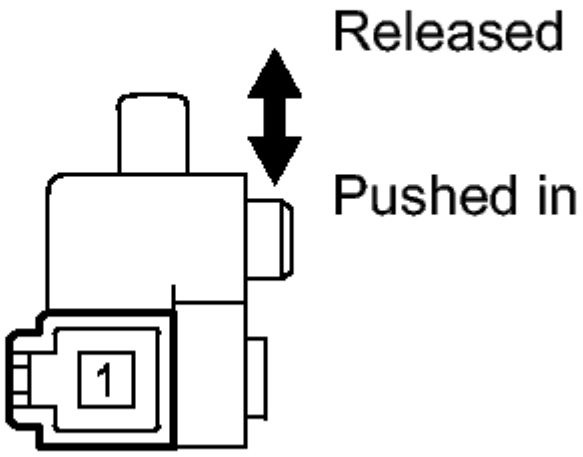


Fig. 66: Checking Parking Brake Switch Assembly
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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

Standard Resistance

Tester Connection	Switch Condition	Specified Condition
1 - Body ground	Parking brake switch ON (Switch pin released)	Below 1 ohms
	Parking brake switch OFF (Switch pin pushed in)	10 kohms or higher

NG --> See step 4

OK: Go to next step

3. **CHECK HARNESS AND CONNECTOR (NAVIGATION RECEIVER - PARKING BRAKE SWITCH)**
   a. Disconnect the D55 navigation receiver assembly connector.
   b. Disconnect the A3 parking brake switch assembly connector.
   c. Measure the resistance according to the value(s) in the table below.

   Standard Resistance (Check for Open)

Tester Connection	Condition	Specified Condition
D55-1 (PKB) - A3-1	Always	Below 1 ohms

   Standard Resistance (Check for Short)

Tester Connection	Condition	Specified Condition
D55-1 (PKB) - Body ground	Always	10 kohms or higher

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK --> See step 5

4. **REPLACE PARKING BRAKE SWITCH ASSEMBLY. Refer to REMOVAL**
5. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**

Speaker Circuit

DESCRIPTION

The navigation receiver assembly sends sound signals to the speaker.

WIRING DIAGRAM

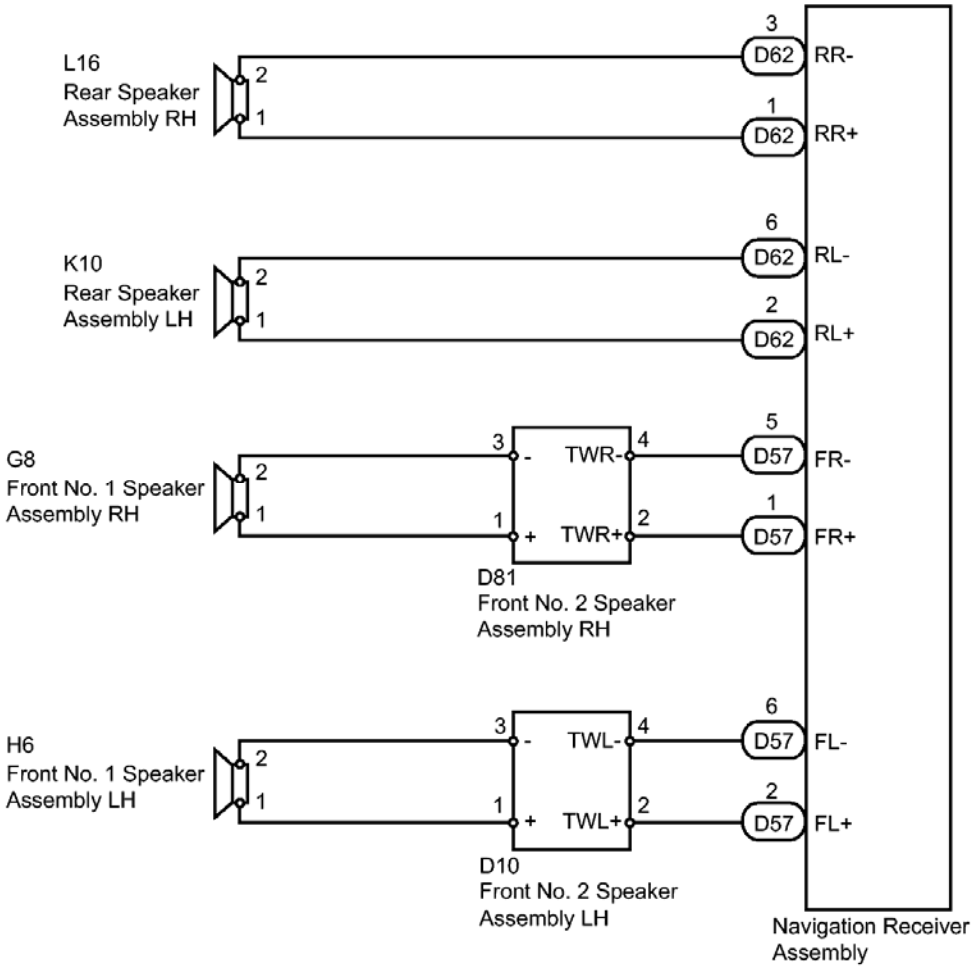


Fig. 67: Speaker Circuit - Wiring Diagram
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

PROCEDURE

1. **CHECK SPEAKER**
    a. Check the malfunctioning speakers.

RESULT

Result	Proceed to
Malfunction in front speaker area	A
Malfunction in rear speaker area	B

B --> See step 7

A: Go to next step

2. **CHECK FRONT SIDE SPEAKER**
    a. Check the malfunctioning speakers.

RESULT

Result	Proceed to
Front No. 2 speaker assembly	A
Front No. 1 speaker assembly	B

B --> See step 5

A: Go to next step

3. **INSPECT FRONT NO. 2 SPEAKER ASSEMBLY**
    a. Disconnect the D81 and/or D10 front No. 2 speaker assembly connector.

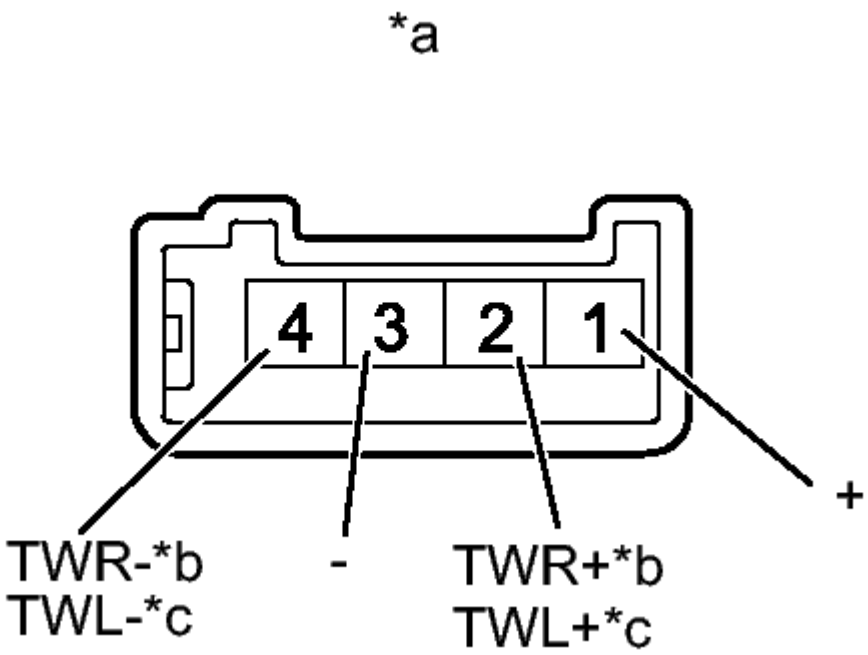


Fig. 68: Checking Front No. 2 Speaker Assembly
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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

Standard Resistance

for RH

for LH

Tester Connection	Condition	Specified Condition
1 (+) - 2 (TWR+)	Always	Below 1 ohms
3 (-) - 4 (TWR-)	Always	Below 1 ohms
2 (TWR+) - 4 (TWR-)	Always	Approximately 4.0 ohms

Tester Connection	Condition	Specified Condition
1 (+) - 2 (TWL+)	Always	Below 1 ohms
3 (-) - 4 (TWL-)	Always	Below 1 ohms

2 (TWL+) - 4 (TWL-)	Always	Approximately 4.0 ohms

TEXT IN ILLUSTRATION

*a	Component without harness connected (Front No. 2 Speaker Assembly)
*b	for RH Side
*c	for LH Side

NG --> See step 9

OK: Go to next step

4. **CHECK HARNESS AND CONNECTOR (NAVIGATION RECEIVER ASSEMBLY - FRONT NO. 2 SPEAKER ASSEMBLY)**
   a. Disconnect the D57 navigation receiver assembly connector.
   b. Disconnect the D81 and/or D10 front No. 2 speaker assembly connector.
   c. Measure the resistance according to the value(s) in the table below.

   Standard Resistance (Check for Open (RH Side))

Tester Connection	Condition	Specified Condition
D57-1 (FR+) - D81-2 (TWR+)	Always	Below 1 ohms
D57-5 (FR-) - D81-4 (TWR-)	Always	Below 1 ohms

   Standard Resistance (Check for Short (RH Side))

Tester Connection	Condition	Specified Condition
D57-1 (FR+) - Body	Always	10 kohms or higher

ground		
D57-5 (FR-) - Body ground	Always	10 kohms or higher

Standard Resistance (Check for Open (LH Side))

Tester Connection	Condition	Specified Condition
D57-2 (FL+) - D10-2 (TWL+)	Always	Below 1 ohms
D57-6 (FL-) - D10-4 (TWL-)	Always	Below 1 ohms

Standard Resistance (Check for Short (LH Side))

Tester Connection	Condition	Specified Condition
D57-2 (FL+) - Body ground	Always	10 kohms or higher
D57-6 (FL-) - Body ground	Always	10 kohms or higher

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK --> See step 10

5. **INSPECT FRONT NO. 1 SPEAKER ASSEMBLY**
   a. Disconnect the G8 and/or H6 front No. 1 speaker assembly connector.

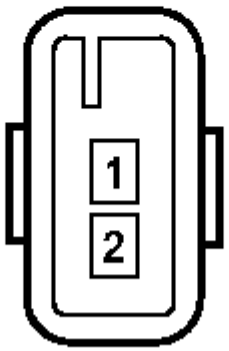


Fig. 69: Checking Front No. 1 Speaker Assembly
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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

Standard Resistance

Tester Connection	Condition	Specified Condition
1 - 2	Always	Approximately 4.0 ohms

TEXT IN ILLUSTRATION

*a	Component without harness connected (Front No. 1 Speaker Assembly)

NG --> See step 11

OK: Go to next step

6. **CHECK HARNESS AND CONNECTOR (FRONT NO. 2 SPEAKER ASSEMBLY - FRONT NO. 1 SPEAKER ASSEMBLY)**

a. Disconnect the D81 and/or D10 front No. 2 speaker assembly connector.
b. Disconnect the G8 and/or H6 front No. 1 speaker assembly connector.
c. Measure the resistance according to the value(s) in the table below.

Standard Resistance (Check for Open (RH Side)

Tester Connection	Condition	Specified Condition
D81-1 (+) - G8-1	Always	Below 1 ohms
D81-3 (-) - G8-2	Always	Below 1 ohms

Standard Resistance (Check for Short (RH Side)

Tester Connection	Condition	Specified Condition
D81-1 (+) - Body ground	Always	10 kohms or higher
D81-3 (-) - Body ground	Always	10 kohms or higher

Standard Resistance (Check for Open (LH Side)

Tester Connection	Condition	Specified Condition
D10-1 (+) - H6-1	Always	Below 1 ohms
D10-3 (-) - H6-2	Always	Below 1 ohms

Standard Resistance (Check for Short (LH Side)

Tester Connection	Condition	Specified Condition
D10-1 (+) - Body ground	Always	10 kohms or higher
D10-3 (-) - Body ground	Always	10 kohms or higher

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK --> See step 12

7. **INSPECT REAR SPEAKER ASSEMBLY**
   a. Disconnect the L16 and K10 rear speaker assembly connectors.

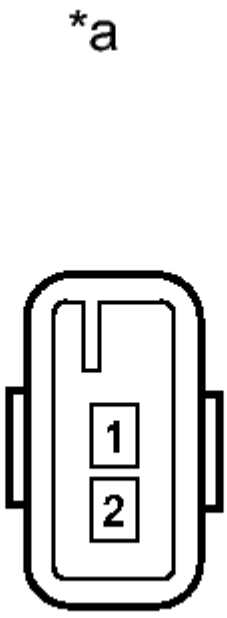


Fig. 70: Checking Rear Speaker Assembly
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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

Standard Resistance

Tester Connection	Condition	Specified Condition
1 - 2	Always	Approximately 4.0 ohms

TEXT IN ILLUSTRATION

*a	Component without harness connected (Rear Speaker

Assembly)

NG --> See step 13

OK: Go to next step

8. **CHECK HARNESS AND CONNECTOR (NAVIGATION RECEIVER ASSEMBLY - REAR SPEAKER ASSEMBLY)**
   a. Disconnect the D62 navigation receiver assembly connector.
   b. Disconnect the L16 and/or K10 rear speaker assembly connector.
   c. Measure the resistance according to the value(s) in the table below.

   Standard Resistance (Check for Open (RH Side)

Tester Connection	Condition	Specified Condition
D62-1 (RR+) - L16-1	Always	Below 1 ohms
D62-3 (RR-) - L16-2	Always	Below 1 ohms

   Standard Resistance (Check for Short (RH Side)

Tester Connection	Condition	Specified Condition
D62-1 (RR+) - Body ground	Always	10 kohms or higher
D62-3 (RR-) - Body ground	Always	10 kohms or higher

   Standard Resistance (Check for Open (LH Side)

Tester Connection	Condition	Specified Condition
D62-2 (RL+) - K10-1	Always	Below 1 ohms
D62-6 (RL-) - K10-2	Always	Below 1 ohms

   Standard Resistance (Check for Short (LH Side)

Tester Connection	Condition	Specified Condition
D62-2 (RL+) - Body ground	Always	10 kohms or higher
D62-6 (RL-) - Body ground	Always	10 kohms or higher

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK --> See step 14

9. **REPLACE FRONT NO. 2 SPEAKER ASSEMBLY. Refer to REMOVAL**
10. **REPLACE NAVIGATION RECEIVER ASSEMBLY. Refer to REMOVAL**
11. **REPLACE FRONT NO. 1 SPEAKER ASSEMBLY. Refer to REMOVAL**
12. **REPLACE NAVIGATION RECEIVER ASSEMBLY. Refer to REMOVAL**
13. **REPLACE REAR SPEAKER ASSEMBLY. Refer to REMOVAL**
14. **REPLACE NAVIGATION RECEIVER ASSEMBLY. Refer to REMOVAL**

Sound Signal Circuit Between Navigation Receiver Assembly And Stereo Jack Adapter

DESCRIPTION

The No. 1 stereo jack adapter assembly sends an external device sound signal to the navigation receiver assembly through this circuit. The sound signal that has been sent is amplified by navigation receiver assembly, and then is sent to speakers.

If there is an open or short in the circuit, sound cannot be heard from the speakers even if there is no malfunction in the navigation receiver assembly or speakers.

WIRING DIAGRAM

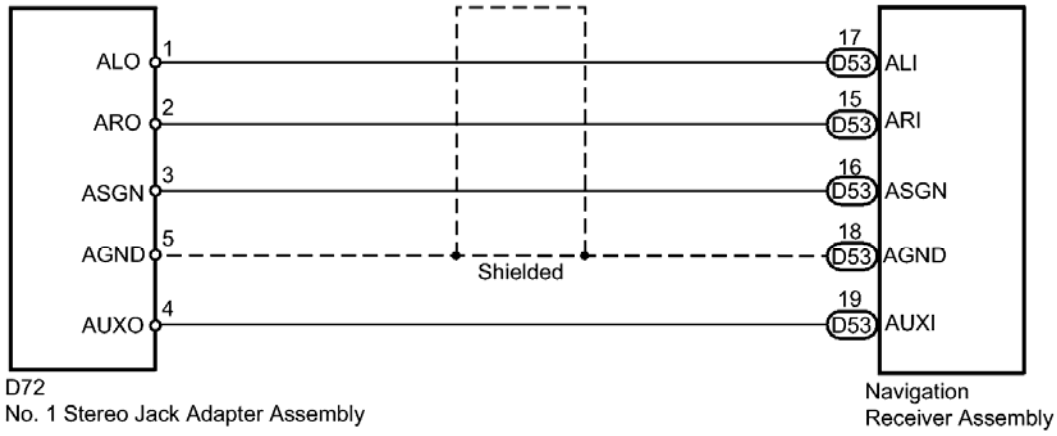


Fig. 71: Sound Signal Circuit Between Navigation Receiver Assembly And Stereo Jack Adapter Wiring Diagram
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

PROCEDURE

1. **CHECK HARNESS AND CONNECTOR (NAVIGATION RECEIVER ASSEMBLY - NO. 1 STEREO JACK ADAPTER ASSEMBLY)**
   a. Disconnect the D53 navigation receiver assembly connector.
   b. Disconnect the D72 No. 1 stereo jack adapter assembly connector.
   c. Measure the resistance according to the value(s) in the table below.

   Standard Resistance (Check for Open)

Tester Connection	Condition	Specified Condition
D53-17 (ALI) - D72-1 (ALO)	Always	Below 1 ohms
D53-15 (ARI) - D72-2 (ARO)	Always	Below 1 ohms
D53-16 (ASGN) - D72-3	Always	Below 1 ohms

(ASGN)		
D53-18 (AGND) - D72-5 (AGND)	Always	Below 1 ohms
D53-19 (AUXI) - D72-4 (AUXO)	Always	Below 1 ohms

Standard Resistance (Check for Short)

Tester Connection	Condition	Specified Condition
D53-15 (ARI) - Body ground	Always	10 kohms or higher
D53-16 (ASGN) - Body ground	Always	10 kohms or higher
D53-17 (ALI) - Body ground	Always	10 kohms or higher
D53-19 (AUXI) - Body ground	Always	10 kohms or higher
D53-18 (AGND) - Body ground	Always	10 kohms or higher

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK --> See step 2

2. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**

Sound Signal Circuit Between Navigation Receiver Assembly And Stereo Component Tuner Assembly

DESCRIPTION

The stereo component tuner assembly sends sound signals to the navigation receiver assembly through this circuit. If there is an open or short in the circuit, sound cannot be heard from the speakers even if there is no malfunction in the navigation receiver assembly or speakers.

WIRING DIAGRAM

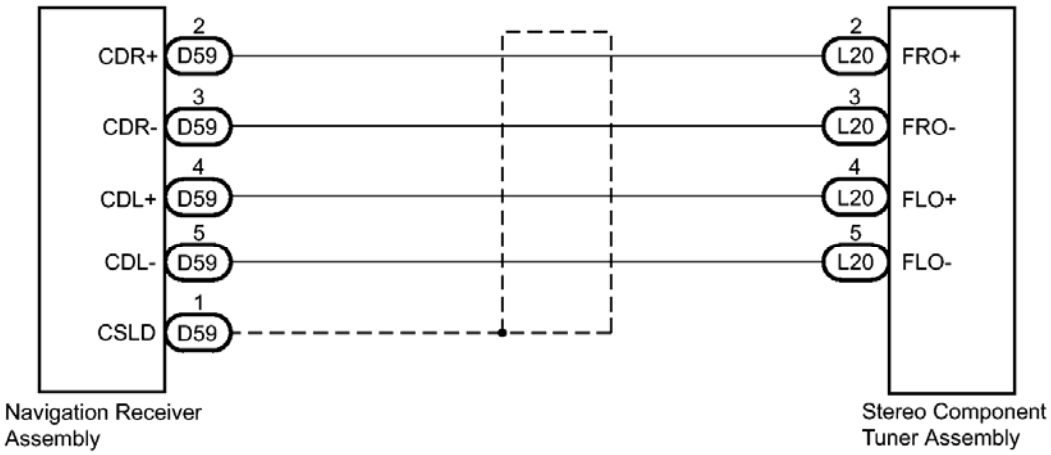


Fig. 72: Sound Signal Circuit Between Navigation Receiver Assembly And Stereo Component Tuner Assembly Wiring Diagram
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

PROCEDURE

1. **CHECK STEREO COMPONENT TUNER ASSEMBLY**
    a. Disconnect the D59 navigation receiver assembly connector.

*a

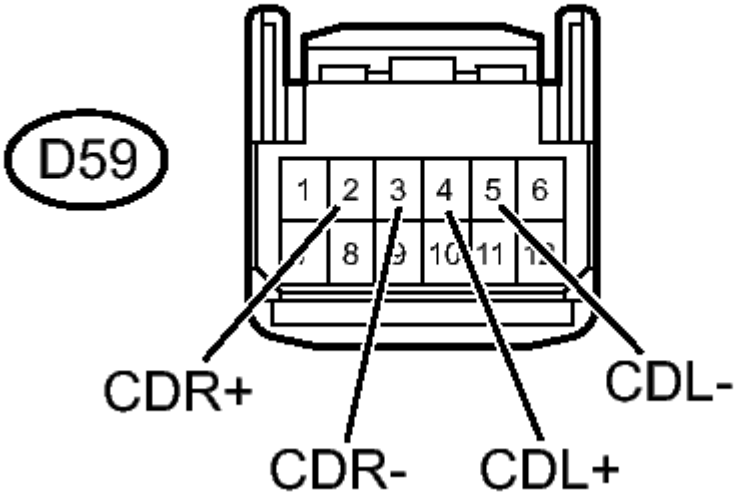


Fig. 73: Checking Stereo Component Tuner Assembly
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

b. Using an oscilloscope, check the signal waveform between each terminal and the body ground according to the conditions, as shown in the chart below.

OK

Tester Connection	Condition	Specified Condition
D59-2 (CDR+) - Body ground	Satellite radio playing	A waveform synchronized with sound is output
D59-3 (CDR-) - Body ground		
D59-4 (CDL+) - Body ground		
D59-5 (CDL-) - Body ground		

*a	Front view of wire harness connector (to Navigation receiver Assembly)

NG --> See step 2

OK --> See step 4

2. **CHECK HARNESS AND CONNECTOR (STEREO COMPONENT TUNER ASSEMBLY - TELEVISION DISPLAY)**
   a. Disconnect the L20 stereo component tuner assembly connector.
   b. Disconnect the D59 navigation receiver assembly connector.
   c. Measure the resistance according to the value(s) in the table below.

   Standard Resistance (Check for Open)

Tester Connection	Condition	Specified Condition
L20-2 (FRO+) - D59-2 (CDR+)	Always	Below 1 ohms
L20-3 (FRO-) - D59-3 (CDR-)	Always	Below 1 ohms
L20-4 (FLO+) - D59-4 (CDL+)	Always	Below 1 ohms
L20-5 (FLO-) - D59-5 (CDL-)	Always	Below 1 ohms

   Standard Resistance (Check for Short)

Tester Connection	Condition	Specified Condition
L20-2		

(FRO+) - Body ground	Always	10 kohms or higher
L20-3 (FRO-) - Body ground	Always	10 kohms or higher
L20-4 (FLO+) - Body ground	Always	10 kohms or higher
L20-5 (FLO-) - Body ground	Always	10 kohms or higher

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK --> See step 3

3. **REPLACE STEREO COMPONENT TUNER ASSEMBLY. Refer to REMOVAL**
4. **REPLACE NAVIGATION RECEIVER ASSEMBLY. Refer to REMOVAL**

Mute Signal Circuit Between Navigation Receiver Assembly And Stereo Component Tuner Assembly

DESCRIPTION

The navigation receiver assembly controls the volume according to the MUTE signal from the stereo component tuner assembly.

The MUTE signal is sent to reduce noise and a popping sound generated when switching the mode etc. If there is an open in the circuit, noise can be heard from the speakers when changing the sound source. If there is a short in the circuit, even though the navigation receiver assembly is functioning normally, no sound or only an extremely faint sound can be heard.

WIRING DIAGRAM



Fig. 74: Mute Signal Circuit Between Navigation Receiver Assembly And Stereo Component Tuner Assembly Wiring Diagram
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

PROCEDURE

1. **CHECK NAVIGATION RECEIVER ASSEMBLY**
    a. Measure the voltage according to the value(s) in the table below.

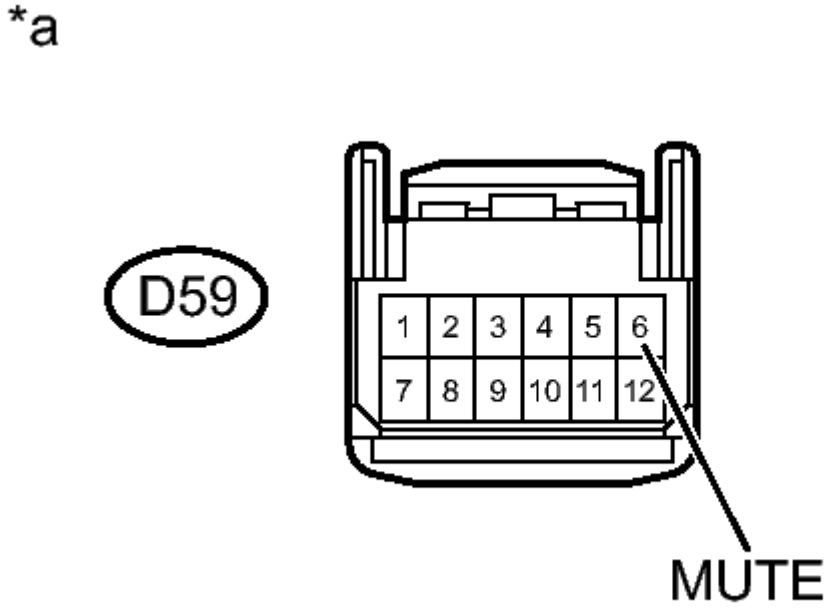


Fig. 75: Measuring Voltage Of Navigation Receiver Assembly
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

Standard Voltage

Tester Connection	Switch Condition	Specified Condition
D59-6 (MUTE) - Body ground	Ignition switch ACC, Satellite radio playing --> Changing source	Above 3.5 V --> Below 1 V

TEXT IN ILLUSTRATION

*a	Component with harness connected (Navigation Receiver Assembly)

NG --> See step 2

OK --> See step 3

2. **CHECK HARNESS AND CONNECTOR (STEREO COMPONENT TUNER - TELEVISION DISPLAY)**
   a. Disconnect the L20 stereo component tuner assembly connector.
   b. Disconnect the D59 navigation receiver assembly connector.
   c. Measure the resistance according to the value(s) in the table below.

Standard Resistance (Check for Open)

Tester Connection	Condition	Specified Condition
D59-6 (MUTE) - L20-6 (MUTE)	Always	Below 1 ohms

Standard Resistance (Check for Short)

Tester	Condition	Specified

Connection		Condition
D59-6 (MUTE) - Body ground	Always	10 kohms or higher

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK --> See step 4

3. **REPLACE NAVIGATION RECEIVER ASSEMBLY. Refer to REMOVAL**
4. **REPLACE STEREO COMPONENT TUNER ASSEMBLY. Refer to REMOVAL**

Reverse Signal Circuit

DESCRIPTION

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

WIRING DIAGRAM

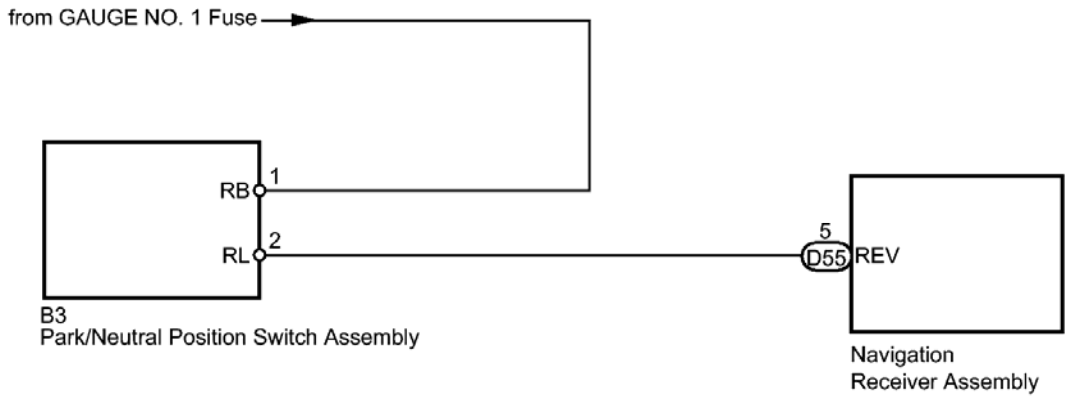


Fig. 76: Reverse Signal Circuit - Wiring Diagram
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

NOTE: Inspect the fuses for circuits related to this system before performing the following inspection procedure.

PROCEDURE

1. **CHECK NAVIGATION RECEIVER ASSEMBLY (DISPLAY CHECK MODE)**
   a. Enter the "Display Check" mode and select "Vehicle Signal Check Mode". Refer to **OPERATION CHECK** .

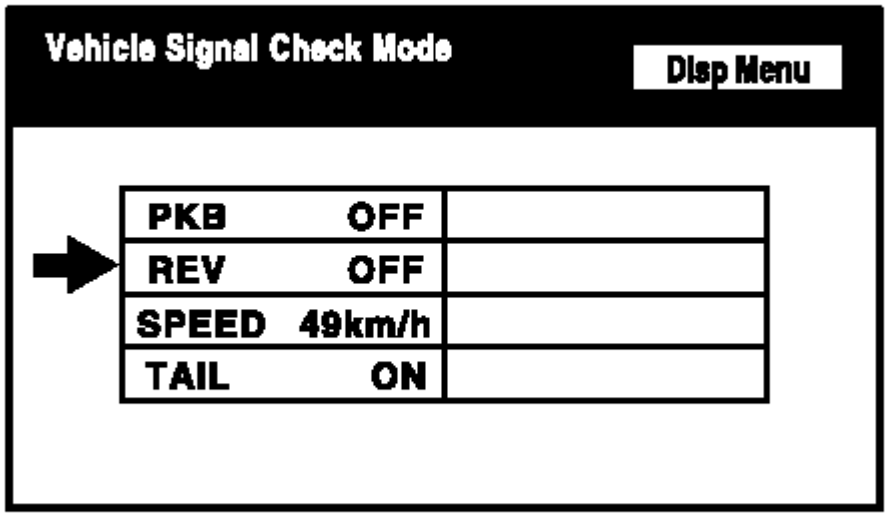


Fig. 77: Screen Display - Vehicle Signal Check Mode (REV)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

   b. Check that the display changes between ON and OFF according to the shift lever operation.

      OK

Shift Lever Position	Display
R	ON
Except R	OFF

      HINT:

      This display is updated once per second. As a result, it is normal for the display to lag behind the actual shift lever operation.

NG --> See step 2

OK --> See step 6

2. **CHECK NAVIGATION RECEIVER ASSEMBLY**
   a. Measure the voltage according to the value(s) in the table below.

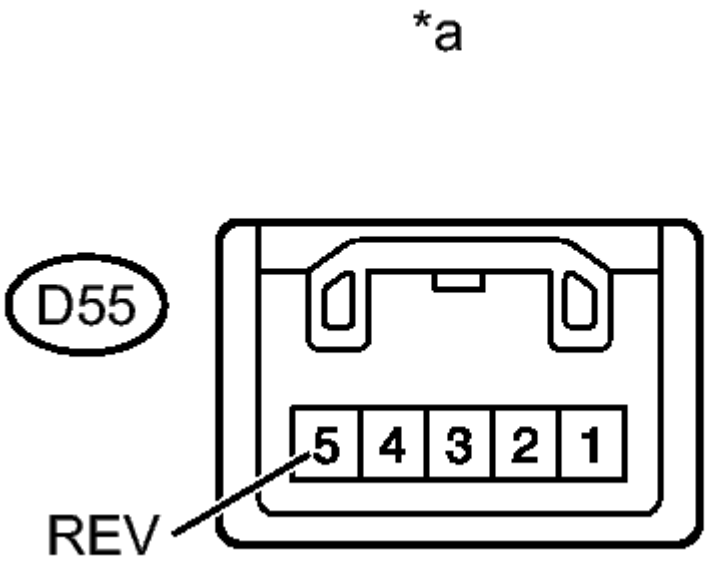


Fig. 78: Measuring Voltage Of Navigation Receiver Assembly
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

Standard Voltage

Tester Connection	Switch Condition	Specified Condition
D55-5 (REV) - Body ground	Ignition switch ON, shift lever in R	11 to 14 V
	Ignition switch ON, shift lever in any position except R	Below 1 V

TEXT IN ILLUSTRATION

	Component

*a	with harness connected (Navigation Receiver Assembly)

NG --> See step 3

OK --> See step 5

3. **CHECK HARNESS AND CONNECTOR (NAVIGATION RECEIVER ASSEMBLY - PARK/NEUTRAL POSITION SWITCH ASSEMBLY)**
   a. Disconnect the D55 navigation receiver assembly connector.
   b. Disconnect the B3 park/neutral position switch assembly connector.
   c. Measure the resistance according to the value(s) in the table below.

   Standard Resistance (Check for Open)

Tester Connection	Condition	Specified Condition
B3-2 (RL) - D55-5 (REV)	Always	Below 1 ohms

   Standard Resistance (Check for Short)

Tester Connection	Condition	Specified Condition
B3-2 (RL) - Body ground	Always	10 kohms or higher

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK: Go to next step

4. **INSPECT PARK/NEUTRAL POSITION SWITCH ASSEMBLY**
   a. Disconnect the B3 park/neutral position switch assembly connector.

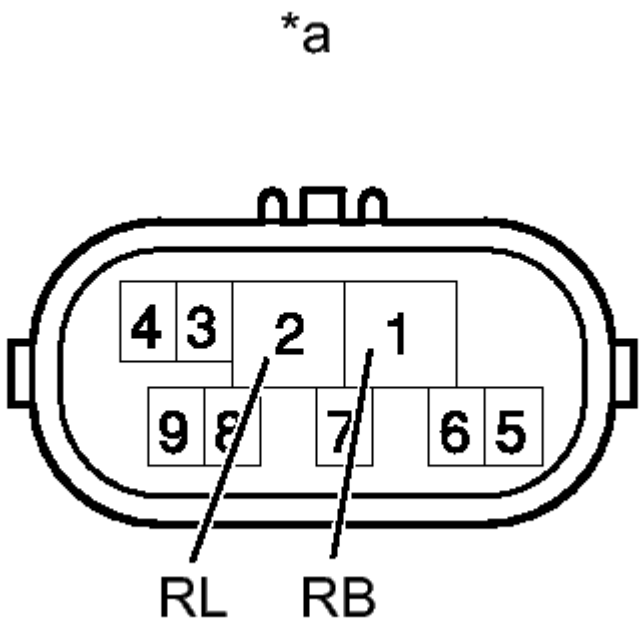


Fig. 79: Measuring Resistance Of Park/Neutral Position Switch Assembly
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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

Standard Resistance

Tester Connection	Switch Condition	Specified Condition
2 (RL) - 1 (RB)	Ignition switch ACC, shift lever in R	Below 1 ohms
	Ignition switch ACC, shift lever in any position except R	10 kohms or higher

HINT:

Replace park/neutral position switch assembly. Refer to **REMOVAL** .

TEXT IN ILLUSTRATION

*a	Component without harness connected (Park/Neutral Position Switch Assembly)

NG --> See step 7

OK --> REPAIR OR REPLACE HARNESS OR CONNECTOR

5. **REPLACE NAVIGATION RECEIVER ASSEMBLY. Refer to REMOVAL**
6. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**
7. **REPLACE PARK/NEUTRAL POSITION SWITCH ASSEMBLY. Refer to REMOVAL**

Stereo Component Tuner Power Source Circuit

DESCRIPTION

This is the power source circuit to operate the stereo component tuner assembly.

WIRING DIAGRAM

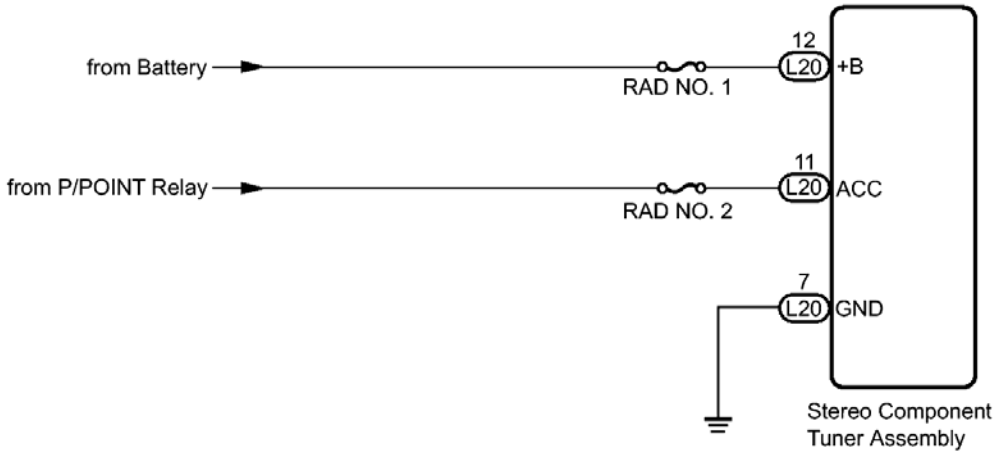


Fig. 80: Stereo Component Tuner Power Source Circuit - Wiring Diagram
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

NOTE: **Inspect the fuses for circuits related to this system before performing the following inspection procedure.**

PROCEDURE

1. **CHECK HARNESS AND CONNECTOR (STEREO COMPONENT TUNER ASSEMBLY - BATTERY AND BODY GROUND)**
   a. Disconnect the L20 stereo component tuner assembly connector.

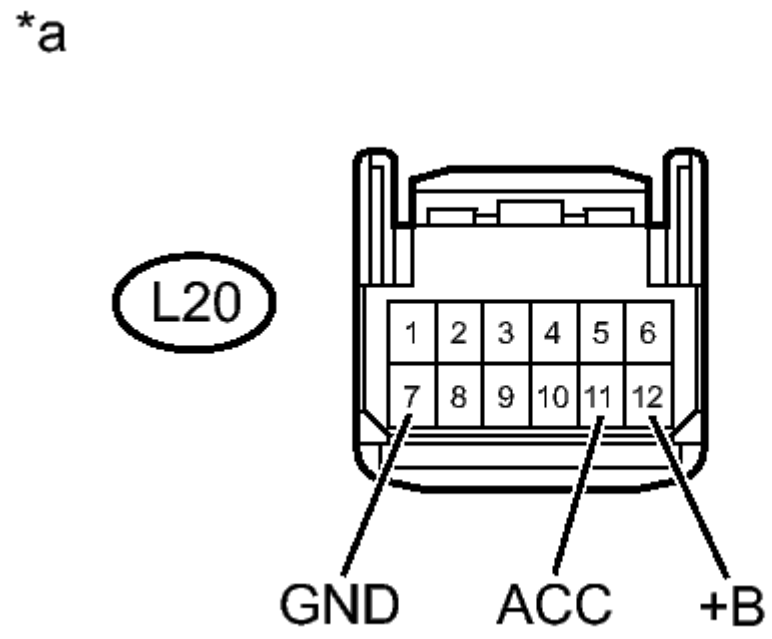


Fig. 81: Checking Harness And Connector (Stereo Component Tuner Assembly - Battery And Body Ground)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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

Standard Resistance

Tester Connection	Condition	Specified Condition
L20-7 (GND) - Body ground	Always	Below 1 ohms

Standard Voltage

Tester Connection	Switch Condition	Specified Condition
L20-12 (+B) - L20-7 (GND)	Always	11 to 14 V
L20-11 (ACC) - L20-7 (GND)	Ignition switch ACC	11 to 14 V

TEXT IN ILLUSTRATION

*a	Front view of wire harness connector (to Navigation Receiver Assembly)

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK --> See step 2

2. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**

Navigation Receiver Assembly Power Source Circuit

DESCRIPTION

This is the power source circuit to operate the navigation receiver assembly.

WIRING DIAGRAM

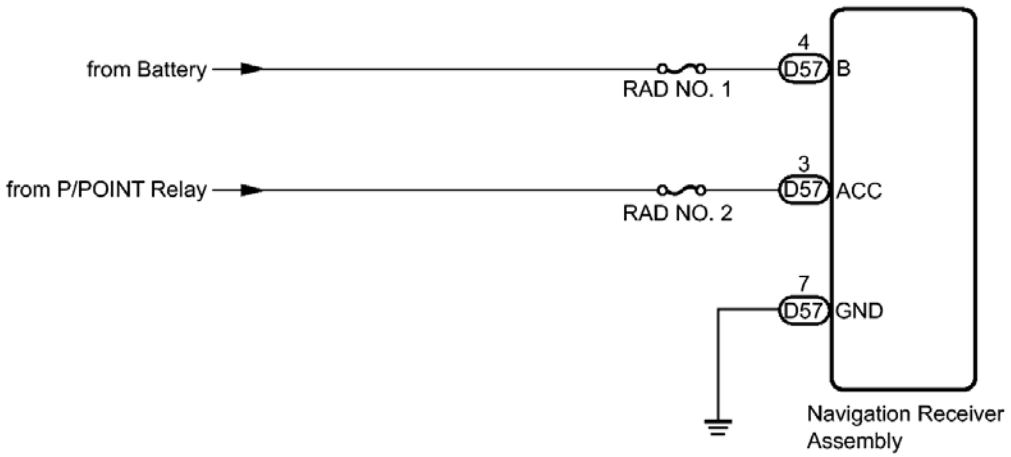


Fig. 82: Navigation Receiver Assembly Power Source Circuit - Wiring Diagram
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

NOTE: Inspect the fuses for circuits related to this system before performing the following inspection procedure.

PROCEDURE

1. **CHECK HARNESS AND CONNECTOR (NAVIGATION RECEIVER - BATTERY AND BODY GROUND)**
   a. Disconnect the D57 navigation receiver assembly connector.

*a

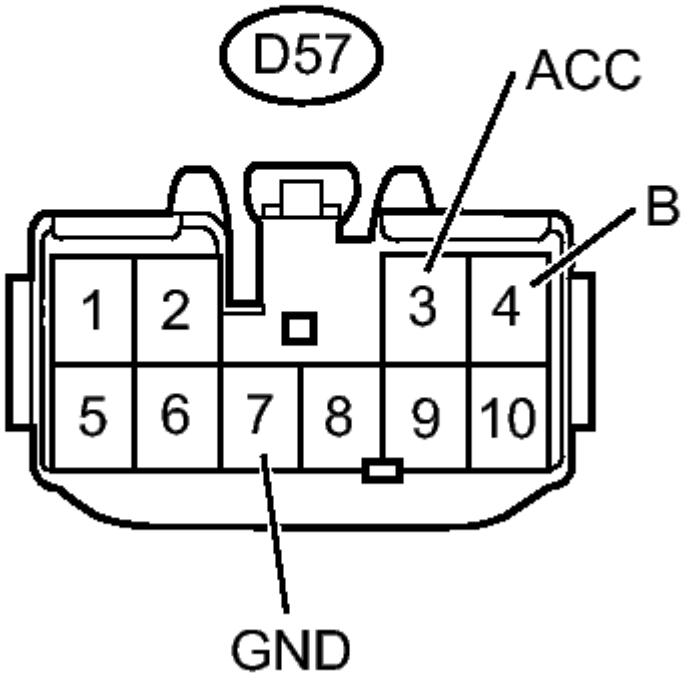


Fig. 83: Checking Harness And Connector (Navigation Receiver - Battery And Body Ground)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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

Standard Resistance

Tester Connection	Condition	Specified Condition
D57-7 (GND) - Body ground	Always	Below 1 ohms

Standard Voltage

Tester Connection	Switch Condition	Specified Condition
D57-4 (B) - Body ground	Always	11 to 14 V
D57-3 (ACC) - Body ground	Ignition switch ACC	11 to 14 V

TEXT IN ILLUSTRATION

*a	Front view of wire harness connector (to Navigation Receiver Assembly)

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

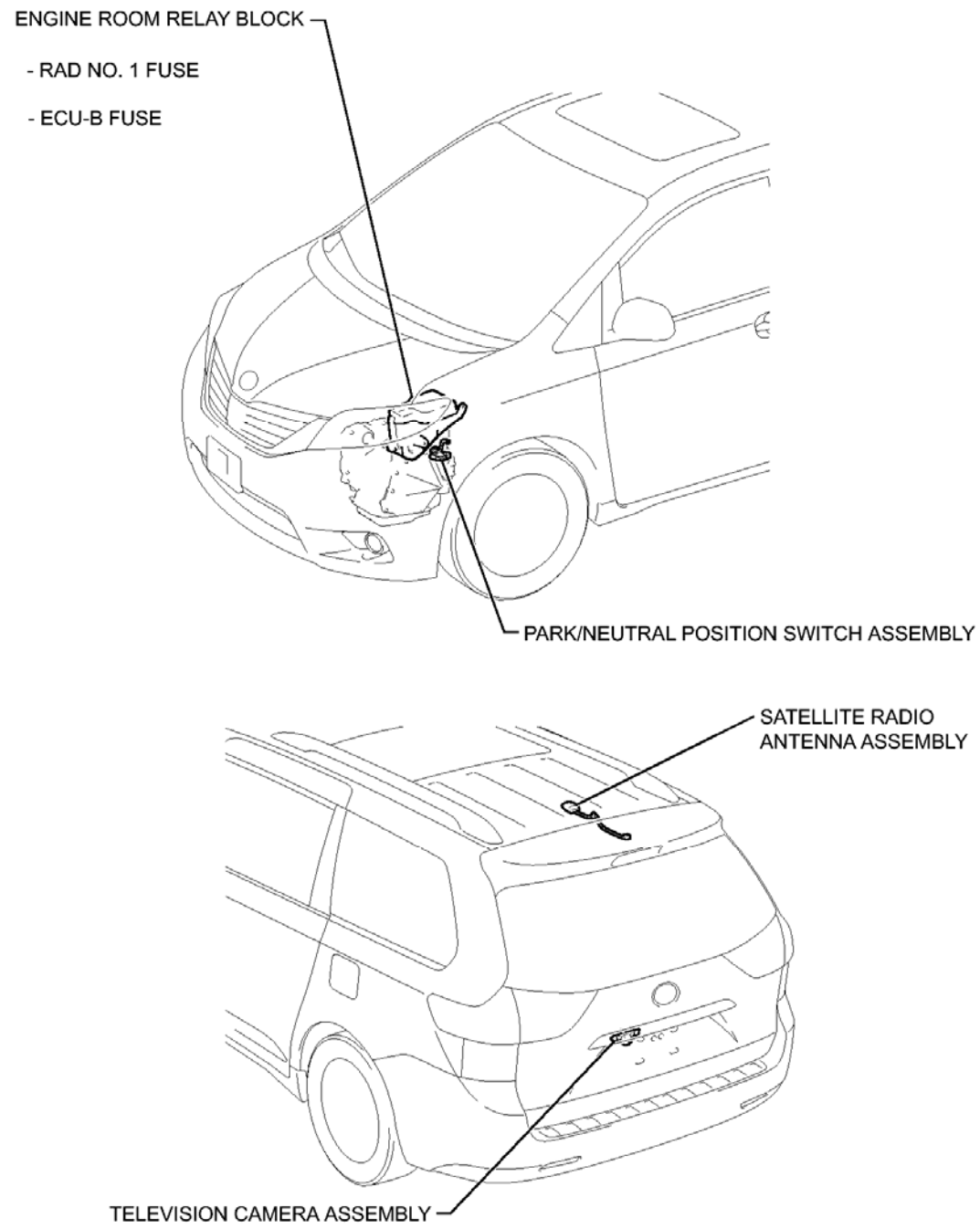
OK --> See step 2

2. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**

NAVIGATION SYSTEM (FOR DVD WITHOUT USB AUDIO SYSTEM)

PARTS LOCATION

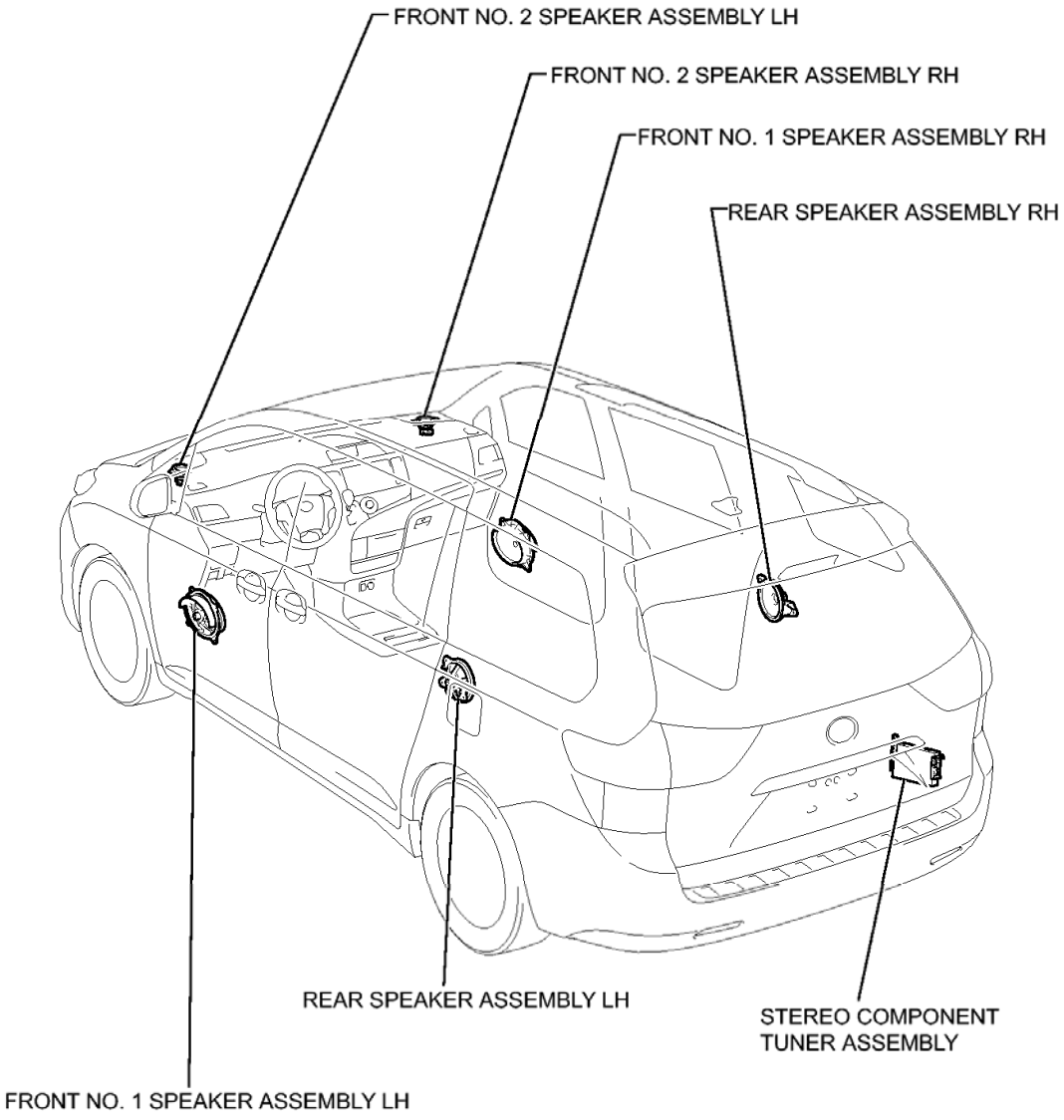
ILLUSTRATION



P

Fig. 1: Navigation System (w/o USB Audio System) Components Location (1 Of 3)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

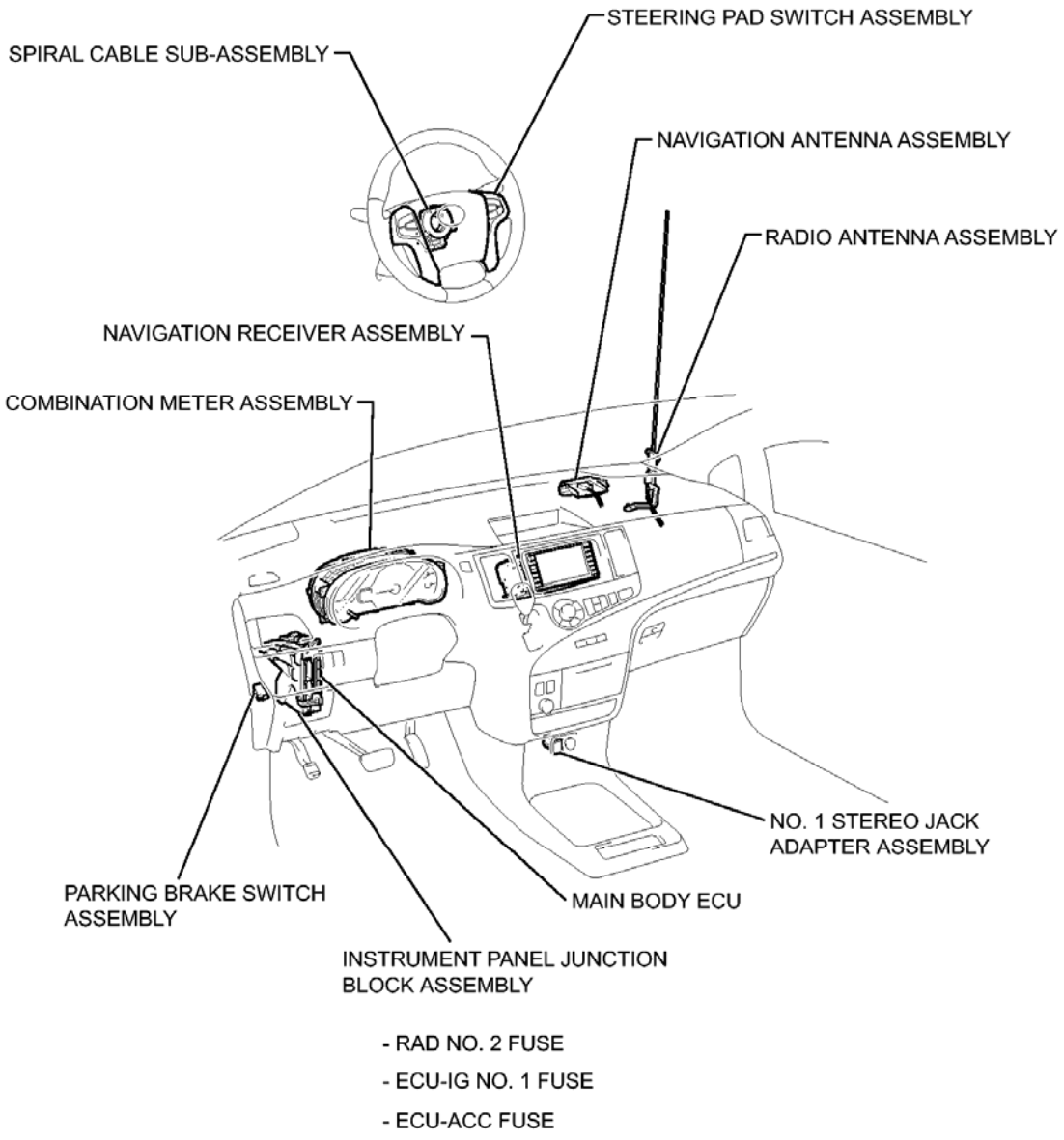
ILLUSTRATION



P

Fig. 2: Navigation System (w/o USB Audio System) Components Location (2 Of 3)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

ILLUSTRATION



P

Fig. 3: Navigation System (w/o USB Audio System) Components Location (3 Of 3)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

SYSTEM DIAGRAM

SYSTEM DIAGRAM

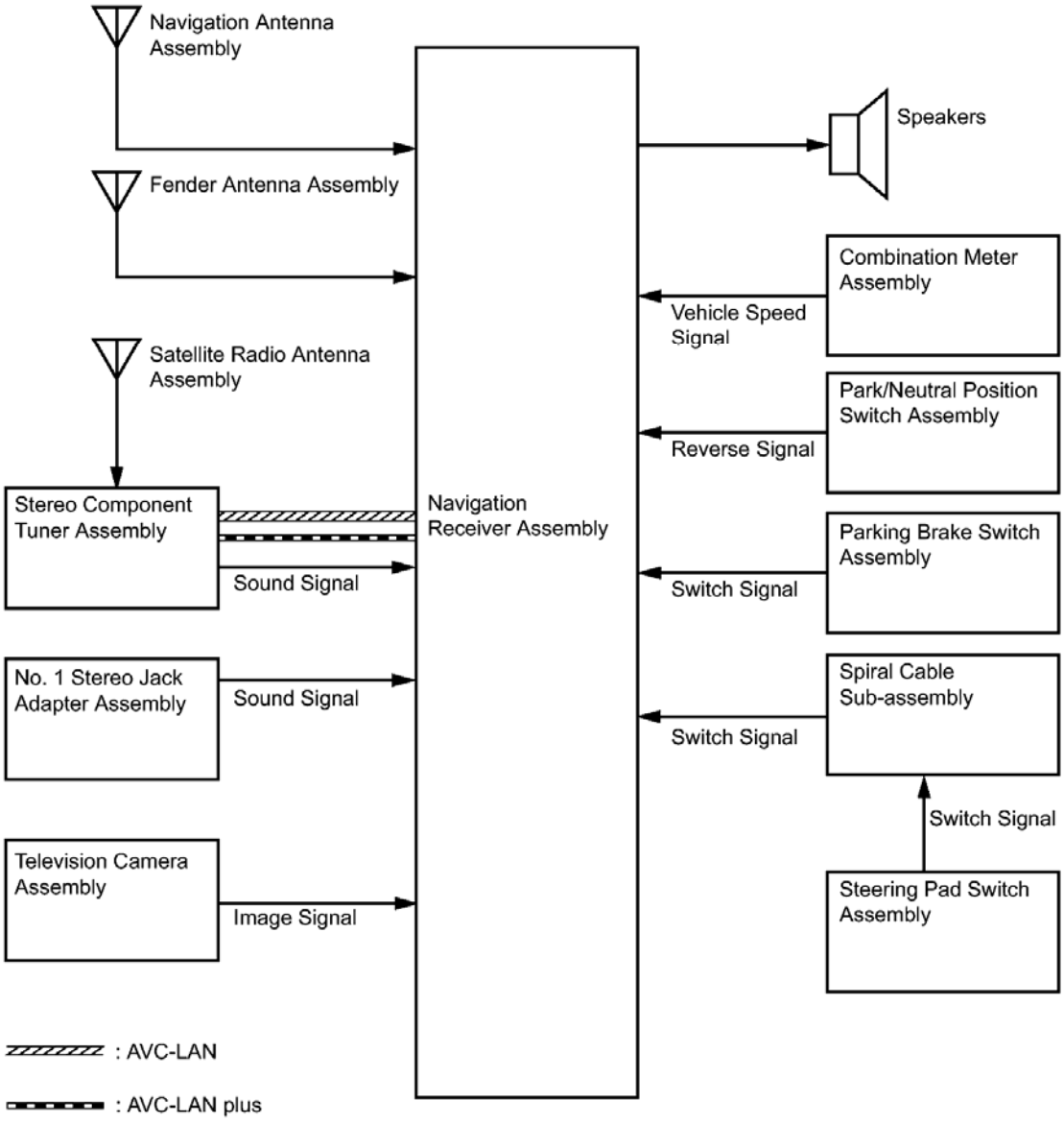


Fig. 4: Navigation System Diagram
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

SYSTEM DESCRIPTION

SYSTEM DESCRIPTION

1. **NAVIGATION RECEIVER ASSEMBLY OUTLINE**

a. Conventionally, 2 separate devices, a "radio and display" and a "navigation ECU", are used. This model combines these device into a single unit.

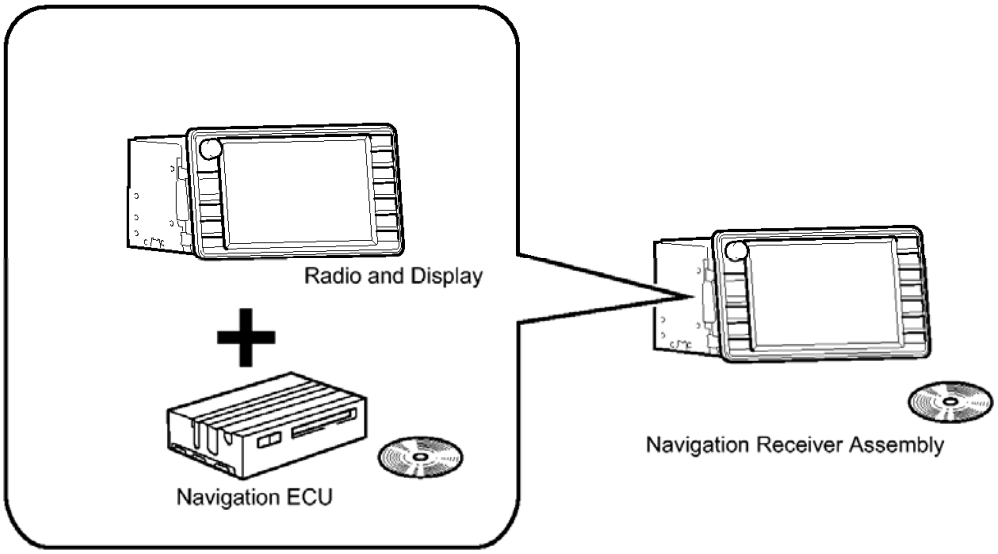
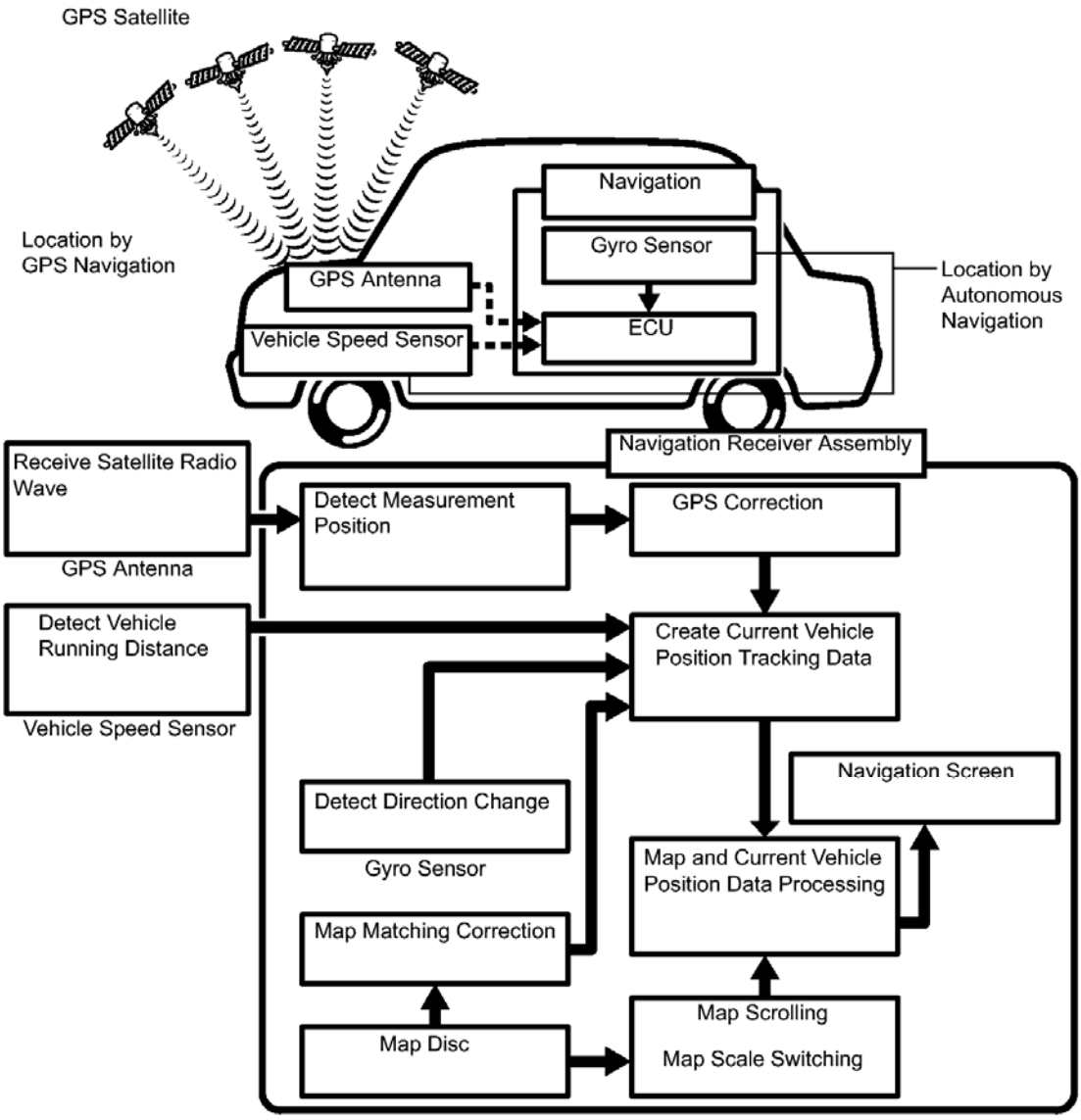


Fig. 5: "Radio And Display" And A "Navigation ECU"
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

2. **NAVIGATION SYSTEM OUTLINE**
   a. Vehicle position tracking methods
      1. 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.

         HINT:

         *: GPS (Global Positioning System)



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Fig. 6: Navigation System Outline (Vehicle Position Tracking Method)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

Operation	Description
	The navigation receiver calculates current vehicle position (direction and current

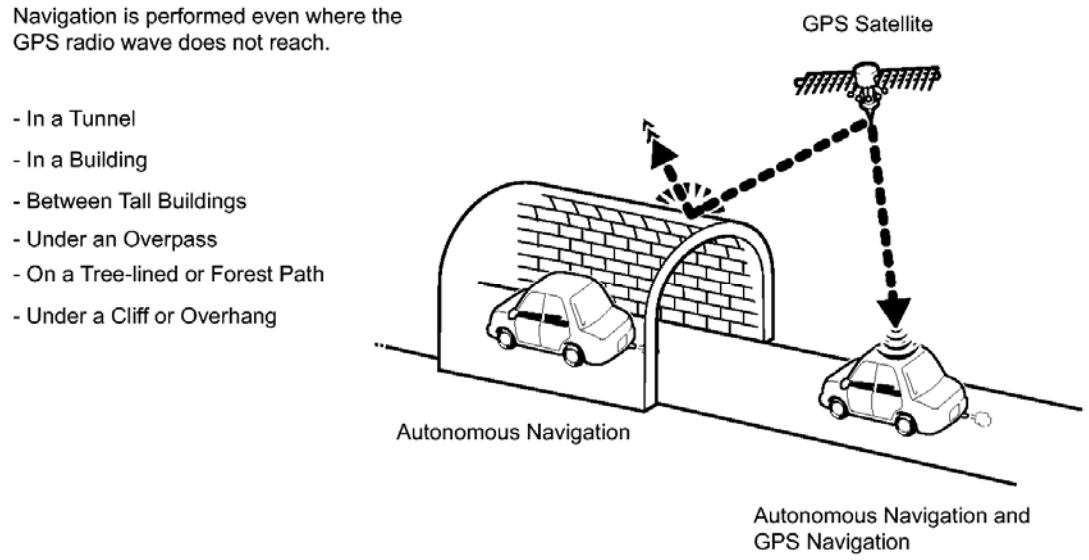
Vehicle Position Calculation	position) using the direction deviation signal from gyro sensor and the running distance signal from the vehicle speed sensor, and creates the driving route.
Map Display Processing	The navigation receiver processes the vehicle position data, vehicle running track, and map 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.
	The vehicle position is matched to the position measured by GPS. Then, the GPS

GPS Correction	measurement position data 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 receiver assembly 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 be received. When only autonomous navigation is used, the mapping accuracy may slightly decline.



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Fig. 7: Identifying Autonomous And GPS Navigation
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

b. Autonomous navigation

This method determines the relative vehicle position based on the running track determined by the gyro and vehicle speed sensors.

1. Gyro sensor

   Calculates the direction by detecting angular velocity. It is located in the navigation receiver assembly.

2. Vehicle speed sensor

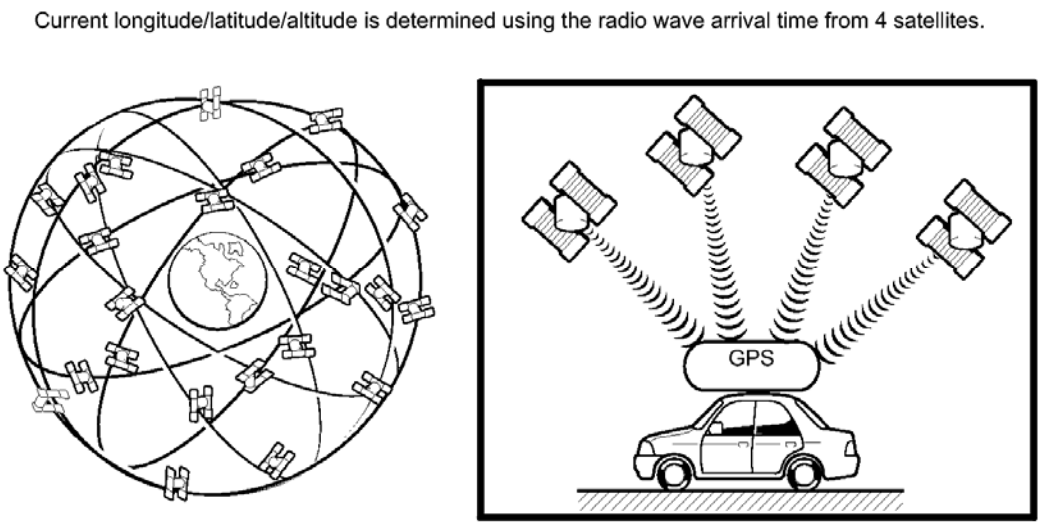
   Used to calculate the vehicle running distance.

c. GPS navigation (Satellite navigation)

This method detects the absolute vehicle position using radio waves from a GPS satellite*.

HINT:

*: GPS satellites were launched by the U.S. Department of Defense for military purposes.



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Fig. 8: Vehicle Position Using Radio Waves From A GPS Satellite
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

Number of Satellites	Measurement	Description
2 or less	Measurement impossible	The vehicle position cannot be obtained because the number of satellites is not enough.
3	2-dimensional measurement is possible	The vehicle position is obtained based on current longitude and latitude (this is less precise

		than 3-dimensional measurement).
4	3-dimensional measurement is possible	The vehicle position is obtained based on current longitude, latitude and altitude.

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.

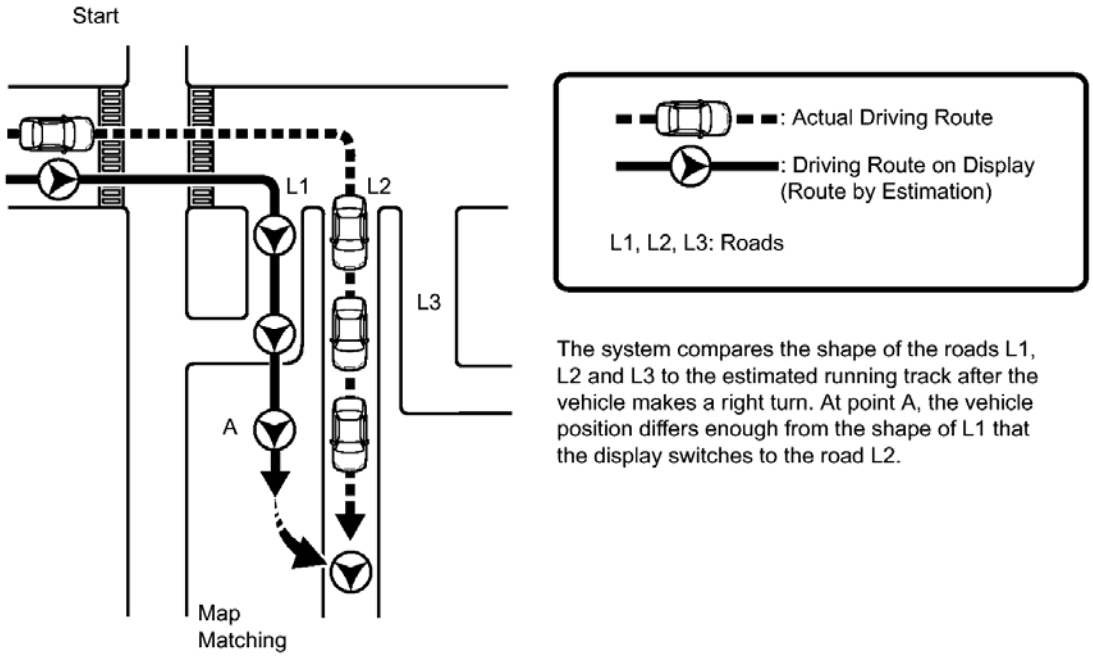
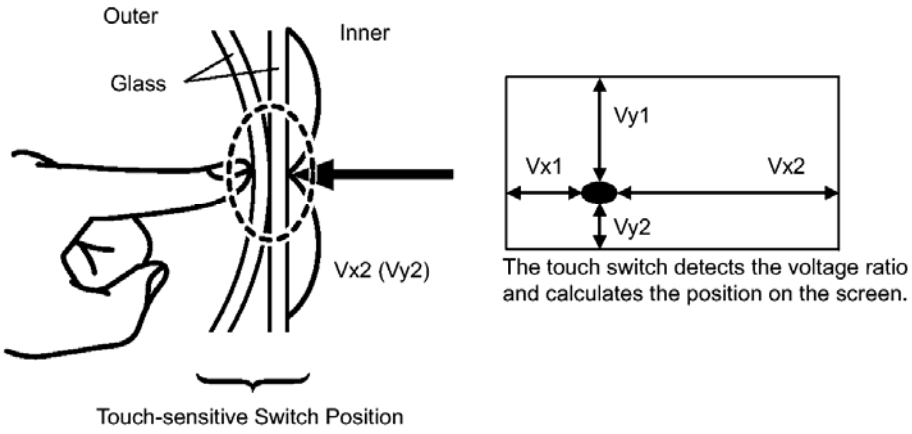


Fig. 9: Identifying GPS Map Matching Function
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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



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Fig. 10: Identifying Touch Screen Outline
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

4. **DVD (Digital Versatile Disc) PLAYER OUTLINE (for Navigation Map)**
   a. The navigation receiver assembly uses a laser pickup to read the digital signals recorded on a DVD.

WARNING: **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.**

NOTE:

- **Do not disassemble any part of the navigation receiver assembly.**
- **Do not apply oil to the navigation receiver assembly.**
- **Do not insert anything but a DVD into the navigation receiver assembly.**

5. **CD (Compact Disc) PLAYER OUTLINE**
   a. A Compact Disc player uses a laser pickup to read digital signals recorded on Compact Disc (CD). By converting the digital signals to analog, it can play music and other content.

WARNING: **Do not look directly at the laser pickup because the CD player uses an invisible laser beam. Be sure to operate the player only as instructed.**

NOTE:

- **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.**

b. Usable discs

1. This player can only play audio CDs, CD-Rs (CD-Recordable), and CD-RWs (CD-ReWritable) that have any of the following marks:



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Fig. 11: Identifying Disc Player Outline
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

c. Precautions for using discs

NOTE:

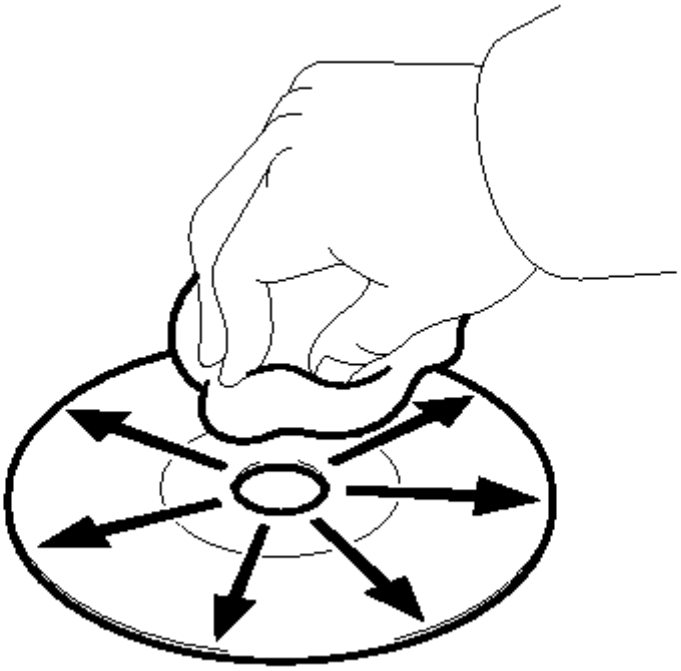
- **Copy-protected CDs cannot be played.**
- **CD-Rs and CD-RWs may not be played depending on the recording conditions or characteristics of the discs, or due to damage, dirt or deterioration caused by leaving the discs in the cabin for a long time.**
- **Unfinalized CD-Rs and CD-RWs cannot be played.**
- **DualDiscs that combine DVD recorded material on one side with CD digital audio material on the other cannot be played.**
- **Keep the discs away from dirt. Be careful not to damage the discs or leave your fingerprints on them.**
- **Hold discs by the outer edge and center, with the label side up.**
- **Leaving the disc exposed halfway out of the slot for a long time after pressing the disc eject button may cause deformation of the disc, making the disc unusable.**
- **If discs have adhesive tape, stickers, CD labels or any traces of such labels attached, the discs may not be ejected or player malfunction may result.**
- **Keep the discs away from direct sunlight. (Exposure to direct sunlight may cause deformation of the disc, making the disc unusable.)**
- **Do not use odd-shaped CDs because these may cause player malfunctions.**
- **Do not use discs whose recording portion is transparent or translucent because they not be inserted, ejected or played**

normally.

HINT:

- When it is cold or it is raining, if the windows mist up, mist and condensation may form in the player. In such cases, the CD may skip or stop in the middle of play. Ventilate or dehumidify the cabin for a while before using the player.
- The CD may skip if the player experiences strong vibrations when the vehicle is driven on a rough road or similar uneven surface(s).

d. Cleaning



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Fig. 12: Cleaning Disc Surface With Soft Dry Cloth
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

NOTE: Do not use lens cleaner because it may cause a malfunction in the pickup portion of the player.

1. If dirt is on the disc surface, wipe it clean with a soft dry cloth, such as an eyeglass cleaner for plastic lenses, from the inside to the outside in a radial direction.

NOTE:

- **Pressing on the disc by hand or rubbing the disc with hard cloth may scratch the disc surface.**
- **Use of solvent such as a record spray, antistatic agent, alcohol, benzine, and thinner or a chemical cloth may cause damage to the disc, making the disc unusable.**

6. **MP3/WMA OUTLINE**
   a. Playable MP3 file standards

Compatible standard	**MP3 (MPEG1 LAYER3, MPEG2 LSF LAYER3**
Compatible sampling frequency	• MPEG1 LAYER3: 44.1, 48 (kHz) • MPEG2 LSF LAYER3: 16, 22.05, 24 (kHz
Compatible bit rate	• MPEG1 LAYER3: 64, 80, 96, 112, 128, 160, 192, 224, 256, 320 (kbps) • MPEG2 LSF LAYER3: 64, 80, 96, 112, 128, 144, 160 (kbps • Compatible with VBR
Compatible channel mode	Stereo, joint stereo, dual channel, monaural

   b. Playable WMA file standards

Compatible standard	**WMA Ver. 7, 8, and 9**
Compatible sampling frequency	44.1, 48 (kHz)

Compatible bit rate	• Ver. 7, 8: CBR48, 64, 80, 96, 128, 160, 192 (kbps • Ver. 9: CBR48, 64, 80, 96, 128, 160, 192, 256, 320 (kbps) • Compatible with playback of channel 2 only

c. ID3 tag and WMA tag

1. Additional textual information called ID3 tags can be input to MP3 files. Information such as song titles and artist names can be stored.

   HINT:

   This player is compatible with the ID3 tags of ID3 Ver. 1.0 and 1.1, and ID3 Ver. 2.2 and 2.3 (Number of characters complies with ID3 Ver. 1.0 and 1.1.).

2. Additional textual information called WMA tags can be input to WMA files. Information such as song titles and artist names can be stored.

d. Usable media

1. Only CD-ROMs, CD-Rs (CD-Recordable), and CD-RWs (CD-ReWritable) can be used to play MP3/WMA files.

   NOTE:

   - **CD-Rs and CD-RWs are more easily affected by a hot and humid environment than discs used for normal audio CDs. For this reason, some CD-Rs and CD-RWs do not play.**
   - **If there are fingerprints or scratches on the disc, the disc may not play or the CD may skip.**
   - **Some CD-Rs and CD-RWs deteriorate if they are left in the cabin for a long time.**
   - **Keep CD-Rs and CD-RWs in an opaque case.**

e. Usable media format

1. Usable media format

Disc format	CD-ROM Mode 1, CD-ROM XA Mode 2 Form1
File format	ISO9660 Level 1 and Level 2 (Joliet, Romeo)

HINT:

- As for MP3/WMA files written in any unlisted format, the contents of the files may not be played or the file names or folder names may not be displayed correctly.
- This player is compatible with multi-session discs and can play CD-Rs and CD-RWs on which MP3/WMA files are added. However, only the first session can be played.
- Discs whose first session includes both music data and MP3 or WMA format data cannot be played.

2. Standards and restrictions

Maximum directory levels	8 levels
Maximum number of characters for a folder name/file name	32 characters
Maximum number of folders	192 (Including empty folders, the root folder, and folders that do not contain MP3/WMA files)
	255

Maximum number of files in a disc	(Including non-MP3/WMA files)

f. File names

1. Only files with an extension of ".mp3" or ".wma" can be recognized and played as MP3 or WMA files.
2. Save MP3 or WMA files with an extension of ".mp3" or ".wma".

NOTE: **If saving non-MP3 or non-WMA files with an extension of ".mp3" or ".wma", those files are wrongly recognized as MP3 or WMA files and played. A loud noise may occur and damage to the speakers may result.**

7. **RADIO DESCRIPTION**

a. Radio frequency band

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

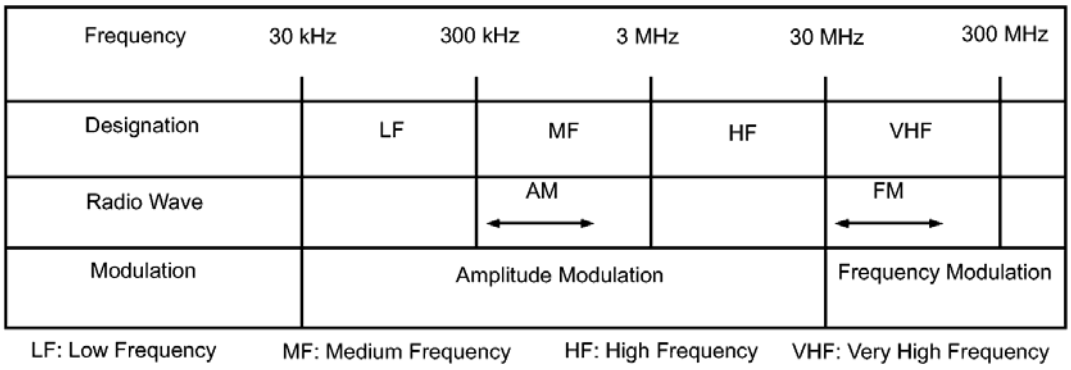
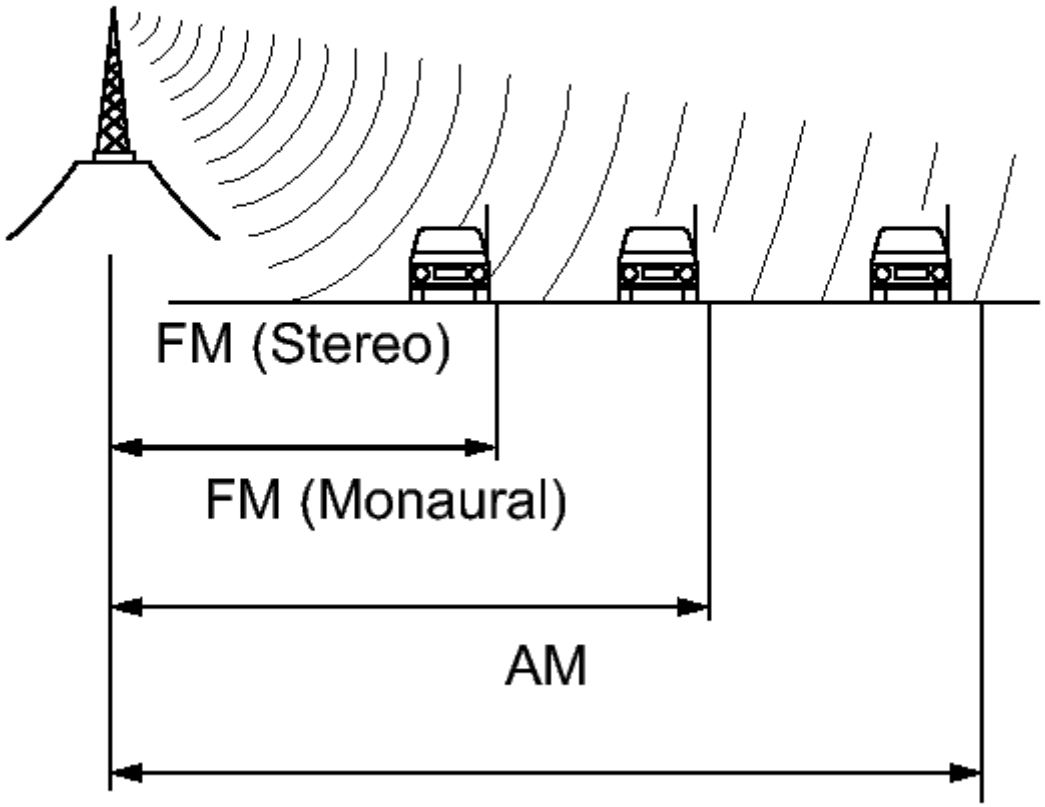


Fig. 13: Radio Frequency Band Chart
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

b. Service area



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Fig. 14: Identifying Service Areas Of AM And FM Broadcasts
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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 broadcast 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.

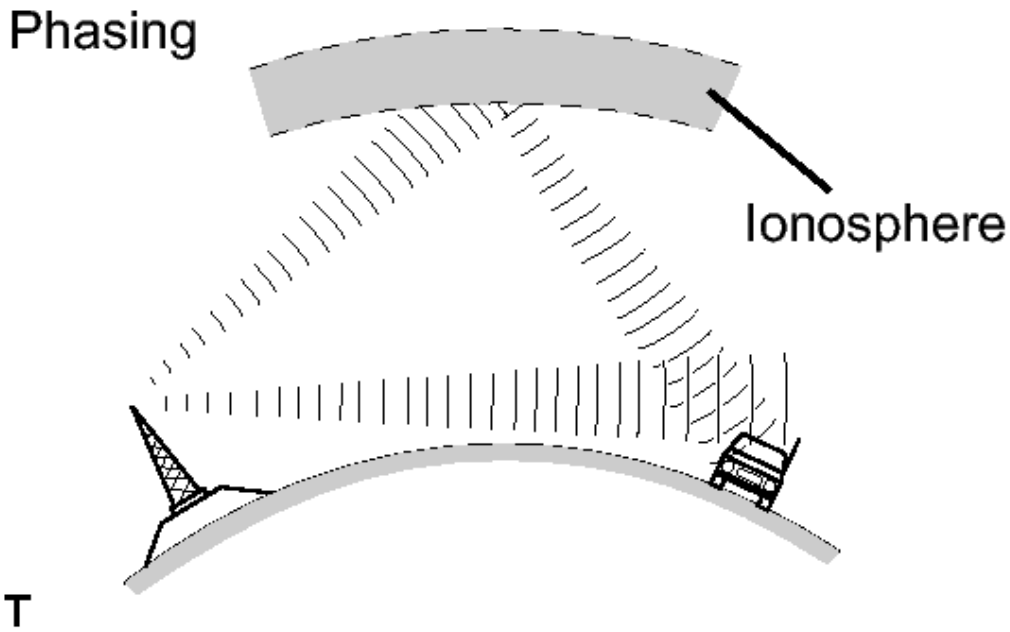
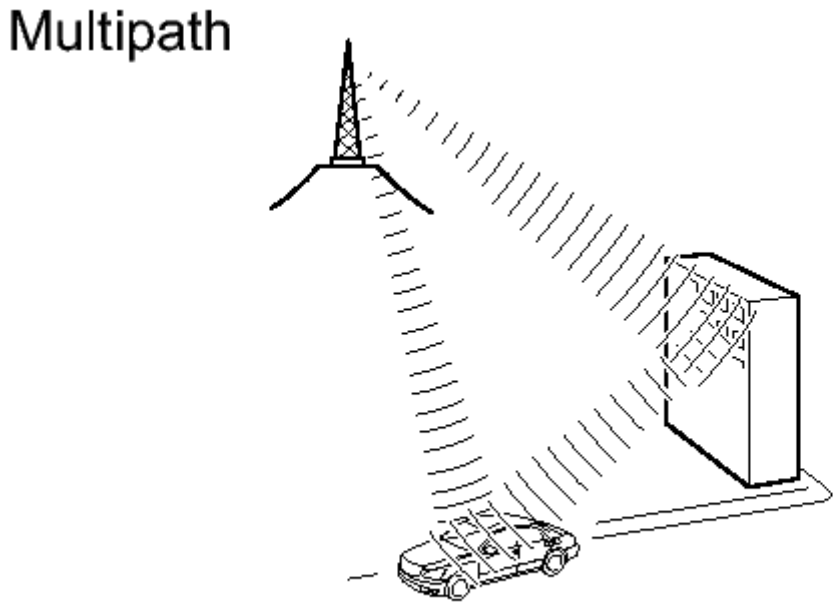


Fig. 15: Identifying Radio Phasing
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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.

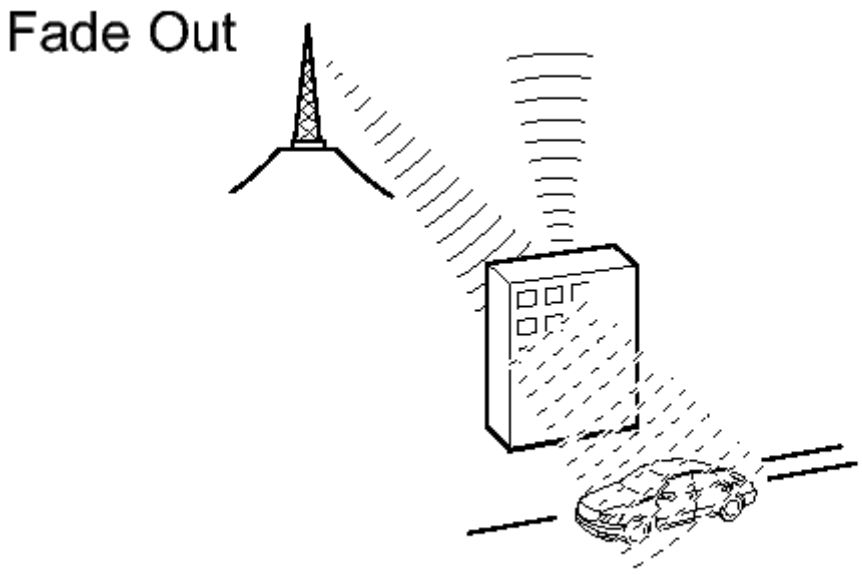


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Fig. 16: Identifying Radio Multipath
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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.



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Fig. 17: Identifying Radio Fade Out
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

d. Noise problem

Technicians must have a clear understanding about each customer noise complaint. 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
	Noise	Over lapping

AM	occurs only at night	sound 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.

8. **RBDS FUNCTION OUTLINE (BROADCAST IN NORTH AMERICA ONLY)**

The Radio Broadcast Data System (RBDS) is broadcast through conventional FM radio broadcasts. Information such as song names, XM navtraffic information, broadcast station names, etc. can be received.

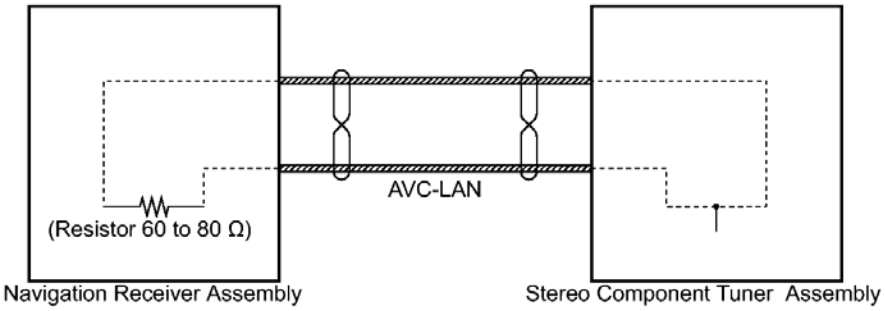
9. **SDARS SYSTEM FUNCTION OUTLINE (BROADCAST IN NORTH AMERICA ONLY)**

Satellite Digital Audio Radio Service (SDARS) is a satellite digital radio broadcast provided by Sirius XM Radio Inc. The broadcast (pay-type) is performed through satellites and terrestrial repeater networks. Several unique channels are available, and even if a vehicle changes locations, the same information can be received without breaks. Information such as song names, broadcast station names, etc. can be received. Also, XM navtraffic information can be received and displayed on the navigation screen.

NOTE: **To receive an audio-visual pay-type broadcasts, the customer must enter into a pay-type contract with XM Satellite Radio Inc. After entering into a contract, registration of the XM Radio ID is required. Also, if parts are replaced, the XM Radio ID must be reregistered.**

10. **COMMUNICATION SYSTEM**
    a. AVC-LAN OUTLINE

Example:



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Fig. 18: Identifying AVC-LAN Outline
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

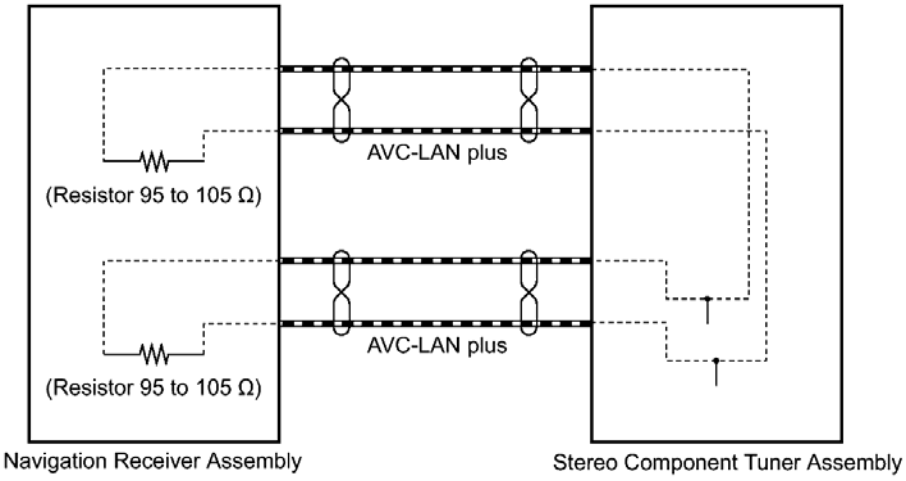
1. Components of the navigation system communicate with each other via the AVC-LAN.
2. The AVC-LAN uses a twisted pair of wires for its communication lines.
3. The master unit of the AVC-LAN is the navigation receiver assembly.

HINT:

- The navigation receiver assembly has enough resistance (60 to 80 ohms) necessary for communication.
- If a short or open circuit occurs in the AVC-LAN circuit, communication is interrupted and system will not operate normally.

b. AVC-LAN plus OUTLINE

Example:



H

Fig. 19: AVC-LAN Plus Communication Diagram
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

1. Navigation system components communicate with each other via the AVC-LAN plus.
2. The AVC-LAN plus uses two twisted pairs of cables for its communication lines.
3. The master unit of the AVC-LAN plus is the navigation receiver assembly.

HINT:

- The navigation receiver assembly has enough resistance (95 to 105 ohms) necessary for communication.
- If a short or open circuit occurs in the AVC-LAN plus circuit, communication will be interrupted and the system will not operate normally.

11. **DIAGNOSTIC FUNCTION OUTLINE**
    a. The navigation system has a diagnostic function (the result is indicated on the master unit).
    b. Each component has a specified number (3 digits) called a physical address. Each function has a number (2 digits) called a logical address.
12. **DIAGNOSIS DISPLAY DETAILED DESCRIPTION**

HINT:

- This information 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 exactly the same as on the actual vehicle.

a. SYSTEM CHECK
    1. System Check Mode Screen

Example:

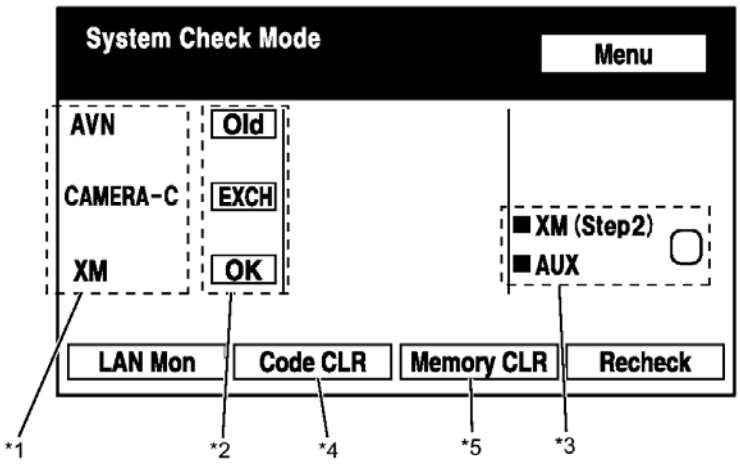


Fig. 20: Identifying System Check Mode Screen
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

*1: Device Names and Hardware Addresses

HINT:

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

Name	Component	Connection Method
AVN	Navigation receiver assembly	-
CAMERA-C	Navigation receiver assembly	Vehicle wire harness
XM	Stereo component tuner assembly	Communication line for AVC-LAN

*2: Check Result

HINT:

Result codes for all devices are displayed.

Result	Meaning	Action
OK	Device did not respond with DTC.	-
EXCH	Device responds with "replace" type DTC.	Look up DTC in "Unit Check Mode" and replace device.
CHEK	Device responds with "check" type DTC.	Look up DTC in "Unit Check Mode".
	Device was	Check

NCON	previously present, but does not respond in diagnostic mode.	power supply wire harness of device.
Old	Device responds with "old" type DTC.	Look up DTC in "Unit Check Mode".
NRES	Device responds in diagnostic mode, but gives no DTC information.	Check power supply wire harness of device.

*3: Device Name List No. 2

HINT:

- Device Name List No. 2 displays some of the devices that make up the navigation system.
- The names of the components from Device Name List No. 2 are shown in the following table.

Name	Component	Connection Method
XM (Step2)	Stereo component tuner assembly	Communication line for AVC-LAN plus
AUX	No. 1 Stereo jack adapter assembly	Vehicle wire harness

*4: Code Clear

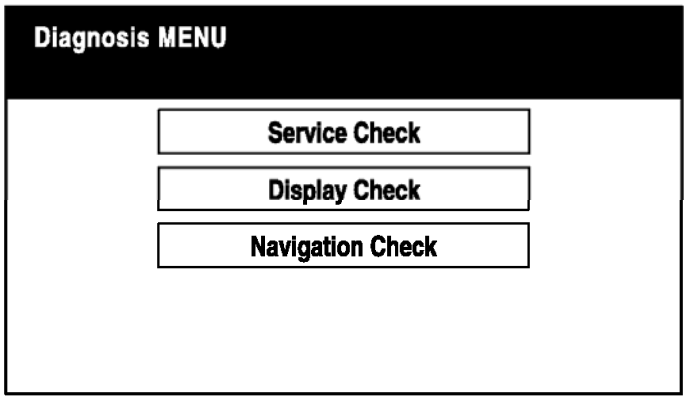
- Present DTCs are cleared.
- Data is cleared by pressing the "Code CLR" switch for 3 seconds.

*5: Memory Clear

- Present and past DTCs and registered connected device names are cleared.
- Data is cleared by pressing the "Memory CLR" switch for 3 seconds.

2. Diagnosis MENU Screen

Example:



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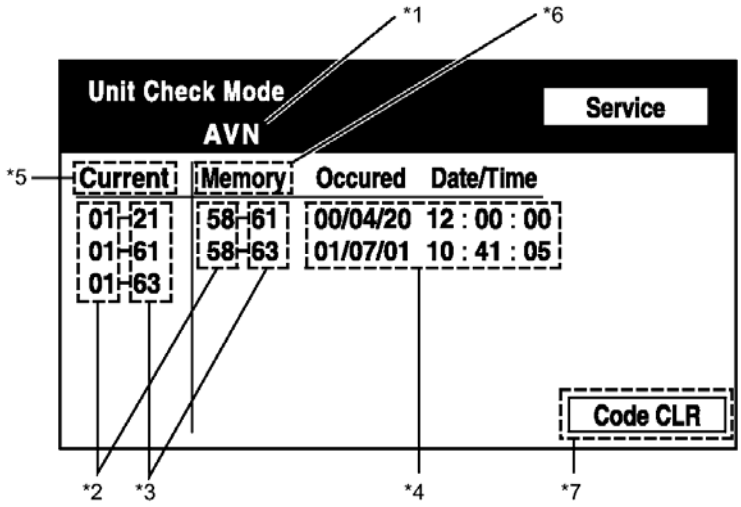
Fig. 21: Diagnosis MENU Screen
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

HINT:

Some items may be grayed out or not displayed, as the functions are different depending on the vehicle.

3. Unit Check Mode Screen

Example:



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Fig. 22: Unit Check Mode Screen
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

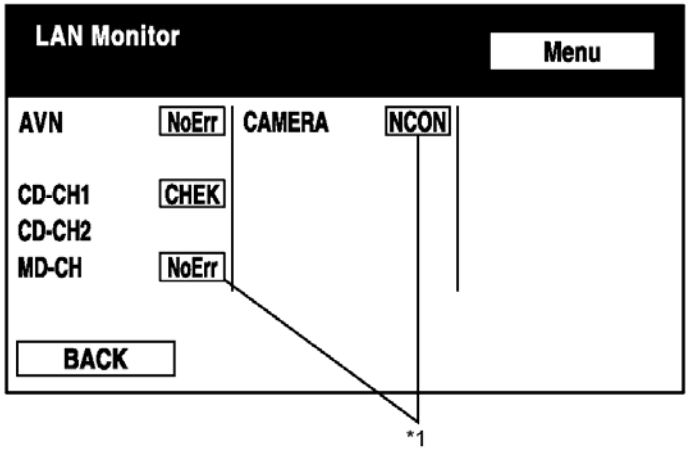
SCREEN DESCRIPTION

Display	Content
*1: Device name	Target device
*2: Segment	Logical address of target device
*3: DTC	DTC (Diagnostic Trouble Code)
*4: Timestamp	Time and date of past DTCs are displayed (year is displayed in 2-digit format)
*5: Present Code	DTCs output at service check are output
	Diagnostic memory

*6: Past Code	results and stored DTCs are output
*7: Diagnosis Clear Switch	Pushing this switch for 3 seconds clears diagnostic memory data of target device (responses to diagnostic system check result and displayed data are cleared)

4. LAN Monitor (Original) Screen

Example:



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Fig. 23: LAN Monitor (Original) Screen
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

*1: Check Result

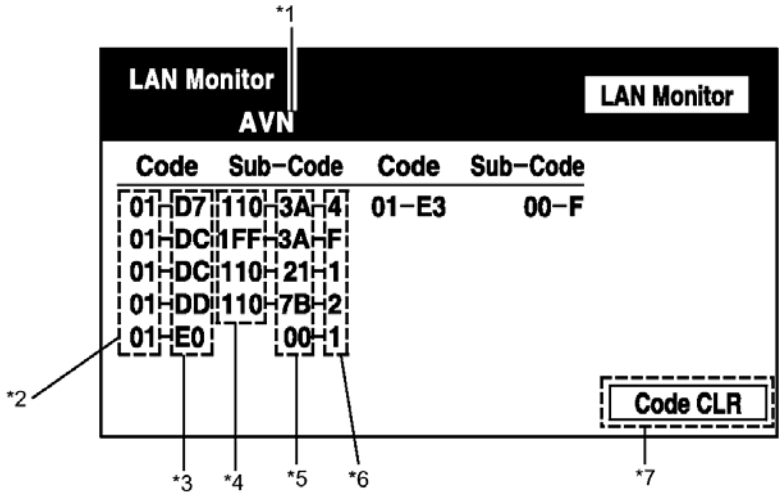
HINT:

Check results of all the devices are displayed.

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

5. LAN Monitor (Individual) Screen

Example:



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Fig. 24: Identifying LAN Monitor (Individual) Screen
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

SCREEN DESCRIPTION

Display	Content
*1: Device name	Target device
*2: Segment	Logical address of target device
*3: DTC	DTC (Diagnostic Trouble Code)
*4: Sub-code (device address)	Physical address stored with DTC (if there is no address, nothing is displayed)
*5: Connection check No.	Connection check number stored with DTC
*6: DTC	Number of times same

occurrence	DTC has been stored
*7: Diagnosis Clear Switch	Pushing this switch for 3 seconds clears diagnostic memory data of target device (responses to diagnostic system check result and displayed data are cleared)

b. DISPLAY CHECK

1. Vehicle Signal Check Mode Screen

Example:

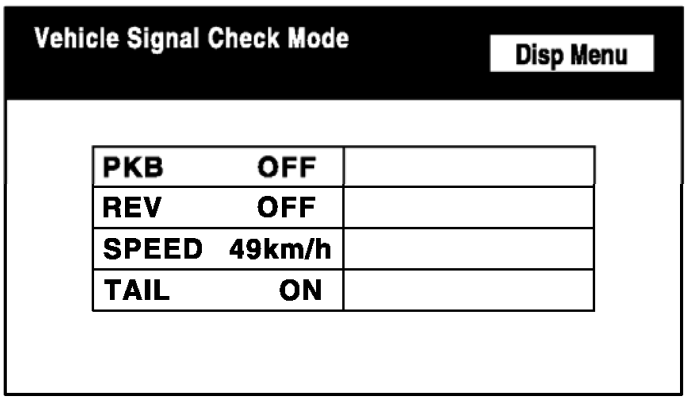


Fig. 25: Identifying Vehicle Signal Check Mode Screen
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

SCREEN DESCRIPTION

Name	Content

PKB	Parking brake ON/OFF state is displayed.
REV	Reverse signal ON/OFF state is displayed.
SPEED	Vehicle speed is displayed in km/h.
TAIL	TAIL signal (light control switch) ON/OFF state is displayed.

HINT:

- Only items sending vehicle signals will be displayed.
- The input signals from the vehicle are updated once per second and if any have changed, the screen is updated.

c. NAVIGATION CHECK

1. Navigation Check Screen

Example:

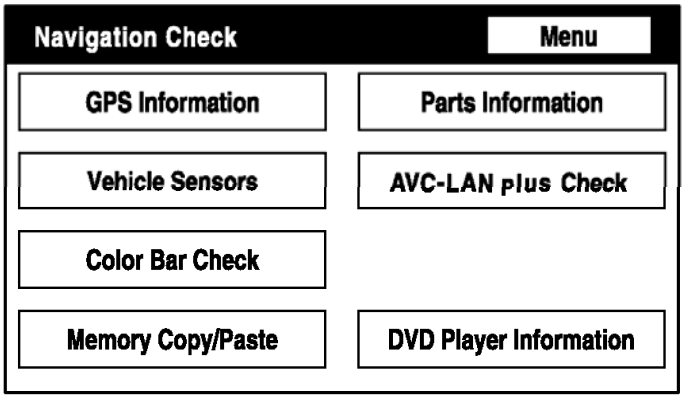


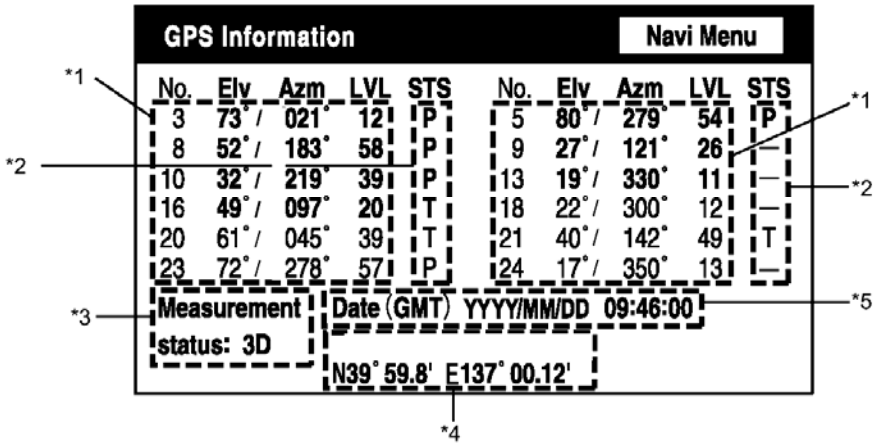
Fig. 26: Identifying Navigation Check Screen
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

HINT:

Some items may be grayed out or not displayed, as the functions are different depending on the vehicle.

2. GPS Information Screen

Example:



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Fig. 27: GPS Information Screen
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

*1: Satellite information

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

DENSO MODEL

Display	Content
T	System is receiving GPS signal, but is not using it for location.
P	System is using GPS signal for location.
-	System cannot receive GPS signal.

AISIN AW MODEL

Display	Content
01H	System cannot receive a GPS signal.
02H	System is tracing a satellite.
04H	System is receiving a GPS signal, but is

	not using it for location.
08H	System is using the GPS signal for location.

*3: Measurement information

Display	Content
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.

*4: Position information

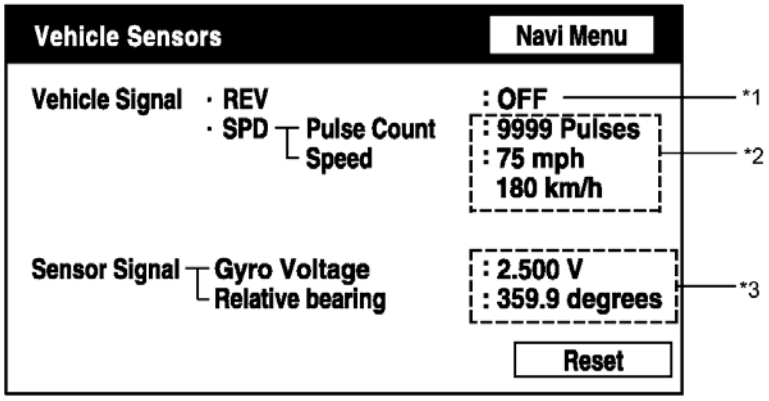
Display	Content
Position	Latitude and longitude information on current position is displayed.

*5: Date information

Display	Content
Date	Date/time information obtained from GPS signal is displayed in Greenwich Mean Time (GMT).

3. Vehicle Sensors Screen

Example:



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Fig. 28: Identifying Vehicle Sensors Screen
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

VEHICLE SIGNAL

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

SENSOR SIGNAL

Display	Content
*3: Gyro sensor	Gyro sensor output condition is displayed (when vehicle is driven straight or is stationary, voltage is approximately 2.5 V).

HINT:

The signals from the vehicle sensors are updated once per second and if any have changed, the screen is updated.

4. DVD Player Information Screen

Example:

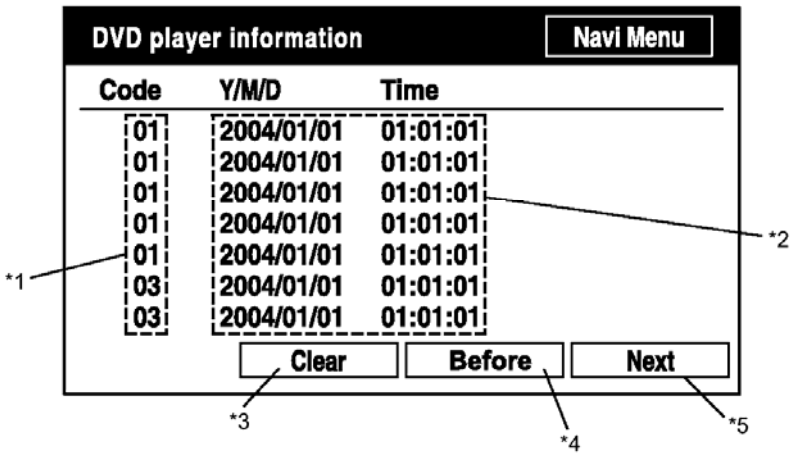


Fig. 29: DVD Player Information Screen
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

SCREEN DESCRIPTION

Display	Contents
*1: Trouble	Each code corresponding to malfunctions is displayed. For

code	details, refer to "Trouble Code Description".
*2: Occurrence time	• Date (year, month, day) and time (hour, minute, second) when trouble code was stored are displayed as time stamp (Greenwich mean time). • Displayed time data is received from GPS receiver.
*3: Trouble code clear switch	All code data being displayed is cleared by pushing this switch for 3 seconds.
*4: Return switch	Previous page is displayed. If current displayed page is first page, this switch cannot be operated.
*5: Proceed switch	Next page is displayed. If current displayed page is last page, this switch cannot be operated.

TROUBLE CODE DESCRIPTION

Code	Malfunction	Countermeasure
		Replace

01	Cannot be recognized	navigation receiver assembly.
03	Cannot be read	Follow inspection procedure for DTC 58-42. Refer to **DTC 58-42: Map Disc Read Error; DTC 80-42: Map Disc Read Error** .

HINT:

There is a DVD player check function in the navigation ECU.

HOW TO PROCEED WITH TROUBLESHOOTING

HOW TO PROCEED WITH TROUBLESHOOTING

HINT:

Use these procedures to troubleshoot the navigation system.

1. **VEHICLE BROUGHT TO WORKSHOP**

   NEXT: Go to next step

2. **INSPECT BATTERY VOLTAGE**

   Standard voltage

   11 to 14 V

   If the voltage is below 11 V, recharge or replace the battery before proceeding.

   NEXT: Go to next step

3. **BASIC INSPECTION**
   a. Turn the ignition switch to ACC.
   b. Check whether or not the display appears on the navigation receiver assembly.

   RESULT

Result	Proceed

	to
Display appears	A
Display does not appear	B

B --> Go to step 6

A: Go to next step

4. **CHECK FOR DTC**
   a. Check for DTCs and note any codes that are output. Refer to **DTC CHECK / CLEAR**.
   b. Clear for DTC.
   c. Recheck for DTCs. Based on the DTC output in the first step, try to force output of the navigation system DTC by simulating the operation indicated by the DTC.

   HINT:

   - Even if the malfunction symptom is not confirmed, check for DTCs. This is because the system stores past DTCs.
   - Refer to the detailed description on the diagnostic screen, as necessary. Refer to **OPERATION CHECK**.
   - Check and clear past diagnostic trouble codes. Check the diagnostic trouble code and inspect the area the code indicates.

   RESULT

Result	Proceed to
DTC does not reoccur	A
DTC reoccurs	B

B --> Go to step 7

A: Go to next step

5. **PROBLEM SYMPTOMS TABLE**

RESULT

Result	Proceed to

Fault is not listed in Problem Symptoms Table	A
Fault is listed in Problem Symptoms Table	B

B --> Go to step 7

A: Go to next step

6. **OVERALL ANALYSIS AND TROUBLESHOOTING**
   a. Terminals of ECU. Refer to **TERMINALS OF ECU**.
   b. Inspect the front No. 1 speaker assembly. Refer to **INSPECTION** .
   c. Inspect the front No. 2 speaker assembly. Refer to **INSPECTION** .
   d. Inspect the rear speaker assembly. Refer to **INSPECTION** .
   e. Inspect the steering pad switch assembly. Refer to **INSPECTION** .

   NEXT: Go to next step

7. **ADJUST, REPAIR OR REPLACE**

   NEXT --> END

OPERATION CHECK

OPERATION CHECK

1. **Check System Normal Condition**
   a. If the cause of a symptom is any of the following, the corresponding symptom is normal; it is not a malfunction.

Symptom	Answer
A longer route than expected is	Depending on the road conditions, the navigation ECU may

chosen.	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 driving 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 navigation ECU.

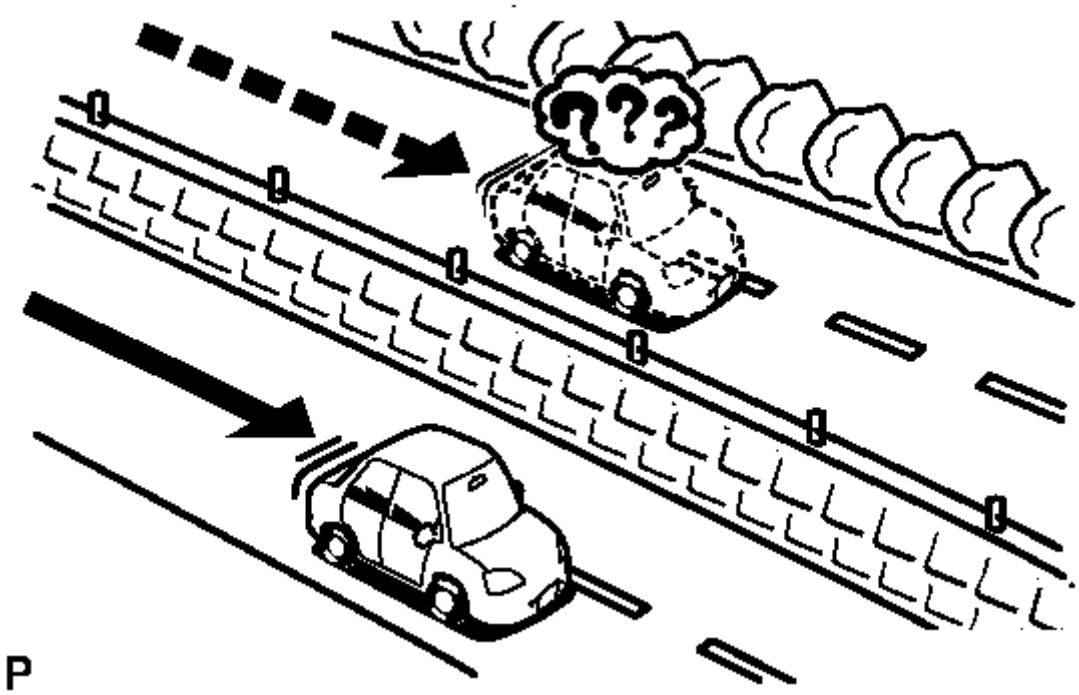
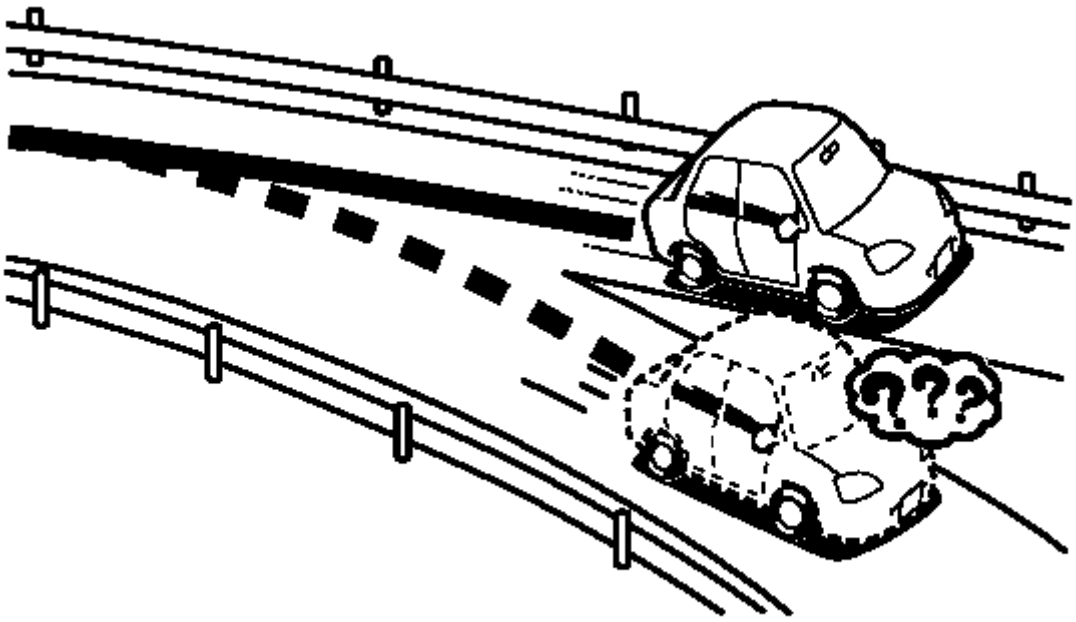


Fig. 30: Locating Position Mark On Parallel Road
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

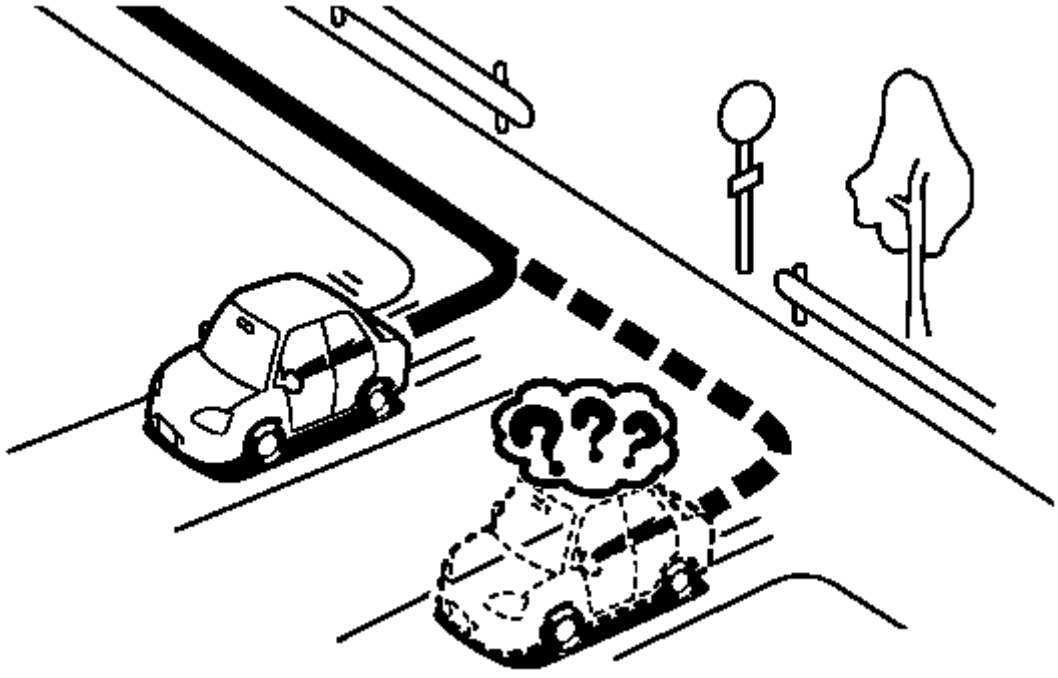
1. The current position mark may be displayed on a nearby parallel road.
2. Immediately after a fork in the road, the current vehicle position mark may be displayed on the wrong road.



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Fig. 31: Locating Vehicle Position Mark On Wrong Road
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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



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Fig. 32: Locating Vehicle Position Mark On Parallel Road
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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

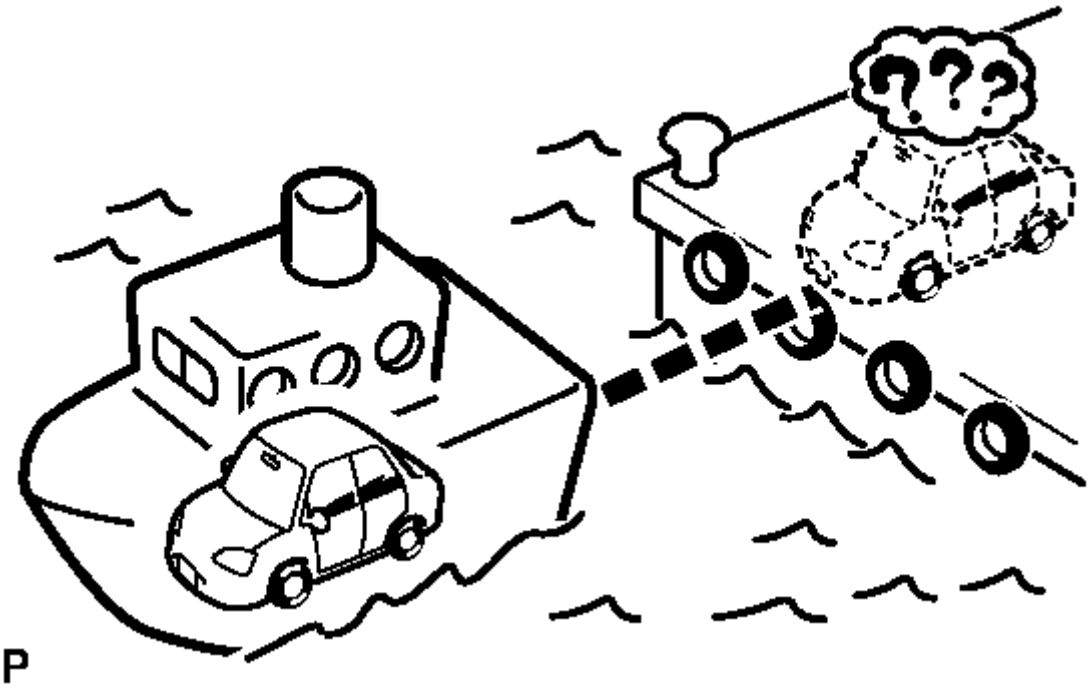


Fig. 33: Identifying Vehicle Position Mark On GPS
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

5. When the vehicle is driven on a steep hill, the current vehicle position mark may deviate from the correct position.

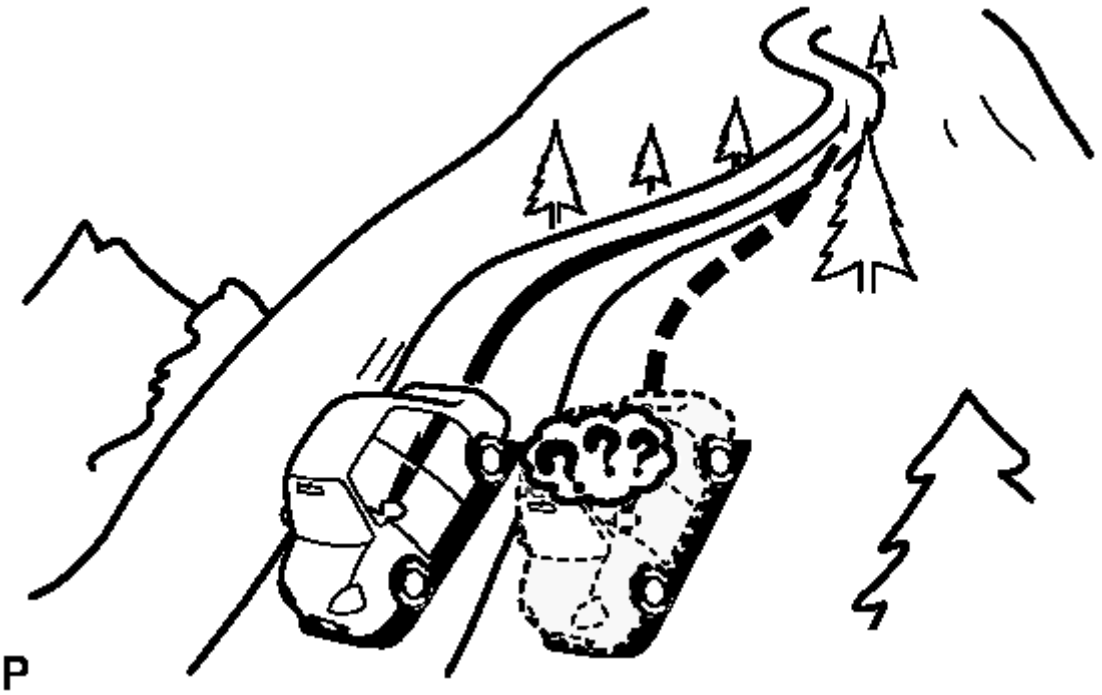


Fig. 34: Identifying Vehicle Position Mark In Correct Position - Runs On Steep Hill
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

6. When the vehicle makes a continuous turn of 360°, 720°, 1080°, etc., the current vehicle position mark may deviate from the correct position.

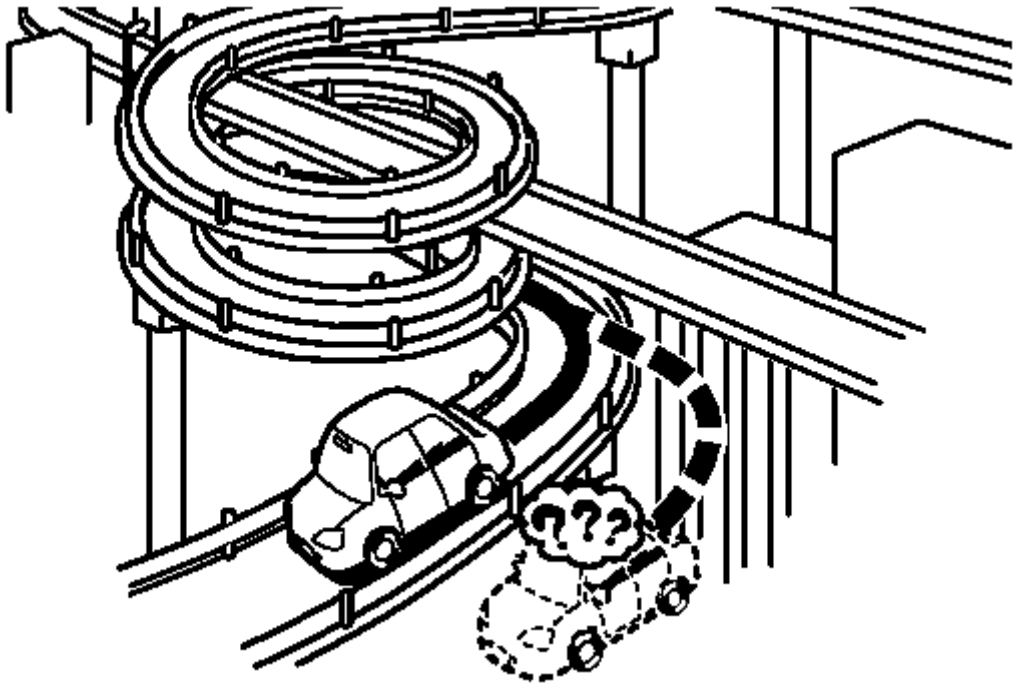


Fig. 35: Identifying Vehicle Position Mark In Correct Position - Continuous Turn
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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

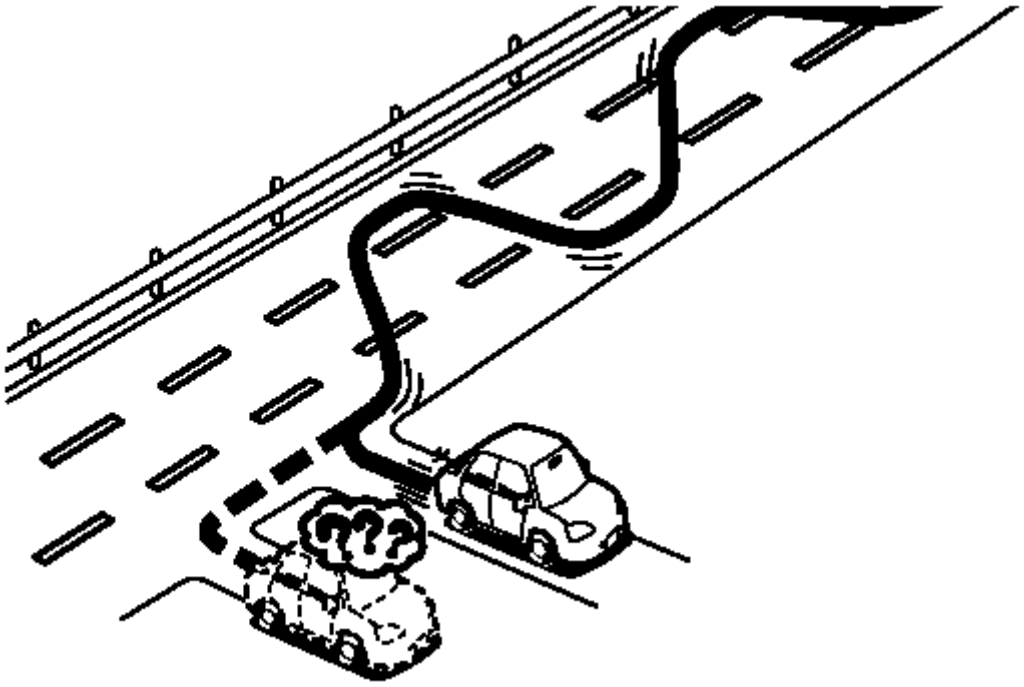


Fig. 36: Identifying Vehicle Position Mark In Correct Position - Erratically
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

8. When the ignition switch is turned to ACC or ON on a turntable while parking, the current vehicle position mark may not point in the correct direction. The same will occur when the vehicle starts to move.

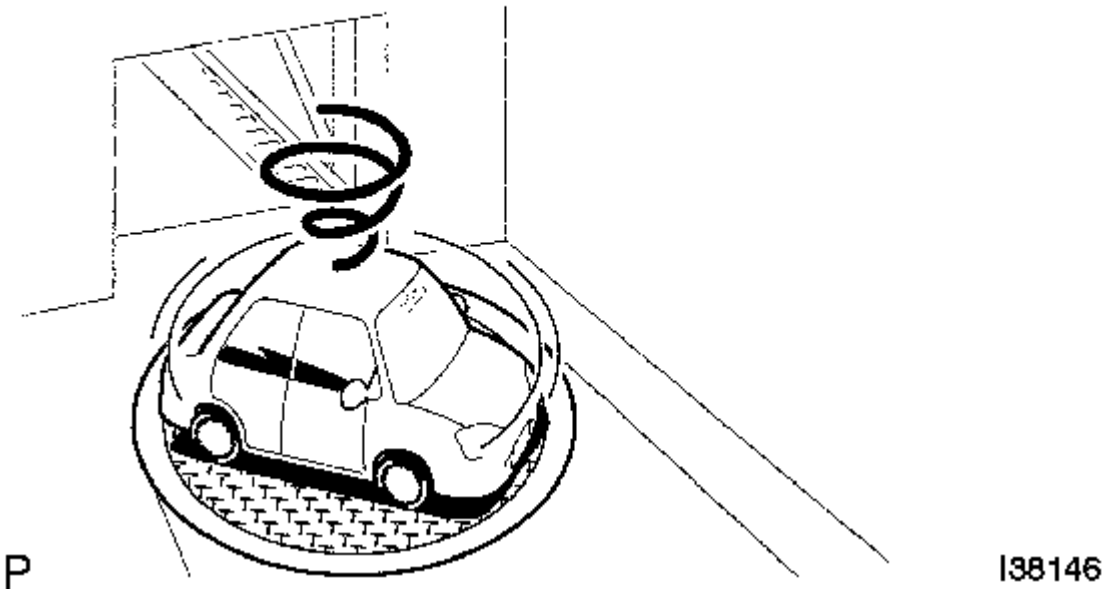


Fig. 37: Symptoms - When Engine Switch Is Turned On (ACC Or ON) On Turntable Before Parking
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

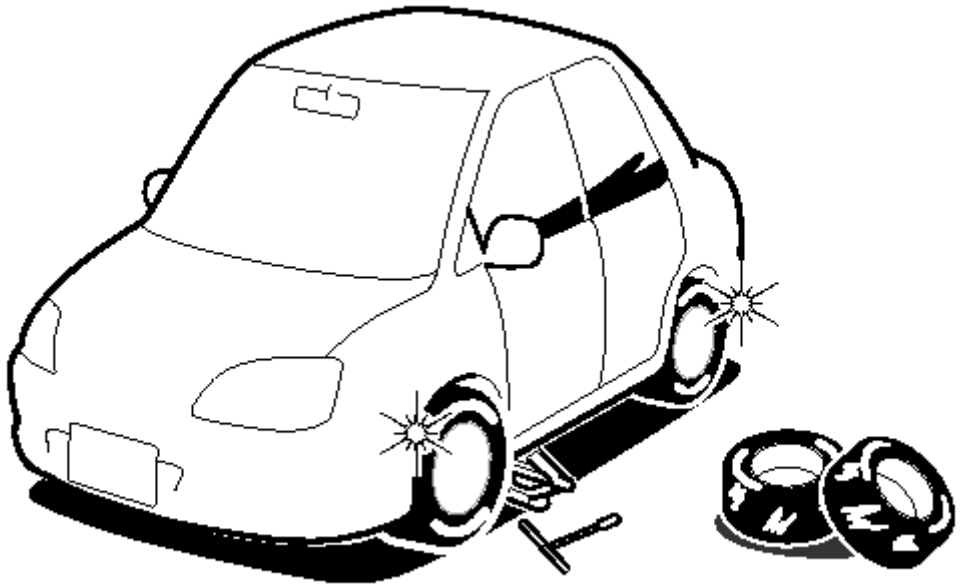
9. When the vehicle is driven on a snowy road or a mountain path with tire chains installed or using a spare tire, the current vehicle position mark may deviate from the correct position.



Fig. 38: Identifying Vehicle Position Mark In Correct Position - Runs On Snowy Road

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

10. When a tire is changed, the current vehicle position mark may deviate from the correct position.



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Fig. 39: Identifying Vehicle Position Mark In Correct Position - Tire Change
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

HINT:

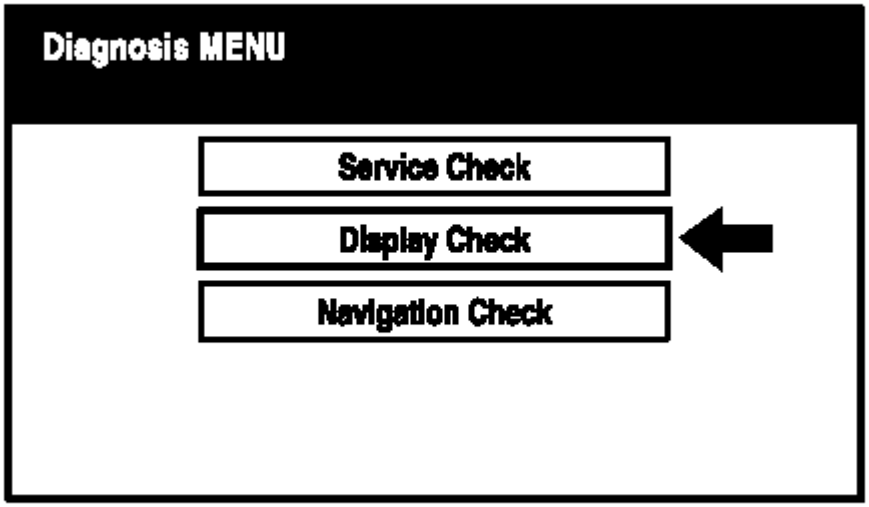
- The diameter of the tire may change, causing a speed sensor error.
- Performing "tire change" in calibration mode will allow the system to correct the current vehicle position faster.

2. **Check Display Check Mode**

HINT:

Illustrations may differ from the actual vehicle depending on the device settings and options. Therefore, some detailed areas may not be exactly the same as on the actual vehicle.

a. Enter diagnostic mode. Refer to **DTC CHECK / CLEAR**.
b. Select "Display Check" from the "Diagnosis MENU" screen.



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Fig. 40: Select "Display Check" from the "Diagnosis MENU" Screen
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

c. Color Bar Check

HINT:

This mode checks the color display on the multi-display.

1. Select "Color Bar Check" from the "Display Check" screen.

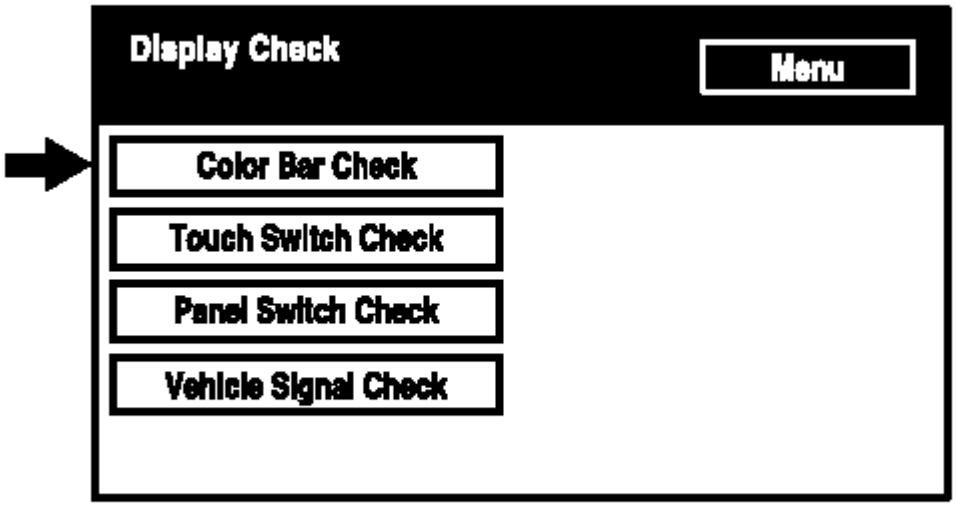
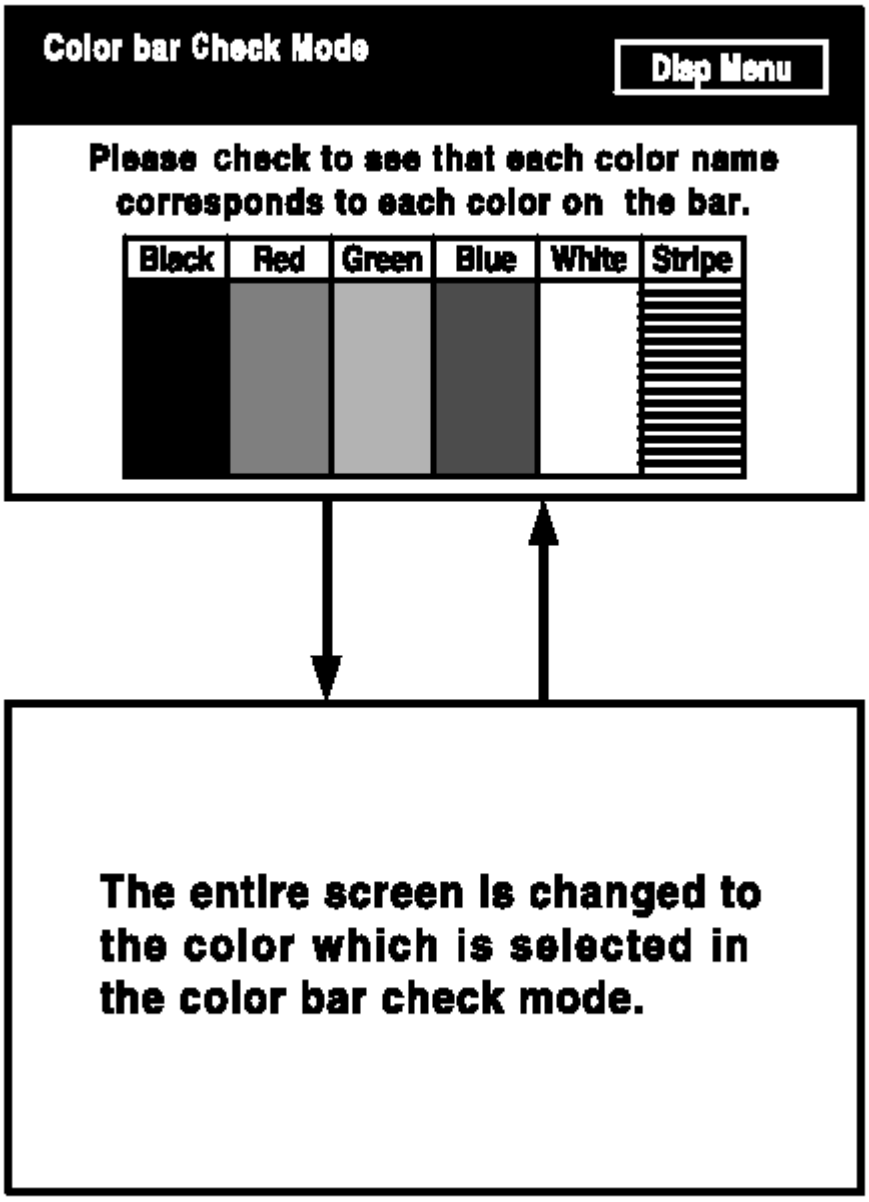


Fig. 41: Diagnostic Menu Screen Display - Color Bar Check
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

2. Select a color bar from the "Color Bar Check Mode" screen.



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Fig. 42: Color Bar Check Mode - Screen Display
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

3. Check the display color.

HINT:

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

d. Touch Switch Check

1. Select "Touch Switch Check" from the "Display Check" screen.

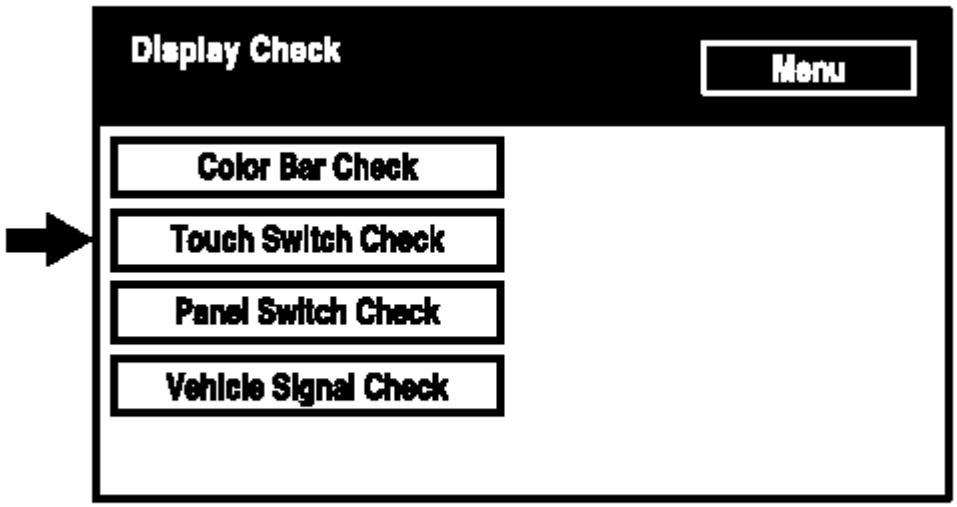
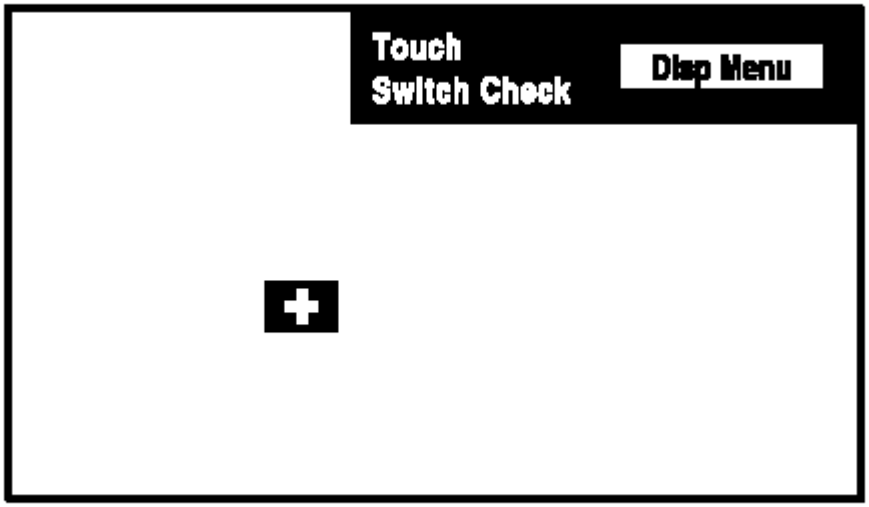


Fig. 43: Diagnostic Menu Screen Display - Touch Switch Check
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

2. 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.



P

Fig. 44: Diagnostic Tool Display - Touch Switch Check
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

e. Panel Switch Check
    1. Select "Panel Switch Check" from the "Display Check" screen.

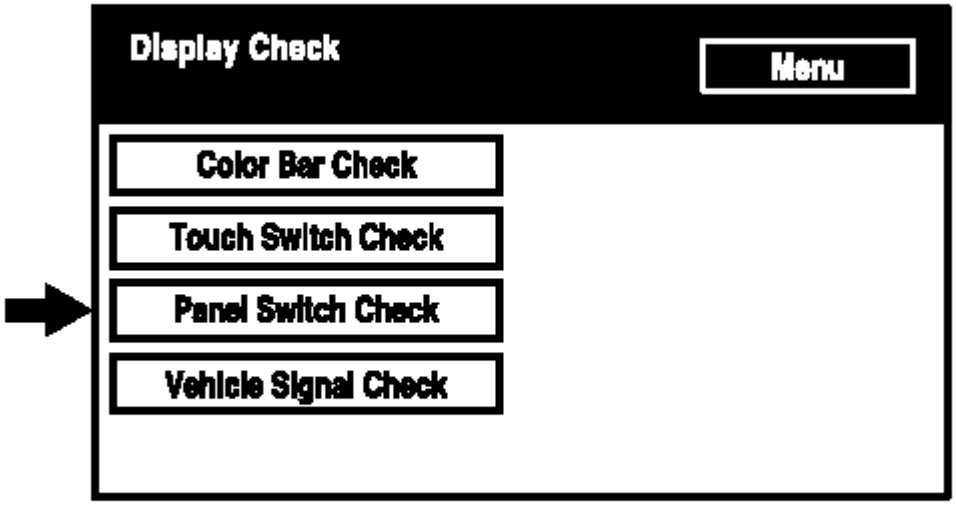
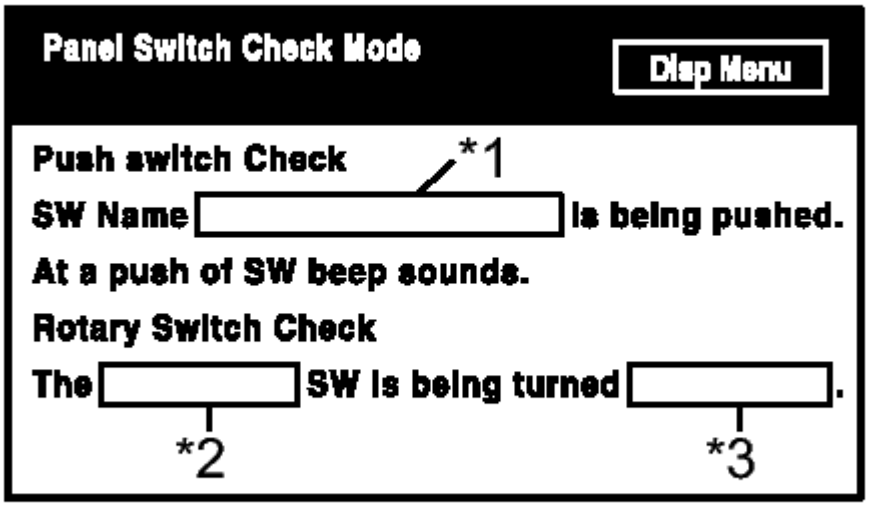


Fig. 45: Diagnostic Menu Screen Display - Panel Switch Check

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

2. Operate each switch and check that the switch name and condition are correctly displayed.



P

Fig. 46: Diagnostic Tool Display - Panel Switch Check Mode
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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

f. Vehicle Signal Check

1. Select "Vehicle Signal Check" from the "Display Check" screen.

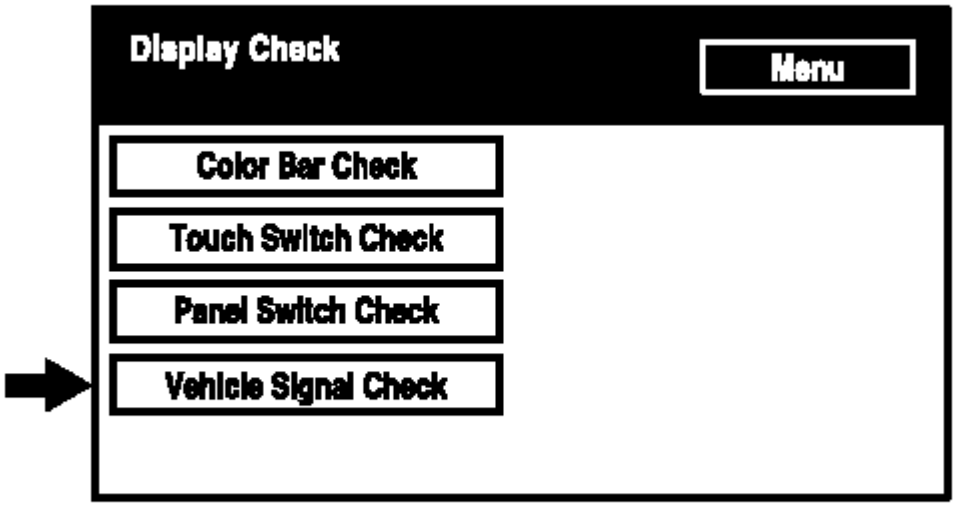


Fig. 47: Diagnostic Menu Screen Display - Vehicle Signal Check
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

2. When the "Vehicle Signal Check Mode" screen is displayed, check all the vehicle signal conditions.

   HINT:

   - Only conditions having inputs are displayed.
   - The input signals from the vehicle are updated once per second and if any have changed, the screen is updated.
   - For details of this function, refer to Diagnosis Display Detailed Description in the System Description. Refer to **SYSTEM DESCRIPTION**.

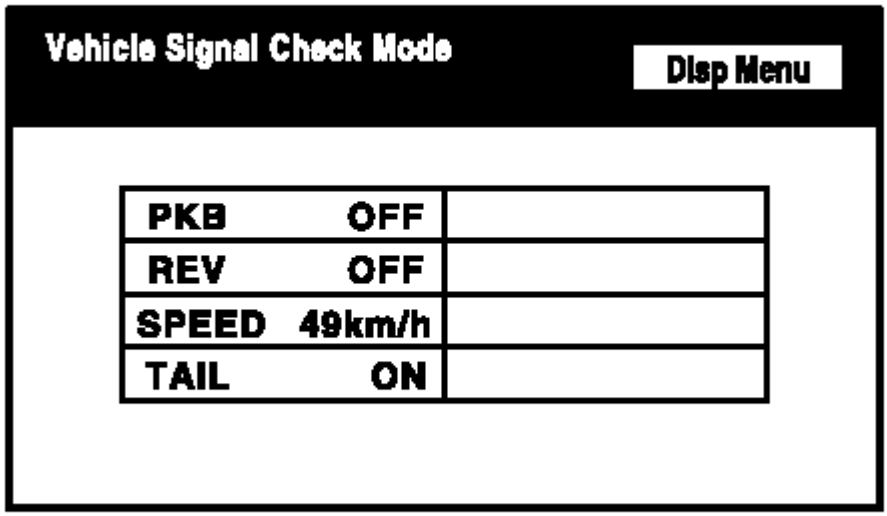


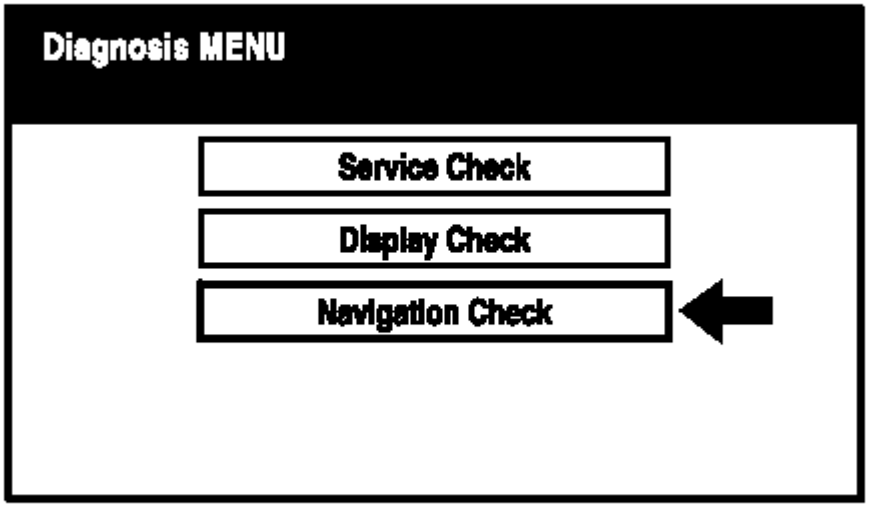
Fig. 48: Identifying Vehicle Signal Check Mode Screen
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

3. **Check Navigation Check Mode**

HINT:

Illustrations may differ from the actual vehicle depending on the device settings and options. Therefore, some detailed areas may not be exactly the same as on the actual vehicle.

a. Enter Diagnostic Mode. Refer to **DTC CHECK / CLEAR**.
b. Navigation Check
    1. Select "Navigation Check" from the "Diagnosis MENU" screen.



P

Fig. 49: Select "Navigation Check" from the "Diagnosis MENU" Screen
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

c. GPS Information

HINT:

This mode displays GPS satellite information.

1. Select "GPS Information" from the "Navigation Check" screen.

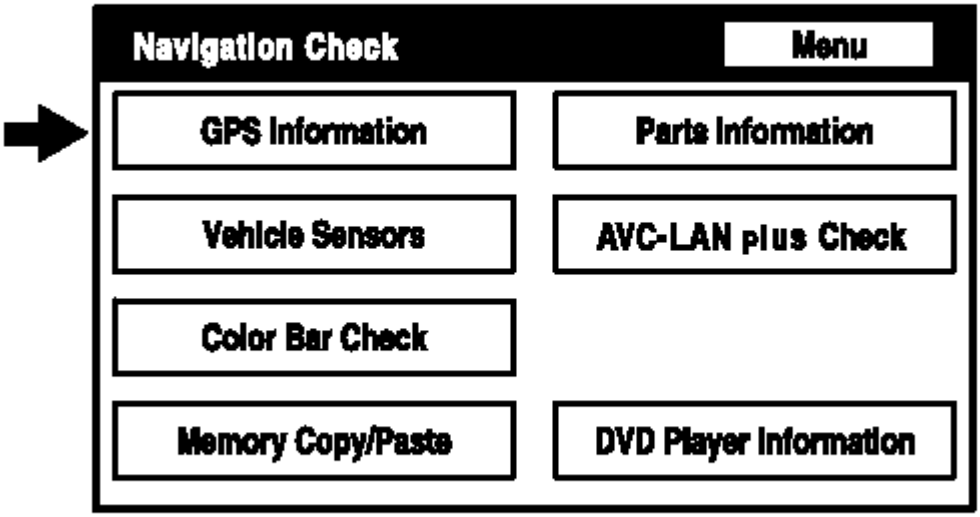


Fig. 50: Diagnostic Menu Screen Display - GPS Information
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

2. When GPS information is displayed, check the GPS conditions.

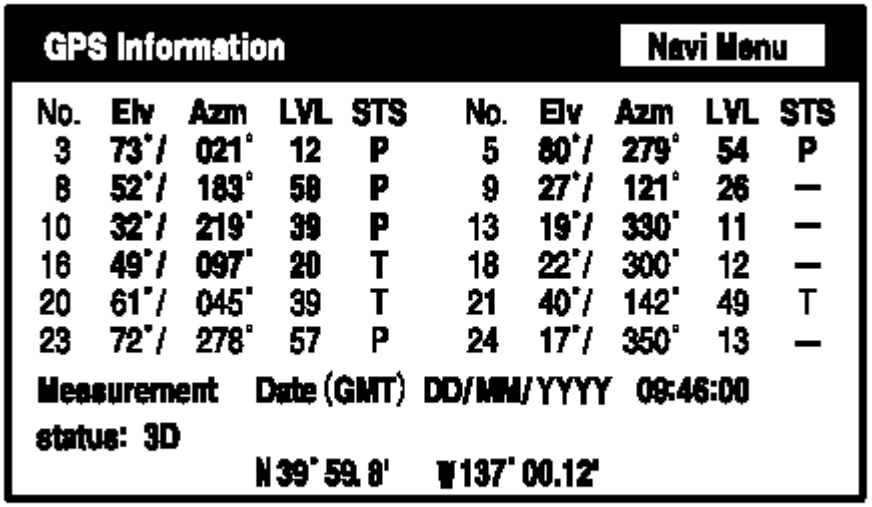


Fig. 51: Diagnosis Display - GPS Information
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

HINT:

- The input signals from the vehicle are updated once per second and if any have changed, the screen is updated.
- For details of this function, refer to Diagnosis Display Detailed Description in the System Description. Refer to **SYSTEM DESCRIPTION**.

d. Vehicle Sensors

1. Select "Vehicle Sensors" from the "Navigation Check" screen.

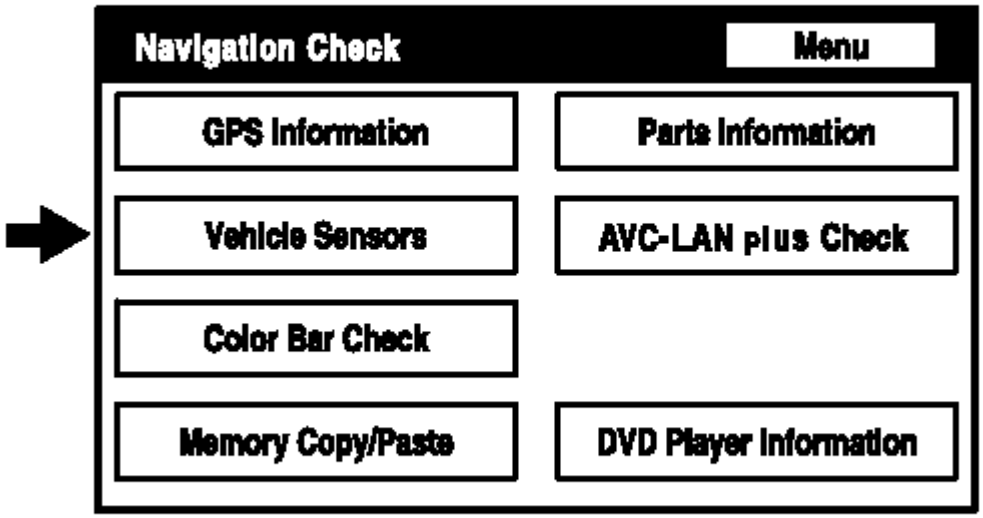
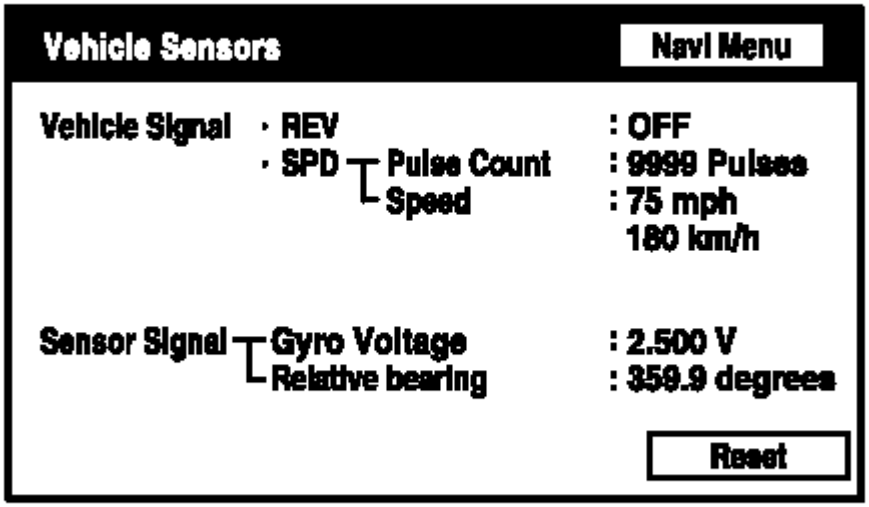


Fig. 52: Diagnostic Menu Screen Display - Navigation Check
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

2. Check all the signals and sensors when vehicle signal information is displayed.



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Fig. 53: Screen Display - Vehicle Sensors
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

HINT:

- The input signals from the vehicle are updated once per second and if any have changed, the screen is updated.
- This screen displays vehicle signals input to the navigation ECU.
- For details of this function, refer to Diagnosis Display Detailed Description in the System Description. Refer to **SYSTEM DESCRIPTION**.

e. Color Bar Check

1. Select "Color Bar Check" from the "Navigation Check" screen.

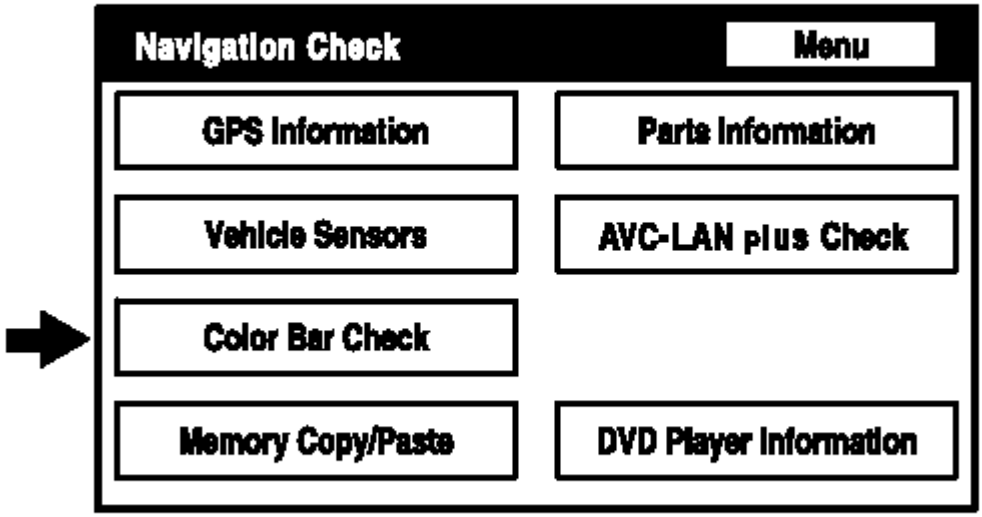
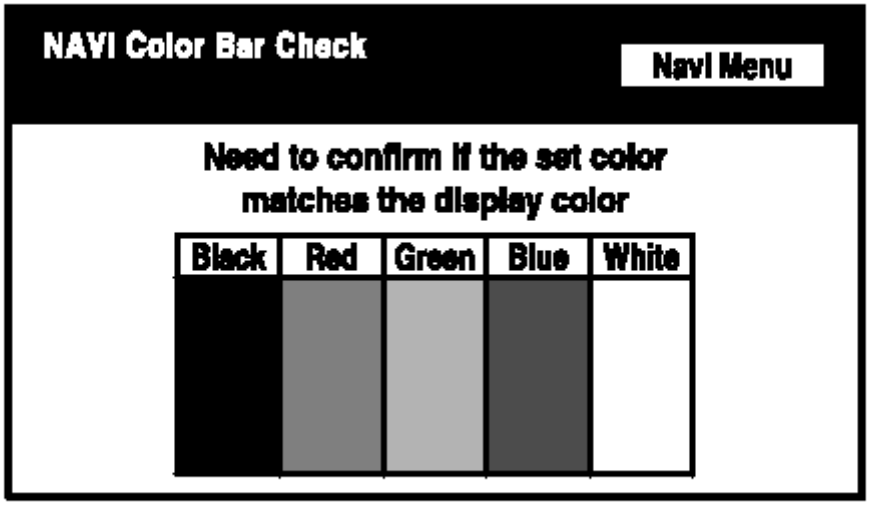


Fig. 54: Diagnostic Menu Screen Display - Color Bar Check
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

2. Check each color of the color bar when the "NAVI Color Bar Check" screen is displayed.



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Fig. 55: Diagnostic Tool Display - NAVI Color Bar Check
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

HINT:

- Colors will not be displayed full-screen as in "Display Check Mode".
- This screen displays the navigation ECU display colors.

f. Memory Copy/Paste

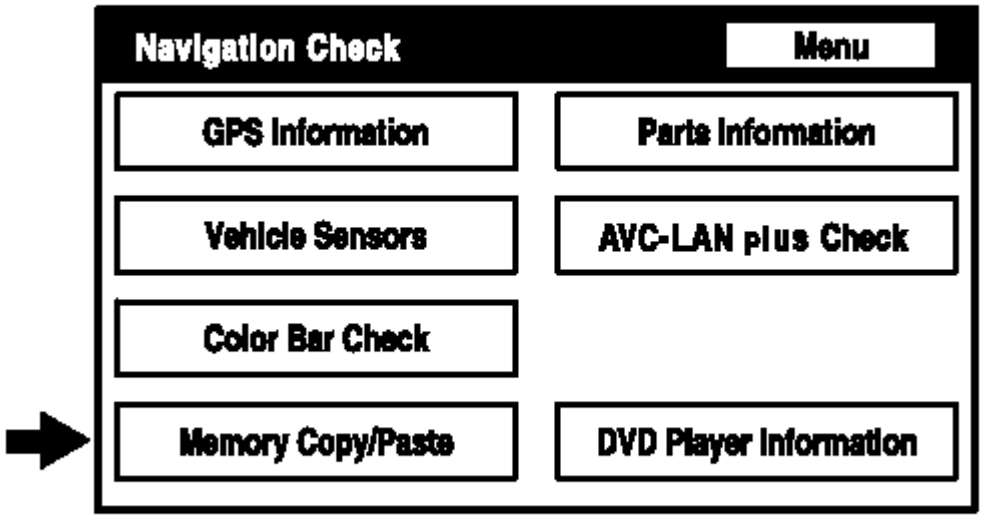


Fig. 56: Diagnostic Menu Screen Display - Memory Copy/Paste
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

HINT:

This function cannot be used.

g. Parts Information
   1. Select "Parts Information" from the "Navigation Check" screen.

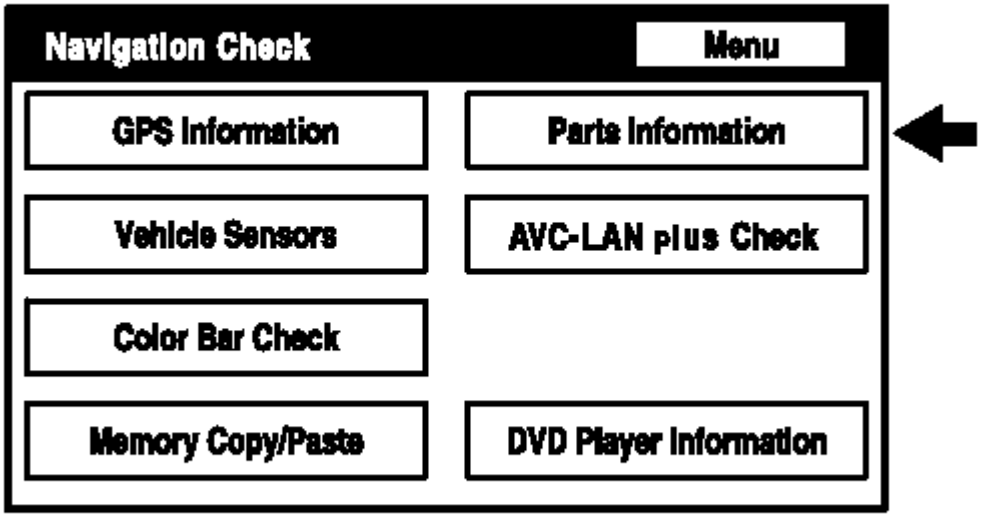
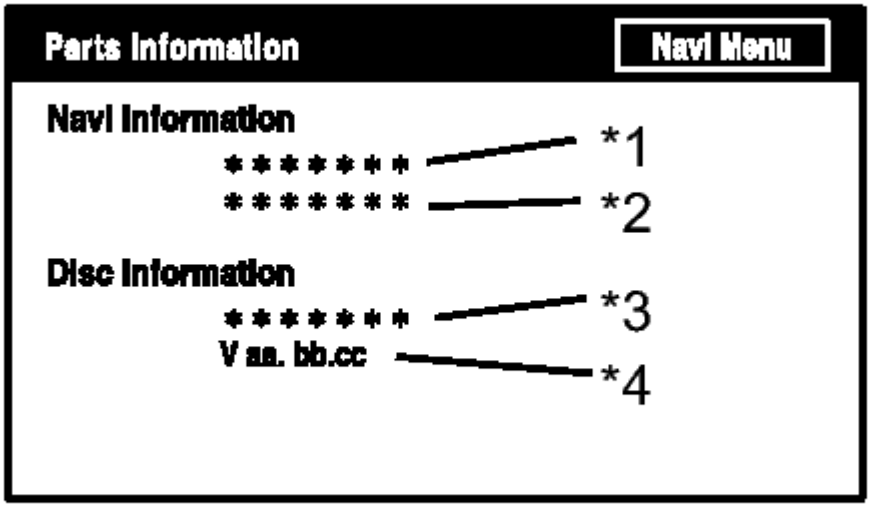


Fig. 57: Diagnostic Menu Screen Display - Parts Information
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

2. Check the navigation and disc information when the "Parts Information" screen is displayed.



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Fig. 58: Diagnosis Display - Parts Information Screen
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

SCREEN DESCRIPTION

Display	Contents
*1: Navigation ECU Manufacturer	Navigation ECU manufacturer is displayed.
*2: Navigation ECU Version	Navigation ECU version is displayed.
*3: Disc Manufacturer	Map disc manufacturer is displayed.
*4: Disc Version	Map disc version is displayed.

h. DVD Player Information

1. Select "DVD Player Information" from the "Navigation Check" screen.

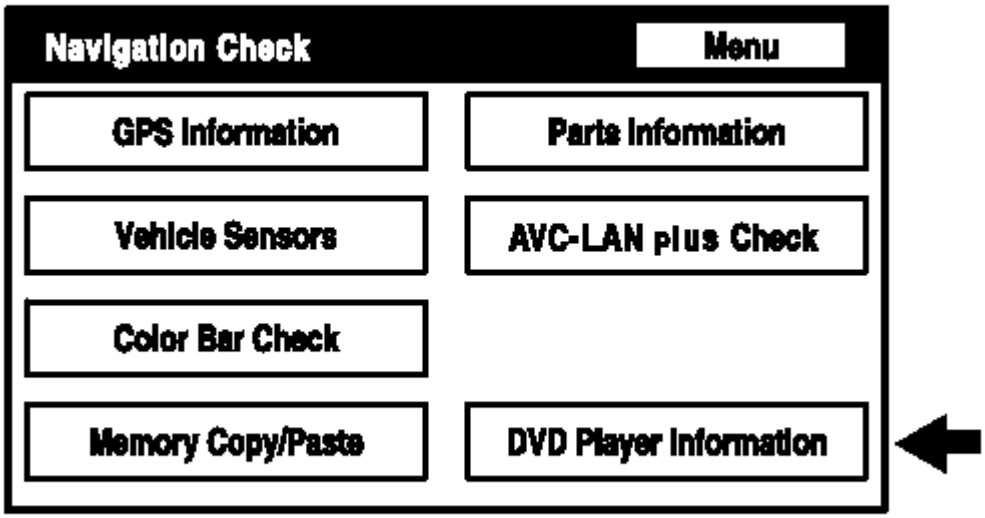
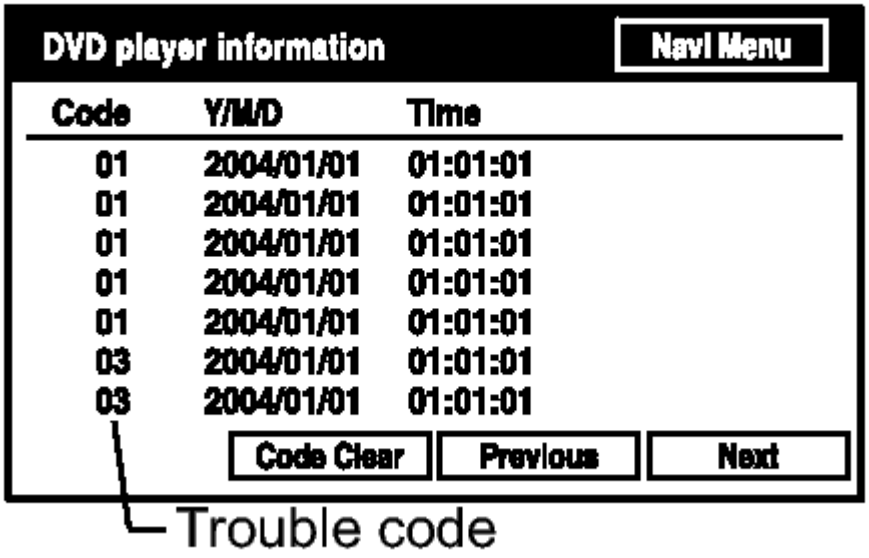


Fig. 59: Diagnosis Menu Screen Display - DVD Player Information
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

2. Check for DTCs.



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Fig. 60: DVD Player Check Function In The Navigation ECU
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

HINT:

- This is the DVD player check function in the navigation ECU.
- For details of this function, refer to Diagnosis Display Detailed Description in the System Description. Refer to **SYSTEM DESCRIPTION**.

PROBLEM SYMPTOMS TABLE

PROBLEM SYMPTOMS TABLE

HINT:

- Use the table below to help determine the cause of problem symptoms. If multiple suspected areas are listed, the potential causes of the symptoms are listed in order of probability in the "Suspected Area" column of the table. Check each symptom by checking the suspected areas in the order they are listed. Replace parts as necessary.
- Inspect the fuses and relays related to this system before inspecting the suspected areas below.

DISPLAY FUNCTION

Symptom	Suspected Area	See
Pressing power switch does not turn on system.	Proceed to "Navigation Receiver Assembly Power Source Circuit"	Refer to **Navigation Receiver Assembly Power Source Circuit**

	Replace navigation receiver assembly	Refer to **REMOVAL**
Black screen (no image appears on navigation/audio screen).	Proceed to "No Image Appears on Multi-display"	Refer to **No Image Appears on Multi-display**
	Proceed to "Black Screen"	Refer to **Black Screen**
	Proceed to "Navigation Receiver Assembly Power Source Circuit"	Refer to **Navigation Receiver Assembly Power Source Circuit**
	Replace navigation receiver assembly	Refer to **REMOVAL**
Illumination for panel switch does not come on with light control switch on.	Proceed to "Illumination for Panel Switch does not Come on with Tail Switch ON"	Refer to **Illumination for Panel Switch does not Come on with Tail Switch ON**
	Replace navigation receiver assembly	Refer to **REMOVAL**
Display does not dim (night screen) with tail switch.	Proceed to "Display does not Dim when Light Control Switch is Turned ON"	Refer to **Display does not Dim when Light Control Switch is Turned ON**
	Proceed to "Navigation Receiver Assembly Power Source Circuit"	Refer to **Navigation Receiver Assembly Power Source Circuit**
	Replace navigation receiver assembly	Refer to **REMOVAL**
Power does not turn off (screen remains on).	Proceed to "Navigation Receiver Assembly Power Source Circuit"	Refer to **Navigation Receiver Assembly Power Source Circuit**
	Replace navigation receiver assembly	Refer to **REMOVAL**
Panel switches do not function.	Proceed to "Panel Switches do not Function"	Refer to **Panel Switches do not Function**
	Proceed to "Navigation Receiver Assembly Power Source Circuit"	Refer to **Navigation Receiver Assembly Power Source Circuit**
	Replace navigation receiver assembly	Refer to **REMOVAL**
Touch panel switch does not function.	Proceed to "Touch Panel Switches does not Function"	Refer to **Panel Switches do not Function**
	Proceed to "Navigation Receiver Assembly Power Source Circuit"	Refer to **Navigation Receiver Assembly Power Source Circuit**
	Replace navigation receiver assembly	Refer to **REMOVAL**
Navigation screen is not displayed.	Map disc	-
	Replace navigation receiver assembly	Refer to **REMOVAL**

Navigation screen flicker or color distortion.	Proceed to "Screen Flicker or Color Distortion"	Refer to **Screen Flicker or Color Distortion**
	Replace navigation receiver assembly	Refer to **REMOVAL**
Navigation function switches can be operated while vehicle running.	Proceed to "Vehicle Speed Signal Circuit between Navigation Receiver and Combination Meter"	Refer to **Vehicle Speed Signal Circuit between Navigation Receiver Assembly and Combination Meter**
Display panel does not open, tilt or tilts improperly.	Proceed to "Display Panel does not Open, Tilt, or Tilts Improperly"	Refer to **Display Panel does not Open, Tilt or Tilts Improperly**
	Proceed to "Navigation Receiver Assembly Power Source Circuit"	Refer to **Navigation Receiver Assembly Power Source Circuit**
	Replace navigation receiver assembly	Refer to **REMOVAL**

NAVIGATION FUNCTION

Symptom	Suspected Area	See
Map disc cannot be inserted.	Proceed to "Map Disc cannot be Inserted"	Refer to **Map Disc cannot be Inserted**
	Proceed to "Navigation Receiver Assembly Power Source Circuit"	Refer to **Navigation Receiver Assembly Power Source Circuit**
	Replace navigation receiver assembly	Refer to **REMOVAL**
Map disc cannot be ejected.	Proceed to "Map Disc cannot be Ejected"	Refer to **Map Disc cannot be Ejected**
	Proceed to "Navigation Receiver Assembly Power Source Circuit"	Refer to **Navigation Receiver Assembly Power Source Circuit**
	Replace navigation receiver assembly	Refer to **REMOVAL**
Vehicle position mark deviates greatly.	Proceed to "Vehicle Position Mark Deviates Greatly"	Refer to **Vehicle Position Mark Deviates Greatly**
	Replace navigation antenna assembly	Refer to **REMOVAL**
	Replace navigation receiver assembly	Refer to **REMOVAL**
Cursor or map rotates when vehicle is stopped.	Proceed to "Cursor or Map Rotates when Vehicle is Stopped"	Refer to **Cursor or Map Rotates when Vehicle Stopped**
	Replace navigation receiver assembly	Refer to **REMOVAL**
Vehicle position mark is not updated.	Proceed to "Vehicle Position Mark is not Updated"	Refer to **Vehicle Position Mark is not Updated**
	Map disc	-

	Replace navigation receiver assembly	Refer to **REMOVAL**
Current position display does not appear.	Proceed to "Current Position Display does not Appear"	Refer to **Current Position Display does not Appear**
	Map disc	-
	Replace navigation antenna assembly	Refer to **REMOVAL**
	Replace navigation receiver assembly	Refer to **REMOVAL**
GPS mark is not displayed.	Proceed to "GPS Mark is not Displayed"	Refer to **GPS Mark is not Displayed**
	Replace navigation antenna assembly	Refer to **REMOVAL**
	Replace navigation receiver assembly	Refer to **REMOVAL**
Voice guidance does not function.	Proceed to "Voice Guidance does not Function"	Refer to **Voice Guidance does not Function**
	Map disc	-
	Replace navigation receiver assembly	Refer to **REMOVAL**
Map display is incomplete.	Proceed to "Map Display Incomplete"	Refer to **Map Display Incomplete**
	Map disc	-
	Replace navigation receiver assembly	Refer to **REMOVAL**
Route cannot be calculated.	Proceed to "Route cannot be Calculated"	Refer to **Route cannot be Calculated**
	Map disc	-
	Replace navigation receiver assembly	Refer to **REMOVAL**
Speed signal does not change in navigation check mode.	Proceed to "Vehicle Speed Signal Circuit between Navigation Receiver and Combination Meter"	Refer to **Vehicle Speed Signal Circuit between Navigation Receiver Assembly and Combination Meter**
Reverse signal does not change in navigation check mode.	Proceed to "Reverse Signal Circuit"	Refer to **Reverse Signal Circuit**

AUDIO FUNCTION

Symptom	Suspected Area	See
No sound can be heard from speakers (audio is mute).	Proceed to "No Sound can be Heard from Speakers"	Refer to **No Sound can be Heard from Speakers**
	Proceed to "Speaker Circuit"	Refer to **Speaker Circuit**
	Replace navigation receiver assembly	Refer to **REMOVAL**

Radio broadcast cannot be received or poor reception.	Proceed to "Radio Broadcast cannot be Received or Poor Reception"	Refer to **Radio Broadcast cannot be Received or Poor Reception**
	Replace navigation receiver assembly	Refer to **REMOVAL**
CD cannot be inserted/played or CD is ejected right after insertion.	Proceed to "CD cannot be Inserted or is Ejected Right After Insertion"	Refer to **CD cannot be Inserted or is Ejected Right After Insertion**
	Replace navigation receiver assembly	Refer to **REMOVAL**
CD cannot be ejected.	Proceed to "CD cannot be Ejected"	Refer to **CD cannot be Ejected**
	Replace navigation receiver assembly	Refer to **REMOVAL**
CD sound skips.	Proceed to "CD Sound Skips"	Refer to **CD Sound Skips**
	Replace navigation receiver assembly	Refer to **REMOVAL**
Abnormal noise occurs.	Proceed to "Noise Occurs"	Refer to **Noise Occurs**
	Replace navigation receiver assembly	Refer to **REMOVAL**
Poor sound quality in all modes (low volume).	Proceed to "Poor Sound Quality in All Modes (Low Volume)"	Refer to **Poor Sound Quality in All Modes (Low Volume)**
	Proceed to "Navigation Receiver Assembly Power Source Circuit"	Refer to **Navigation Receiver Assembly Power Source Circuit**
	Replace navigation receiver assembly	Refer to **REMOVAL**
	Proceed to "Stereo Component Tuner Power Source Circuit"	Refer to **Stereo Component Tuner Power Source Circuit**
	Proceed to "Mute Signal Circuit between Navigation Receiver Assembly and Stereo Component Tuner Assembly"	Refer to **Mute Signal Circuit between Navigation Receiver Assembly and Stereo Component Tuner Assembly**
	Proceed to "Sound Signal Circuit between Navigation Receiver Assembly and Stereo Component Tuner Assembly"	Refer to **Sound Signal Circuit between Navigation Receiver Assembly and Stereo Component Tuner Assembly**
External device sound cannot be heard or sound quality bad (stereo jack is used).	Proceed to "Sound Signal Circuit between Navigation Receiver and Stereo Jack Adapter"	Refer to **Sound Signal Circuit between Navigation Receiver Assembly and Stereo Jack Adapter**
	Replace No. 1 stereo jack adapter assembly	Refer to **REMOVAL**
	Proceed to "Navigation	Refer to **Navigation Receiver**

	Receiver Assembly Power Source Circuit"	**Assembly Power Source Circuit**
	Replace navigation receiver assembly	Refer to **REMOVAL**

STEERING PAD SWITCH FUNCTION

Symptom	Suspected Area	See
The system cannot be operated by the steering pad switch.	Proceed to "Steering Pad Switch Circuit"	Refer to **Steering Pad Switch Circuit**
	Replace navigation receiver assembly	Refer to **REMOVAL**
Illumination for steering pad switch does not come on with tail switch on.	Proceed to "Illumination Circuit"	Refer to **Illumination Circuit**
	Replace navigation receiver assembly	Refer to **REMOVAL**

SDARS FUNCTION

Symptom	Suspected Area	See
Satellite radio broadcast cannot be received or reception is bad.	Proceed to "Satellite Radio Broadcast cannot be Received"	Refer to **Satellite Radio Broadcast cannot be Received**
	Proceed to "Stereo Component Tuner Power Source Circuit"	Refer to **Stereo Component Tuner Power Source Circuit**
	Replace stereo component tuner assembly	Refer to **REMOVAL**
	Replace navigation receiver assembly	Refer to **REMOVAL**
Satellite radio cannot receive pay type broadcasts.	Proceed to "Satellite Radio Broadcast cannot be Received"	Refer to **Satellite Radio Broadcast cannot be Received**
	Replace stereo component tuner assembly	Refer to **REMOVAL**
	Replace navigation receiver assembly	Refer to **REMOVAL**
Satellite radio broadcast cannot be selected or after selecting broadcast, broadcast cannot be added into memory.	Proceed to "Satellite Radio Broadcast cannot be Received"	Refer to **Satellite Radio Broadcast cannot be Received**
	Proceed to "Satellite Radio Broadcast cannot be Selected or After Selecting Broadcast, Broadcast cannot be Added into Memory"	Refer to **Satellite Radio Broadcast cannot be Selected or After Selecting Broadcast, Broadcast cannot be Added into Memory**
	Replace stereo component tuner assembly	Refer to **REMOVAL**
	Replace navigation receiver assembly	Refer to **REMOVAL**
	Proceed to "Traffic Information is not Displayed"	Refer to **Traffic Information is not Displayed**

Traffic information is not displayed.	Replace stereo component tuner assembly	Refer to **REMOVAL**
	Replace navigation receiver assembly	Refer to **REMOVAL**
"XM Nav Traffic" mark is not displayed.	Proceed to "Traffic Information is not Displayed"	Refer to **Traffic Information is not Displayed**
	Replace stereo component tuner assembly	Refer to **REMOVAL**
	Replace navigation receiver assembly	Refer to **REMOVAL**

TERMINALS OF ECU

TERMINALS OF ECU

1. **CHECK NAVIGATION RECEIVER ASSEMBLY**

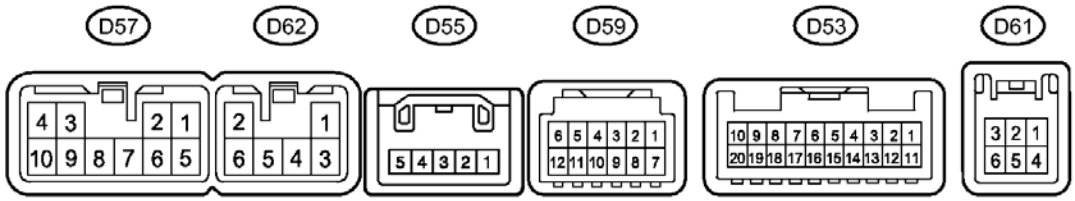


Fig. 61: Navigation Receiver Assembly Connector Terminal Identification
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

Terminal No. (Symbol)	Wiring Color	Terminal Description	Condition	Specified Condition
D53-6 (SWG) - Body ground	SB - Body ground	Steering pad switch signal	Always	Below 1 V
D53-7 (SW1) - D53-6 (SWG)	B - SB	Steering pad switch signal	No switch is pushed --> SEEK+ switch pushed --> SEEK- switch pushed --> VOL+ switch pushed --> VOL- switch pushed	4.44 to 5.43 V --> 0.45 to 0.65 V --> 1.19 to 1.49 V --> 2.09 to 2.54 V --> 3.2 to 3.88 V
			No switch	

D53-8 (SW2) - D53-6 (SWG)	LG - SB	Steering pad switch signal	pushed --> MODE switch pushed --> ON HOOK switch pushed --> OFF HOOK switch pushed --> VOICE switch pushed	4.44 to 5.43 V --> 0.45 to 0.65 V --> 1.19 to 1.49 V --> 2.09 to 2.54 V --> 3.2 to 3.88 V
D53-11 (V+) - D57-7 (GND)	B - BR	Television camera image signal	Ignition switch ON, shift lever in R	Pulse generation (refer to **Fig. 62**)
			Ignition switch ON, shift lever in R, screen blacked out by covering camera lens	Pulse generation (refer to **Fig. 63**)
D53-12 (V-) - D57-7 (GND)	W - BR	Television camera signal ground	Always	Below 1 V
D53-13 (CA+) - D57-7 (GND)	R - BR	Television camera power supply	Ignition switch ON, shift lever in R	5.5 to 7.05 V
D53-14 (CGND) - D57-7 (GND)	Shield - BR	Shielded ground	Always	Below 1 V
D53-15 (ARI) - D57-7 (GND)	R - BR	Aux sound signal (right)	External device is playing (When stereo jack is used)	Waveform synchronized with sound is output
D53-16 (ASGN) - D57-7 (GND)	B - BR	Ground	Always	Below 1 V
D53-17 (ALI) - D57-7 (GND)	W - BR	Aux sound signal (left)	External device is playing (When stereo jack is used)	Waveform synchronized with sound is output
D53-18				

(AGND) - D57-7 (GND)	Shield - BR	Shielded ground	Always	Below 1 V
D53-19 (AUXI) - D57-7 (GND)	B - BR	External device connection detection signal	External device is playing (When stereo jack is used)	Waveform synchronized with sound is output
D55-1 (PKB) - D57-7 (GND)	R - BR	Parking brake signal	See "Vehicle Signal Check" Mode. Refer to **OPERATION CHECK**	-
D55-2 (IG) - D57-7 (GND)	L - BR	Ignition switch ON	Ignition switch off --> Ignition switch ON	Below 1 V --> 11 to 14 V
D55-3 (SPD) - D57-7 (GND)	LG - BR	Speed signal from combination meter	See "Vehicle Signal Check" mode. Refer to **OPERATION CHECK**	-
D55-5 (REV) - D57-7 (GND)	B - BR	Reverse signal	See "Vehicle Signal Check" mode. Refer to **OPERATION CHECK**	-
D57-1 (FR+) - D57-7 (GND)	LG - BR	Sound signal (Front right)	Audio system playing	Waveform synchronized with sound is output
D57-2 (FL+) - D57-7 (GND)	P - BR	Sound signal (Front left)	Audio system playing	Waveform synchronized with sound is output
D57-3 (ACC) - D57-7 (GND)	GR - BR	Accessory (ON)	Ignition switch off --> ACC or ON	Below 1 V --> 11 to 14 V
D57-4 (B) - D57-7 (GND)	SB - BR	Battery	Always	11 to 14 V
D57-5 (FR-) -	L - BR	Sound signal	Audio system	Waveform synchronized

D57-7 (GND)		(Front right)	playing	with sound is output
D57-6 (FL-) - D57-7 (GND)	V - BR	Sound signal (Front left)	Audio system playing	Waveform synchronized with sound is output
D57-10 (ILL+) - D57-7 (GND)	G - BR	Illumination signal	Light control switch OFF	Below 1 V
			Light control switch TAIL or HEAD	11 to 14 V
D59-1 (CSLD) - Body ground	Shield - Body ground	Shield ground	Always	Below 1 V
D59-2 (CDR+) - D57-7 (GND)	B - BR	Satellite radio system is playing	Satellite radio system playing	A waveform synchronized with sound is output
		Satellite radio sound signal	Satellite radio playing	
D59-3 (CDR-) - D57-7 (GND)	W - BR	Satellite radio system is playing	Satellite radio system playing	A waveform synchronized with sound is output
		Satellite radio sound signal	Satellite radio playing	
D59-4 (CDL+) - D57-7 (GND)	R - BR	Satellite radio system is playing	Satellite radio system playing	A waveform synchronized with sound is output
		Satellite radio sound signal	Satellite radio playing	
D59-5 (CDL-) - D57-7 (GND)	G - BR	Satellite radio system is playing	Satellite radio system playing	A waveform synchronized with sound is output
		Satellite radio sound signal	Satellite radio playing	
D59-6 (MUTE) - D57-7 (GND)	R - BR	Mute signal	Satellite radio system playing --> Source changed to CD	Above 3.5 V --> Below 1 V
			Satellite radio playing --> Source changed	
D59-9 (TXM+)	B - BR	AVC-LAN communication	Ignition switch	2 to 3 V

- D57-7 (GND)		signal	ACC	
D59-10 (TXM-) - D57-7 (GND)	W - BR	AVC-LAN communication signal	Ignition switch ACC	2 to 3 V
D61-2 (TXO+) - D57-7 (GND)	W - BR	AVC-LAN plus communication signal	Ignition switch ACC	2 to 3 V
D61-3 (TXI+) - D57-7 (GND)	V - BR	AVC-LAN plus communication signal	Ignition switch ACC	2 to 3 V
D61-5 (TXO-) - D57-7 (GND)	R - BR	AVC-LAN plus communication signal	Ignition switch ACC	2 to 3 V
D61-6 (TXI-) - D57-7 (GND)	P - BR	AVC-LAN plus communication signal	Ignition switch ACC	2 to 3 V
D62-1 (RR+) - D57-7 (GND)	R - BR	Sound signal (Rear right)	Audio system playing	Waveform synchronized with sound is output
D62-2 (RL+) - D57-7 (GND)	B - BR	Sound signal (Rear left)	Audio system playing	Waveform synchronized with sound is output
D62-3 (RR-) - D57-7 (GND)	W - BR	Sound signal (Rear right)	Audio system playing	Waveform synchronized with sound is output
D62-5 (ILL-) - D57-7 (GND)	GR - BR	Illumination signal	Light control switch OFF	Below 1 V
			Light control switch TAIL or HEAD	11 to 14 V
D62-6 (RL-) - D57-7 (GND)	Y - BR	Sound signal (Rear left)	Audio system playing	Waveform synchronized with sound is output

a. Using an oscilloscope, check waveform 1.

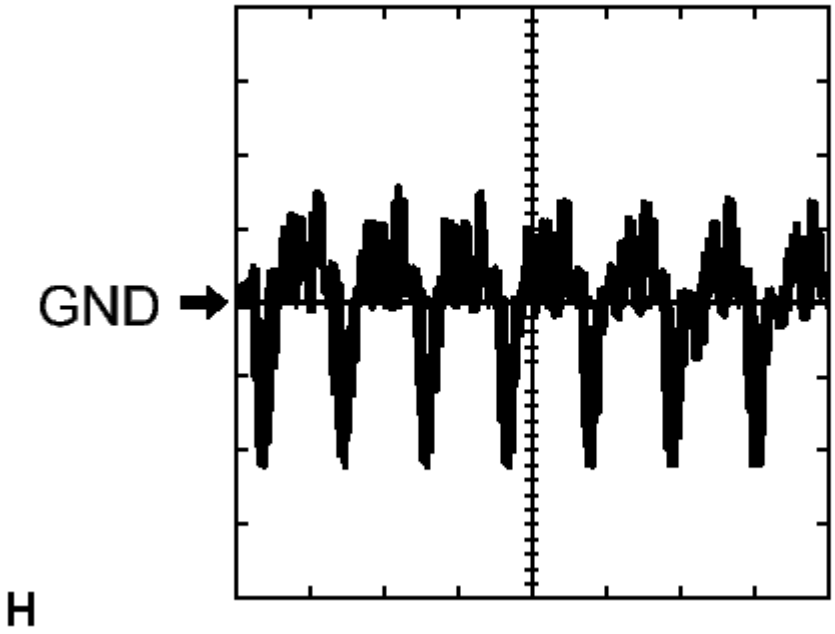


Fig. 62: Identifying Waveform 1
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

MEASUREMENT CONDITION (REFERENCE)

Item	Content
Terminal No. (Symbol)	D53-11 (V+) - D57-7 (GND)
Tool Setting	0.2 V/DIV., 50 µsec/DIV.
Condition	Ignition switch ON, shift lever in R

b. Using an oscilloscope, check waveform 2.

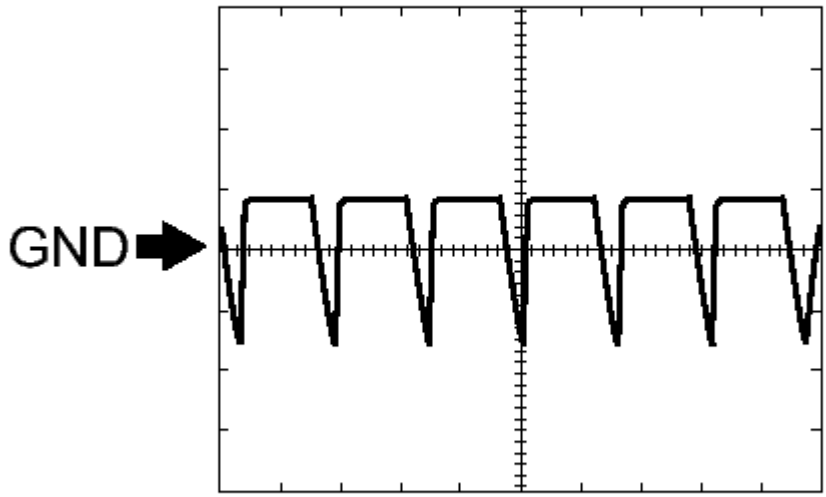


Fig. 63: Identifying Waveform 2
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

MEASUREMENT CONDITION (REFERENCE)

Item	Content
Terminal No. (Symbol)	D53-11 (V+) - D57-7 (GND)
Tool Setting	0.2 V/DIV., 50 µsec/DIV.
Condition	Ignition switch ON, shift lever in R, screen blacked out by covering camera lens

2. **CHECK STEREO COMPONENT TUNER ASSEMBLY**

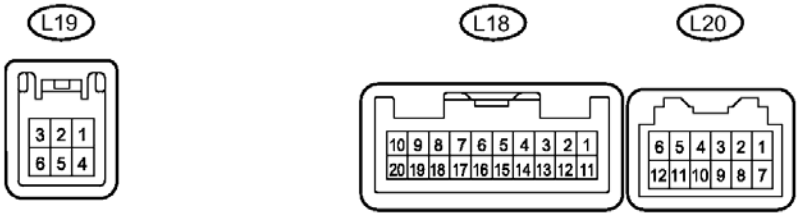


Fig. 64: Stereo Component Tuner Assembly Connector Terminal Identification
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

Terminal No. (Symbol)	Wiring Color	Terminal Description	Condition	Specified Condition
L19-2 (TXO+) - L20-7 (GND)	V - BR	AVC-LAN plus communication signal	Ignition switch ACC	2 to 3 V
L19-3 (TXI+) - L20-7 (GND)	W - BR	AVC-LAN plus communication signal	Ignition switch ACC	2 to 3 V
L19-5 (TXO-) - L20-7 (GND)	P - BR	AVC-LAN plus communication signal	Ignition switch ACC	2 to 3 V
L19-6 (TXI-) - L20-7 (GND)	R - BR	AVC-LAN plus communication signal	Ignition switch ACC	2 to 3 V
L20-2 (FRO+) - L20-7 (GND)	B - BR	Satellite radio sound signal	Satellite radio playing	A waveform synchronized with sounds is output
L20-3 (FRO-) - L20-7 (GND)	W - BR	Satellite radio sound signal	Satellite radio playing	A waveform synchronized with sounds is output
L20-4 (FLO+) - L20-7 (GND)	R - BR	Satellite radio sound signal	Satellite radio playing	A waveform synchronized with sounds is output
L20-5 (FLO-) - L20-7 (GND)	G - BR	Satellite radio sound signal	Satellite radio playing	A waveform synchronized with sounds is output

L20-6 (MUTE) - L20-7 (GND)	R - BR	Mute signal	Satellite radio playing --> Source changed	Above 3.5 V --> Below 1 V
L20-7 (GND) - Body ground	BR - Body ground	Ground	Always	Below 1 V
L20-9 (TX+) - L20-7 (GND)	B - BR	AVC-LAN communication signal	Ignition switch ACC	2 to 3 V
L20-10 (TX-) - L20-7 (GND)	W - BR	AVC-LAN communication signal	Ignition switch ACC	2 to 3 V
L20-11 (ACC) - L20-7 (GND)	GR - BR	Accessory (ON)	Ignition switch off --> ACC or ON	Below 1 V --> 11 to 14 V
L20-12 (+B) - L20-7 (GND)	SB - BR	Battery	Always	11 to 14 V

DTC CHECK / CLEAR

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 exactly the same as on the actual vehicle.
- After the ignition switch is turned to ON, check that the map is displayed before starting the diagnostic mode. Otherwise, some items cannot be checked.

1. **START DIAGNOSTIC MODE**
    a. Method 1
        1. Start the engine.
        2. Press the "DISP" switch.

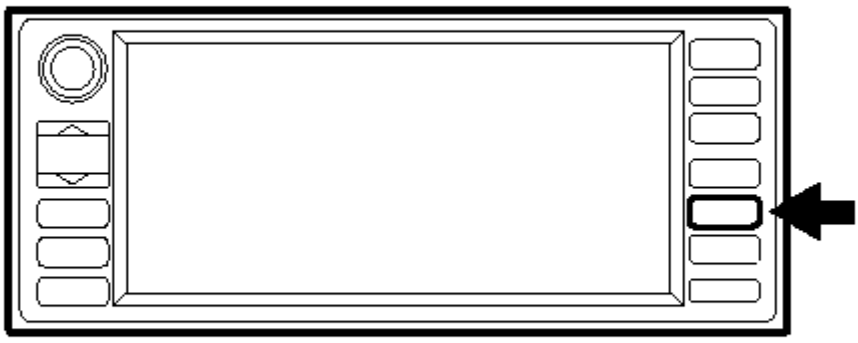


Fig. 65: "DISP" Switch
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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.

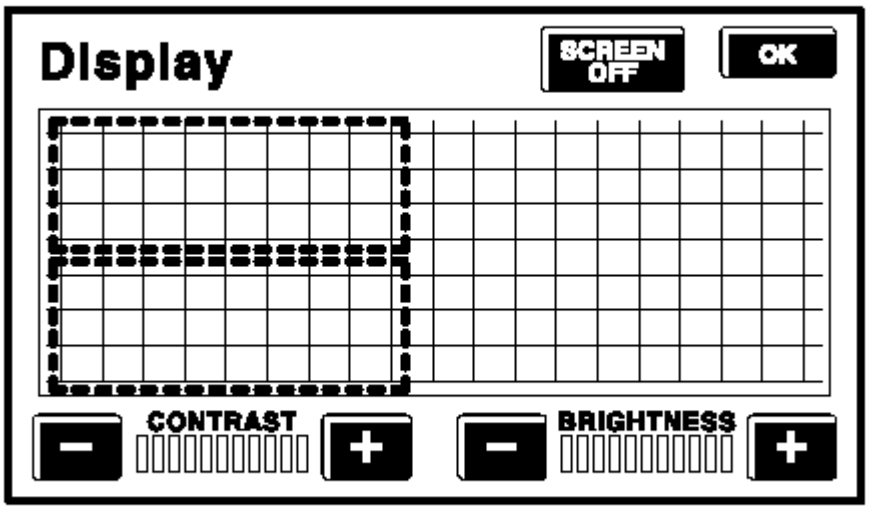


Fig. 66: Identifying Display Quality Adjustment Screen

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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

b. Method 2

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.

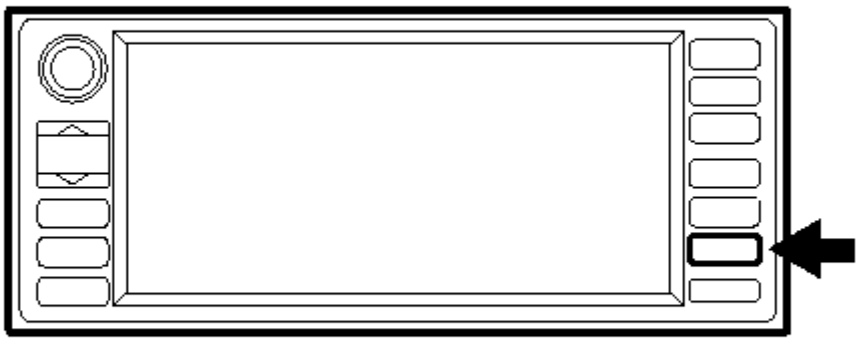


Fig. 67: Identifying "Info" Switch
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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

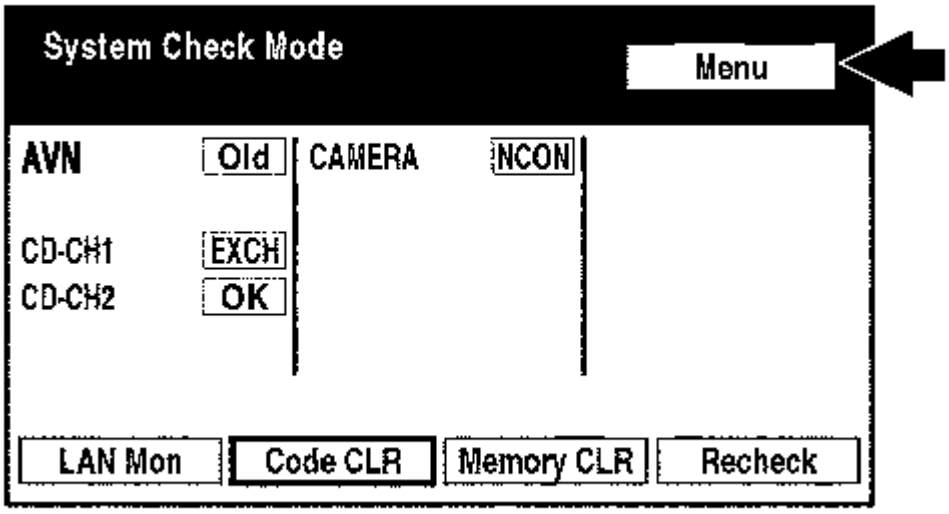
2. **FINISH DIAGNOSTIC MODE**

a. Turn the ignition switch off.

3. **DIAGNOSIS MENU**

a. Press the "MENU" switch on the "System Check Mode" screen.

Example:

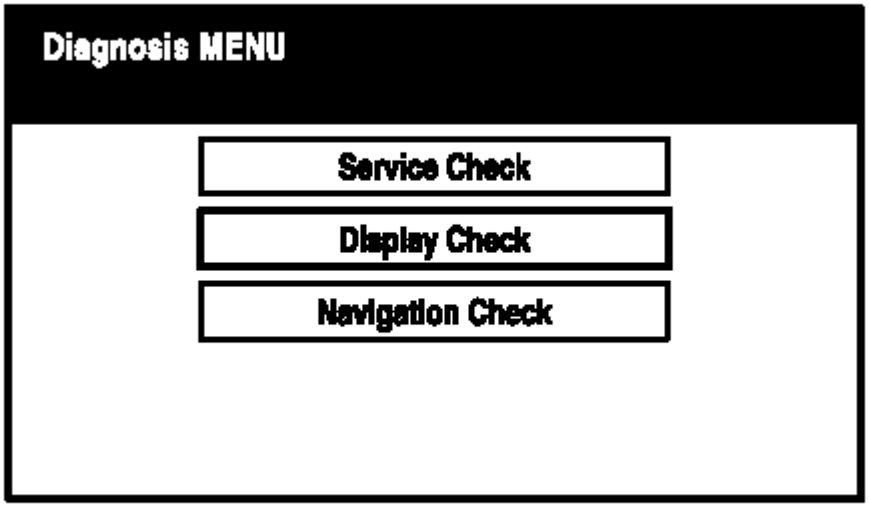


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Fig. 68: Identifying "Menu" Tab In System Check Mode Screen
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

b. The "Diagnosis MENU" screen will be displayed.

Example:

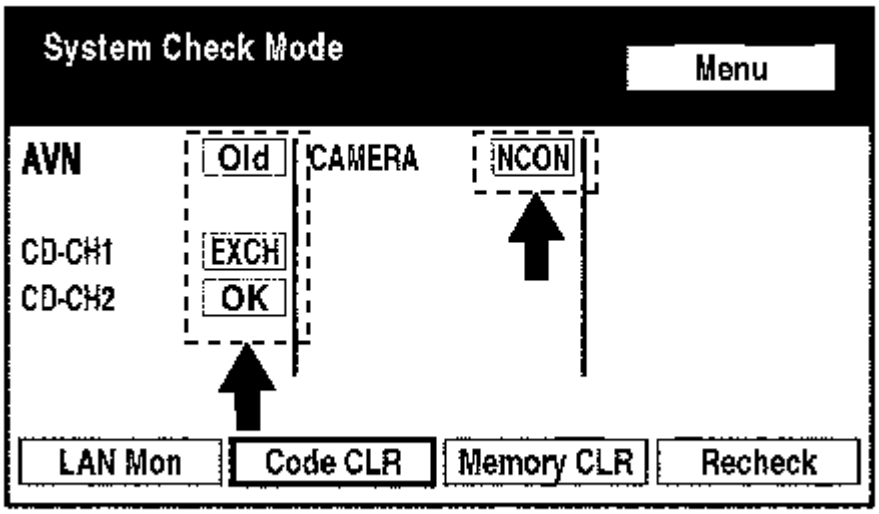


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Fig. 69: "Diagnosis MENU" Screen
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

4. **CHECK DTC**
    a. Read the system check result.
        1. If the check result is "EXCH", "CHEK" or "Old", touch the displayed check result.

Example:



P

Fig. 70: "EXCH", "CHEK" or "Old", Touch The Displayed Check Result
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

        2. View the results on the "Unit Check Mode" screen and record them.

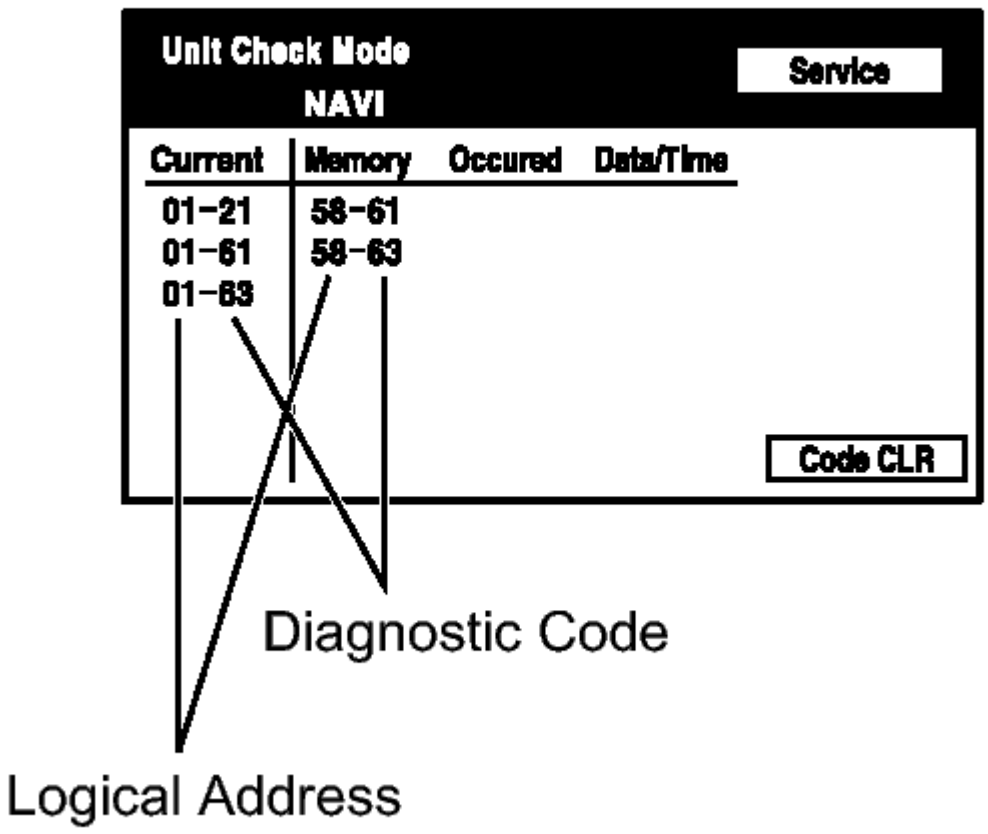


Fig. 71: Display - Diagnostic Mode
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

3. When proceeding to view the results of another device, press the "Service" switch to return to the "System Check Mode" screen.

Example:

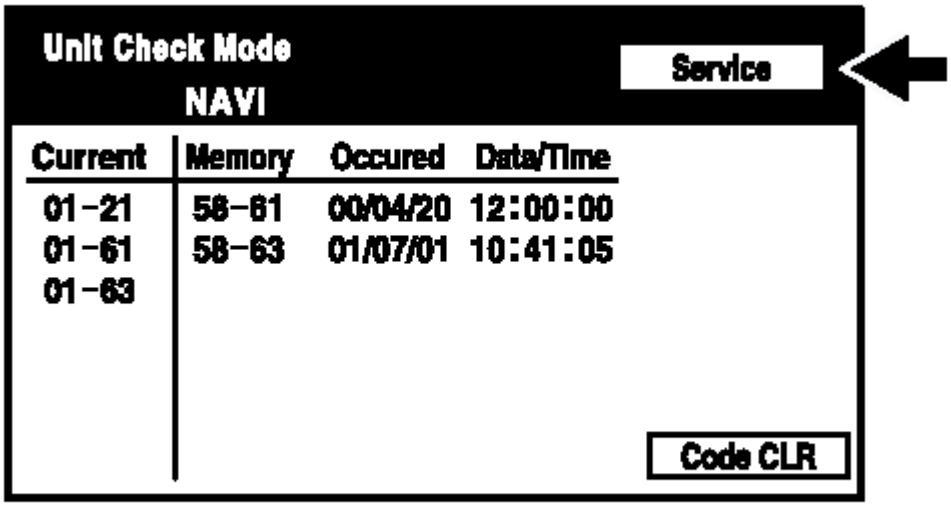


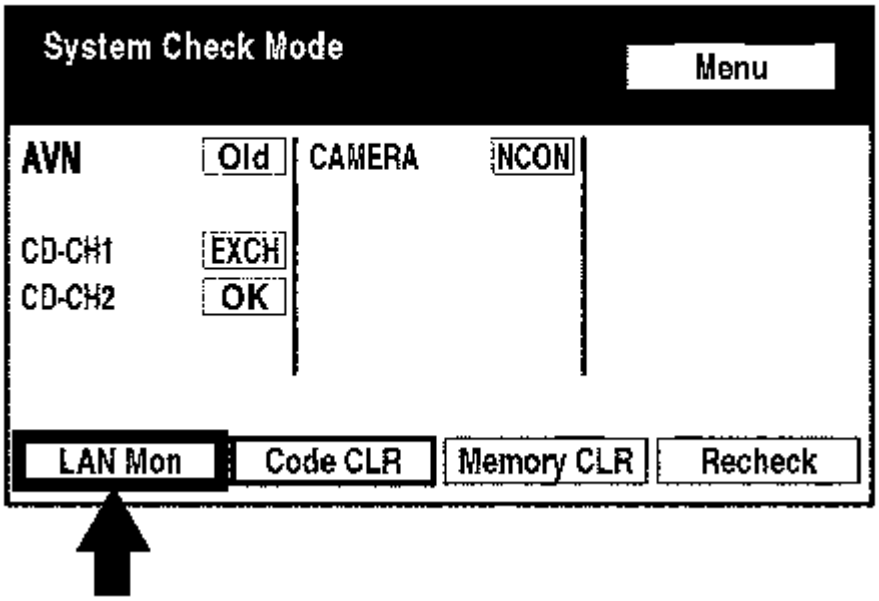
Fig. 72: Identifying "Service" Tab In "Unit Check Mode" Screen
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

HINT:

To check other items, repeat from the first step.

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

Example:

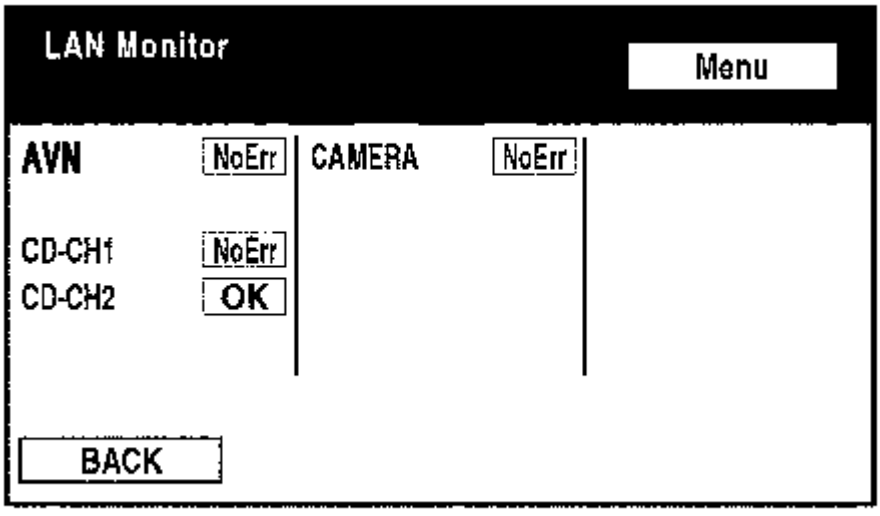


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Fig. 73: Return to the "System Check Mode" screen, and press the "LAN Mon" switch
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

2. The "LAN Monitor" screen is displayed.

Example:

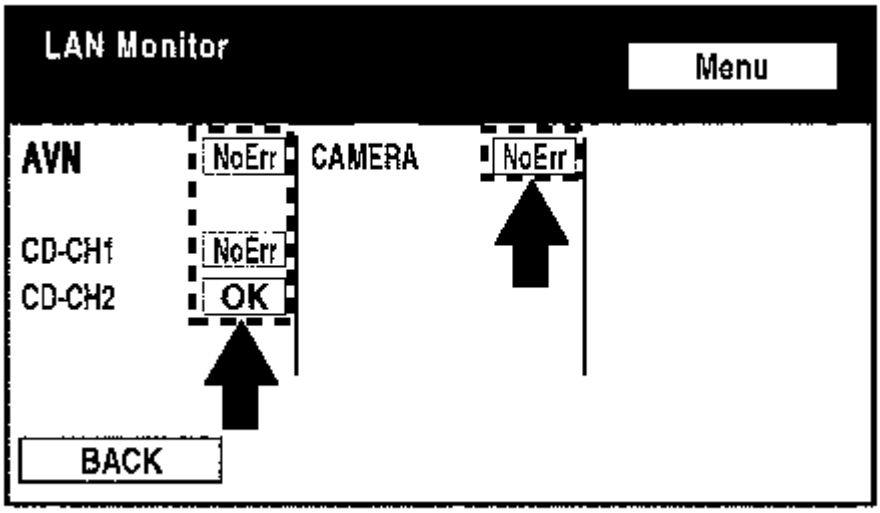


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Fig. 74: "LAN Monitor" Screen Is Displayed
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

3. If the check result is "CHEK" or "Old", touch the displayed check result.

Example:



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Fig. 75: "LAN Monitor" Screen Is Displayed
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

HINT:

If all check results are "No Err", the system judges that no DTC is stored.

4. View the results on the individual communication diagnostic screen and record them.

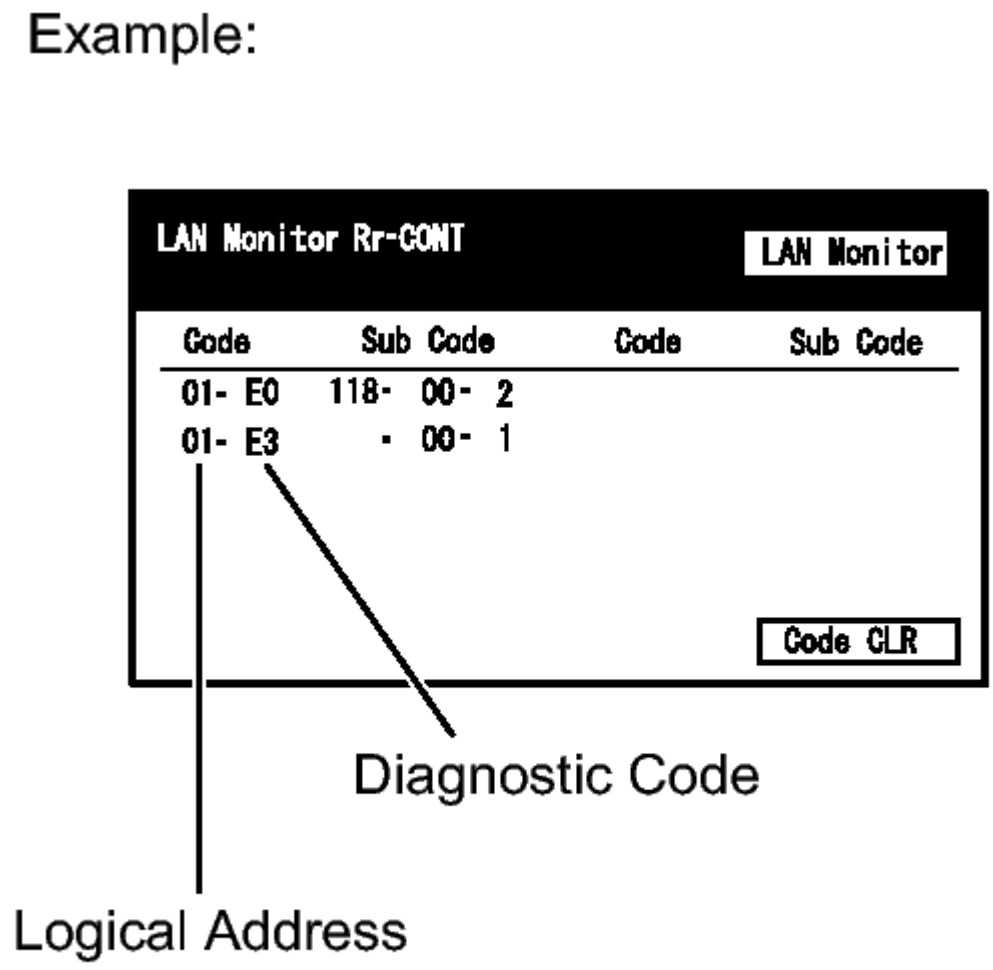


Fig. 76: Display - Check Results No Err
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

HINT:

The sub-code (relevant device) will be indicated with its physical address.

Example:

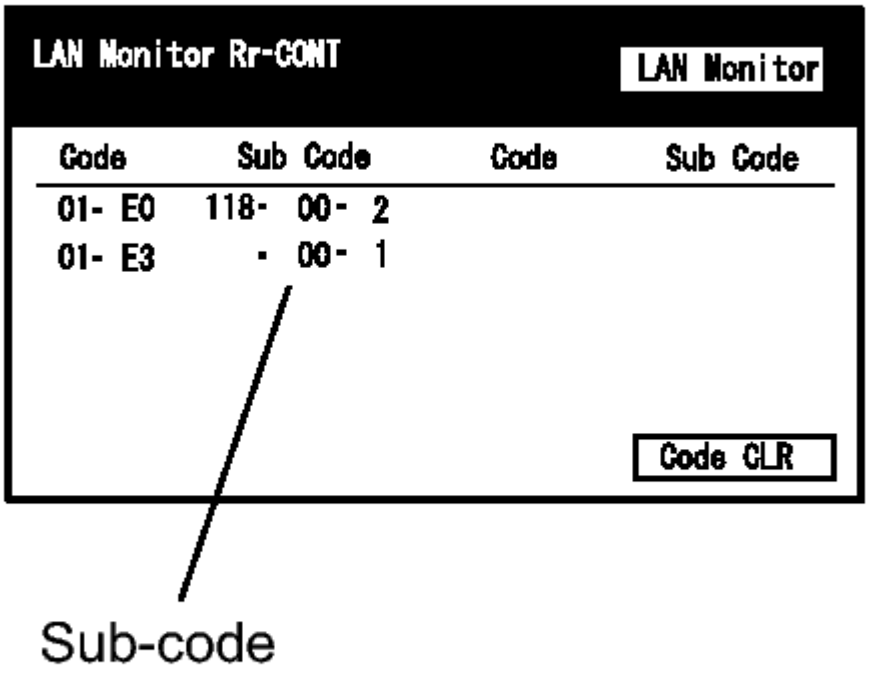
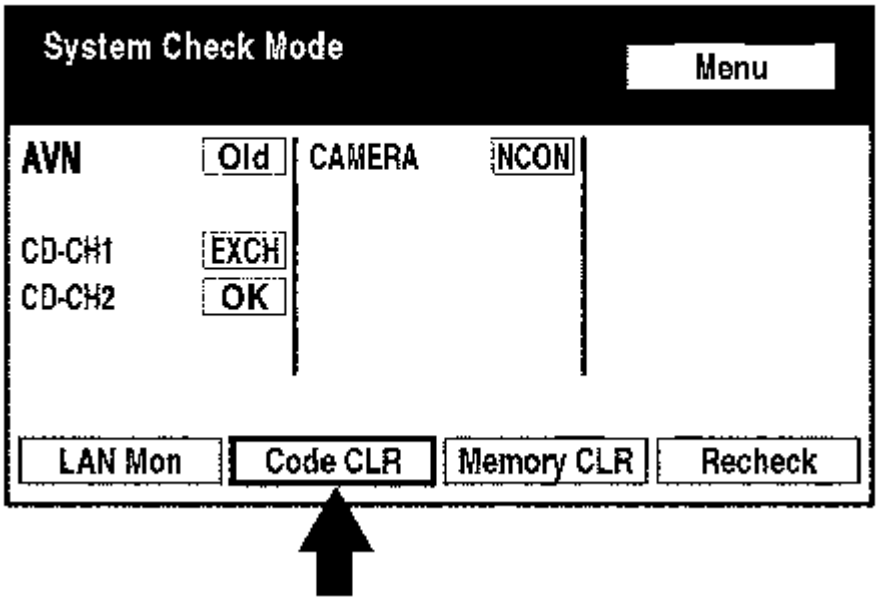


Fig. 77: Display - Sub-Code (Relevant Device)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

5. **DTC CLEAR/RECHECK**
   a. Clear DTC

Example:



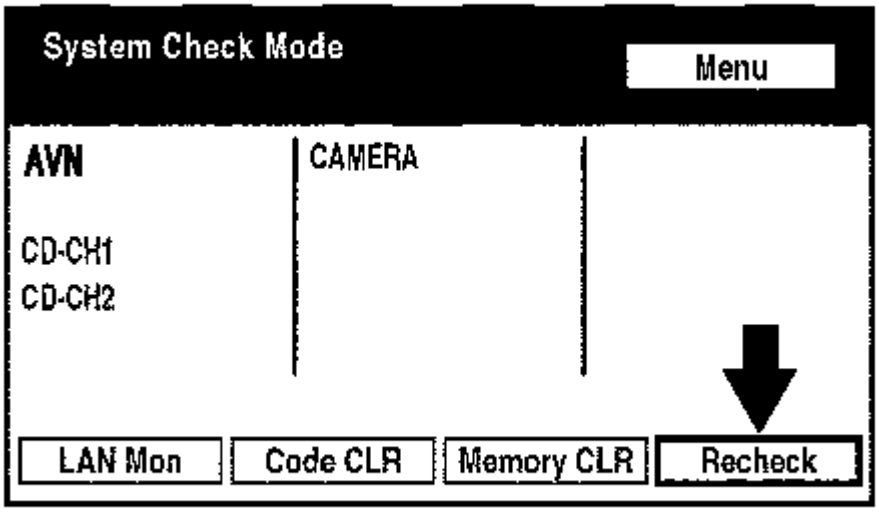
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Fig. 78: "Code CLR" Switch
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

1. Press the "Code CLR" switch for 3 seconds.
2. The check results are cleared.

b. Recheck

Example:



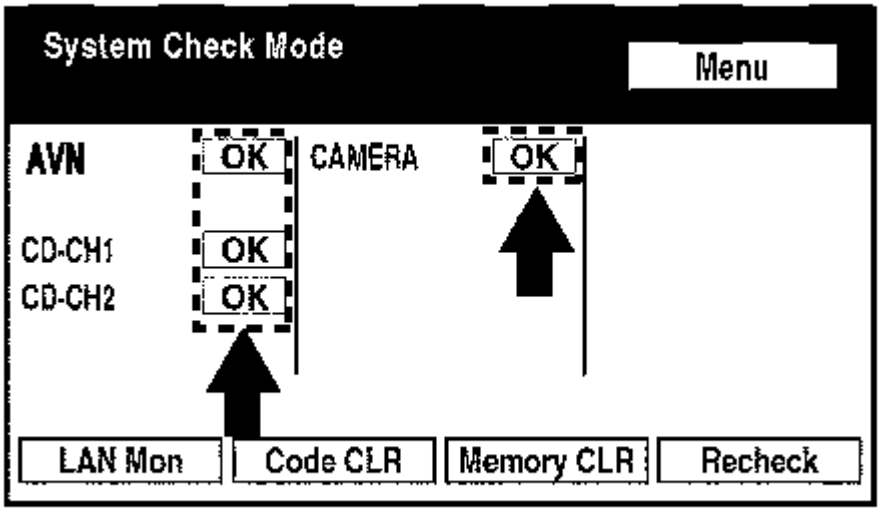
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Fig. 79: "Recheck" Switch

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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.

Example:

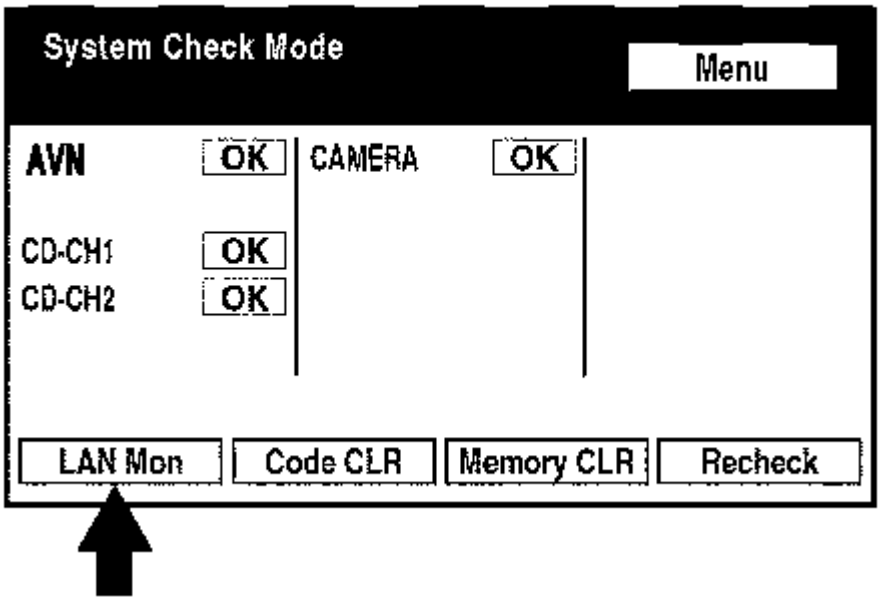


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Fig. 80: Confirm That All Diagnostic Codes Are "OK"
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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

Example:

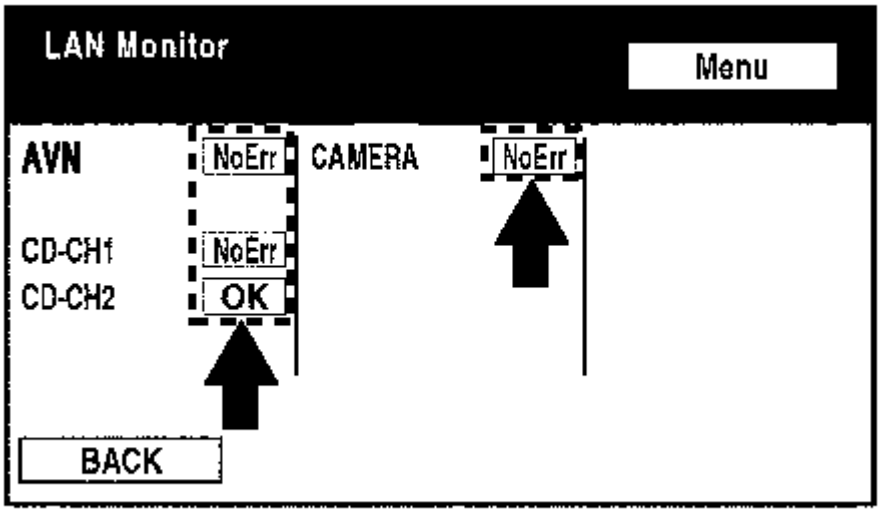


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Fig. 81: "LAN Mon" Switch
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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

Example:



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Fig. 82: "No Err" Is Displayed
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

DIAGNOSTIC TROUBLE CODE CHART

DIAGNOSTIC TROUBLE CODE CHART

HINT:

If a trouble code is displayed during the DTC check, inspect the trouble areas listed for that code. For details of the code, refer to appropriate information below.

COMMUNICATION FUNCTION

DTC Code	Detection Item	Trouble Area	See
01-21	ROM Error	Navigation receiver assembly	Refer to **DTC 01-21: ROM Error; DTC 01-22: RAM Error**
01-22	RAM Error	Navigation receiver assembly	Refer to **DTC 01-21: ROM Error; DTC 01-22: RAM Error**

SWITCH FUNCTION

DTC Code	Detection Item	Trouble Area	See
21-10	Panel Switch Error	Navigation receiver assembly	Refer to **DTC 21-10: Panel Switch Error; DTC 21-11: Touch Switch Error; DTC 23-10: Panel Switch Error; DTC 23-11: Touch Switch Error; DTC 24-10: Panel Switch Error; DTC 24-11: Touch Switch Error; DTC 25-10: Panel Switch Error; DTC 25-11: Touch Switch Error**
21-11	Touch Switch Error	Navigation receiver assembly	Refer to **DTC 21-10: Panel Switch Error; DTC 21-11: Touch Switch Error; DTC 23-10: Panel Switch Error; DTC 23-11: Touch Switch Error; DTC 24-10: Panel Switch Error; DTC 24-11: Touch Switch Error; DTC 25-10: Panel Switch Error; DTC 25-11:**

			Touch Switch Error

SWITCH WITH NAME FUNCTION

DTC Code	Detection Item	Trouble Area	See
23-10	Panel Switch Error	Navigation receiver assembly	Refer to **DTC 21-10: Panel Switch Error; DTC 21-11: Touch Switch Error; DTC 23-10: Panel Switch Error; DTC 23-11: Touch Switch Error; DTC 24-10: Panel Switch Error; DTC 24-11: Touch Switch Error; DTC 25-10: Panel Switch Error; DTC 25-11: Touch Switch Error**
23-11	Touch Switch Error	Navigation receiver assembly	Refer to **DTC 21-10: Panel Switch Error; DTC 21-11: Touch Switch Error; DTC 23-10: Panel Switch Error; DTC 23-11: Touch Switch Error; DTC 24-10: Panel Switch Error; DTC 24-11: Touch Switch Error; DTC 25-10: Panel Switch Error; DTC 25-11: Touch Switch Error**

SWITCH CONVERTING FUNCTION

DTC Code	Detection Item	Trouble Area	See
24-10	Panel Switch Error	Navigation receiver assembly	Refer to **DTC 21-10: Panel Switch Error; DTC 21-11: Touch Switch Error; DTC 23-10: Panel Switch Error; DTC 23-11: Touch Switch Error; DTC 24-10: Panel Switch Error; DTC 24-11: Touch Switch Error; DTC 25-10: Panel Switch**

			Error; DTC 25-11: Touch Switch Error
24-11	Touch Switch Error	Navigation receiver assembly	Refer to **DTC 21-10: Panel Switch Error; DTC 21-11: Touch Switch Error; DTC 23-10: Panel Switch Error; DTC 23-11: Touch Switch Error; DTC 24-10: Panel Switch Error; DTC 24-11: Touch Switch Error; DTC 25-10: Panel Switch Error; DTC 25-11: Touch Switch Error**

COMMAND SWITCH FUNCTION

DTC Code	Detection Item	Trouble Area	See
25-10	Panel Switch Error	Navigation receiver assembly	Refer to **DTC 21-10: Panel Switch Error; DTC 21-11: Touch Switch Error; DTC 23-10: Panel Switch Error; DTC 23-11: Touch Switch Error; DTC 24-10: Panel Switch Error; DTC 24-11: Touch Switch Error; DTC 25-10: Panel Switch Error; DTC 25-11: Touch Switch Error**
25-11	Touch Switch Error	Navigation receiver assembly	Refer to **DTC 21-10: Panel Switch Error; DTC 21-11: Touch Switch Error; DTC 23-10: Panel Switch Error; DTC 23-11: Touch Switch Error; DTC 24-10: Panel Switch Error; DTC 24-11: Touch Switch Error; DTC 25-10: Panel Switch Error; DTC 25-11: Touch Switch Error**

FRONT MONITOR FUNCTION

DTC Code	Detection Item	Trouble Area	See
34-10	Error in Picture Circuit	Navigation receiver assembly	Refer to **DTC 34-10: Error in Picture Circuit; DTC 34-11: No Current in Back-light; DTC 34-12: Excess Current in Back-light**
34-11	No Current in Back-light	Navigation receiver assembly	Refer to **DTC 34-10: Error in Picture Circuit; DTC 34-11: No Current in Back-light; DTC 34-12: Excess Current in Back-light**
34-12	Excess Current in Back-light	Navigation receiver assembly	Refer to **DTC 34-10: Error in Picture Circuit; DTC 34-11: No Current in Back-light; DTC 34-12: Excess Current in Back-light**
58-10	Gyro Error	Navigation receiver assembly (Gyro sensor)	Refer to **DTC 58-10: Gyro Error; DTC 80-10: Gyro Error**
58-11	GPS Receiver Error	Navigation receiver assembly	Refer to **DTC 58-11: GPS Receiver Error; DTC 80-11: GPS Receiver Error**
58-40	GPS Antenna Error	- Navigation antenna assembly - Navigation receiver assembly	Refer to **DTC 58-40: GPS Antenna Error; DTC 58-41: GPS Antenna Power Source Error; DTC 80-40: GPS Antenna Error; DTC 80-41: GPS Antenna Power Source Error**
58-41	GPS Antenna Power Source Error	- Navigation antenna assembly - Navigation receiver assembly	Refer to **DTC 58-40: GPS Antenna Error; DTC 58-41: GPS Antenna Power Source Error; DTC 80-40: GPS Antenna Error; DTC 80-41: GPS Antenna Power Source Error**
58-42	Map Disc Read Error	- Map disc - Navigation receiver assembly	Refer to **DTC 58-42: Map Disc Read Error; DTC 80-42: Map Disc Read Error**
58-43	SPD Signal Error	- Speed signal circuit - Navigation receiver assembly	Refer to **DTC 58-43: SPD Signal Error; DTC 80-43: SPD Signal Error**
58-44	Player Error	Navigation receiver assembly	Refer to **DTC 58-44: Player Error; DTC 80-44: Player Error**
58-45	High Temperature	Navigation receiver assembly	Refer to **DTC 58-45: High Temperature; DTC 80-45: High Temperature**

TELEVISION CAMERA FUNCTION

DTC Code	Detection Item	Trouble Area	See
5C-40	Camera Picture Error	- Harness or connector - Television camera assembly - Navigation receiver assembly	Refer to **DTC 5C-40: Camera Picture Error**

RADIO FUNCTION

DTC Code	Detection Item	Trouble Area	See
60-10	AM Tuner PLL does not Lock	Navigation receiver assembly	Refer to **DTC 60-10: AM Tuner PLL does not Lock; DTC 60-11: FM Tuner PLL does not Lock**
60-11	FM Tuner PLL does not Lock	Navigation receiver assembly	Refer to **DTC 60-10: AM Tuner PLL does not Lock; DTC 60-11: FM Tuner PLL does not Lock**
60-42	Tuner Power Source Error	Navigation receiver assembly	Refer to **DTC 60-42: Tuner Power Source Error; DTC 60-43: AM Tuner Error; DTC 60-44: FM Tuner Error; DTC 60-50: Malfunction in Internal IC**
60-43	AM Tuner Error	Navigation receiver assembly	Refer to **DTC 60-42: Tuner Power Source Error; DTC 60-43: AM Tuner Error; DTC 60-44: FM Tuner Error; DTC 60-50: Malfunction in Internal IC**
60-44	FM Tuner Error	Navigation receiver assembly	Refer to **DTC 60-42: Tuner Power Source Error; DTC 60-43: AM Tuner Error; DTC 60-44: FM Tuner Error; DTC 60-50: Malfunction in Internal IC**
60-50	Malfunction in Internal IC	Navigation receiver assembly	Refer to **DTC 60-42: Tuner Power Source Error; DTC 60-43: AM Tuner Error; DTC 60-44: FM Tuner Error; DTC 60-50: Malfunction in Internal IC**

CD PLAYER

DTC Code	Detection Item	Trouble Area	See
62-10	CD Player Mechanical Error	Navigation receiver assembly	Refer to **DTC 62-10: CD Player Mechanical Error; DTC 62-11: CD Insertion and Ejection Error; DTC 62-12: CD**

			Reading Abnormal
62-11	CD Insertion and Ejection Error	Navigation receiver assembly	Refer to **DTC 62-10: CD Player Mechanical Error; DTC 62-11: CD Insertion and Ejection Error; DTC 62-12: CD Reading Abnormal**
62-12	CD Reading Abnormal	Navigation receiver assembly	Refer to **DTC 62-10: CD Player Mechanical Error; DTC 62-11: CD Insertion and Ejection Error; DTC 62-12: CD Reading Abnormal**
62-41	Wrong Disc	- Disc - Navigation receiver assembly	Refer to **DTC 62-41: Wrong Disc; DTC 62-42: Disc cannot be Read**
62-42	Disc cannot be Read	- Disc - Navigation receiver assembly	Refer to **DTC 62-41: Wrong Disc; DTC 62-42: Disc cannot be Read**
62-43	CD-ROM Abnormal	- CD - Navigation receiver assembly	Refer to **DTC 62-43: CD-ROM Abnormal**
62-44	CD Abnormal	Navigation receiver assembly	Refer to **DTC 62-44: CD Abnormal; DTC 62-48: Excess Current; DTC 62-50: Tray Insertion / Ejection Error**
62-45	Eject Error	Navigation receiver assembly	Refer to **DTC 62-45: Eject Error; DTC 62-51: Elevator Error; DTC 62-52: Clamp Error**
62-46	Scratched / Reversed Disc	- Disc - Navigation receiver assembly	Refer to **DTC 62-46: Scratched / Reversed Disc**
62-47	High Temperature	Navigation receiver assembly	Refer to **DTC 62-47: High Temperature**
62-48	Excess Current	Navigation receiver assembly	Refer to **DTC 62-44: CD Abnormal; DTC 62-48: Excess Current; DTC 62-50: Tray Insertion / Ejection Error**
62-50	Tray Insertion / Ejection Error	Navigation receiver assembly	Refer to **DTC 62-44: CD Abnormal; DTC 62-48: Excess Current; DTC 62-50: Tray Insertion / Ejection Error**
62-51	Elevator Error	Navigation receiver assembly	Refer to **DTC 62-45: Eject Error; DTC 62-51: Elevator Error; DTC 62-52: Clamp Error**
			Refer to **DTC 62-45: Eject**

62-52	Clamp Error	Navigation receiver assembly	**Error; DTC 62-51: Elevator Error; DTC 62-52: Clamp Error**
62-78	DSP Error	Navigation receiver assembly	Refer to **DTC 62-78: DSP Error**
62-7D	Disc cannot be Played	- Disc - Navigation receiver assembly	Refer to **DTC 62-7D: Disc cannot be Played; DTC 62-7E: No Playable Files; DTC 62-7F: Copyright Protection Error**
62-7E	No Playable Files	- Disc - Navigation receiver assembly	Refer to **DTC 62-7D: Disc cannot be Played; DTC 62-7E: No Playable Files; DTC 62-7F: Copyright Protection Error**
62-7F	Copyright Protection Error	- Disc - Navigation receiver assembly	Refer to **DTC 62-7D: Disc cannot be Played; DTC 62-7E: No Playable Files; DTC 62-7F: Copyright Protection Error**

GPS FUNCTION

DTC Code	Detection Item	Trouble Area	See
80-10	Gyro Error	Navigation receiver assembly (Gyro sensor)	Refer to **DTC 58-10: Gyro Error; DTC 80-10: Gyro Error**
80-11	GPS Receiver Error	Navigation receiver assembly	Refer to **DTC 58-11: GPS Receiver Error; DTC 80-11: GPS Receiver Error**
80-40	GPS Antenna Error	- Navigation antenna assembly - Navigation receiver assembly	Refer to **DTC 58-40: GPS Antenna Error; DTC 58-41: GPS Antenna Power Source Error; DTC 80-40: GPS Antenna Error; DTC 80-41: GPS Antenna Power Source Error**
80-41	GPS Antenna Power Source Error	- Navigation antenna assembly - Navigation receiver assembly	Refer to **DTC 58-40: GPS Antenna Error; DTC 58-41: GPS Antenna Power Source Error; DTC 80-40: GPS Antenna Error; DTC 80-41: GPS Antenna Power Source Error**
80-42	Map Disc Read Error	- Disc - Navigation receiver assembly	Refer to **DTC 58-42: Map Disc Read Error; DTC 80-42: Map Disc Read Error**
80-43	SPD Signal Error	- Speed signal circuit - Navigation receiver assembly	Refer to **DTC 58-43: SPD Signal Error; DTC 80-43: SPD Signal Error**
		Navigation receiver	Refer to **DTC 58-44: Player**

80-44	Player Error	assembly	**Error; DTC 80-44: Player Error**
80-45	High Temperature	Navigation receiver assembly	Refer to **DTC 58-45: High Temperature; DTC 80-45: High Temperature**

XM TUNER

DTC Code	Detection Item	Trouble Area	See
C0-11	Satellite Radio Tuner Internal Circuit Error 1	Stereo component tuner assembly	Refer to **DTC C0-11: Satellite Radio Tuner Internal Circuit Error 1; DTC C0-12: Satellite Radio Tuner Internal Circuit Error 2; DTC C0-13: Satellite Radio Tuner Internal Circuit Error 3; DTC C0-14: Satellite Radio Tuner Internal Circuit Error 4; DTC C0-15: Satellite Radio Tuner Internal Circuit Error 5; DTC C0-16: Satellite Radio Tuner Internal Circuit Error 6**
C0-12	Satellite Radio Tuner Internal Circuit Error 2	Stereo component tuner assembly	Refer to **DTC C0-11: Satellite Radio Tuner Internal Circuit Error 1; DTC C0-12: Satellite Radio Tuner Internal Circuit Error 2; DTC C0-13: Satellite Radio Tuner Internal Circuit Error 3; DTC C0-14: Satellite Radio Tuner Internal Circuit Error 4; DTC C0-15: Satellite Radio Tuner Internal Circuit Error 5; DTC C0-16: Satellite Radio Tuner Internal Circuit Error 6**
C0-13	Satellite Radio Tuner Internal Circuit Error 3	Stereo component tuner assembly	Refer to **DTC C0-11: Satellite Radio Tuner Internal Circuit Error 1; DTC C0-12: Satellite Radio Tuner Internal Circuit Error 2; DTC C0-13: Satellite Radio Tuner Internal Circuit Error 3; DTC C0-14: Satellite Radio Tuner Internal Circuit Error 4; DTC C0-15: Satellite Radio Tuner Internal Circuit Error 5; DTC C0-16: Satellite Radio Tuner Internal Circuit Error 6**
			Refer to **DTC C0-11: Satellite**

C0-14	Satellite Radio Tuner Internal Circuit Error 4	Stereo component tuner assembly	**Radio Tuner Internal Circuit Error 1; DTC C0-12: Satellite Radio Tuner Internal Circuit Error 2; DTC C0-13: Satellite Radio Tuner Internal Circuit Error 3; DTC C0-14: Satellite Radio Tuner Internal Circuit Error 4; DTC C0-15: Satellite Radio Tuner Internal Circuit Error 5; DTC C0-16: Satellite Radio Tuner Internal Circuit Error 6**
C0-15	Satellite Radio Tuner Internal Circuit Error 5	Stereo component tuner assembly	Refer to **DTC C0-11: Satellite Radio Tuner Internal Circuit Error 1; DTC C0-12: Satellite Radio Tuner Internal Circuit Error 2; DTC C0-13: Satellite Radio Tuner Internal Circuit Error 3; DTC C0-14: Satellite Radio Tuner Internal Circuit Error 4; DTC C0-15: Satellite Radio Tuner Internal Circuit Error 5; DTC C0-16: Satellite Radio Tuner Internal Circuit Error 6**
C0-16	Satellite Radio Tuner Internal Circuit Error 6	Stereo component tuner assembly	Refer to **DTC C0-11: Satellite Radio Tuner Internal Circuit Error 1; DTC C0-12: Satellite Radio Tuner Internal Circuit Error 2; DTC C0-13: Satellite Radio Tuner Internal Circuit Error 3; DTC C0-14: Satellite Radio Tuner Internal Circuit Error 4; DTC C0-15: Satellite Radio Tuner Internal Circuit Error 5; DTC C0-16: Satellite Radio Tuner Internal Circuit Error 6**
C0-40	Antenna not Connected	- Antenna cord sub-assembly - Satellite radio antenna assembly - Stereo component tuner assembly	Refer to **DTC C0-40: Antenna not Connected; DTC C0-41: Antenna Shorted**
C0-41	Antenna Shorted	- Antenna cord sub-assembly - Satellite radio antenna assembly - Stereo component tuner	Refer to **DTC C0-40: Antenna not Connected; DTC C0-41: Antenna Shorted**

		assembly	

NAVIGATION SYSTEM (FOR DVD WITH USB AUDIO SYSTEM)

PRECAUTION

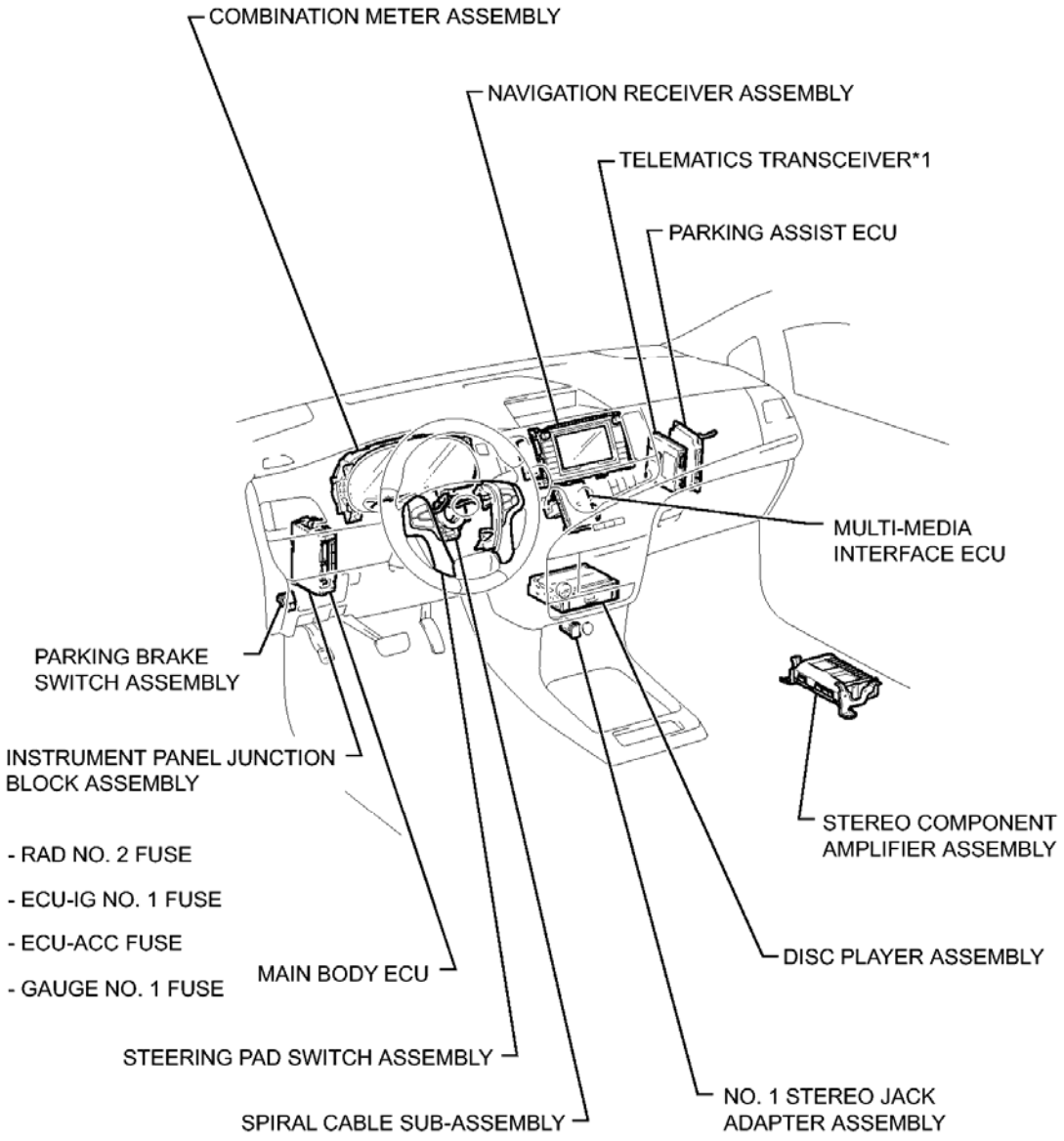
PRECAUTION

1. **IGNITION SWITCH EXPRESSIONS**
   a. The type of ignition switch used on this model differs according to the specifications of the vehicle. The expressions listed in the table below are used in this information.

Expression	Ignition Switch (Position)	Engine Switch (Condition)
Ignition switch off	LOCK	Off
Ignition switch ACC	ACC	On (ACC)
Ignition switch ON	ON	On (IG)
Engine start	START	Start

PARTS LOCATION

ILLUSTRATION

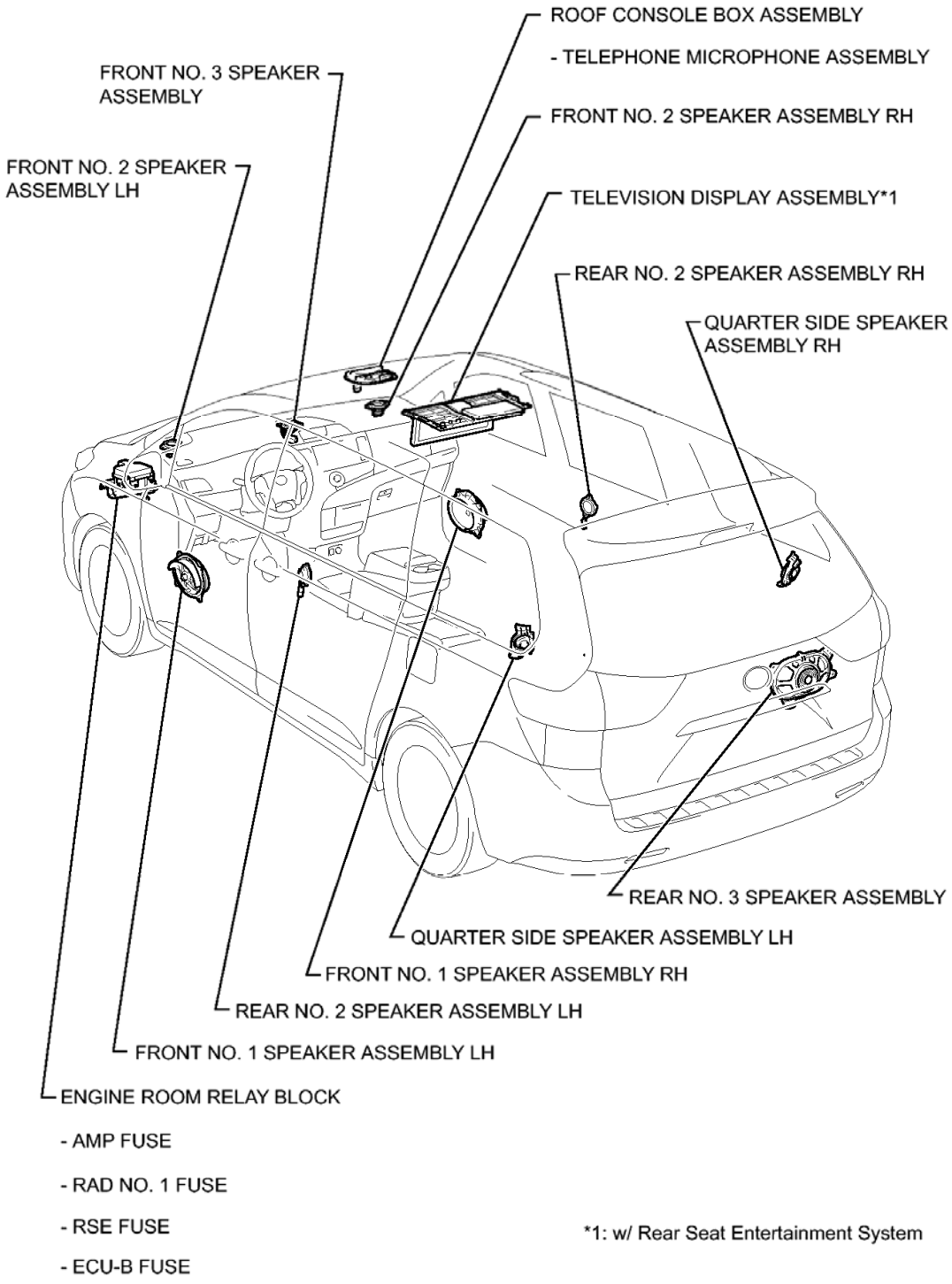


*1: w/ Safety Connect System

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Fig. 1: Navigation System Components Location (1 Of 3)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

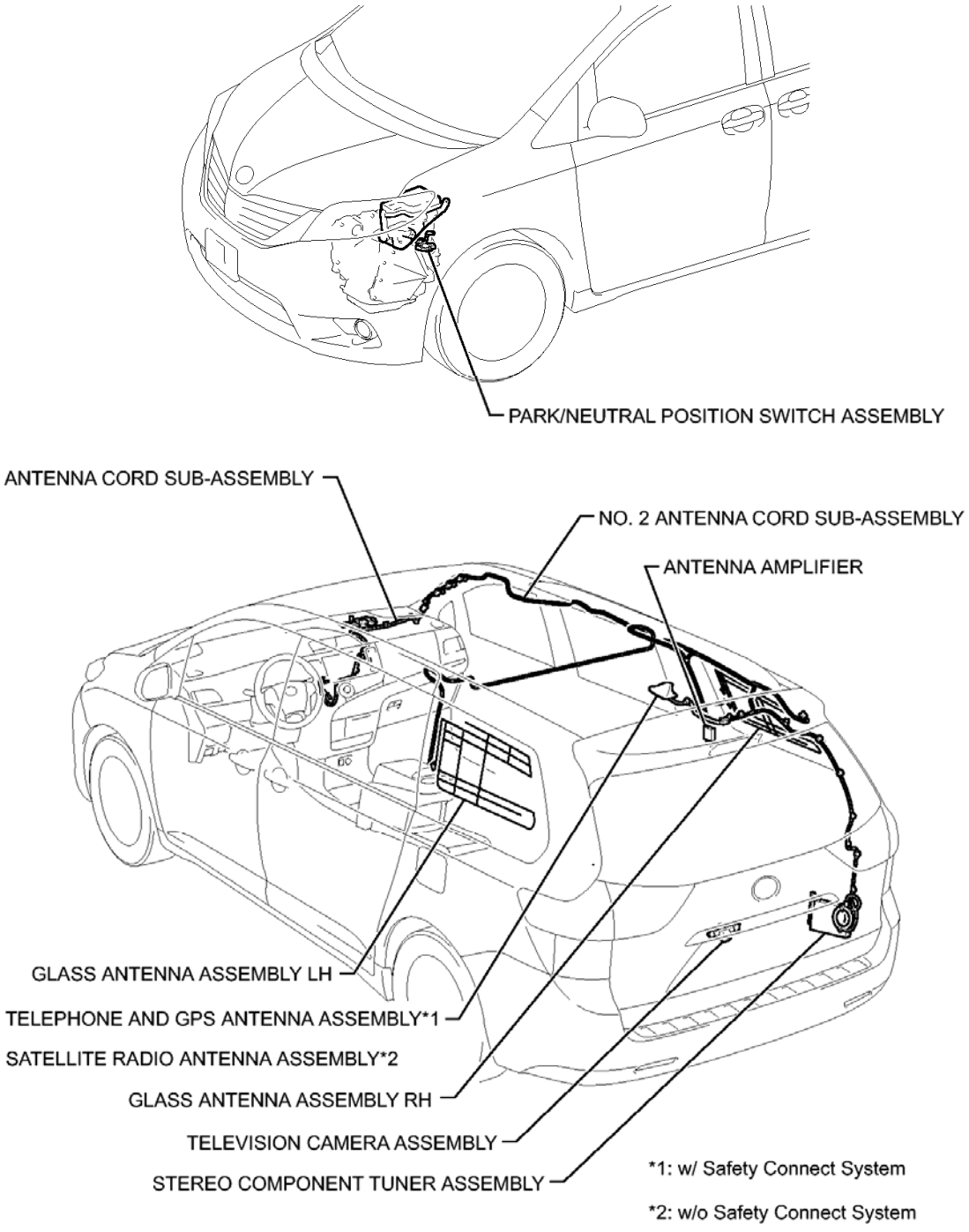
ILLUSTRATION



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Fig. 2: Navigation System Components Location (2 Of 3)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

ILLUSTRATION



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Fig. 3: Navigation System Components Location (3 Of 3)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

SYSTEM DIAGRAM

SYSTEM DIAGRAM

1. SYSTEM DIAGRAM

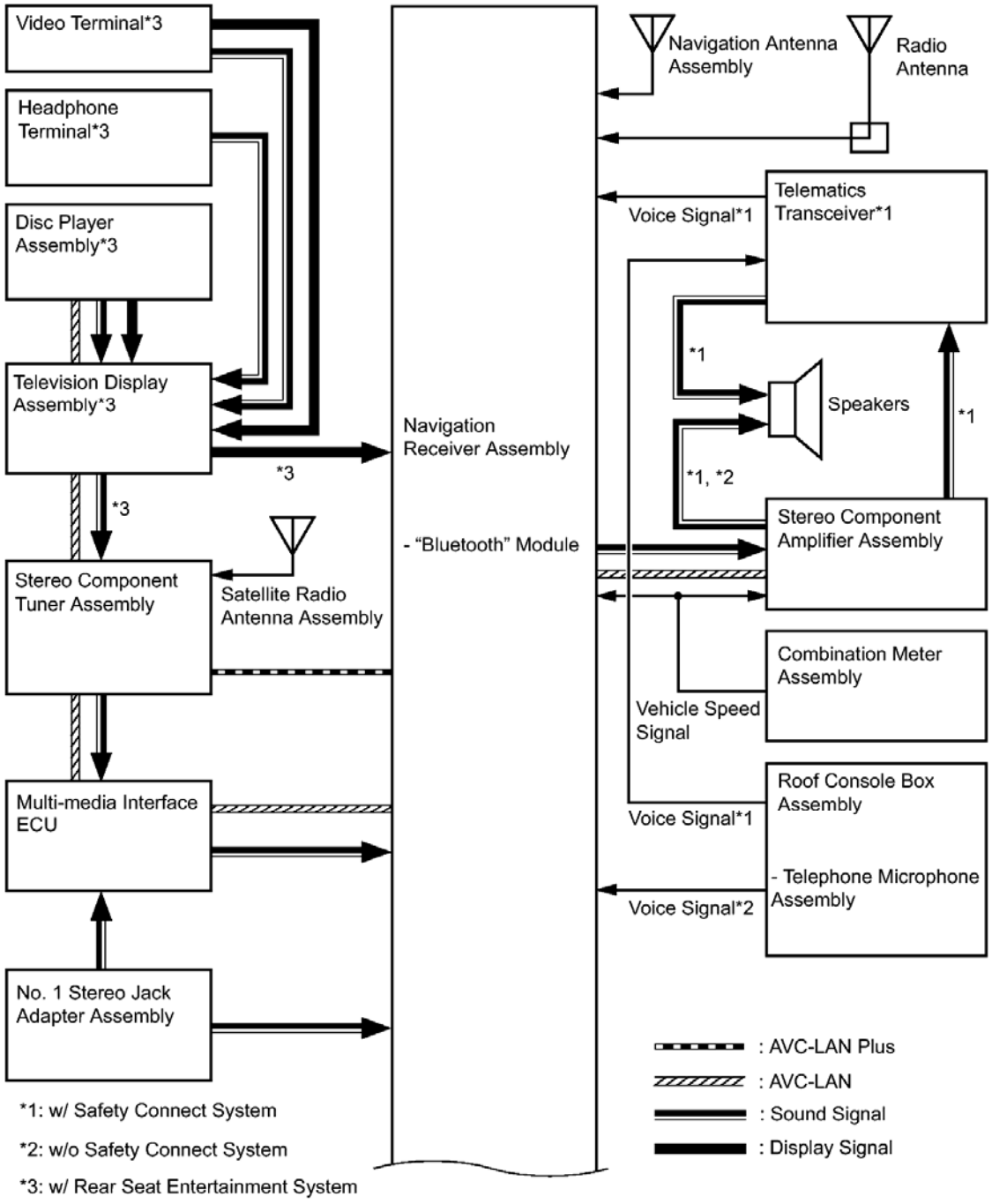


Fig. 4: Navigation System Diagram (1 Of 2)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

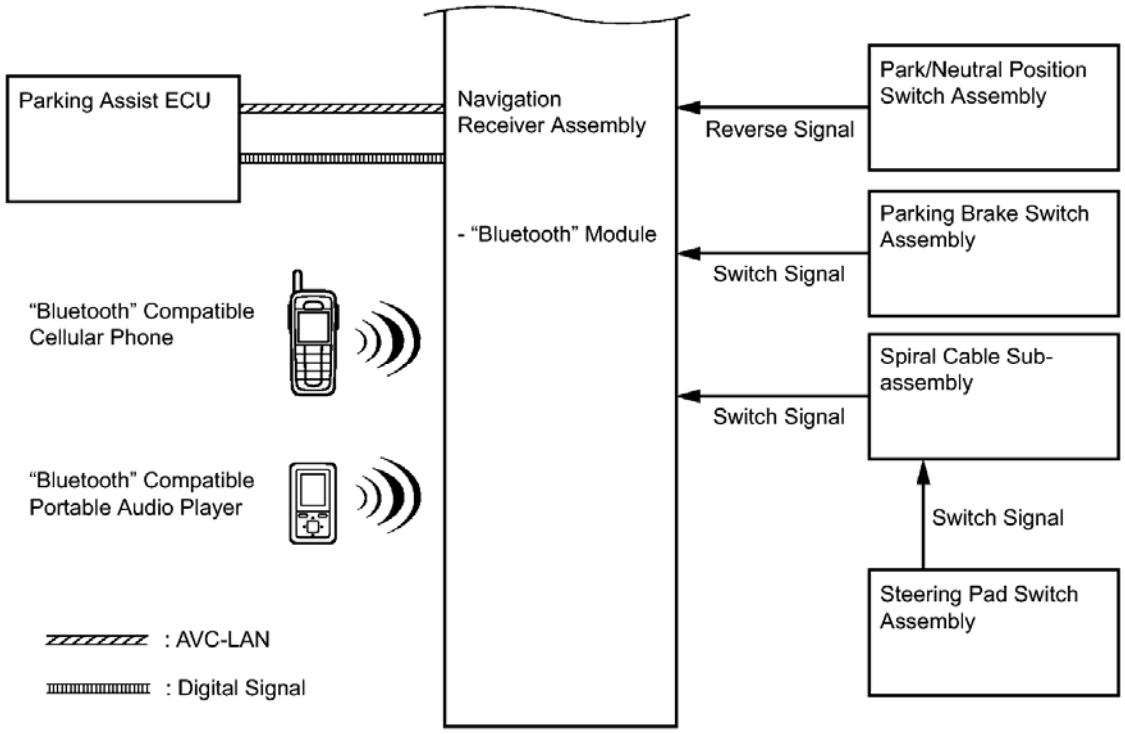


Fig. 5: Navigation System Diagram (2 Of 2)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

SYSTEM DESCRIPTION

SYSTEM DESCRIPTION

1. **NAVIGATION RECEIVER ASSEMBLY OUTLINE**
    a. Conventionally, 2 separate devices, a "radio and display" and a "navigation ECU" are used. This model combines these devices into a single unit.

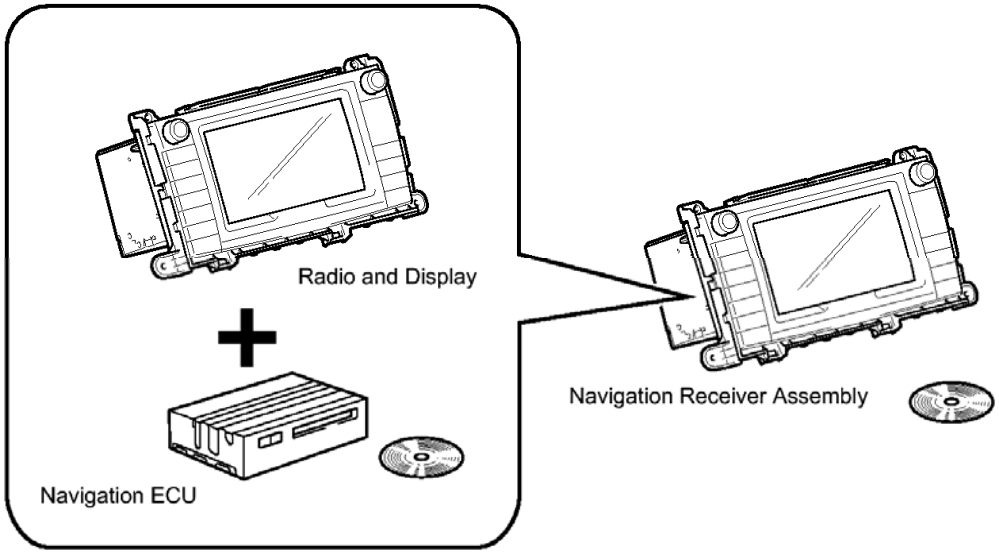
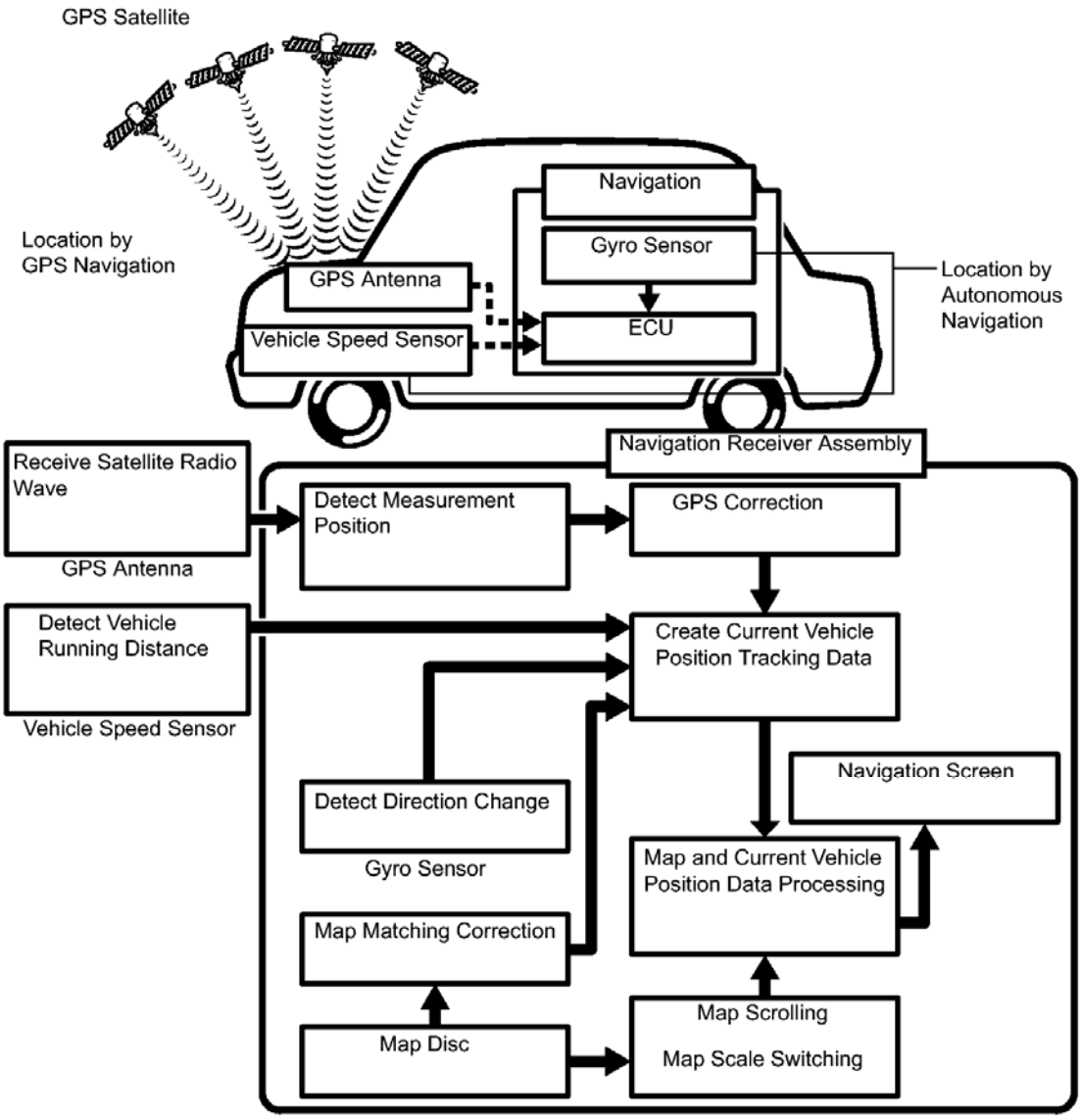


Fig. 6: Identifying Navigation Receiver Assembly Outline
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

2. **NAVIGATION SYSTEM OUTLINE**
    a. Vehicle position tracking methods
        1. 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.

            HINT:

            *: GPS (Global Positioning System)



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Fig. 7: Navigation System Outline (Vehicle Position Tracking Method)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

Operation	Description
	The navigation receiver assembly calculates the current vehicle position (direction

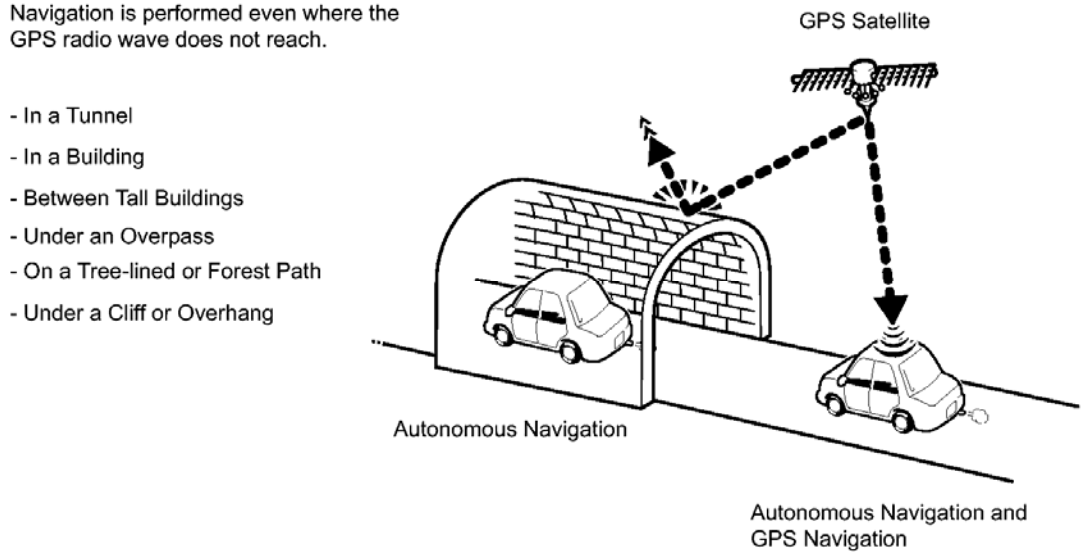
Vehicle Position Calculation	and current position) using the direction deviation signal from the gyro sensor and the running distance signal from the vehicle speed sensor and creates the driving route.
Map Display Processing	The navigation receiver assembly processes the vehicle position data, vehicle 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.
	The vehicle position is matched to the position measured by

GPS Correction	GPS. Then, the GPS measurement position data 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 receiver assembly 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 be received. When only autonomous navigation is used, the mapping accuracy may slightly decline.



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Fig. 8: Identifying Autonomous And GPS Navigation
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

b. Autonomous navigation

This method determines the relative vehicle position based on the running track determined by the gyro and vehicle speed sensors.

1. Gyro sensor

   Calculates the direction by detecting angular velocity. It is located in the navigation receiver assembly.

2. Vehicle speed sensor

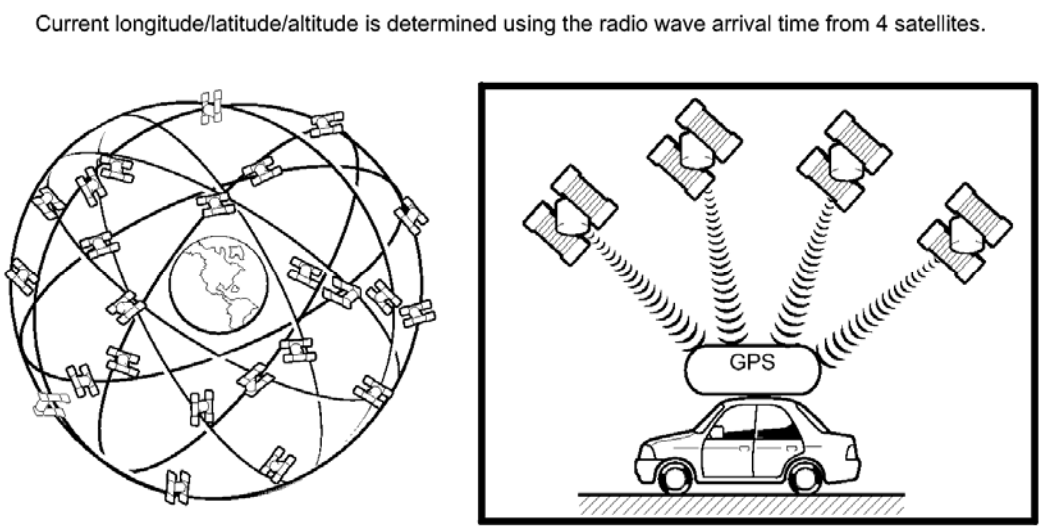
Used to calculate the vehicle running distance.

c. GPS navigation (satellite navigation)

This method detects the absolute vehicle position using radio waves from a GPS satellite*.

HINT:

*: GPS satellites were launched by the U.S. Department of Defense for military purposes.



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Fig. 9: Vehicle Position Using Radio Waves From A GPS Satellite
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

Number of satellites	Measurement	Description
2 or less	Measurement impossible	The vehicle position cannot be obtained because the number of satellites is not enough.
3	2-dimensional measurement	The vehicle position is obtained based on current longitude and

	is possible	latitude (this is less precise than 3-dimensional measurement).
4	3-dimensional measurement is possible	The vehicle position is obtained based on current longitude, latitude and altitude.

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.

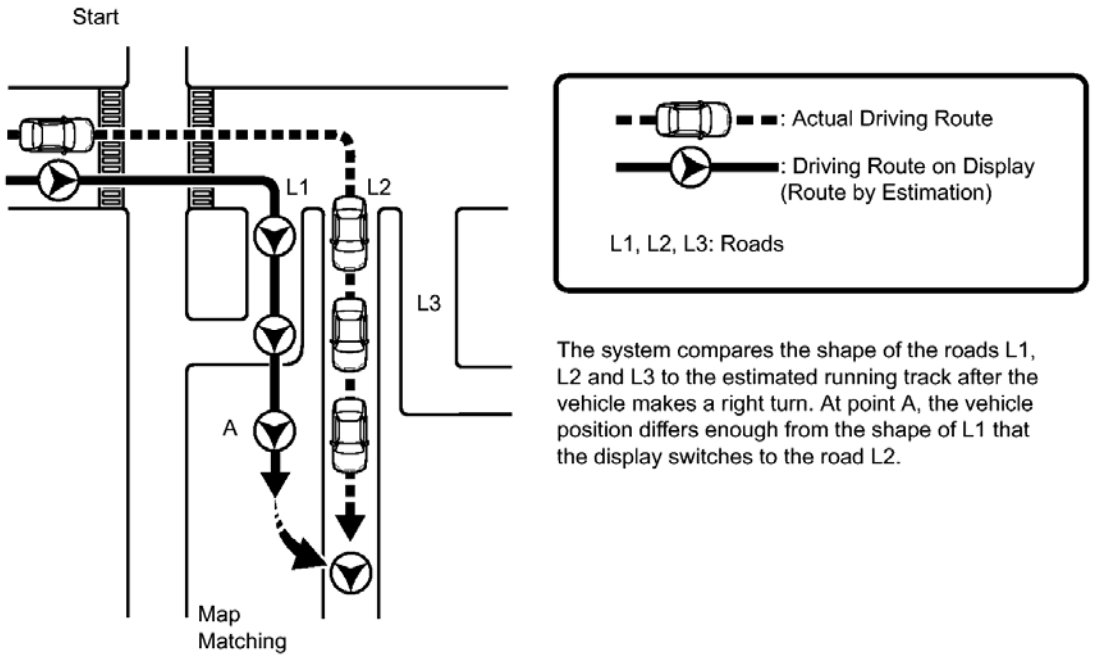
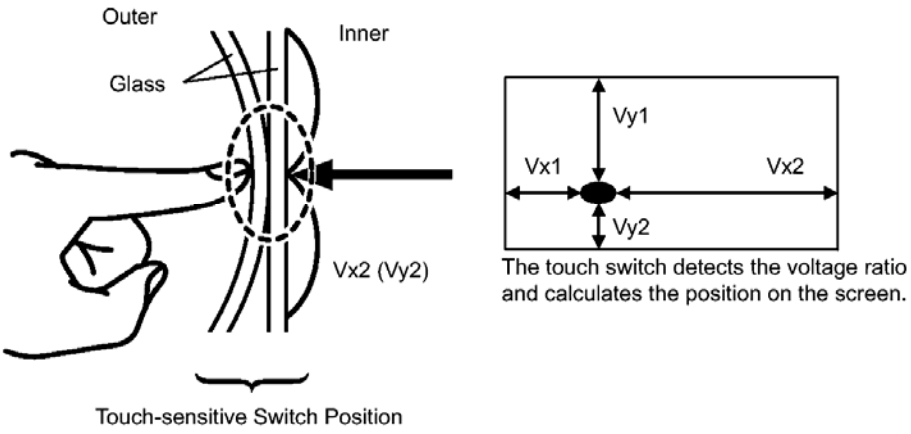


Fig. 10: Identifying GPS Map Matching Function
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

3. **TOUCH SCREEN OUTLINE**
   a. Touch switches are touch-sensitive (interactive) switches operated by touching the screen. When a

switch is pressed, the outer glass bends to contact the inner glass at the pressed position. By doing this, the voltage ratio is measured and the pressed position is detected.



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Fig. 11: Identifying Touch Screen Outline
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

4. **DVD (Digital Versatile Disc) PLAYER OUTLINE (for Navigation Map)**
   a. The navigation receiver assembly uses a laser pickup to read the digital signals recorded on a DVD.

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

NOTE:

- **Do not disassemble any part of the navigation receiver assembly.**
- **Do not apply oil to the navigation receiver assembly.**
- **Do not insert anything but a DVD into the navigation receiver assembly.**

5. **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 content.

WARNING: Do not look directly at the laser pickup because the CD player uses an invisible laser beam. Be sure to operate the player only as instructed.

NOTE:

- **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.**

b. Usable discs

1. This player can play only audio CDs, CD-Rs (CD-Recordable), and CD-RWs (CD-ReWritable) that have any of the following marks:



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Fig. 12: Identifying Disc Player Outline
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

c. Precautions for use of discs

NOTE:

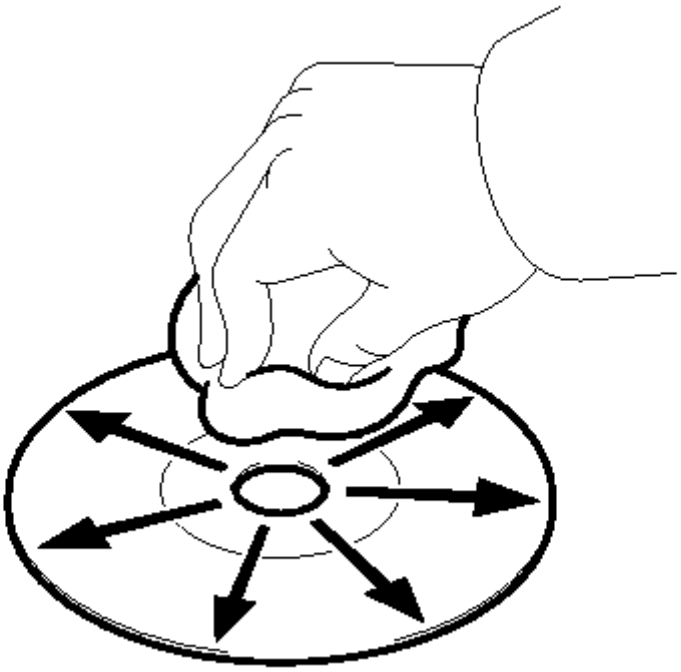
- **Copy-protected CDs cannot be played.**
- **CD-Rs and CD-RWs may not be played depending on the recording conditions or characteristics of the discs, or due to damage, dirt or deterioration caused by leaving the discs in the cabin for a long time.**
- **Unfinalized CD-Rs and CD-RWs cannot be played.**
- **DualDiscs that combine DVD recorded material on one side with CD digital audio material on the other cannot be played.**
- **Keep the discs away from dirt. Be careful not to damage the discs or leave your fingerprints on them.**
- **Hold discs by the outer edge and center hole with the label side up.**
- **Leaving the disc exposed halfway out of the slot for a long time after pressing the disc eject button may cause deformation of the disc, making the disc unusable.**
- **If discs have adhesive tape, stickers, CD labels or any traces of such labels attached, the discs may not be ejected or player malfunctions may result.**
- **Keep the discs away from direct sunlight. (Exposure to direct sunlight may cause deformation of the disc, making the disc unusable.)**
- **Do not use odd-shaped CDs because these may cause player malfunctions.**

- **Do not use discs whose recording portion is transparent or translucent because they may not be inserted, ejected or played normally.**

HINT:

- When it is cold or it is raining, if the windows mist up, mist and condensation may form in the player. In such cases, the CD may skip or stop in the middle of play. Ventilate or dehumidify the cabin for a while before using the player.
- The CD may skip if the player experiences strong vibrations when the vehicle is driven on rough roads or similar uneven surface(s).

d. Cleaning



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Fig. 13: Cleaning Disc Surface With Soft Dry Cloth
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

NOTE: Do not use a lens cleaner because it may cause a malfunction in the pickup portion of the player.

1. If dirt is on the disc surface, wipe it clean with a soft dry cloth such as an eyeglass cleaner for plastic lenses from the inside to the outside in a radial direction.

NOTE:

- **Pressing on the disc by hand or rubbing the disc with a hard cloth may scratch the disc surface.**
- **Use of solvent such as a record spray, antistatic agent,**

alcohol, benzine, and thinner or a chemical cloth may cause damage to the disc, making the disc unusable.

6. **MP3/WMA OUTLINE**
   a. Playable MP3 file standards

Compatible Standard	**MP3 (MPEG1 LAYER3, MPEG2 LSF LAYER3)**
Compatible sampling frequency	• MPEG1 LAYER3: 44.1, 48 (kHz) • MPEG2 LSF LAYER3: 16, 22.05, 24 (kHz)
Compatible bit rate	• MPEG1 LAYER3: 64, 80, 96, 112, 128, 160, 192, 224, 256, 320 (kbps) • MPEG2 LSF LAYER3: 64, 80, 96, 112, 128, 144, 160 (kbps) • Compatible with VBR
Compatible channel mode	Stereo, joint stereo, dual channel, monaural

   b. Playable WMA file standards

Compatible Standard	**WMA Ver. 7, 8, and 9**
Compatible	

sampling frequency	44.1, 48 (kHz)
Compatible bit rate	• Ver. 7, 8: CBR48, 64, 80, 96, 128, 160, 192 (kbps) • Ver. 9: CBR48, 64, 80, 96, 128, 160, 192, 256, 320 (kbps) • Compatible with playback of channel 2 only

c. ID3 tag and WMA tag

1. Additional textual information called ID3 tag can be input to MP3 files. Information such as song titles and artist names can be stored.

   HINT:

   This player is compatible with the ID3 tags of ID3 Ver. 1.0 and 1.1, and ID3 Ver. 2.2 and 2.3. (Number of characters complies with ID3 Ver. 1.0 and 1.1.)

2. Additional textual information called WMA tag can be input to WMA files. Information such as song titles and artist names can be stored.

d. Usable media

1. Only CD-ROMs, CD-Rs (CD-Recordable), and CD-RWs (CD-ReWritable) can be used to play MP3/WMA files.

   NOTE:

   - **CD-Rs and CD-RWs are more easily affected by a hot and humid environment than discs used for normal audio CDs. For this reason, some CD-Rs and CD-RWs do not play.**
   - **If there are fingerprints or scratches on a disc, the disc may not play or the CD may skip.**
   - **Some CD-Rs and CD-RWs may deteriorate if they are left in the cabin for a long time.**
   - **Keep CD-Rs and CD-RWs in an opaque case.**

e. Usable media format

1. Usable media format

Disc format	CD-ROM Mode 1, CD-ROM XA Mode 2 Form 1
File format	ISO9660 Level 1 and Level 2 (Joliet, Romeo)

HINT:

- As for MP3/WMA files written in any unlisted format, the contents of the files may not be played normally or the file names or folder names may not be displayed correctly.
- This player is compatible with multi-session discs and can play CD-Rs and CD-RWs on which MP3/WMA files are added. However, only the first session can be played.
- Discs whose first session includes both music data and MP3 or WMA format data cannot be played.

2. Standard and restrictions

Maximum directory levels	8 levels
Maximum number of characters for a folder name/file name	32 characters
Maximum number of folders	192 (Including empty folders, the route folder, and folders that do not contain

	MP3/WMA files)
Maximum number of files in a disc	255 (Including non-MP3/WMA files)

f. File names

1. Only files with an extension of ".mp3" or ".wma" can be recognized and played as MP3 or WMA files.
2. Save MP3 or WMA files with an extension of ".mp3" or ".wma".

NOTE: If saving non-MP3 or non-WMA files with an extension of ".mp3" or ".wma", those files are wrongly recognized as MP3 or WMA files and played. A loud noise may occur and damage to the speaker may result.

7. **"BLUETOOTH" OUTLINE**

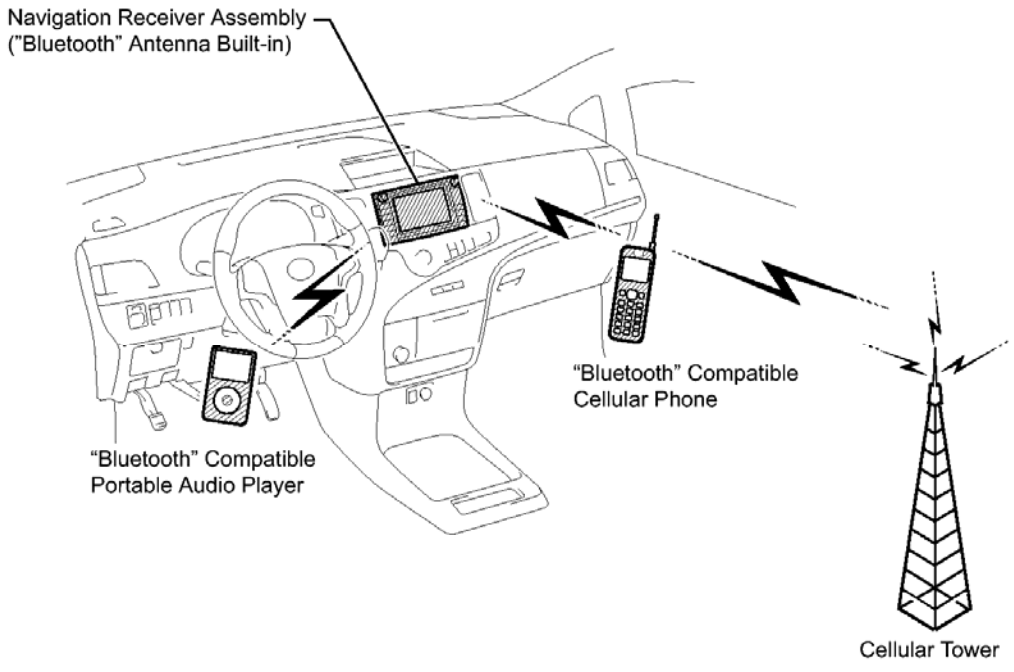


Fig. 14: Identifying Bluetooth Outline
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

a. "Bluetooth" is a trademark owned by Bluetooth SIG. Inc.
b. "Bluetooth" is a new wireless connection technology that uses the 2.4 GHz frequency band.

HINT:

The communication performance of "Bluetooth" may vary depending on obstructions or radio wave conditions between communication devices, electromagnetic radiation, communication device sensitivity or antenna capacity.

c. Handsfree function

1. The "Bluetooth" built into the navigation receiver assembly and a "Bluetooth" compatible cellular phone* can be connected using a "Bluetooth" wireless connection. This enables use of the handsfree function on the cellular phone even though the phone may be in a pocket or bag. For this reason, it is not necessary to use a connector or cable to connect the cellular phone.

   *: Some versions of "Bluetooth" compatible cellular phones may not function.

d. "Bluetooth" audio function

1. The "Bluetooth" built into the navigation receiver assembly and a "Bluetooth" compatible portable audio player* can be connected using a "Bluetooth" wireless connection. This enables files stored in the portable audio player to be heard from the vehicle speakers. In addition, operations such as play/stop can be performed directly from the navigation receiver assembly.

   *: Some versions of "Bluetooth" compatible audio players may not be able to operate the "Bluetooth" function, or music may play, but functions available using the navigation receiver assembly may be limited.

2. Available "Bluetooth" audio devices

"Bluetooth" specifications	Ver. 1.1 or higher (Recommended: Ver. 2.0 + EDR or higher)
Following Profiles	• A2DP (Advanced Audio Distribution Profile) Ver. 1.0 or higher • AVRCP (Audio/Video Remote Control Profile) Ver. 1.0 or higher (Ver. 1.3 or higher

	recommended)
Maximum number of audio devices that can be registered	2

HINT:

The amount of remaining battery charge displayed on the navigation receiver assembly may be different from that of the portable player.

8. **USB AUDIO SYSTEM FUNCTION OUTLINE**
   a. The No. 1 stereo jack adapter assembly is equipped with a USB terminal. Connecting a USB device or "iPod" to the No. 1 stereo jack adapter assembly allows music files to be played. Not only is it possible to play music from a USB device with audio functions, is also possible to play MP3 or WMA music files that are stored on a USB device. In addition, "iPod" control software is installed, allowing file selection from playlists and operation using shuffle mode.

      HINT:

      - Visual contents of an "iPod" cannot be played.
      - Operation through the controls of a USB device or "iPod" cannot be performed while it is connected.

   b. USB audio system compatible model
      1. USB Device

         The following device formats can be used:

Compatible USB device formats	• USB communication format: USB 2.0 FS (12 MBPS) • File format: FAT16/32 (Windows) • Class: Mass storage class

         MP3 and WMA files written in any format other than those listed above may not play correctly, and their names and folder names may not be displayed correctly.

         Items related to standards and limitations are as follows:

- Maximum directory hierarchy: 8 levels
- Maximum number of folders in device: 999 (including the root folder)
- Maximum number of files in device: 65025
- Maximum number of files per folder: 255

2. "iPod"

"iPod" is a trademark of Apple Inc., registered in the U.S. and other countries.

SUPPORTED "IPOD" MODELS AND FIRMWARE VERSIONS

Supported "iPod" Model	Supported Firmware Version
"iPod" 5G	Ver. 1.2 or higher
"iPod Nano" 1G	Ver. 1.2 or higher
"iPod Nano" 2G	Ver. 1.1.2 or higher
"iPod Nano" 3G	Ver. 1.0.2 or higher
"iPod touch"	Ver. 1.1.1 or higher
"iPod classic"	Ver. 1.1.1 or higher

UNSUPPORTED "IPOD" MODELS

Unsupported Models	"iPod shuffle"
	"iPhone"
	"iPod" 1G, 2G, 3G, 4G
	"iPod mini"

HINT:

Depending on the generation of "iPod" used, response to commands from the vehicle may be delayed.

Items related to standards and limitations are as follows:

- Maximum number of lists in device: 9999
- Maximum number of songs in device: 65535

- Maximum number of songs per list: 65535

9. **RADIO DESCRIPTION**
   a. Radio frequency band
      1. Radio broadcasts use the radio frequency bands shown in the table below.

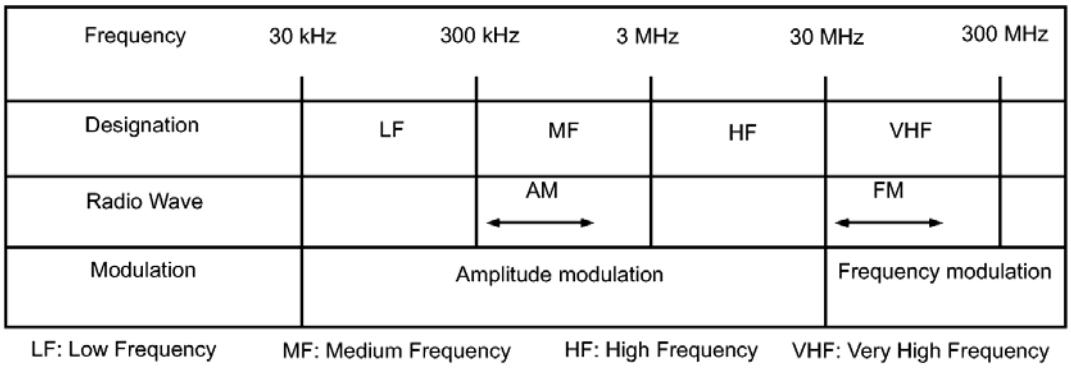
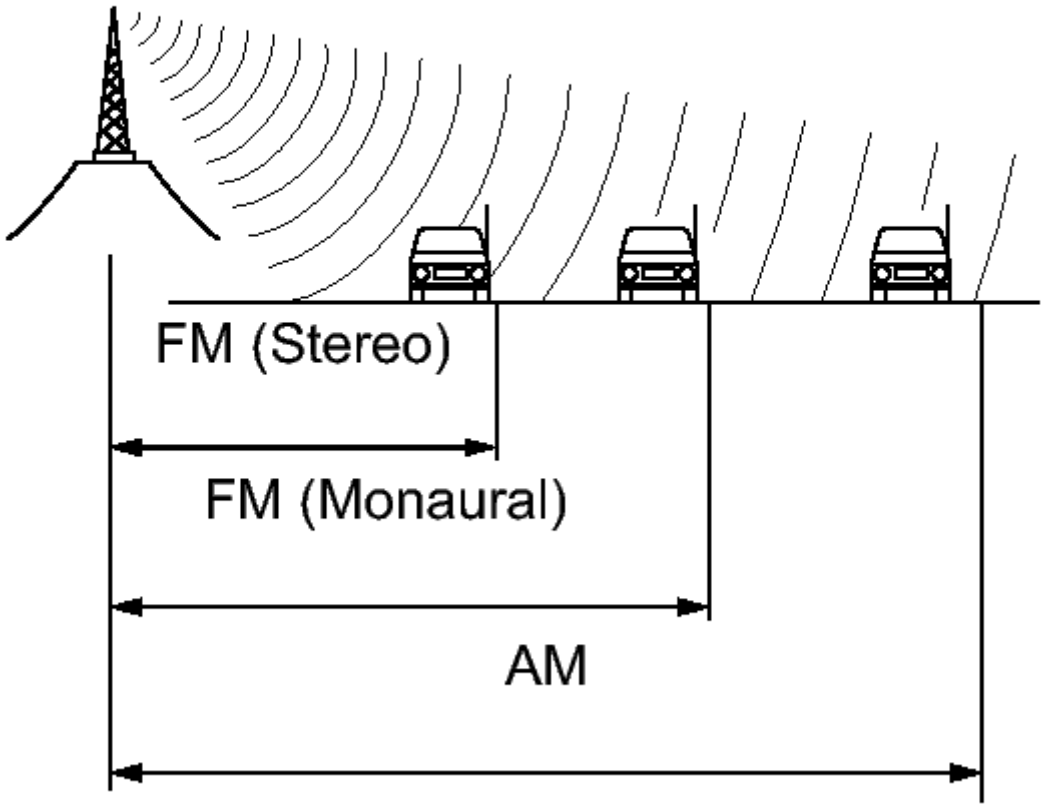


Fig. 15: Radio Frequency Band Reference Chart
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

   b. Service area



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Fig. 16: Identifying Service Areas Of AM And FM Broadcasts
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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 broadcast 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.

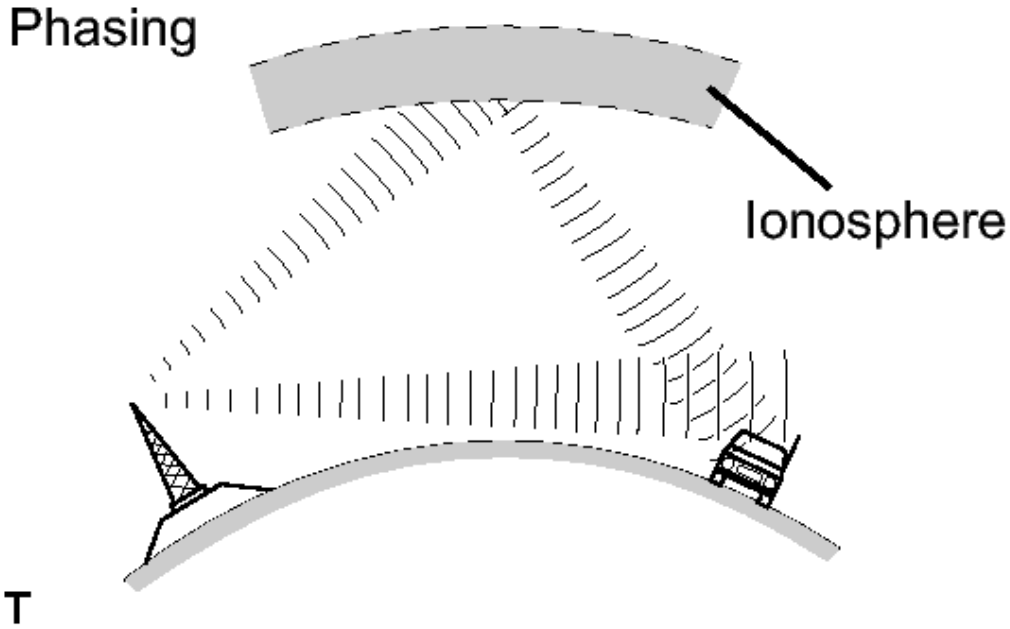
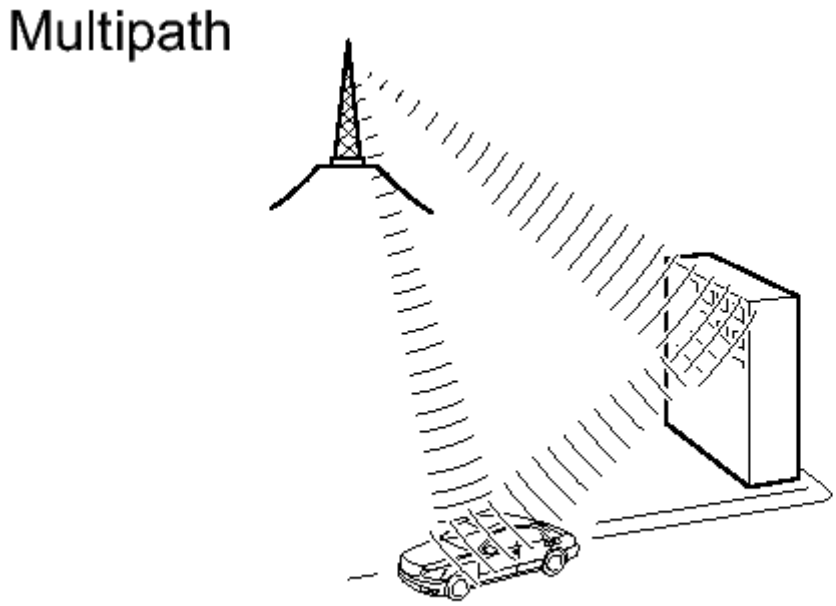


Fig. 17: Identifying Radio Phasing
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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.

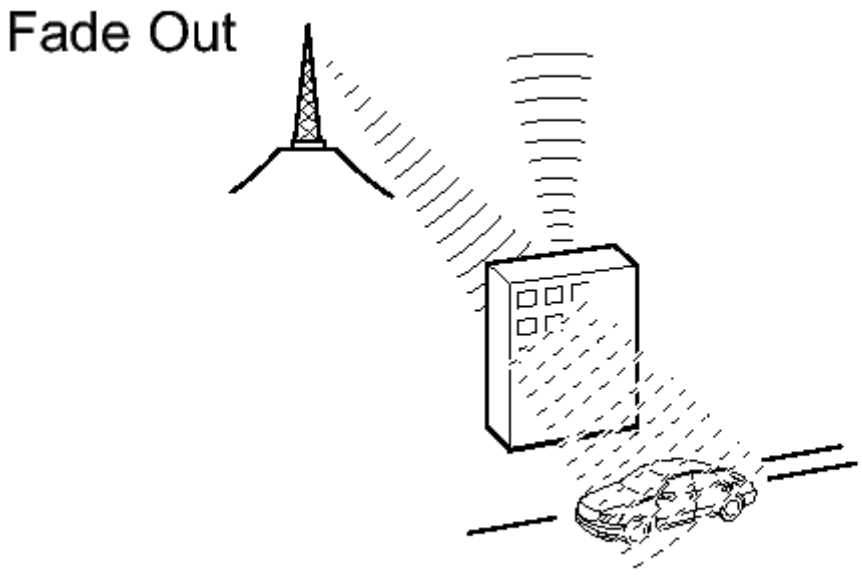


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Fig. 18: Identifying Radio Multipath
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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.



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Fig. 19: Identifying Radio Fade Out
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

d. Noise problem

Technicians must have a clear understanding about each customer noise complaint. 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
AM	Noise occurs only	Music beat from a

	at night	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.

10. **RBDS FUNCTION OUTLINE (BROADCAST IN NORTH AMERICA ONLY)**

The Radio Broadcast Data System (RBDS) is broadcast through conventional FM radio broadcasts. Information such as song names, traffic information, broadcast station names, etc. can be received.

11. **SDARS SYSTEM FUNCTION OUTLINE (BROADCAST IN NORTH AMERICA ONLY)**

Satellite Digital Audio Radio Service (SDARS) is a satellite digital radio broadcast provided by Sirius XM Radio Inc. The broadcast (pay-type) is performed through satellites and terrestrial repeater networks. Several unique channels are available, and even if a vehicle changes locations, the same information can be received without breaks. Information such as song names, broadcast station names, etc. can be received. Also, traffic information can be received and displayed on the navigation screen.

NOTE: **To receive an audio-visual pay-type broadcasts, the customer must enter into a pay-type contract with XM Satellite Radio Inc. After entering into a contract, registration of the XM Radio ID is required. Also, if parts are replaced, the XM Radio ID must be reregistered.**

12. **AUTOMATIC SOUND LEVELIZER (ASL) FUNCTION OUTLINE**

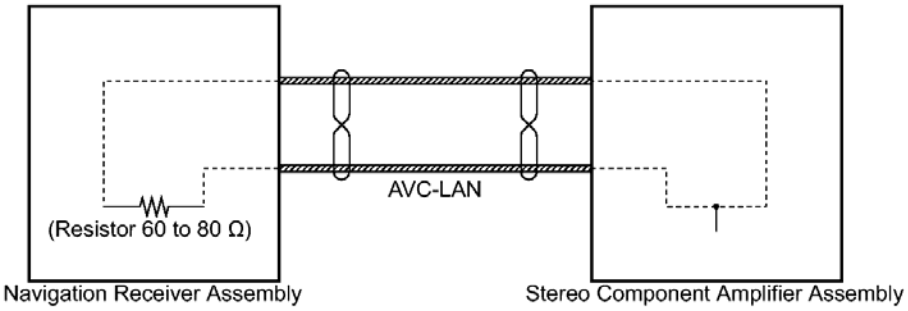
a. The ASL function automatically adjusts the sound volume in order to enable clear audio quality even when vehicle noise increases (as vehicle speed increases, the volume is turned up, etc.).

Vehicle speed signals are received from the combination meter assembly and used for the ASL control.

13. **COMMUNICATION SYSTEM**

a. AVC-LAN OUTLINE

Example:



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Fig. 20: Identifying AVC-LAN Communication System Diagram
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

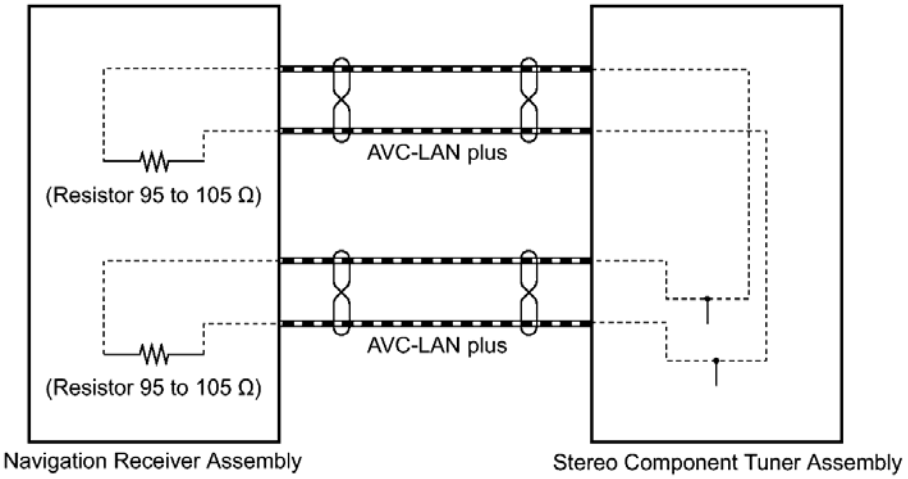
1. Components of the navigation system communicate with each other via the AVC-LAN.
2. The AVC-LAN uses a twisted pair of wires for its communication lines.
3. The master unit of the AVC-LAN is the navigation receiver assembly.

HINT:

- The navigation receiver assembly has enough resistance (60 to 80 ohms) necessary for communication.
- If a short or open circuit occurs in the AVC-LAN circuit, communication is interrupted and system will not operate normally.

b. AVC-LAN plus OUTLINE

Example:



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Fig. 21: AVC-LAN Plus Communication Diagram
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

1. Navigation system components communicate with each other via the AVC-LAN plus.
2. The AVC-LAN plus uses two twisted pairs of cables for its communication lines.
3. The master unit of the AVC-LAN plus is the navigation receiver assembly.

HINT:

- The navigation receiver assembly has enough resistance (95 to 105 ohms) necessary for communication.
- If a short or open circuit occurs in the AVC-LAN plus circuit, communication will be interrupted and the system will not operate normally.

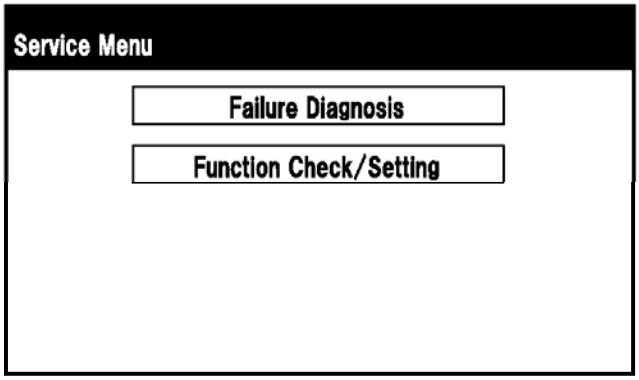
14. **DIAGNOSTIC FUNCTION OUTLINE**
    a. The navigation system has a diagnostic function (the result is indicated on the master unit).
15. **DIAGNOSIS DISPLAY DETAILED DESCRIPTION**

HINT:

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

a. Service Menu Screen

Example:



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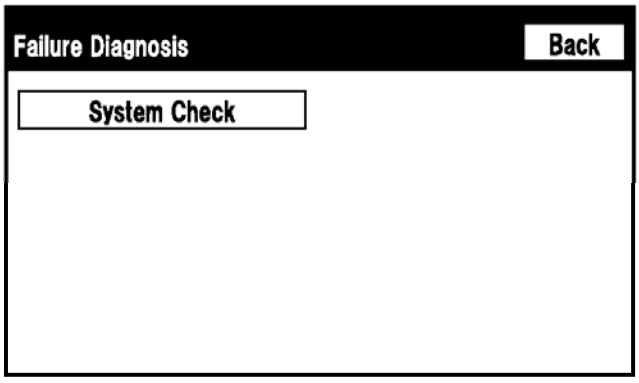
Fig. 22: Identifying Service Menu Screen
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

HINT:

Some item may be grayed out or not displayed based on the device settings.

b. Failure Diagnosis Screen

Example:



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Fig. 23: Identifying Failure Diagnosis Screen
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

HINT:

Same item may be grayed out or not displayed based on the device settings.

1. System Check Mode Screen

Example:

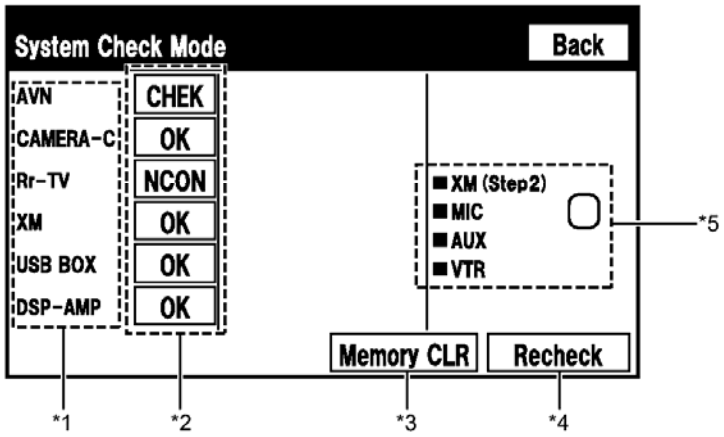


Fig. 24: Screen Display - System Check Mode
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

*1: Device Name List No. 1

HINT:

- Device Name List No. 1 displays some of the devices that make up the navigation system.
- The names of the components from Device Name List No. 1 are shown in the following table.

Name	Component	Connection Method
AVN	Navigation receiver assembly	-
XM	Stereo component tuner assembly	Communication line for AVC-LAN
DSP-AMP	Stereo component amplifier assembly	Communication line for AVC-LAN
Rr-TV	Television display assembly	Communication line for AVC-LAN
USB BOX	Multi-media Interface ECU	Communication line for AVC-LAN
CAMERA-C	Parking assist ECU	Communication line for AVC-LAN

*2: Check Result

HINT:

Result codes for all devices are displayed.

Result	Meaning	Action
OK	The device does not respond with a DTC.	-
		Look

EXCH	The device responds with a "replace"-type DTC.	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.	- Check power supply wire harness of the device. - Check the AVC-LAN of the device.
NRES	The device responds in diagnostic mode, but gives no DTC information.	- Check power supply wire harness of the device. - Check the AVC-LAN of the device.

*3: Memory Clear

HINT:

- Present and past DTCs and registered connected device names are cleared.
- Data is cleared by pressing the "Memory CLR" switch for 3 seconds.

*4: Recheck

HINT:

- A system check will be performed again after the memory is cleared.
- The Recheck switch will dim during a system check.

*5: Device Name List No. 2

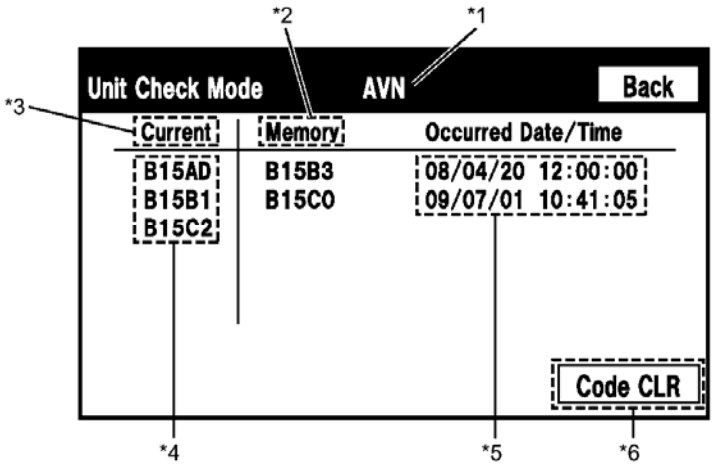
HINT:

- Device Name List No. 2 displays some of the devices that make up the navigation system.
- The names of the components from Device Name List No. 2 are shown in the following table.

Name	Component	Connection Method
XM (Step2)	Stereo component tuner assembly	Communication line for AVC-LAN plus
MIC	Telephone microphone assembly	Vehicle wire harness
AUX	No. 1 Stereo jack adapter assembly	Vehicle wire harness
VTR	Video Terminal	Vehicle wire harness

2. Unit Check Mode Screen

Example:



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Fig. 25: Identifying Unit Check Mode Screen
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

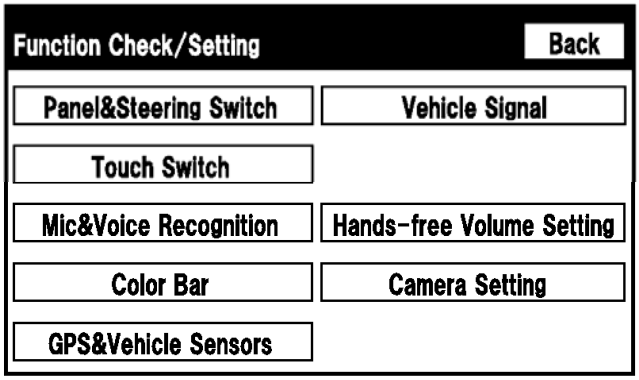
SCREEN DESCRIPTION

Display	Content
*1: Device name	Target device
*2: Past DTC	Diagnostic memory results and stored DTCs are output.
*3: Present DTC	DTCs output in the service check are output.
*4: DTC	DTC (Diagnostic Trouble Code)
*5: Timestamp	The time and date of history DTCs are displayed. (the year is displayed in 2-digit

	format.)
*6: Diagnosis clear switch	Pushing this switch for 3 seconds clears diagnostic memory data of target device (responses to diagnostic system check result and displayed data are cleared)

c. Function Check/Setting Screen

Example:



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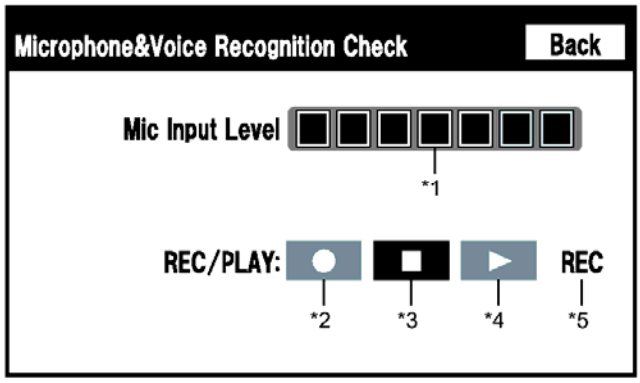
Fig. 26: Function Check/Setting Screen
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

HINT:

Same item may be grayed out or not displayed based on the device settings.

1. Microphone&Voice Recognition Check Screen

Example:



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Fig. 27: Identifying Microphone & Voice Recognition Check Screen
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

SCREEN DESCRIPTION

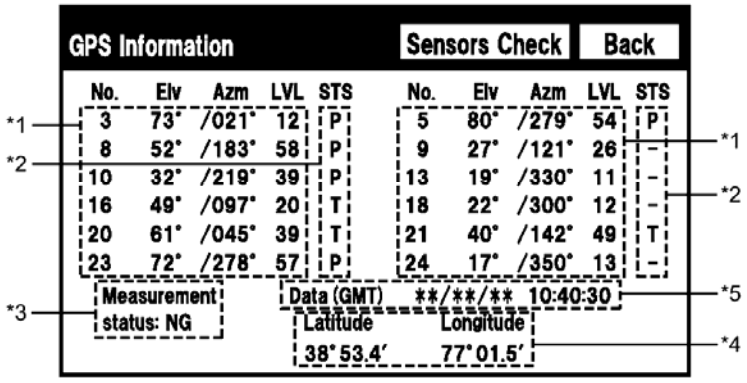
Display	Content
*1: Microphone input level meter	Monitors the microphone input level every 0.1 sec. and displays the results in 8 different levels.
*2: Recording switch	Starts recording.
*3: Stop switch	Stops recording.
*4: Play switch	Plays the recorded voice.
*5: Recording indicator	Comes on while recording.

HINT:

- The microphone is active at all times when this screen is displayed.
- While recording or playing, the switches other than the stop switch cannot be pushed.
- When no recording is present, the play switch cannot be pushed.
- Recording will stop after 5 seconds or when the stop switch is pushed.

2. GPS Information Screen

Example:



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Fig. 28: Identifying GPS Information Screen
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

*1: Satellite information

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

SCREEN DESCRIPTION

Display	Content
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.

*3: Measurement information

SCREEN DESCRIPTION

Display	Content
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.

*4: Position information

SCREEN DESCRIPTION

Display	Content
	Latitude and longitude information

Position	on the current position is displayed.

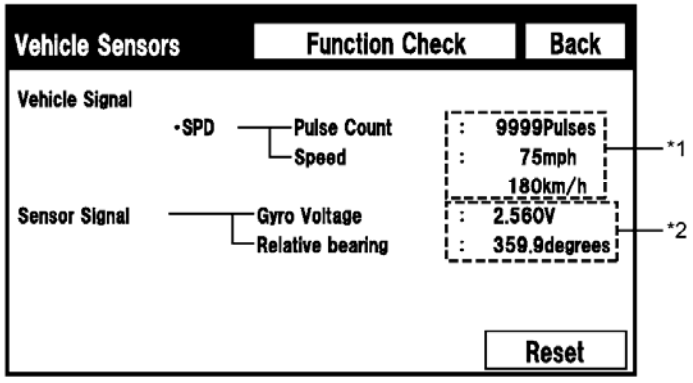
*5: Date information

SCREEN DESCRIPTION

Display	Content
Date	The date/time information obtained from GPS signal is displayed in Greenwich Mean Time (GMT).

3. Vehicle Sensors Screen

Example:



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Fig. 29: Identifying Vehicle Sensors Screen
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

VEHICLE SIGNAL

Display	Content
	SPD

*1: SPD	signal condition is displayed.

SENSOR SIGNAL

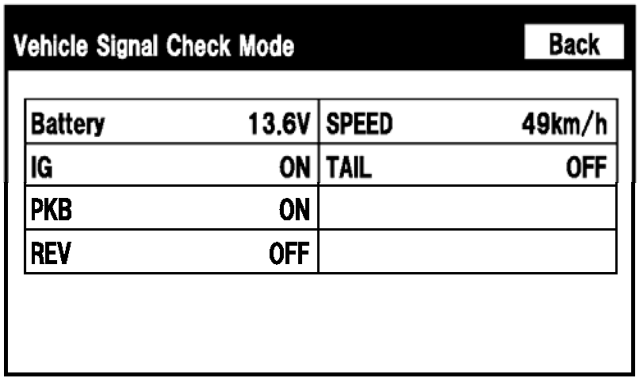
Display	Content
*2: Gyro sensor	Gyro sensor output condition is displayed. 2.1 to 2.9 V

HINT:

The signals from the vehicle sensors are updated once per second and if any have changed, the screen is updated.

4. Vehicle Signal Check Mode Screen

Example:



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Fig. 30: Identifying Vehicle Signal Check Mode Screen
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

SCREEN DESCRIPTION

Display	Content
	Battery

Battery	voltage is displayed.
IG	IG switch ON/OFF state is displayed.
PKB	Parking brake ON/OFF state is displayed.
REV	Reverse signal ON/OFF state is displayed.
SPEED	Vehicle speed is displayed in km/h.
TAIL	Tail signal (Light control switch) ON/OFF state is displayed.

HINT:

- Only items sending vehicle signals will be displayed.
- The input signals from the vehicle are updated once per second and if any have changed, the screen is updated.

HOW TO PROCEED WITH TROUBLESHOOTING

HOW TO PROCEED WITH TROUBLESHOOTING

HINT:

Use these procedures to troubleshoot the navigation system.

1. **VEHICLE BROUGHT TO WORKSHOP**

   NEXT: Go to next step

2. **INSPECT BATTERY VOLTAGE**

   Standard voltage

   11 to 14 V

   If the voltage is below 11 V, recharge or replace the battery before proceeding.

   NEXT: Go to next step

3. **BASIC INSPECTION**
   a. Turn the ignition switch to ACC.
   b. Check whether or not the display appears on the navigation receiver assembly.

   RESULT

Result	Proceed to
Display appears	A
Display does not appear	B

   B --> Go to step 6

   A: Go to next step

4. **CHECK FOR DTC**
   a. Check for DTCs and note any codes that are output.
   b. Clear the DTCs.
   c. Recheck for DTCs. Based on the DTCs output in the first step, try to force output of the navigation system DTCs by simulating the conditions indicated by the DTCs.

   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 DTCs as the system stores past DTCs.
   - Refer to the detailed description on the diagnostic screen as necessary. Refer to **SYSTEM DESCRIPTION**.
   - Check and clear past diagnostic trouble codes. Check the diagnostic trouble code and inspect the area the code indicates.

RESULT

Result	Proceed to
DTC is not output	A
DTC is output	B

B --> Go to step 7

A: Go to next step

5. **PROBLEM SYMPTOMS TABLE**
   a. Refer to Problem Symptoms Table. Refer to **PROBLEM SYMPTOMS TABLE**.

RESULT

Result	Proceed to
Fault is not listed in problem symptoms table	A
Fault is listed in problem symptoms table	B

B --> Go to step 7

A: Go to next step

6. **OVERALL ANALYSIS AND TROUBLESHOOTING**
   a. Terminals of ECU. Refer to **TERMINALS OF ECU**.
   b. Inspect the front No. 1 speaker assembly. Refer to **INSPECTION** .
   c. Inspect the front No. 2 speaker assembly. Refer to **INSPECTION** .
   d. Inspect the front No. 3 speaker assembly. Refer to **INSPECTION** .
   e. Inspect the rear No. 2 speaker assembly. Refer to **INSPECTION** .
   f. Inspect the quarter side speaker assembly. Refer to **INSPECTION** .
   g. Inspect the rear No. 3 speaker assembly. Refer to **INSPECTION** .

h. Inspect the steering pad switch assembly. Refer to **INSPECTION** .

NEXT: Go to next step

7. **ADJUST, REPAIR OR REPLACE**

NEXT --> END

OPERATION CHECK

OPERATION CHECK

1. **CHECK SYSTEM 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 receiver assembly may determine that a longer route is quicker.
Even when distance priority is high, the shortest route is not shown.	Some routes may not be advised due to safety concerns.
When the vehicle is put into motion immediately after the engine starts, the navigation system	If the vehicle starts before the navigation system activates, the system

deviates from the actual position.	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 malfunctions, but are caused by errors inherent in the GPS, gyro sensor, speed sensor or navigation receiver assembly.

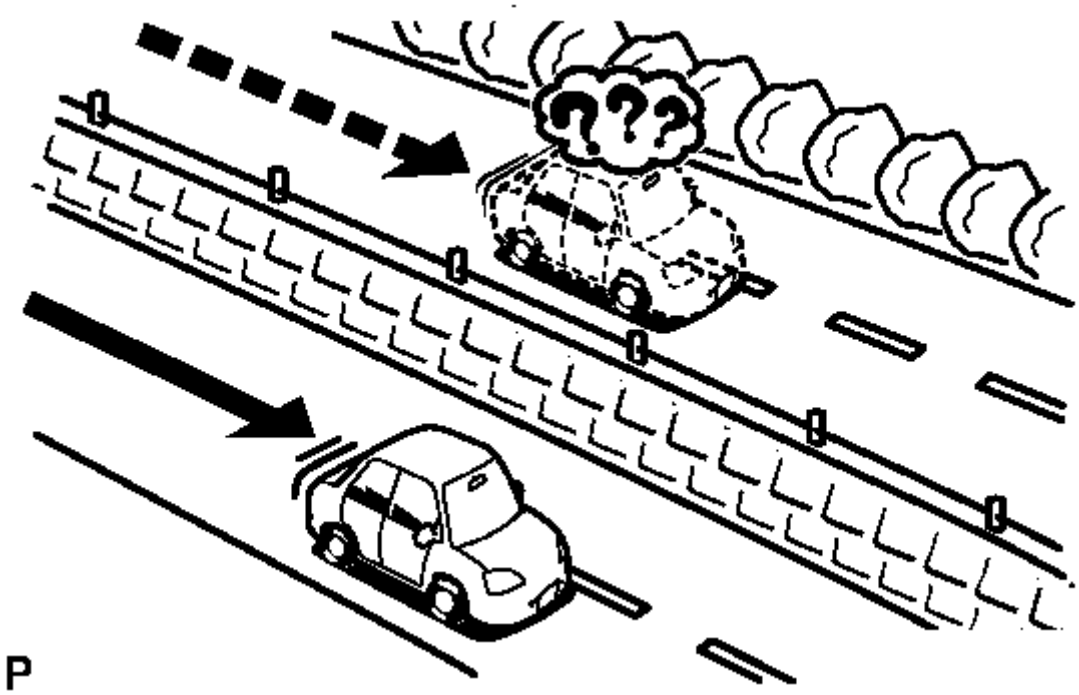
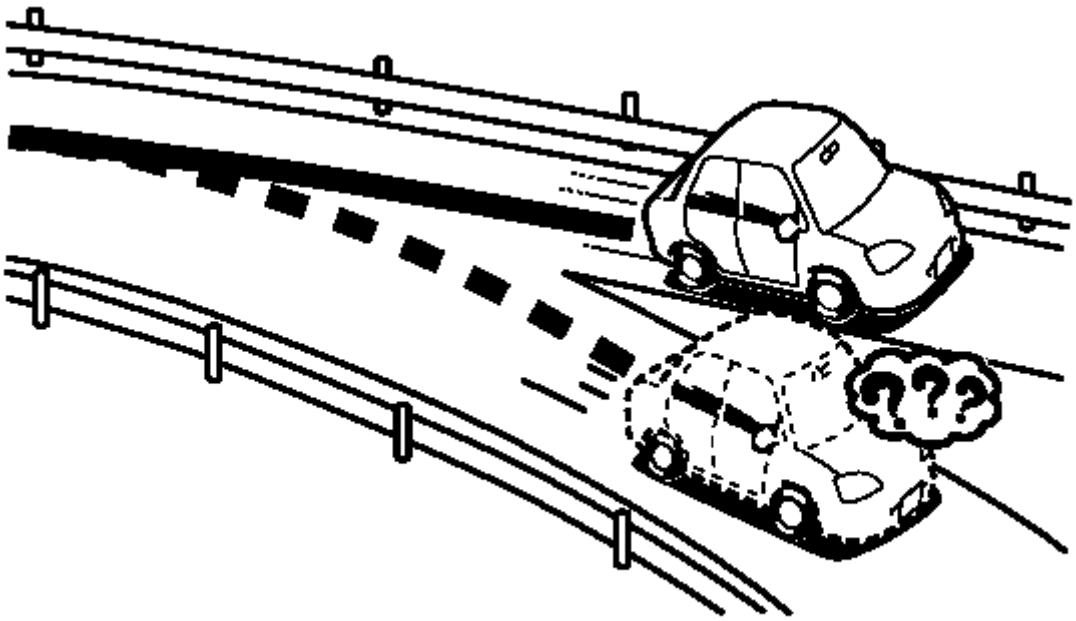


Fig. 31: Locating Position Mark On Parallel Road
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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.



P

Fig. 32: Locating Vehicle Position Mark On Wrong Road
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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

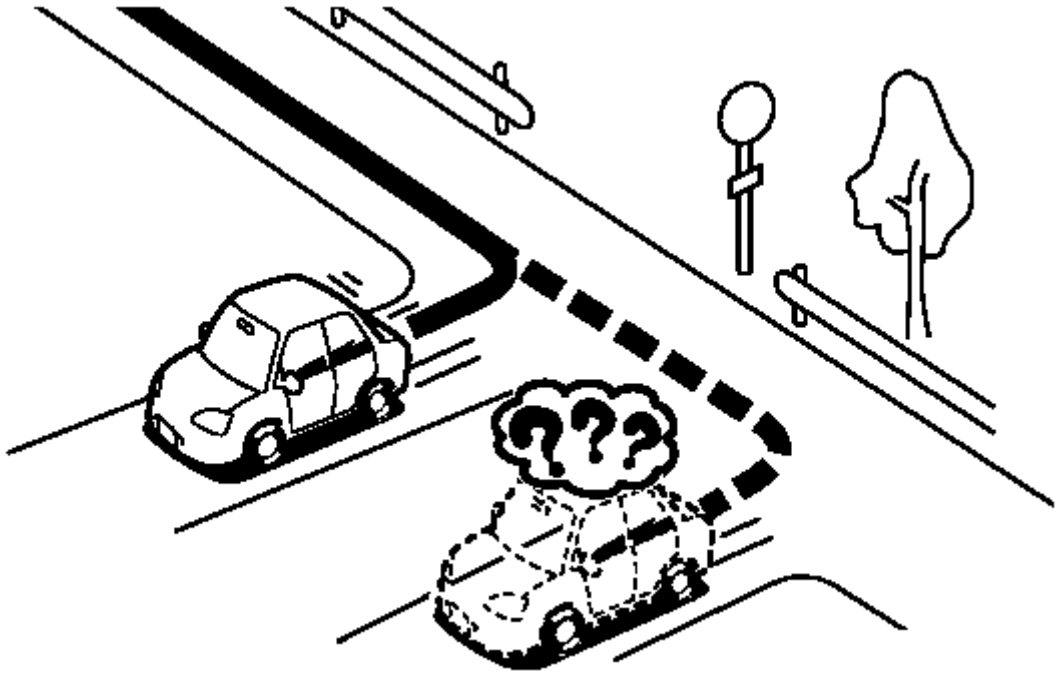


Fig. 33: Locating Vehicle Position Mark On Parallel Road
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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

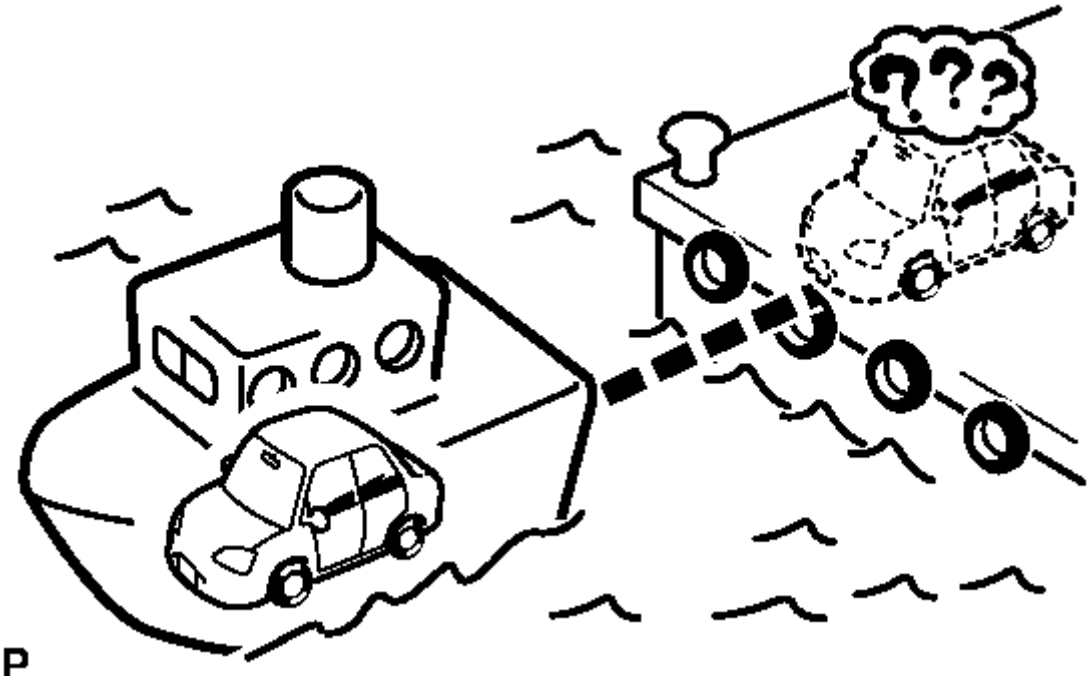


Fig. 34: Identifying Vehicle Position Mark On GPS

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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

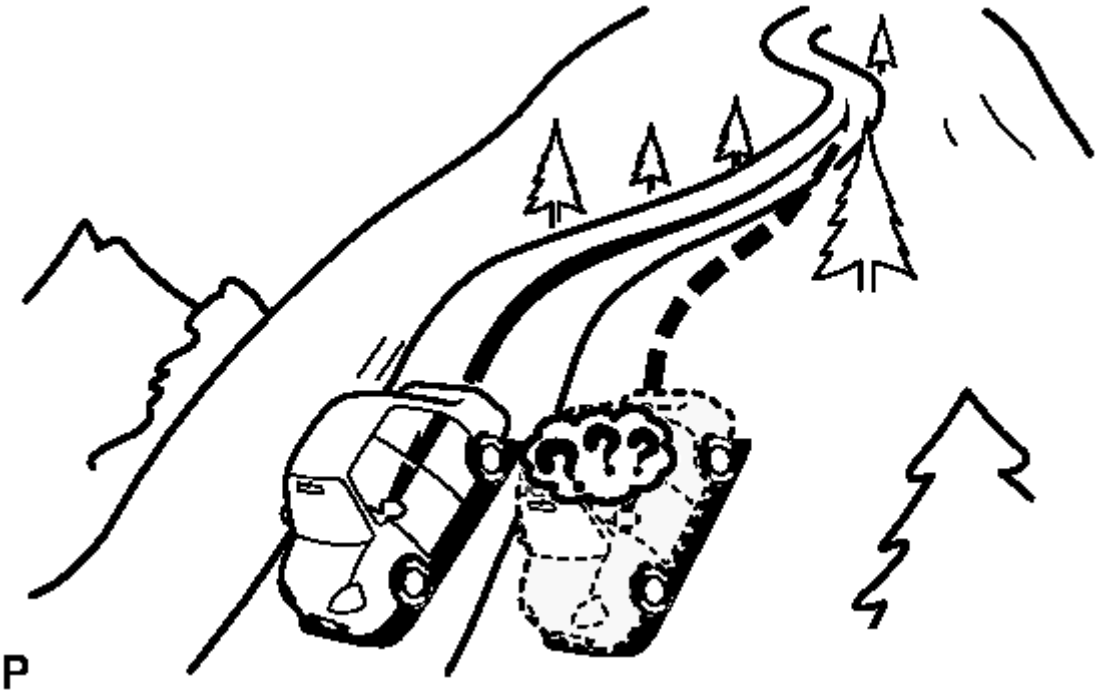


Fig. 35: Identifying Vehicle Position Mark In Correct Position - Runs On Steep Hill
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

6. When the vehicle makes a continuous turn of 360°, 720°, 1080°, etc. the current vehicle position mark may deviate from the correct position.

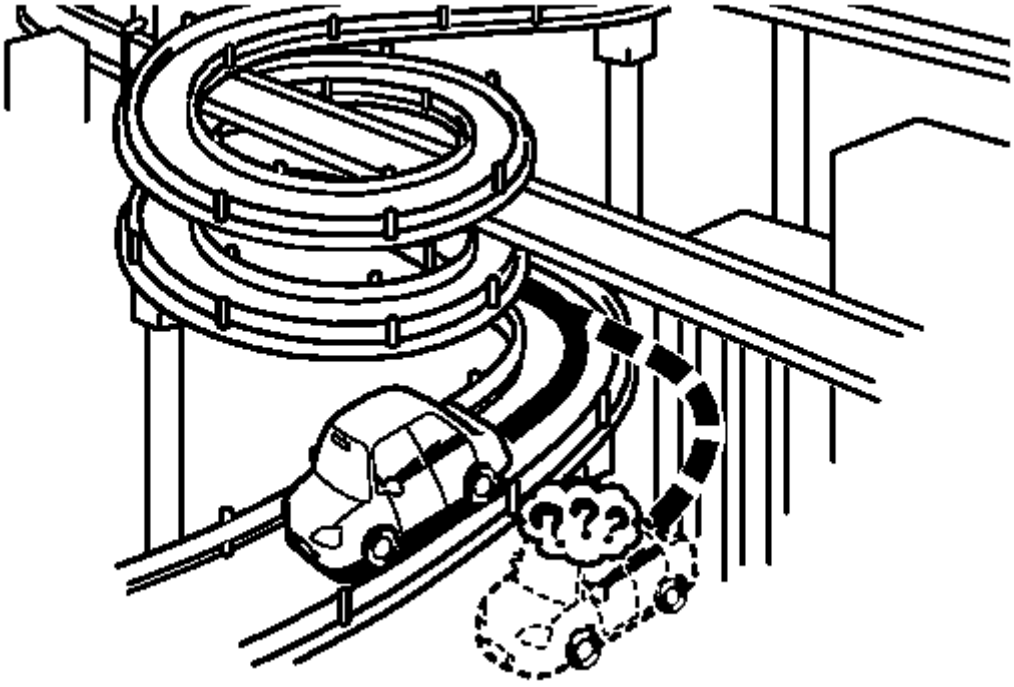


Fig. 36: Identifying Vehicle Position Mark In Correct Position - Continuous Turn
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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

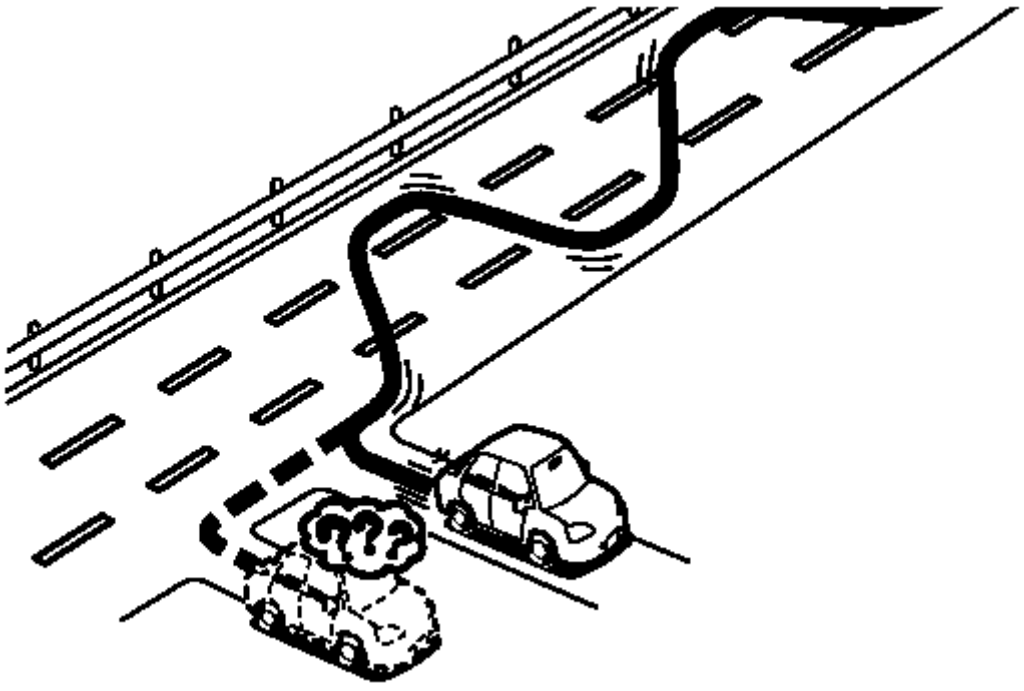


Fig. 37: Identifying Vehicle Position Mark In Correct Position - Erratically
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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

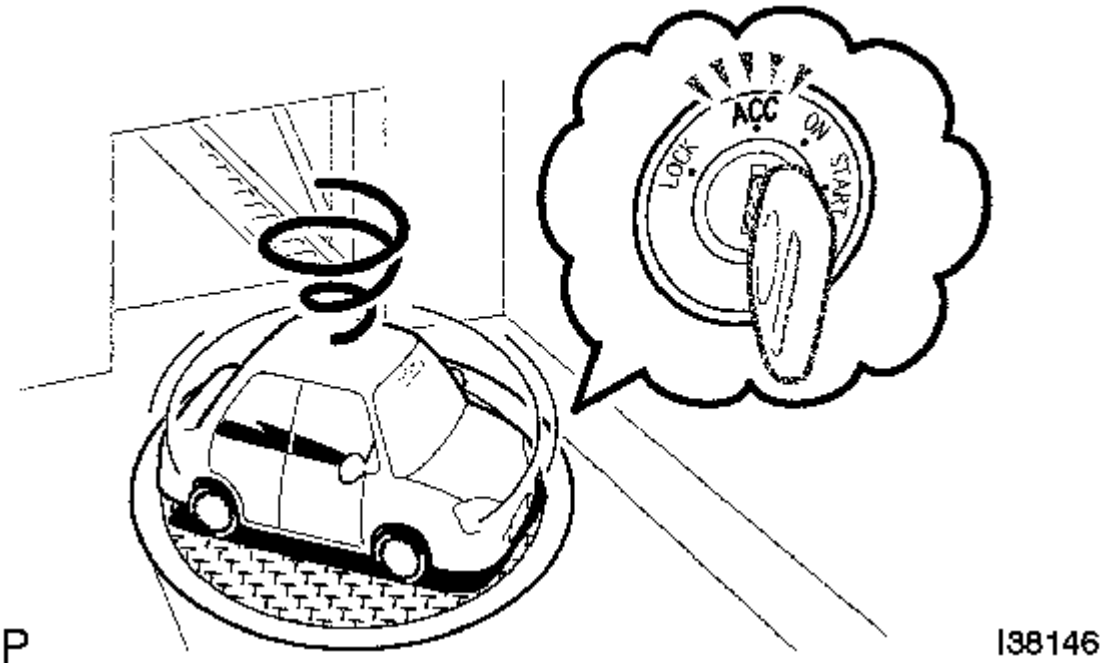


Fig. 38: Condition Check - Ignition Switch Turned To ACC On Position
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

9. When the vehicle is driven 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.



Fig. 39: Identifying Vehicle Position Mark In Correct Position - Runs On Snowy Road
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

10. When a tire is changed, the current vehicle position mark may deviate from the correct position.

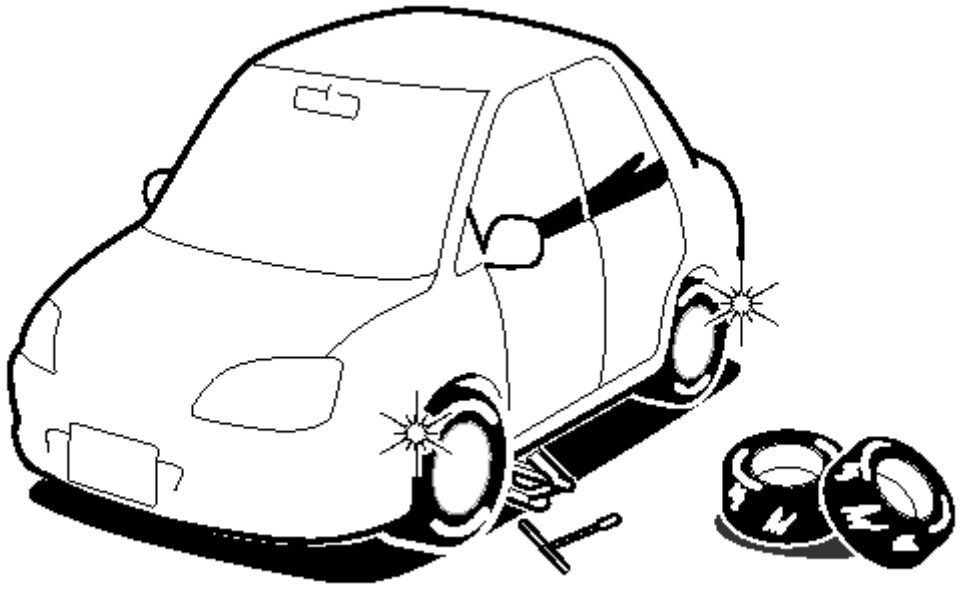


Fig. 40: Identifying Vehicle Position Mark In Correct Position - Tire Change
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

HINT:

- A change in tire diameter may cause a speed sensor error.
- Performing "tire change" in calibration mode will allow the system to correct the current vehicle position faster.

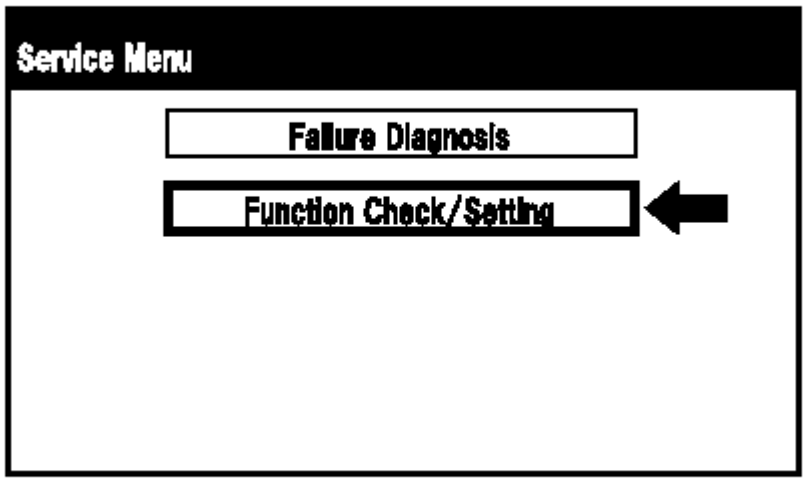
2. **CHECK PANEL & STEERING SWITCH**

HINT:

- The navigation receiver assembly panel switches and steering switch are checked in the following procedure.
- Illustrations may differ from the actual vehicle screen depending on the device settings and options. Therefore, some detailed areas may not be shown exactly the same as on the actual vehicle screen.

a. Enter diagnostic mode. Refer to **DTC CHECK / CLEAR**.

b. Select "Function Check/Setting" from the "Service Menu" screen.



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Fig. 41: Screen Display - Service Menu
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

c. Select "Panel&Steering Switch" from the "Function Check/Setting" screen.

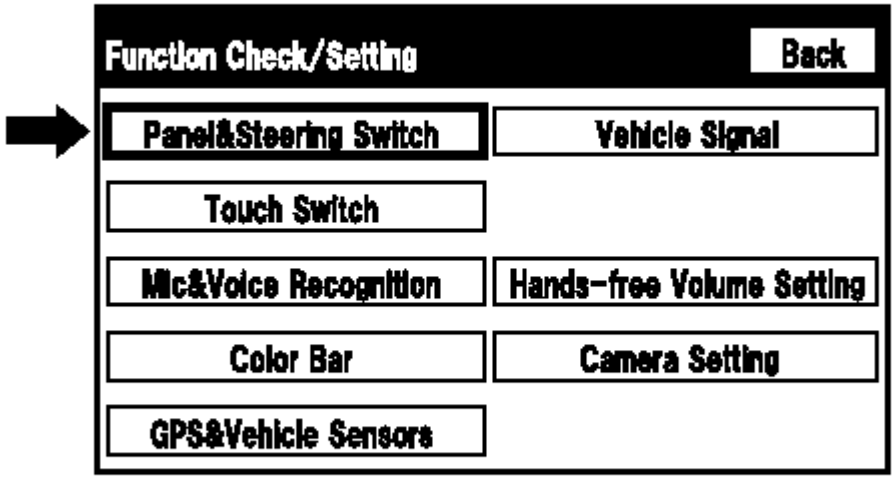


Fig. 42: Screen Display - Function Check/Setting
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

d. Panel&Steering Switch Check Mode
    1. Operate each switch and check that the switch names and condition are correctly displayed.

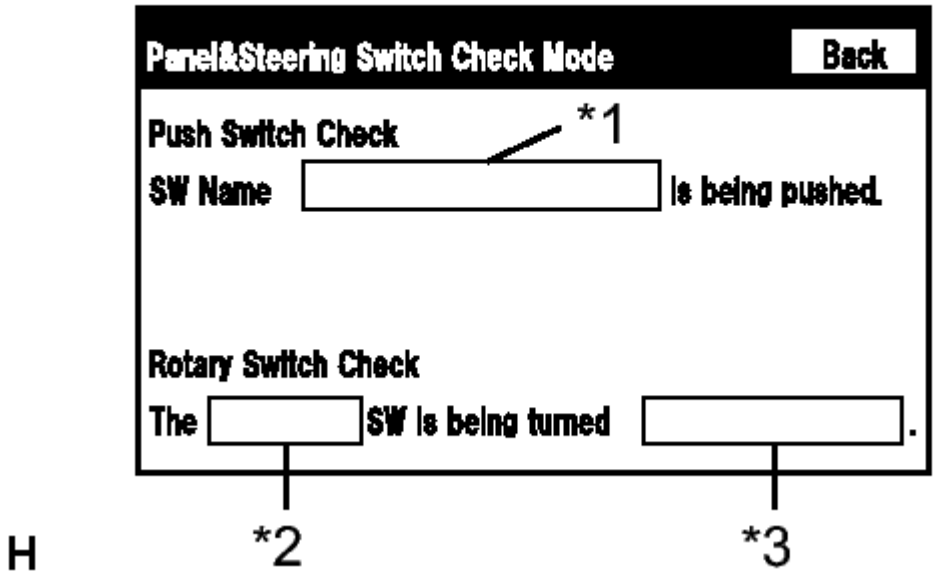


Fig. 43: Screen Display - Panel & Steering Switch Check Mode

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

SCREEN DESCRIPTION

Display	Content
*1: Push switch name	• Name of the pressed switch is displayed. • If more than one switch is pressed, "MULTIPLE" will be displayed.
*2: Rotary switch name	Name of the rotary switch is displayed.
*3: Rotary switch direction	Direction of the rotary switch is displayed.

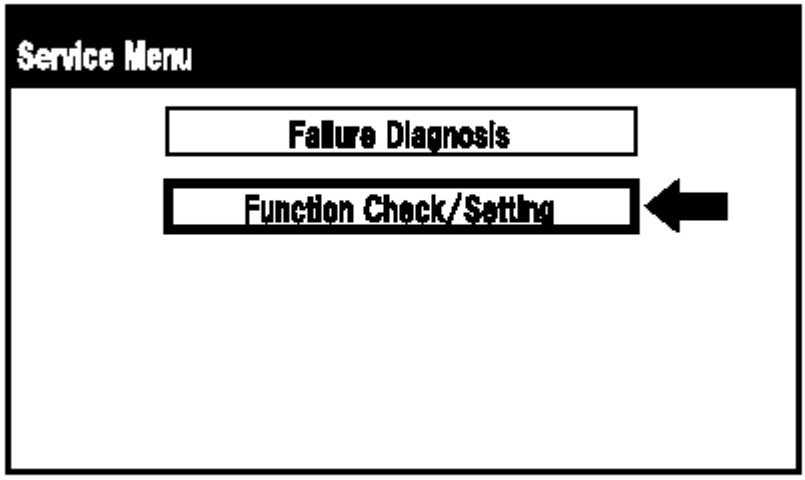
3. **CHECK TOUCH SWITCH**

HINT:

- The touch switches on the screen are checked in the following procedure.
- Illustrations may differ from the actual vehicle screen depending on the device settings and options. Therefore, some detailed areas may not be shown exactly the same as on the actual vehicle screen.

a. Enter diagnostic mode. Refer to **DTC CHECK / CLEAR**.

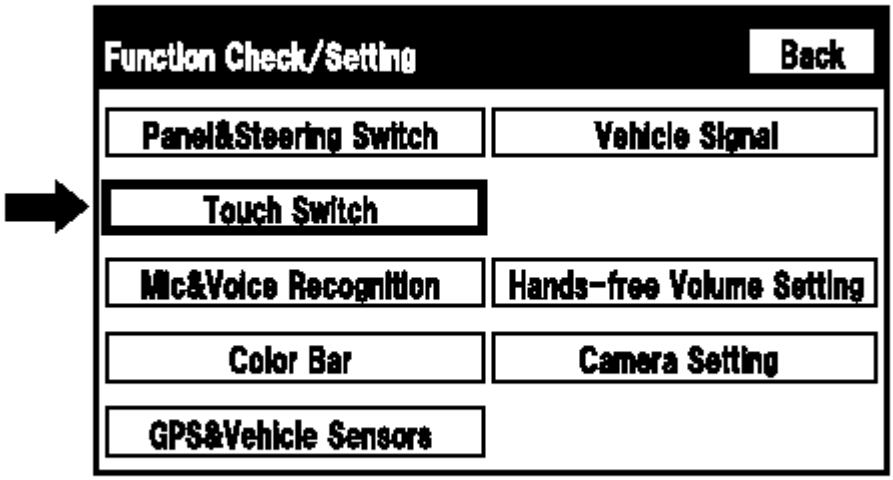
b. Select "Function Check/Setting" from the "Service Menu" screen.



H

Fig. 44: Screen Display - Service Menu
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

c. Select "Touch Switch" from the "Function Check/Setting" screen.

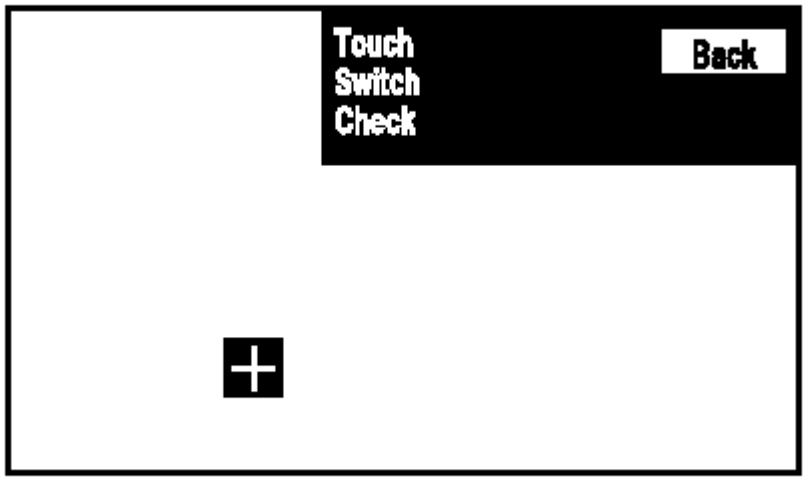


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Fig. 45: Screen Display - Function Check/Setting
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

d. Touch Switch Check

1. Touch the display anywhere in the open area to perform the check when the "Touch Switch Check" screen is displayed.



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Fig. 46: Screen Display - Touch Switch Check
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

HINT:

- A "+" mark is displayed where the display is touched.
- The "+" mark remains on the display even after the finger is removed.

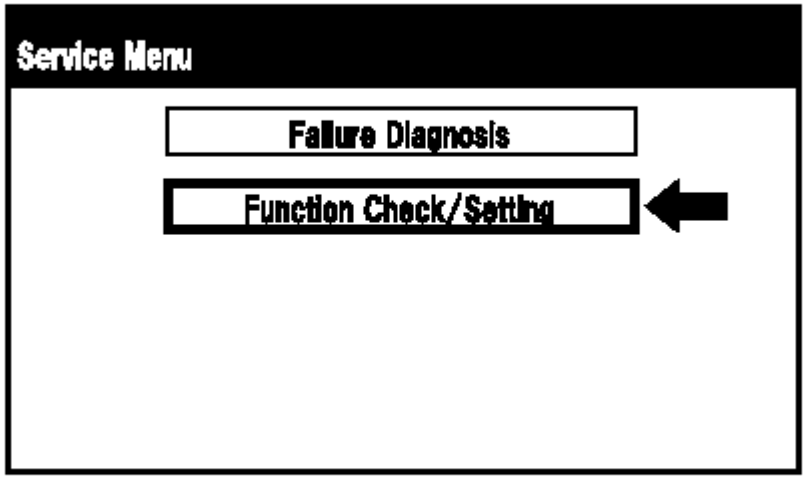
4. **CHECK MIC & VOICE RECOGNITION**

HINT:

- The microphone and microphone input level are checked in the following procedure.
- Illustrations may differ from the actual vehicle screen depending on the device settings and options. Therefore, some detailed areas may not be shown exactly the same as on the actual vehicle screen.

a. Enter diagnostic mode. Refer to **DTC CHECK / CLEAR**.

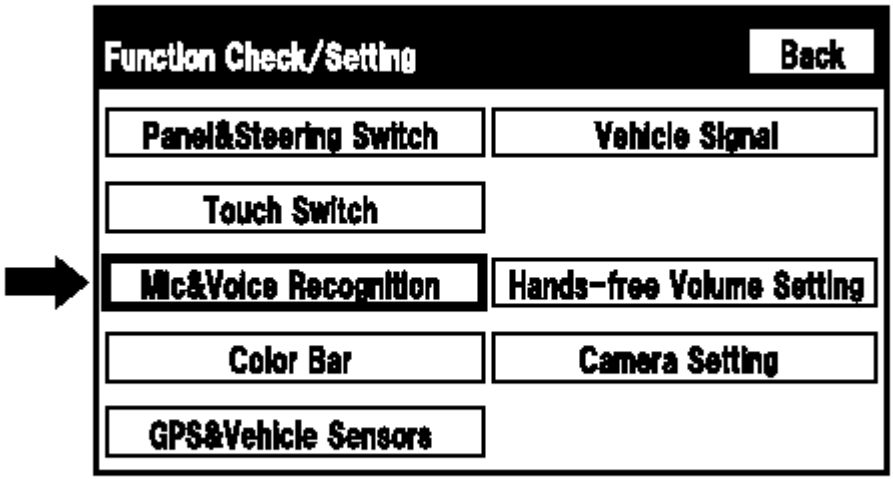
b. Select "Function Check/Setting" from the "Service Menu" screen.



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Fig. 47: Screen Display - Service Menu
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

c. Select "Mic&Voice Recognition" from the "Function Check/Setting" screen.



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Fig. 48: Screen Display - "MIC&VOICE RECOGNITION"
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

d. Microphone&Voice Recognition Check

1. When speaking into the microphone, check that the microphone input level meter changes according to the input level.

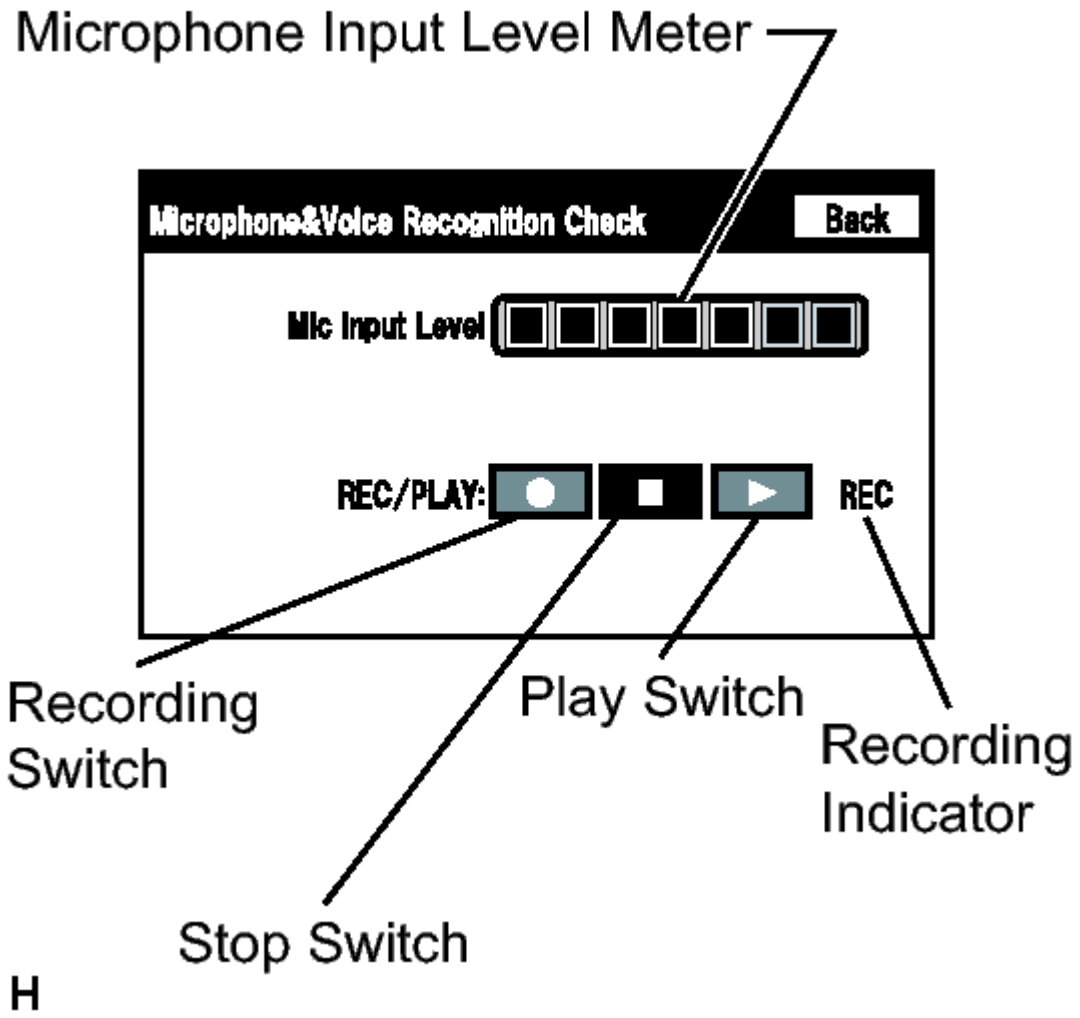


Fig. 49: Screen Display - Microphone & Voice Recognition Check
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

2. Push the recording switch and perform voice recording.
3. Check that the recording indicator remains on while recording and that the recording can be played normally.

HINT:

- For details of this function, refer to Diagnosis Display Detailed Description. Refer to **SYSTEM DESCRIPTION**.

- This function is controlled by the built-in navigation ECU.

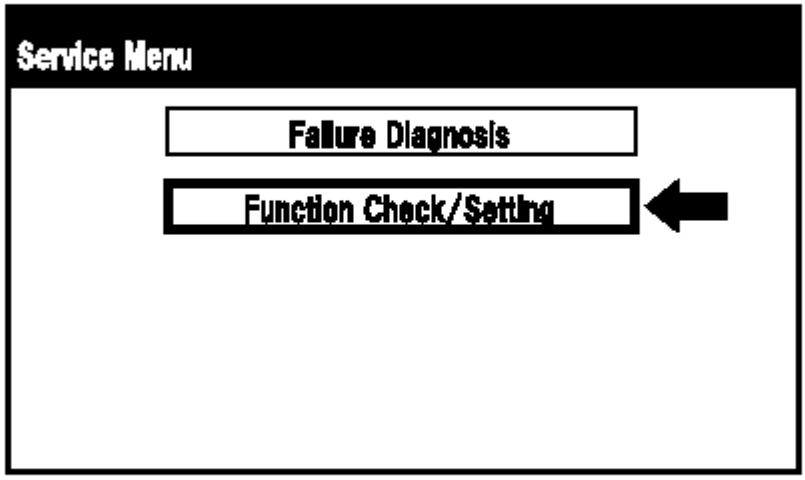
5. **CHECK COLOR BAR**

HINT:

- The display color on the screen is checked in the following procedure.
- Illustrations may differ from the actual vehicle screen depending on the device settings and options. Therefore, some detailed areas may not be shown exactly the same as on the actual vehicle screen.

a. Enter diagnostic mode. Refer to **DTC CHECK / CLEAR**.

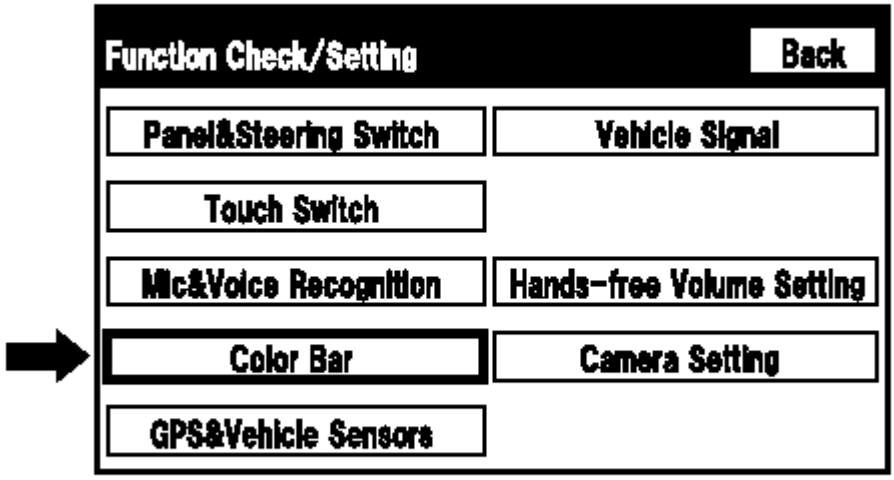
b. Select "Function Check/Setting" from the "Service Menu" screen.



H

Fig. 50: Screen Display - Service Menu
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

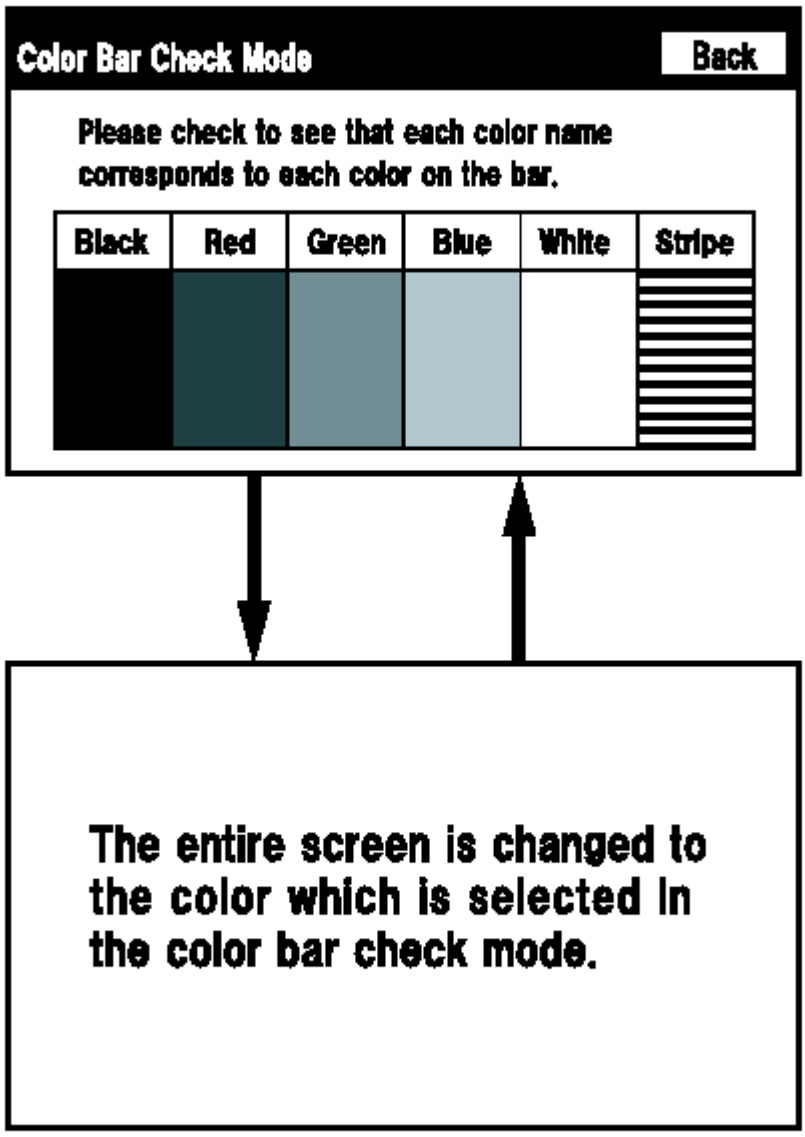
c. Select "Color Bar" from the "Function Check/Setting" screen.



H

Fig. 51: Screen Display - Color Bar
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

d. Color Bar Check Mode
    1. Select a color bar from the "Color Bar Check Mode" screen.



H

Fig. 52: Screen Display - Color Bar Check Mode
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

2. Check the display color.

HINT:

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

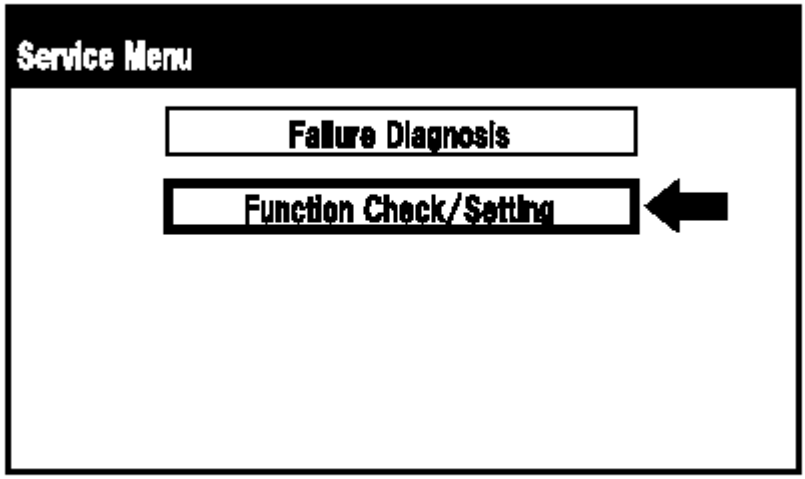
6. **CHECK GPS & VEHICLE SENSORS**

HINT:

- GPS information, vehicle signals and sensor signals are checked in the following procedure.
- Illustrations may differ from the actual vehicle screen depending on the device settings and options. Therefore, some detailed areas may not be shown exactly the same as on the actual vehicle screen.

a. Enter diagnostic mode. Refer to **DTC CHECK / CLEAR**.

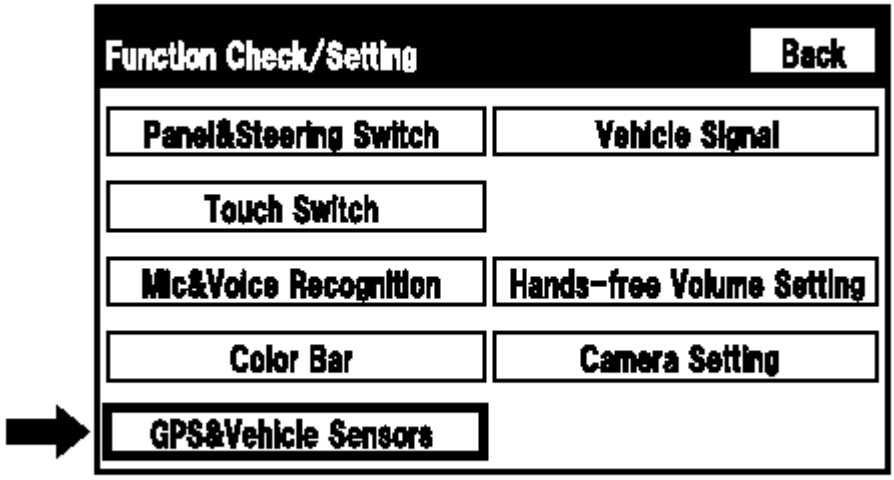
b. Select "Function Check/Setting" from the "Service Menu" screen.



H

Fig. 53: Screen Display - Service Menu
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

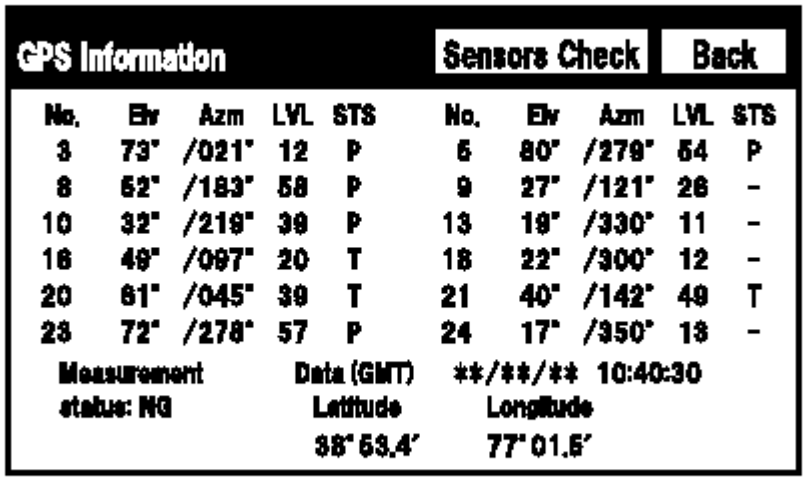
c. Select "GPS&Vehicle Sensors" from the "Function Check/Setting" screen.



H

Fig. 54: Screen Display - GPS &Vehicle Sensors
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

d. GPS information
    1. When GPS information is displayed, check the GPS conditions.



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Fig. 55: GPS Information

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

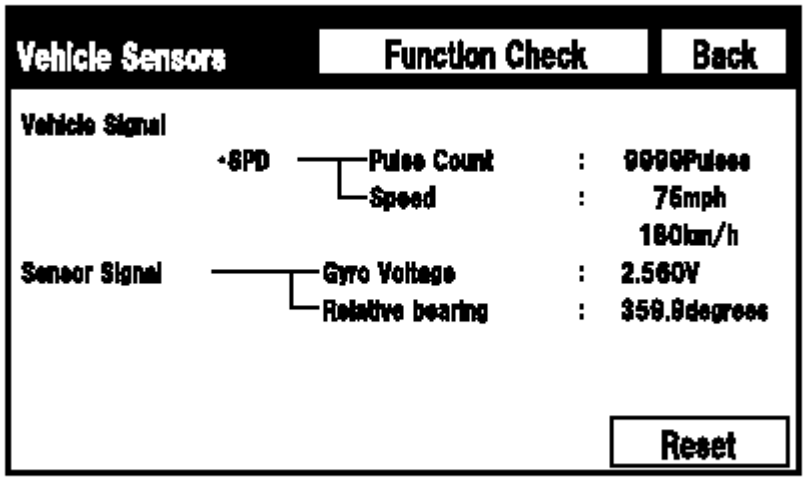
HINT:

- This screen is updated once per second when input signals to the vehicle are changed.
- For details of this function, refer to Diagnosis Display Detailed Description. Refer to **SYSTEM DESCRIPTION**.

e. Select "Sensors Check" from the "GPS & Vehicle Sensors" screen.

f. Vehicle Sensors

1. Check all the signals and sensors when vehicle signal information is displayed.



H

Fig. 56: Screen Display - Vehicle Sensors
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

HINT:

- The input signals from the vehicle are updated once per second and if any have changed, the screen is updated.
- This screen displays vehicle signals input to the built-in navigation ECU.
- For details of this function, refer to Diagnosis Display Detailed Description. Refer to **SYSTEM DESCRIPTION**.

7. **CHECK VEHICLE SIGNAL**

HINT:

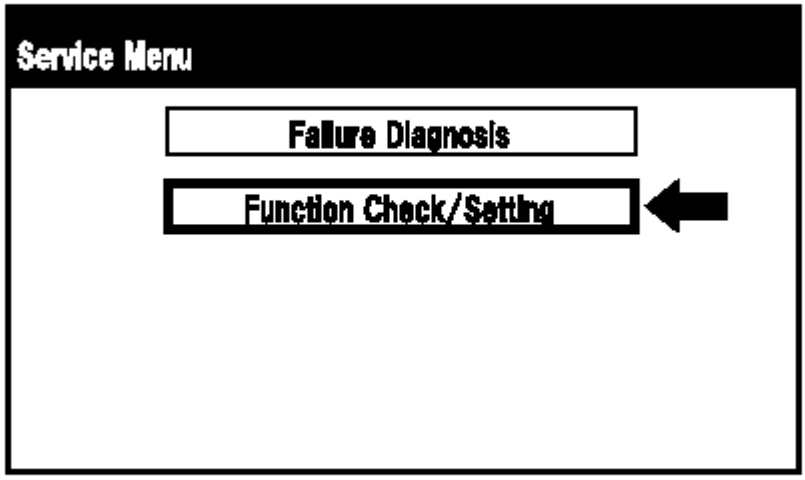
- Vehicle signals received by the navigation receiver assembly are checked in the following

procedure.

- Illustrations may differ from the actual vehicle screen depending on the device settings and options. Therefore, some detailed areas may not be shown exactly the same as on the actual vehicle screen.

a. Enter diagnostic mode. Refer to **DTC CHECK / CLEAR**.

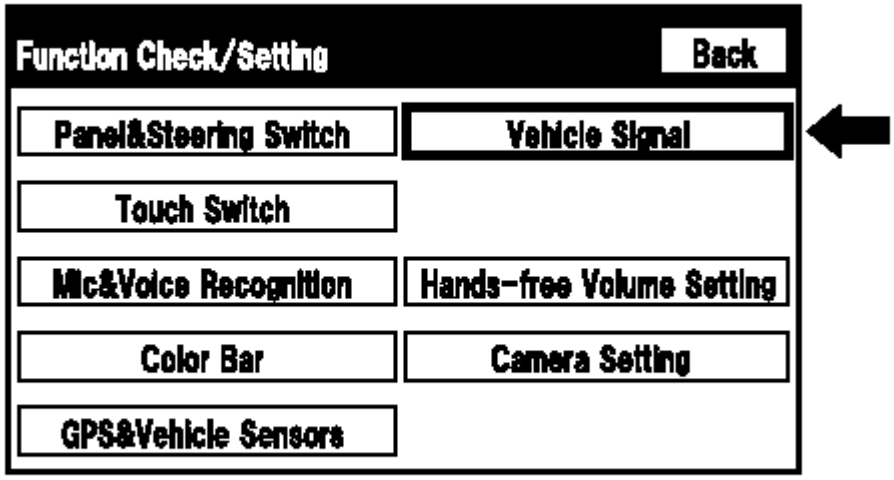
b. Select "Function Check/Setting" from the "Service Menu" screen.



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Fig. 57: Screen Display - Service Menu
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

c. Select "Vehicle Signal" from the "Function Check/Setting" screen.

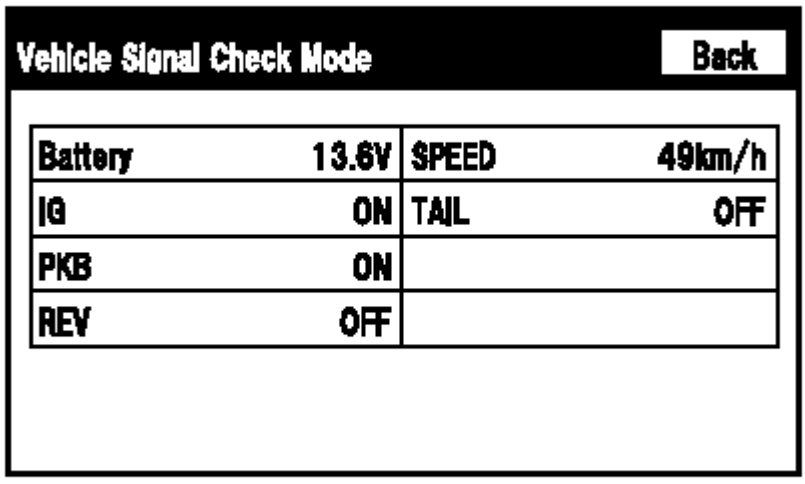


H

Fig. 58: Screen Display - Vehicle Signal
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

d. Vehicle Signal Check Mode

1. When the "Vehicle Signal Check Mode" screen is displayed, check all the vehicle signal conditions.



H

Fig. 59: Screen Display - Vehicle Signal Check Mode
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

HINT:

- Only conditions having inputs are displayed.
- This screen displays vehicle signals input to the navigation receiver assembly.
- For details of this function, refer to Diagnosis Display Detailed Description. Refer to **SYSTEM DESCRIPTION**.

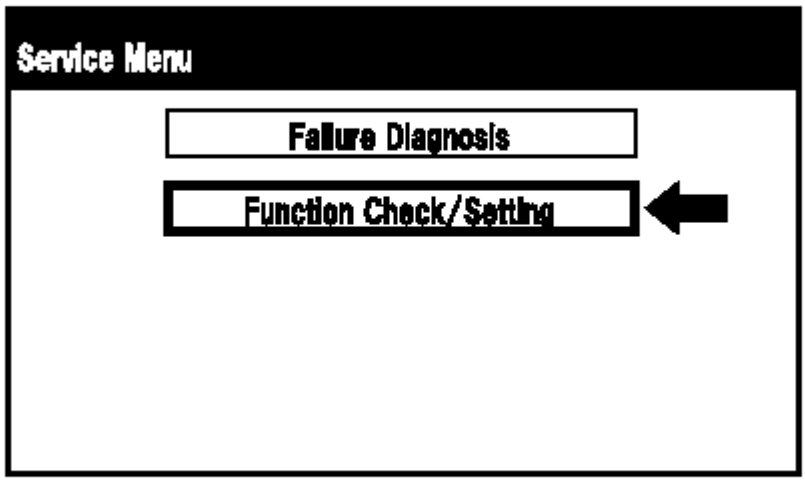
8. **CHECK HANDSFREE VOLUME SETTING**

HINT:

- The handsfree volume of a "Bluetooth" compatible phone can be adjusted using the following procedure.
- Illustrations may differ from the actual vehicle screen depending on the device settings and options. Therefore, some detailed areas may not be shown exactly the same as on the actual vehicle screen.

a. Enter diagnostic mode. Refer to **DTC CHECK / CLEAR**.

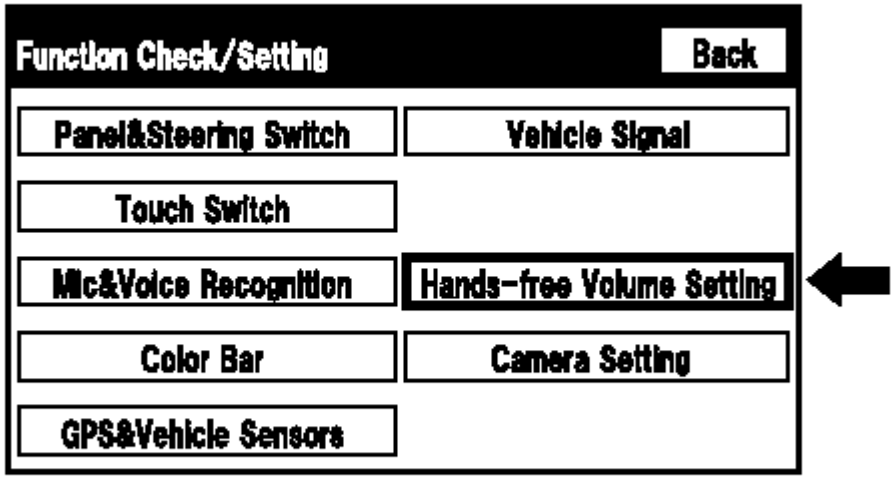
b. Select "Function Check/Setting" from the "Service Menu" screen.



H

Fig. 60: Screen Display - Service Menu
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

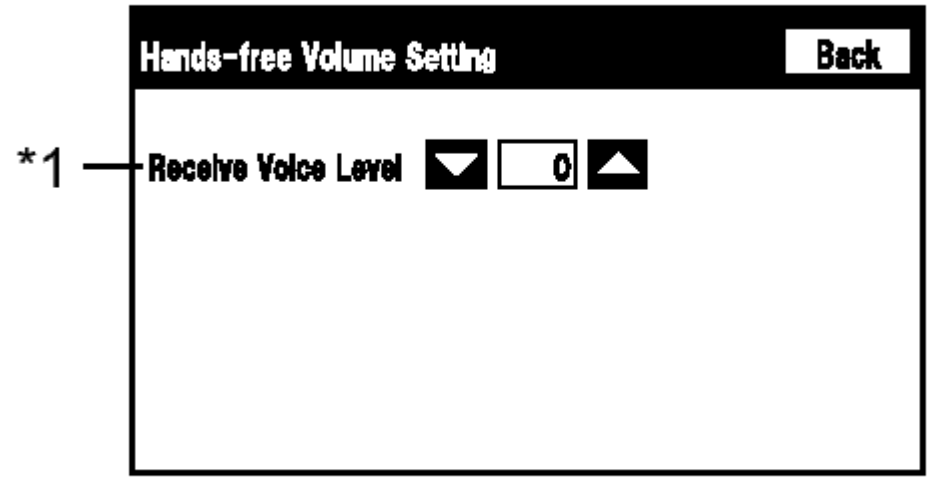
c. Select "Hands-free Volume Setting" from the "Function Check/Setting" screen.



H

Fig. 61: Screen Display - Hands-Free Volume Setting
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

d. Handsfree Volume Setting
    1. Check the handsfree volume level.



H

Fig. 62: Screen Display - Handsfree Volume Setting

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

SCREEN DESCRIPTION

Display	Content
*1: Receive voice level adjustment	Setting possible for the voice level received from "Bluetooth" compatible phones.

NOTE: **Sound quality may deteriorate when the receive voice level is changed more than necessary. For this reason, check that the received voice quality is still acceptable after changing this setting.**

PROBLEM SYMPTOMS TABLE

PROBLEM SYMPTOMS TABLE

HINT:

- Use the table below to help determine the cause of problem symptoms. If multiple suspected areas are listed, the potential causes of the symptoms are listed in order of probability in the "Suspected Area" column of the table. Check each symptom by checking the suspected areas in the order they are listed. Replace parts as necessary.
- Inspect the fuses and relays related to this system before inspecting the suspected areas below.

DISPLAY FUNCTION

Symptom	Suspected Area	See
Pressing PWR switch does not turn on system.	Proceed to "Pressing Power Switch does not Turn on System"	Refer to **Pressing Power Switch does not Turn on System**
	Proceed to "Navigation Receiver Assembly Power Source Circuit"	Refer to **Navigation Receiver Assembly Power Source Circuit**
	Navigation receiver assembly	Refer to **REMOVAL**
Black screen (No image appears on navigation/audio screen).	Proceed to "Black Screen"	Refer to **Black Screen**
	Proceed to "Illumination Circuit"	Refer to **Illumination Circuit**
	Navigation receiver assembly	Refer to **REMOVAL**
	Proceed to "Illumination for	Refer to **Illumination for**

Illumination for panel switch does not come on with tail switch on.	Panel Switch does not Come on with tail Switch ON"	**Panel Switch does not Come on with Tail Switch ON**
	Proceed to "Illumination Circuit"	Refer to **Illumination Circuit**
	Navigation receiver assembly	Refer to **REMOVAL**
Display does not dim (night Screen) with TAIL switch on.	Proceed to "Display does not Dim when Light Control Switch is Turned ON"	Refer to **Display does not Dim when Light Control Switch is Turned ON**
	Proceed to "Illumination Circuit"	Refer to **Illumination Circuit**
	Navigation receiver assembly	Refer to **REMOVAL**
Power does not turn off (Screen remains on).	Proceed to "Navigation Receiver Assembly Power Source Circuit"	Refer to **Navigation Receiver Assembly Power Source Circuit**
	Navigation receiver assembly	Refer to **REMOVAL**
Panel switches do not function.	Proceed to "Panel Switches do not Function"	Refer to **Panel Switches do not Function**
	Proceed to "Steering Pad Switch Circuit"	Refer to **Steering Pad Switch Circuit**
	Proceed to "Navigation Receiver Assembly Power Source Circuit"	Refer to **Navigation Receiver Assembly Power Source Circuit**
	Navigation receiver assembly	Refer to **REMOVAL**
Touch panel switch does not function.	Proceed to "Touch Panel Switch does not Function"	Refer to **Touch Panel Switch does not Function**
	Proceed to "Steering Pad Switch Circuit"	Refer to **Steering Pad Switch Circuit**
	Proceed to "Navigation Receiver Assembly Power Source Circuit"	Refer to **Navigation Receiver Assembly Power Source Circuit**
	Navigation receiver assembly	Refer to **REMOVAL**
Display panel does not open, tilt, or tilts improperly.	Proceed to "Display Panel does not Open, Tilt, or Tilts Improperly"	Refer to **Display Panel does not Open, Tilt or Tilts Improperly**
	Proceed to "Navigation Receiver Assembly Power Source Circuit"	Refer to **Navigation Receiver Assembly Power Source Circuit**
	Navigation receiver assembly	Refer to **REMOVAL**
Screen is distorted.	Proceed to "Navigation Receiver Assembly Power Source Circuit"	Refer to **Navigation Receiver Assembly Power Source Circuit**
	Navigation receiver assembly	Refer to **REMOVAL**
	Proceed to "Screen Flicker or Color Distortion"	Refer to **Screen Flicker or Color Distortion**

Screen flicker or color distortion.	Proceed to "Navigation Receiver Assembly Power Source Circuit"	Refer to **Navigation Receiver Assembly Power Source Circuit**
	Navigation receiver assembly	Refer to **REMOVAL**
DVD image cannot be displayed on front screen (Parking brake is on).*1	Proceed to "Display Signal Circuit between Television Display Assembly and Navigation Receiver Assembly"	Refer to **Display Signal Circuit between Television Display Assembly and Navigation Receiver Assembly**
	Proceed to "Parking Brake Switch Signal Circuit"	Refer to **Parking Brake Switch Circuit**
	Navigation receiver assembly	Refer to **REMOVAL**
Navigation function switches can be operated while vehicle is running.	Navigation receiver assembly	Refer to **REMOVAL**

*1: w/ Rear Seat Entertainment System

AUDIO FUNCTION

Symptom	Suspected Area	See
No sound can be heard from speakers (audio is mute).	Proceed to "No Sound can be Heard from Speakers"	Refer to **No Sound can be Heard from Speakers**
	Proceed to "Stereo Component Amplifier Power Source Circuit"	Refer to **Stereo Component Amplifier Power Source Circuit**
	Proceed to "Sound Signal Circuit between Navigation Receiver Assembly and Stereo Component Amplifier"	Refer to **Sound Signal Circuit between Navigation Receiver Assembly and Stereo Component Amplifier**
	Proceed to "Mute Signal Circuit between Navigation Receiver Assembly and Stereo Component Amplifier"	Refer to **Mute Signal Circuit between Navigation Receiver Assembly and Stereo Component Amplifier**
	Proceed to "Mute Signal Circuit between Stereo Component Tuner Assembly and Television Display Assembly"*1	Refer to **Mute Signal Circuit between Stereo Component Tuner Assembly and Television Display Assembly**
	Proceed to "Mute Signal Circuit between Stereo Component Tuner Assembly and Multi-media Interface ECU"	Refer to **Mute Signal Circuit between Stereo Component Tuner Assembly and Multi-media Interface ECU**
	Proceed to "Mute Signal Circuit between Navigation Receiver Assembly and Multi-media Interface ECU"	Refer to **Mute Signal Circuit between Navigation Receiver Assembly and Multi-media Interface ECU**
	Proceed to "Mute Signal Circuit	Refer to **Mute Signal Circuit**

	between Stereo Component Amplifier and Telematics Transceiver"*2	**between Stereo Component Amplifier and Telematics Transceiver**
	Proceed to "Speaker Circuit"	Refer to **Speaker Circuit**
	Stereo component amplifier assembly	Refer to **REMOVAL**
	Navigation receiver assembly	Refer to **REMOVAL**
Radio broadcast cannot be received or poor reception.	Proceed to "Radio Broadcast cannot be Received or Poor Reception"	Refer to **Radio Broadcast cannot be Received or Poor Reception**
CD cannot be inserted/played or CD is ejected right after insertion.	Proceed to "CD cannot be Inserted / Played or CD is Ejected Right After Insertion"	Refer to **CD cannot be Inserted / Played or CD is Ejected Right After Insertion**
CD cannot be ejected.	Proceed to "CD cannot be Ejected"	Refer to **CD cannot be Ejected**
CD sound skips.	Proceed to "CD Sound Skips"	Refer to **CD Sound Skips**
Abnormal noise occurs.	Proceed to "Noise Occurs"	Refer to **Noise Occurs**
Poor sound quality in all modes (low volume).	Proceed to "Poor Sound Quality in All Modes (Low Volume)"	Refer to **Poor Sound Quality in All Modes (Low Volume)**
	Proceed to "Speaker Circuit"	Refer to **Speaker Circuit**
	Proceed to "Mute Signal Circuit between Navigation Receiver Assembly and Stereo Component Amplifier"	Refer to **Mute Signal Circuit between Navigation Receiver Assembly and Stereo Component Amplifier**
	Proceed to "Mute Signal Circuit between Stereo Component Tuner Assembly and Television Display Assembly"*1	Refer to **Mute Signal Circuit between Stereo Component Tuner Assembly and Television Display Assembly**
	Proceed to "Mute Signal Circuit between Stereo Component Tuner Assembly and Multi-media Interface ECU"	Refer to **Mute Signal Circuit between Stereo Component Tuner Assembly and Multi-media Interface ECU**
	Proceed to "Mute Signal Circuit between Navigation Receiver Assembly and Multi-media Interface ECU"	Refer to **Mute Signal Circuit between Navigation Receiver Assembly and Multi-media Interface ECU**
	Proceed to "Stereo Component Amplifier Power Source Circuit"	Refer to **Stereo Component Amplifier Power Source Circuit**
	Proceed to "Navigation Receiver Assembly Power Source Circuit"	Refer to **Navigation Receiver Assembly Power Source Circuit**
	Stereo component amplifier assembly	Refer to **REMOVAL**
	Navigation receiver assembly	Refer to **REMOVAL**

Satellite radio sound cannot be heard or sound quality is bad.	Proceed to "Sound Signal Circuit between Stereo Component Tuner Assembly and Multi-media Interface ECU"	Refer to **Sound Signal Circuit between Stereo Component Tuner Assembly and Multi-media Interface ECU**
	Proceed to "Sound Signal Circuit between Stereo Component Tuner Assembly and Television Display Assembly"*1	Refer to **Sound Signal Circuit between Stereo Component Tuner Assembly and Television Display Assembly**
	Proceed to "Mute Signal Circuit between Stereo Component Tuner Assembly and Television Display Assembly"*1	Refer to **Mute Signal Circuit between Stereo Component Tuner Assembly and Television Display Assembly**
	Proceed to "Mute Signal Circuit between Stereo Component Tuner Assembly and Multi-media Interface ECU"	Refer to **Mute Signal Circuit between Stereo Component Tuner Assembly and Multi-media Interface ECU**
	Stereo component tuner assembly	Refer to **REMOVAL**
	Navigation receiver assembly	Refer to **REMOVAL**
RSE sound cannot be heard or sound quality is bad.*1	Proceed to "Sound Signal Circuit between Stereo Component Tuner Assembly and Television Display Assembly"	Refer to **Sound Signal Circuit between Stereo Component Tuner Assembly and Television Display Assembly**
	Proceed to "Mute Signal Circuit between Stereo Component Tuner Assembly and Television Display Assembly"	Refer to **Mute Signal Circuit between Stereo Component Tuner Assembly and Television Display Assembly**
	Navigation receiver assembly	Refer to **REMOVAL**
	Stereo component tuner assembly	Refer to **REMOVAL**
	Television display assembly	Refer to **REMOVAL**
ASL does not function.	Check the ASL function is ON	-
	Proceed to "B15C2"	Refer to **DTC B15C2: Speed Signal Malfunction**
	Navigation receiver assembly	Refer to **REMOVAL**

*1: w/ Rear Seat Entertainment System

*2: w/ Safety Connect System

NAVIGATION FUNCTION

Symptom	Suspected Area	See
Map disc cannot be inserted.	Proceed to "Map Disc cannot be Inserted"	Refer to **Map Disc cannot be Inserted**
	Proceed to "Navigation Receiver Assembly Power Source Circuit"	Refer to **Navigation Receiver Assembly Power Source Circuit**
	Navigation receiver assembly	Refer to **REMOVAL**

Map disc cannot be ejected.	Proceed to "Navigation Receiver Assembly Power Source Circuit"	Refer to **Navigation Receiver Assembly Power Source Circuit**
	Navigation receiver assembly	Refer to **REMOVAL**
Vehicle position mark deviates.	Proceed to "Vehicle Position Mark Deviates Greatly"	Refer to **Vehicle Position Mark Deviates Greatly**
	Navigation antenna assembly	Refer to **REMOVAL**
	Navigation receiver assembly	Refer to **REMOVAL**
Cursor or map rotates when vehicle is stopped.	Proceed to "Cursor or Map Rotates When Vehicle is Stopped"	Refer to **Cursor or Map Rotates when Vehicle Stopped**
	Navigation receiver assembly	Refer to **REMOVAL**
Vehicle position mark is not updated.	Proceed to "Vehicle Position Mark is not Updated"	Refer to **Vehicle Position Mark is not Updated**
	Map disc	-
	Navigation receiver assembly	Refer to **REMOVAL**
Map disc reading error	Proceed to "Map Disc Read Error"	Refer to **Map Disc Read Error**
	Navigation receiver assembly	Refer to **REMOVAL**
Current position display does not appear.	Proceed to "Current Position Display does not Appear"	Refer to **Current Position Display does not Appear**
	Map disc	-
	Navigation antenna assembly	Refer to **REMOVAL**
	Navigation receiver assembly	Refer to **REMOVAL**
GPS mark is not displayed.	Proceed to "GPS Mark is not Displayed"	Refer to **GPS Mark is not Displayed**
	Navigation antenna assembly	Refer to **REMOVAL**
	Navigation receiver assembly	Refer to **REMOVAL**
Voice guidance does not function.	Proceed to "Voice Guidance does not Function"	Refer to **Voice Guidance does not Function**
	Proceed to "Mute Signal Circuit between Navigation Receiver Assembly and Stereo Component Amplifier"	Refer to **Mute Signal Circuit between Navigation Receiver Assembly and Stereo Component Amplifier**
	Proceed to "Navigation Voice Circuit"	Refer to **Navigation Voice Circuit**
	Proceed to "Speaker Circuit"	Refer to **Speaker Circuit**
	Map disc	-
	Stereo component amplifier assembly	Refer to **REMOVAL**
	Navigation receiver assembly	Refer to **REMOVAL**
Map display incomplete.	Proceed to "Map Display Incomplete"	Refer to **Map Display Incomplete**
	Map disc	-
	Navigation receiver assembly	Refer to **REMOVAL**
	Proceed to "Route cannot be	Refer to **Route cannot be**

Route cannot be calculated.	Calculated"	**Calculated**
	Map disc	-
	Navigation receiver assembly	Refer to **REMOVAL**
Voice recognition difficulty.	Proceed to "Voice Recognition Difficulty"	Refer to **Voice Recognition Difficulty**
	Proceed to "Microphone Circuit between Microphone and Navigation Receiver Assembly"	Refer to **Microphone Circuit between Microphone and Navigation Receiver Assembly**
	Telephone microphone assembly	-
	Navigation receiver assembly	Refer to **REMOVAL**
Voice is not recognized.	Proceed to "Voice is not Recognized"	Refer to **Voice is not Recognized**
	Proceed to "Microphone Circuit between Microphone and Navigation Receiver Assembly"	Refer to **Microphone Circuit between Microphone and Navigation Receiver Assembly**
	Proceed to "Steering Pad switch Circuit"	Refer to **Steering Pad Switch Circuit**
	Telephone microphone assembly	-
	Navigation receiver assembly	Refer to **REMOVAL**
Reverse signal does not change in the vehicle signal check mode.	Proceed to "Reverse Signal Circuit"	Refer to **Reverse Signal Circuit**
"MIC" is not displayed on system check mode screen.	Proceed to "Microphone Circuit between Microphone and Navigation Receiver Assembly"	Refer to **Microphone Circuit between Microphone and Navigation Receiver Assembly**
	Navigation receiver assembly	Refer to **REMOVAL**
"AUX" is not displayed on system check mode screen.	Proceed to "Sound Signal Circuit between Multi-media Interface ECU and Stereo Jack Adapter"	Refer to **Sound Signal Circuit between Multi-media Interface ECU and Stereo Jack Adapter**
	Proceed to "Sound Signal Circuit between Navigation Receiver Assembly and Stereo Jack Adapter"	Refer to **Sound Signal Circuit between Navigation Receiver Assembly and Stereo Jack Adapter**
	Navigation receiver assembly	Refer to **REMOVAL**

STEERING PAD SWITCH FUNCTION

Symptom	Suspected Area	See
The system cannot be operated by the steering pad switch.	Proceed to "Steering Pad Switch Circuit"	Refer to **Steering Pad Switch Circuit**
	Navigation receiver assembly	Refer to **REMOVAL**
Illumination for steering pad switch does not come on with tail switch on.	Proceed to "Illumination Circuit"	Refer to **Illumination Circuit**
	Navigation receiver assembly	Refer to **REMOVAL**

"BLUETOOTH" FUNCTION

Symptom	Suspected Area	See
Cellular phone registration failure, phone directory transfer failure.	Proceed to "Cellular Phone Registration Failure, Phone Directory Transfer Failure"	Refer to **Cellular Phone Registration Failure, Phone Directory Transfer Failure**
Cellular phone cannot send/receive.	Proceed to "Cellular Phone cannot Send / Receive"	Refer to **Cellular Phone cannot Send/Receive**
	Proceed to "Steering Pad Switch Circuit"	Refer to **Steering Pad Switch Circuit**
	Navigation receiver assembly	Refer to **REMOVAL**
Cannot call in a certain place.	Proceed to "Cannot Call in a Certain Place"	Refer to **Cannot Call in a Certain Place**
The other caller's voice cannot be heard, is too quiet, or distorted.	Proceed to "The Other Caller's Voice cannot be Heard, is too Quiet, or Distorted"	Refer to **The Other Caller's Voice cannot be Heard, is too Quiet, or Distorted**
	Proceed to "Navigation Voice Circuit"	Refer to **Navigation Voice Circuit**
	Stereo component amplifier assembly	Refer to **REMOVAL**
	Navigation receiver assembly	Refer to **REMOVAL**
The other caller cannot hear your voice, or your voice is too quiet or distorted.	Proceed to "The Other Caller cannot Hear Your Voice, or Your Voice is too Quiet or Distorted"	Refer to **The Other Caller cannot Hear Your Voice, or Your Voice is too Quiet or Distorted**
	Proceed to "Microphone Circuit between Microphone and Navigation Receiver Assembly"	Refer to **Microphone Circuit between Microphone and Navigation Receiver Assembly**
	Telephone microphone assembly	-
	Navigation receiver assembly	Refer to **REMOVAL**

"BLUETOOTH" AUDIO FUNCTION

Symptom	Suspected Area	See
Portable player cannot be registered.	Proceed to "Portable Player cannot be Registered"	Refer to **Portable Player cannot be Registered**
	Navigation receiver assembly	Refer to **REMOVAL**
Portable player cannot be connected manually/automatically.	Proceed to "Portable Player cannot be Registered"	Refer to **Portable Player cannot be Registered**
	Proceed to "Portable Player cannot be Connected Manually/Automatically"	Refer to **Portable Player cannot be Connected Manually/Automatically**
	Navigation receiver assembly	Refer to **REMOVAL**
Cellular phone with portable audio function cannot be recognized as "Bluetooth" audio device even when connected	Proceed to "Portable Player cannot be Registered"	Refer to **Portable Player cannot be Registered**
	Proceed to "Portable Player cannot be Connected	Refer to **Portable Player cannot be Connected**

using "Bluetooth".	Manually/Automatically"	**Manually/Automatically**
	Navigation receiver assembly	Refer to **REMOVAL**
Sound of portable player cannot be heard from speakers, or sound is low.	Proceed to "Sound of Portable Player cannot be Heard from Speakers or Sound is Low"	Refer to **Sound of Portable Player cannot be Heard from Speakers or Sound is Low**
	Navigation receiver assembly	Refer to **REMOVAL**
Portable player does not play even after "Bluetooth" audio mode is selected.	Proceed to "Does not Play even after Bluetooth Audio Mode is Selected"	Refer to **Does not Play even after Bluetooth Audio Mode is Selected**
	Navigation receiver assembly	Refer to **REMOVAL**
Portable player does not play.	Proceed to "Does not Play even after Bluetooth Audio Mode is Selected"	Refer to **Does not Play even after Bluetooth Audio Mode is Selected**
	Navigation receiver assembly	Refer to **REMOVAL**
Track information such as track number, track name and elapsed play time is not displayed.	Proceed to "Portable Player cannot be Operated Using In-vehicle Device or Track Information is not Displayed on In-vehicle Device"	Refer to **Portable Player cannot be Operated Using In-vehicle Device or Track Information is not Displayed on In-vehicle Device**
	Navigation receiver assembly	Refer to **REMOVAL**
Operation switches for portable player such as play, pause, repeat, random and scan are not displayed.	Proceed to "Portable Player cannot be Operated Using In-vehicle Device or Track Information is not Displayed on In-vehicle Device"	Refer to **Portable Player cannot be Operated Using In-vehicle Device or Track Information is not Displayed on In-vehicle Device**
	Navigation receiver assembly	Refer to **REMOVAL**
Battery condition of portable player is not displayed.	Proceed to "Portable Player cannot be Operated Using In-vehicle Device or Track Information is not Displayed on In-vehicle Device"	Refer to **Portable Player cannot be Operated Using In-vehicle Device or Track Information is not Displayed on In-vehicle Device**
	Navigation receiver assembly	Refer to **REMOVAL**
"Bluetooth" signal condition is not displayed.	Proceed to "Portable Player cannot be Operated Using In-vehicle Device or Track Information is not Displayed on In-vehicle Device"	Refer to **Portable Player cannot be Operated Using In-vehicle Device or Track Information is not Displayed on In-vehicle Device**
	Navigation receiver assembly	Refer to **REMOVAL**
Portable player cannot pause, select file, fast forward, fast rewind, random play or scan.	Proceed to "Portable Player cannot be Operated Using In-vehicle Device or Track Information is not Displayed on In-vehicle Device"	Refer to **Portable Player cannot be Operated Using In-vehicle Device or Track Information is not Displayed on In-vehicle Device**
	Navigation receiver assembly	Refer to **REMOVAL**
	Proceed to "Noise Occurs or	

Noise occurs or sound skips when portable player plays.	Sound Skips when Portable Player Plays"	Refer to **Noise Occurs or Sound Skips when Portable Player Plays**
	Navigation receiver assembly	Refer to **REMOVAL**
Registered device cannot be deleted.	Proceed to "Registered Device cannot be Deleted"	Refer to **Registered Device cannot be Deleted**
	Navigation receiver assembly	Refer to **REMOVAL**

SDARS FUNCTION

Symptom	Suspected Area	See
Satellite radio broadcast cannot be received or reception is bad.	Proceed to "Satellite Radio Broadcast cannot be Received"	Refer to **Satellite Radio Broadcast cannot be Received**
	Stereo component tuner assembly	Refer to **REMOVAL**
	Navigation receiver assembly	Refer to **REMOVAL**
Satellite radio cannot receive pay type broadcasts.	Proceed to "Satellite Radio Broadcast cannot be Received"	Refer to **Satellite Radio Broadcast cannot be Received**
	Stereo component tuner assembly	Refer to **REMOVAL**
	Navigation receiver assembly	Refer to **REMOVAL**
Satellite radio broadcast cannot be selected or after selecting broadcast, broadcast cannot be added into memory.	Proceed to "Satellite Radio Broadcast cannot be Received"	Refer to **Satellite Radio Broadcast cannot be Received**
	Proceed to "Satellite Radio Broadcast cannot be Selected or After Selecting Broadcast, Broadcast cannot be Added into Memory"	Refer to **Satellite Radio Broadcast cannot be Selected or After Selecting Broadcast, Broadcast cannot be Added into Memory**
	Stereo component tuner assembly	Refer to **REMOVAL**
	Navigation receiver assembly	Refer to **REMOVAL**
Traffic information is not displayed.	Proceed to "Traffic Information is not Displayed"	Refer to **Traffic Information is not Displayed**
	Stereo component tuner assembly	Refer to **REMOVAL**
	Navigation receiver assembly	Refer to **REMOVAL**
"XM Nav Traffic" mark is not displayed.	Proceed to "Traffic Information is not Displayed"	Refer to **Traffic Information is not Displayed**
	Stereo component tuner assembly	Refer to **REMOVAL**
	Navigation receiver assembly	Refer to **REMOVAL**

USB AUDIO SYSTEM FUNCTION

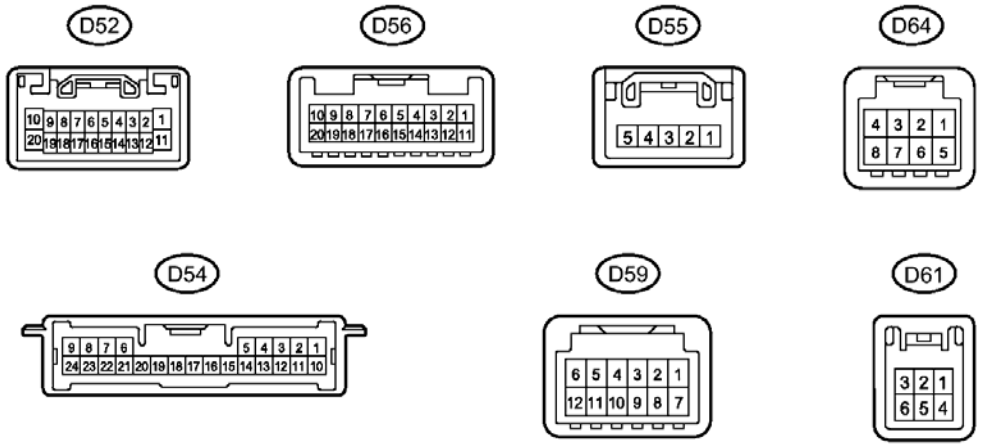
Symptom	Suspected Area	See
	Proceed to "Multi-media Interface ECU Power Source Circuit"	Refer to **Multi-media Interface ECU Power Source Circuit**
	Proceed to "Sound Signal Circuit between Navigation Receiver Assembly and Multi-media Interface ECU"	Refer to **Sound Signal Circuit between Navigation Receiver Assembly and Multi-media Interface ECU**

USB audio sound cannot be heard or sound quality is bad. (Stereo jack is used.)	Proceed to "Sound Signal Circuit between Multi-media Interface ECU and Stereo Jack Adapter"	Refer to **Sound Signal Circuit between Multi-media Interface ECU and Stereo Jack Adapter**
	Proceed to "Mute Signal Circuit between Navigation Receiver Assembly and Multi-media Interface ECU"	Refer to **Mute Signal Circuit between Navigation Receiver Assembly and Multi-media Interface ECU**
	No. 1 stereo jack adapter assembly	Refer to **REMOVAL**
	Multi-media interface ECU	Refer to **REMOVAL**
	Navigation receiver assembly	Refer to **REMOVAL**
USB device or "iPod" is not recognized.	Proceed to "USB Audio System Recognition/Play Error"	Refer to **USB Audio System Recognition/Play Error**
	Proceed to "Sound Signal Circuit between Multi-media Interface ECU and Stereo Jack Adapter"	Refer to **Sound Signal Circuit between Multi-media Interface ECU and Stereo Jack Adapter**
	No. 1 stereo jack adapter assembly	Refer to **REMOVAL**
	Multi-media interface ECU	Refer to **REMOVAL**
Track information such as track, artist and album names are not displayed.	Proceed to "USB Audio System Recognition/Play Error"	Refer to **USB Audio System Recognition/Play Error**
	Proceed to "Sound Signal Circuit between Multi-media Interface ECU and Stereo Jack Adapter"	Refer to **Sound Signal Circuit between Multi-media Interface ECU and Stereo Jack Adapter**
	No. 1 stereo jack adapter assembly	Refer to **REMOVAL**
	Multi-media interface ECU	Refer to **REMOVAL**
USB device or "iPod" is recognized but cannot play nor play in a sorted order.	Proceed to "USB Audio System Recognition/Play Error"	Refer to **USB Audio System Recognition/Play Error**
	Proceed to "Sound Signal Circuit between Multi-media Interface ECU and Stereo Jack Adapter"	Refer to **Sound Signal Circuit between Multi-media Interface ECU and Stereo Jack Adapter**
	No. 1 stereo jack adapter assembly	Refer to **REMOVAL**
	Multi-media interface ECU	Refer to **REMOVAL**

TERMINALS OF ECU

TERMINALS OF ECU

1. **CHECK NAVIGATION RECEIVER ASSEMBLY**



H

Fig. 63: ECU Connector Terminal Identification - Navigation Receiver Assembly
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

Terminal No. (Symbol)	Wiring Color	Terminal Description	Condition	Specified Condition
D52-1 (B) - D52-20 (GND)	SB - BR	Battery power source	Always	11 to 14 V
D52-2 (ILL+) - D52-20 (GND)	G - BR	Illumination signal	Ignition switch ON Light control switch off --> tail or on	Below 1 V --> 11 to 14 V
D52-5 (ATX+) - D52-15 (ATX-)	L - Y	AVC-LAN communication signal	Ignition switch ACC	2 to 3 V
D52-7 (MUTE) - D52-20 (GND)	L - BR	Mute signal	Audio system playing--> Changing	Above 3.5 V --> Below 1 V
D52-8 (R+) - D52-20 (GND)	W - BR	Sound signal (Right)	Audio system playing	A waveform synchronized with sounds is output
D52-9 (L+) - D52-20	G - BR	Sound signal (Left)	Audio system playing	A waveform synchronized with sounds

(GND)				is output
D52-10 (SGND) - Body ground	Shielded - Body ground	Shield ground	Always	Below 1 V
D52-11 (ACC) - D52-20 (GND)	GR - BR	ACC power source	Ignition switch off	Below 1 V
			Ignition switch ACC	11 to 14 V
D52-12 (ILL-) - D52-20 (GND)	GR - BR	Illumination signal	Ignition switch ON Light control switch off --> tail or on (Light intensity not max. or min.)	Below 1 V --> Pulse generation
D52-13 (ANT) - D52-20 (GND)	B - BR	Power source of antenna	Radio switch is ON and AM or FM	11 to 14 V
D52-15 (ATX-) - D52-20 (GND)	Y - BR	AVC-LAN communication signal	Ignition switch ACC	2 to 3 V
D52-18 (R-) - D52-20 (GND)	B - BR	Sound signal (Right)	Audio system playing	A waveform synchronized with sounds is output
D52-19 (L-) - D52-20 (GND)	R - BR	Sound signal (Left)	Audio system playing	A waveform synchronized with sounds is output
D52-20 (GND) - Body ground	BR - Body ground	Ground	Always	Below 1 V
D54-5 (SNS2) - D52-20 (GND)	B - BR	Microphone connection detection signal	Always	Below 0.1 V
D54-17 (MACC) - D52-20 (GND)	R - BR	Telephone microphone assembly power supply	Ignition switch off --> ON	Below 1 V --> 5 V
D54-18				

(SGND) - D52-20 (GND)	Shielded - BR	Microphone voice signal shield ground	Always	Below 1 V
D54-19 (MIC+) - D52-20 (GND)	B - BR	Microphone voice signal	See "Microphone & Voice Recognition Check". Refer to **OPERATION CHECK**	-
D54-20 (MIC-) - Body ground	W - Body ground	Microphone voice signal	See "Microphone & Voice Recognition Check". Refer to **OPERATION CHECK**	-
D55-1 (PKB) - D52-20 (GND)	R - BR	Parking brake signal	See "Vehicle Signal Check Mode". Refer to **OPERATION CHECK**	-
D55-2 (IG) - D52-20 (GND)	L - BR	IG power source	Ignition switch ON	11 to 14 V
D55-3 (SPD) - D52-20 (GND)	LG - BR	Speed signal from combination meter assembly	See "Vehicle Signal Check Mode". Refer to **OPERATION CHECK**	-
D55-5 (REV) - D52-20 (GND)	B - BR	Reverse signal	See "Vehicle Signal Check Mode". Refer to **OPERATION CHECK**	-
D56-6 (SWG) - D52-20 (GND)	SB - BR	Steering pad switch signal	Always	Below 1 V
			Steering pad switch not	4.5 to 5.5 V

D56-7 (SW1) - D56-6 (SWG)	B - SB	Steering pad switch signal	operated	
			Seek+ switch pushed	Below 0.5 V
			Seek- switch pushed	0.86 to 1.5 V
			Volume+ switch pushed	1.91 to 2.01 V
			Volume- switch pushed	3.23 to 3.57 V
D56-8 (SW2) - D56-6 (SWG)	LG - SB	Steering pad switch signal	Steering pad switch not operated	4.5 to 5.5 V
			MODE switch pushed	Below 0.5 V
			On Hook switch pushed	0.86 to 1.5 V
			Off Hook switch pushed	1.91 to 2.01 V
			Voice switch pushed	3.23 to 3.57 V
D56-9 (TX1+) - D52-20 (GND)	W - BR	AVC-LAN communication signal	Ignition switch ACC	2 to 3 V
D56-10 (TX1-) - D52-20 (GND)	B - BR	AVC-LAN communication signal	Ignition switch ACC	2 to 3 V
D56-11 (IVO+) - D52-20 (GND)	R - BR	Voice guidance signal	Voice guidance transmitting	A waveform synchronized with sounds is output
D56-12 (IVO-) - D52-20 (GND)	G - BR	Voice guidance signal	Voice guidance transmitting	A waveform synchronized with sounds is output
D56-13 (SLD1) - Body ground	Shielded - Body ground	Voice sound signal shield ground	Always	Below 1 V
D56-15 (ARI) - D52-20 (GND)	R - BR	Sound signal (Right)	External device playing (When stereo jack used)	A waveform synchronized with sounds is output
D56-16				

(ASGN) - D52-20 (GND)	B - BR	Ground	Always	Below 1 V
D56-17 (ALI) - D52-20 (GND)	W - BR	Sound signal (Left)	External device playing (When stereo jack used)	Below 1 V
D56-18 (AGND) - Body ground	Shielded - Body ground	Shield ground	Always	Below 1 V
D56-19 (AUXI) - D52-20 (GND)	B - BR	External device connection detection signal	External device connected	Below 1 V
D64-2 (VV+) - D64-6 (VV-)*1	B - W	Display signal (Input)	RSE system is playing	A waveform synchronized with display signals is output. (Refer to waveform 1)
D59-2 (CDR+) - D52-20 (GND)	B - BR	Sound signal (Input)	Satellite radio or RSE system*1 or USB audio is playing	A waveform synchronized with sounds is output
D59-3 (CDR-) - D52-20 (GND)	W - BR	Sound signal (Input)	Satellite radio or RSE system*1 or USB audio is playing	A waveform synchronized with sounds is output
D59-4 (CDL+) - D52-20 (GND)	R - BR	Sound signal (Input)	Satellite radio or RSE system*1 or USB audio is playing	A waveform synchronized with sounds is output
D59-5 (CDL-) - D52-20 (GND)	G - BR	Sound signal (Input)	Satellite radio or RSE system*1 or USB audio is playing	A waveform synchronized with sounds is output
D59-6 (MUTE)	R - BR	Mute signal	Satellite radio or RSE system or USB audio	Above 3.5 V --> Below 1

- D52-20 (GND)			is playing --> Source changed	V
D59-7 (GND) - Body ground	BR - Body ground	Ground	Always	Below 1 ohms
D59-9 (TXM+) - D52-20 (GND)	B - BR	AVC-LAN communication signal	Ignition switch ACC	2 to 3 V
D59-10 (TXM-) - D52-20 (GND)	W - BR	AVC-LAN communication signal	Ignition switch ACC	2 to 3 V
D59-11 (ACC) - D52-20 (GND)	GR - BR	ACC power source	Ignition switch off	Below 1 V
			Ignition switch ACC	11 to 14 V
D59-12 (+B) - D52-20 (GND)	SB - BR	Battery power source	Always	11 to 14 V
D61-2 (TXO+) - D52-20 (GND)	W - BR	AVC-LAN plus communication signal	Ignition switch ACC	2 to 3 V
D61-3 (TXI+) - D52-20 (GND)	V - BR	AVC-LAN plus communication signal	Ignition switch ACC	2 to 3 V
D61-5 (TXO-) - D52-20 (GND)	R - BR	AVC-LAN plus communication signal	Ignition switch ACC	2 to 3 V
D61-6 (TXI-) - D52-20 (GND)	P - BR	AVC-LAN plus communication signal	Ignition switch ACC	2 to 3 V

*1: w/ Rear Seat Entertainment System

a. Using an oscilloscope, check waveform 1.

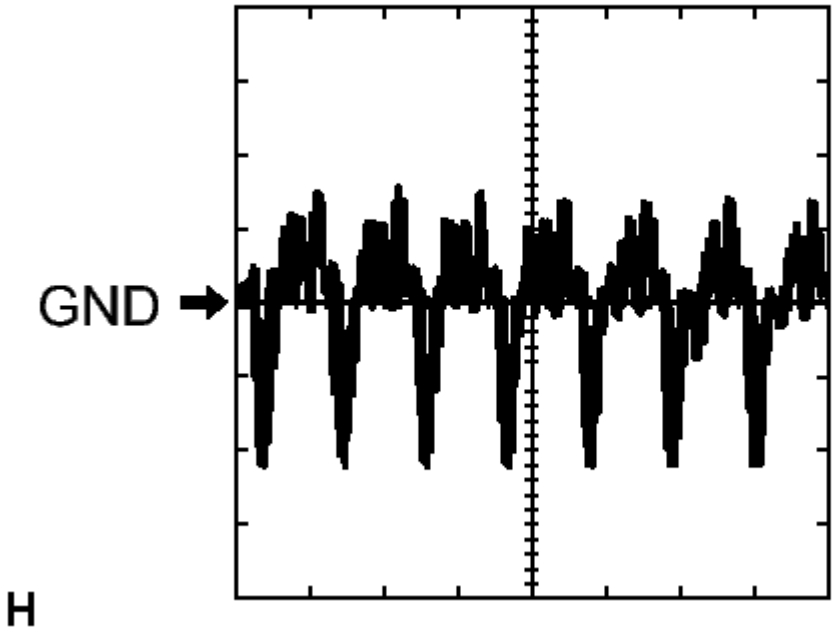


Fig. 64: Identifying Waveform 1
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

MEASUREMENT CONDITION (REFERENCE)

Item	Content
Terminal No. (Symbol)	D64-2 (VV+) - D64-6 (VV-)
Tool Setting	0.2 V/DIV., 50 µsec./DIV.
Condition	RSE system is playing

NOTE: **The video waveform changes according to the image input from television display assembly to navigation receiver assembly, but the synchronization signal does not change.**

2. **CHECK STEREO COMPONENT TUNER ASSEMBLY**

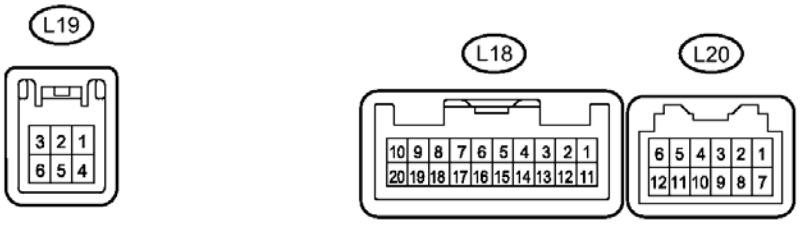


Fig. 65: ECU Connector Terminal Identification - Stereo Component Tuner Assembly
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

Terminal No. (Symbol)	Wiring Color	Terminal Description	Condition	Specified Condition
L18-7 (FLR-) - L20-7 (GND)*1	G - BR	RSE system sound signal (Input)	RSE system playing	A waveform synchronized with sounds is output
L18-8 (FLI+) - L20-7 (GND)*1	R - BR	RSE system sound signal	RSE system playing	A waveform synchronized with sounds is output
L18-9 (FRI-) - L20-7 (GND)*1	W - BR	RSE system sound signal	RSE system playing	A waveform synchronized with sounds is output
L18-10 (FRI+) - L20-7 (GND)*1	B - BR	RSE system sound signal	RSE system playing	A waveform synchronized with sounds is output
L18-11 (TX1-) - L20-7 (GND)	W - BR	AVC-LAN communication signal	Ignition switch ACC	2 to 3 V
L18-12 (TX1+) - L20-7 (GND)	B - BR	AVC-LAN communication signal	Ignition switch ACC	2 to 3 V
L18-15 (MUTE2) - L20-7 (GND)*1	R - BR	Mute signal	RSE system playing--> Source changed with remote control	Above 3.5 V --> Below 1 V

			(signal from RSE system)	
L19-2 (TXO+) - L20-7 (GND)	V - BR	AVC-LAN plus communication signal	Ignition switch ACC	2 to 3 V
L19-3 (TXI+) - L20-7 (GND)	W - BR	AVC-LAN plus communication signal	Ignition switch ACC	2 to 3 V
L19-5 (TXO-) - L20-7 (GND)	P - BR	AVC-LAN plus communication signal	Ignition switch ACC	2 to 3 V
L19-6 (TXI-) - L20-7 (GND)	R - BR	AVC-LAN plus communication signal	Ignition switch ACC	2 to 3 V
L20-2 (FRO+) - L20-7 (GND)	B - BR	Satellite radio or RSE system is playing*1	Satellite radio or RSE system playing*1	A waveform synchronized with sounds is output
		Satellite radio sound signal*2	Satellite radio playing*2	
L20-3 (FRO-) - L20-7 (GND)	W - BR	Satellite radio or RSE system is playing*1	Satellite radio or RSE system playing*1	A waveform synchronized with sounds is output
		Satellite radio sound signal*2	Satellite radio playing*2	
L20-4 (FLO+) - L20-7 (GND)	R - BR	Satellite radio or RSE system is playing*1	Satellite radio or RSE system playing*1	A waveform synchronized with sounds is output
		Satellite radio sound signal*2	Satellite radio playing*2	
L20-5		Satellite radio or RSE system	Satellite radio or RSE	A waveform

(FLO-) - L20-7 (GND)	G - BR	is playing*1	system playing*1	synchronized with sounds is output
		Satellite radio sound signal*2	Satellite radio playing*2	
L20-6 (MUTE) - L20-7 (GND)	R - BR	Mute signal	Satellite radio or RSE system playing --> Source changed to CD*1	Above 3.5 V --> Below 1 V
			Satellite radio playing --> Source changed*2	
L20-7 (GND) - Body ground	BR - Body ground	Ground	Always	Below 1 V
L20-9 (TX+) - L20-7 (GND)	B - BR	AVC-LAN communication signal	Ignition switch ACC	2 to 3 V
L20-10 (TX-) - L20-7 (GND)	W - BR	AVC-LAN communication signal	Ignition switch ACC	2 to 3 V
L20-11 (ACC) - L20-7 (GND)	GR - BR	ACC power source	Ignition switch off	Below 1 V
			Ignition switch ACC	11 to 14 V
L20-12 (+B) - L20-7 (GND)	SB - BR	Battery power source	Always	11 to 14 V

*1: w/ Rear Seat Entertainment System

*2: w/o Rear Seat Entertainment System

3. **CHECK MULTI-MEDIA INTERFACE ECU**

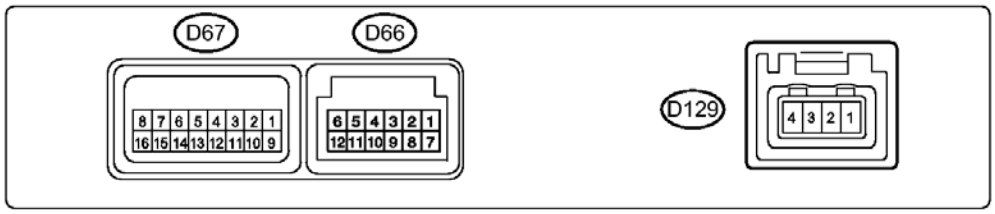


Fig. 66: ECU Connector Terminal Identification - Multi-Media Interface ECU
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

Terminal No. (Symbol)	Wiring Color	Terminal Description	Condition	Specification
D66-1 (USD1) - Body ground	Shielded - Body ground	Shield ground	Always	Below 1 V
D66-2 (URO+) - D66-7 (GND)*1	B - BR	Satellite radio or RSE system*1 or USB audio system sound signal	Satellite radio or RSE system*1 or USB audio system is playing	A waveform synchronized with sounds is output
D66-3 (URO-) - D66-7 (GND)*1	W - BR	Satellite radio or RSE system*1 or USB audio system sound signal	Satellite radio or RSE system*1 or USB audio system is playing	A waveform synchronized with sounds is output
D66-4 (ULO+) - D66-7 (GND)*1	R - BR	Satellite radio or RSE system*1 or USB audio system sound signal	Satellite radio or RSE system*1 or USB audio system is playing	A waveform synchronized with sounds is output
D66-5 (ULO-) - D66-7	G - BR	Satellite radio or RSE system*1 or USB audio	Satellite radio or RSE system*1 or USB	A waveform synchronized with sounds

(GND)*1		system sound signal	audio system is playing	is output
D66-6 (MUT1) - D66-7 (GND)	R - BR	Mute signal from multi-media interface ECU	Satellite radio or RSE system*1 or USB audio system is playing	Above 3.5 V
			Source changed	Below 1 V
D66-7 (GND) - Body ground	BR - Body ground	Ground	Always	Below 1 V
D66-9 (TX1+) - D66-7 (GND)	B - BR	AVC-LAN communication signal	Ignition switch ACC	2 to 3 V
D66-10 (TX1-) - D66-7 (GND)	W - BR	AVC-LAN communication signal	Ignition switch ACC	2 to 3 V
D66-11 (ACC) - D66-7 (GND)	GR - BR	ACC power source	Ignition switch off	Below 1 V
			Ignition switch ACC	11 to 14 V
D66-12 (+B) - D66-7 (GND)	SB - BR	Battery power source	Always	11 to 14 V
D67-4 (TX2+) - D66-7 (GND)	B - BR	AVC-LAN communication signal	Ignition switch ACC	2 to 3 V
D67-5 (TX2-) - D66-7 (GND)	W - BR	AVC-LAN communication signal	Ignition switch ACC	2 to 3 V
D67-7 (ULI+) - D66-7 (GND)	R - BR	Satellite radio or RSE system*1 sound signal	Satellite radio or RSE system*1	A waveform synchronized with sounds is output

			is playing	
D67-8 (URI+) - D66-7 (GND)	B - BR	Satellite radio or RSE system*1 sound signal	Satellite radio or RSE system*1 is playing	A waveform synchronized with sounds is output
D67-14 (MUT2) - D66-7 (GND)	R - BR	Mute signal from television display assembly	RSE system is playing	Above 3.5 V
			RSE system changing mode	Below 1 V
D67-15 (ULI-) - D66-7 (GND)	G - BR	Satellite radio or RSE system*1 sound signal	Satellite radio or RSE system*1 is playing	A waveform synchronized with sounds is output
D67-16 (URI-) - D66-7 (GND)	W - BR	Satellite radio or RSE system*1 sound signal	Satellite radio or RSE system*1 is playing	A waveform synchronized with sounds is output
D129-1 - Body ground	-	Ground	Always	Below 1 V
D129-2 - D129-1	-	Data signal	USB device or "iPod" connected	-
D129-3 - D129-1	-	Data signal	USB device or "iPod" connected	-
D129-4 - D129-1	-	Battery power source	Always	5 V

*1: w/ Rear Seat Entertainment System

4. **CHECK STEREO COMPONENT AMPLIFIER ASSEMBLY**

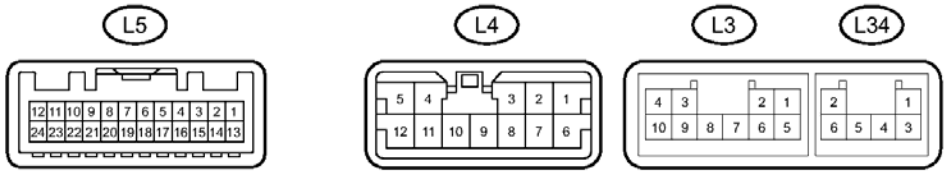


Fig. 67: ECU Connector Terminal Identification - Stereo Component Amplifier Assembly
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

Terminal No. (Symbol)	Wiring Color	Terminal Description	Condition	Specified Condition
L3-1 (WFL+) - L34-2 (GND)	LG - BR	Sound signal (Front No. 1 speaker assembly LH)	Audio system playing	A waveform synchronized with sounds is output
L3-2 (WFR+) - L34-2 (GND)	W - BR	Sound signal (Front No. 1 speaker assembly RH)	Audio system playing	A waveform synchronized with sounds is output
L3-3 (CTR+) - L34-2 (GND)	V - BR	Sound Signal (Front No. 3 speaker assembly)	Audio system playing	A waveform synchronized with sounds is output
L3-4 (WF2+) - L34-2 (GND)	G - BR	Sound signal (Rear No. 3 speaker assembly)	Audio system playing	A waveform synchronized with sounds is output
L3-5 (WFL-) - L34-2 (GND)	L - BR	Sound signal (Front No. 1 speaker assembly LH)	Audio system playing	A waveform synchronized with sounds is output
L3-6 (WFR-) - L34-2 (GND)	R - BR	Sound signal (Front No. 1 speaker assembly RH)	Audio system playing	A waveform synchronized with sounds is output
L3-7 (WF1-) - L34-2 (GND)	W - BR	Sound signal (Rear No. 3 speaker assembly)	Audio system playing	A waveform synchronized with sounds is output
L3-8 (WF1+) - L34-2 (GND)	R - BR	Sound signal (Rear No. 3 speaker assembly)	Audio system playing	A waveform synchronized with sounds is output

L3-9 (CTR-) - L34-2 (GND)	P - BR	Sound signal (Front No. 3 speaker assembly)	Audio system playing	A waveform synchronized with sounds is output
L3-10 (WF2-) - L34-2 (GND)	B - BR	Sound signal (Rear No. 3 speaker assembly)	Audio system playing	A waveform synchronized with sounds is output
L4-1 (SL+) - L34-2 (GND)	L - BR	Sound signal (Quarter side speaker assembly LH)	Audio system playing	A waveform synchronized with sounds is output
L4-2 (SR+) - L34-2 (GND)	G - BR	Sound signal (Quarter side speaker assembly RH)	Audio system playing	A waveform synchronized with sounds is output
L4-3 (FL+) - L34-2 (GND)	P - BR	Sound signal (Front No. 2 speaker assembly LH)	Audio system playing	A waveform synchronized with sounds is output
L4-4 (RL+) - L34-2 (GND)	B - BR	Sound Signal (Rear No. 2 speaker assembly LH)	Audio system playing	A waveform synchronized with sounds is output
L4-5 (RR+) - L34-2 (GND)	R - BR	Sound signal (Rear No. 2 speaker assembly RH)	Audio system playing	A waveform synchronized with sounds is output
L4-6 (SL-) - L34-2 (GND)	LG - BR	Sound signal (Quarter side speaker assembly LH)	Audio system playing	A waveform synchronized with sounds is output
L4-7 (SR-) - L34-2 (GND)	B - BR	Sound signal (Quarter side speaker assembly RH)	Audio system playing	A waveform synchronized with sounds is output
L4-8 (FL-) - L34-2 (GND)	V - BR	Sound signal (Front No. 2 speaker assembly LH)	Audio system playing	A waveform synchronized with sounds is output
L4-9 (FR-) - L34-2 (GND)	LG - BR	Sound signal (Front No. 2 speaker assembly RH)	Audio system playing	A waveform synchronized with sounds is output
L4-10 (FR+) -	L - BR	Sound signal (Front No. 2	Audio system	A waveform synchronized

L34-2 (GND)		speaker assembly RH)	playing	with sounds is output
L4-11 (RL-) - L34-2 (GND)	Y - BR	Sound signal (Rear No. 2 speaker assembly LH)	Audio system playing	A waveform synchronized with sounds is output
L4-12 (RR-) - L34-2 (GND)	W - BR	Sound signal (Rear No. 2 speaker assembly RH)	Audio system playing	A waveform synchronized with sounds is output
L5-1 (MUTE) - L34-2 (GND)	L - BR	Mute signal	Audio system playing	Above 3.5 V
			Audio system changing mode	Below 1 V
L5-2 (L-) - L34-2 (GND)	R - BR	Sound signal (Left)	Audio system playing	A waveform synchronized with sounds is output
L5-3 (L+) - L34-2 (GND)	G - BR	Sound signal (Left)	Audio system playing	A waveform synchronized with sounds is output
L5-4 (R-) - L34-2 (GND)	B - BR	Sound signal (Right)	Audio system playing	A waveform synchronized with sounds is output
L5-5 (R+) - L34-2 (GND)	W - BR	Sound signal (Right)	Audio system playing	A waveform synchronized with sounds is output
L5-7 (TX-) - L34-2 (GND)	Y - BR	AVC-LAN communication signal	Ignition switch ACC	2 to 3 V
L5-8 (TX+) - L34-2 (GND)	L - BR	AVC-LAN communication signal	Ignition switch ACC	2 to 3 V
L5-11 (SPD) - L34-2 (GND)	LG - BR	Speed signal from combination meter	See "vehicle signal check mode"	-

L5-12 (ACC) - L34-2 (GND)	GR - BR	ACC power source	Ignition switch off	Below 1 V
			Ignition switch ACC	11 to 14 V
L5-14 (II1-) - L34-2 (GND)	G - BR	Voice signal	"Bluetooth" handsfree voice signal playing	A waveform synchronized with sounds is output
L5-15 (II1+) - L34-2 (GND)	R - BR	Voice signal	"Bluetooth" handsfree voice signal playing	A waveform synchronized with sounds is output
L5-24 (TMUT) - L34-2 (GND)	R - BR	Mute signal	Audio system playing	Above 3.5 V
			Emergency call mode	Below 1 V
L34-1 (+B) - L34-2 (GND)	L - BR	Battery power source	Always	11 to 14 V
L34-2 (GND) - Body ground	BR - Body ground	Ground	Always	Below 1 ohms
L34-3 (+B2) - L34-2 (GND)	L - BR	Battery power source	Always	11 to 14 V
L34-6 (GND2) - Body ground	BR - Body ground	Ground	Always	Below 1 ohms

5. **CHECK TELEVISION DISPLAY ASSEMBLY (w/ Rear Seat Entertainment System)**

DTC CHECK / CLEAR

DTC CHECK / CLEAR

HINT:

- Illustrations may differ from the actual vehicle screen depending on the device settings and options.

Therefore, some detailed areas may not be shown exactly the same as on the actual vehicle screen.

- If the system cannot enter the diagnostic mode, inspect all AVC-LAN communication components and repair or replace problem parts. Refer to **AVC-LAN Circuit** .
- After the ignition switch is turned to 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 either of them.
   b. Method 1

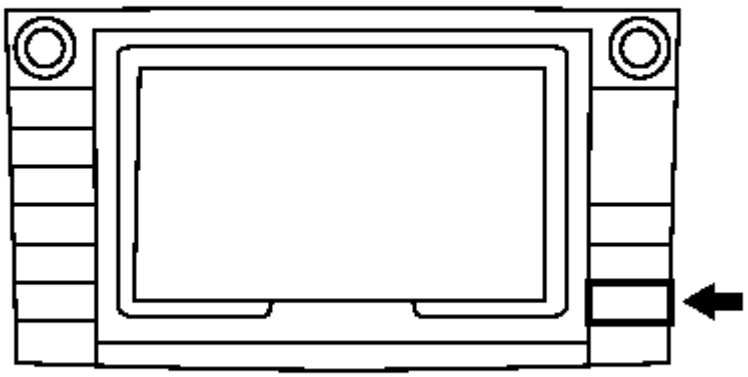


Fig. 68: Identifying "INFO" Switch
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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. Press the "DISP" switch.

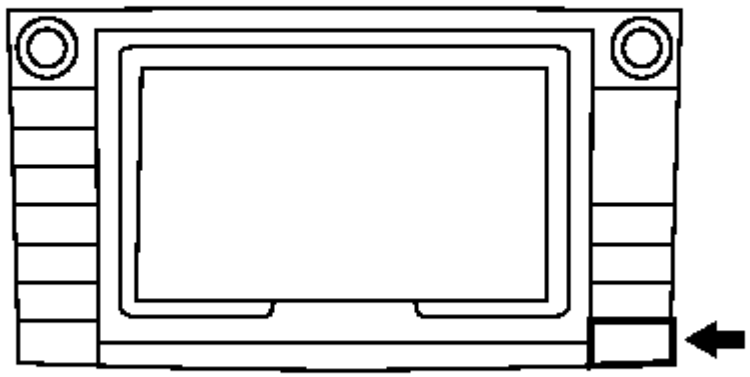
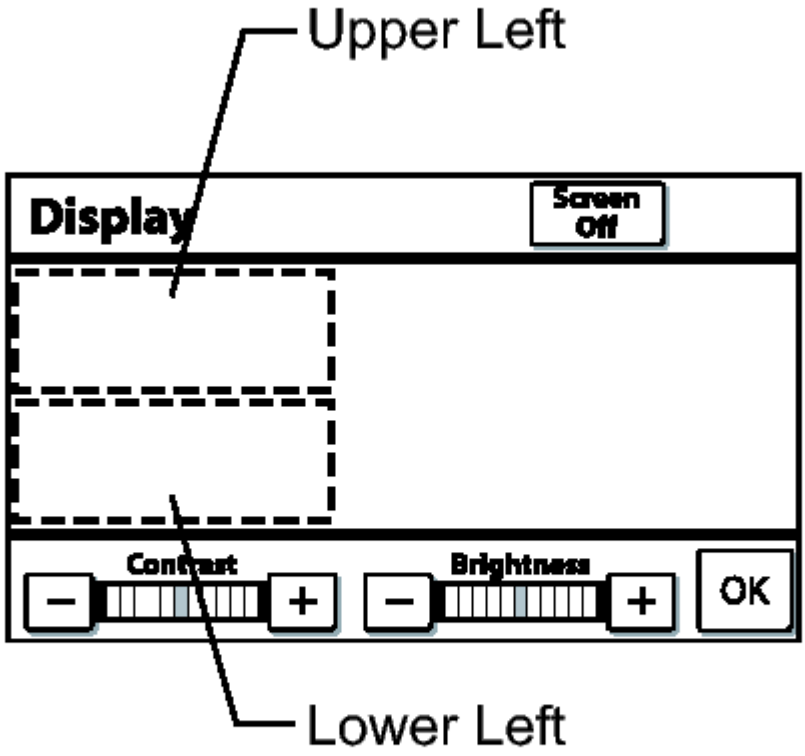


Fig. 69: Identifying "DISP" Switch
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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.



H

Fig. 70: Display Quality Adjustment Screen
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

4. The diagnostic mode starts and the "System Menu" screen will be displayed.

2. **FINISH DIAGNOSTIC MODE**
   a. Turn the ignition switch off.
3. **FAILURE DIAGNOSIS**
   a. Press the "Failure Diagnosis" switch on the "Service Menu" screen.

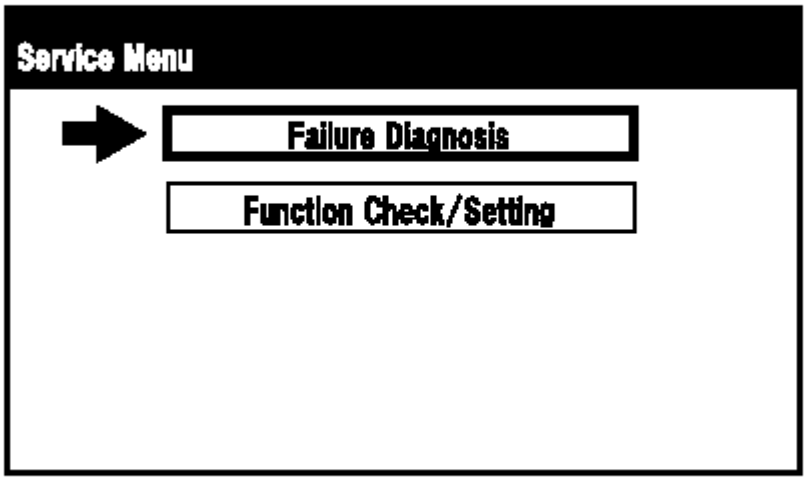


Fig. 71: Failure Diagnosis - Service Menu Screen
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

b. The "Failure Diagnosis" will be displayed.

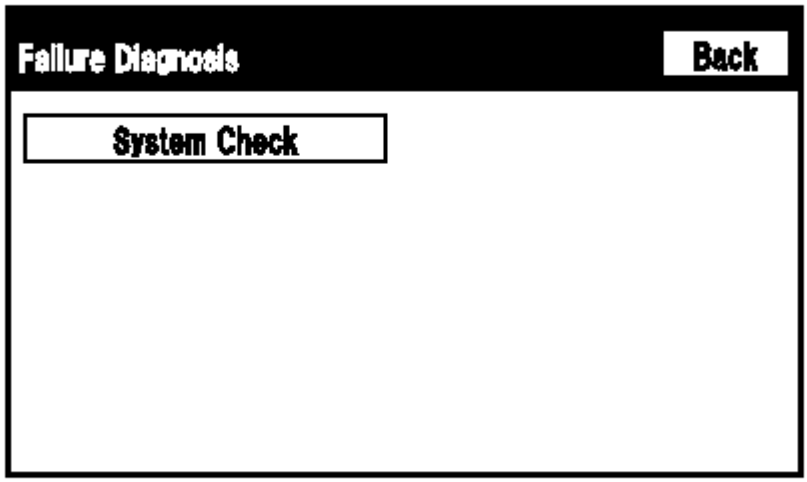


Fig. 72: Failure Diagnosis Displayed
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

4. **SYSTEM CHECK**
   a. Press the "System Check" switch on the "Failure Diagnosis" screen.

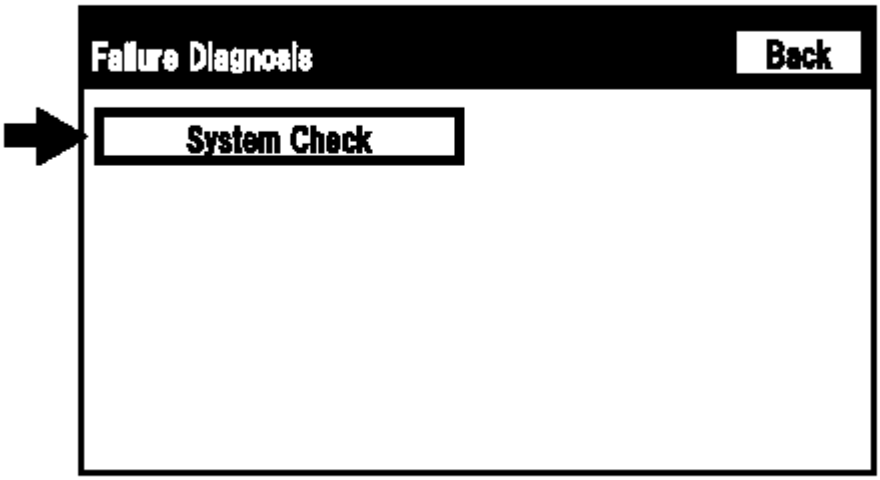


Fig. 73: Screen Display - System Check
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

   b. The "System Check Mode" screen will be displayed.

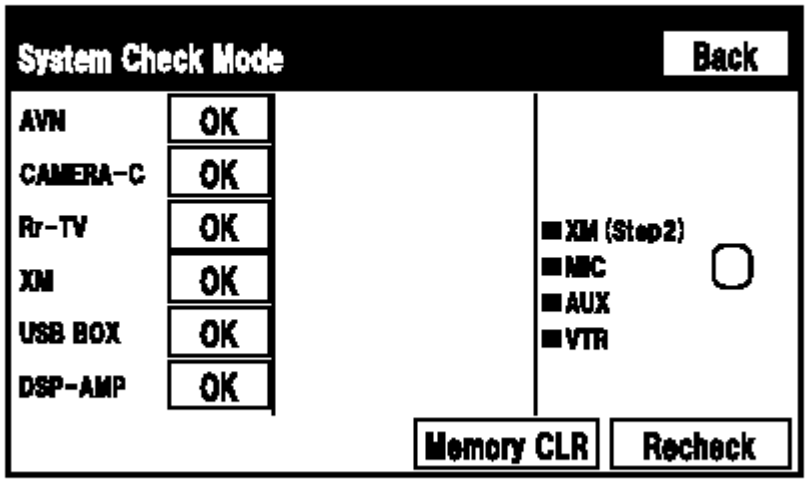


Fig. 74: Screen Display - System Check Mode
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

5. **CHECK DTC (CHECK USING SYSTEM CHECK MODE SCREEN)**
   a. Read the system check result.
      1. If the check result is "EXCH" or "CHEK", touch the displayed check result.

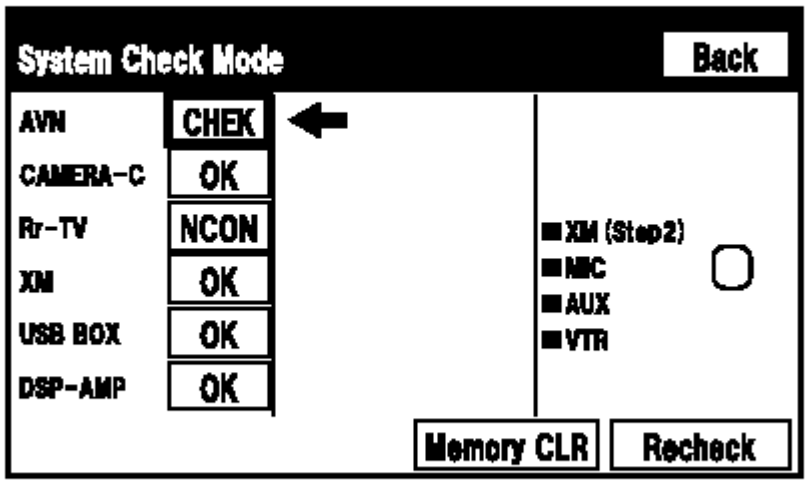


Fig. 75: Checking DTC (Check Using System Check Mode Screen)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

HINT:

When all results are "OK", this means that no DTCs are present.

2. View the results on the "Unit Check Mode" screen and record them.

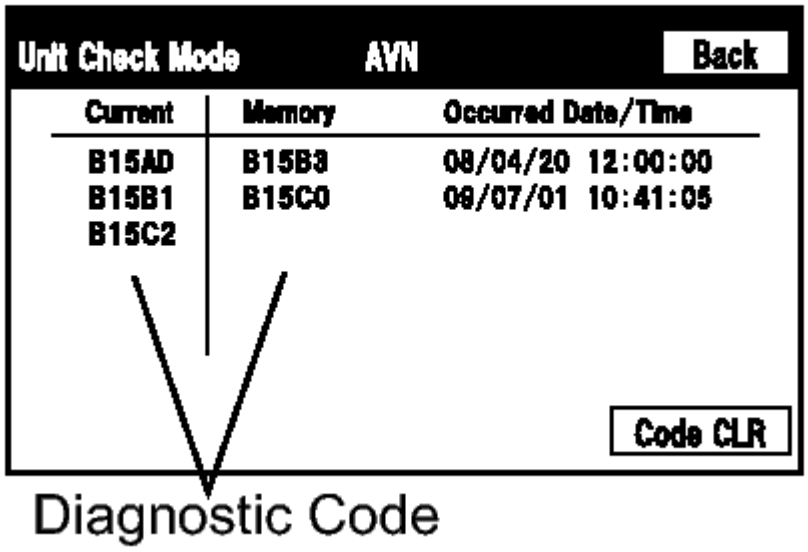


Fig. 76: Identifying Diagnostic Codes On Unit Check Mode Screen
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

3. When proceeding to view the results of another device, press the "Back" switch to return to the "System Check Mode" screen. Repeat the step above to view the results of other devices.

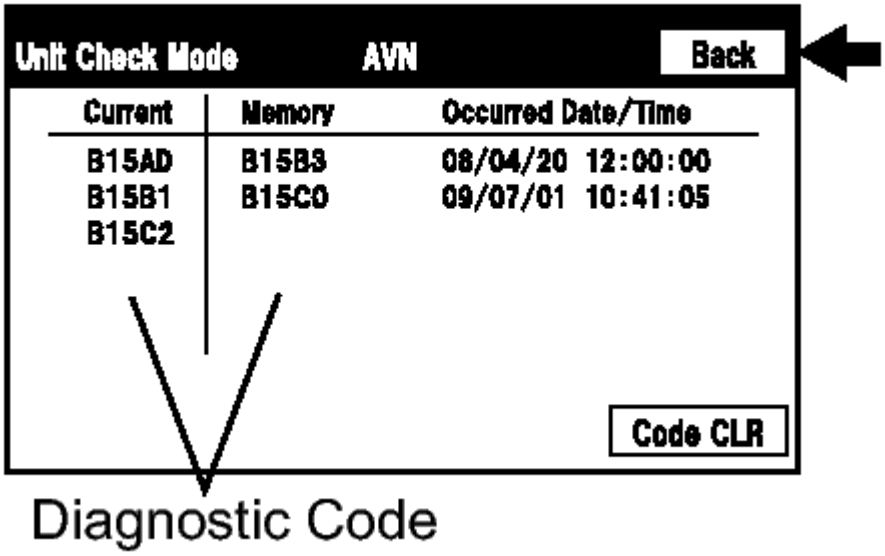


Fig. 77: Locating Back Switch On Unit Check Mode Screen
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

HINT:

To check other item, repeat from the first step.

6. **DTC CLEAR/RECHECK (CLEAR USING SYSTEM CHECK MODE SCREEN)**
   a. Clear DTC

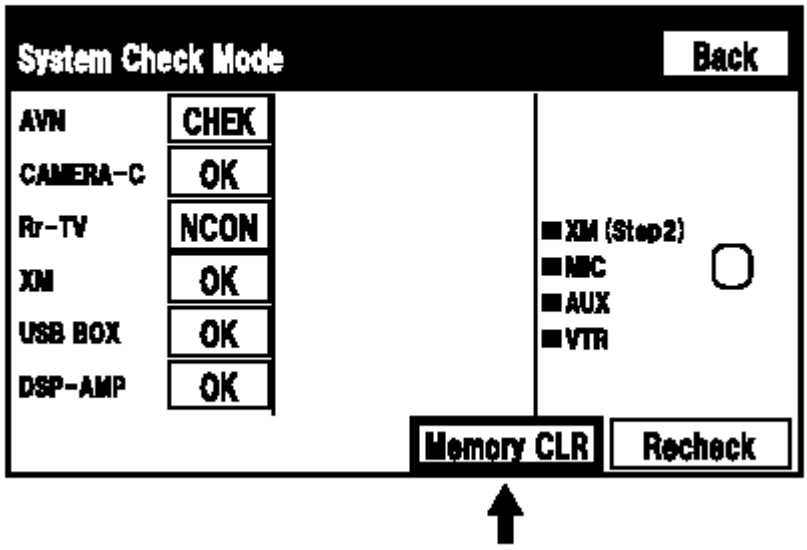


Fig. 78: Identifying "Memory CLR" Switch
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

1. Press the "Memory CLR" switch for 3 seconds.
2. Confirm that the check results are cleared.

   HINT:

   - To clear the DTC for a specific device, clear the DTC using the "Unit Check Mode" screen.
   - When clearing a DTC using the "Unit Check Mode" screen, press the "Code CLR" switch for 3 seconds.

b. Recheck

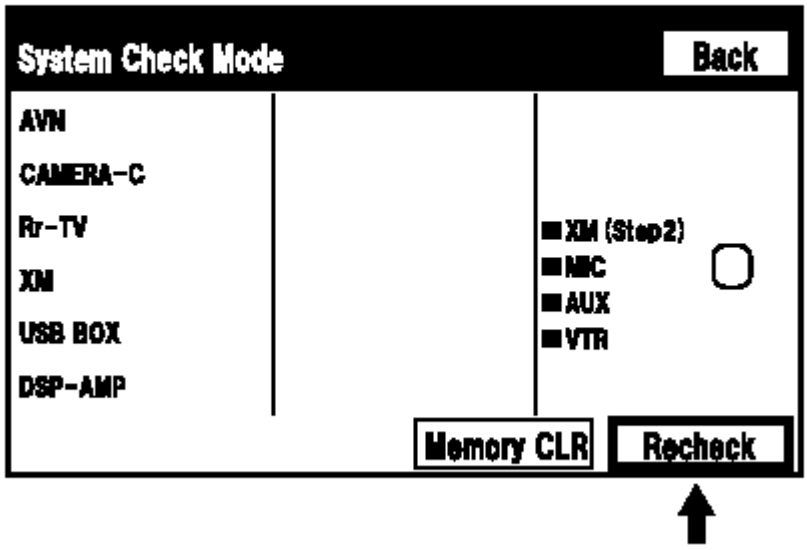


Fig. 79: Identifying "Recheck" Switch
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

1. Press the "Recheck" switch.
2. Confirm that all check results are "OK" when the check results are displayed. If a result other than "OK" is displayed, troubleshoot again.

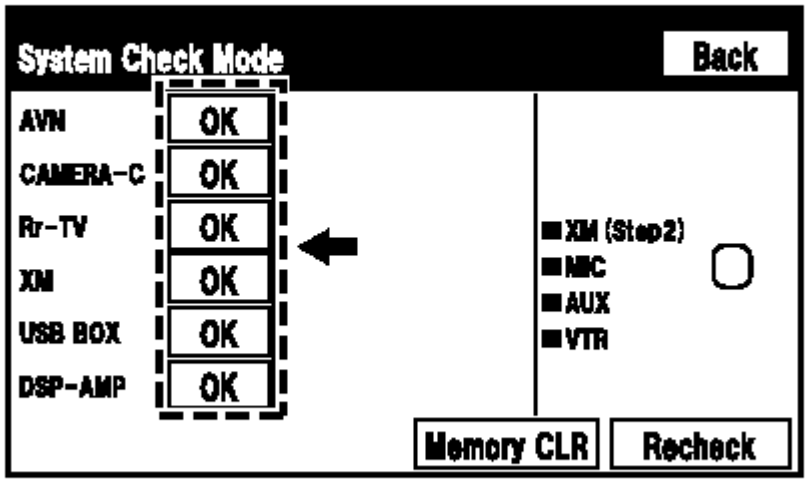


Fig. 80: Screen Display - System Check Mode Results "OK"
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

HINT:

When a DTC was cleared using the "Unit Check Mode" screen, press the "Back" switch to return to the "System Check Mode" screen and perform this operation.

DIAGNOSTIC TROUBLE CODE CHART

DIAGNOSTIC TROUBLE CODE CHART

HINT:

If a trouble code is output during the DTC check, inspect the trouble areas listed for that code. For details of the code, refer to the information below.

NAVIGATION SYSTEM

DTC Code	Detection Item	Trouble Area	See
B1561	XM Tuner Disconnected (Command Line)	- Stereo component tuner assembly power source circuit - AVC-LAN circuit between navigation receiver assembly and stereo component tuner assembly - Navigation receiver assembly - Stereo component tuner assembly - Multi-media interface ECU	Refer to **DTC B1561: XM Tuner Disconnected (Command Line); DTC B159F: No Response from XM Tuner**
B159F	No Response from XM Tuner	- Stereo component tuner assembly power source circuit - AVC-LAN circuit between navigation receiver assembly and stereo component tuner assembly - Navigation receiver assembly - Stereo component tuner assembly - Multi-media interface ECU	Refer to **DTC B1561: XM Tuner Disconnected (Command Line); DTC B159F: No Response from XM Tuner**

B1562	XM Tuner Disconnected (Burst Mode)	- AVC-LAN plus circuit between navigation receiver assembly and stereo component tuner assembly - Navigation receiver assembly - Stereo component tuner assembly	Refer to **DTC B1562: XM Tuner Disconnected (Burst Mode)**
B156B	Multi-media Interface ECU Disconnected	- Multi-media interface ECU power source circuit - AVC-LAN circuit between navigation receiver assembly and multi-media interface ECU - Navigation receiver assembly - Multi-media interface ECU	Refer to **DTC B156B: Multi-media Interface ECU Disconnected; DTC B156E: No Response from Multi-media Interface ECU**
B156E	No Response from Multi-media Interface ECU	- Multi-media interface ECU power source circuit - AVC-LAN circuit between navigation receiver assembly and multi-media interface ECU - Navigation receiver assembly - Multi-media interface ECU	Refer to **DTC B156B: Multi-media Interface ECU Disconnected; DTC B156E: No Response from Multi-media Interface ECU**
B1582	Map Disk Reading Malfunction	- Map disc - Navigation receiver assembly	Refer to **DTC B1582: Map Disk Reading Malfunction**
B1585	USB Media Malfunction	- USB device - "iPod" - Multi-media interface ECU	Refer to **DTC B1585: USB Media Malfunction**
		- Disc player assembly power source circuit - AVC-LAN circuit between television display assembly and disc player assembly	Refer to **DTC B1592: No**

B1592*1	No Response from DVD Player	- Disc player assembly - Navigation receiver assembly - Television display assembly - Stereo component tuner assembly - Multi-media interface ECU	**Response from DVD Player; DTC B15D2: DVD Player Disconnected**
B15D2*1	DVD Player Disconnected	- Disc player assembly power source circuit - AVC-LAN circuit between television display assembly and disc player assembly - Disc player assembly - Navigation receiver assembly - Television display assembly - Stereo component tuner assembly - Multi-media interface ECU	Refer to **DTC B1592: No Response from DVD Player; DTC B15D2: DVD Player Disconnected**
B1593	No Response from Stereo Component Amplifier	- Stereo component amplifier assembly power source circuit - AVC-LAN circuit between navigation receiver assembly and stereo component amplifier assembly - Navigation receiver assembly - Stereo component amplifier assembly	Refer to **DTC B1593: No Response from Stereo Component Amplifier; DTC B15D3: Stereo Component Amplifier Disconnected**
B15D3	Stereo Component Amplifier Disconnected	- Stereo component amplifier assembly power source circuit - AVC-LAN circuit between navigation receiver assembly and stereo component amplifier assembly - Navigation receiver assembly - Stereo component	Refer to **DTC B1593: No Response from Stereo Component Amplifier; DTC B15D3: Stereo Component Amplifier Disconnected**

		amplifier assembly	
B1595*1	No Response from Rear Seat Entertainment System	- Television display assembly power source circuit - AVC-LAN circuit between stereo component tuner assembly and television display assembly - Television display assembly - Stereo component tuner assembly - Navigation receiver assembly	Refer to **DTC B1595: No Response from Rear Seat Entertainment System; DTC B15D5: Rear Seat Entertainment System Disconnected**
B15D5*1	Rear Seat Entertainment System Disconnected	- Television display assembly power source circuit - AVC-LAN circuit between stereo component tuner assembly and television display assembly - Television display assembly - Stereo component tuner assembly - Navigation receiver assembly	Refer to **DTC B1595: No Response from Rear Seat Entertainment System; DTC B15D5: Rear Seat Entertainment System Disconnected**
B15A0	LAN Master Malfunction	Navigation receiver assembly	Refer to **DTC B15A0: LAN Master Malfunction; DTC B15AD: Navigation Processor Malfunction; DTC B15B3: Radio Tuner Malfunction; DTC B15B7: Bluetooth Module Malfunction**
B15AD	Navigation Processor Malfunction	Navigation receiver assembly	Refer to **DTC B15A0: LAN Master Malfunction; DTC B15AD: Navigation Processor Malfunction; DTC B15B3: Radio Tuner Malfunction; DTC B15B7: Bluetooth Module Malfunction**
B15B3	Radio Tuner Malfunction	Navigation receiver assembly	Refer to **DTC B15A0: LAN Master Malfunction; DTC B15AD: Navigation Processor Malfunction; DTC B15B3:**

			Radio Tuner Malfunction; DTC B15B7: Bluetooth Module Malfunction
B15B7	Bluetooth Module Malfunction	Navigation receiver assembly	Refer to **DTC B15A0: LAN Master Malfunction; DTC B15AD: Navigation Processor Malfunction; DTC B15B3: Radio Tuner Malfunction; DTC B15B7: Bluetooth Module Malfunction**
B15A3	Stereo Component Amplifier Malfunction	Stereo component amplifier assembly	Refer to **DTC B15A3: Stereo Component Amplifier Malfunction**
B15A5*1	Rear Seat Entertainment System Malfunction	Television display assembly	Refer to **DTC B15A5: Rear Seat Entertainment System Malfunction**
B15B0	Display Screen Malfunction	Navigation receiver assembly	Refer to **DTC B15B0: Display Screen Malfunction**
B15BA	XM Tuner Malfunction	Stereo component tuner assembly	Refer to **DTC B15BA: XM Tuner Malfunction**
B15BB	Multi-media Interface ECU Malfunction	- "iPod" or USB device - Harness or connector between multi-media interface ECU and No. 1 stereo jack adapter assembly - No. 1 stereo jack adapter assembly - Multi-media interface ECU	Refer to **DTC B15BB: Multi-media Interface ECU Malfunction**
B15C0	Short in GPS Antenna	- Navigation antenna assembly - Navigation receiver assembly	Refer to **DTC B15C0: Short in GPS Antenna; DTC B15C1: Open in GPS Antenna**
B15C1	Open in GPS Antenna	- Navigation antenna assembly - Navigation receiver assembly	Refer to **DTC B15C0: Short in GPS Antenna; DTC B15C1: Open in GPS Antenna**
B15C2	Speed Signal Malfunction	- Harness or connector - Combination meter assembly - Navigation receiver assembly	Refer to **DTC B15C2: Speed Signal Malfunction**
		- Parking assist ECU power source circuit - AVC-LAN circuit	

B15D8	Monitor Disconnected	between navigation receiver assembly and parking assist ECU - Navigation receiver assembly - Parking assist ECU - Harness or connector	Refer to **DTC B15D8: Monitor Disconnected**
B15DF	USB Communication Malfunction	- "iPod" - USB device - Multi-media interface ECU	Refer to **DTC B15DF: USB Communication Malfunction**
B15E1	Media Malfunction	- Disc - Navigation receiver assembly	Refer to **DTC B15E1: Media Malfunction**
B15FE	XM Tuner Antenna Disconnected	- Satellite radio antenna assembly - Stereo component tuner assembly	Refer to **DTC B15FE: XM Tuner Antenna Disconnected; DTC B15FF: XM Tuner Antenna Short**
B15FF	XM Tuner Antenna Short	- Satellite radio antenna assembly - Stereo component tuner assembly	Refer to **DTC B15FE: XM Tuner Antenna Disconnected; DTC B15FF: XM Tuner Antenna Short**

*1: w/ Rear Seat Entertainment System

NAVIGATION SYSTEM (FOR SD)

DTC B1551: HD RADIO TUNER MALFUNCTION; DTC B15A0: LAN MASTER MALFUNCTION; DTC B15AD: NAVIGATION PROCESSOR MALFUNCTION; DTC B15B0: DISPLAY SCREEN MALFUNCTION; DTC B15B3: RADIO TUNER MALFUNCTION; DTC B15B4: CD CHANGER MALFUNCTION; DTC B15B7: BLUETOOTH MODULE MALFUNCTION

DESCRIPTION

These DTCs are stored when a malfunction occurs in the navigation receiver assembly.

DTC Code	DTC Detection Condition	Trouble Area
B1551	When either condition below is met: • "HD Radio" tuner decoder malfunction • "HD Radio" tuner audio output section malfunction • "HD Radio" tuner decoder RF/IF malfunction	Navigation receiver assembly
B15A0	When either condition below is met: • Bus malfunction • Sub-microprocessor malfunction	
B15AD	When either condition below is met: • A short to ground, short to +B or open occurs in the gyro signal circuit • Gyro sensor malfunction • GPS receiver malfunction	
B15B0	Picture circuit (TFT unit) malfunction	
B15B3	When either condition below is met: • AM tuner PLL is unlocked • FM tuner PLL is unlocked • Tuner communication error	
B15B4	When one of the conditions below is met: • Mechanism drive signal malfunction • Load/Eject malfunction • Read mechanism malfunction	

	• Mechanical malfunction	
B15B7	"Bluetooth" module malfunction	

INSPECTION PROCEDURE

PROCEDURE

1. **CHECK FOR DTC**
   a. Clear the DTCs. Refer to **DTC CHECK / CLEAR** .
   b. Recheck for DTCs and check if the same DTC is output again.

      OK

      No DTCs are output.

   NG --> See step 2

   OK --> See step 3

2. **REPLACE NAVIGATION RECEIVER ASSEMBLY. Refer to REMOVAL**
3. **USE SIMULATION METHOD TO CHECK. Refer to HOW TO PROCEED WITH TROUBLESHOOTING**

DTC B1579: VOICE RECOGNITION MICROPHONE DISCONNECTED

DESCRIPTION

The navigation receiver assembly and roof console box assembly (telephone microphone assembly) are connected to each other using the microphone connection detection signal lines.

This DTC is stored when the microphone connection detection signal is disconnected.

DTC Code	DTC Detection Condition	Trouble Area
B1579	Telephone microphone signal is lost.	• Roof console box assembly (telephone microphone assembly) • Navigation receiver assembly • Harness or connector

WIRING DIAGRAM

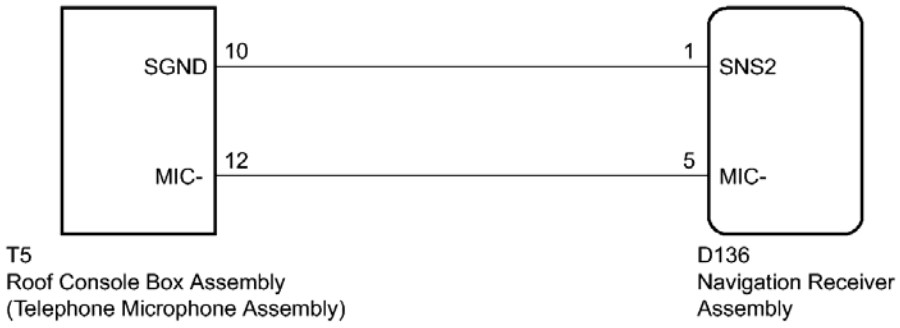


Fig. 1: Microphone Circuit Wiring Diagram
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

PROCEDURE

1. **INSPECT NAVIGATION RECEIVER ASSEMBLY**
    a. Measure the resistance according to the value(s) in the table below.

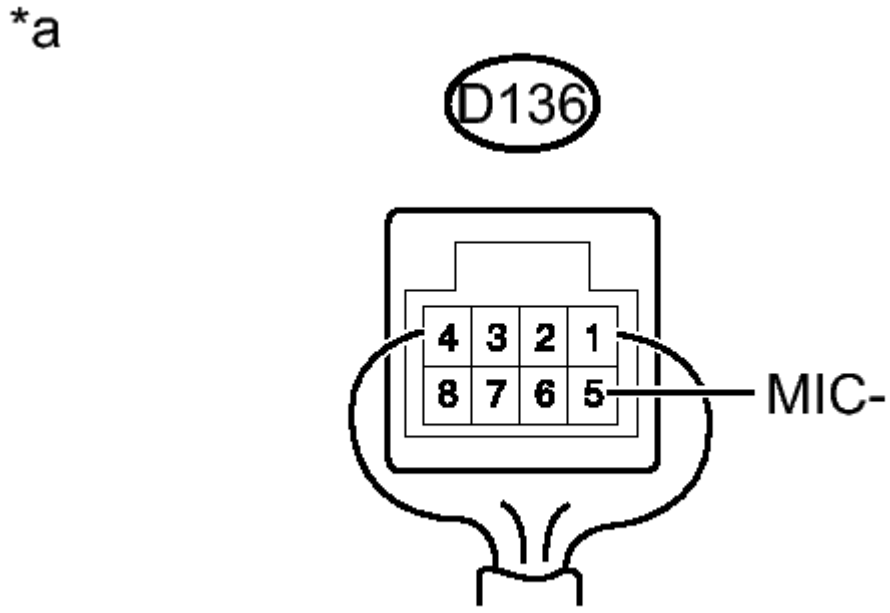


Fig. 2: Measuring Resistance Of Navigation Receiver Assembly
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

Standard Resistance

Tester Connection	Condition	Specified Condition
D136-5 (MIC-) - Body ground	Always	Below 1 ohms

TEXT IN ILLUSTRATION

*a	Component with harness connected (Navigation Receiver Assembly)

NG --> See step 4

OK: Go to next step

2. **CHECK HARNESS AND CONNECTOR (NAVIGATION RECEIVER ASSEMBLY - ROOF CONSOLE BOX ASSEMBLY)**
   a. Disconnect the D136 navigation receiver assembly connector.
   b. Disconnect the T5 roof console box assembly connector.
   c. Measure the resistance according to the value(s) in the table below.

   Standard Resistance

Tester Connection	Condition	Specified Condition
D136-1 (SNS2) - T5-10 (SGND)	Always	Below 1 ohms
D136-5 (MIC-) - T5-12 (MIC-)	Always	Below 1 ohms
D136-1 (SNS2) - Body ground	Always	10 kohms or higher
D136-5 (MIC-) - Body	Always	10 kohms or higher

ground		

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK: Go to next step

3. **INSPECT ROOF CONSOLE BOX ASSEMBLY**
   a. Measure the resistance according to the value(s) in the table below.

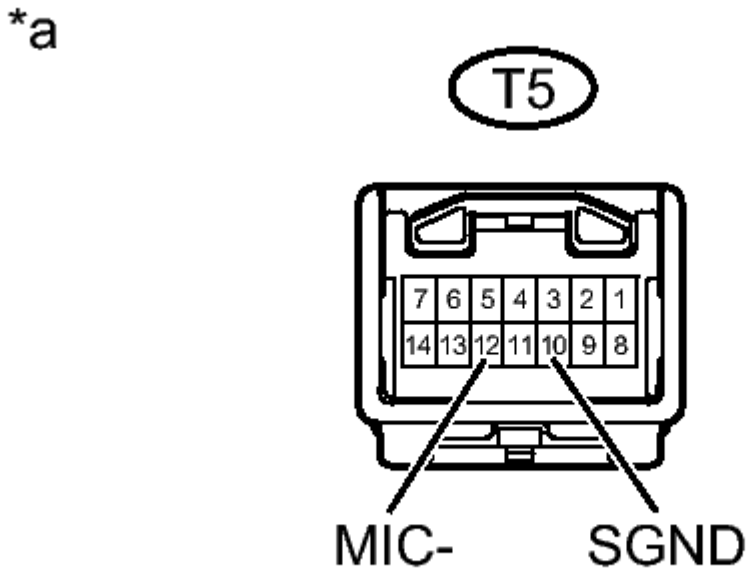


Fig. 3: Measuring Resistance Of Roof Console Box Assembly
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

Standard Resistance

Tester Connection	Condition	Specified Condition
T5-10 (SGND) - T5-12 (MIC-)	Always	Below 1 ohms

TEXT IN ILLUSTRATION

*a	Component without harness connected

	(Roof Console Box Assembly)

NG --> See step 5

OK --> See step 6

4. **REPLACE NAVIGATION RECEIVER ASSEMBLY. Refer to REMOVAL**
5. **REPLACE TELEPHONE MICROPHONE ASSEMBLY. Refer to REMOVAL**
6. **REPLACE NAVIGATION RECEIVER ASSEMBLY. Refer to REMOVAL**

DTC B158B: TOUCH SWITCH MALFUNCTION

DESCRIPTION

This DTC is stored when a malfunction occurs in a panel switch.

DTC Code	DTC Detection Condition	Trouble Area
B158B	Touch switch malfunction	Navigation receiver assembly

INSPECTION PROCEDURE

PROCEDURE

1. **CHECK MULTI-DISPLAY**
   a. Check if there is any foreign matter caught between the display and exterior frame of the multi-display.

      OK

      No foreign matter is caught between the display and exterior frame of the multi-display.

      HINT:

      If there is foreign matter between the display and exterior frame of the multi-display, the touch panel will remain pressed, preventing touch switch operation.

   NG --> REMOVE FOREIGN MATTER

   OK: Go to next step

2. **CHECK TOUCH PANEL**
   a. Check for foreign matter on the display.

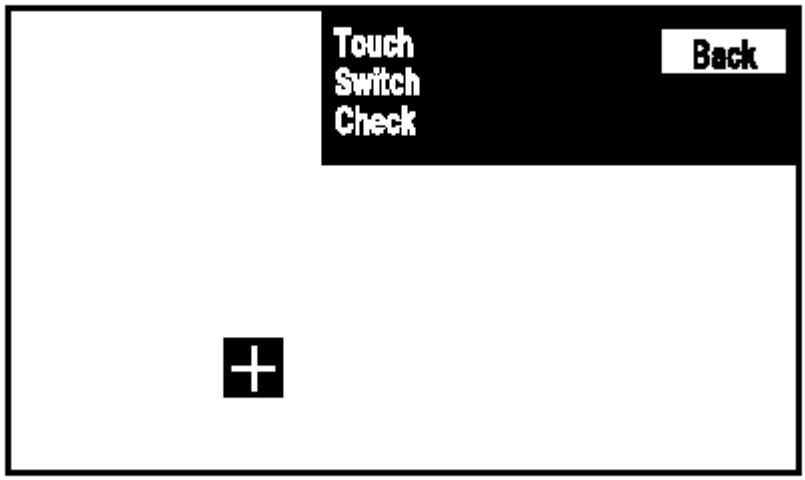
OK

The display is clean.

NG --> CLEAN DISPLAY AND RECHECK TOUCH PANEL

OK: Go to next step

3. **CHECK TOUCH SWITCH**
   a. Enter the "Touch Switch Check" screen. Refer to Check Touch Switch in Operation Check. Refer to **OPERATION CHECK** .



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Fig. 4: Screen Display - Touch Switch Check
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

   b. Touch the display in the area where the switch malfunction occurs.

OK

A "+" mark appears at the touched position.

NG --> See step 4

OK --> See step 5

4. **REPLACE NAVIGATION RECEIVER ASSEMBLY. Refer to REMOVAL**
5. **USE SIMULATION METHOD TO CHECK. Refer to HOW TO PROCEED WITH**

TROUBLESHOOTING

DTC B158C: SD CARD COMMUNICATION MALFUNCTION

DESCRIPTION

This DTC is stored when the SD card has an initialization malfunction or read/write error more than a specified number of times.

DTC Code	DTC Detection Condition	Trouble Area
B158C	SD card communication malfunction	SD card

INSPECTION PROCEDURE

PROCEDURE

1. **CHECK FOR DTC**
   a. Clear the DTCs. Refer to **DTC CHECK / CLEAR** .
   b. Recheck for DTCs and check if the same DTC is output again.

      OK

      No DTCs are output.

   NG --> REPLACE SD CARD

   OK --> See step 2

2. **USE SIMULATION METHOD TO CHECK. Refer to HOW TO PROCEED WITH TROUBLESHOOTING**

DTC B1595: NO RESPONSE FROM REAR SEAT ENTERTAINMENT SYSTEM; DTC B15D5: REAR SEAT ENTERTAINMENT SYSTEM DISCONNECTED

DESCRIPTION

The television display assembly and navigation receiver assembly are connected by the AVC-LAN communication line.

These DTCs will be stored when an AVC-LAN communication error occurs between the navigation receiver assembly and television display assembly.

DTC Code	DTC Detection Condition	Trouble Area
	Within the time-out period, there was no response from the television display assembly to the following requests from the master unit:	

B1595	• System inspection request • System inspection result request • Diagnostic memory request	• Television display assembly power source circuit • AVC-LAN circuit between navigation receiver assembly and television display assembly • Television display assembly • Navigation receiver assembly
B15D5*	When either condition below is met: • The television display assembly is/was not connected while the ignition switch is ON or ACC. • Communication between the master unit and the television display assembly is not possible when the engine is started.	

HINT:

- *: Even if no fault is present, this DTC may be stored depending on the battery condition or engine start voltage.
- The navigation receiver assembly is the master unit.

WIRING DIAGRAM

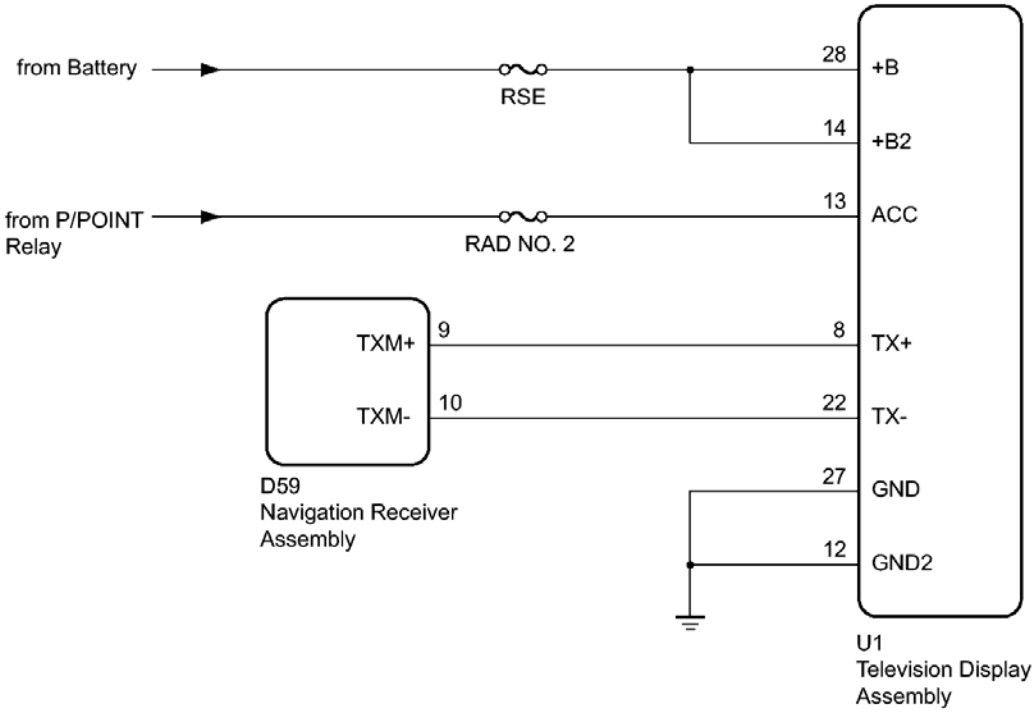


Fig. 5: Television Display Assembly Circuit Wiring Diagram
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

NOTE: Inspect the fuses for circuits related to this system before performing the following inspection procedure.

PROCEDURE

1. **CHECK OPTIONAL COMPONENTS (INCLUDING ASSOCIATED WIRING)**
   a. Check for optional components.
      1. Check that optional components (including associated wiring) which generate radio waves are not installed.

RESULT

Result	Proceed to
Optional components (including associated wiring) are installed.	A
Optional components (including associated wiring) are not installed.	B

HINT:

- Electrical noise from radio waves generated by optional components or the wiring for those components may affect AVC-LAN communication.
- This DTC may be stored when an AVC-LAN communication error occurs due to electrical noise.

B --> See step 3

A: Go to next step

2. **REMOVE OPTIONAL COMPONENTS (INCLUDING ASSOCIATED WIRING)**
   a. Remove optional components (including associated wiring).

NOTE: **Do not remove optional components or associated wiring without the permission of the customer.**

NEXT: Go to next step

3. **CHECK FOR DTC**
   a. Clear the DTCs. Refer to **DTC CHECK / CLEAR** .
   b. Recheck for DTCs and check if the same DTC is output again.

      OK

      No DTCs are output.

   NG --> See step 4

   OK --> END

4. **CHECK HARNESS AND CONNECTOR (TELEVISION DISPLAY ASSEMBLY POWER SOURCE)**
   a. Disconnect the U1 television display assembly connector.

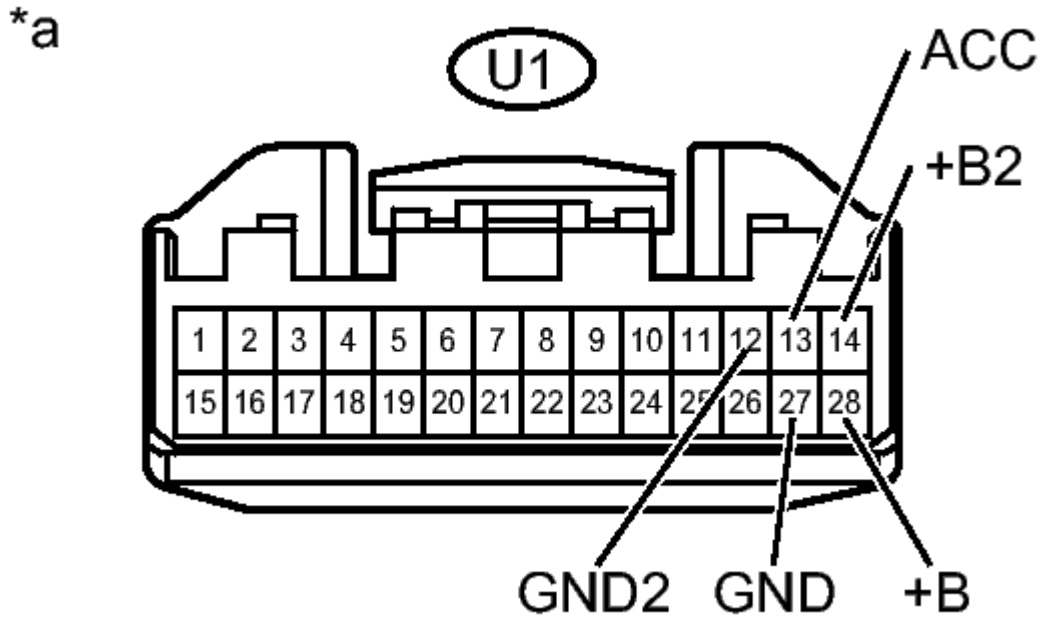


Fig. 6: Measuring Resistance Of Television Display Assembly Power Source)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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

Standard Resistance

Tester Connection	Condition	Specified Condition
U1-27 (GND) - Body ground	Always	Below 1 ohms
U1-12 (GND2) - Body ground	Always	Below 1 ohms

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

Standard Voltage

Tester Connection	Condition	Specified Condition
U1-28 (+B) - Body ground	Always	11 to 14 V
U1-14 (+B2) - Body ground	Always	11 to 14 V
U1-13 (ACC) - Body ground	Ignition switch ACC	11 to 14 V

TEXT IN ILLUSTRATION

*a	Front view of wire harness connector (to Television Display Assembly)

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK: Go to next step

5. **CHECK HARNESS AND CONNECTOR (NAVIGATION RECEIVER ASSEMBLY - TELEVISION DISPLAY ASSEMBLY)**
   a. Disconnect the D59 navigation receiver assembly connector.
   b. Disconnect the U1 television display assembly connector.
   c. Measure the resistance according to the value(s) in the table below.

      Standard Resistance

Tester Connection	Condition	Specified Condition
D59-9 (TXM+) - U1-8 (TX+)	Always	Below 1 ohms
D59-10 (TXM-) - U1-22 (TX-)	Always	Below 1 ohms
D59-9 (TXM+) - Body ground	Always	10 kohms or higher
D59-10 (TXM-) - Body ground	Always	10 kohms or higher

   NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

   OK: Go to next step

6. **REPLACE TELEVISION DISPLAY ASSEMBLY**
   a. Replace the television display assembly with a new one. Refer to **REMOVAL** .
   b. Clear the DTCs. Refer to **DTC CHECK / CLEAR** .
   c. Recheck for DTCs and check if the same DTC is output again.

      OK

      No DTCs are output.

   NG --> See step 7

   OK --> END (TELEVISION DISPLAY ASSEMBLY IS FAULTY)

7. **REPLACE NAVIGATION RECEIVER ASSEMBLY. Refer to REMOVAL**

DTC B15A5: REAR SEAT ENTERTAINMENT SYSTEM MALFUNCTION

DESCRIPTION

This DTC is stored when a malfunction occurs in the television display assembly.

DTC Code	DTC Detection Condition	Trouble Area
B15A5	When one of the conditions below is met: • RAM error • Bus malfunction • Sub-microprocessor malfunction • Drawing controller malfunction • Internal hardware malfunction • EEPROM error	Television display assembly

INSPECTION PROCEDURE

PROCEDURE

1. **CHECK FOR DTC**
   a. Clear the DTC. Refer to **DTC CHECK / CLEAR** .
   b. Recheck for DTCs and check if the same DTC is output again.

      OK

      No DTC is output.

   NG --> See step 2

   OK --> See step 3

2. **REPLACE TELEVISION DISPLAY ASSEMBLY. Refer to REMOVAL**
3. **USE SIMULATION METHOD TO CHECK. Refer to HOW TO PROCEED WITH TROUBLESHOOTING**

DTC B15C0: SHORT IN GPS ANTENNA; DTC B15C1: OPEN IN GPS ANTENNA

DESCRIPTION

This DTC is stored when a malfunction occurs in the navigation antenna.

DTC Code	DTC Detection Condition	Trouble Area
B15C0	Navigation antenna error	• Antenna cord sub-assembly (navigation

B15C1	Error of the power source to the navigation antenna	antenna) • Navigation receiver assembly

INSPECTION PROCEDURE

PROCEDURE

1. **CHECK CONNECTION OF NAVIGATION ANTENNA**
   a. Check if the navigation antenna is securely connected to the navigation receiver assembly.

      OK

      Navigation antenna is securely connected.

   NG --> SECURELY CONNECT NAVIGATION ANTENNA

   OK: Go to next step

2. **REPLACE ANTENNA CORD SUB-ASSEMBLY (NAVIGATION ANTENNA)**
   a. Replace the antenna cord sub-assembly (navigation antenna) with a known good one and check if the same DTC is output again. Refer to **REMOVAL** .
      1. Clear the DTCs. Refer to **DTC CHECK / CLEAR** .
      2. Recheck for DTCs and check if the same DTC is output again.

         OK

         No DTCs are output.

   NG --> See step 3

   OK --> END

3. **REPLACE NAVIGATION RECEIVER ASSEMBLY. Refer to REMOVAL**

DTC B15C2: SPEED SIGNAL MALFUNCTION

DESCRIPTION

The navigation receiver assembly receives a vehicle speed signal from the combination meter assembly and information from the navigation antenna, and then adjusts the vehicle position.

The navigation receiver assembly stores this DTC when the difference between the speed information that the navigation antenna receives and the SPD pulse received from the combination meter assembly becomes large.

HINT:

- A voltage of 12 V or 5 V is output from each ECU and then input to the combination meter assembly. The signal is changed to a pulse signal at the transistor in the combination meter assembly. Each ECU controls the respective systems based on the pulse signal.
- If a short occurs in any of the ECUs or in the wire harness connected to an ECU, all systems in the diagram below will not operate normally.

DTC Code	DTC Detection Condition	Trouble Area
B15C2	A difference between the GPS speed and SPD pulse is detected.	• Navigation receiver assembly • Combination meter assembly • Harness or connector

WIRING DIAGRAM

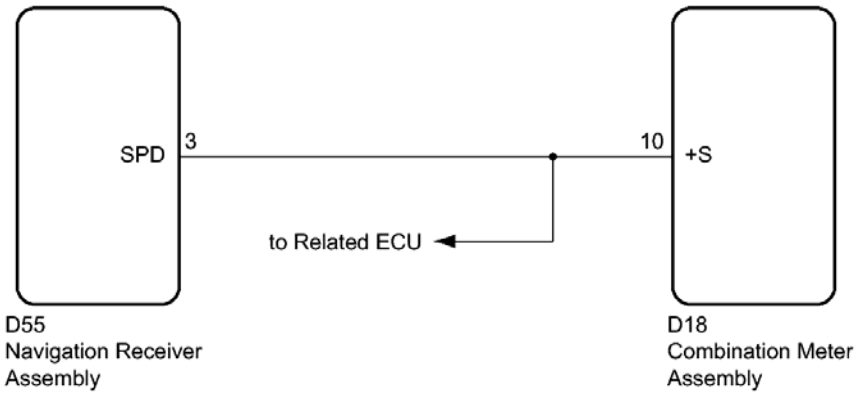
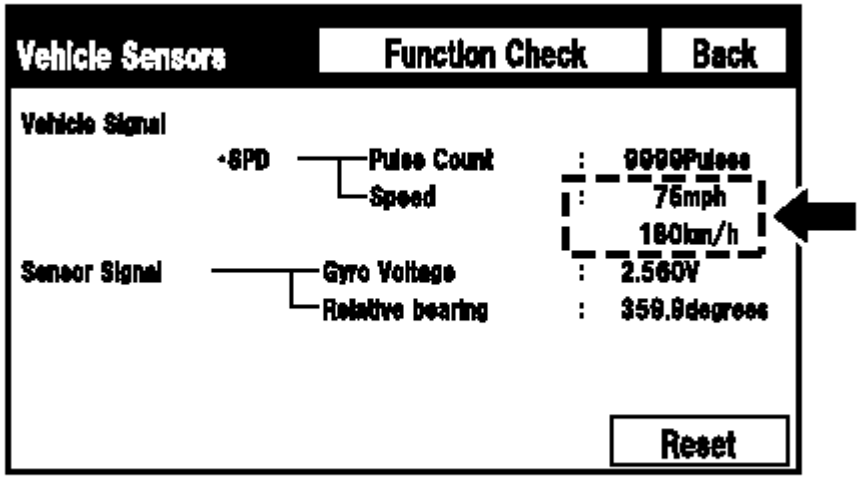


Fig. 7: Combination Meter Circuit Wiring Diagram
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

PROCEDURE

1. **CHECK VEHICLE SENSOR (OPERATION CHECK)**
   a. Enter the "Vehicle Sensors" screen. Refer to Check GPS & Vehicle Sensors in Operation Check. Refer to **OPERATION CHECK** .



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Fig. 8: Screen Display - GPS & Vehicle Sensor
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

b. While driving the vehicle, compare the "Speed" indicator to the reading on the speedometer. Check if these readings are almost equal.

HINT:

The combination meter assembly receives the vehicle speed signal from the skid control ECU via CAN communication. Therefore, perform the following inspection referring to values on the Data List of the skid control ECU because it is the source of the vehicle speed signal.

OK

Vehicle speed displayed on the "Vehicle Sensors" screen is almost the same as the actual vehicle speed measured using the Techstream. Refer to **DATA LIST / ACTIVE TEST** .

NG --> See step 2

OK --> See step 4

2. **INSPECT COMBINATION METER ASSEMBLY (OUTPUT WAVEFORM)**
   a. Check the output waveform.

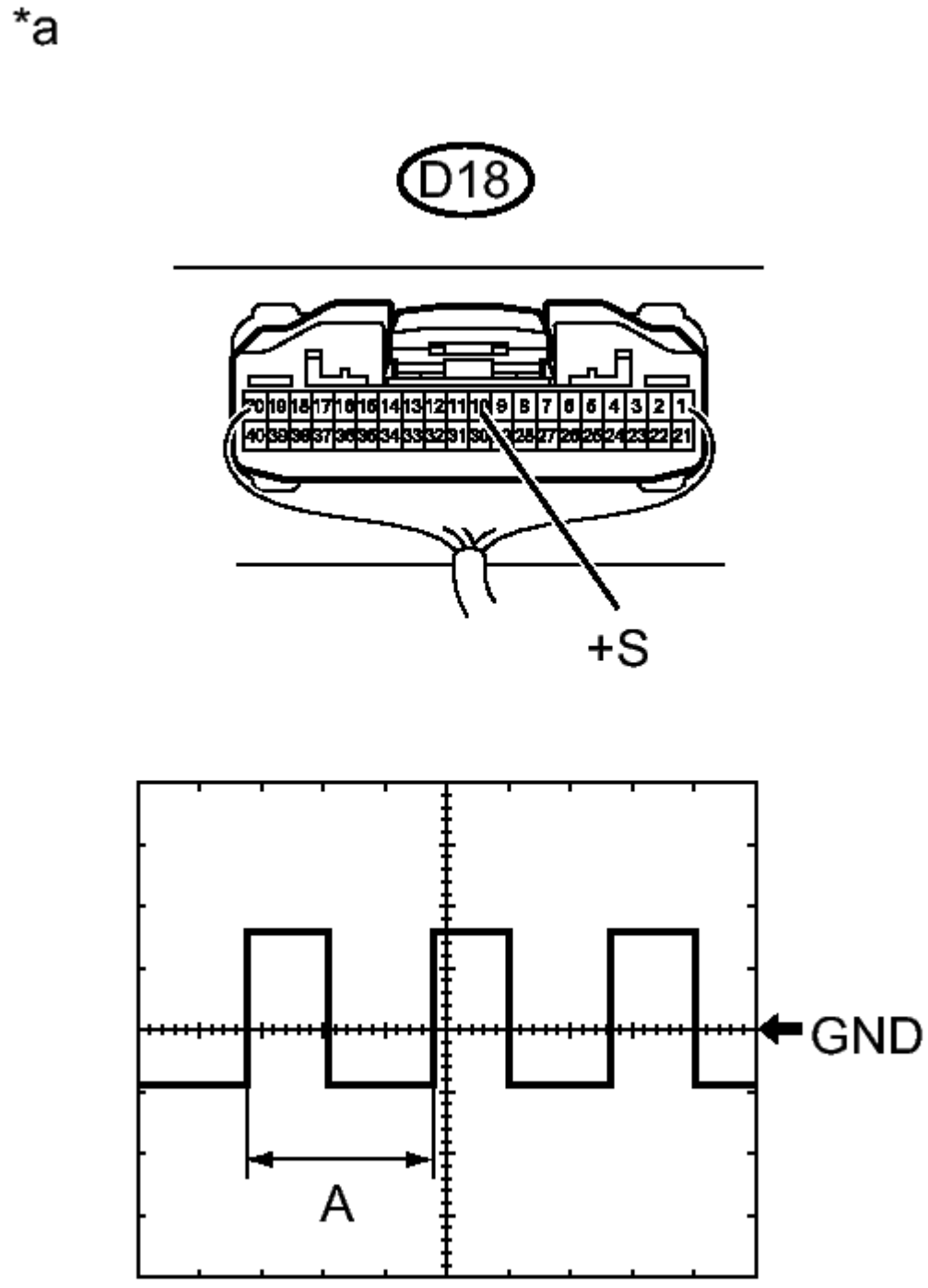


Fig. 9: Checking Combination Meter Assembly With Waveform Reference
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

1. Remove the combination meter assembly with the connector(s) still connected.
2. Connect an oscilloscope to terminal D18-10 (+S) and body ground.

3. Turn the ignition switch to ON.
4. Turn a wheel slowly.
5. Check the signal waveform according to the condition(s) in the table below.

Item	Condition
Measurement terminal	D18-10 (+S) - Body ground
Tool setting	5 V/DIV., 20 ms./DIV.
Vehicle condition	Wheel being rotated

TEXT IN ILLUSTRATION

*a	Component with harness connected (Combination Meter Assembly)

OK

The waveform display is as shown in the illustration.

HINT:

When the system is functioning normally, one wheel revolution generates 4 pulses. As the vehicle speed increases, the width indicated by (A) in the illustration narrows.

NG --> See step 5

OK: Go to next step

3. **CHECK HARNESS AND CONNECTOR (NAVIGATION RECEIVER ASSEMBLY - COMBINATION METER ASSEMBLY)**
   a. Disconnect the D55 navigation receiver assembly connector.
   b. Disconnect the D18 combination meter assembly connector.
   c. Measure the resistance according to the value(s) in the table below.

Standard Resistance

Tester Connection	Condition	Specified Condition
D55-3 (SPD) - D18-10 (+S)	Always	Below 1 ohms
D55-3 (SPD) - Body ground	Always	10 kohms or higher

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK --> See step 6

4. **REPLACE NAVIGATION RECEIVER ASSEMBLY. Refer to REMOVAL**
5. **GO TO METER / GAUGE SYSTEM. Refer to Speed Signal Circuit**
6. **REPLACE NAVIGATION RECEIVER ASSEMBLY. Refer to REMOVAL**

DTC B15C3: SPEAKER OUTPUT SHORT

DESCRIPTION

This DTC is stored when a malfunction occurs in the speakers.

DTC Code	DTC Detection Condition	Trouble Area
B15C3	A short is detected in the speaker output circuit.	• Harness or connector • Speaker • Navigation receiver assembly

WIRING DIAGRAM

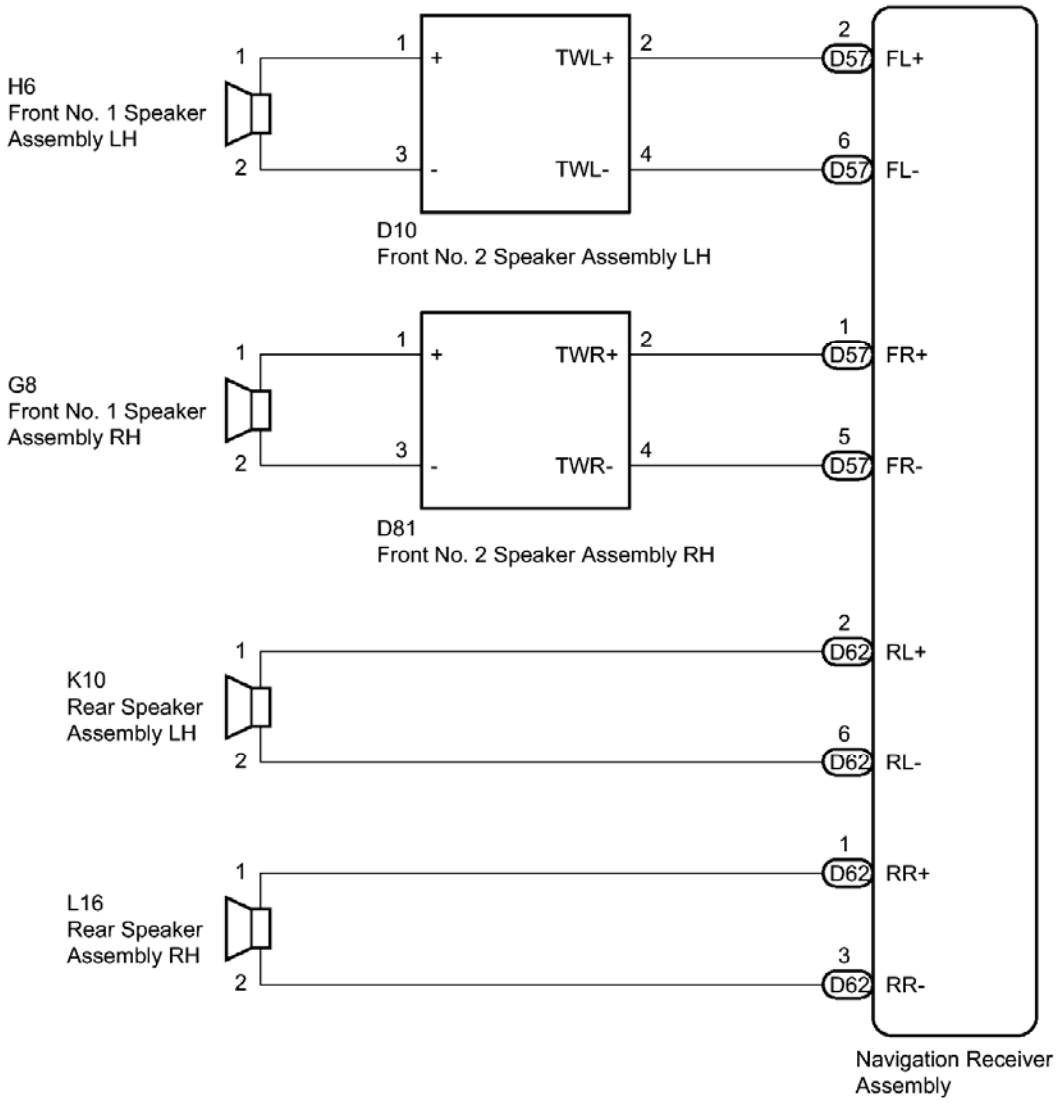


Fig. 10: Speaker Circuit Wiring Diagram
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

PROCEDURE

1. **CHECK HARNESS AND CONNECTOR**
    a. Disconnect the D57 and D62 navigation assembly connectors.
    b. Disconnect the H6 and G8 front No. 1 speaker assembly connectors.
    c. Disconnect the D10 and D81 front No. 2 speaker assembly connectors.
    d. Disconnect the K10 and L16 rear speaker assembly connectors.

e. Measure the resistance between the navigation receiver assembly and body ground to check for a short circuit in the wire harness.

Standard Resistance

Tester Connection	Condition	Specified Condition
D57-2 (FL+) - Body ground	Always	10 kohms or higher
D57-6 (FL-) - Body ground	Always	10 kohms or higher
D57-1 (FR+) - Body ground	Always	10 kohms or higher
D57-5 (FR-) - Body ground	Always	10 kohms or higher
D62-2 (RL+) - Body ground	Always	10 kohms or higher
D62-6 (RL-) - Body ground	Always	10 kohms or higher
D62-1 (RR+) - Body ground	Always	10 kohms or higher
D62-3 (RR-) - Body ground	Always	10 kohms or higher

f. Measure the resistance between each of the front No. 2 speaker assemblies and body ground to check for a short circuit in the wire harness.

Standard Resistance

Tester Connection	Condition	Specified Condition
D10-1 (+) - Body ground	Always	10 kohms or higher

D10-3 (-) - Body ground	Always	10 kohms or higher
D81-1 (+) - Body ground	Always	10 kohms or higher
D81-3 (-) - Body ground	Always	10 kohms or higher

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK: Go to next step

2. **INSPECT FRONT NO. 1 SPEAKER ASSEMBLY**
   a. Measure the resistance according to the value(s) in the table below.

*a

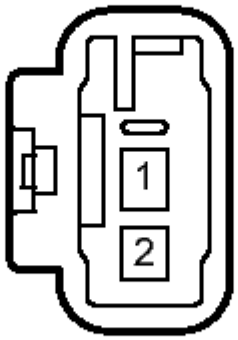


Fig. 11: Measuring Resistance Of Front No. 1 Speaker Assembly
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

Standard Resistance

Tester Connection	Condition	Specified Condition
1 - 2	Always	Approximately 4 ohms

TEXT IN ILLUSTRATION

*a	Component without harness connected (Front No. 1 Speaker Assembly)

NG --> See step 6

OK: Go to next step

3. **INSPECT FRONT NO. 2 SPEAKER ASSEMBLY**
   a. Measure the resistance according to the value(s) in the table below.

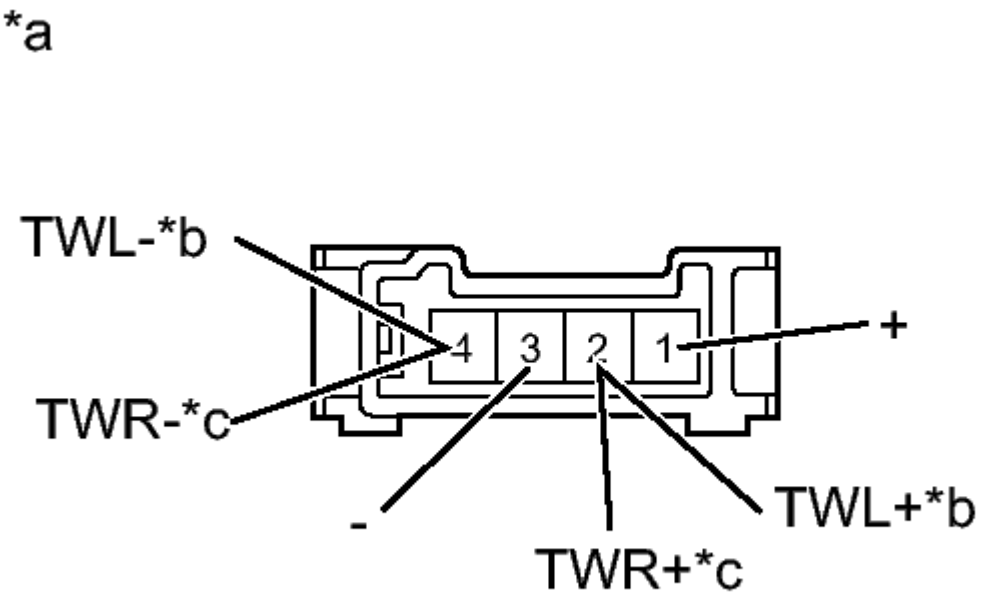


Fig. 12: Measuring Resistance Of Front No. 2 Speaker Assembly
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

Standard Resistance

FOR LH SIDE

Tester Connection	Condition	Specified Condition
1 (+) - 2 (TWL+)	Always	Below 1 ohms

3 (-) - 4 (TWL-)	Always	Below 1 ohms
2 (TWL+) - 4 (TWL-)	Always	Approximately 4 ohms

FOR RH SIDE

Tester Connection	Condition	Specified Condition
1 (+) - 2 (TWR+)	Always	Below 1 ohms
3 (-) - 4 (TWR-)	Always	Below 1 ohms
2 (TWR+) - 4 (TWR-)	Always	Approximately 4 ohms

TEXT IN ILLUSTRATION

*a	Component without harness connected (Front No. 2 Speaker Assembly)
*b	for LH Side
*c	for RH Side

NG --> See step 7

OK: Go to next step

4. **REPLACE FRONT NO. 2 SPEAKER ASSEMBLY**
   a. Check that the malfunction disappears when a known good speaker is installed. Refer to **REMOVAL** .

      OK

      Malfunction disappears.

      HINT:

      - Connect all the connectors to the front No. 2 speaker assemblies that were disconnected.
      - When there is a possibility that either the right or left front speaker is defective, inspect by interchanging the right one with the left one.

- Perform the above inspection on both LH and RH sides.

NG --> See step 5

OK --> END (FRONT NO. 2 SPEAKER ASSEMBLY WAS DEFECTIVE)

5. **INSPECT REAR SPEAKER ASSEMBLY**
   a. Measure the resistance according to the value(s) in the table below.

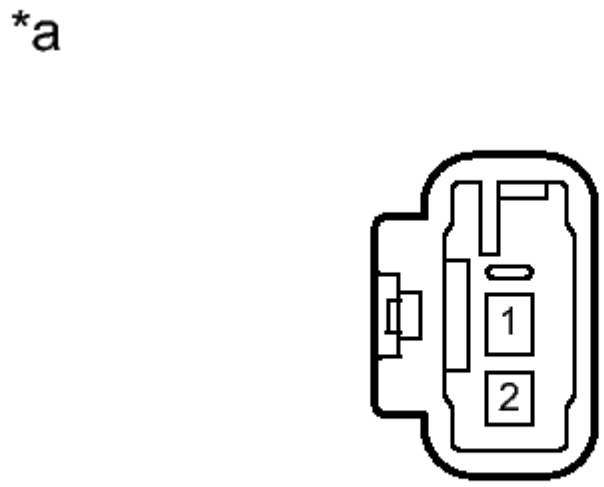


Fig. 13: Measuring Resistance Of Rear Speaker Assembly
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

Standard Resistance

Tester Connection	Condition	Specified Condition
1 - 2	Always	Approximately 4 ohms

TEXT IN ILLUSTRATION

*a	Component without harness connected (Rear Speaker

Assembly)

NG --> See step 8

OK --> See step 9

6. **REPLACE FRONT NO. 1 SPEAKER ASSEMBLY. Refer to REMOVAL**
7. **REPLACE FRONT NO. 2 SPEAKER ASSEMBLY. Refer to REMOVAL**
8. **REPLACE REAR SPEAKER ASSEMBLY. Refer to REMOVAL**
9. **REPLACE NAVIGATION RECEIVER ASSEMBLY. Refer to REMOVAL**

SYMPTOM TESTS

Noise Occurs

INSPECTION PROCEDURE

PROCEDURE

1. **NOISE CONDITION**
   a. Check from which direction the noise comes (front left or right, or rear left or right).

      OK

      The location of the noise source can be determined.

   NG --> See step 3

   OK: Go to next step

2. **CHECK SPEAKERS**
   a. Check the installation conditions of the speaker units that are located near the noise source and that there are no cracks, scratches, deformation or other failures.

      RESULT

Result	Proceed to
No malfunction is found	A
A speaker is installed incorrectly	B
Foreign objects are	C

in the speaker	
A speaker cone paper is broken	D

B --> REINSTALL SPEAKER

C --> REMOVE FOREIGN OBJECT

D --> REPLACE SPEAKER

A: Go to next step

3. **CHECK NOISE CONDITIONS**
   a. Check the noise condition.

      HINT:

      The radio has a noise prevention function to reduce noise when listening to the radio. If a loud noise occurs, check whether the ground at the antenna mounting base and the noise prevention unit are installed and wired correctly.

Condition Under Which Noise Occurs	Noise Source
Noise increases when the accelerator pedal is depressed, but stops when the engine is stopped.	Generator
Noise occurs during A/C or heater operation.	Blower motor
Noise occurs when the horn switch is pressed and released or when pressed and held.	Horn

Noise occurs synchronously with the turn signal blinking pattern.	Flasher
Noise occurs during window washer operation.	Washer
Noise occurs during wiper operation.	Wiper
Noise occurs when the brake pedal is depressed.	Stop light switch
Others	Static electricity

HINT:

- In the left column of the table, find the situation that matches the customer's complaint. Then, in the right column, find the part that is causing the noise. Check the respective noise filter.
- To save time and avoid a misdiagnosis, first make sure that the noise is not coming from outside the vehicle.
- Troubleshoot noises in descending order of loudness.
- Setting the radio to a frequency where no signal is received may make recognition of the noise problem easier.

OK

The noise source cannot be determined.

NG --> REPAIR OR REPLACE NOISE SOURCE

OK --> See step 4

4. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**

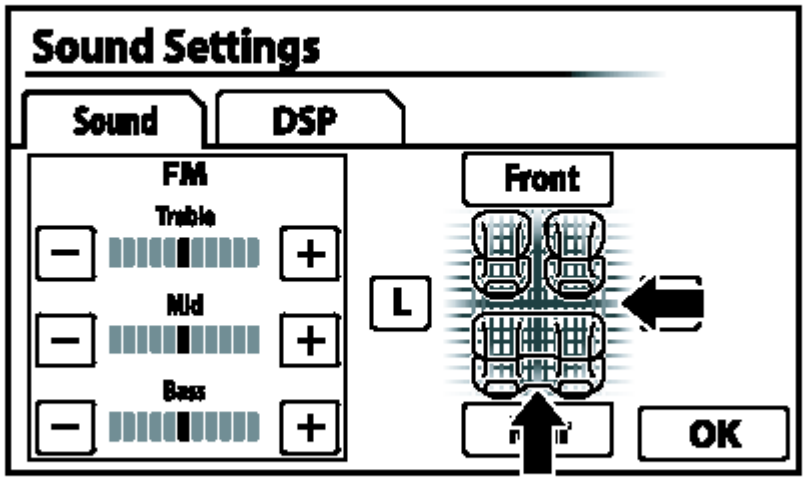
No Sound can be Heard from Speakers

INSPECTION PROCEDURE

PROCEDURE

1. **CHECK AUDIO SETTINGS**
   a. Display the "Sound Settings" screen.

*a



H

Fig. 14: Screen Display - Audio Settings
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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

      OK

      Audio system returns to normal.

      HINT:

      Sound quality adjustment measures vary according to the type of amplifier.

      TEXT IN ILLUSTRATION

*a	Example

NG --> See step 2

OK --> END

2. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**

Sound Quality is Bad Only when CD is Played (Volume is Too Low)

INSPECTION PROCEDURE

PROCEDURE

1. **REPLACE CD AND RECHECK**
    a. Replace the CD with a known good one and recheck.
        1. Check if the same trouble occurs again.

            OK

            Malfunction disappears.

    NG --> See step 2

    OK --> END

2. **REPLACE NAVIGATION RECEIVER ASSEMBLY. Refer to REMOVAL**

CD cannot be Ejected

INSPECTION PROCEDURE

PROCEDURE

1. **CHECK OPERATION**
    a. Press the CD eject switch of the navigation receiver assembly for 5 seconds or more and check that the CD is ejected.

        OK

        CD is ejected.

    NG --> See step 3

    OK: Go to next step

2. **REPLACE CD AND RECHECK**
    a. Replace CD with a known good one and check that the malfunction disappears.

        OK

        CD is ejected.

    NG --> See step 4

OK --> CD WAS FAULTY

3. **REPLACE NAVIGATION RECEIVER ASSEMBLY. Refer to REMOVAL**
4. **REPLACE NAVIGATION RECEIVER ASSEMBLY. Refer to REMOVAL**

CD cannot be Inserted or is Ejected Right After Insertion

INSPECTION PROCEDURE

PROCEDURE

1. **CHECK IF PROPER CD IS INSERTED**
   a. Make sure that the CD is an audio CD, or a CD with an MP3 or WMA file, and that it is not deformed, flawed, stained, burred or otherwise defective.

      OK

      The CD is a normal.

      HINT:

      - Translucent or uniquely-shaped CDs cannot be played.
      - Commercial audio CDs can be played.
      - CD-DA files on CD-ROMs, CD-Rs, and CD-RWs can be played.
      - MP3 and WMA files on CD-ROMs, CD-Rs and CD-RWs can be played.
      - For details on playable CDs, refer to the Owner's Manual.

   NG --> CD IS FAULTY

   OK: Go to next step

2. **CHECK THAT CD IS INSERTED PROPERLY**
   a. Check whether or not the CD is inserted upside down.

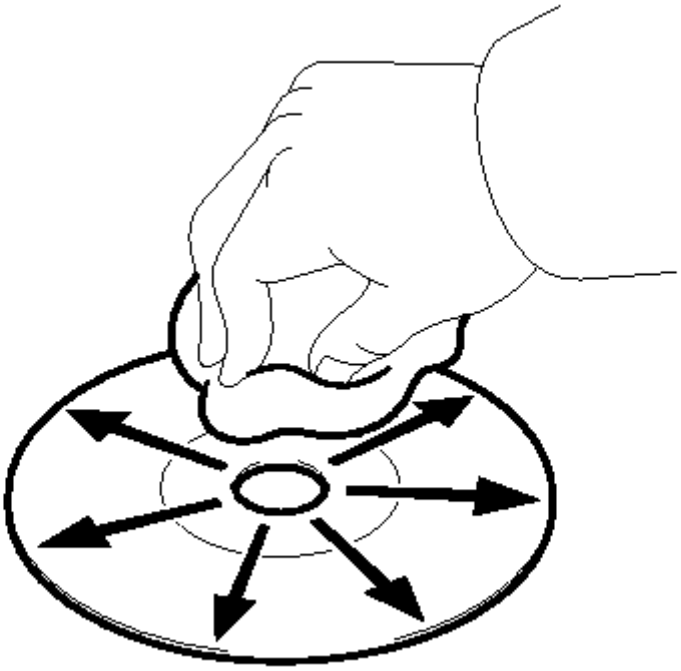
      OK

      The CD is properly inserted.

   NG --> SET CD PROPERLY

   OK: Go to next step

3. **CHECK CD**
   a. Disc cleaning



P

Fig. 15: Cleaning Disc Surface With Soft Dry Cloth
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

1. If dirt is on the disc surface, wipe it clean with a soft cloth from the inside to the outside in a radial direction.

   OK

   Malfunction disappears.

   NOTE: Do not use a conventional record cleaner or anti-static preservative.

NG --> See step 4

OK --> END (CD WAS DIRTY)

4. **REPLACE CD AND RECHECK**
   a. Replace CD with a known good one and check that the malfunction disappears.

      OK

      Malfunction disappears.

NG --> See step 5

OK --> CD WAS FAULTY

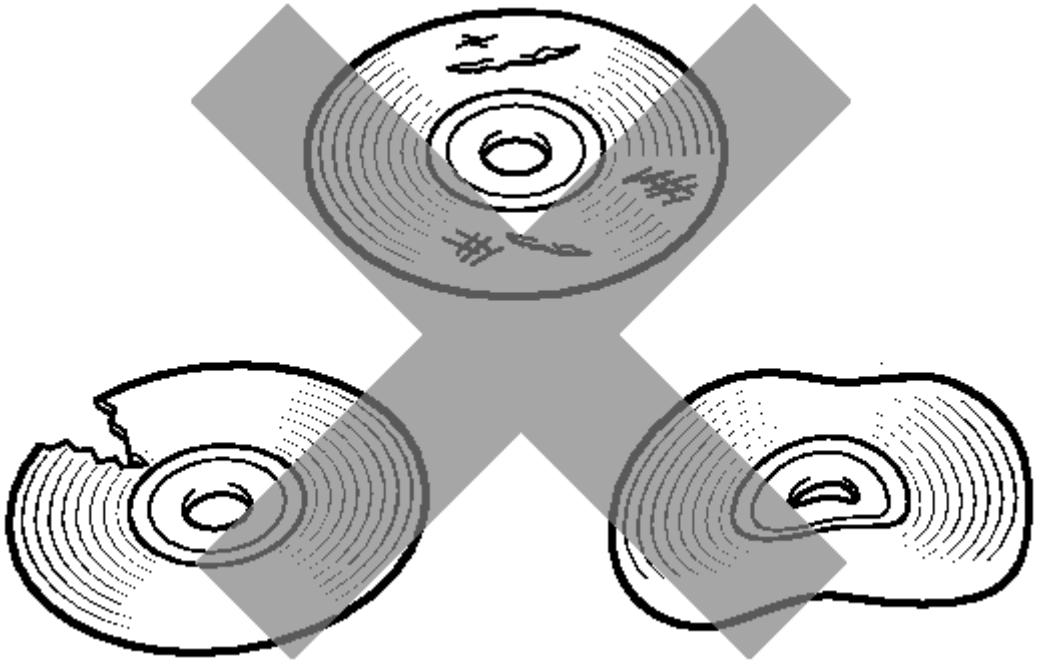
5. **REPLACE NAVIGATION RECEIVER ASSEMBLY. Refer to REMOVAL**

CD Sound Skips

INSPECTION PROCEDURE

PROCEDURE

1. **CHECK CD**
   a. Check that the CD is not deformed or cracked.



P

Fig. 16: Identifying Deformed Or Cracked Disc
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

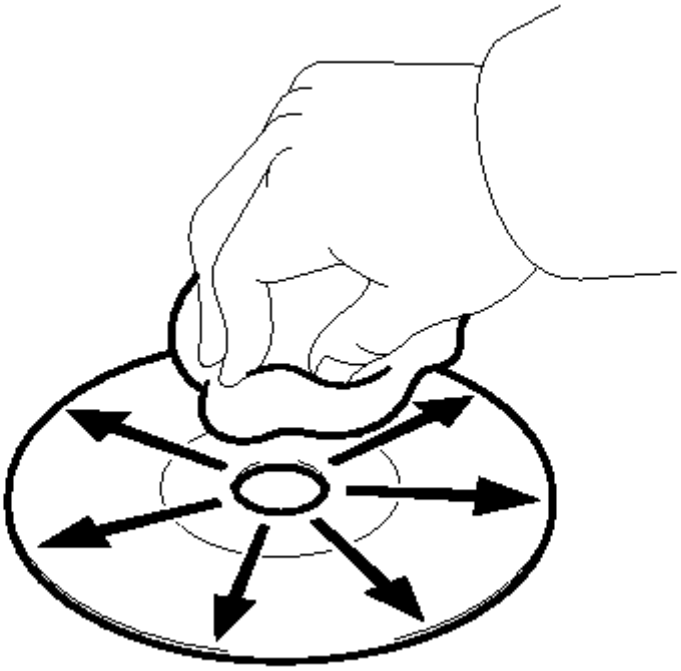
OK

No deformation or cracks in the CD.

NG --> CD IS FAULTY

OK: Go to next step

2. **CHECK CD**
   a. Check the CD.



P

Fig. 17: Cleaning Disc Surface With Soft Dry Cloth
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK

The CD is clean.

NOTE: Do not use a conventional record cleaner or antistatic preservative.

HINT:

If the CD is dirty, clean the CD by wiping the CD surface radially with a soft cloth.

NG --> CLEAN CD

OK: Go to next step

3. **REPLACE CD AND RECHECK**
   a. Replace CD with a known good one and check that the malfunction disappears.

      OK

      Malfunction disappears.

NG --> See step 4

OK --> CD WAS FAULTY

4. **CHECK NAVIGATION RECEIVER ASSEMBLY**
    a. Check the navigation receiver assembly installation condition.
        1. Check that the navigation receiver assembly is properly installed.

            OK

            The navigation receiver assembly is properly installed.

    NG --> REINSTALL NAVIGATION RECEIVER ASSEMBLY PROPERLY

    OK --> See step 5

5. **REPLACE NAVIGATION RECEIVER ASSEMBLY. Refer to <u>REMOVAL</u>**

Radio Broadcast cannot be Received or Poor Reception

INSPECTION PROCEDURE

PROCEDURE

1. **CHECK NAVIGATION RECEIVER ASSEMBLY**
    a. Check the radio automatic station search function.
        1. Check the radio automatic station search function by activating it.

            OK

            The radio automatic station search function works properly.

    NG --> See step 2

    OK --> See step 7

2. **CHECK OPTIONAL COMPONENTS**
    a. Check if any optional components that may decrease reception capacity, such as sunshade film or a telephone antenna, are installed.

        OK

        Optional components are installed.

        NOTE: Do not remove optional components without the permission of the customer.

    NG --> See step 3

    OK --> REMOVE OPTIONAL COMPONENTS AND CHECK AGAIN (SEE NOTE ABOVE)

3. **CHECK NAVIGATION RECEIVER ASSEMBLY (ANTENNA)**
   a. Preparation for check

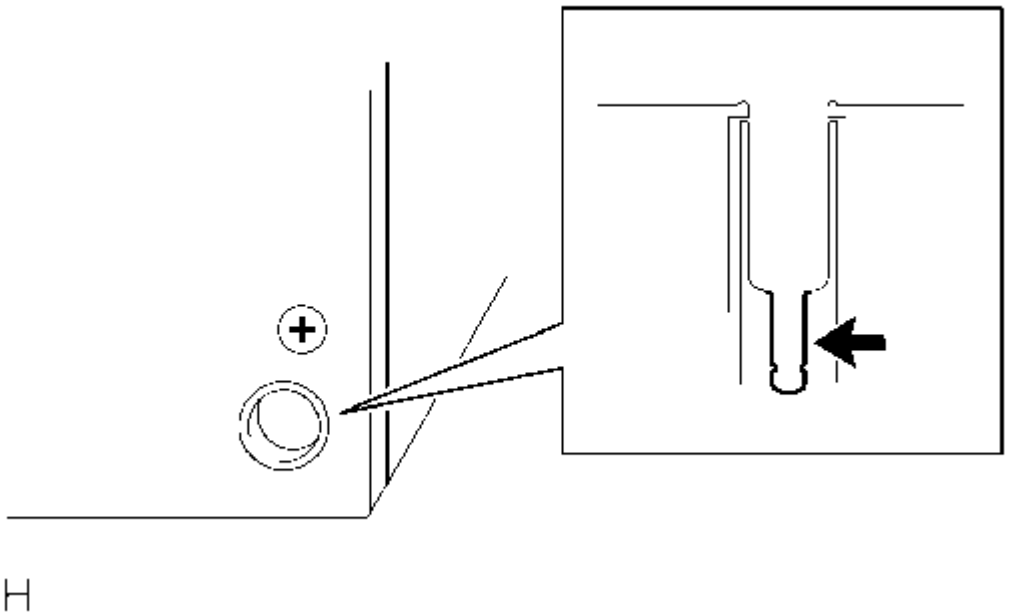


Fig. 18: Checking Antenna Plug On Radio And Navigation Assembly
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

      1. Remove the antenna plug from the navigation receiver assembly.

   b. Check for noise
      1. Turn the ignition switch to ACC with the navigation receiver assembly connector connected.
      2. Turn the radio on and change the AM mode.
      3. Place a screwdriver, thin wire, or other metal object on the navigation receiver's antenna jack and check that noise can be heard from the speaker.

         OK

         Noise occurs.

NG --> See step 8

OK: Go to next step

4. **CHECK ANTENNA CORD SUB-ASSEMBLY**
   a. Disconnect the pillar antenna pole sub-assembly connector.

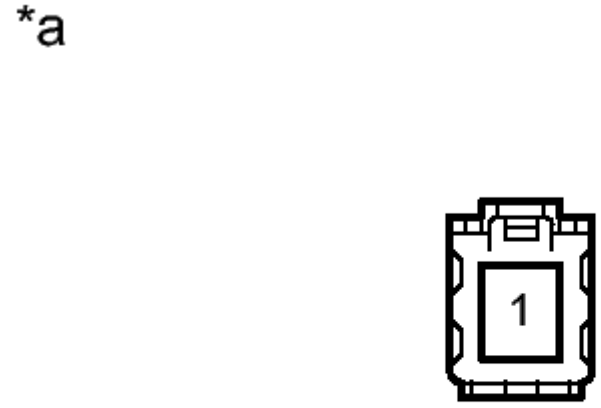


Fig. 19: Checking Antenna Cord Sub-Assembly
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

b. With the ignition switch to ON, turn on the radio and select the AM mode.
c. Place the tip of a screwdriver against the metal terminal of the antenna cord sub-assembly and check that noise is heard from the speakers.

   OK

   Noise occurs.

TEXT IN ILLUSTRATION

*a	Front view of wire harness connector (to Antenna Cord Sub-assembly)

d. Reconnect the pillar antenna pole sub-assembly connector.

NG --> See step 9

OK: Go to next step

5. **CHECK PULL TOP ANTENNA POLE SUB-ASSEMBLY**
   a. Check that the pull top antenna pole sub-assembly is securely installed.

      OK

      The pull top antenna pole sub-assembly is installed properly.

   NG --> See step 10

   OK: Go to next step

6. **REPLACE PILLAR ANTENNA POLE SUB-ASSEMBLY**
   a. Replace the pillar antenna pole sub-assembly and check if radio broadcasts can be received normally. Refer to **REMOVAL** .

   NG --> REPLACE NAVIGATION RECEIVER ASSEMBLY

   OK --> END

7. **REPLACE NAVIGATION RECEIVER ASSEMBLY. Refer to REMOVAL**
8. **REPLACE NAVIGATION RECEIVER ASSEMBLY. Refer to REMOVAL**
9. **REPLACE ANTENNA CORD SUB-ASSEMBLY. Refer to REMOVAL**
10. **CHECK AND REPLACE PULL TOP ANTENNA POLE SUB-ASSEMBLY. Refer to REMOVAL**

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

INSPECTION PROCEDURE

PROCEDURE

1. **CHECK VEHICLE SIGNAL (OPERATION CHECK)**
   a. Enter the "Vehicle Signal Check Mode" screen. Refer to Check Vehicle Signal in Operation Check. Refer to **OPERATION CHECK** .

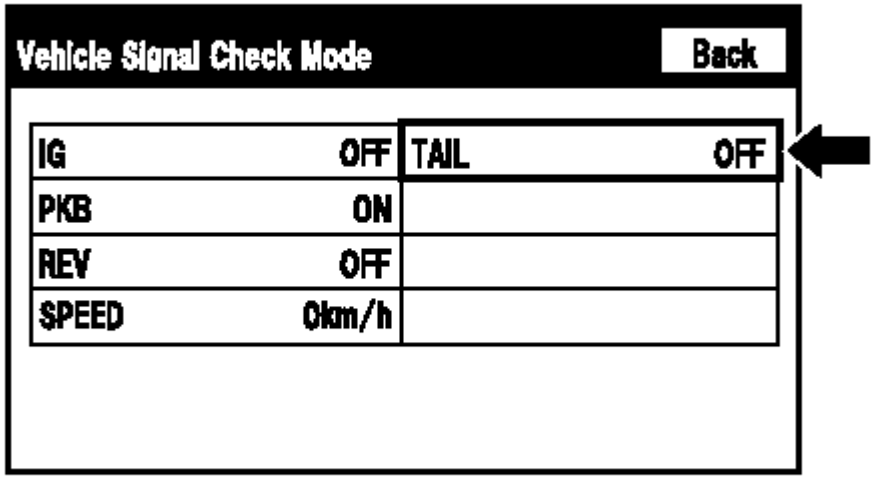


Fig. 20: Screen Display - Vehicle Signal Check Mode
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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

OK

Light Control Switch Condition	Display Condition
Tail or Head	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 switch operation.

NG --> See step 2

OK --> See step 3

2. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**

3. **REPLACE NAVIGATION RECEIVER ASSEMBLY. Refer to REMOVAL**

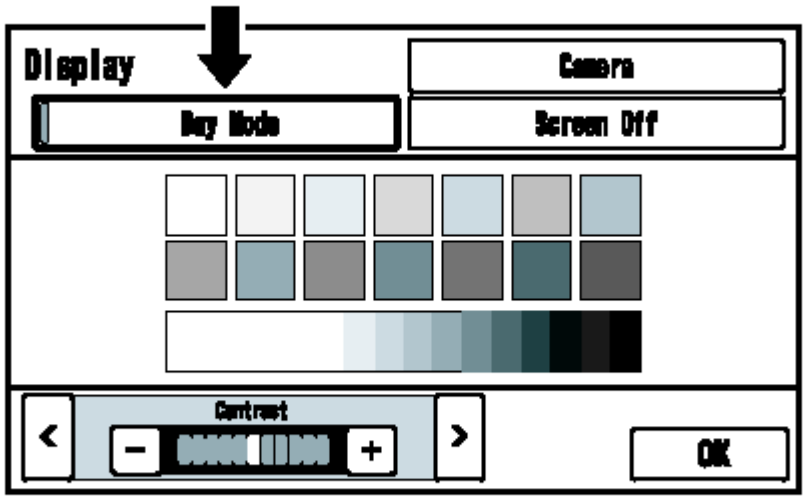
Display does not Dim when Light Control Switch is Turned ON

INSPECTION PROCEDURE

PROCEDURE

1. **CHECK IMAGE QUALITY SETTING**
   a. Display the "Display" screen.

*a



H

Fig. 21: Screen Display - Day Mode
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

   b. Turn the light control switch to the tail or head position.
   c. Check if "Day Mode" setting on the display adjustment screen is on.

RESULT

Result	Result
"Day Mode" setting is on	A
"Day Mode" setting	B

is off	

TEXT IN ILLUSTRATION

*a	Example

B --> See step 2

A --> TURN "Day Mode" SETTING OFF

2. **CHECK VEHICLE SIGNAL (OPERATION CHECK)**
   a. Enter the "Vehicle Signal Check Mode" screen. Refer to Check Vehicle Signal in Operation Check. Refer to **OPERATION CHECK** .

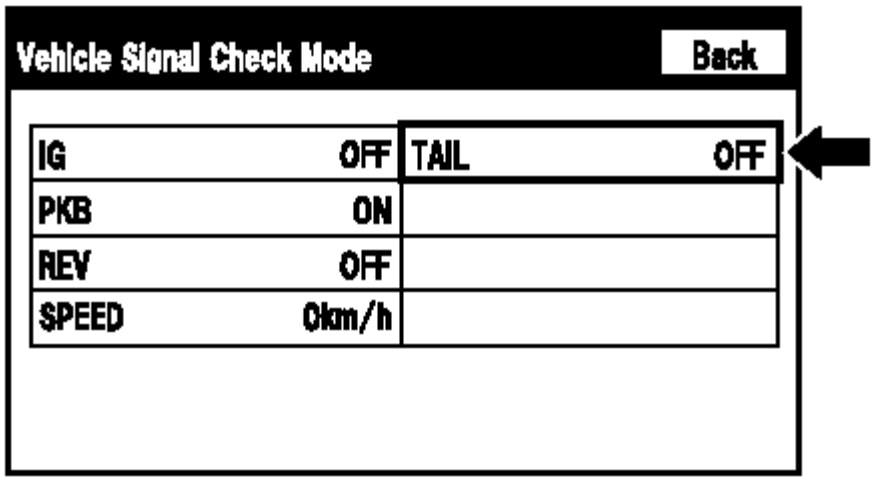


Fig. 22: Screen Display - Vehicle Signal Check Mode
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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

OK

Light Control Switch Condition	Display Condition
Tail or	

Head	ON
OFF	OFF

HINT:

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

NG --> See step 3

OK --> See step 4

3. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**
4. **REPLACE NAVIGATION RECEIVER ASSEMBLY. Refer to REMOVAL**

Panel Switches do not Function

INSPECTION PROCEDURE

PROCEDURE

1. **CHECK PANEL SWITCH**
   a. Check for foreign matter around the switch that might prevent operation.

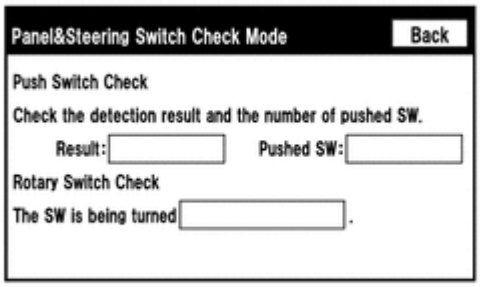
      OK

      No foreign matter is found.

   NG --> REMOVE ANY FOREIGN MATTER FOUND

   OK: Go to next step

2. **CHECK PANEL SWITCH (OPERATION CHECK)**
   a. Enter the "Panel & Steering Switch Check Mode" screen. Refer to Check Panel & Steering Switch in Operation Check. Refer to **OPERATION CHECK** .



H

Fig. 23: Screen Display - Panel & Steering Switch Check Mode
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

b. Operate the abnormal switch and check if the switch status is correctly displayed.

OK

The switch status is correctly displayed as operated.

NG --> See step 3

OK --> See step 4

3. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**
4. **REPLACE NAVIGATION RECEIVER ASSEMBLY. Refer to REMOVAL**

Touch Panel Switch does not Function

INSPECTION PROCEDURE

PROCEDURE

1. **CHECK MULTI-DISPLAY**
   a. Check if there is any foreign matter caught between the display and exterior frame of the multi-display.

   OK

   No foreign matter is caught between the display and exterior frame of the multi-display.

   HINT:

   If there is foreign matter between the display and exterior frame of the multi-display, the touch panel will remain pressed, preventing touch switch operation.

NG --> REMOVE FOREIGN MATTER

OK: Go to next step

2. **CHECK TOUCH PANEL**
   a. Check for foreign matter on the display.

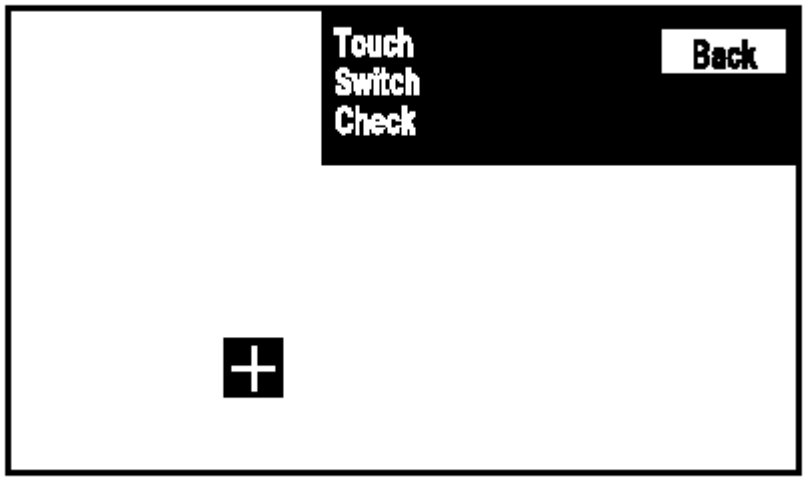
      OK

      The display is clean.

   NG --> CLEAN DISPLAY AND RECHECK TOUCH PANEL

   OK: Go to next step

3. **CHECK TOUCH SWITCH (DISPLAY CHECK MODE)**
   a. Enter the "Touch Switch Check" screen. Refer to Check Touch Switch in Operation Check. Refer to **OPERATION CHECK** .



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Fig. 24: Screen Display - Touch Switch Check
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

   b. Touch the display in the area where the switch malfunction occurs.

      OK

      A "+" mark appears at the touched position.

NG --> See step 4

OK --> See step 5

4. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**
5. **REPLACE NAVIGATION RECEIVER ASSEMBLY. Refer to REMOVAL**

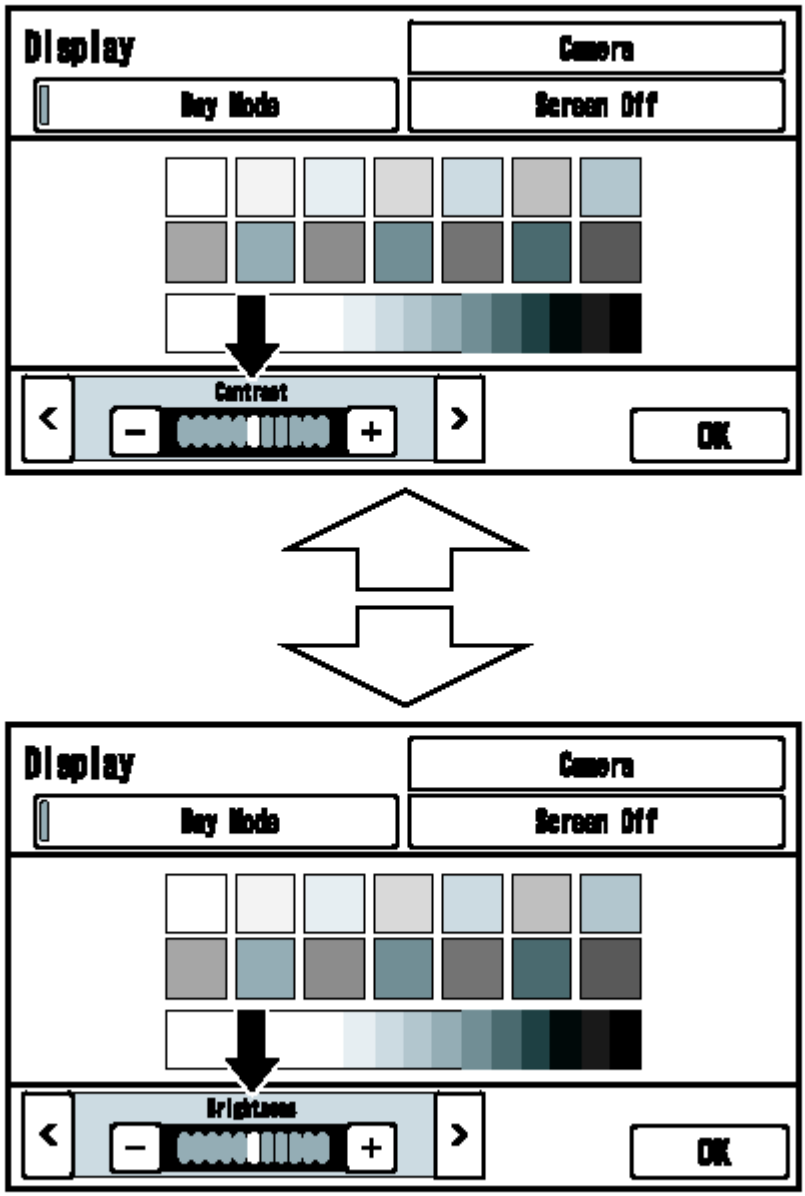
Screen Flicker or Color Distortion

INSPECTION PROCEDURE

PROCEDURE

1. **CHECK DISPLAY SETTING**
   a. Display the "Display" screen.

*a



H

Fig. 25: Screen Display - Display Settings
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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

OK

The display returns to normal.

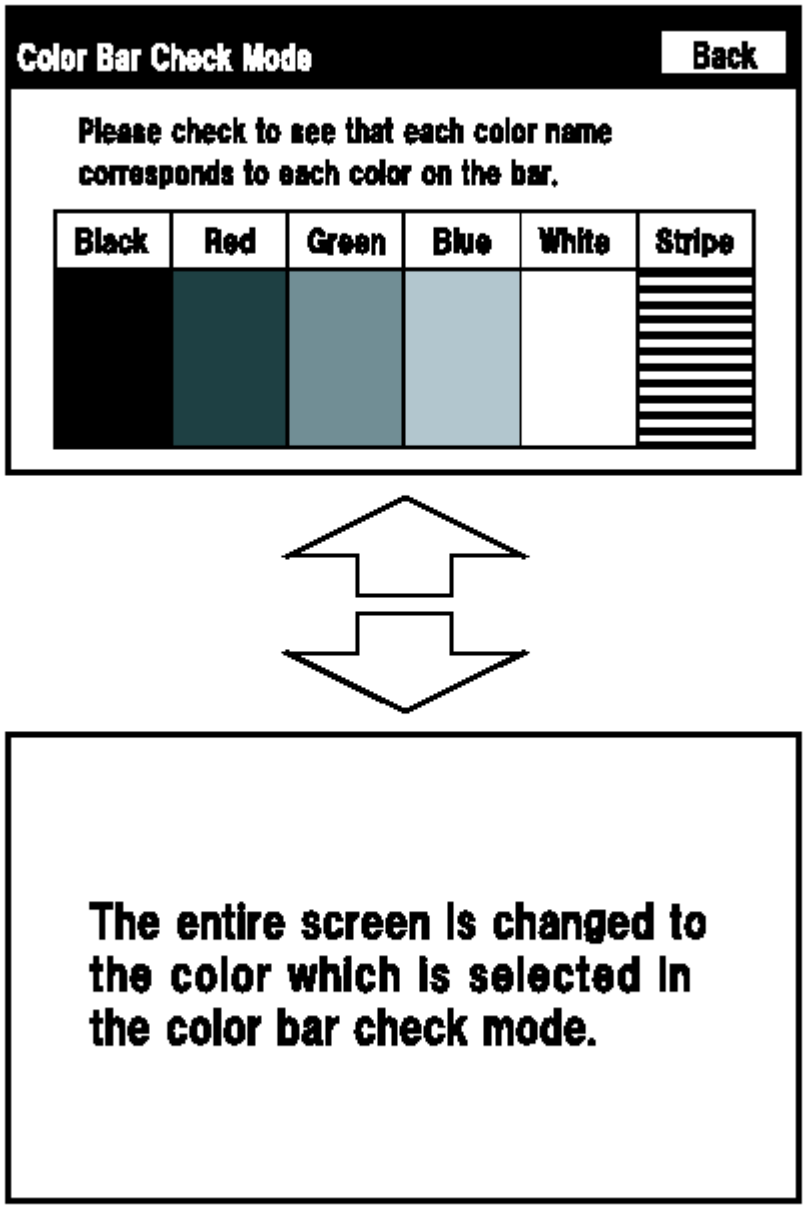
TEXT IN ILLUSTRATION

*a	Example

NG --> See step 2

OK --> END

2. **CHECK COLOR BAR**
   a. Enter the "Color Bar Check Mode" screen. Refer to Check Color Bar in Operation Check. Refer to **OPERATION CHECK** .



H

Fig. 26: Screen Display - Color Bar Check Mode
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

b. Check that the color bars match the displayed names.

OK

Color bars match the displayed names.

NG --> See step 3

OK --> See step 4

3. **REPLACE NAVIGATION RECEIVER ASSEMBLY. Refer to REMOVAL**
4. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**

Poor Sound Quality in All Modes (Low Volume)

INSPECTION PROCEDURE

PROCEDURE

1. **CHECK AUDIO SETTINGS**
   a. Display the "Sound Settings" screen.

*a

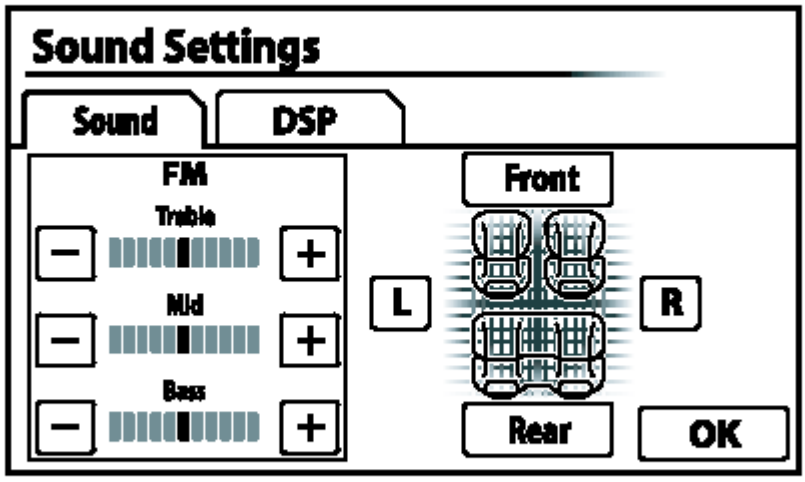


Fig. 27: Screen Display - Sound Settings
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

   b. Set "Bass", "Mid" and "Treble" to the initial values and check that sound is normal.

OK

Malfunction disappears.

TEXT IN ILLUSTRATION

*a	Example

HINT:

Sound quality adjustment measures vary according to the type of amplifier.

NG --> See step 2

OK --> END

2. **COMPARE VEHICLE WITH ANOTHER VEHICLE OF SAME MODEL**
   a. Compare with another vehicle of the same model which does not have trouble to see if there is any difference in the sound quality.

      OK

      No difference is found.

   NG --> See step 3

   OK --> END

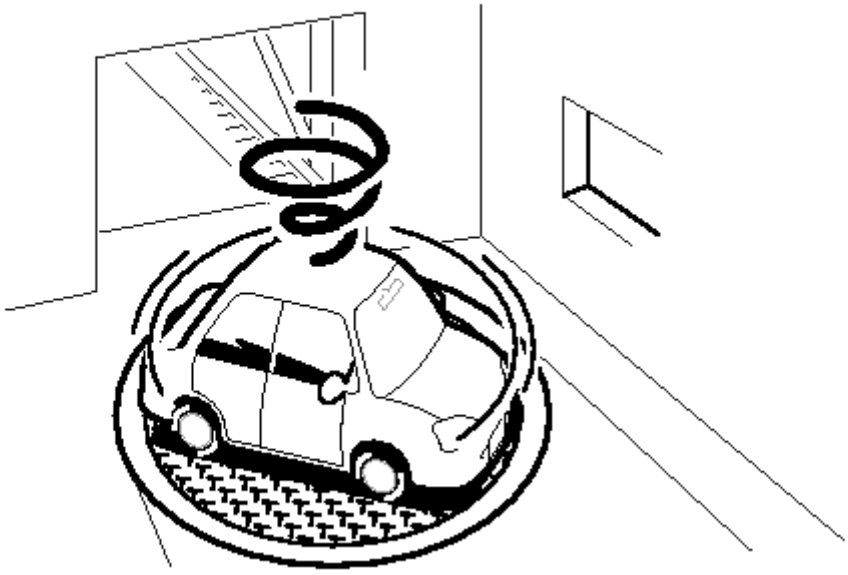
3. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**

Cursor or Map Rotates when Vehicle Stopped

INSPECTION PROCEDURE

PROCEDURE

1. **CHECK CONDITION**
   a. Check with the customer if the vehicle has been turned by a turntable.



P

Fig. 28: Checking Vehicle Condition
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK

Vehicle has not been turned by turntable.

HINT:

If the vehicle is turned on a turntable with the ignition switch ON, the system may store the angular velocity. As a result, the vehicle position cursor may deviate. In this case, the vehicle position cursor will return to normal by turning the ignition switch off and back to ON again with the vehicle completely stopped.

NG --> TURN IGNITION SWITCH TO ON WHEN VEHICLE IS COMPLETELY STOPPED

OK --> See step 2

2. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**

Vehicle Position Mark is not Updated

INSPECTION PROCEDURE

PROCEDURE

1. **CHECK SD CARD**

a. Check that the SD card is not deformed or cracked.

OK

No deformations or cracks in the SD card.

NG --> REPLACE SD CARD

OK: Go to next step

2. **CHECK NAVIGATION DISPLAY**
   a. Check if a touch scroll can be performed on the map display.

OK

Touch scroll can be performed.

NG --> See step 4

OK: Go to next step

3. **CHECK VEHICLE SENSOR (NAVIGATION CHECK MODE)**
   a. Enter the "Vehicle Signal Check Mode" screen. Refer to Check Vehicle Signal Check Mode in Operation Check. Refer to **OPERATION CHECK** .

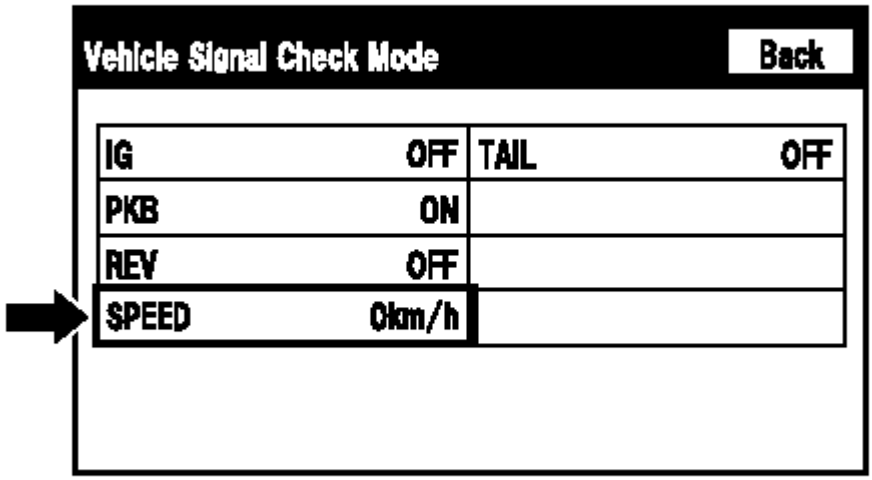


Fig. 29: Screen Display - Vehicle Signal Check Mode

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

b. While driving the vehicle, compare the "SPEED" indicator to the reading on the speedometer. Check if these readings are equal or almost equal.

OK

The readings are equal or almost equal.

NG --> See step 5

OK --> END

4. **REPLACE NAVIGATION RECEIVER ASSEMBLY. Refer to REMOVAL**
5. **GO TO "Speed signal does not change in navigation check mode" IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**

Current Position Display does not Appear

INSPECTION PROCEDURE

PROCEDURE

1. **CHECK NAVIGATION RECEIVER ASSEMBLY**
   a. Check that an SD card disc is inserted into the SD card slot.

   OK

   An SD card is inserted.

   NG --> INSERT SD CARD IN SD CARD SLOT

   OK: Go to next step

2. **CHECK SD CARD**
   a. Check that the SD card is not deformed or cracked.

   OK

   No deformations or cracks in the SD card.

   NG --> REPLACE SD CARD

   OK --> See step 3

3. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**

GPS Mark is not Displayed

INSPECTION PROCEDURE

PROCEDURE

1. **CHECK CABIN**
    a. Check the cabin for any object that might interrupt radio reception or additional devices which use radio waves 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

        The GPS mark appears.

    NG --> See 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 examples, see the following illustration.

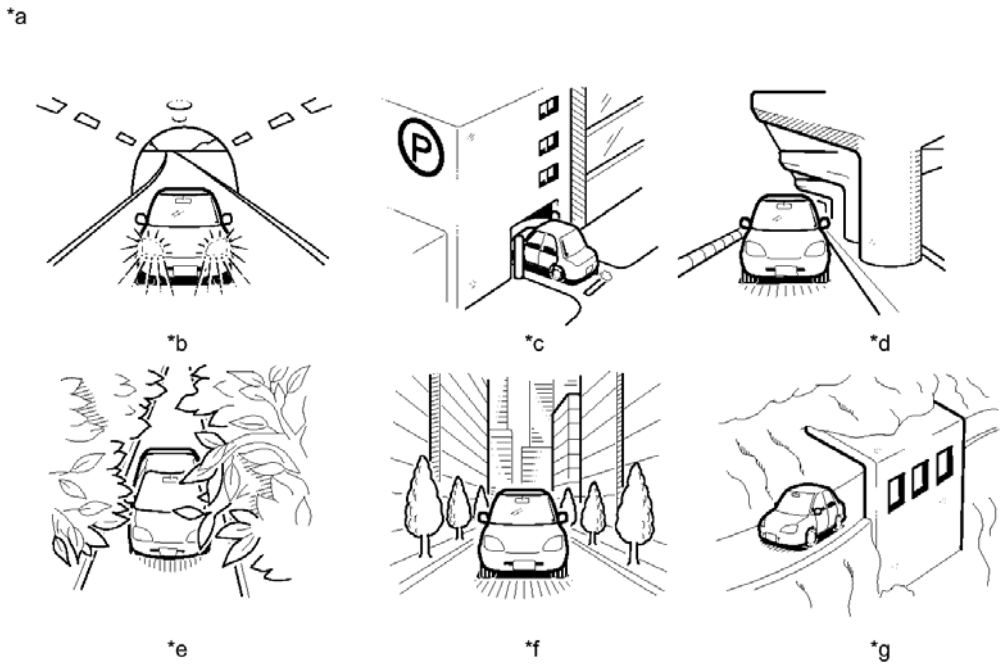


Fig. 30: Identifying Reasons For Poor GPS Signal Reception
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

TEXT IN ILLUSTRATION

*a	Example	*b	In a tunnel
*c	In a building	*d	Under an overpass
*e	On a forest or tree-lined path	*f	Between tall buildings
*g	Under a cliff or overhang	-	-

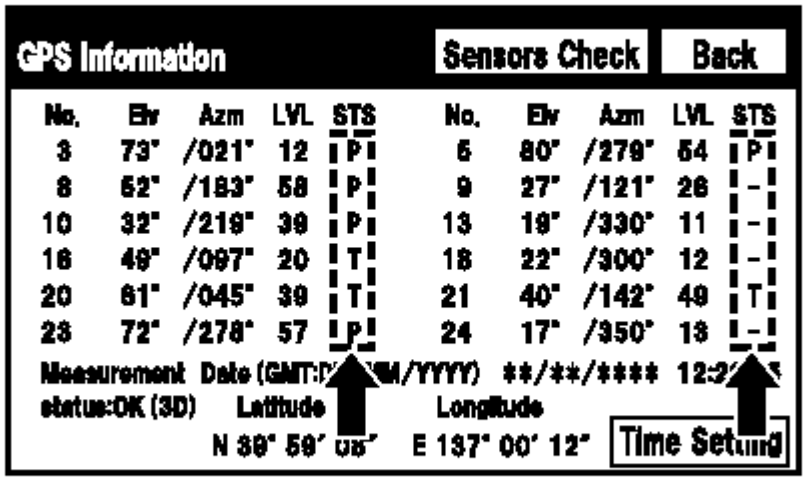
OK

The GPS mark is displayed.

NG --> See step 3

OK --> SYSTEM RETURN TO NORMAL

3. **CHECK GPS INFORMATION (OPERATION CHECK)**
    a. Enter the "GPS Information" screen. Refer to Check GPS & Vehicle Sensors in Operation Check. Refer to **OPERATION CHECK** .



H

Fig. 31: Screen Display - GPS Information
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

b. Check how many of the following codes appear in the "STS" column.

HINT:

T, U or P appears

OK

At least 3 codes appear.

NG --> See step 4

OK --> See step 5

4. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**
5. **REPLACE NAVIGATION RECEIVER ASSEMBLY. Refer to REMOVAL**

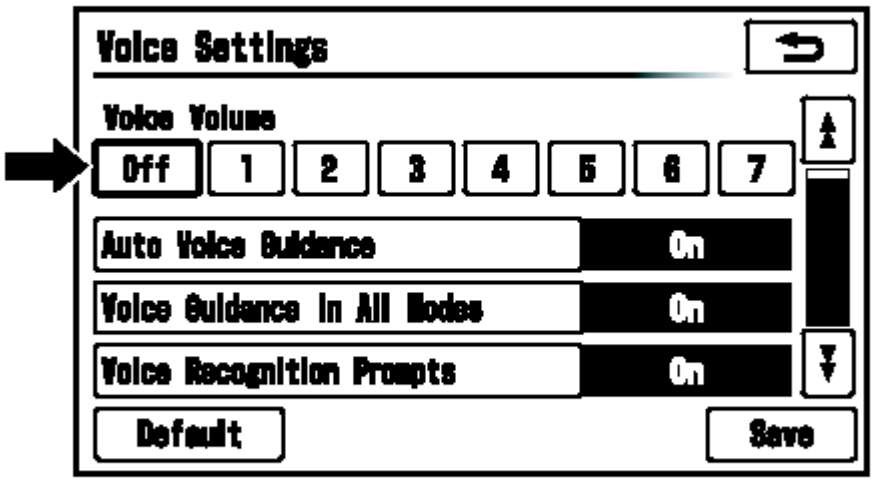
Voice Guidance does not Function

INSPECTION PROCEDURE

PROCEDURE

1. **CHECK NAVIGATION SETTING**
   a. Display the "Voice Settings" screen.

*a



H

Fig. 32: Screen Display - Voice Settings
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

   b. Check that "Off" is not selected.

      OK

      "Off" is not selected.

      TEXT IN ILLUSTRATION

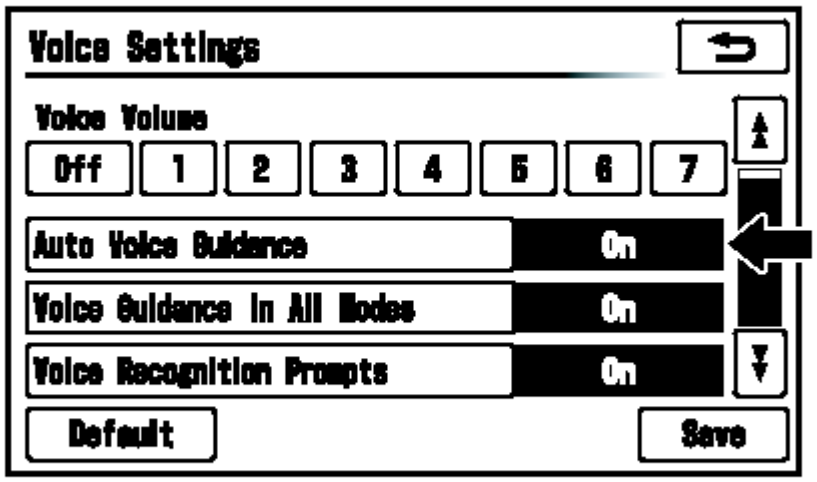
*a	Example

   NG --> SELECT VOICE VOLUME SETTING OTHER THAN "Off"

   OK: Go to next step

2. **CHECK NAVIGATION SETTING**
   a. Display the "Voice Settings" screen.

*a



H

Fig. 33: Screen Display - Auto Voice Guidance
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

b. Check that "Auto Voice Guidance" is not "Off".

OK

"Auto Voice Guidance" is not "Off".

TEXT IN ILLUSTRATION

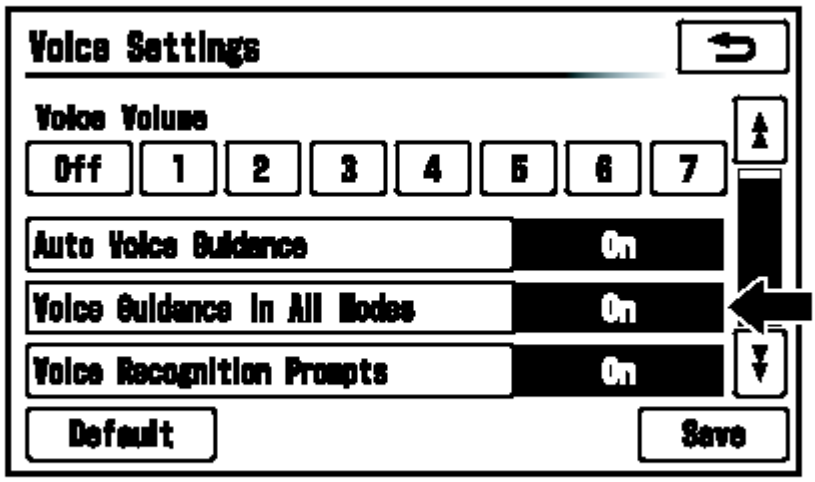
*a	Example

NG --> TURN AUTO VOICE GUIDANCE "On"

OK: Go to next step

3. **CHECK NAVIGATION SETTING**
   a. Display the "Voice Settings" screen.

*a



H

Fig. 34: Screen Display - Voice Guidance In All Modes
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

b. Check that "Voice Guidance in All Modes" is not "Off".

OK

"Voice Guidance in All Modes" is not "Off".

TEXT IN ILLUSTRATION

*a	Example

NG --> TURN VOICE GUIDANCE IN ALL MODES "On"

OK: Go to next step

4. **CHECK SD CARD**
   a. Check that the SD card is not deformed or cracked.

OK

No deformations or cracks in the SD card.

NG --> REPLACE SD CARD

OK: Go to next step

5. **CHECK AUDIO FUNCTION**
    a. Check that sound can be heard from a front speaker.

        OK

        Sound can be heard.

    NG --> See step 6

    OK --> See step 7

6. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**
7. **REPLACE NAVIGATION RECEIVER ASSEMBLY. Refer to REMOVAL**

Map Display Incomplete

INSPECTION PROCEDURE

PROCEDURE

1. **CHECK SD CARD**
    a. Check that the SD card is not deformed or cracked.

        OK

        No deformations or cracks in the SD card.

    NG --> REPLACE SD CARD

    OK: Go to next step

2. **CHECK NAVIGATION DISPLAY**
    a. Check that displays other than the navigation display are complete.

        OK

        No other incomplete displays are found.

    NG --> See step 3

    OK --> See step 4

3. **REPLACE NAVIGATION RECEIVER ASSEMBLY. Refer to REMOVAL**
4. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**

Route cannot be Calculated

INSPECTION PROCEDURE

PROCEDURE

1. **CHECK SD CARD**
   a. Check that the SD card is not deformed or cracked.

      OK

      No deformations or cracks in the SD card.

   NG --> REPLACE SD CARD

   OK: Go to next step

2. **SET DESTINATION**
   a. Set another destination and check if the system can calculate the route correctly.

      OK

      Route can be correctly calculated.

   NG --> See step 3

   OK --> NORMAL OPERATION

3. **REPLACE NAVIGATION RECEIVER ASSEMBLY. Refer to REMOVAL**

Voice is not Recognized

INSPECTION PROCEDURE

PROCEDURE

1. **CHECK CONDITION**
   a. Check if the system voice recognition level is low when recognizing a particular voice.

      RESULT

Result	Proceed to
System voice recognition level is low only	A

for a particular voice.	
System voice recognition level is low with any voice.	B

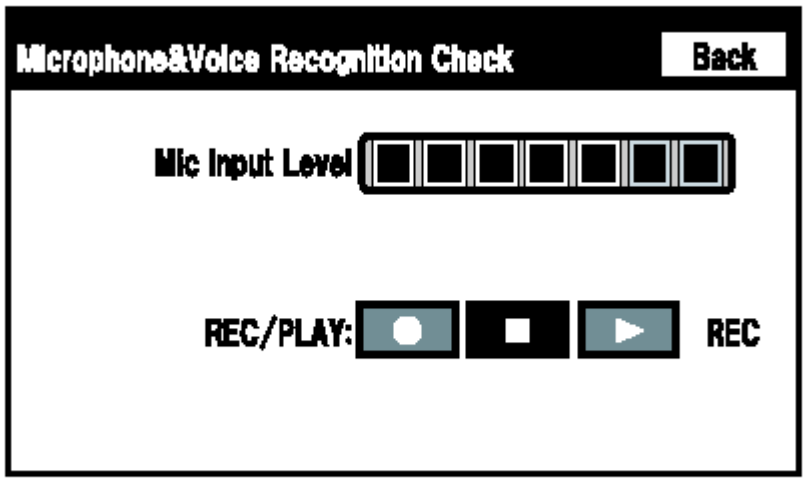
HINT:

System voice recognition level varies depending on voice and pronunciation. This is not a malfunction.

B --> See step 2

A --> END

2. **CHECK MICROPHONE AND VOICE RECOGNITION (OPERATION CHECK)**
   a. Enter the "Microphone & Voice Recognition Check" screen. Refer to Check Mic & Voice Recognition in Operation Check. Refer to **OPERATION CHECK** .



H

Fig. 35: Screen Display - Microphone & Voice Recognition Check
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

   b. When voice is input into the microphone, check that the microphone input level meter changes

according to the input voice.

c. Push the recording switch and perform voice recording.

HINT:

- Select the recording switch with the blower motor of the air conditioning system stopped. If an outlet of the air conditioning system is facing the microphone, noise may be recorded.
- Voice can be recorded for up to 5 seconds.

d. Check that the recording indicator remains on while recording and that the recorded voice is played normally without noise or distortion.

OK

All check results are normal.

NG --> See step 3

OK --> See step 4

3. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**
4. **REPLACE NAVIGATION RECEIVER ASSEMBLY. Refer to REMOVAL**

Cellular Phone Registration Failure, Phone Directory Transfer Failure

INSPECTION PROCEDURE

PROCEDURE

1. **CHECK OPERATION**
   a. Place the cellular phone close to the navigation receiver assembly.
   b. Check if the cellular phone can be registered.

OK

The cellular phone can be registered.

NG --> See step 2

OK --> NORMAL OPERATION

2. **CHECK CURRENT CONDITIONS**
   a. Proceed to the next step according to the table below.

RESULT

	Proceed

Result	to
Another "Bluetooth" compatible cellular phone is available.	A
Another "Bluetooth" compatible vehicle is available.	B
None of the above	C

B --> See step 4

C --> See step 5

A: Go to next step

3. **CHECK USING ANOTHER CELLULAR PHONE**
   a. Check if the system functions using another "Bluetooth" compatible cellular phone.

      HINT:

      - Confirm that either the same or a different version of another "Bluetooth" compatible cellular phone complies with the system.
      - Depending on the version, some "Bluetooth" compatible cellular phones cannot be used.

      OK

      The system functions.

NG --> See step 7

OK --> USE A "Bluetooth" COMPATIBLE CELLULAR PHONE

4. **CHECK USING ANOTHER "Bluetooth" COMPATIBLE VEHICLE**
   a. Register the cellular phone with another vehicle and check if the system functions normally.

      HINT:

      Depending on the version, some "Bluetooth" compatible cellular phones cannot be used.

      OK

The system functions.

NG --> ASK CUSTOMER TO UPDATE CELLULAR PHONE OR CHANGE IT TO A "Bluetooth" COMPATIBLE MODEL

OK --> See step 8

5. **CHECK USING ANOTHER CELLULAR PHONE**
   a. Check if the system functions using another "Bluetooth" compatible cellular phone.

      HINT:

      - Confirm that either the same or a different version of another "Bluetooth" compatible cellular phone complies with the system.
      - Depending on the version, some "Bluetooth" compatible cellular phones cannot be used.

      OK

      The system functions.

NG --> See step 6

OK --> USE A "Bluetooth" COMPATIBLE CELLULAR PHONE

6. **CHECK CELLULAR PHONE**
   a. Check if a call can be made from the cellular phone.

      HINT:

      The cellular phone is unable to call under any of the following conditions:

      - The cellular phone is locked.
      - The phonebook is being transferred.
      - The line is crossed.
      - The cellular phone is outside service range.
      - The power is off.
      - The battery is low.
      - The cellular phone is not connected to "Bluetooth".

      OK

      A call can be made from the cellular phone.

NG --> REPAIR OR REPLACE CELLULAR PHONE

OK --> See step 9

7. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**
8. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**
9. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**

Cellular Phone cannot Send/Receive

INSPECTION PROCEDURE

PROCEDURE

1. **CHECK "Bluetooth" SETTINGS**
   a. Check if the cellular phone is registered as a connected device and the "Bluetooth" settings are correct.

      OK

      The cellular phone is registered as a connected device and "Bluetooth" settings are correct.

   NG --> SET SETTINGS CORRECTLY

   OK: Go to next step

2. **CHECK SETTINGS AND CONDITIONS**
   a. Check the cellular phone functions.

      HINT:

      The cellular phone is unable to call under any of the following conditions:

      - The cellular phone is locked.
      - The phonebook is being transferred.
      - The line is crossed.
      - The cellular phone is outside service range.
      - The power is off.
      - The battery is low.
      - The cellular phone is not connected to "Bluetooth".

      OK

      None of the above conditions exist.

NG --> SET CORRECTLY

OK: Go to next step

3. **CHECK RECEPTION**
   a. Place the cellular phone close to the navigation receiver assembly.
   b. Set the cellular phone so that it can receive calls.
   c. Check if the cellular phone has reception according to the radio and display receiver assembly.

      OK

      The cellular phone has reception.

   NG --> See step 4

   OK --> END

4. **CHECK CELLULAR PHONE**
   a. Check if the cellular phone can make a call.

      HINT:

      The purpose of this step is to inspect the cellular phone when it is not connected to the vehicle.

      OK

      Cellular phone can make a call.

   NG --> REPAIR OR REPLACE CELLULAR PHONE

   OK: Go to next step

5. **RESTART CELLULAR PHONE**
   a. Restart the cellular phone.
   b. Register the cellular phone as a connected device again and check that the malfunction disappears.

      OK

      Malfunction disappears.

   NG --> See step 6

   OK --> END

6. **CHECK CELLULAR PHONE**

a. Check if the cellular phone is "Bluetooth" compatible.

HINT:

Some versions of "Bluetooth" compatible cellular phones may not function.

OK

The phone is "Bluetooth" compatible.

NG --> See step 7

OK --> END (ONLY A "Bluetooth" COMPATIBLE CELLULAR PHONE CAN BE USED)

7. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**

The Other Caller's Voice cannot be Heard, is too Quiet, or Distorted

INSPECTION PROCEDURE

PROCEDURE

1. **CHECK CELLULAR PHONE**
   a. Check if the other caller's voice can be heard properly.

   OK

   Voice can be heard properly.

   HINT:

   The purpose of this step is to inspect the cellular phone when it is not connected to the vehicle.

   NG --> REPAIR OR REPLACE CELLULAR PHONE

   OK: Go to next step

2. **CHECK NAVIGATION SYSTEM**
   a. Check that navigation sound can be heard from a front speaker.

   OK

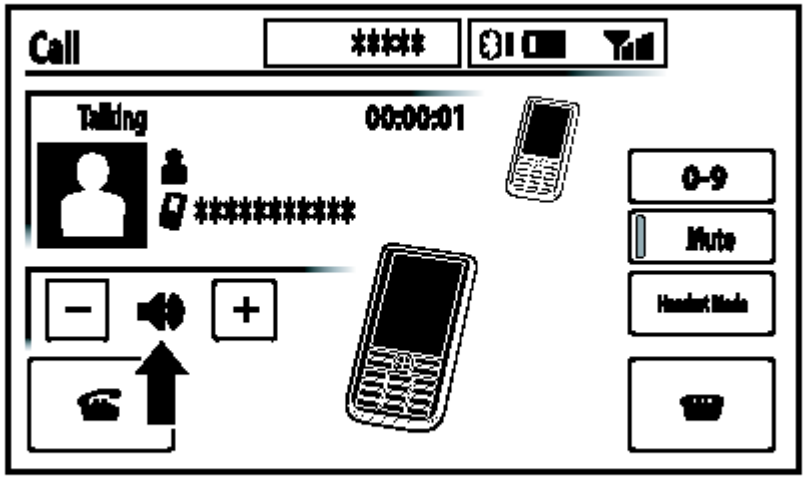
   Sound from the navigation system can be heard.

   NG --> See step 4

OK: Go to next step

3. **CHECK SETTINGS**
   a. Display the "Call" screen.
   b. Check if the volume level is not set to low.

*a



H

Fig. 36: Screen Display - Volume Level
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK

The level is not set to low.

TEXT IN ILLUSTRATION

*a	Example

NG --> SET VOLUME TO HIGH

OK --> See step 5

4. **GO TO "VOICE GUIDANCE DOES NOT FUNCTION" IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**
5. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**

The Other Caller cannot Hear Your Voice, or Your Voice is too Quiet or Distorted

INSPECTION PROCEDURE

HINT:

If an outlet of the air conditioning system is facing the microphone, noise may be recorded and other caller may not be able to hear your voice properly.

PROCEDURE

1. **CHECK CELLULAR PHONE**
   a. Check if the other caller can hear your voice properly.

      OK

      Your voice can be heard properly.

      HINT:

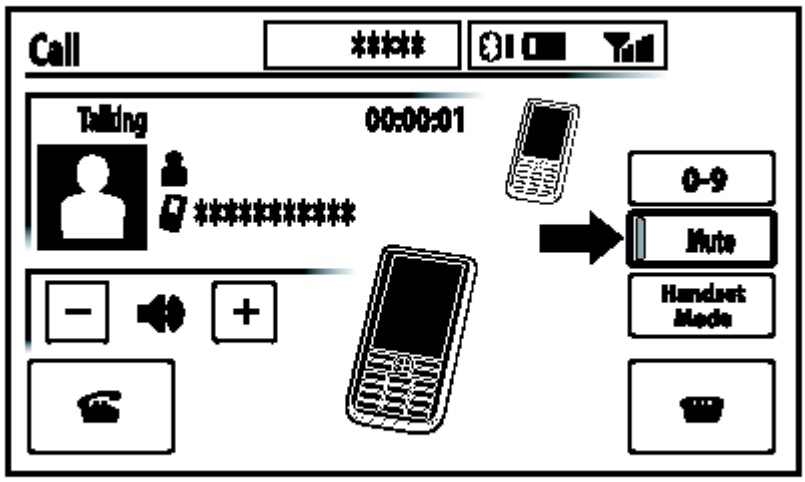
      The purpose of this step is to inspect the cellular phone when it is not connected to the vehicle.

   NG --> REPLACE CELLULAR PHONE

   OK: Go to next step

2. **CHECK SETTINGS**
   a. Display the "Call" screen.
   b. Check if the "Mute" switch is not set to on.

*a



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Fig. 37: Screen Display - Mute Switch
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK

"Mute" switch is not set to on.

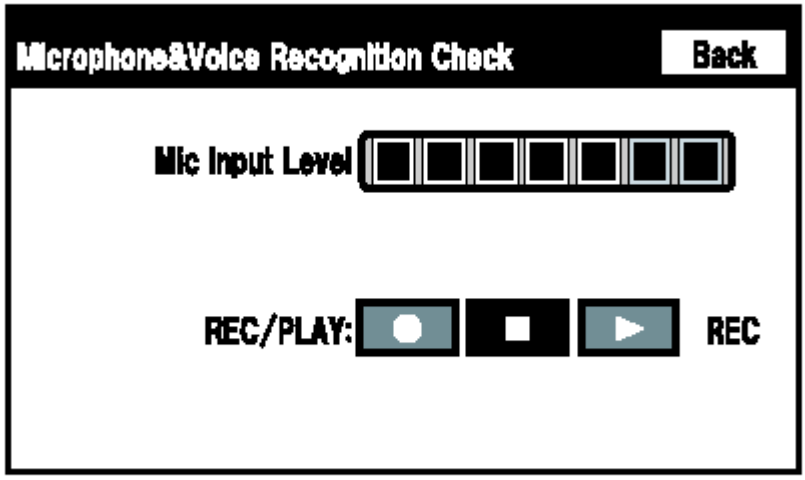
TEXT IN ILLUSTRATION

*a	Example

NG --> TURN "Mute" SWITCH OFF

OK: Go to next step

3. **CHECK MICROPHONE AND VOICE RECOGNITION (OPERATION CHECK)**
   a. Enter the "Microphone&Voice Recognition Check" screen. Refer to Check Mic & Voice Recognition in Operation Check. Refer to **OPERATION CHECK** .



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Fig. 38: Screen Display - Microphone & Voice Recognition Check
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

b. When voice is input into the microphone, check that the microphone input level meter changes according to the input voice.
c. Push the recording switch and perform voice recording.

HINT:

- Voice can be recorded for up to 5 seconds.
- Select the recording switch with the blower motor of the air conditioning system stopped. If an outlet of the air conditioning system is facing the microphone, noise may be recorded.

d. Check that the recording indicator remains on while recording and that the recorded voice is played normally without noise or distortion.

OK

All check results are normal.

NG --> See step 4

OK --> See step 5

4. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**
5. **REPLACE NAVIGATION RECEIVER ASSEMBLY. Refer to REMOVAL**

Sound of Portable Player cannot be Heard from Speakers or Sound is Low

INSPECTION PROCEDURE

PROCEDURE

1. **CHECK PORTABLE PLAYER SETTINGS**
   a. Check the portable player settings.
      1. Check that the volume is not set to "0".
      2. Check that the mute is off.
   b. Check that the sound of the portable player can be heard from the speakers.

      OK

      Sound of the portable player can be heard from the speakers.

   NG --> See step 2

   OK --> END

2. **CHECK AUDIO SETTINGS**
   a. Check the audio settings.
      1. Check that the volume is not set to "0".
   b. Check that the sound of the portable player can be heard from the speakers.

      OK

      Sound of the portable player can be heard from the speakers.

   NG --> See step 3

   OK --> END

3. **CHECK USING ANOTHER "Bluetooth" AUDIO COMPATIBLE VEHICLE OF SAME MODEL**
   a. Check that the sound of the portable player can be heard from the speakers on another "Bluetooth" audio compatible vehicle of the same model.

      OK

      Sound of the portable player can be heard from the speakers.

   NG --> MALFUNCTION IN PORTABLE PLAYER

   OK --> See step 4

4. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer**

to PROBLEM SYMPTOMS TABLE

Does not Play even after Bluetooth Audio Mode is Selected

INSPECTION PROCEDURE

HINT:

Even if the portable player can play audio content, it may not be able to play via the in-vehicle device. This does not necessarily indicate a malfunction of the in-vehicle device.

PROCEDURE

1. **CHECK OPERATION**
   a. Check if the portable player operates normally.

      OK

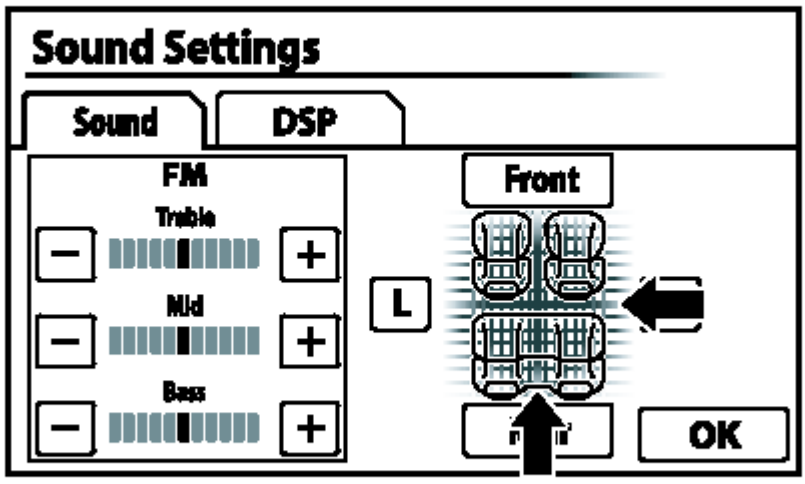
      The portable player operates normally.

   NG --> MALFUNCTION IN PORTABLE PLAYER

   OK: Go to next step

2. **CHECK AUDIO SETTINGS**
   a. Display the "Sound Settings" screen.

*a



H

Fig. 39: Screen Display - Audio Settings
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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

OK

Audio system returns to normal.

TEXT IN ILLUSTRATION

*a	Example

NG --> See step 4

OK: Go to next step

3. **CHECK USING ANOTHER "Bluetooth" AUDIO COMPATIBLE VEHICLE OF SAME MODEL**
   a. Check if the "Bluetooth" audio player plays normally on another "Bluetooth" audio compatible vehicle of the same model.

OK

"Bluetooth" audio plays normally.

NG --> MALFUNCTION IN PORTABLE PLAYER

OK --> See step 5

4. **REPLACE NAVIGATION RECEIVER ASSEMBLY. Refer to REMOVAL**
5. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**

Portable Player cannot be Operated Using In-vehicle Device or Track Information is not Displayed on In-vehicle Device

INSPECTION PROCEDURE

PROCEDURE

1. **CHECK USING ANOTHER "Bluetooth" AUDIO COMPATIBLE VEHICLE OF SAME MODEL**
   a. Check if track information is displayed normally on another "Bluetooth" audio compatible vehicle of the same model.

OK

Track information is displayed normally.

NG --> PORTABLE PLAYER IS NOT COMPATIBLE

OK --> See step 2

2. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**

Noise Occurs or Sound Skips when Portable Player Plays

INSPECTION PROCEDURE

HINT:

- Perform this check with the portable player volume set at an appropriate level.
- Make sure that there are no obstructions between the portable player and navigation receiver assembly that may block signals, and that the portable player and navigation receiver assembly are not excessively far apart.
- Make sure that devices other than the navigation receiver assembly are not connected to the portable player.
- Make sure that there is no interference from a wireless LAN, etc.

PROCEDURE

1. **CHECK USING ANOTHER "Bluetooth" AUDIO COMPATIBLE VEHICLE OF SAME MODEL**
   a. Check that the same problem does not occur in the sound heard from the speakers on another "Bluetooth" audio compatible vehicle of the same model.

      OK

      The same problem does not occur in the sound heard from the speakers.

   NG --> MALFUNCTION IN PORTABLE PLAYER

   OK: Go to next step

2. **REMOVE ADDITIONAL DEVICES WHICH USE RADIO WAVES**
   a. Remove additional devices which use radio waves.
   b. Play the portable player and check that the same problem does not occur in the sound heard from the speakers.

      OK

      The same problem does not occur in the sound heard from the speakers.

   NG --> See step 3

   OK --> END

3. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**

Portable Player cannot be Connected Manually/Automatically

INSPECTION PROCEDURE

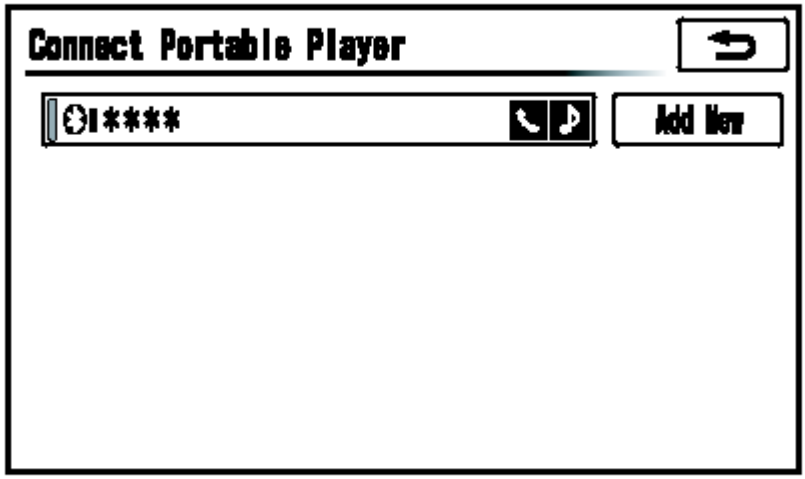
HINT:

Some versions of "Bluetooth" compatible audio players may not function, or the function may be limited using the navigation receiver assembly, even if the portable audio player itself can play files. Refer to **SYSTEM DESCRIPTION** .

PROCEDURE

1. **CHECK CONNECTED DEVICE SETTINGS**
   a. Display the "Connect Portable Player" screen.
   b. Check if the portable player is registered as a connected device.

*a



H

Fig. 40: Screen Display - Connect Portable Player
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

NOTE: **If a cellular phone is used as a portable player, it must be registered independently from the registration that is performed for the hands-free system.**

HINT:

Only 5 portable players can be registered.

RESULT

Result	Proceed to
The portable player is registered as a connected device.	A
The portable player is not registered as a connected device.	B

TEXT IN ILLUSTRATION

*a	Example

B --> REGISTER PORTABLE PLAYER AS CONNECTED DEVICE

A: Go to next step

2. **CHECK SYMPTOMS**
   a. Check the connection condition between the portable player and navigation receiver assembly.

HINT:

The portable player cannot be connected under any of the following conditions:

- The portable player is connected to another device.
- The navigation receiver assembly has cleared the portable player registration.
- The portable player is off.

RESULT

Result	Proceed to
The portable player cannot be connected	A

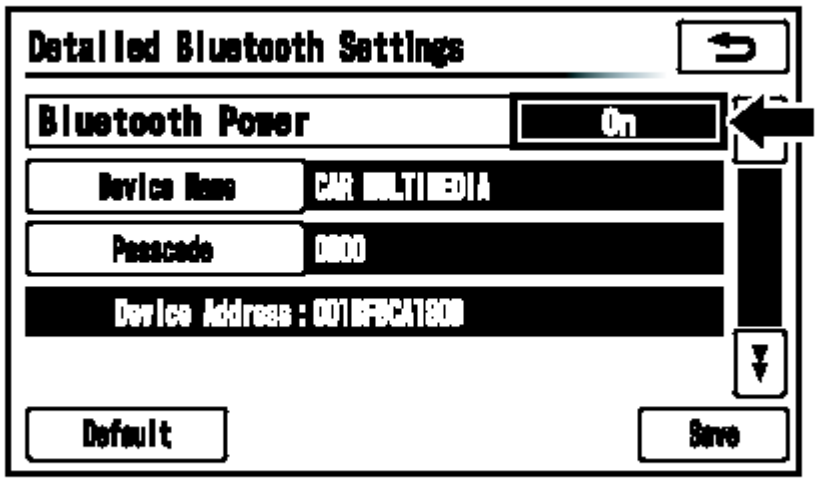
automatically.	
The portable player cannot connect manually.	B

B --> See step 4

A: Go to next step

3. **CHECK AUTOMATIC CONNECTION SETTINGS**
   a. Display the "Detailed Bluetooth Settings" screen.
   b. Check automatic connection settings of the "Bluetooth" audio.
      1. Check if "On" is displayed for "Bluetooth Power" on the "Detailed Bluetooth Settings" screen.

*a



H

Fig. 41: Screen Display - Detailed Bluetooth Settings
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OK

"On" is displayed for "Bluetooth Power".

TEXT IN ILLUSTRATION

*a	Example

NG --> CHANGE "Bluetooth" POWER TO "On"

OK: Go to next step

4. **CHECK PORTABLE PLAYER STATUS**
   a. Check the status of the portable player.
      1. Check that the portable player is not in standby mode.
      2. Check that the portable player is not connected to another device (headphones etc.).

         OK

         The portable player is not in standby mode and not connected to another device (headphones etc.).

NG --> TAKE PORTABLE PLAYER OUT OF STANDBY MODE AND DISCONNECT OTHER DEVICES (HEADPHONES etc.)

OK: Go to next step

5. **CHECK USING ANOTHER "Bluetooth" AUDIO COMPATIBLE VEHICLE OF SAME MODEL**
   a. Check if the portable player can be connected manually/automatically on another "Bluetooth" audio compatible vehicle of the same model.

      OK

      The portable player can be connected manually/automatically.

NG --> PORTABLE PLAYER IS NOT COMPATIBLE

OK: Go to next step

6. **REMOVE ADDITIONAL DEVICES WHICH USE RADIO WAVES**
   a. Remove additional devices which use radio waves.
   b. Check if the portable player can be connected manually/automatically.

      OK

      The portable player can be connected manually/automatically.

NG --> See step 7

OK --> END

7. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**

Registered Device cannot be Deleted

INSPECTION PROCEDURE

PROCEDURE

1. **DELETE OPERATION**
   a. Check if a registered portable player can be deleted normally.

      OK

      Registered portable player can be deleted normally.

   NG --> See step 2

   OK --> END

2. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**

Portable Player cannot be Registered

INSPECTION PROCEDURE

HINT:

Some versions of "Bluetooth" compatible audio players may not function, or the function using the navigation receiver assembly may be limited even if the portable audio player itself can play files. Refer to **SYSTEM DESCRIPTION** .

PROCEDURE

1. **CHECK THAT PORTABLE PLAYER IS "Bluetooth" AUDIO COMPATIBLE**
   a. Check if the portable player is "Bluetooth" audio compatible.

      RESULT

Result	Proceed to
The portable player is "Bluetooth" audio compatible.	A
The portable player is	

not "Bluetooth" audio compatible.	B

B --> USE A "Bluetooth" AUDIO COMPATIBLE PORTABLE PLAYER

A: Go to next step

2. **CHECK CONNECTION PROCEDURE OF CONNECTED DEVICE**
   a. Referring to the owner's manual, correctly register the portable player.
   b. Check that the portable player has been registered as a connected device.

      HINT:

      The portable player cannot be registered under any of the following conditions:

      - The A2DP (Advanced Audio Distribution Profile) is not used when registering a cellular phone.
      - The number of portable players registered in the navigation receiver has reached the maximum.
      - A different navigation receiver registration remains in the portable player.
      - The portable player is off.

      OK

      The portable player has been registered as a connected device.

   NG --> See step 3

   OK --> END

3. **CHECK USING ANOTHER "Bluetooth" AUDIO COMPATIBLE VEHICLE OF SAME MODEL**
   a. Check if the portable player can be registered normally on another "Bluetooth" audio compatible vehicle of the same model.

      OK

      The portable player can be registered.

   NG --> MALFUNCTION IN PORTABLE PLAYER

   OK: Go to next step

4. **REMOVE ADDITIONAL DEVICES WHICH USE RADIO WAVES**

a. Remove additional devices which use radio waves.
b. Place the portable player close to the navigation receiver assembly.
c. Check that the portable player can be registered as a connected device.

OK

The portable player can be registered.

NG --> See step 5

OK --> END

5. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**

USB Audio System Recognition/Play Error

DESCRIPTION

When a USB device or "iPod" is connected to the USB jack of the No. 1 stereo jack adapter assembly, it must have playable files. The device must also communicate with and be recognized by the navigation receiver assembly. This diagnosis procedure is for when a device is not recognized, or files from the device cannot be played normally.

WIRING DIAGRAM

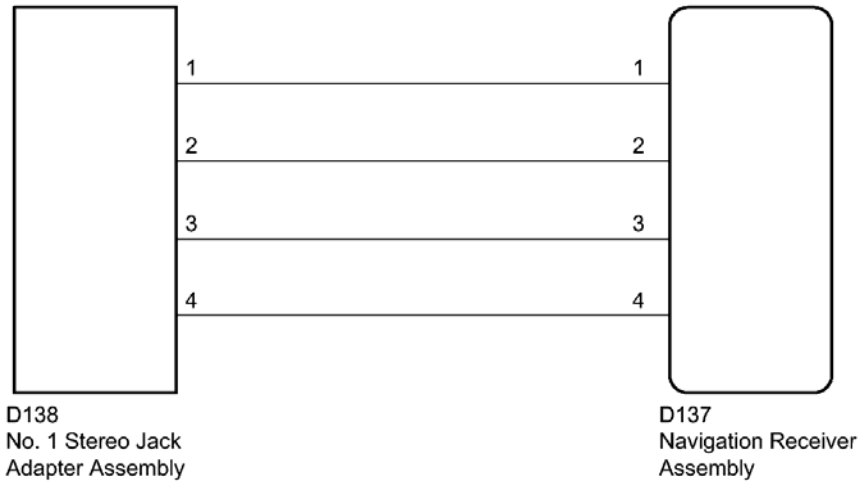


Fig. 42: No. 1 Stereo Jack Adapter Assembly Wiring Diagram
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

HINT:

- When a large amount of data is in a USB device, it may take a while before play begins.
- When using a USB device, files that are copy protected or encrypted due to copy protection reasons cannot be played.
- When files are not played in the sorted order, perform the following procedure before inspection.
  a. Add numbers in front of the file names.
  b. Put the files in a folder and copy the folder data to the USB device.

PROCEDURE

1. **CHECK USB DEVICE OR "iPod"**
   a. Disconnect the USB device or "iPod" from the No. 1 stereo jack adapter assembly.
   b. Check if playable files are present on the USB device or "iPod".

      HINT:

      Refer to System Description for playable files. Refer to **SYSTEM DESCRIPTION** .

   c. Check if the USB device is a compatible format or "iPod" is a compatible version.

      HINT:

      Refer to System Description for compatible formats and versions. Refer to **SYSTEM DESCRIPTION** .

      RESULT

Result	Proceed to
No playable files exist, or incompatible device format or version	A
Playable files exist, and compatible device format or version	B

B --> See step 2

A --> USB DEVICE FORMAT WAS INCOMPATIBLE, "iPod" VERSION WAS INCOMPATIBLE, OR NO PLAYABLE FILES PRESENT

2. **CHECK HARNESS AND CONNECTOR (NAVIGATION RECEIVER ASSEMBLY - NO. 1 STEREO JACK ADAPTER ASSEMBLY)**
   a. Disconnect the D137 navigation receiver assembly connector.
   b. Disconnect the D138 No. 1 stereo jack adapter assembly connector.
   c. Measure the resistance according to the value(s) in the table below.

   Standard Resistance

Tester Connection	Condition	Specified Condition
D137-1 - D138-1	Always	Below 1 ohms
D137-2 - D138-2	Always	Below 1 ohms
D137-3 - D138-3	Always	Below 1 ohms
D137-4 - D138-4	Always	Below 1 ohms
D137-1 - Body ground	Always	10 kohms or higher
D137-2 - Body ground	Always	10 kohms or higher
D137-3 - Body ground	Always	10 kohms or higher
D137-4 - Body ground	Always	10 kohms or higher

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK: Go to next step

3. **CHECK HARNESS AND CONNECTOR (NO. 1 STEREO JACK ADAPTER ASSEMBLY POWER SOURCE)**
   a. Disconnect the D138 No. 1 stereo jack adapter assembly connector.

*a

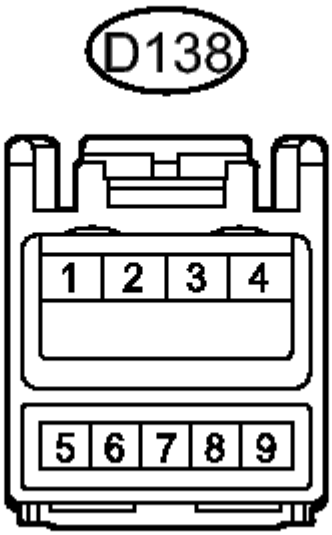


Fig. 43: Measuring Voltage Of No. 1 Stereo Jack Adapter Assembly Power Source
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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

Standard Voltage

Tester Connection	Condition	Specified Condition
D138-1 - D138-4	Ignition switch ACC	5 V

TEXT IN ILLUSTRATION

*a	Front view of wire harness connector (to No. 1 Stereo Jack Adapter Assembly)

NG --> See step 7

OK: Go to next step

4. **FORMAT USB DEVICE OR RESTORE "iPod" AND RECHECK**
   a. Delete all files in the USB device or "iPod" and format/ restore it.
   b. Save the data again and check if it can be played on the in-vehicle device.

      NOTE: Formatting a USB device or restoring an "iPod" erases all music on the device. Ensure that backup music data is available before performing this operation.

      OK

      Malfunction disappears.

   NG --> See step 5

   OK --> END

5. **REPLACE USB DEVICE OR "iPod"**
   a. Turn the ignition switch off.

      HINT:

      When this malfunction occurs, it is necessary to turn off the ignition switch to make it possible for the vehicle to recognize a new device when it is connected.

   b. Turn the ignition switch to ACC.
   c. Connect a known good USB device or "iPod" to the No. 1 stereo jack adapter assembly.

      HINT:

      - If the malfunction occurred when a USB device was in use, use another USB device for the inspection. If the malfunction occurred when an "iPod" was in use, use another "iPod" for the inspection.
      - Refer to System Description for compatible formats and versions. Refer to **SYSTEM DESCRIPTION** .

   NEXT: Go to next step

6. **CHECK USB DEVICE OR "iPod"**
   a. Check if a USB device or "iPod" is recognized by the radio receiver assembly, and if information such as track, artist and album names are displayed on the screen.

      OK

Malfunction disappears.

NG --> See step 8

OK --> USB DEVICE OR "iPod" WAS INCOMPATIBLE OR DEFECTIVE

7. **REPLACE NAVIGATION RECEIVER ASSEMBLY. Refer to REMOVAL**
8. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**

Black Screen

INSPECTION PROCEDURE

PROCEDURE

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: Go to next step

2. **CHECK IMAGE QUALITY SETTING**
   a. Check that the screen color quality can be set.

      OK

      Setting is possible.

   NG --> See step 3

   OK --> SET SCREEN COLOR QUALITY TO NORMAL

3. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**

CIRCUIT TESTS

Vehicle Speed Signal Circuit

DESCRIPTION

This circuit sends a speed signal from the combination meter assembly to the navigation receiver assembly.

HINT:

- A voltage of 12 V or 5 V is output from each ECU and then input to the combination meter assembly. The signal is changed to a pulse signal at the transistor in the combination meter assembly. Each ECU controls its respective system based on the pulse signal.
- If a short occurs in any of the ECUs or in the wire harness connected to an ECU, both systems in the diagram below will not operate normally.

WIRING DIAGRAM

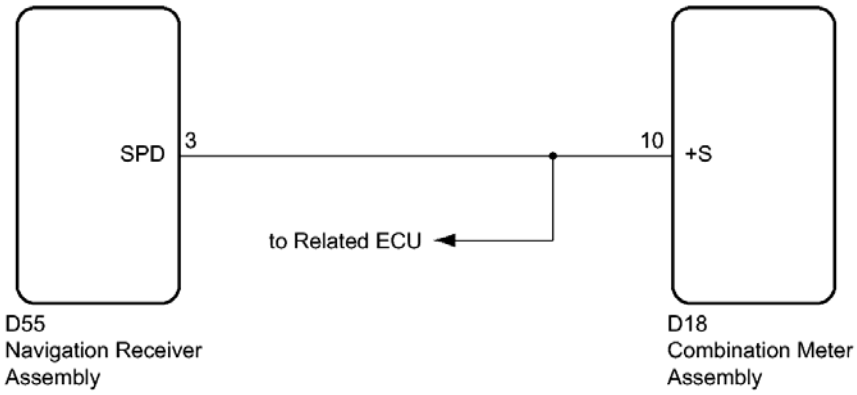


Fig. 44: Combination Meter Circuit Wiring Diagram
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

PROCEDURE

1. **CHECK VEHICLE SIGNAL (OPERATION CHECK)**
   a. Enter the "Vehicle Signal Check Mode" screen. Refer to Check Vehicle Signal Check Mode in Operation Check. Refer to **OPERATION CHECK** .

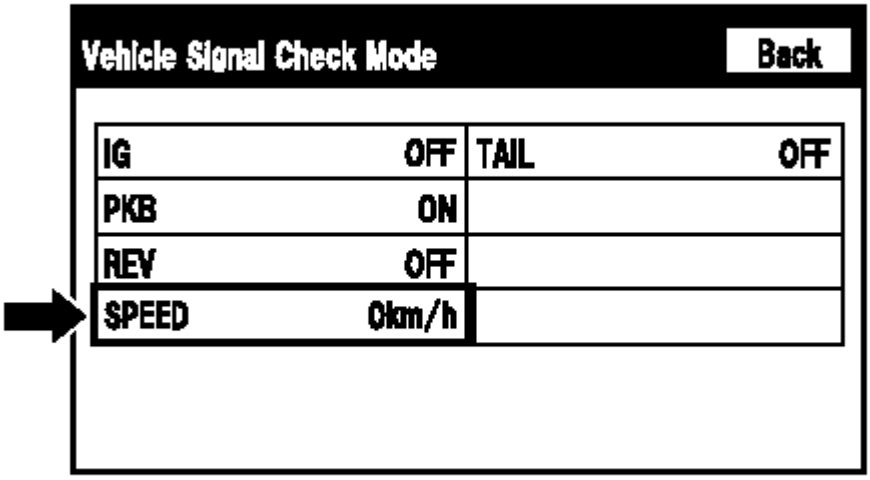


Fig. 45: Screen Display - Vehicle Signal Check Mode
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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

HINT:

The combination meter assembly receives the vehicle speed signal from the skid control ECU via CAN communication. Therefore, perform the following inspection referring to values on the Data List of the skid control ECU because it is the source of the vehicle speed signal.

OK

Vehicle speed displayed on the "Vehicle Signal Check Mode" screen is almost the same as the actual vehicle speed measured using the Techstream. Refer to **DATA LIST / ACTIVE TEST** .

NG --> See step 2

OK --> See step 4

2. **INSPECT COMBINATION METER ASSEMBLY (OUTPUT WAVEFORM)**
   a. Check the output waveform.

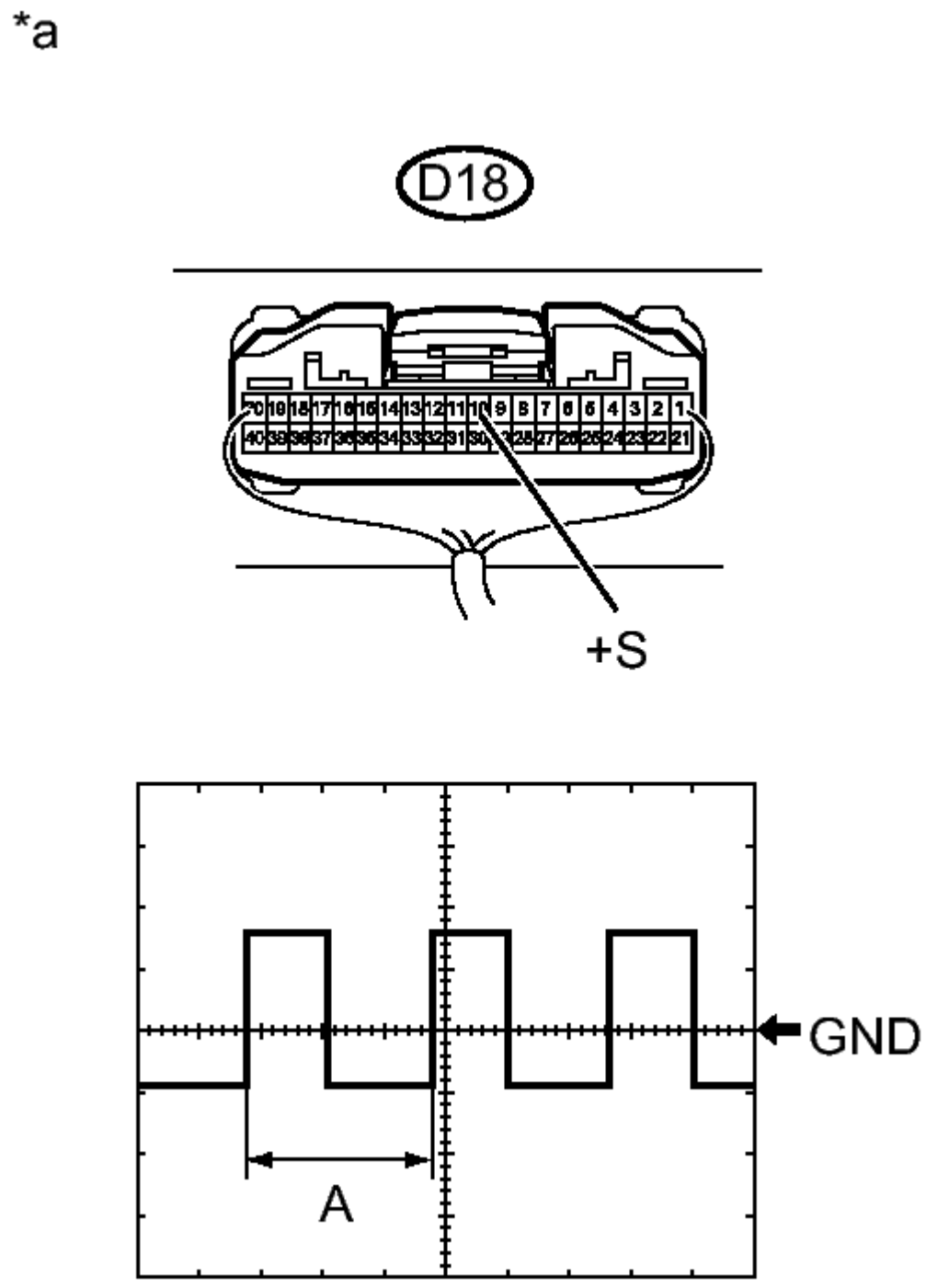


Fig. 46: Checking Combination Meter Assembly With Waveform Reference
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

1. Remove the combination meter assembly with the connector still connected.
2. Connect an oscilloscope to terminal D18-10 (+S) and body ground.

3. Turn the ignition switch to ON.
4. Turn a wheel slowly.
5. Check the signal waveform according to the condition(s) in the table below.

Item	Condition
Measurement terminal	D18-10 (+S) - Body ground
Tool setting	5 V/DIV., 20 ms./DIV.
Condition	Wheel being rotated

OK

The waveform displayed is as shown in the illustration

HINT:

When the system is functioning normally, one wheel revolution generates 4 pulses. As the vehicle speed increases, the width indicated by (A) in the illustration narrows.

TEXT IN ILLUSTRATION

*a	Component with harness connected (Combination Meter Assembly)

NG --> See step 5

OK: Go to next step

3. **CHECK HARNESS AND CONNECTOR (NAVIGATION RECEIVER ASSEMBLY - COMBINATION METER ASSEMBLY)**
   a. Disconnect the D55 navigation receiver assembly connector.
   b. Disconnect the D18 combination meter assembly connector.
   c. Measure the resistance according to the value(s) in the table below.

Standard Resistance

Tester Connection	Condition	Specified Condition
D55-3 (SPD) - D18-10 (+S)	Always	Below 1 ohms
D55-3 (SPD) - Body ground	Always	10 kohms or higher

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK --> See step 6

4. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**
5. **GO TO METER / GAUGE SYSTEM. Refer to Speed Signal Circuit**
6. **REPLACE NAVIGATION RECEIVER ASSEMBLY. Refer to REMOVAL**

Steering Pad Switch Circuit

DESCRIPTION

This circuit sends an operation signal from the steering pad switch assembly to the navigation receiver assembly.

If there is an open in the circuit, the audio system cannot be operated using the steering pad switch assembly.

If there is a short in the circuit, the same condition as when a switch is continuously depressed occurs.

Therefore, the navigation receiver assembly cannot be operated using the steering pad switch assembly, and also the navigation receiver assembly itself cannot function.

WIRING DIAGRAM

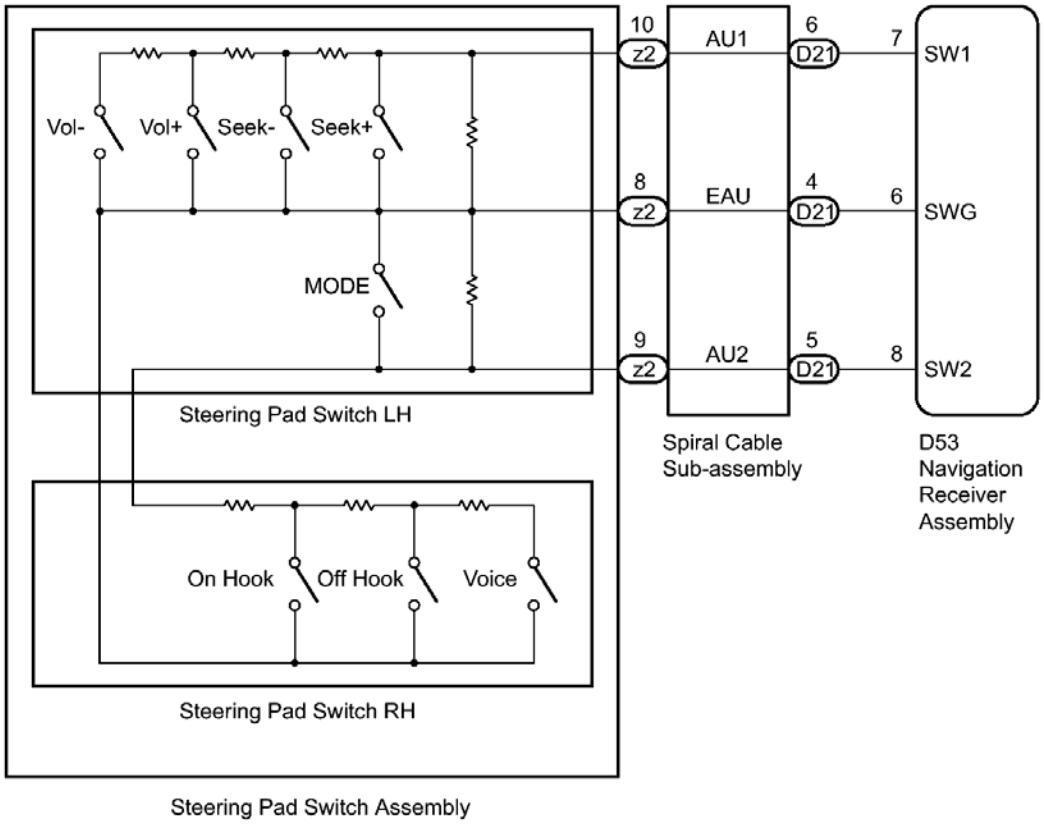


Fig. 47: Steering Pad Switch Circuit Wiring Diagram
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

WARNING: The vehicle is equipped with a Supplemental Restraint System (SRS) which includes components such as airbags. Before servicing (including removal or installation of parts), be sure to read the precaution for Supplemental Restraint System. Refer to PRECAUTION .

PROCEDURE

1. **CHECK HARNESS AND CONNECTOR (STEERING PAD SWITCH SIGNAL)**
   a. Disconnect the D53 navigation receiver assembly connector.

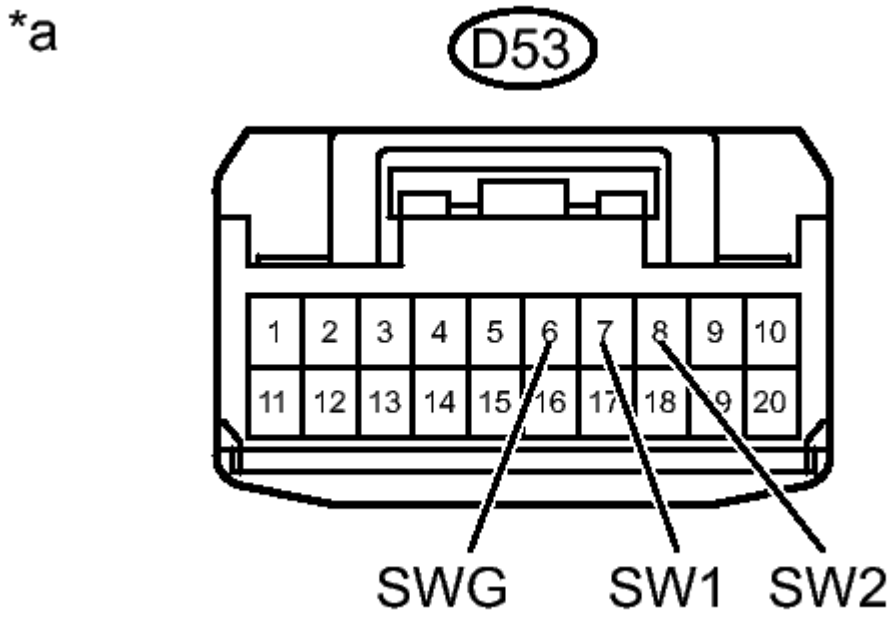


Fig. 48: Measuring Resistance Of Steering Pad Switch Signal
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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

Standard Resistance

Tester Connection	Condition	Specified Condition
D53-7 (SW1) - D53-6 (SWG)	No switch pushed	95 to 105 kohms
	Seek+ switch pushed	Below 2.5 ohms
	Seek- switch pushed	313 to 345 ohms
	Volume+ switch pushed	950 to 1050 ohms
	Volume- switch pushed	2955 to 3265 ohms
	No switch pushed	95 to 105 kohms
	MODE	Below 2.5

	switch pushed	ohms
D53-8 (SW2) - D53-6 (SWG)	On hook switch pushed	313 to 345 ohms
	Off hook switch pushed	950 to 1050 ohms
	Voice switch pushed	2955 to 3265 ohms

TEXT IN ILLUSTRATION

*a	Front view of wire harness connector (to Navigation Receiver Assembly)

NG --> See step 2

OK --> See step 4

2. **INSPECT STEERING PAD SWITCH ASSEMBLY**
   a. Disconnect the z2 steering pad switch assembly connector.

*a

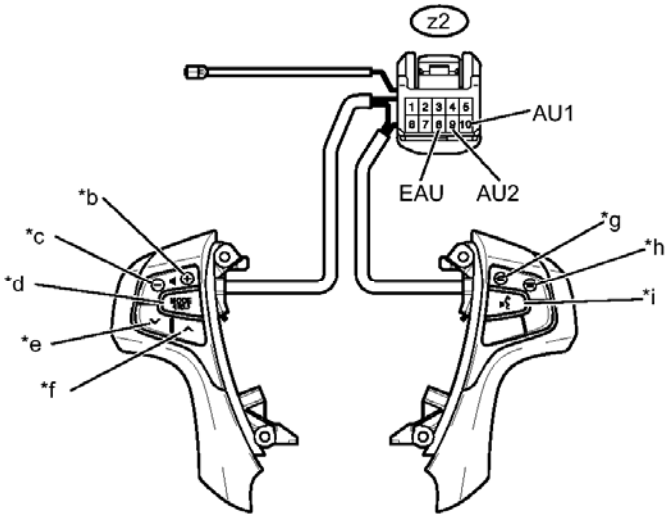


Fig. 49: Checking Steering Pad Switch Assembly
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

TEXT IN ILLUSTRATION

*a	Component without harness connected (Steering Pad Switch Assembly)	*b	Volume+
*c	Volume-	*d	MODE
*e	Seek-	*f	Seek+
*g	Off hook	*h	On hook
*i	Voice	-	-

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

Standard Resistance

Tester Connection	Condition	Specified Condition
z2-10 (AU1) - z2-8 (EAU)	No switch pushed	95 to 105 kohms
	Seek+ switch pushed	Below 2.5 ohms
	Seek- switch pushed	313 to 345 ohms
	Volume+ switch pushed	950 to 1050 ohms
	Volume- switch pushed	2955 to 3265 ohms
z2-9 (AU2) - z2-8 (EAU)	No switch pushed	95 to 105 kohms
	MODE switch pushed	Below 2.5 ohms
	On hook switch pushed	313 to 345 ohms
	Off hook	950 to

	switch pushed	1050 ohms
	Voice switch pushed	2955 to 3265 ohms

NG --> See step 5

OK: Go to next step

3. **INSPECT SPIRAL CABLE SUB-ASSEMBLY**
   a. Disconnect the z2 steering pad switch assembly connector.
   b. Disconnect the D21 spiral cable sub-assembly connector.
   c. Measure the resistance according to the value(s) in the table below.

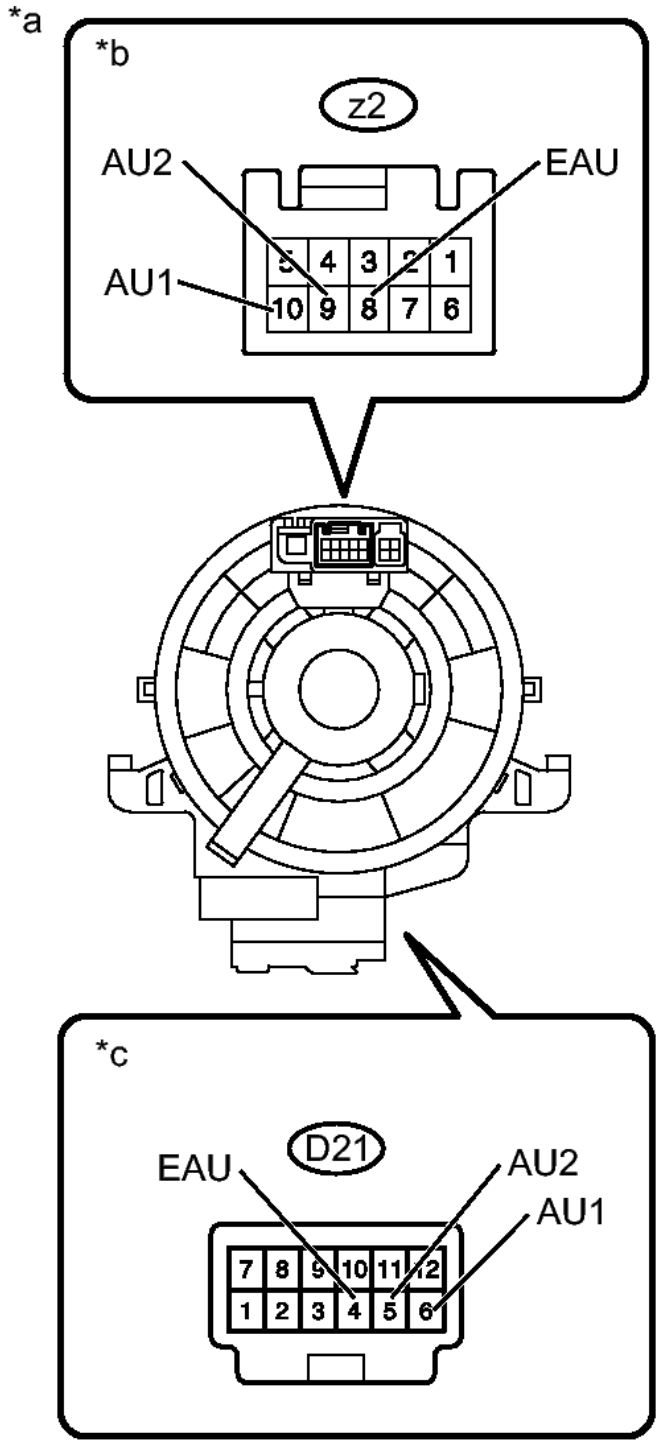


Fig. 50: Checking Spiral Cable Sub-Assembly
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

Standard Resistance

Tester Connection	Condition	Specified Condition
z2-8 (EAU) - D21-4 (EAU)	Center	Below 1 ohms
	2.5 rotations to the left	Below 1 ohms
	2.5 rotations to the right	Below 1 ohms
z2-10 (AU1) - D21-6 (AU1)	Center	Below 1 ohms
	2.5 rotations to the left	Below 1 ohms
	2.5 rotations to the right	Below 1 ohms
z2-9 (AU2) - D21-5 (AU2)	Center	Below 1 ohms
	2.5 rotations to the left	Below 1 ohms
	2.5 rotations to the right	Below 1 ohms

TEXT IN ILLUSTRATION

*a	Component without harness connected (Spiral Cable Sub-assembly)
*b	Steering Pad Switch Assembly Side
*c	Vehicle Side

WARNING: The spiral cable sub-assembly is an important part of the SRS airbag system. Incorrect removal or installation of the spiral cable sub-assembly may prevent the airbag from deploying. Be sure to read the information shown in the brackets.

HINT:

- Removal. Refer to **REMOVAL**
- Installation. Refer to **INSTALLATION**

NG --> See step 6

OK --> REPAIR OR REPLACE HARNESS OR CONNECTOR (NAVIGATION RECEIVER ASSEMBLY - SPIRAL CABLE SUB-ASSEMBLY)

4. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**
5. **REPLACE STEERING PAD SWITCH ASSEMBLY. Refer to REMOVAL**
6. **REPLACE SPIRAL CABLE SUB-ASSEMBLY. Refer to REMOVAL**

Illumination Circuit

DESCRIPTION

Power is supplied to the navigation receiver assembly and steering pad switch assembly illumination when the light control switch is in the tail or head position.

WIRING DIAGRAM

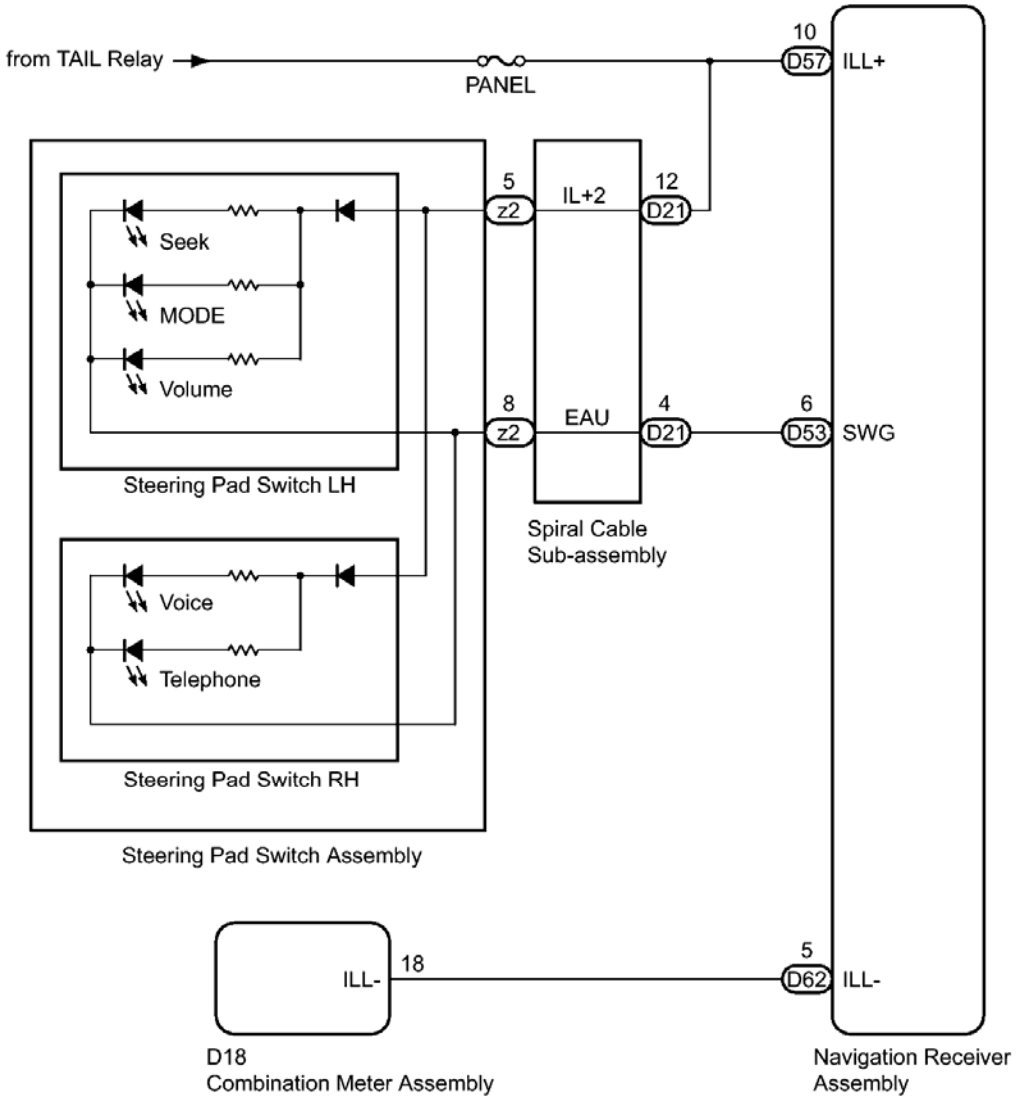


Fig. 51: Illumination Circuit Wiring Diagram
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

WARNING: The vehicle is equipped with a Supplemental Restraint System (SRS) which includes components such as airbags. Before servicing (including removal or installation of parts), be sure to read the precaution for Supplemental Restraint System. Refer to PRECAUTION .

NOTE: Inspect the fuses for circuits related to this system before performing the following inspection procedure.

PROCEDURE

1. **CHECK ILLUMINATION**
   a. Check if the illumination for the navigation receiver assembly, steering pad switch assembly, glove box or other parts (hazard switch, transmission control switch, etc.) come on when the light control switch is turned to the TAIL or HEAD position.

RESULT

Result	Proceed to
Illumination comes on for all components except steering pad switch assembly.	A
Illumination comes on for all components except navigation receiver assembly.	B
Illumination comes on for all components except steering pad switch assembly and navigation receiver assembly.	C
No illumination comes on (navigation receiver, hazard switch, glove box, etc.).	D

B --> See step 6

C --> See step 7

D --> See step 8

A: Go to next step

2. **CHECK HARNESS AND CONNECTOR (SPIRAL CABLE SUB-ASSEMBLY - BATTERY)**
   a. Disconnect the D21 spiral cable sub-assembly connector.

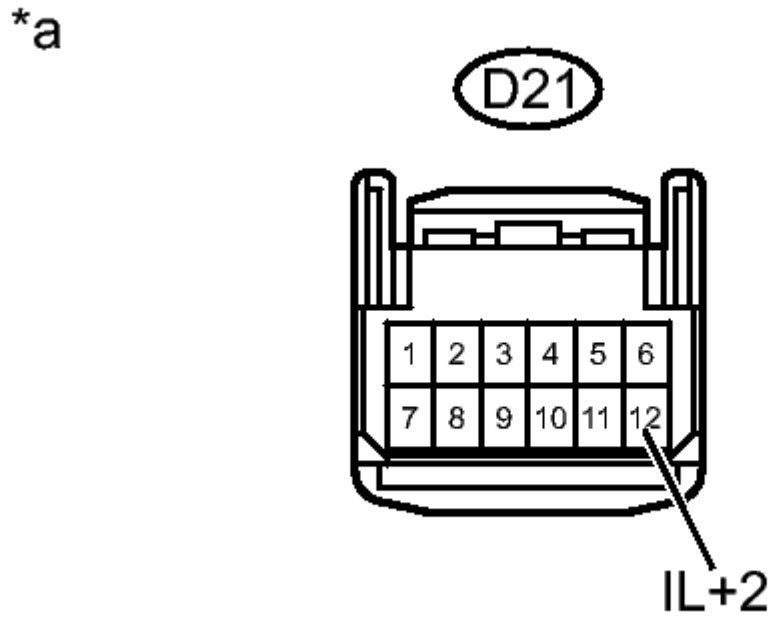


Fig. 52: Checking Harness And Connector (Spiral Cable Sub-Assembly - Battery)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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

Standard Voltage

Tester Connection	Condition	Specified Condition
D21-12 (IL+2) - Body ground	Light control switch in the tail or head position	11 to 14 V

TEXT IN ILLUSTRATION

*a	Front view of wire harness connector (to Spiral Cable Sub-assembly)

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK: Go to next step

3. **INSPECT STEERING PAD SWITCH ASSEMBLY**
   a. Disconnect the z2 steering pad switch assembly connector.

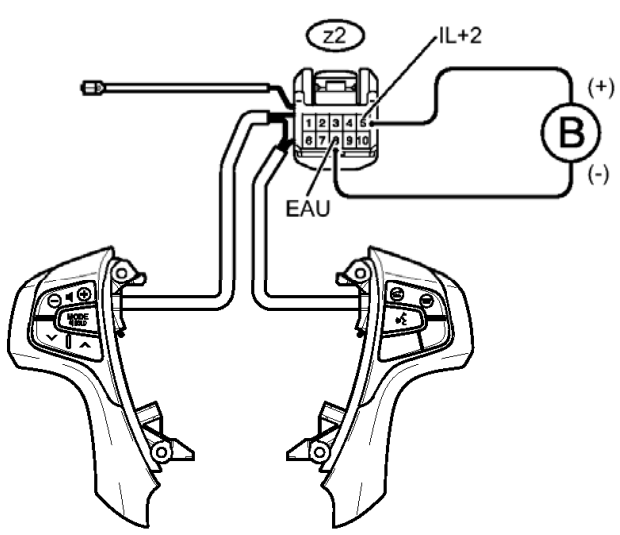


Fig. 53: Inspecting Steering Pad Switch Assembly
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

TEXT IN ILLUSTRATION

*a	Component without harness connected (Steering Pad Switch Assembly)	-	-

b. Connect the battery positive (+) lead to terminal IL+2 and the negative (-) lead to terminal EAU of the steering pad switch assembly connector.

c. Check if the illumination for the steering pad switch assembly comes on.

OK

Illumination for the steering pad switch assembly comes on.

NG --> See step 9

OK: Go to next step

4. **INSPECT SPIRAL CABLE SUB-ASSEMBLY**

a. Disconnect the z2 steering pad switch assembly connector.

b. Disconnect the D21 spiral cable sub-assembly connector.

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

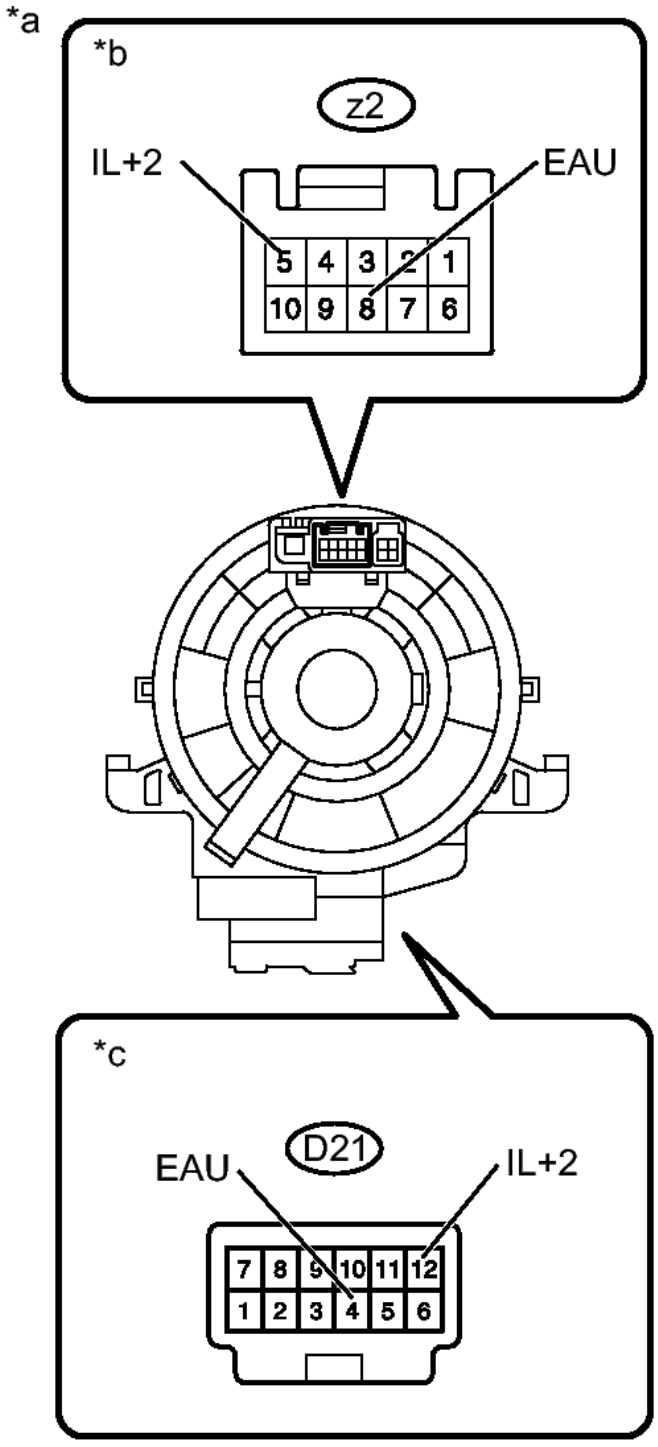


Fig. 54: Inspecting Spiral Cable Sub-Assembly
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

Standard Resistance

Tester Connection	Condition	Specified Condition
z2-8 (EAU) - D21-4 (EAU)	Center	Below 1 ohms
	2.5 rotations to the left	Below 1 ohms
	2.5 rotations to the right	Below 1 ohms
z2-5 (IL+2) - D21-12 (IL+2)	Center	Below 1 ohms
	2.5 rotations to the left	Below 1 ohms
	2.5 rotations to the right	Below 1 ohms

TEXT IN ILLUSTRATION

*a	Component without harness connected (Spiral Cable Sub-assembly)
*b	Steering Pad Switch Side
*c	Vehicle Side

WARNING: The spiral cable sub-assembly is an important part of the SRS airbag system. Incorrect removal or installation of the spiral cable sub-assembly may prevent the airbag from deploying. Refer to the information shown in the brackets.

HINT:

- Removal. Refer to **REMOVAL**
- Installation. Refer to **INSTALLATION**

NG --> See step 10

OK: Go to next step

5. **CHECK HARNESS AND CONNECTOR (NAVIGATION RECEIVER ASSEMBLY - SPIRAL CABLE SUB-ASSEMBLY)**
   a. Disconnect the D53 navigation receiver assembly connector.
   b. Disconnect the D21 spiral cable sub-assembly connector.
   c. Measure the resistance according to the value(s) in the table below.

   Standard Resistance

Tester Connection	Condition	Specified Condition
D53-6 (SWG) - D21-4 (EAU)	Always	Below 1 ohms
D53-6 (SWG) - Body ground	Always	10 kohms or higher

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK --> See step 11

6. **CHECK HARNESS AND CONNECTOR (NAVIGATION RECEIVER ASSEMBLY - BATTERY)**
   a. Disconnect the D57 navigation receiver assembly connector.

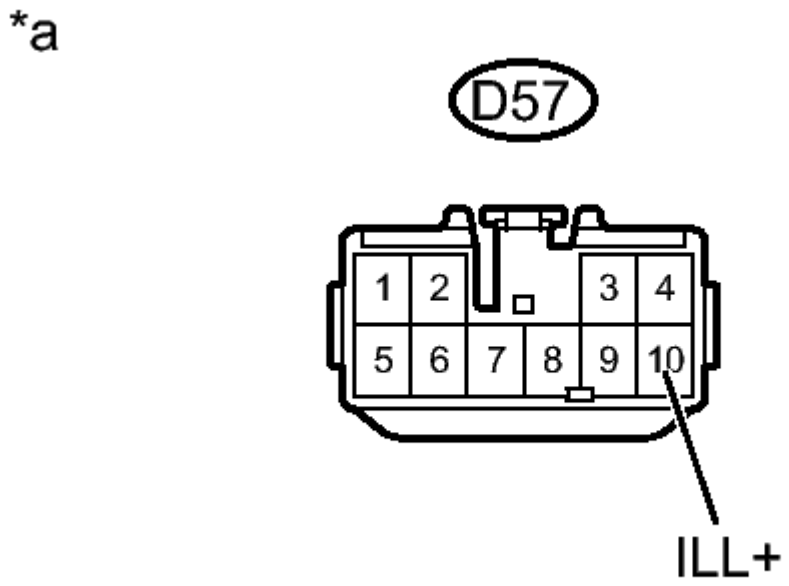


Fig. 55: Checking Harness And Connector (Navigation Receiver Assembly - Battery)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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

Standard Voltage

Tester Connection	Condition	Specified Condition
D57-10 (ILL+) - Body ground	Light control switch in the tail or head position	11 to 14 V

TEXT IN ILLUSTRATION

*a	Front view of wire harness connector (to Navigation Receiver Assembly)

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK --> See step 12

7. **CHECK HARNESS AND CONNECTOR (NAVIGATION RECEIVER ASSEMBLY - COMBINATION METER ASSEMBLY)**
   a. Disconnect the D62 navigation receiver assembly connector.
   b. Disconnect the D18 combination meter assembly connector.
   c. Measure the resistance according to the value(s) in the table below.

   Standard Resistance

Tester Connection	Condition	Specified Condition
D62-5 (ILL-) - D18-18 (ILL-)	Always	Below 1 ohms
D62-5 (ILL-) - Body ground	Always	10 kohms or higher

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK --> See step 13

8. **GO TO LIGHTING SYSTEM. Refer to PROBLEM SYMPTOMS TABLE**
9. **REPLACE STEERING PAD SWITCH ASSEMBLY. Refer to REMOVAL**
10. **REPLACE SPIRAL CABLE SUB-ASSEMBLY. Refer to REMOVAL**
11. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**
12. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**
13. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**

Parking Brake Switch Circuit

DESCRIPTION

This circuit is from the parking brake switch assembly to the navigation receiver assembly.

WIRING DIAGRAM

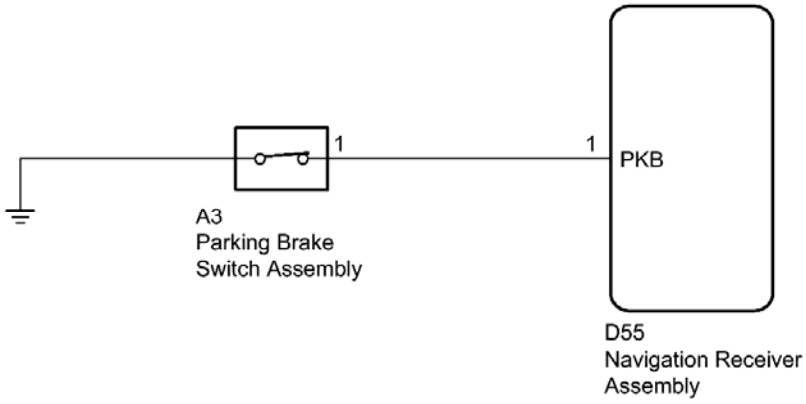


Fig. 56: Parking Brake Switch Circuit Wiring Diagram
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

PROCEDURE

1. **CHECK BRAKE WARNING LIGHT**
   a. Check that the brake warning light comes on when the parking brake is applied and goes off when it is released.

      OK

      The brake warning light operates as specified above.

   NG --> See step 3

   OK: Go to next step

2. **CHECK HARNESS AND CONNECTOR (NAVIGATION RECEIVER ASSEMBLY - PARKING BRAKE SWITCH ASSEMBLY)**
   a. Disconnect the D55 navigation receiver assembly connector.
   b. Disconnect the A3 parking brake switch assembly connector.
   c. Measure the resistance according to the value(s) in the table below.

      Standard Resistance

Tester Connection	Condition	Specified Condition

D55-1 (PKB) - A3-1	Always	Below 1 ohms
D55-1 (PKB) - Body ground	Always	10 kohms or higher

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK --> See step 4

3. **GO TO BRAKE CONTROL / DYNAMIC CONTROL SYSTEMS. Refer to HOW TO PROCEED WITH TROUBLESHOOTING**
4. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**

Speaker Circuit

DESCRIPTION

If there is a short in a speaker circuit, the navigation receiver assembly detects it and stops output to the speakers.

Thus sound cannot be heard from the speakers even if there is no malfunction in the navigation receiver assembly or speakers.

If a short is detected in a speaker circuit, no sound can be heard from the speakers.

WIRING DIAGRAM

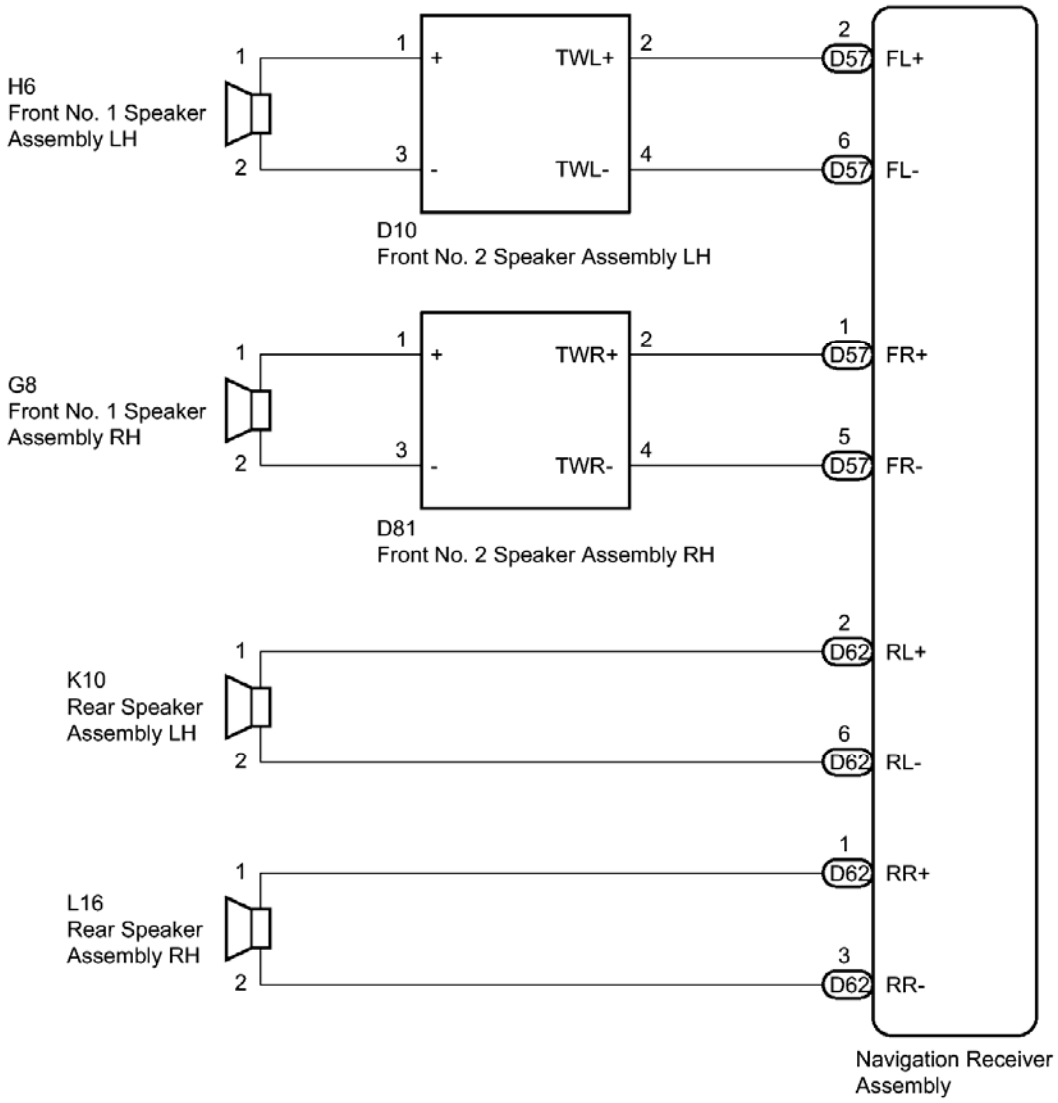


Fig. 57: Speaker Circuit Wiring Diagram
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

PROCEDURE

1. **CHECK HARNESS AND CONNECTOR**
    a. Disconnect the D57 and D62 navigation receiver assembly connectors.
    b. Disconnect the H6 and G8 front No. 1 speaker assembly connectors.
    c. Disconnect the D10 and D81 front No. 2 speaker assembly connectors.
    d. Disconnect the K10 and L16 rear speaker assembly connectors.

e. Measure the resistance between each of the navigation receiver assembly and the front No. 2 speaker assembly to check for an open circuit in the wire harness.

Standard Resistance

Tester Connection	Condition	Specified Condition
D57-2 (FL+) - D10-2 (TWL+)	Always	Below 1 ohms
D57-6 (FL-) - D10-4 (TWL-)	Always	Below 1 ohms
D57-1 (FR+) - D81-2 (TWR+)	Always	Below 1 ohms
D57-5 (FR-) - D81-4 (TWR-)	Always	Below 1 ohms

f. Measure the resistance between each of the front No. 2 speaker assembly and front No. 1 speaker assembly to check for an open circuit in the wire harness.

Standard Resistance

Tester Connection	Condition	Specified Condition
D10-1 (+) - H6-1	Always	Below 1 ohms
D10-3 (-) - H6-2	Always	Below 1 ohms
D81-1 (+) - G8-1	Always	Below 1 ohms
D81-3 (-) - G8-2	Always	Below 1 ohms

g. Measure the resistance between each of the navigation receiver assembly and the rear speaker assembly to check for an open circuit in the wire harness.

Standard Resistance

Tester Connection	Condition	Specified Condition

D62-2 (RL+) - K10-1	Always	Below 1 ohms
D62-6 (RL-) - K10-2	Always	Below 1 ohms
D62-1 (RR+) - L16-1	Always	Below 1 ohms
D62-3 (RR-) - L16-2	Always	Below 1 ohms

h. Measure the resistance between the navigation receiver assembly and body ground to check for a short circuit in the wire harness.

Standard Resistance

Tester Connection	Condition	Specified Condition
D57-2 (FL+) - Body ground	Always	10 kohms or higher
D57-6 (FL-) - Body ground	Always	10 kohms or higher
D57-1 (FR+) - Body ground	Always	10 kohms or higher
D57-5 (FR-) - Body ground	Always	10 kohms or higher
D62-2 (RL+) - Body ground	Always	10 kohms or higher
D62-6 (RL-) - Body ground	Always	10 kohms or higher
D62-1 (RR+) - Body ground	Always	10 kohms or higher
D62-3 (RR-) - Body ground	Always	10 kohms or higher

i. Measure the resistance between each of the front No. 2 speaker assemblies and body ground to check for a short circuit in the wire harness.

Standard Resistance

Tester Connection	Condition	Specified Condition
D10-1 (+) - Body ground	Always	10 kohms or higher
D10-3 (-) - Body ground	Always	10 kohms or higher
D81-1 (+) - Body ground	Always	10 kohms or higher
D81-3 (-) - Body ground	Always	10 kohms or higher

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK: Go to next step

2. **INSPECT FRONT NO. 1 SPEAKER ASSEMBLY**
   a. Measure the resistance according to the value(s) in the table below.

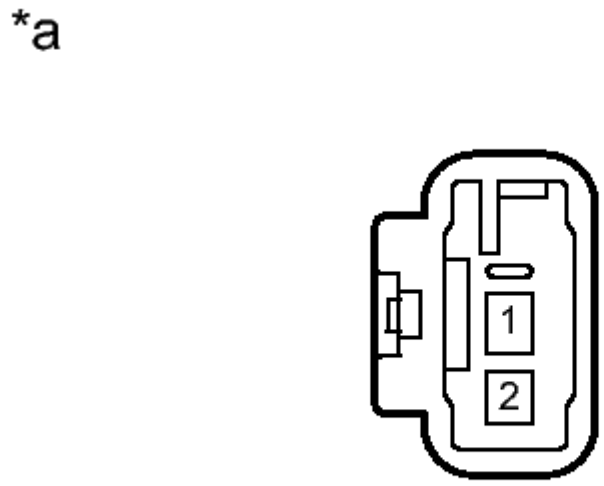


Fig. 58: Measuring Resistance Of Front No. 1 Speaker Assembly
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

Standard Resistance

Tester Connection	Condition	Specified Condition
1 - 2	Always	Approximately 4 ohms

TEXT IN ILLUSTRATION

*a	Component without harness connected (Front No. 1 Speaker Assembly)

NG --> See step 6

OK: Go to next step

3. **INSPECT FRONT NO. 2 SPEAKER ASSEMBLY**
   a. Measure the resistance according to the value(s) in the table below.

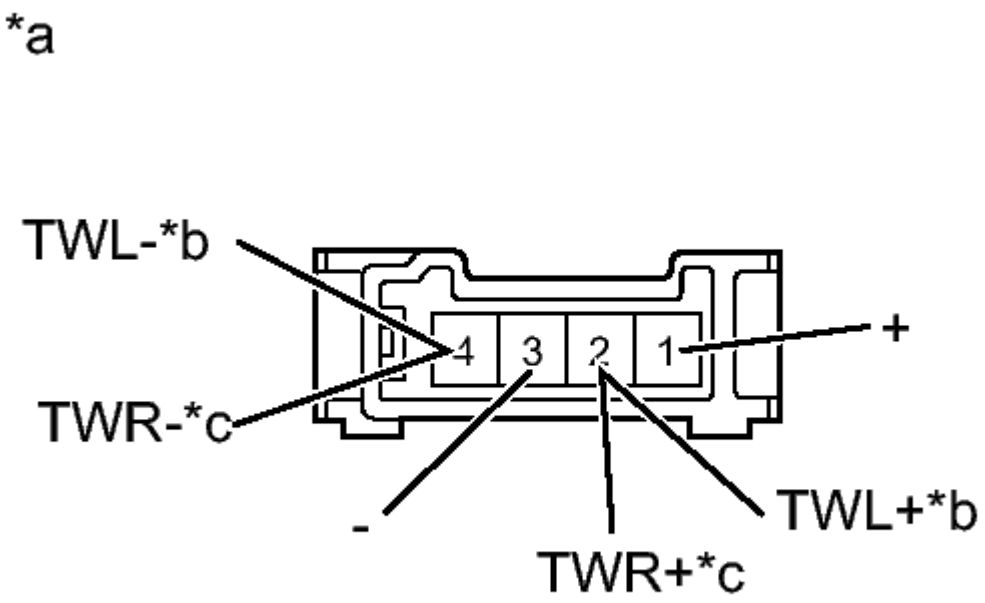


Fig. 59: Measuring Resistance Of Front No. 2 Speaker Assembly
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

Standard Resistance

FOR LH SIDE

Tester Connection	Condition	Specified Condition
1 (+) - 2 (TWL+)	Always	Below 1 ohms
3 (-) - 4 (TWL-)	Always	Below 1 ohms
2 (TWL+) - 4 (TWL-)	Always	Approximately 4 ohms

FOR RH SIDE

Tester Connection	Condition	Specified Condition
1 (+) - 2 (TWR+)	Always	Below 1 ohms
3 (-) - 4 (TWR-)	Always	Below 1 ohms
2 (TWR+) - 4 (TWR-)	Always	Approximately 4 ohms

TEXT IN ILLUSTRATION

*a	Component without harness connected (Front No. 2 Speaker Assembly)
*b	for LH Side
*c	for RH Side

NG --> See step 7

OK: Go to next step

4. **REPLACE FRONT NO. 2 SPEAKER ASSEMBLY**
   a. Check that the malfunction disappears when a known good speaker is installed. Refer to **REMOVAL** .

      OK

      Malfunction disappears.

      HINT:

      - Connect all the connectors to the front No. 2 speaker assemblies that were disconnected.
      - When there is a possibility that either the right or left front speaker is defective, inspect by interchanging the right one with the left one.
      - Perform the above inspection on both LH and RH sides.

NG --> See step 5

OK --> END (FRONT NO. 2 SPEAKER ASSEMBLY WAS DEFECTIVE)

5. **INSPECT REAR SPEAKER ASSEMBLY**
   a. Measure the resistance according to the value(s) in the table below.

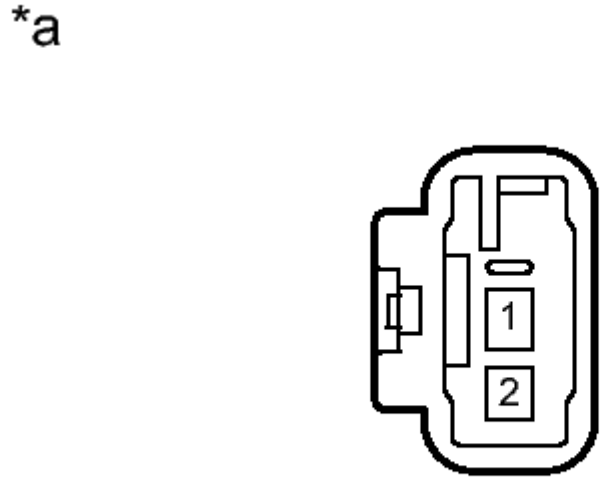


Fig. 60: Measuring Resistance Of Rear Speaker Assembly
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

Standard Resistance

Tester Connection	Condition	Specified Condition
1 - 2	Always	Approximately 4 ohms

TEXT IN ILLUSTRATION

*a	Component without harness connected (Rear Speaker Assembly)

NG --> See step 8

OK --> See step 9

6. **REPLACE FRONT NO. 1 SPEAKER ASSEMBLY. Refer to REMOVAL**
7. **REPLACE FRONT NO. 2 SPEAKER ASSEMBLY. Refer to REMOVAL**
8. **REPLACE REAR SPEAKER ASSEMBLY. Refer to REMOVAL**

9. **REPLACE PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**

Sound Signal Circuit Between Navigation Receiver Assembly And Stereo Jack Adapter

DESCRIPTION

The No. 1 stereo jack adapter assembly sends the sound signal from an external device to the navigation receiver assembly via this circuit.

The sound signal that has been sent is amplified by the navigation receiver assembly, and then is sent to the speakers.

If there is an open or short in the circuit, sound cannot be heard from the speakers even if there is no malfunction in the navigation receiver assembly or speakers.

WIRING DIAGRAM

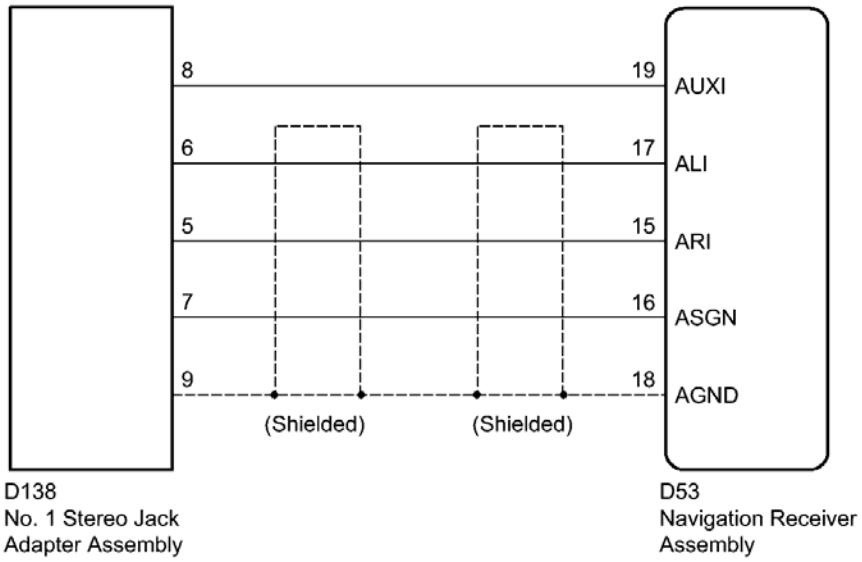


Fig. 61: Sound Signal Circuit Between Navigation Receiver Assembly And Stereo Jack Adapter Wiring Diagram
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

PROCEDURE

1. **CHECK HARNESS AND CONNECTOR (NAVIGATION RECEIVER ASSEMBLY - NO. 1**

STEREO JACK ADAPTER ASSEMBLY)

a. Disconnect the D53 navigation receiver assembly connector.
b. Disconnect the D138 No. 1 stereo jack adapter assembly connector.
c. Measure the resistance according to the value(s) in the table below.

Standard Resistance

Tester Connection	Condition	Specified Condition
D53-17 (ALI) - D138-6	Always	Below 1 ohms
D53-15 (ARI) - D138-5	Always	Below 1 ohms
D53-16 (ASGN) - D138-7	Always	Below 1 ohms
D53-18 (AGND) - D138-9	Always	Below 1 ohms
D53-19 (AUXI) - D138-8	Always	Below 1 ohms
D53-17 (ALI) - Body ground	Always	10 kohms or higher
D53-15 (ARI) - Body ground	Always	10 kohms or higher
D53-16 (ASGN) - Body ground	Always	10 kohms or higher
D53-18 (AGND) - Body ground	Always	10 kohms or higher
D53-19 (AUXI) - Body ground	Always	10 kohms or higher

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK --> See step 2

2. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**

Data Signal Circuit Between Navigation Receiver Assembly And Stereo Jack Adapter

DESCRIPTION

The No. 1 stereo jack adapter assembly sends the sound data signal or image data signal from a USB device to the navigation receiver assembly via this circuit.

WIRING DIAGRAM

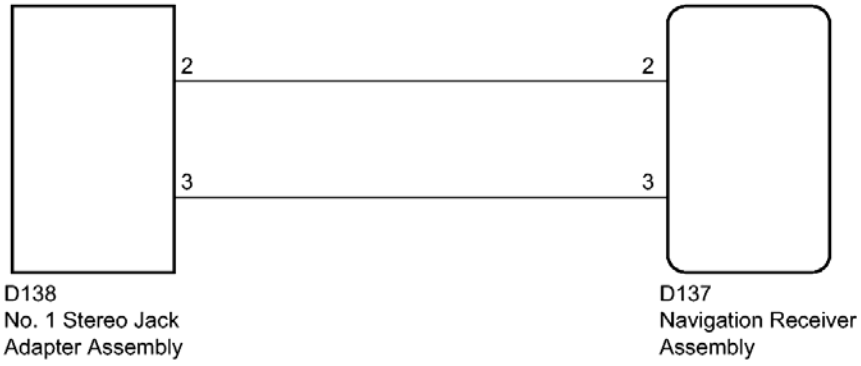


Fig. 62: Data Signal Circuit Between Navigation Receiver Assembly And Stereo Jack Adapter Wiring Diagram
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

PROCEDURE

1. **CHECK HARNESS AND CONNECTOR (NAVIGATION RECEIVER ASSEMBLY - NO. 1 STEREO JACK ADAPTER ASSEMBLY)**
   a. Disconnect the D137 navigation receiver assembly connector.
   b. Disconnect the D138 No. 1 stereo jack adapter assembly connector.
   c. Measure the resistance according to the value(s) in the table below.

   Standard Resistance

Tester Connection	Condition	Specified Condition

D137-2 - D138-2	Always	Below 1 ohms
D137-3 - D138-3	Always	Below 1 ohms
D137-2 - Body ground	Always	10 kohms or higher
D137-3 - Body ground	Always	10 kohms or higher

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK --> See step 2

2. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**

Sound Signal Circuit Between Navigation Receiver Assembly And Television Display Assembly

DESCRIPTION

The television display assembly sends an RSE sound signal to the navigation receiver assembly via the sound signal circuit.

The sound signal that has been sent is amplified by the navigation receiver assembly, and then is sent to the speakers.

If there is an open or short in the circuit, sound cannot be heard from the speakers even if there is no malfunction in the navigation receiver assembly or speakers.

WIRING DIAGRAM

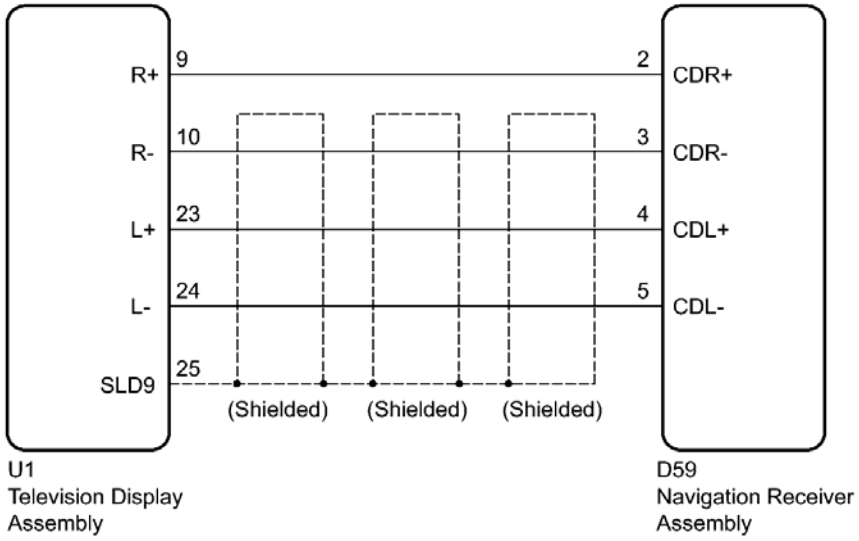


Fig. 63: Sound Signal Circuit Between Navigation Receiver Assembly And Television Display Assembly
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

PROCEDURE

1. **CHECK HARNESS AND CONNECTOR (NAVIGATION RECEIVER ASSEMBLY - TELEVISION DISPLAY ASSEMBLY)**
   a. Disconnect the D59 navigation receiver assembly connector.
   b. Disconnect the U1 television display assembly connector.
   c. Measure the resistance according to the value(s) in the table below.

   Standard Resistance

Tester Connection	Condition	Specified Condition
U1-9 (R+) - D59-2 (CDR+)	Always	Below 1 ohms
U1-10 (R-) - D59-3 (CDR-)	Always	Below 1 ohms
U1-23 (L+) - D59-4	Always	Below 1 ohms

(CDL+)		
U1-24 (L-) - D59-5 (CDL-)	Always	Below 1 ohms
U1-9 (R+) - Body ground	Always	10 kohms or higher
U1-10 (R-) - Body ground	Always	10 kohms or higher
U1-23 (L+) - Body ground	Always	10 kohms or higher
U1-24 (L-) - Body ground	Always	10 kohms or higher
U1-25 (SLD9) - Body ground	Always	10 kohms or higher

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK --> See step 2

2. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**

Mute Signal Circuit Between Navigation Receiver Assembly And Television Display Assembly

DESCRIPTION

The navigation receiver assembly controls the volume according to the mute signal from the television display assembly.

The mute signal is sent to reduce noise and popping sounds as such as those generated when switching modes.

If there is an open in the circuit, noise can be heard from the speakers when changing the sound source.

If there is a short in the circuit, even though the navigation receiver assembly is functioning normally, no sound or only an extremely faint sound can be heard.

WIRING DIAGRAM



Fig. 64: Mute Signal Circuit Between Navigation Receiver Assembly And Television Display Assembly
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

PROCEDURE

1. **INSPECT TELEVISION DISPLAY ASSEMBLY**
    a. Measure the voltage according to the value(s) in the table below.

*a

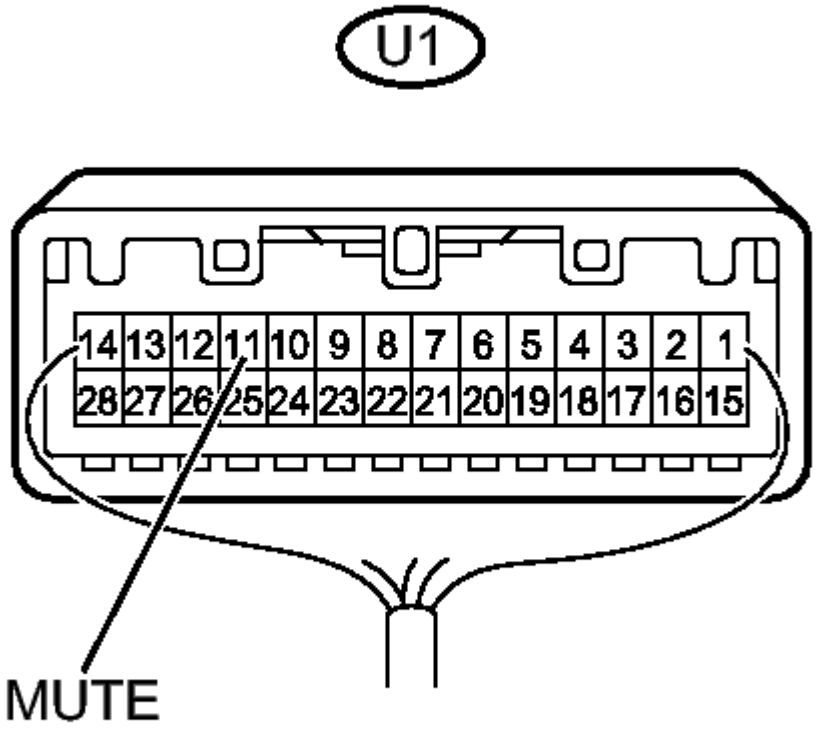


Fig. 65: Measuring Voltage Of Television Display Assembly
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

Standard Voltage

Tester Connection	Condition	Specified Condition
U1-11 (MUTE) - Body ground	Ignition switch ACC, RSE system playing --> Changing mode	Above 3.5 V --> Below 1 V

TEXT IN ILLUSTRATION

*a	Component with harness connected (Television Display Assembly)

NG --> See step 2

OK --> See step 4

2. **CHECK HARNESS AND CONNECTOR (NAVIGATION RECEIVER ASSEMBLY - TELEVISION DISPLAY ASSEMBLY)**
   a. Disconnect the D59 navigation receiver assembly connector.
   b. Disconnect the U1 television display assembly connector.
   c. Measure the resistance according to the value(s) in the table below.

   Standard Resistance

Tester Connection	Condition	Specified Condition
D59-6 (MUTE) - U1-11 (MUTE)	Always	Below 1 ohms
D59-6 (MUTE) - Body ground	Always	10 kohms or higher

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK: Go to next step

3. **INSPECT NAVIGATION RECEIVER ASSEMBLY (OUTPUT SIGNAL)**
   a. Reconnect the navigation receiver assembly connector.
   b. Measure the voltage according to the value(s) in the table below.

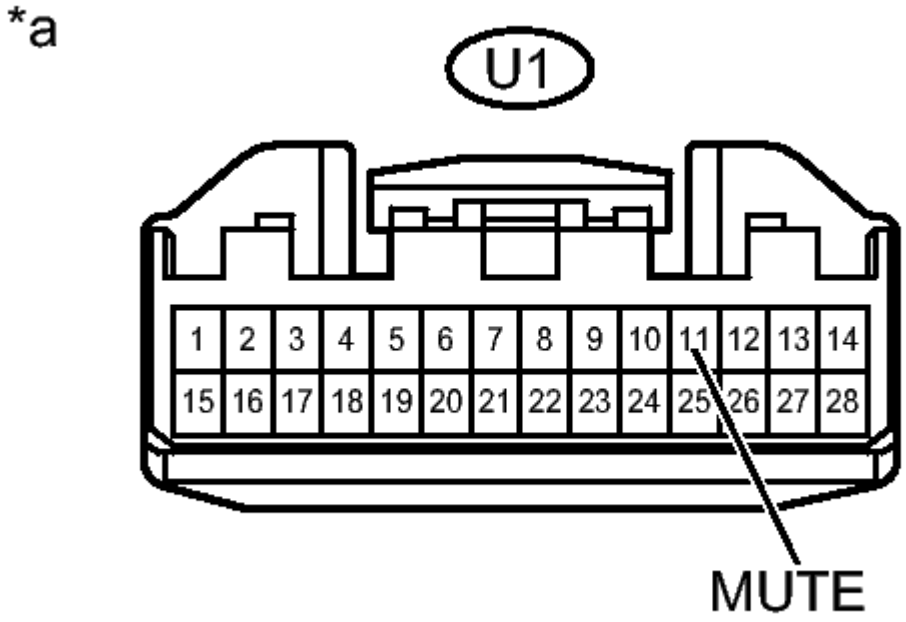


Fig. 66: Measuring Voltage Of Navigation Receiver Assembly (Output Signal)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

Standard Voltage

Tester Connection	Condition	Specified Condition
U1-11 (MUTE) - Body ground	Ignition switch ACC, RSE system playing	Above 3.5 V

TEXT IN ILLUSTRATION

*a	Front view of wire harness connector (to Television Display Assembly)

NG --> See step 5

OK --> See step 6

4. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**
5. **REPLACE NAVIGATION RECEIVER ASSEMBLY. Refer to REMOVAL**
6. **REPLACE TELEVISION DISPLAY ASSEMBLY. Refer to REMOVAL**

AVC-LAN Circuit

DESCRIPTION

Each unit of the navigation system connected to the AVC-LAN (communication bus) transfers the switch signals using the AVC-LAN.

If a short to +B or short to ground occurs in the AVC-LAN, the navigation system will not function normally because communication is not possible.

WIRING DIAGRAM

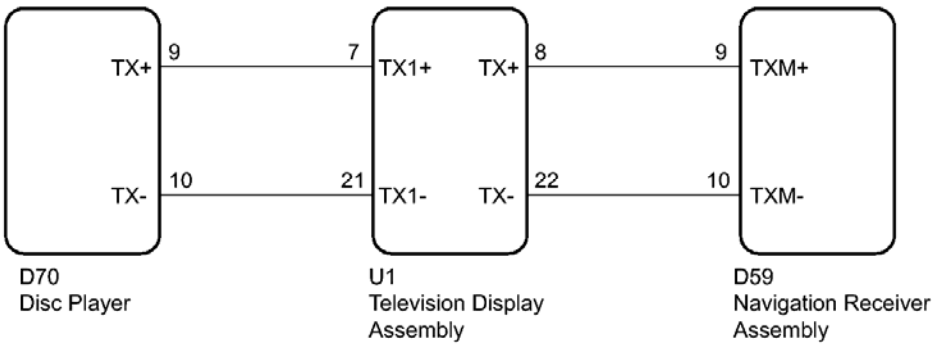


Fig. 67: AVC-LAN Circuit Wiring Diagram
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

HINT:

The navigation receiver assembly is the master unit.

PROCEDURE

1. **INSPECT NAVIGATION RECEIVER ASSEMBLY**

a. Disconnect the D59 navigation receiver assembly connector.

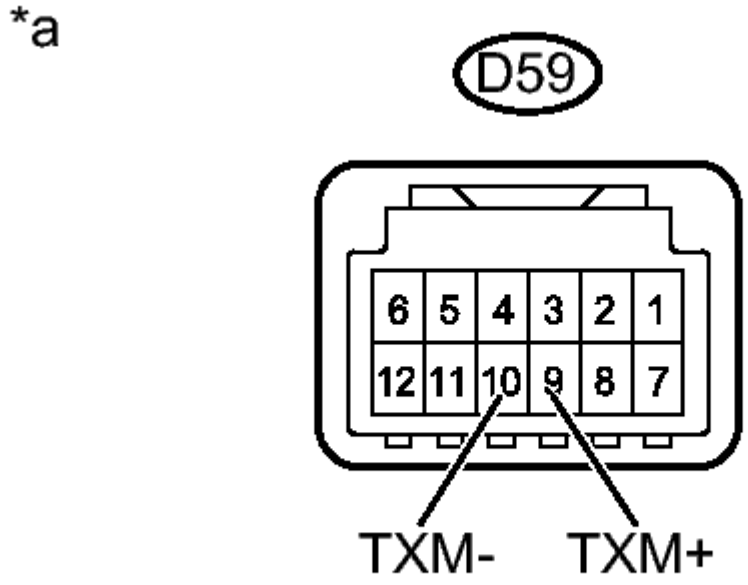


Fig. 68: Measuring Resistance Of Navigation Receiver Assembly
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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

Standard Resistance

Tester Connection	Condition	Specified Condition
D59-9 (TXM+) - D59-10 (TXM-)	Always	60 to 80 ohms

TEXT IN ILLUSTRATION

*a	Component without harness connected (Navigation Receiver Assembly)

NG --> See step 4

OK: Go to next step

2. **CHECK HARNESS AND CONNECTOR (AVC-LAN CIRCUIT)**
   a. Disconnect the D59 navigation receiver assembly connector.
   b. Disconnect the U1 television display assembly connector.
   c. Disconnect the D70 disc player connector.
   d. Measure the resistance according to the value(s) in the table below.

   Standard Resistance

Tester Connection	Condition	Specified Condition
D59-9 (TXM+) - U1-8 (TX+)	Always	Below 1 ohms
D59-10 (TXM-) - U1-22 (TX-)	Always	Below 1 ohms
U1-7 (TX1+) - D70-9 (TX+)	Always	Below 1 ohms
U1-21 (TX1-) - D70-10 (TX-)	Always	Below 1 ohms
U1-8 (TX+) - Body ground	Always	10 kohms or higher
U1-22 (TX-) - Body ground	Always	10 kohms or higher
U1-7 (TX1+) - Body ground-)	Always	10 kohms or higher
U1-21 (TX1-) - Body ground	Always	10 kohms or higher

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK: Go to next step

3. **INSPECT MALFUNCTIONING PARTS**
    a. Disconnect and reconnect each slave unit one by one until the master unit returns to normal operation.

    HINT:

    - Check all slave units.
    - If disconnecting a slave unit causes the master unit to return to normal operation, the slave unit is defective and should be replaced.

    OK

    Master unit returns to normal operation.

NG --> See step 5

OK --> REPLACE MALFUNCTIONING PARTS

4. **REPLACE NAVIGATION RECEIVER ASSEMBLY. Refer to REMOVAL**
5. **REPLACE NAVIGATION RECEIVER ASSEMBLY. Refer to REMOVAL**

Reverse Signal Circuit

DESCRIPTION

The navigation receiver assembly receives a reverse signal from the park/neutral position switch assembly to use for adjusting the vehicle position on the navigation receiver assembly.

WIRING DIAGRAM

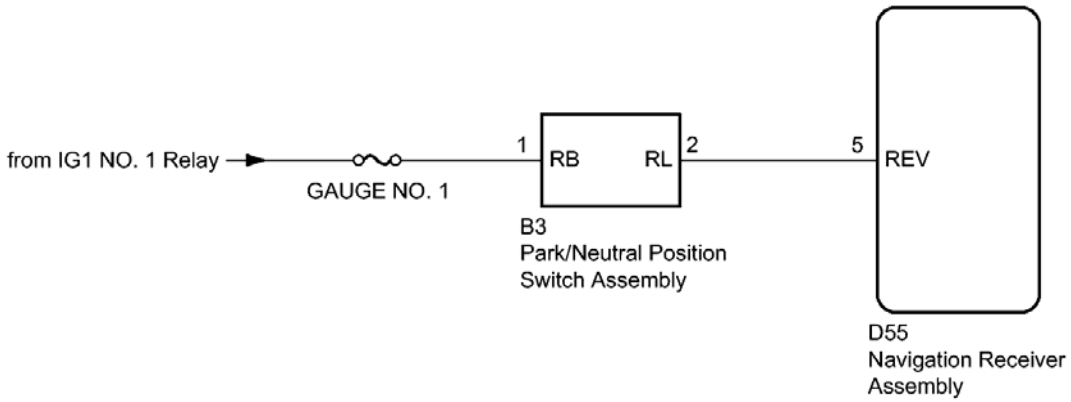


Fig. 69: Reverse Signal Circuit Wiring Diagram
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

NOTE: Inspect the fuses for circuits related to this system before performing the following inspection procedure.

PROCEDURE

1. **CHECK HARNESS AND CONNECTOR (REVERSE SIGNAL)**
   a. Disconnect the D55 navigation receiver assembly connector.

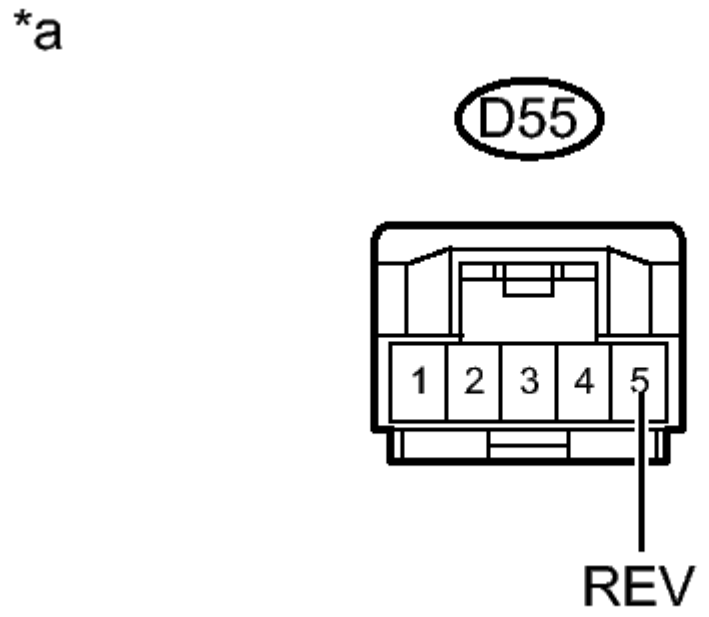


Fig. 70: Measuring Voltage Of Reverse Signal
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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

Standard Voltage

Tester Connection	Condition	Specified Condition
D55-5	Ignition switch ON Shift lever in R	11 to 14 V

(REV) - Body ground	Ignition switch ON Shift lever in any position except R	Below 1 V

TEXT IN ILLUSTRATION

*a	Front view of wire harness connector (to Navigation Receiver Assembly)

NG --> See step 2

OK --> See step 4

2. **CHECK HARNESS AND CONNECTOR (NAVIGATION RECEIVER ASSEMBLY - PARK/NEUTRAL POSITION SWITCH ASSEMBLY)**
   a. Disconnect the D55 navigation receiver assembly connector.
   b. Disconnect the B3 park/neutral position switch assembly connector.
   c. Measure the resistance according to the value(s) in the table below.

   Standard Resistance

Tester Connection	Condition	Specified Condition
D55-5 (REV) - B3-2 (RL)	Always	Below 1 ohms
D55-5 (REV) - Body ground	Always	10 kohms or higher

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK: Go to next step

3. **CHECK HARNESS AND CONNECTOR (PARK/NEUTRAL POSITION SWITCH ASSEMBLY - BATTERY)**

a. Disconnect the B3 park/neutral position switch assembly connector.

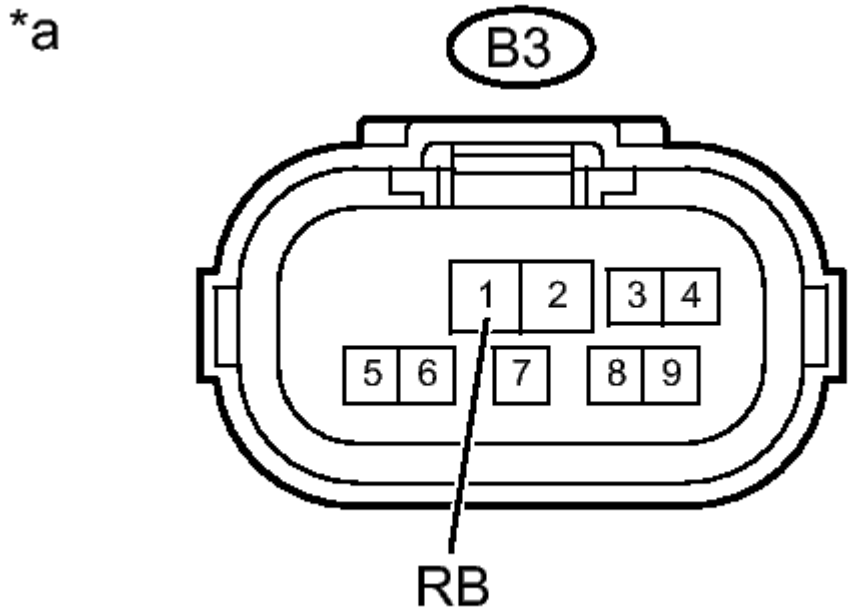


Fig. 71: Checking Harness And Connector (Park/Neutral Position Switch Assembly - Battery)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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

Standard Voltage

Tester Connection	Condition	Specified Condition
B3-1 (RB) - Body ground	Ignition switch ON	11 to 14 V

RESULT

Result	Proceed to
NG	A
OK (for U660E)	B
OK (for U660F)	C

B --> See step 5

C --> See step 6

A --> REPAIR OR REPLACE HARNESS OR CONNECTOR

4. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**
5. **REPLACE PARK/NEUTRAL POSITION SWITCH ASSEMBLY. Refer to REMOVAL**
6. **REPLACE PARK/NEUTRAL POSITION SWITCH ASSEMBLY. Refer to REMOVAL**

Microphone Circuit Between Microphone And Navigation Receiver Assembly

DESCRIPTION

The navigation receiver assembly and roof console box assembly (telephone microphone assembly) are connected to each other using the microphone connection detection signal lines.

Using this circuit, the navigation receiver assembly sends power to the roof console box assembly (telephone microphone assembly), and the roof console box assembly sends microphone signals to the navigation receiver assembly.

WIRING DIAGRAM

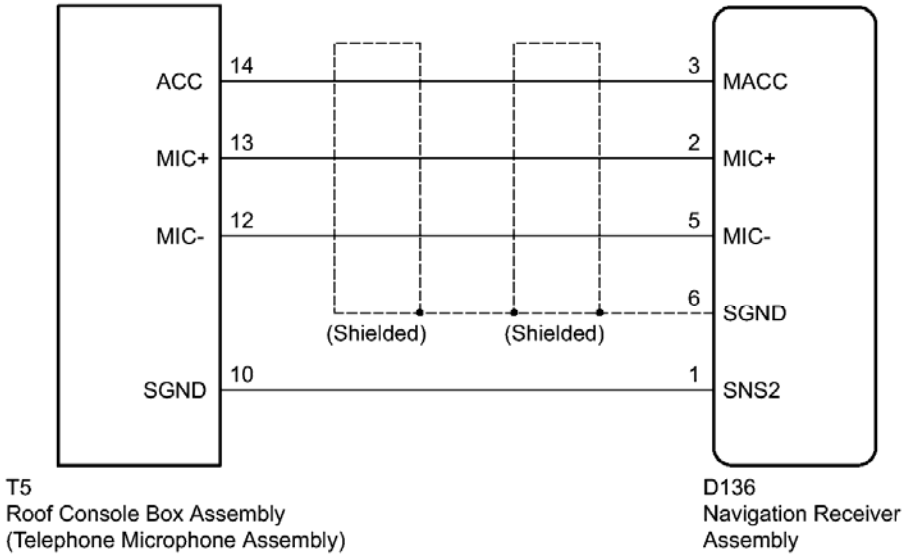


Fig. 72: Microphone Circuit Between Microphone And Navigation Receiver Assembly Wiring Diagram
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

PROCEDURE

1. **CHECK HARNESS AND CONNECTOR (NAVIGATION RECEIVER ASSEMBLY - ROOF CONSOLE BOX ASSEMBLY)**
   a. Disconnect the D136 navigation receiver assembly connector.
   b. Disconnect the T5 roof console box assembly connector.
   c. Measure the resistance according to the value(s) in the table below.

   Standard Resistance

Tester Connection	Condition	Specified Condition
D136-3 (MACC) - T5-14 (ACC)	Always	Below 1 ohms
D136-2 (MIC+) - T5-13 (MIC+)	Always	Below 1 ohms
D136-5 (MIC-) - T5-12 (MIC-)	Always	Below 1 ohms
D136-1 (SNS2) - T5-10 (SGND)	Always	Below 1 ohms
D136-3 (MACC) - Body ground	Always	10 kohms or higher
D136-2 (MIC+) - Body ground	Always	10 kohms or higher
D136-5 (MIC-) - Body ground	Always	10 kohms or higher
D136-1 (SNS2) - Body ground	Always	10 kohms or higher

D136-6 (SGND) - Body ground	Always	10 kohms or higher

d. Reconnect the roof console box assembly connector.
e. Reconnect the navigation receiver assembly connector.

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK: Go to next step

2. **INSPECT NAVIGATION RECEIVER ASSEMBLY**
   a. Measure the voltage according to the value(s) in the table below.

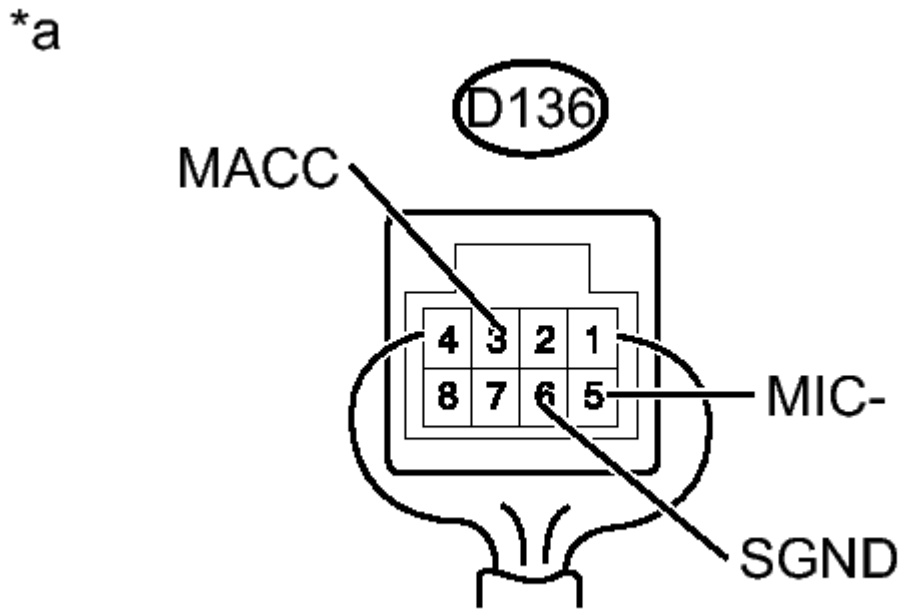


Fig. 73: Checking Navigation Receiver Assembly
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

Standard Voltage

Tester Connection	Condition	Specified Condition
D136-3 (MACC) - Body ground	Ignition switch ACC	4.75 to 5.25 V

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

Standard Resistance

Tester Connection	Condition	Specified Condition
D136-5 (MIC-) - Body ground	Always	Below 1 ohms
D136-6 (SGND) - Body ground	Always	Below 1 ohms

TEXT IN ILLUSTRATION

*a	Component with harness connected (Navigation Receiver Assembly)

NG --> See step 5

OK: Go to next step

3. **INSPECT ROOF CONSOLE BOX ASSEMBLY**
   a. Disconnect the T5 roof console box assembly connector.

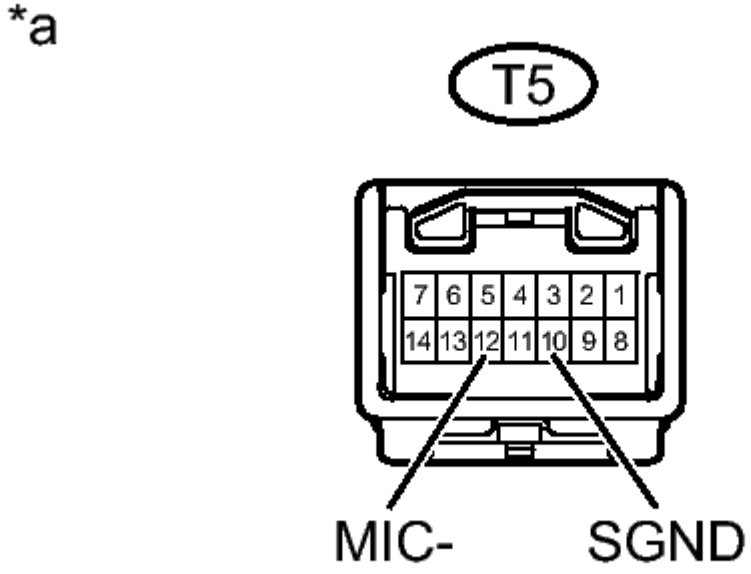


Fig. 74: Measuring Resistance Of Roof Console Box Assembly
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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

Standard Resistance

Tester Connection	Condition	Specified Condition
T5-10 (SGND) - T5-12 (MIC-)	Always	Below 1 ohms

TEXT IN ILLUSTRATION

*a	Component without harness connected (Roof Console Box Assembly)

c. Reconnect the roof console box assembly connector.

NG --> See step 6

OK: Go to next step

4. **INSPECT ROOF CONSOLE BOX ASSEMBLY**
   a. Turn the ignition switch to ACC.
   b. Connect an oscilloscope to terminals 13 (MIC+) and 12 (MIC-) of the roof console box assembly connector.

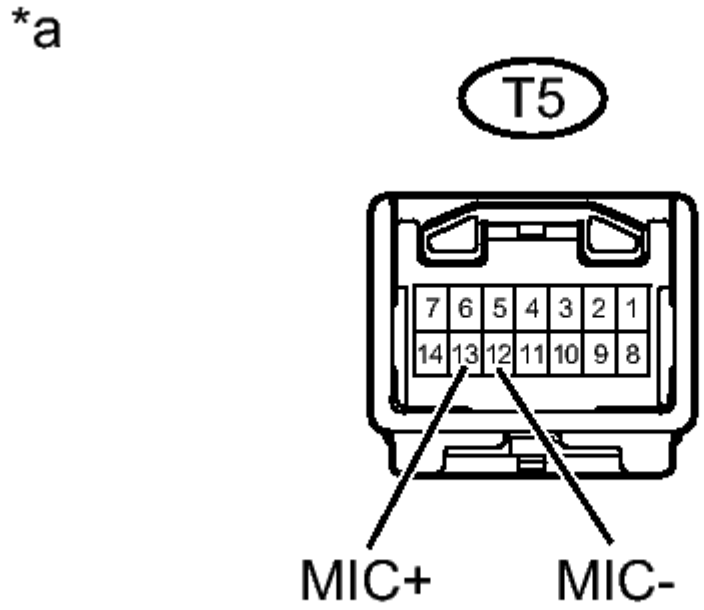


Fig. 75: Inspecting Roof Console Box Assembly
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

   c. Check the waveform of the telephone microphone assembly using an oscilloscope.

RESULT

Result	Proceed to
A waveform synchronized with the voice input to the telephone microphone assembly is output	A
A waveform synchronized	

with the voice input to the telephone microphone assembly is not output	B

TEXT IN ILLUSTRATION

*a	Component with harness connected (Roof Console Box Assembly)

B --> See step 7

A --> See step 8

5. **REPLACE NAVIGATION RECEIVER ASSEMBLY. Refer to REMOVAL**
6. **REPLACE ROOF CONSOLE BOX ASSEMBLY. Refer to REMOVAL**
7. **REPLACE ROOF CONSOLE BOX ASSEMBLY. Refer to REMOVAL**
8. **REPLACE PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**

Navigation Receiver Assembly Power Source Circuit

DESCRIPTION

This is the power source circuit to operate the navigation receiver assembly.

WIRING DIAGRAM

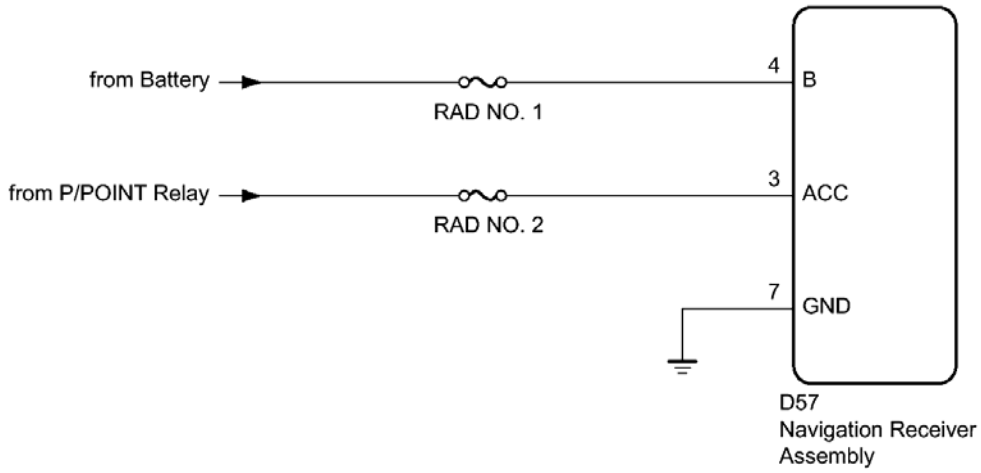


Fig. 76: Navigation Receiver Assembly Power Source Circuit Wiring Diagram
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

NOTE: Inspect the fuses for circuits related to this system before performing the following inspection procedure.

PROCEDURE

1. **CHECK HARNESS AND CONNECTOR (NAVIGATION RECEIVER ASSEMBLY - BATTERY AND BODY GROUND)**
    a. Disconnect the D57 navigation receiver assembly connector.

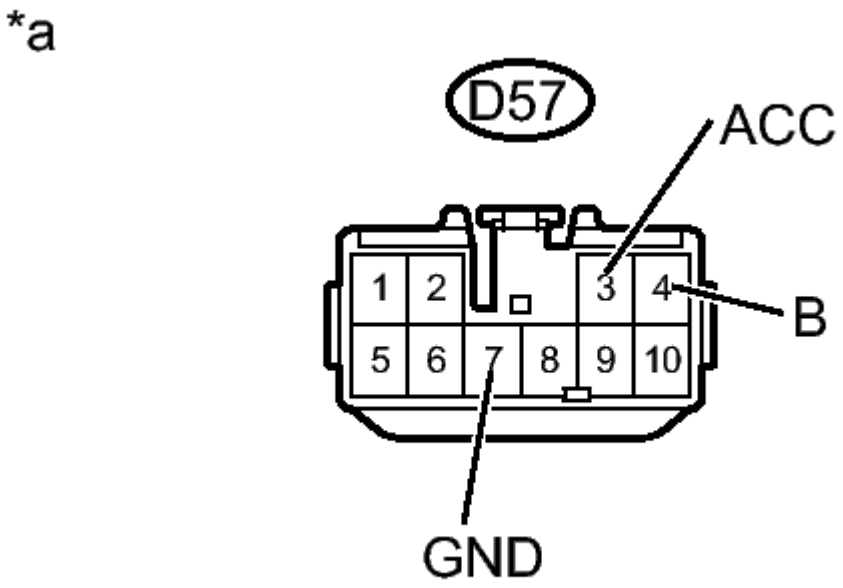


Fig. 77: Checking Harness And Connector (Navigation Receiver Assembly - Battery And Body Ground)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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

Standard Resistance

Tester Connection	Condition	Specified Condition
D57-7 (GND) - Body ground	Always	Below 1 ohms

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

Standard Voltage

Tester Connection	Condition	Specified Condition
D57-4 (B) - Body ground	Always	11 to 14 V
D57-3 (ACC) -	Ignition switch	11 to 14 V

Body ground	ACC	

TEXT IN ILLUSTRATION

*a	Front view of wire harness connector (to Navigation Receiver Assembly)

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK --> See step 2

2. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**

NAVIGATION SYSTEM (FOR SD)

PRECAUTION

PRECAUTION

1. **PRECAUTION FOR DISCONNECTING CABLE FROM NEGATIVE BATTERY TERMINAL**

NOTE: **After turning the ignition switch off, waiting time may be required before disconnecting the cable from the battery terminal. Therefore, make sure to read the disconnecting the cable from the battery terminal notice before proceeding with work. Refer to PRECAUTION .**

2. **IGNITION SWITCH EXPRESSIONS**
   a. The type of ignition switch used on this model differs according to the specifications of the vehicle. The expressions listed in the table below are used in this information.

Expression	Ignition Switch (Position)	Engine Switch (Condition)
Ignition switch off	LOCK	Off
Ignition switch ACC	ACC	On (ACC)
Ignition switch ON	ON	On (IG)
Engine start	START	Start

3. **PRECAUTION FOR USING SD CARD**

NOTE:

- **Do not touch SD memory cards with dirty or wet hands.**
- **Do not insert anything other than SD memory cards into the SD slot.**
- **As the SD cards may malfunction or adversely affect the navigation unit, do not store or use SD cards in the following locations.**
  - **Places where static electricity is generated.**
  - **Places where electronic noise is generated.**
  - **Places which are hot or humid.**
  - **Places where condensation occurs.**

- **Places which are prone to corrosion.**

- **SD cards are delicate electronic devices. Always abide by the following instructions, as the card may malfunction otherwise.**
  - **Do not bend, drop or otherwise subject the card to an impact.**
  - **Do not insert the SD card into the SD slot when it is covered with dust or dirt. Make sure that the SD card is oriented correctly when inserting it into the SD slot, and always insert the SD card completely.**
- **If a strong force is applied to the SD card, it may be damaged.**

a. Do not use the SD card if the label has peeled off or someone has put a sticker or other label on the SD card.
b. Do not store the SD card in places exposed to direct sunlight or that have a high humidity, as the SD card may stop working.
c. Do not touch the terminals with your hand or a metal object.

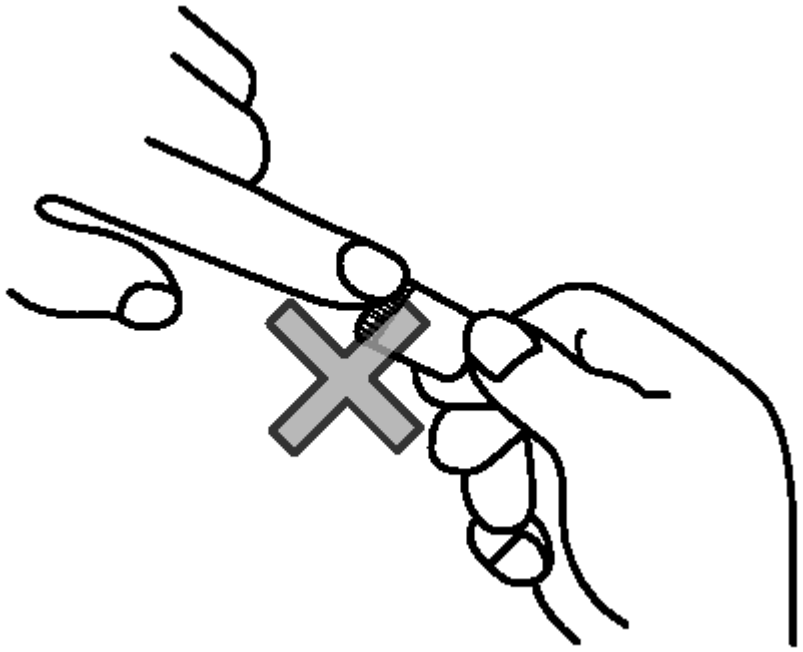
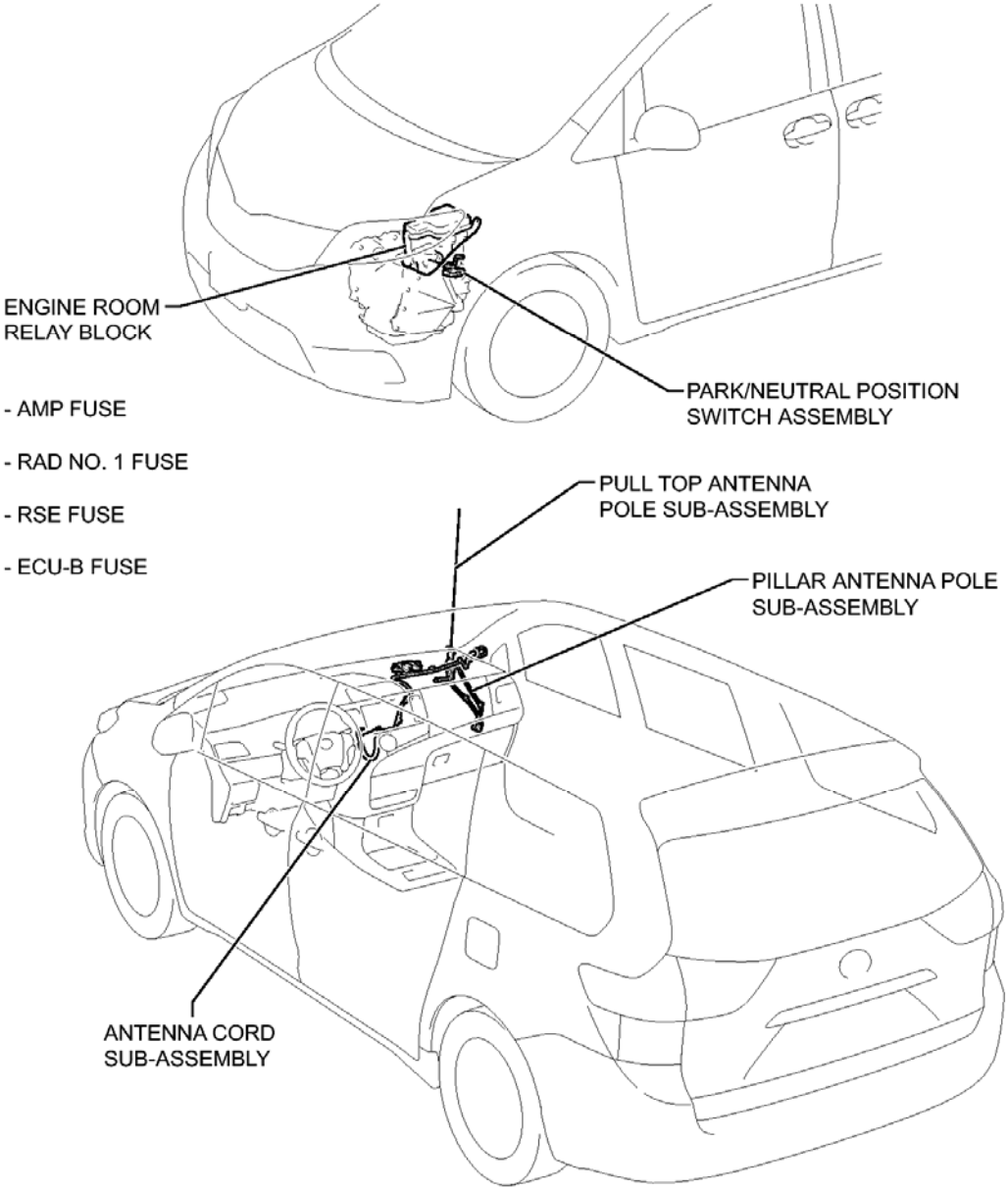


Fig. 1: Improper Handling Of SD Card
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

d. Do not leave the SD card in places where the SD card may be affected by static electricity or electronic noise, as the data may be corrupted.

PARTS LOCATION

ILLUSTRATION



P

Fig. 2: Navigation System Component Location (1 Of 3)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

ILLUSTRATION

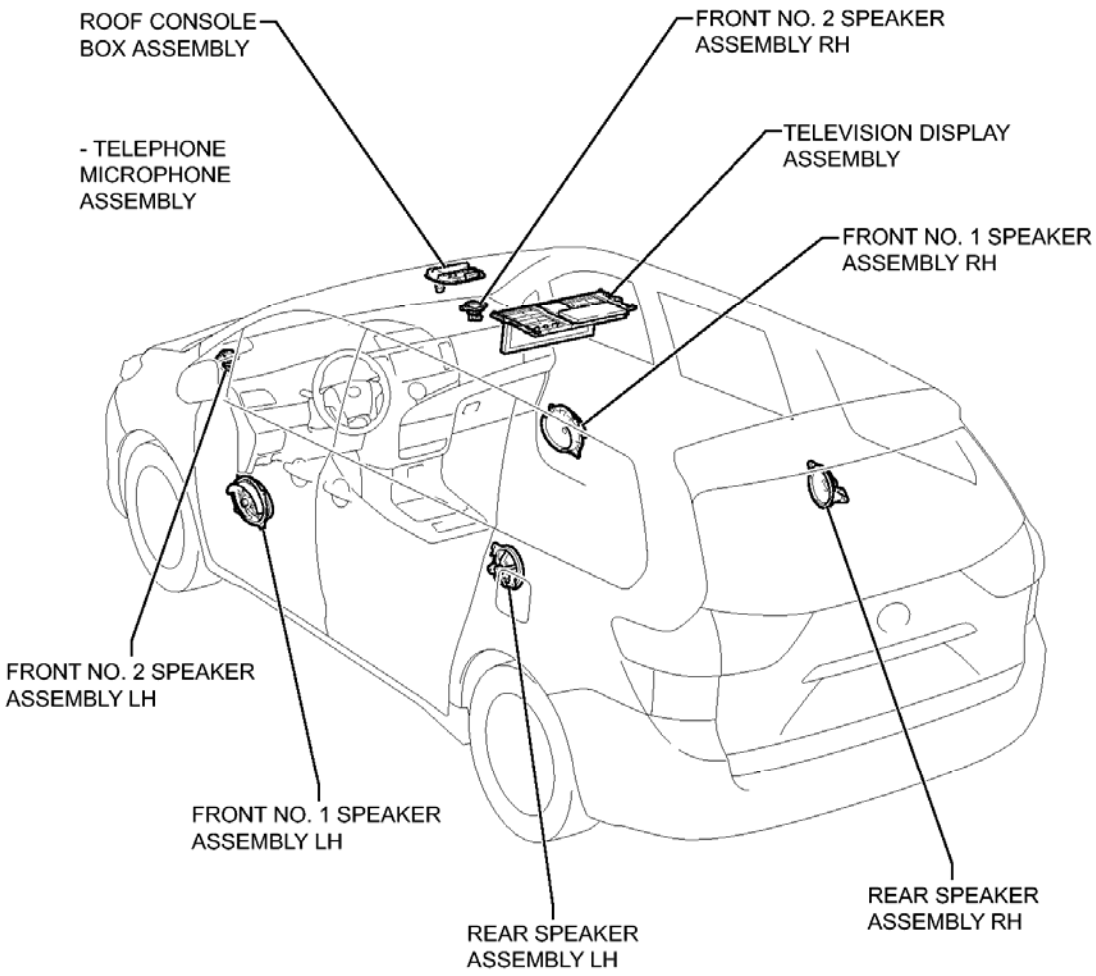
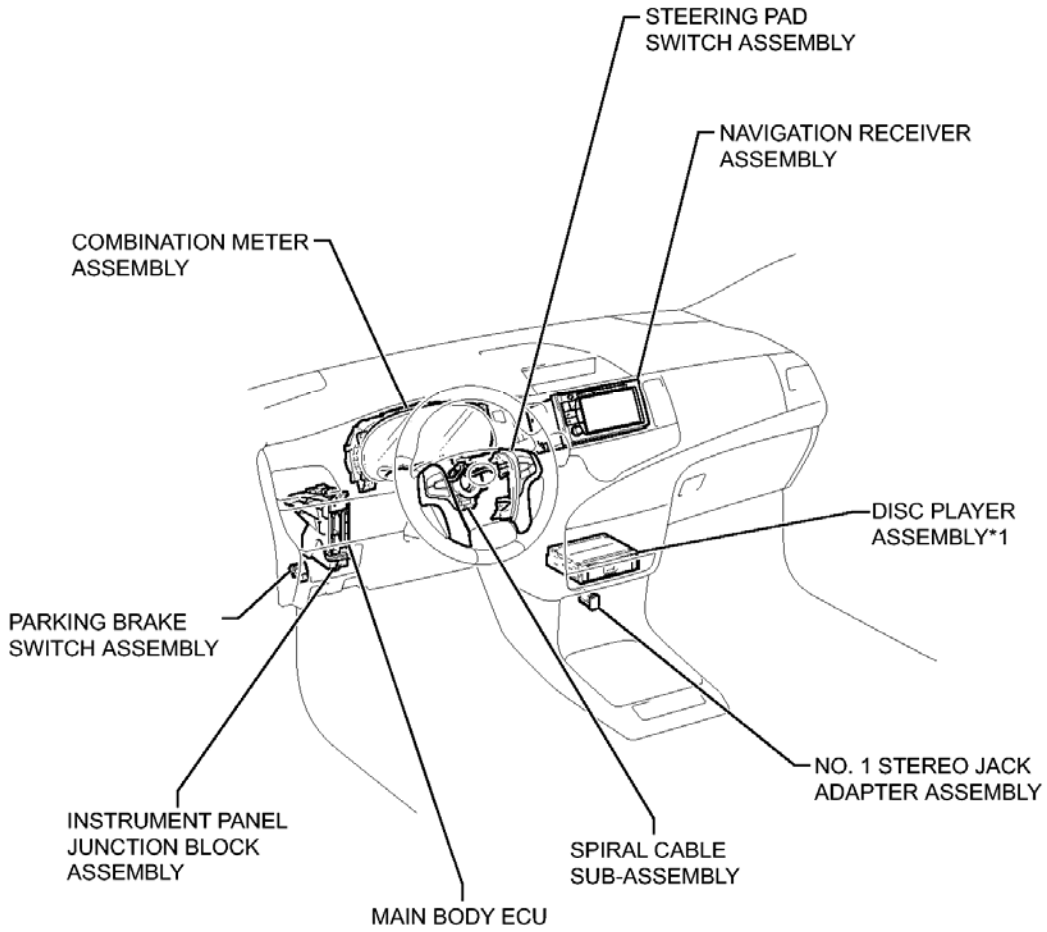


Fig. 3: Navigation System Component Location (2 Of 3)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

ILLUSTRATION



*1: w/ Rear Seat Entertainment System

P

Fig. 4: Navigation System Component Location (3 Of 3)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

SYSTEM DIAGRAM

SYSTEM DIAGRAM

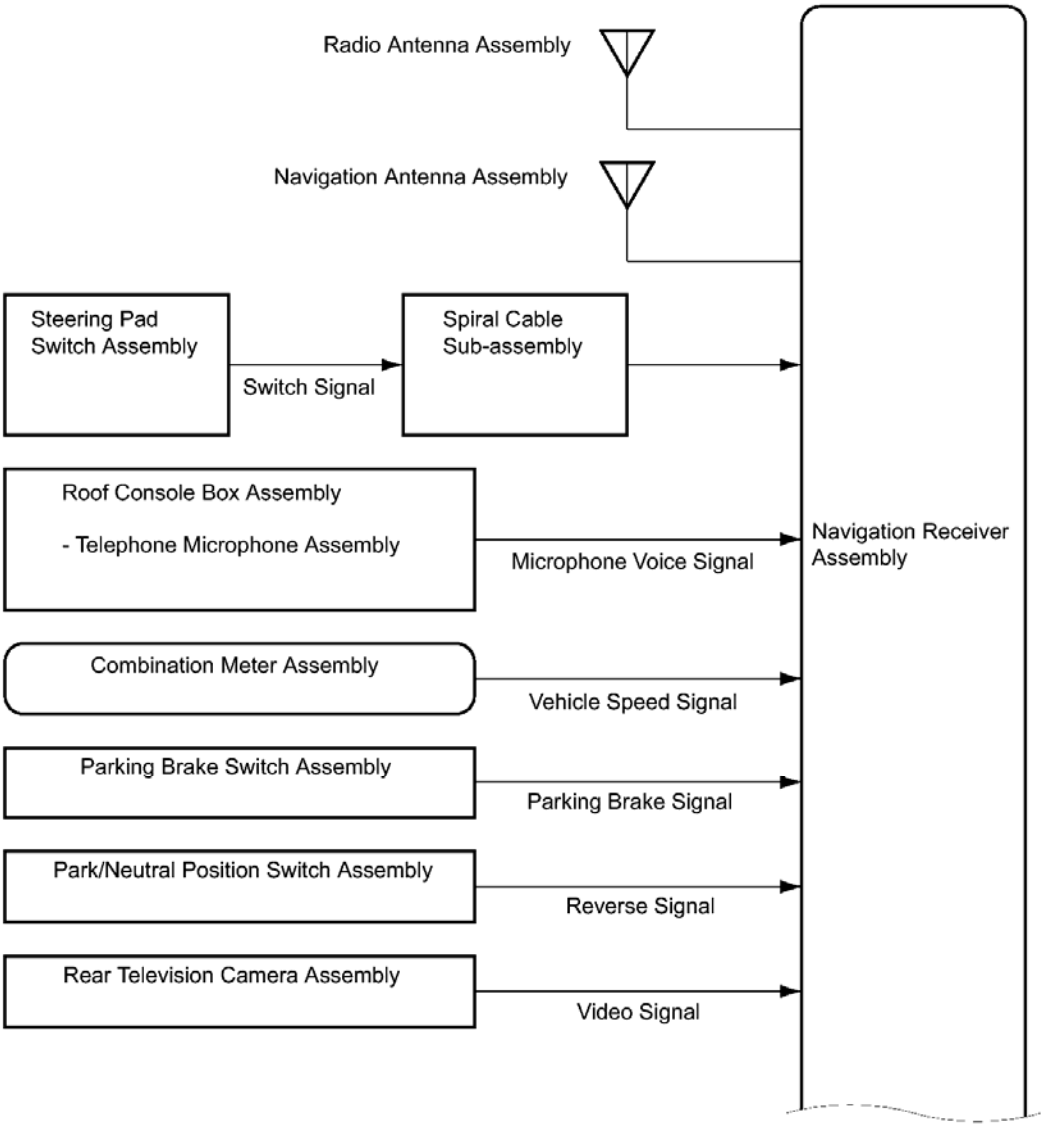


Fig. 5: Navigation System Diagram (1 Of 2)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

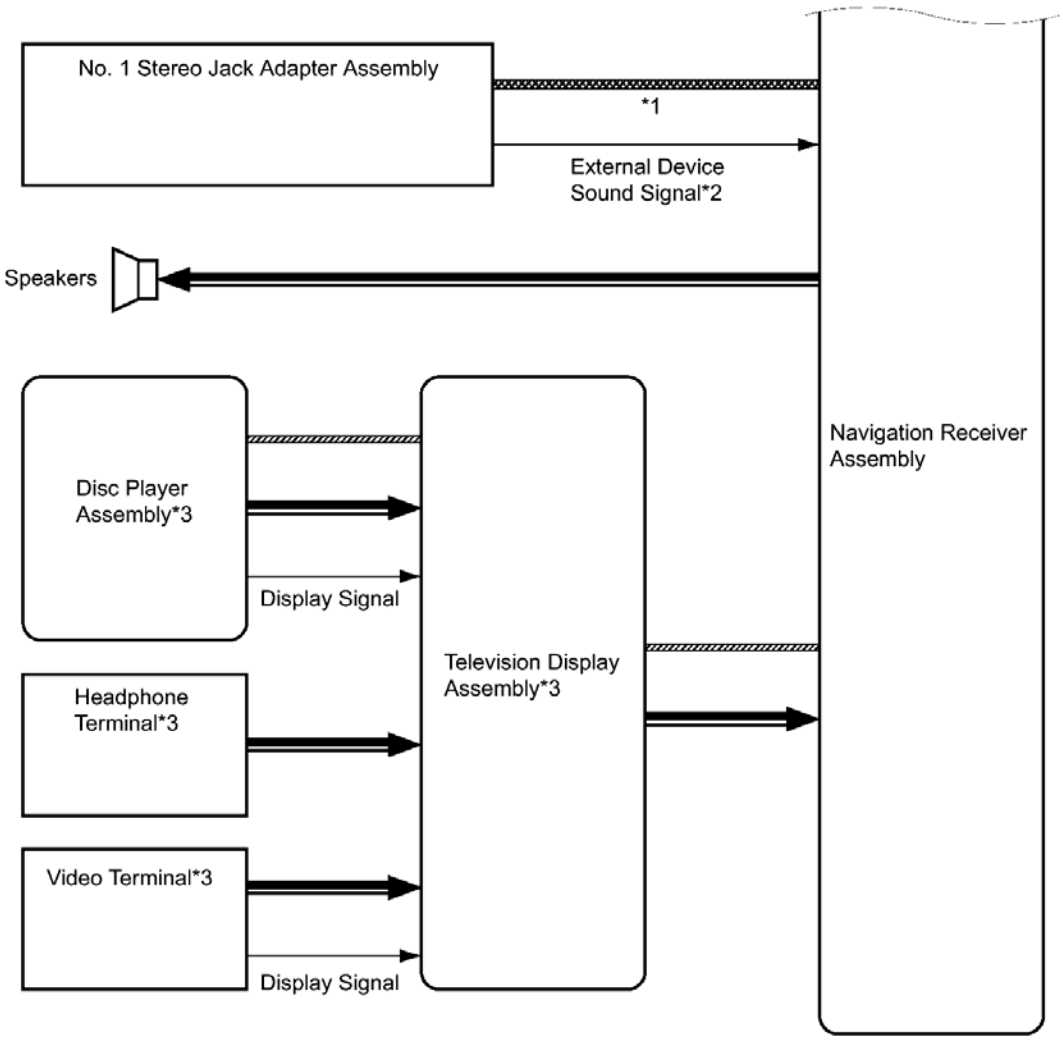


Fig. 6: Navigation System Diagram (2 Of 2)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

SYSTEM DESCRIPTION

SYSTEM DESCRIPTION

1. **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)

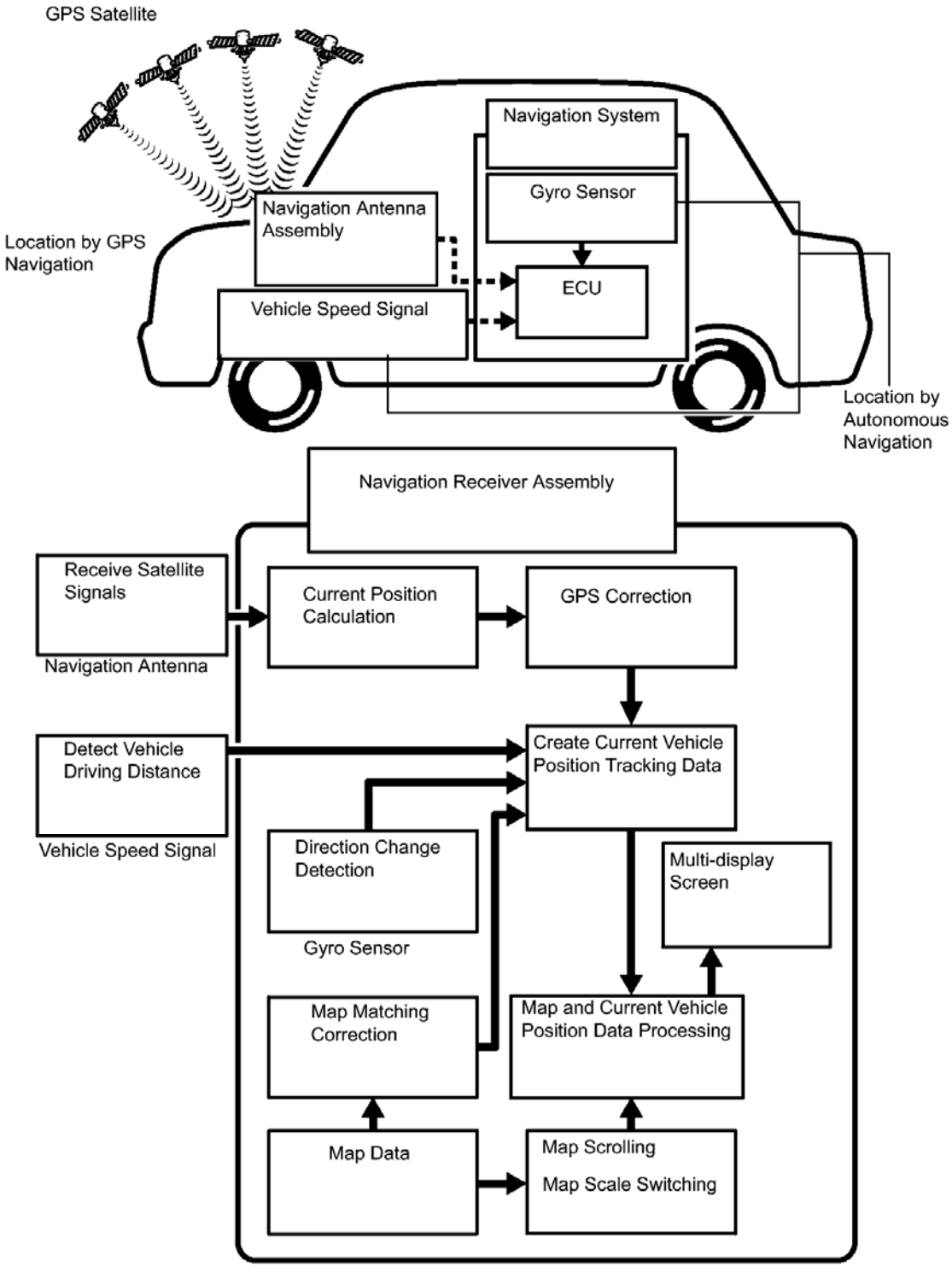


Fig. 7: GPS Navigation System Outline
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

Operation	Description

Vehicle Position Calculation	The navigation receiver calculates current vehicle position (the direction and current position) using the direction deviation signal from gyro sensor and the running distance signal from the vehicle speed sensor, and creates the driving route.
Map Display Processing	The navigation receiver processes the vehicle position data, vehicle running track, and map data from the SD card.
Map Matching	The map data from the SD card 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 GPS measurement position data 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 receiver assembly 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.

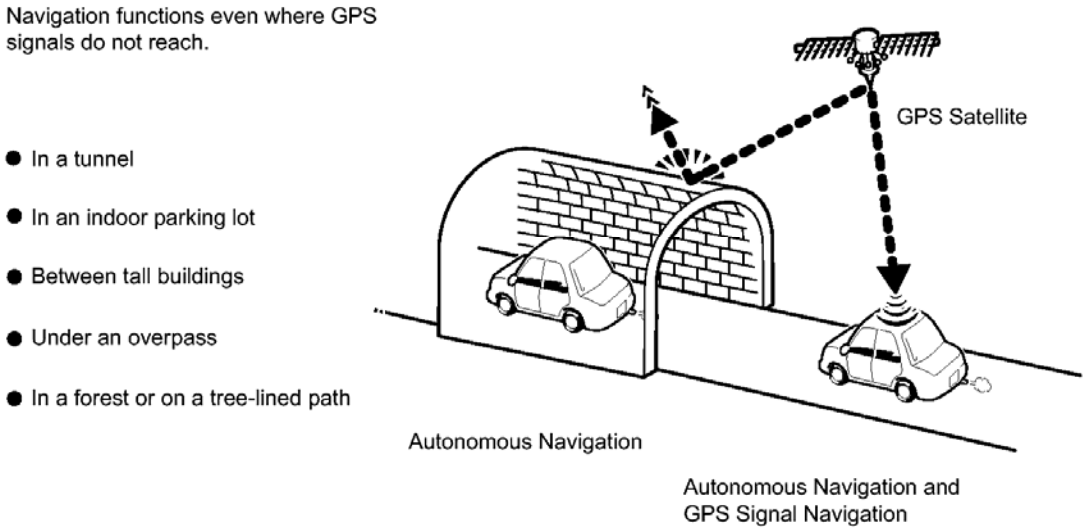


Fig. 8: View Of Autonomous And GPS Navigation
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

HINT:

The combination of autonomous and GPS navigation makes it possible to display the vehicle position even when the vehicle is in places where GPS signals cannot be received. When only autonomous navigation is used, however, the mapping accuracy may slightly decrease.

b. Autonomous navigation

This method determines the relative vehicle position based on the running track determined by the gyro and vehicle speed sensors.

1. Gyro sensor

Used to calculates the direction by detecting angular velocity. It is located in the navigation receiver assembly.

2. Vehicle speed sensor

   Used to calculate the vehicle running distance.

c. GPS* navigation (Satellite navigation)

This method detects the absolute vehicle position using radio waves from a GPS satellite.

*: GPS satellites were launched by the U.S. Department of Defense for military purposes.

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

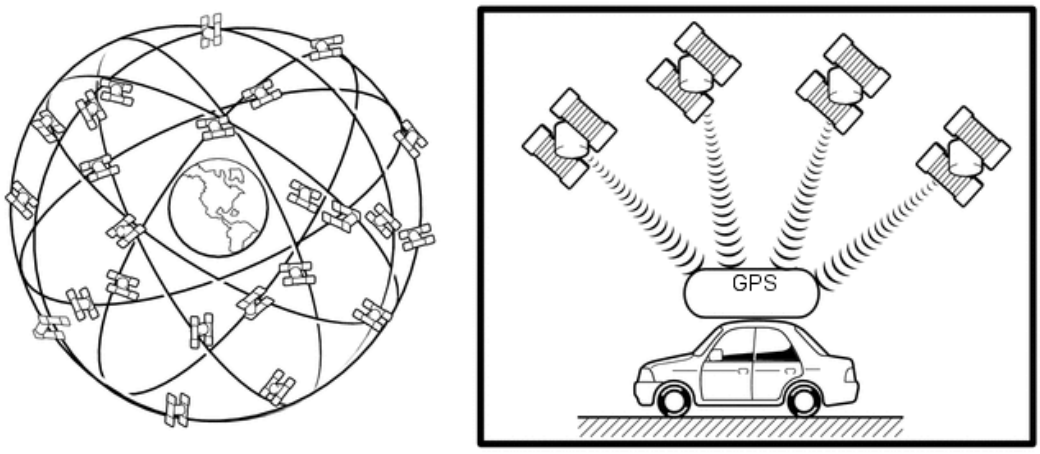


Fig. 9: GPS Navigation (Satellite Navigation)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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.

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 SD card and the vehicle position is set onto the most appropriate road.

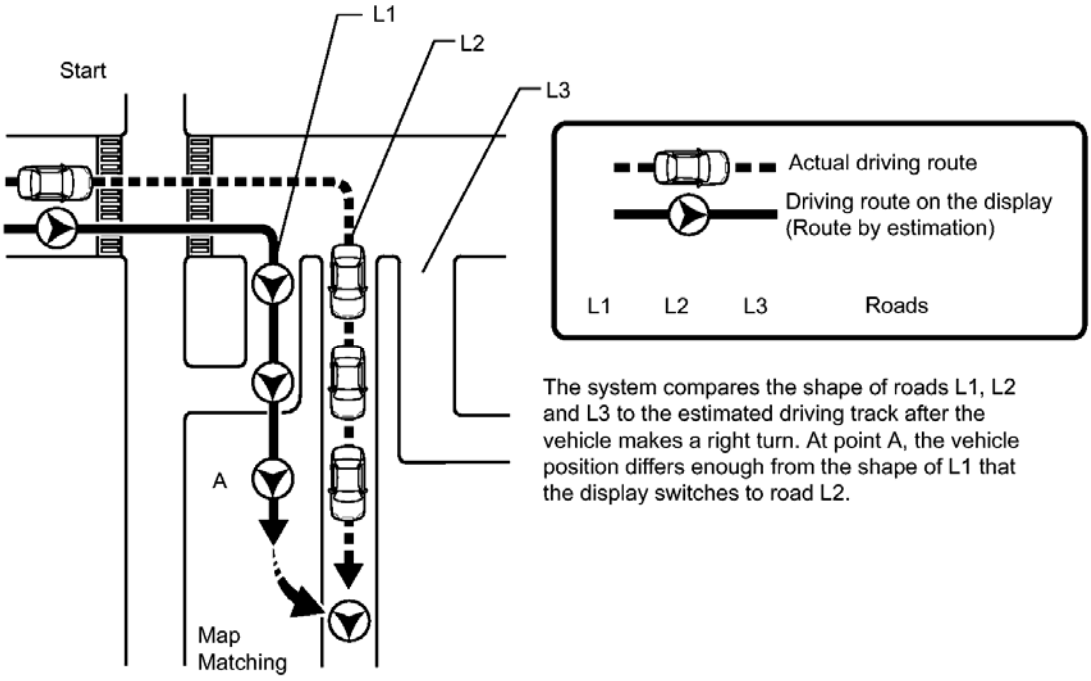


Fig. 10: Comparing GPS Driving Route And Actual Driving Route
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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.

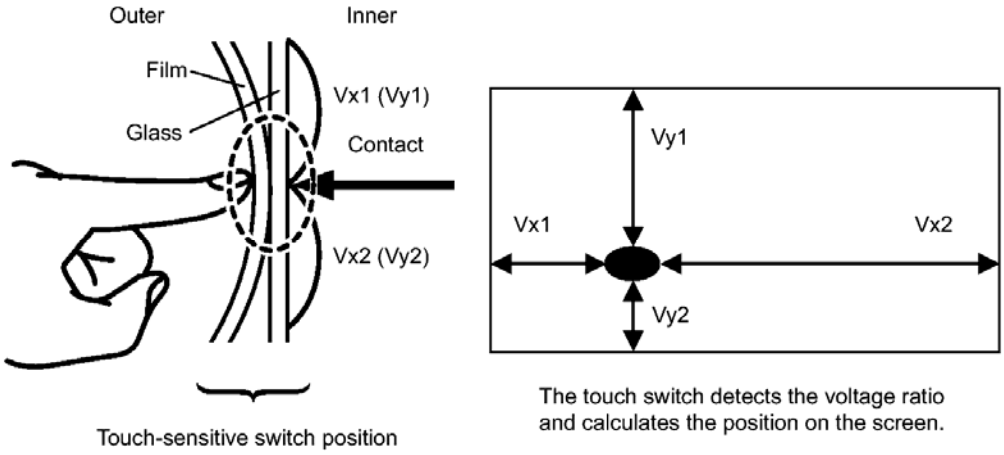


Fig. 11: Identifying Touch Switch
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

2. **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 audio.

WARNING: Do not look directly at the laser pickup because the CD player uses an invisible laser beam. Be sure to operate the player only as instructed.

NOTE:

- **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.**

   b. Usable discs
      1. This player can play only audio CDs, CD-Rs (CD-Recordable) and CD-RWs (CD-ReWritable) that have any of the following marks:



H

Fig. 12: Identifying Disc Player Outline
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

   c. Precautions for use of discs

NOTE:

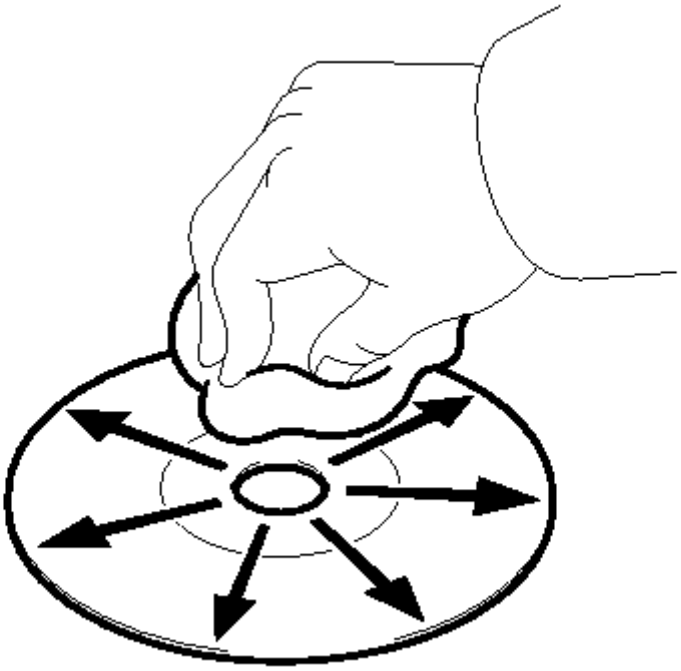
- **Copy-protected CDs cannot be played.**
- **CD-Rs and CD-RWs may not be played depending on the recording conditions or characteristics of the discs, or due to damage, dirt or deterioration caused by leaving the discs in the cabin for a long time.**
- **Unfinalized CD-Rs and CD-RWs cannot be played.**
- **DualDiscs that combine DVD recorded material on one side with CD digital audio material on the other cannot be played.**
- **Keep the discs away from dirt. Be careful not to damage the discs or leave your fingerprints on them.**

- **Hold discs by the outer edge and center hole with the label side up.**
- **Leaving the disc exposed halfway out of the slot for a long time after pressing the disc eject button may cause deformation of the disc, making the disc unusable.**
- **If discs have adhesive tape, stickers, CD labels or any traces of such labels attached, the discs may not be ejected or player malfunctions may result.**
- **Keep the discs away from direct sunlight. (Exposure to direct sunlight may cause deformation of the disc, making the disc unusable.)**
- **Do not use odd-shaped CDs because these may cause player malfunctions.**
- **Do not use discs whose recording portion is transparent or translucent because they may not be inserted, ejected or played normally.**
- **Use only 4.7 in. (12 cm) CDs.**
- **Do not use 3 in. (8 cm) CDs either with or without adaptors.**

HINT:

- When it is cold or it is raining, if the windows mist up, mist and condensation may form in the player. In such cases, the CD may skip or stop in the middle of play. Ventilate or dehumidify the cabin for a while before using the player.
- The CD may skip if the player experiences strong vibrations when the vehicle is driven on a rough road or similar uneven surface(s).

d. Cleaning



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Fig. 13: Cleaning Disc Surface With Soft Dry Cloth
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

NOTE: **Do not use a lens cleaner because it may cause a malfunction in the pickup portion of the player.**

1. If dirt is on the disc surface, wipe it clean with a soft dry cloth, such as an eyeglass cleaner for plastic lenses from the inside to the outside in a radial direction.

NOTE:

- **Pressing on the disc by hand or rubbing the disc with a rough cloth may scratch the disc surface.**
- **Use of solvents such as record spray, antistatic agents, alcohol, benzine, thinners or a chemical cloth may cause damage to the disc, making the disc unusable.**

3. **MP3/WMA OUTLINE**
   a. Playable MP3 file standards

Compatible standard	MP3 (MPEG1 LAYER3, MPEG2 LSF LAYER3)
	• MPEG1 LAYER3: 32, 44.1,

Compatible sampling frequency	48 (kHz) • MPEG2 LSF LAYER3: 16, 22.05, 24 (kHz)
Compatible bit rate	• MPEG1 LAYER3: 32, 40, 48, 56, 64, 80, 96, 112, 128, 160, 192, 224, 256, 320 (kbps) • MPEG2 LSF LAYER3: 8, 16, 24, 32, 40, 48, 56, 64, 80, 96, 112, 128, 144, 160 (kbps) • Compatible with VBR
Compatible channel mode	Stereo, joint stereo, dual channel, monaural

b. Playable WMA file standards

Compatible standard	WMA Ver. 7, 8, and 9
Compatible sampling frequency	32, 44.1, 48 (kHz)
Compatible bit rate (Only compatible with 2-	Ver. 7, 8, 9: CBR32, 40, 48, 64, 80, 96, 128, 160,

channel playback)	192, 256, 320 (kbps)

c. ID3 tag and WMA tag

1. Additional text information called an ID3 tag can be input to MP3 files. Information such as song titles and artist names can be stored.

   HINT:

   This player is compatible with ID3 tags of ID3 Ver. 1.0 and 1.1, and ID3 Ver. 2.2 and 2.3. (Number of characters complies with ID3 Ver. 1.0 and 1.1.)

2. Additional text information called a WMA tag can be input to WMA files. Information such as song titles and artist names can be stored.

d. Usable media

1. Only CD-ROMs, CD-Rs (CD-Recordable) and CD-RWs (CD-ReWritable) can be used to play MP3/WMA files.

   NOTE:

   - **CD-Rs and CD-RWs are more easily affected by a hot and humid environment than discs used for normal audio CDs. For this reason, some CD-Rs and CD-RWs do not play.**
   - **If there are fingerprints or scratches on a disc, the disc may not play or the CD may skip.**
   - **Some CD-Rs and CD-RWs may deteriorate if they are left in the cabin for a long time.**
   - **Keep CD-Rs and CD-RWs in an opaque case.**

e. Usable media format

1. Usable media format

Disc format	CD-ROM, CD-R, CD-RW
File format	ISO9660 Level 1 and Level 2 (Joliet, Romeo)

HINT:

- As for MP3/WMA files written in any unlisted format, the contents of the files may not be played normally or the file names or folder names may not be displayed correctly.
- This player is compatible with multi-session discs and can play CD-Rs and CD-RWs on which MP3/WMA files have been added. However, only the first session can be played.
- Discs whose first session includes both music data and MP3 or WMA format data cannot be played.

2. Standards and restrictions

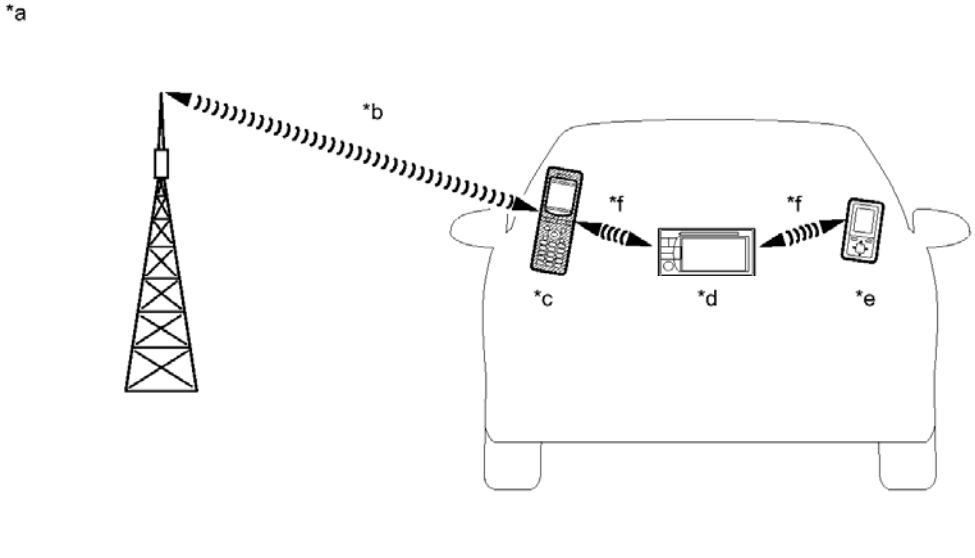
Maximum directory hierarchy	8 levels
Maximum number of characters for a folder name/file name	128 characters
Maximum number of folders	512 (Including empty folders, the root folder, and folders that do not contain MP3/WMA files)
Maximum number of files in a disc	999 (Including non-MP3/WMA files)

f. File names

1. Only files with an extension of ".mp3" or ".wma" can be recognized and played as MP3 or WMA files.
2. Save MP3 or WMA files with an extension of ".mp3" or ".wma".

NOTE: **If non-MP3 or non-WMA files are saved with an extension of ".mp3" or ".wma", those files may be wrongly recognized as MP3 or WMA files and played. A loud noise may occur and damage to the speakers may result.**

4. **"Bluetooth" OUTLINE**



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Fig. 14: Identifying "Bluetooth" Outline
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

TEXT IN ILLUSTRATION

*a	Example	*b	Cellular Network
*c	Cellular Phone ("Bluetooth" compatible type)	*d	Navigation Receiver Assembly (Built-in "Bluetooth" receiver antenna)
*e	Portable Audio Player ("Bluetooth" compatible type)	*f	"Bluetooth" Wireless Connection

a. "Bluetooth" is a trademark owned by Bluetooth SIG, Inc.

b. "Bluetooth" is a wireless connection technology that uses the 2.4 GHz frequency band.

HINT:

The communication performance of "Bluetooth" may vary depending on obstructions or radio wave conditions between communication devices, electromagnetic radiation, communication device sensitivity or antenna capacity.

c. Hands-free function

1. The "Bluetooth" built-in navigation receiver assembly and a "Bluetooth" compatible cellular phone* can be connected using a "Bluetooth" wireless connection. This enables the use of the hands-free function on the cellular phone even if the phone is in a pocket or bag. For this reason, it is not necessary to use a connector or cable to connect the cellular phone.

   *: Some versions of "Bluetooth" compatible cellular phones may not function.

2. Compatible hands-free devices

Required "Bluetooth" specifications	Ver. 1.1 or higher (Ver. 2.1+EDR or higher recommended)
Compatible profiles	• HFP (Hands Free Profile) Ver.1.0 or higher (Ver.1.5 or higher recommended) *1 • OPP (Object Push Profile) Ver.1.1 or higher*1 • PBAP (Phone Book Access Profile) Ver.1.0 or higher*1 • MAP (Message Access Profile) Ver.1.0 or higher*2 • SPP (Serial Port Profile) Ver.1.1 or higher*3
Maximum number of hands-free devices that can be registered	5

(including audio devices)	

*1: This profile is necessary when using handsfree function.

*2: This profile is necessary when using message function.

*3: This profile is necessary when using "Entune" function.

HINT:

The amount of remaining battery charge displayed on the navigation receiver assembly may be different from that of the portable player.

d. "Bluetooth" audio function

1. The "Bluetooth" built-in navigation receiver assembly and a "Bluetooth" compatible portable audio player* can be connected using a "Bluetooth" wireless connection. This enables files stored in the portable audio player to be heard from the vehicle speakers. In addition, operations such as play/stop can be performed directly from the navigation receiver assembly.

   *: Some versions of "Bluetooth" compatible audio players may not be able to operate the "Bluetooth" function, or music may play, but functions available using the navigation receiver assembly may be limited.

2. Compatible "Bluetooth" audio devices

Required "Bluetooth" specifications	Ver. 1.1 or higher (Ver. 2.1+EDR or higher recommended)
Compatible profiles	• A2DP (Advanced Audio Distribution Profile) Ver. 1.0 or higher (Ver. 1.2 or higher recommended) • AVRCP (Audio/Video Remote Control Profile) Ver. 1.0 or higher (Ver. 1.4 or higher

	recommended)
Maximum number of audio devices that can be registered	5

HINT:

The amount of remaining battery charge displayed on the navigation receiver assembly may be different from that of the portable player.

5. **"Entune" FUNCTION OUTLINE**
   a. "Entune" is a service that enables the usable contents of a cellular phone to be displayed on and operated from the navigation receiver assembly screen. As Bluetooth communication is used for the communication between a cellular phone and the navigation receiver assembly, before using the "Entune" service on the navigation system, the cellular phone needs to be registered with the navigation system as a Bluetooth device. For details regarding "Entune" operations, each of the applications and compatible phones, refer to http://www.toyota.com/entune/.
6. **RADIO DESCRIPTION**
   a. Radio frequency band
      1. Radio broadcasts use the radio frequency bands shown in the table below.

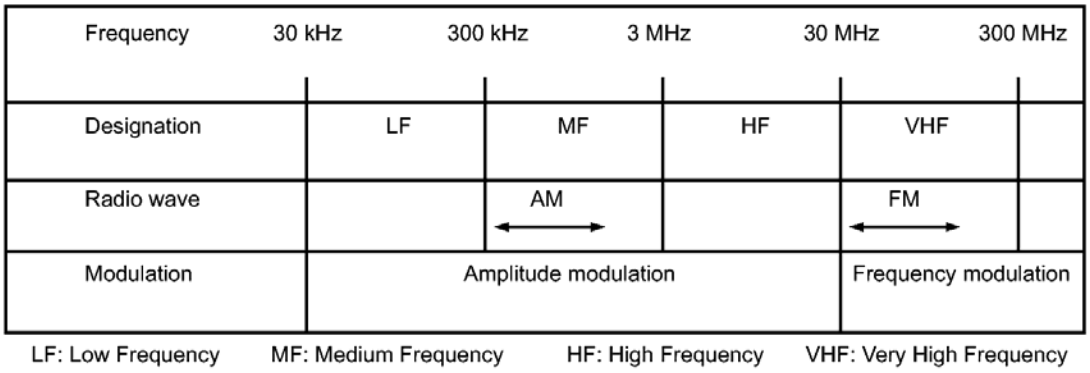


Fig. 15: Identifying Radio Frequency Band Description Chart
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

   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 broadcast cannot. FM stereo has the smallest service area, and is prone to pick up static and other types of interference such as noise.

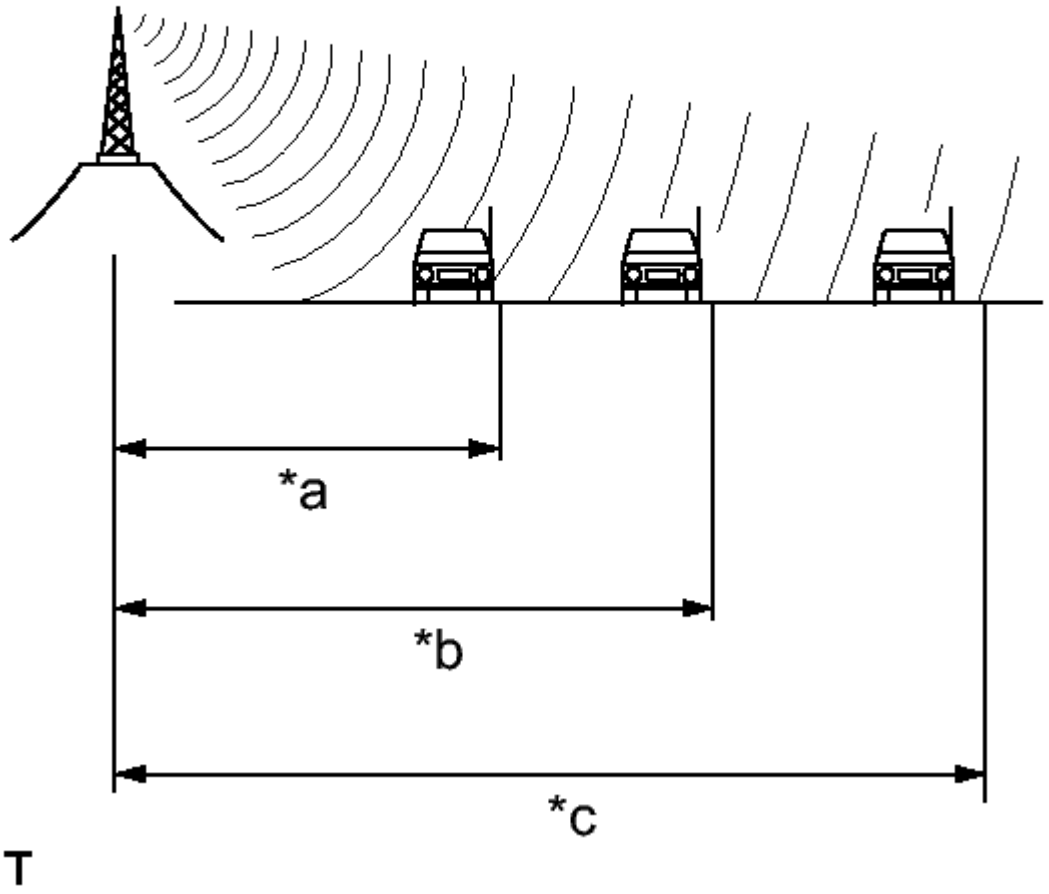


Fig. 16: Identifying Radio System Service Area
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

TEXT IN ILLUSTRATION

*a	FM (Stereo)
*b	FM (Monaural)
*c	AM

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.

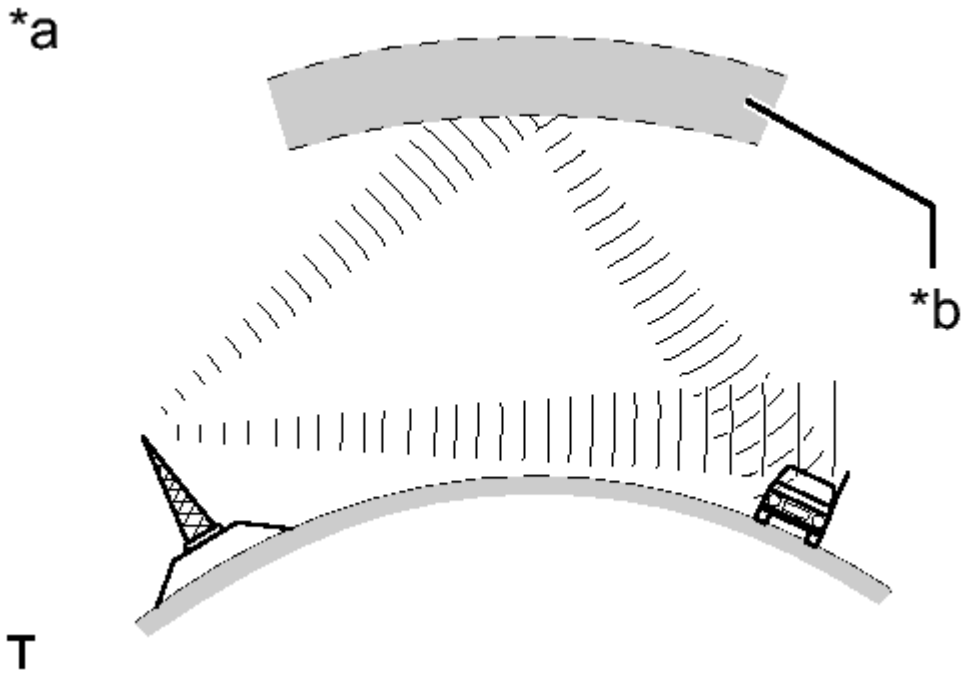


Fig. 17: AM Broadcasts Are Susceptible To Electrical Interference
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

TEXT IN ILLUSTRATION

*a	Phasing
*b	Ionosphere

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.

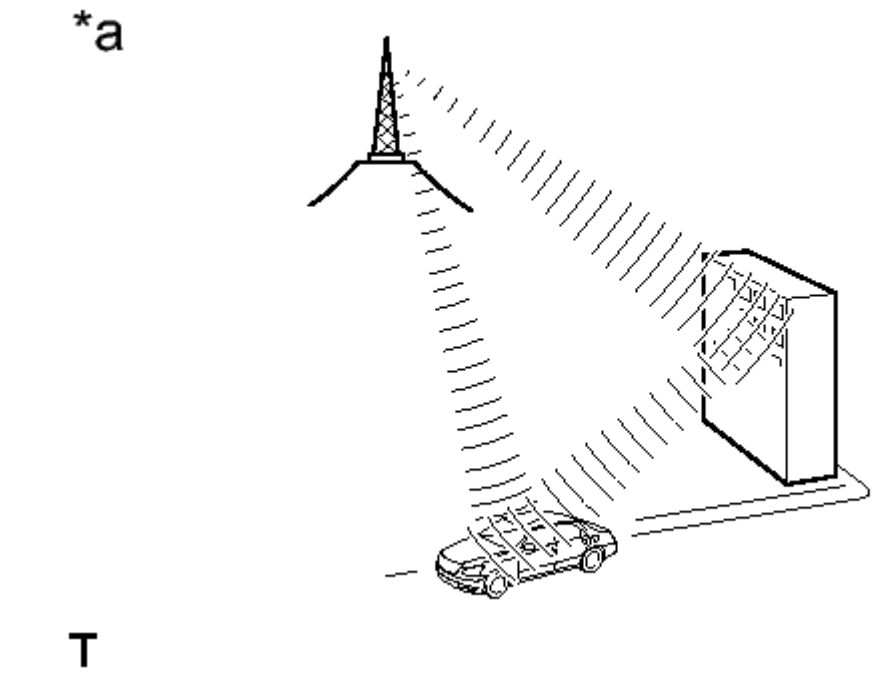


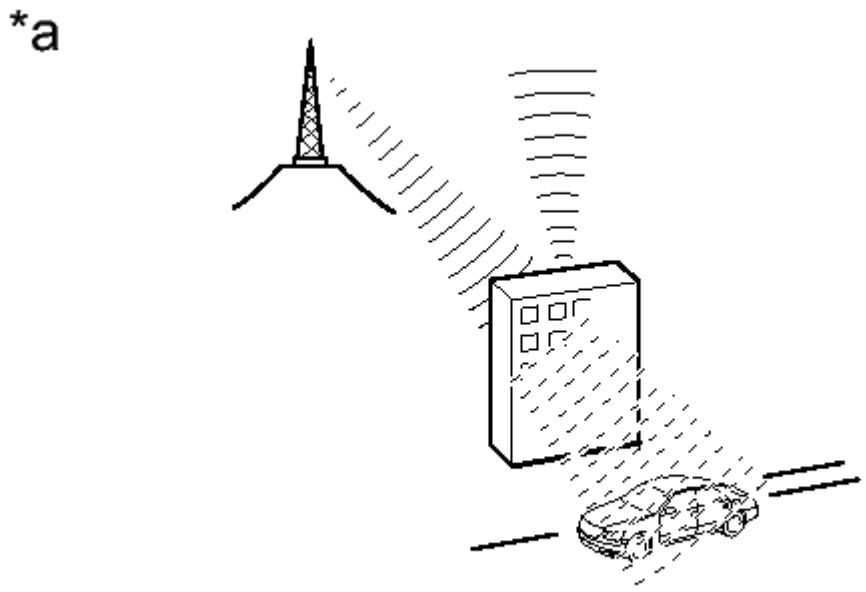
Fig. 18: Identifying 2 Radio Wave Signals From The Same Transmitter
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

TEXT IN ILLUSTRATION

*a	Multipath

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 less likely to deflect.



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Fig. 19: Buildings, Mountains, And Other Such Large Obstacles That Deflect Away Part Of A Signal
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

TEXT IN ILLUSTRATION

*a	Fade Out

d. Noise problem

Technicians must have a clear understanding about each customer's noise complaint. Use the following table to diagnose noise problems.

Radio Frequency	Noise Occurrence Condition	Presumable Cause
AM	Noise occurs in a specific area	Foreign noise
	Noise occurs when listening to an	An identical program transmitted from multiple towers can cause noise

	intermittent broadcast	where the signals overlap
	Noise occurs only at night	Signal phasing
FM	Noise occurs while driving in a specified area	Multipath resulting from a change in FM frequency

7. **"HD Radio" FUNCTION OUTLINE (BROADCAST IN NORTH AMERICA ONLY)**
   a. "HD Radio" system is a radio system that broadcasts in the IBOC (In-Band On-Channel) form that the iBiquity Co. has developed. By expanding the bandwidth per channel of conventional FM/AM bands, digital audio and data signals are additionally transmitted.

      "HD Radio" Technology manufactured under license from iBiquity Digital Corporation. U.S. and Foreign Patents. "HD Radio" and the HD and HD Radio logos are proprietary trademarks of iBiquity Digital Corporation.

      The information for the music currently being listened to is stored in the system and transmitted to the "iPod" connected to the system. The information transferred to the "iPod" can be used for purchasing the music through "iTunes" music store.

8. **RBDS FUNCTION OUTLINE (BROADCAST IN NORTH AMERICA ONLY)**
   a. The Radio Broadcast Data System (RBDS) is broadcast through conventional FM radio broadcasts. Information such as song names, traffic information, broadcast station names, etc. can be received.
9. **USB AUDIO SYSTEM FUNCTION OUTLINE**
   a. The No. 1 stereo jack adapter assembly is equipped with a USB terminal. Connecting a USB device or "iPod" to the No. 1 stereo jack adapter assembly allows music files to be played. Not only is it possible to play music from a USB device with audio functions, is also possible to play MP3 or WMA music files that are stored on a USB device. In addition, "iPod" control software is installed, allowing file selection from playlists and operation using shuffle mode.

      HINT:

      - Visual contents of an "iPod" cannot be played.
      - Operation through the controls of a USB device or "iPod" cannot be performed while it is connected.

   b. USB audio system compatible model
      1. USB Device

         The following device formats can be used:

Compatible USB device formats	• USB communication format: USB 2.0 FS (12Mbps) • File format: FAT 16/32 (Windows) • Class: Mass storage class

MP3 and WMA files written in any format other than those listed above may not play correctly, and their names and folder names may not be displayed correctly.

Items related to standards and limitations are as follows:

- Maximum directory hierarchy: 8 levels
- Maximum number of folders in device: 3000 (including the root folder)
- Maximum number of files in device: 9999
- Maximum number of files per folder: 255

2. "iPod"

"iPod" is a trademark of Apple Inc., registered in the U.S. and other countries.

SUPPORTED MODELS AND FIRMWARE OR OS VERSIONS

Model	Generation	Supported Firmware or OS Version
"iPod"	5G	1.3
"iPod nano"	1G	1.3.1
	2G	1.1.3
	3G	1.1.3
	4G	1.0.4
	5G	1.0.2
	6G	1.0
"iPod classic"	1G	1.1.2
	2G (120GB)	2.0.1
	2009 (160GB)	2.0.4
"iPod	1G	iOS 3.1.3
	2G	iOS 3.1.3
		iOS 4.2.1
	Late 2009	iOS 3.1.3

touch"	(8GB)	iOS 4.2.1
	3G (32GB/64GB)	iOS 3.1.3
		iOS 4.2.1
	4G	iOS 4.2.1
"iPhone"	1G ("iPhone")	iOS 3.1.3
	2G ("iPhone3G")	iOS 3.1.3
		iOS 4.2.1
	3G ("iPhone3GS")	iOS 3.1.3
		iOS 4.2.1
	4G ("iPhone4")	iOS 4.2.1

UNSUPPORTED "IPOD" MODELS

Unsupported Models	"iPod shuffle"
	"iPod" 1G, 2G, 3G, 4G
	"iPod mini"
	"iPod photo"
	"iPad"

HINT:

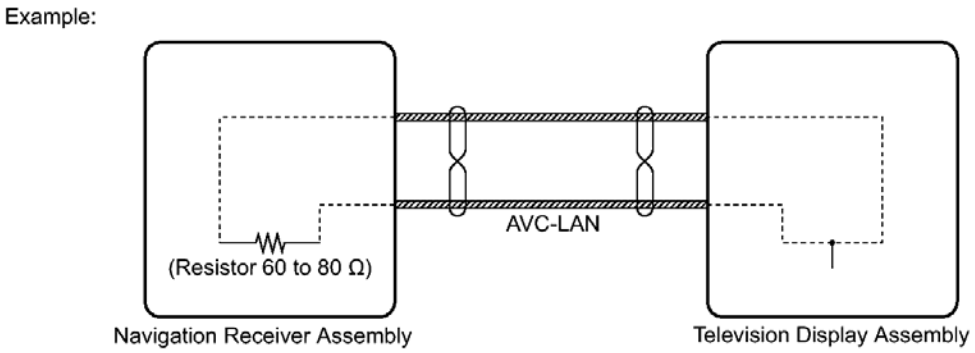
- "iPod" models and firmware versions that are not listed in "Supported Models and Firmware or OS Versions" may not function, or may not function correctly. Also depending on differences between models or software versions etc., some models listed in the table might be incompatible with this system.
- Depending on the generation of "iPod" used, response to commands from the vehicle may be delayed.

Items related to standards and limitations are as follows:

- Maximum number of lists in device: 9999
- Maximum number of songs in device: 65025
- Maximum number of songs per list: No limitation

10. **AUTOMATIC SOUND LEVELIZER (ASL) FUNCTION OUTLINE**
    a. The Automatic Sound Levelizer (ASL) function automatically adjusts the audio system volume level in order to compensate for increased vehicle noise (vehicle noise tends to increase as vehicle speed increases). The ASL adjusts the volume level based upon vehicle speed signals that it receives from the combination meter assembly.

11. **COMMUNICATION SYSTEM**
    a. AVC-LAN Outline



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Fig. 20: Identifying Communication System (AVC-LAN) Outline
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

1. Components of the navigation system communicate with each other via the AVC-LAN.
2. The AVC-LAN uses a twisted pair of wires for its communication lines.
3. The master unit of the AVC-LAN is the navigation receiver assembly.

HINT:

- The radio and display receiver assembly has the resistance (60 to 80 ohms) necessary for communication.
- If a short or open circuit occurs in the AVC-LAN circuit, communication is interrupted and the system will not operate normally.

12. **DIAGNOSTIC FUNCTION OUTLINE**
    a. The navigation system has a diagnostic function (the result is indicated on the master unit).

HOW TO PROCEED WITH TROUBLESHOOTING

HOW TO PROCEED WITH TROUBLESHOOTING

HINT:

Use the following procedure to troubleshoot the navigation system.

1. **VEHICLE BROUGHT TO WORKSHOP**

   NEXT: Go to next step

2. **CUSTOMER PROBLEM ANALYSIS**
   - When troubleshooting, confirm that the problem symptoms have been accurately identified.

Preconceptions should be discarded in order to make an accurate judgment. To clearly understand what the problem symptoms are, it is extremely important to ask the customer about the problem and the conditions at the time the malfunction occurred.

- Gather as much information as possible for reference. Past problems that seem unrelated may also help in some cases.
- The following 5 items are important points in problem analysis:

What	Vehicle model, system name
When	Date, time, occurrence frequency
Where	Road conditions
Under what conditions?	Driving conditions, weather conditions
How did it happen?	Problem symptoms

NEXT: Go to next step

3. **INSPECT BATTERY VOLTAGE**
   a. Measure the battery voltage.

      Standard voltage

      11 to 14 V

      HINT:

      If the voltage is below 11 V, recharge or replace the battery before proceeding to the next step.

      NEXT: Go to next step

4. **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.

      OK

      Condensation is not likely being produced and the temperature is not high or extremely low.

HINT:

- A humid cabin and a rapid change in temperature may lead to condensation. Condensation in the cabin may cause a short circuit.
- The navigation system may not operate normally when the temperature is -20°C (-4°F) or lower, or 65°C (149°F) or higher.

NG --> SET CABIN TO APPROPRIATE TEMPERATURE

OK: Go to next step

5. **CHECK NAVIGATION SYSTEM NORMAL CONDITION**
   a. Refer to Check Navigation System Normal Condition. Refer to **OPERATION CHECK**.

RESULT

Result	Proceed to
Symptom is not normal operation.	A
Symptom is normal operation.	B

B --> SYMPTOM IS NORMAL OPERATION

A: Go to next step

6. **CHECK FOR DTC**
   a. Refer to DTC Check/Clear. Refer to **DTC CHECK / CLEAR**.

RESULT

Result	Proceed to
DTCs are output.	A
DTCs are not output.	B

HINT:

If the system cannot enter diagnostic mode, inspect the AVC-LAN and all the components that

connect to the AVC-LAN for short circuits and repair or replace the problem part. Refer to **AVC-LAN Circuit** .

B --> Go to step 10

A: Go to next step

7. **DTC CLEAR**
   a. Refer to DTC Check/Clear. Refer to **DTC CHECK / CLEAR**.

      HINT:

      The present DTCs may not indicate actual malfunctions depending on the vehicle operating conditions.

      NEXT: Go to next step

8. **RECHECK FOR DTC**
   a. Refer to DTC Check/Clear. Refer to **DTC CHECK / CLEAR**.

      RESULT

Result	Proceed to
DTCs are output.	A
DTCs are not output.	B

      HINT:

      - Even if the malfunction symptom is not confirmed, check for DTCs. This is because the system stores history DTCs.
      - If more information is needed, perform a recheck using the "System Check Mode" screen after rechecking for DTCs using the Techstream.
      - Check the DTCs and inspect the area that the code indicates.

      B --> Go to step 10

      A: Go to next step

9. **DIAGNOSTIC TROUBLE CODE CHART**
   a. Find the output code in Diagnostic Trouble Code Chart. Refer to **DIAGNOSTIC TROUBLE CODE CHART**.

NEXT --> Go to step 12

10. **PROBLEM SYMPTOMS TABLE**
    a. Refer to Problem Symptoms Table. Refer to **PROBLEM SYMPTOMS TABLE**.

    RESULT

Result	Proceed to
Fault is not listed in Problem Symptoms Table.	A
Fault is listed in Problem Symptoms Table.	B

    HINT:

    If the symptom does not recur and no DTCs are output, attempt to reproduce the symptoms. Refer to **HOW TO PROCEED WITH TROUBLESHOOTING** .

    B --> Go to step 12

    A: Go to next step

11. **PERFORM TROUBLESHOOTING BASED ON MALFUNCTION SYMPTOM**
    a. Refer to Terminals of ECU. Refer to **TERMINALS OF ECU**.

    NEXT: Go to next step

12. **CHECK CIRCUIT**
    a. Adjust, repair or replace as necessary.

    NEXT: Go to next step

13. **RECHECK FOR DTC**
    a. After clearing DTCs, recheck for DTCs.

    NEXT: Go to next step

14. **PERFORM CONFIRMATION TEST**

NEXT --> END

OPERATION CHECK

OPERATION CHECK

1. **CHECK NAVIGATION SYSTEM 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 receiver assembly may determine that a longer route is quicker.
Even when distance priority is high, the shortest route is not shown.	Some routes 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 the vehicle is

When driving on certain types of roads, especially new roads, the vehicle position deviates from the actual position.	driving on new roads not available on the SD card, 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 navigation receiver assembly.

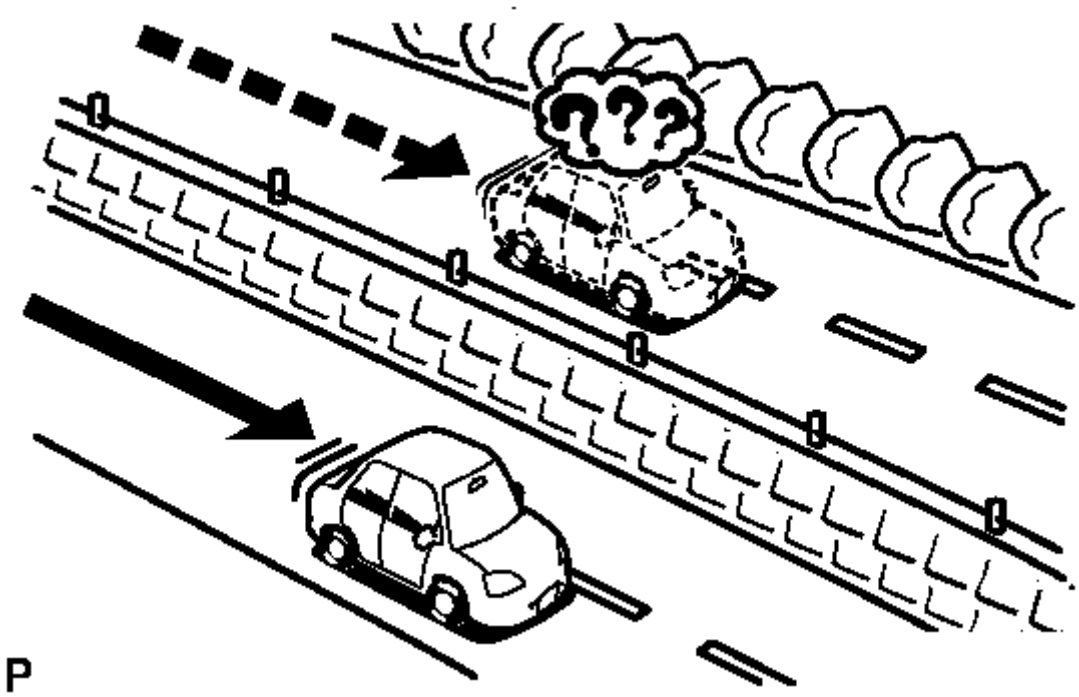
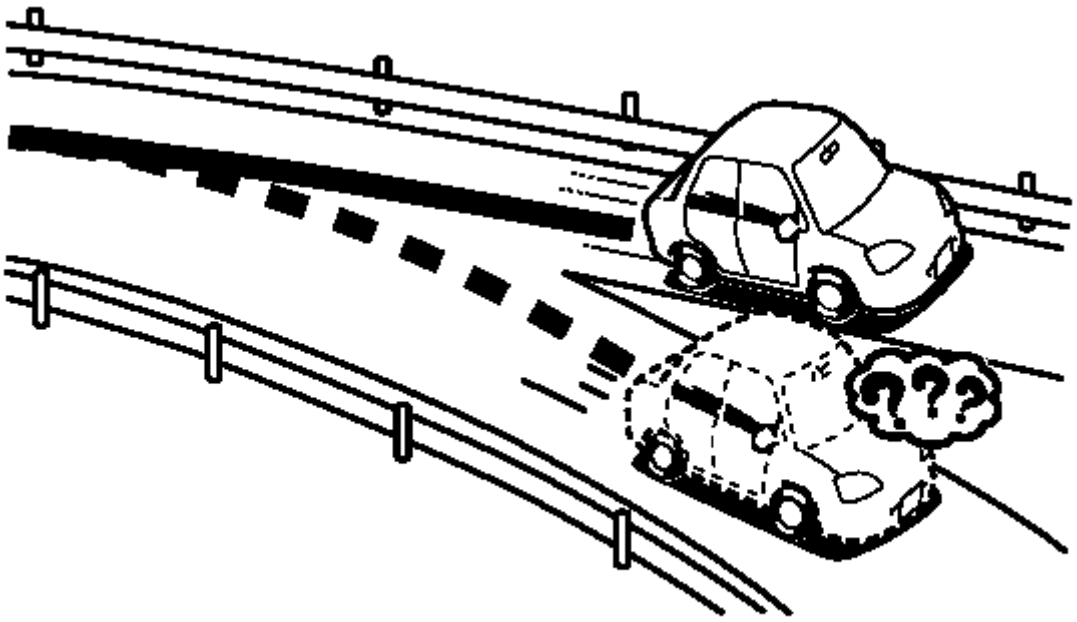


Fig. 21: Locating Position Mark On Parallel Road
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

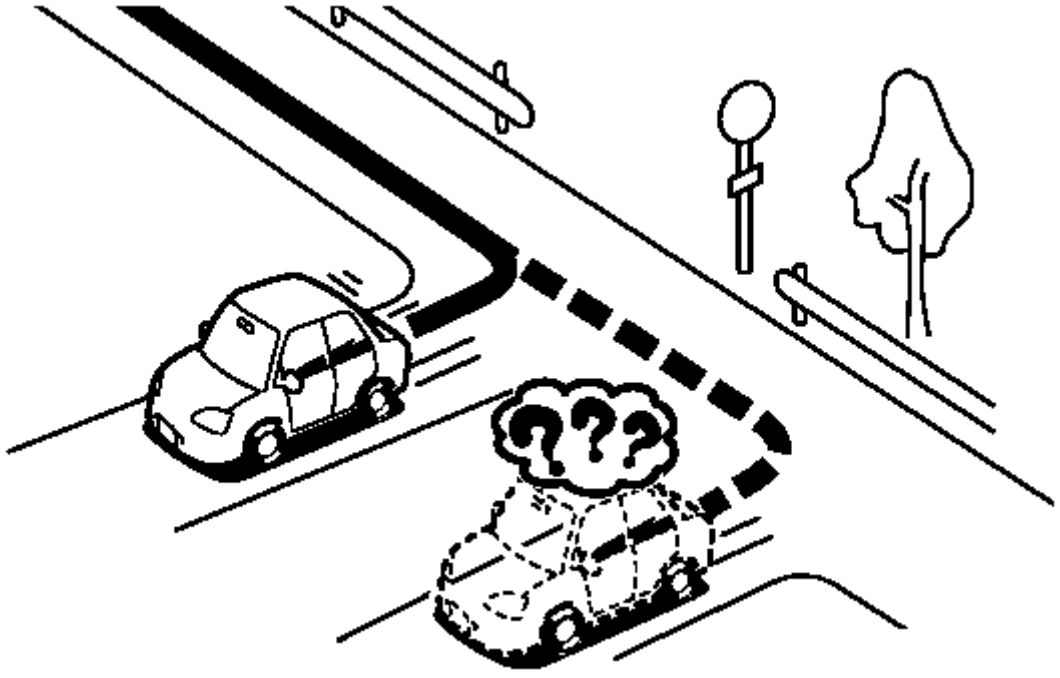
1. The current position mark may be displayed on a nearby parallel road.
2. Immediately after a fork in the road, the current vehicle position mark may be displayed on the wrong road.



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Fig. 22: Locating Vehicle Position Mark On Wrong Road
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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



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Fig. 23: Locating Vehicle Position Mark On Parallel Road
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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

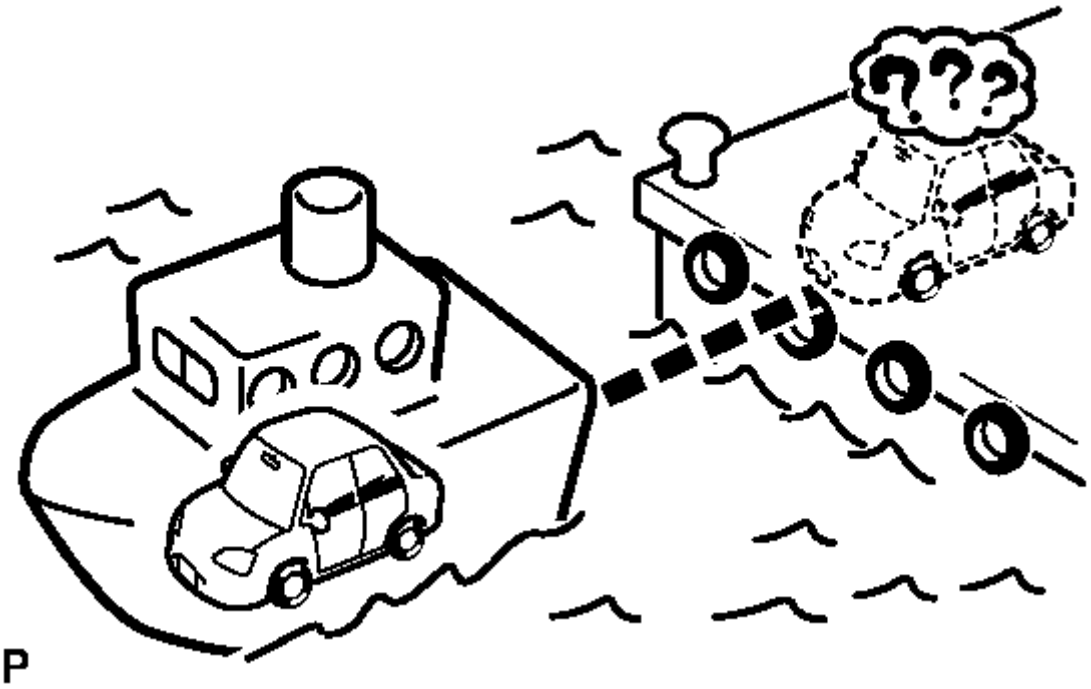


Fig. 24: Identifying Vehicle Position Mark On GPS
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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

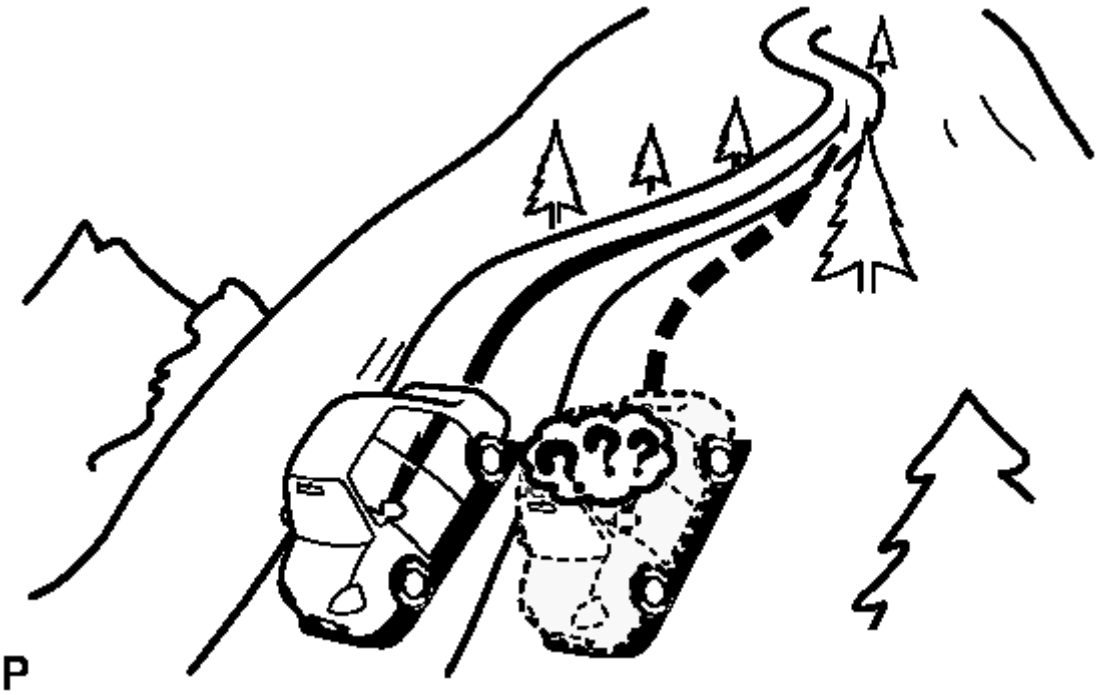


Fig. 25: Identifying Vehicle Position Mark In Correct Position - Runs On Steep Hill
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

6. When the vehicle makes a continuous turn (e.g. 360, 720, 1080 degrees), the current vehicle position mark may deviate from the correct position.

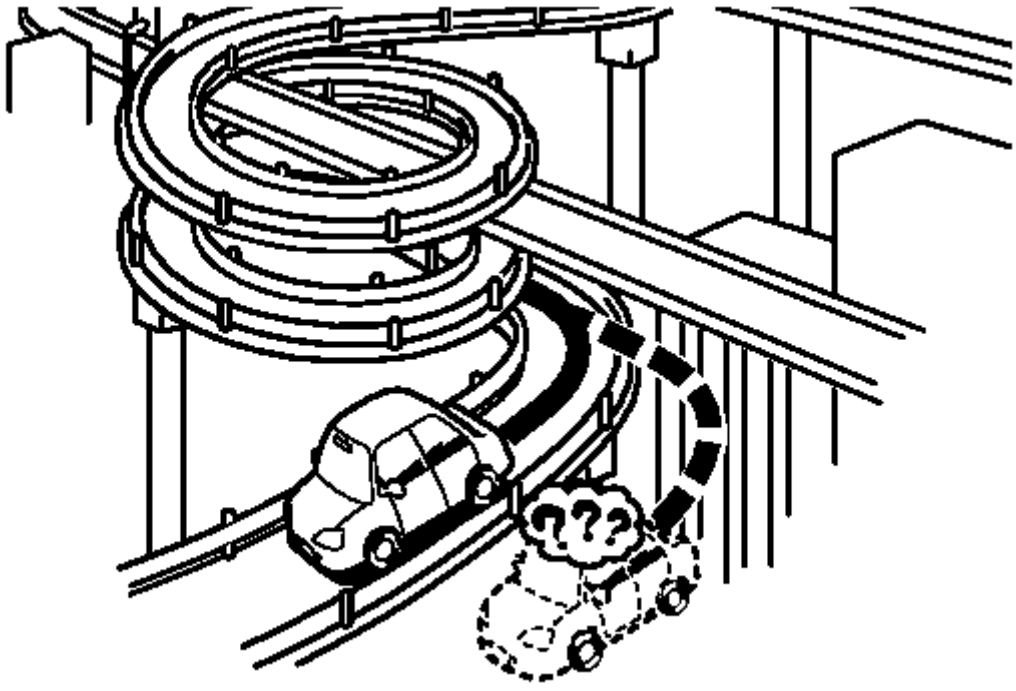


Fig. 26: Identifying Vehicle Position Mark In Correct Position - Continuous Turn
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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

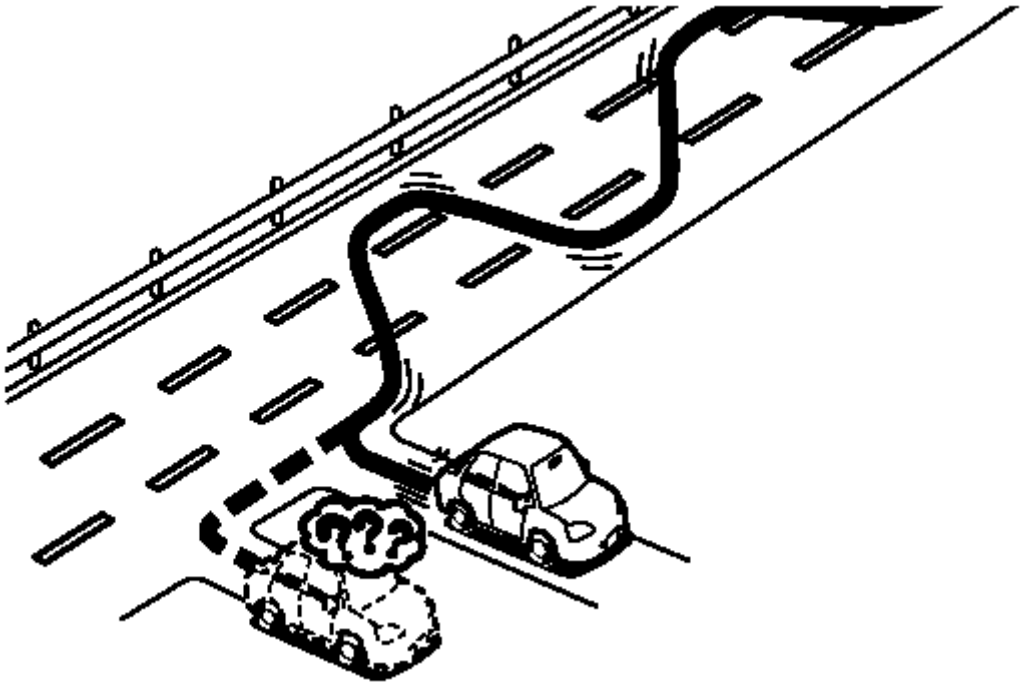


Fig. 27: Identifying Vehicle Position Mark In Correct Position - Erratically
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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

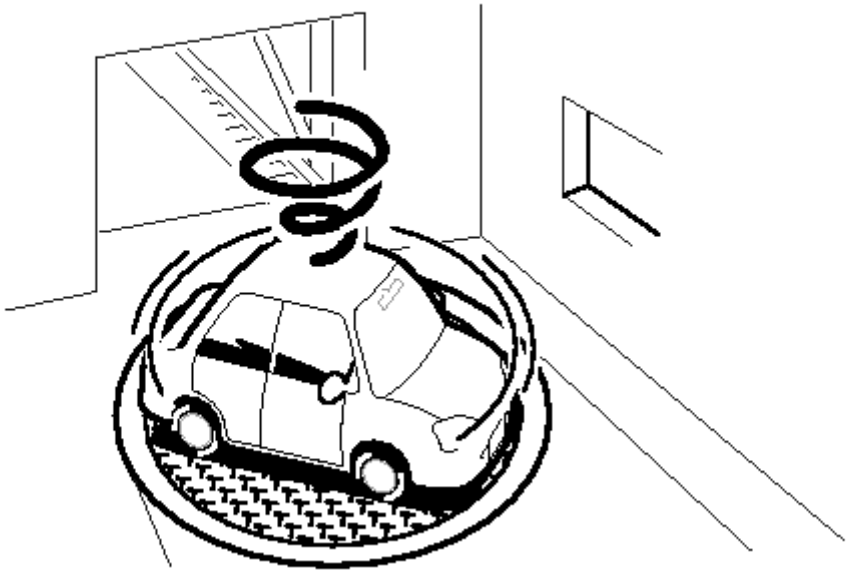


Fig. 28: Checking Vehicle Condition
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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

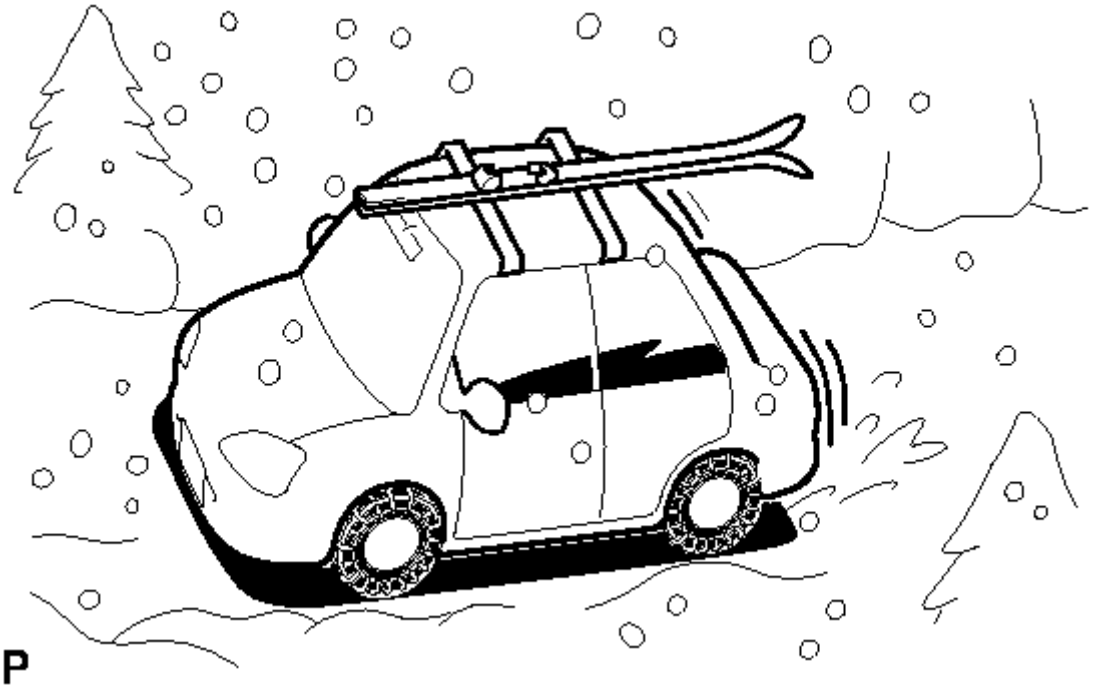
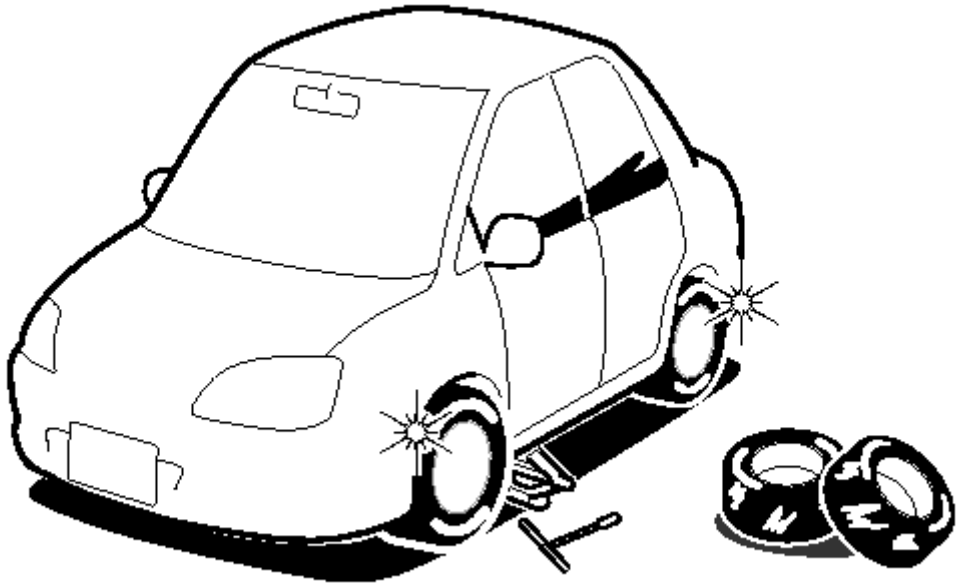


Fig. 29: Identifying Vehicle Position Mark In Correct Position - Runs On Snowy Road
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

10. When the tires are changed, the current vehicle position mark may deviate from the correct position.



P

Fig. 30: Identifying Vehicle Position Mark In Correct Position - Tire Change
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

HINT:

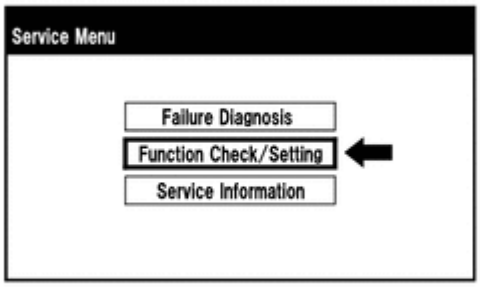
- A change in tire diameter may cause a speed sensor error.
- Performing "tire change" in calibration mode will allow the system to correct the current vehicle position faster.

2. **CHECK PANEL & STEERING SWITCH**

HINT:

- The navigation receiver assembly panel switches and steering switches are checked in the following procedure.
- Illustrations may differ from the actual vehicle screen depending on the device settings and options. Therefore, some detailed areas may not be shown exactly the same as on the actual vehicle screen.

a. Enter diagnostic mode. Refer to **DTC CHECK / CLEAR**.
b. Select "Function Check/Setting" from the "Service Menu" screen.



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Fig. 31: Screen Display - Service Menu
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

c. Select "Panel & Steering Switch" from the "Function Check/Setting I" screen.

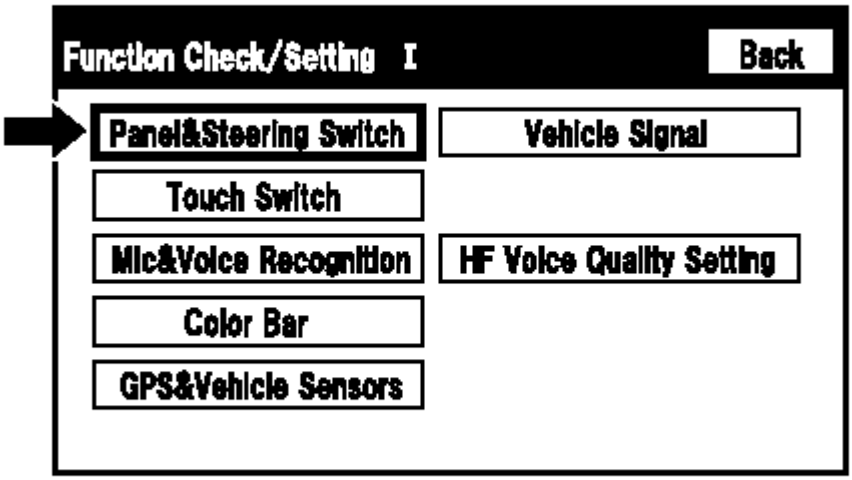
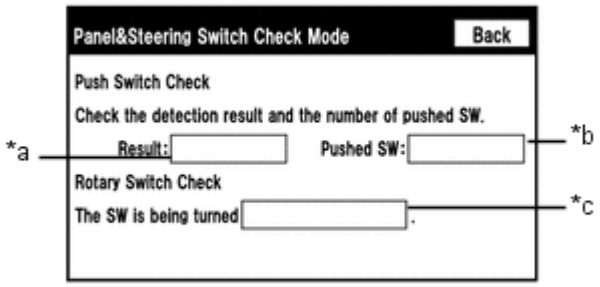


Fig. 32: Screen Display - Function Check/Setting I
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

d. Panel & Steering Switch Check Mode



H

Fig. 33: Screen Display - Panel & Steering Switch Check Mode
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

SCREEN DESCRIPTION

Display	Content
*a: Switch condition	"Pushed" is displayed when any switch is pushed
*b: Number of switches pushed	• Number of switches pushed at once is displayed • If more than 3 switches are pushed at once, "More than 3" is displayed
*c: Rotary switch direction	Direction of rotary switch is displayed

1. Operate each switch and check that the switch conditions are correctly displayed.

NOTE: When the "SETUP" switch is pressed and held for 3 seconds or more, diagnostic mode will be canceled.

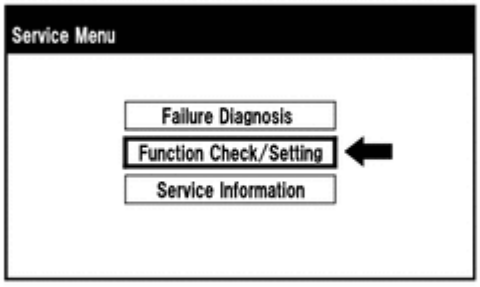
3. **CHECK TOUCH SWITCH**

HINT:

- The touch switches on the screen are checked in the following procedure.
- Illustrations may differ from the actual vehicle screen depending on the device settings and options. Therefore, some detailed areas may not be shown exactly the same as on the actual vehicle screen.

a. Enter diagnostic mode. Refer to **DTC CHECK / CLEAR**.

b. Select "Function Check/Setting" from the "Service Menu" screen.



H

Fig. 34: Screen Display - Service Menu
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

c. Select "Touch Switch" from the "Function Check/Setting I" screen.

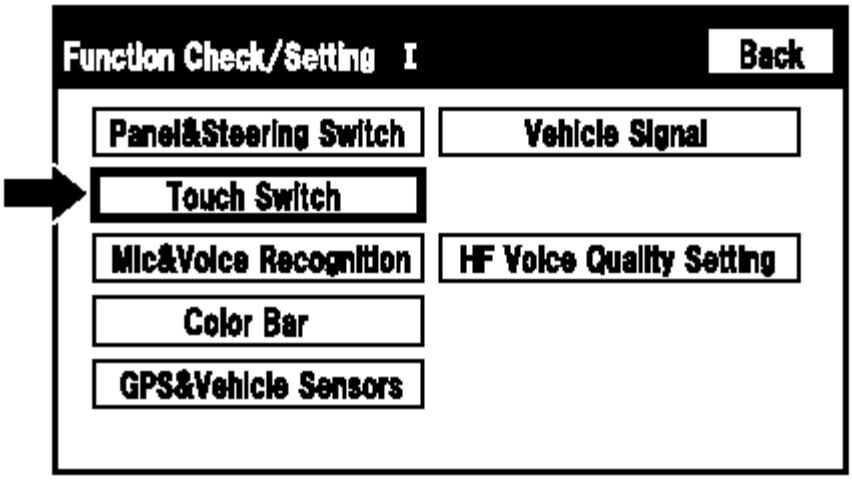
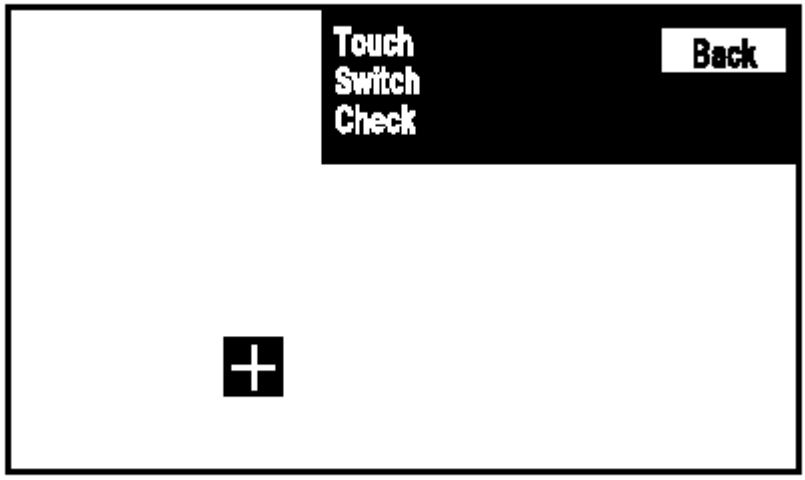


Fig. 35: Screen Display - Function Check/Setting I
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

d. Touch Switch Check

1. Touch the display anywhere in the open area to perform the check when the "Touch Switch Check" screen is displayed.



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Fig. 36: Screen Display - Touch Switch Check
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

HINT:

- A "+" mark is displayed where the display is touched.
- The "+" mark remains on the display even after the finger is removed.

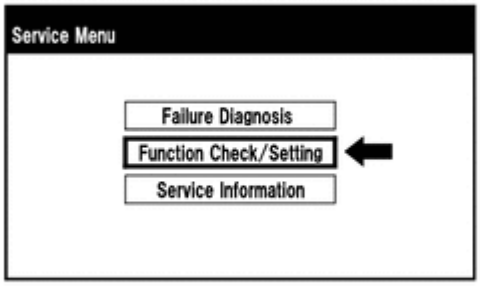
4. **CHECK MIC & VOICE RECOGNITION**

HINT:

- The microphone and microphone input level are checked in the following procedure.
- Illustrations may differ from the actual vehicle screen depending on the device settings and options. Therefore, some detailed areas may not be shown exactly the same as on the actual vehicle screen.

a. Enter diagnostic mode. Refer to **DTC CHECK / CLEAR**.

b. Select "Function Check/Setting" from the "Service Menu" screen.



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Fig. 37: Screen Display - Service Menu
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

c. Select "Mic & Voice Recognition" from the "Function Check/Setting I" screen.

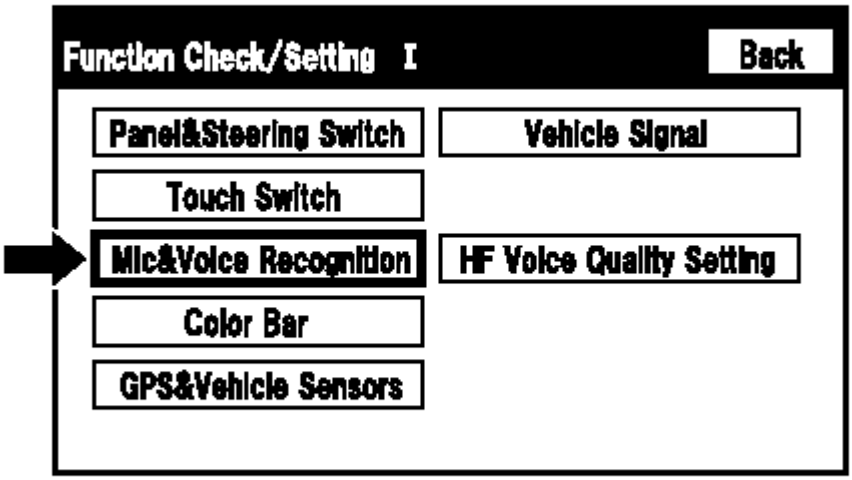


Fig. 38: Screen Display - Function Check/Setting I
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

d. Microphone & Voice Recognition Check

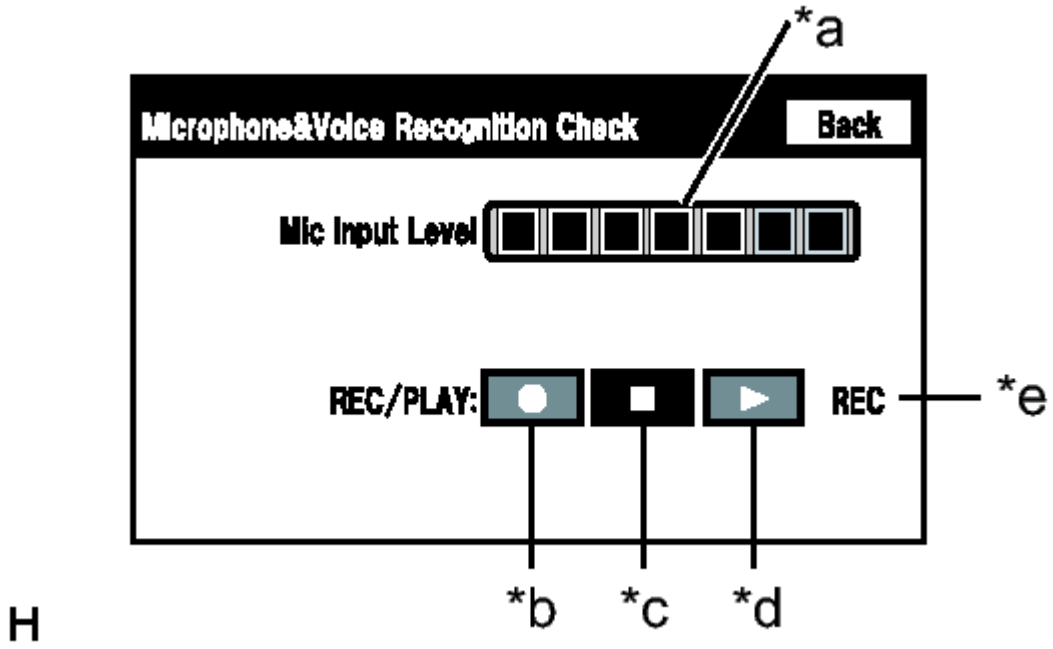


Fig. 39: Identifying Microphone & Voice Recognition Check
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

SCREEN DESCRIPTION

Display	Content
*a: Microphone input level meter	Monitors the microphone input level every 0.1 seconds and displays the results in 8 different levels.
*b: Recording switch	Starts recording.
*c: Stop switch	Stops recording and playing.
*d: Play switch	Plays the recorded voice.
*e:	Comes on

Recording indicator	while recording.

1. When speaking into the microphone, check that the microphone input level meter changes according to the input level.

   HINT:

   The microphone is active at all times when this screen is displayed.

2. Push the recording switch and perform voice recording.

   HINT:

   - Select the recording switch with the blower motor of the air conditioning system stopped. If an outlet of the air conditioning system is facing the microphone, noise may be recorded.
   - While recording or playing, the switches other than the stop switch cannot be pushed.
   - When no recording is present, the play switch cannot be pushed.
   - Recording will stop after 5 seconds or when the stop switch is pushed.

3. Check that the recording indicator remains on while recording and that the recording can be played normally.

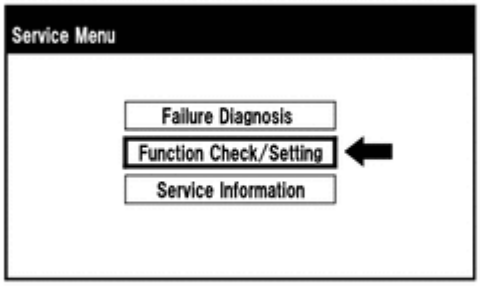
5. **CHECK COLOR BAR**

HINT:

- The display color on the screen is checked in the following procedure.
- Illustrations may differ from the actual vehicle screen depending on the device settings and options. Therefore, some detailed areas may not be shown exactly the same as on the actual vehicle screen.

a. Enter diagnostic mode. Refer to **DTC CHECK / CLEAR**.

b. Select "Function Check/Setting" from the "Service Menu" screen.



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Fig. 40: Screen Display - Service Menu

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

c. Select "Color Bar" from the "Function Check/Setting I" screen.

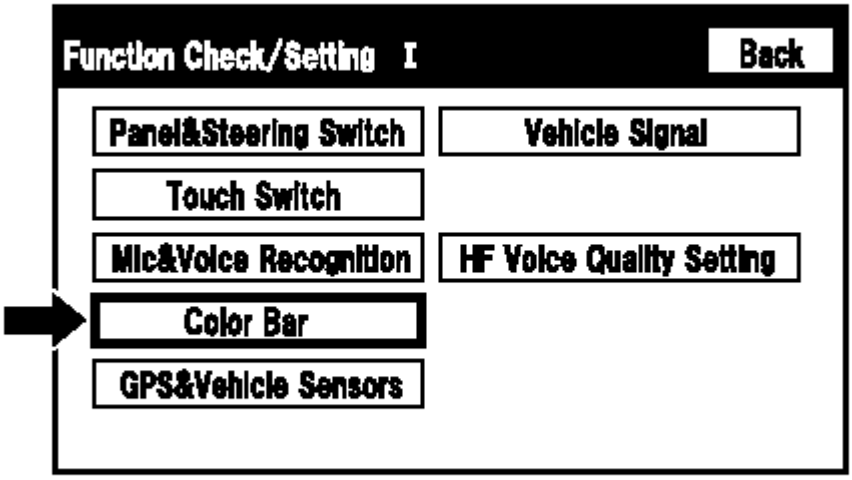
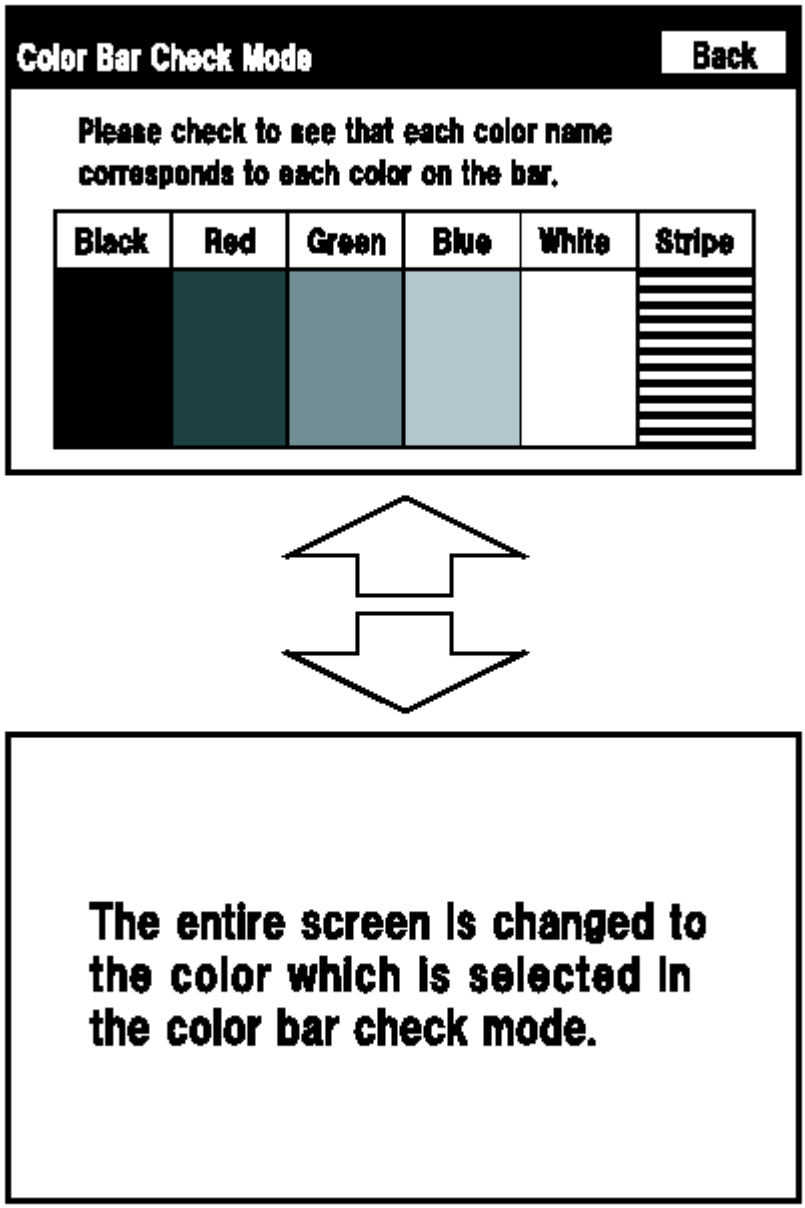


Fig. 41: Screen Display - Function Check/Setting I
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

d. Color Bar Check Mode
    1. Select a color bar from the "Color Bar Check Mode" screen.



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Fig. 42: View Of Color Bar Check Mode Screen
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

2. Check the display color.

HINT:

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

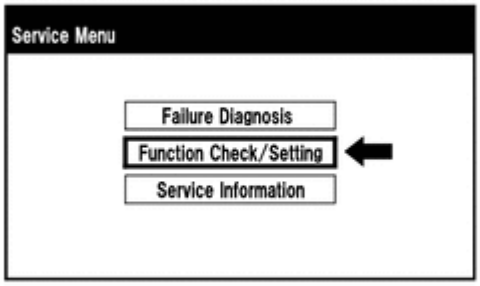
6. **CHECK GPS & VEHICLE SENSORS**

HINT:

- GPS information, vehicle signals and sensor signals are checked in the following procedure.
- Illustrations may differ from the actual vehicle screen depending on the device settings and options. Therefore, some detailed areas may not be shown exactly the same as on the actual vehicle screen.

a. Enter diagnostic mode. Refer to **DTC CHECK / CLEAR**.

b. Select "Function Check/Setting" from the "Service Menu" screen.



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Fig. 43: Screen Display - Service Menu
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

c. Select "GPS & Vehicle Sensors" from the "Function Check/Setting I" screen.

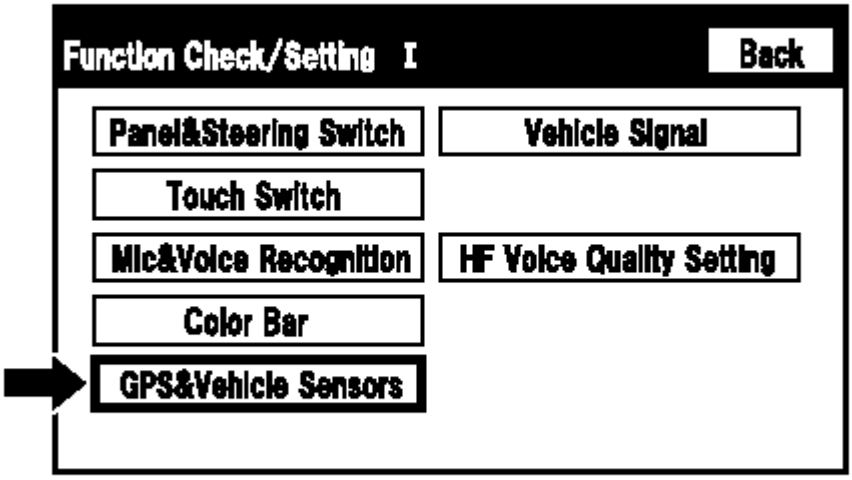
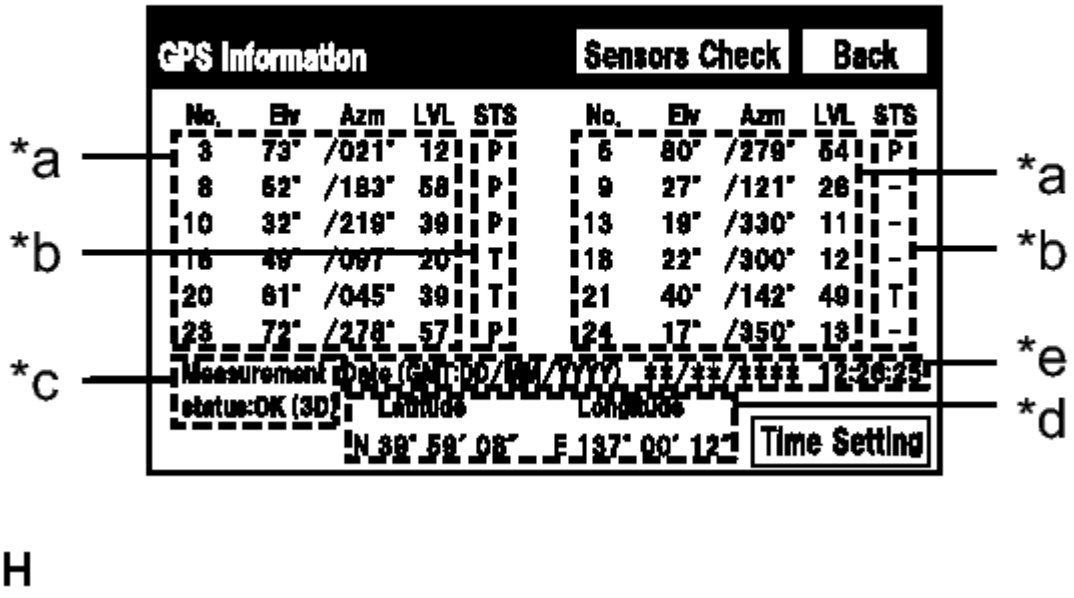


Fig. 44: Screen Display - Function Check/Setting I
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

d. GPS Information



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Fig. 45: Screen Display - GPS Information
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

***A: SATELLITE INFORMATION DESCRIPTION**

Display	Content
No.	Number of the target GPS satellite.
Elv	Elevation angle of the target GPS satellite.
Azm	Direction of the target GPS satellite.
LVL	The GPS signal level.

***B: RECEIVING CONDITION DESCRIPTION**

Display	Content
P	The system is using the GPS signal for location.
T	The system is tracking the GPS signal for location.
U	The system is receiving a GPS signal, but is not using it for location.
	The system

-	cannot receive a GPS signal. (Searching a GPS Signal)

***C: MEASUREMENT STATUS DESCRIPTION**

Display	Content
OK (H3D)	High accuracy 3-dimensional location method is being used.
OK (H2D)	High accuracy 2-dimensional location method is being used.
OK (3D)	3-dimensional location method is being used.
OK (2D)	2-dimensional location method is being used.
NG	Location data cannot be used.
error	Reception error has occurred.
-	Any other state.

***D: POSITION INFORMATION DESCRIPTION**

Display	Content
	Latitude and longitude

Position	information on the current position is displayed.

***E: DATE INFORMATION DESCRIPTION**

Display	Content
Date	The date/time information obtained from GPS signals is displayed in Greenwich Mean Time (GMT).

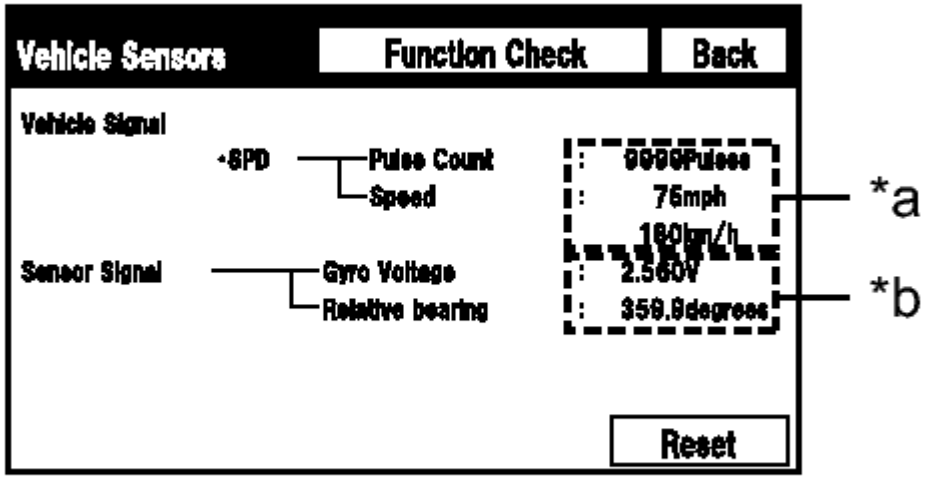
HINT:

- This screen is updated once per second.
- Information from a maximum of 12 satellites is displayed on the screen.

1. When the "GPS Information" screen is displayed, check the GPS conditions.

e. Select "Sensors Check" from the "GPS Information" screen.

f. Vehicle Sensors



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Fig. 46: Screen Display - Vehicle Sensors
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

SCREEN DESCRIPTION

Display	Content
*a: Vehicle signal	Vehicle speed signal condition is displayed.
*b: Sensor signal	Gyro sensor output condition is displayed.

HINT:

This screen is updated once per second.

1. Check all the signals and sensors when vehicle signal information is displayed.

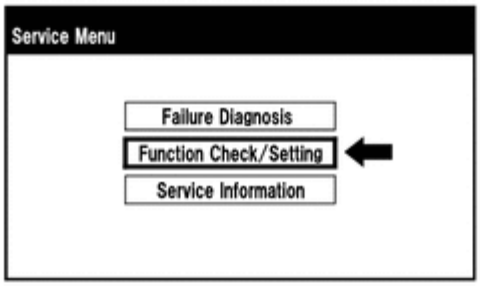
7. **CHECK VEHICLE SIGNAL**

HINT:

- Vehicle signals received by the navigation receiver assembly are checked in the following procedure.
- Illustrations may differ from the actual vehicle screen depending on the device settings and options. Therefore, some detailed areas may not be shown exactly the same as on the actual vehicle screen.

a. Enter diagnostic mode. Refer to **DTC CHECK / CLEAR**.

b. Select "Function Check/Setting" from the "Service Menu" screen.



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Fig. 47: Screen Display - Service Menu
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

c. Select "Vehicle Signal" from the "Function Check/Setting I" screen.

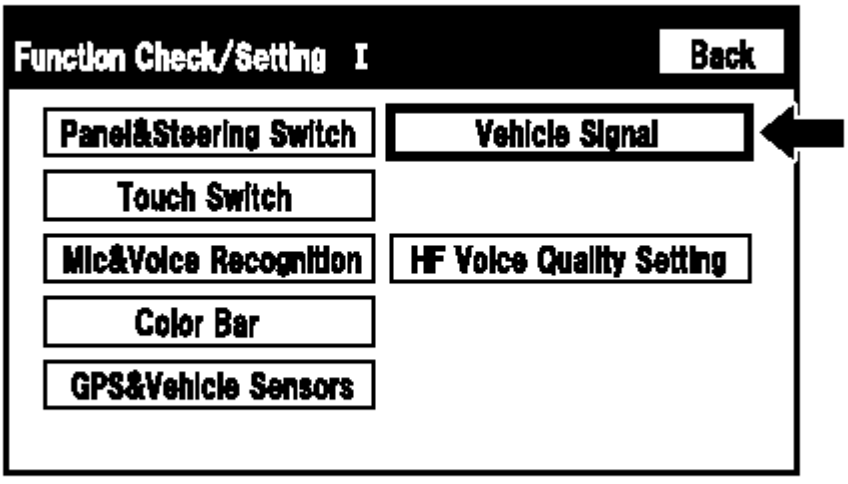


Fig. 48: Screen Display - Function Check/Setting I
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

d. Vehicle Signal Check Mode

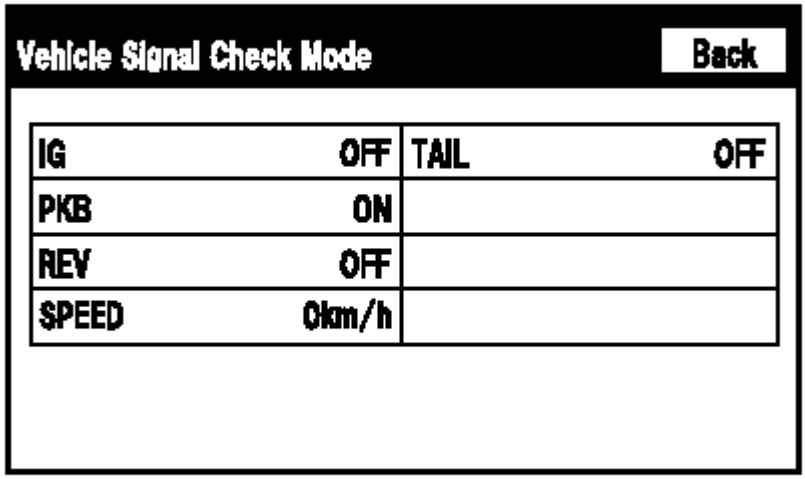


Fig. 49: Screen Display - Vehicle Signal Check Mode
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

SCREEN DESCRIPTION

Display	Content
IG	Ignition switch OFF state is displayed.
PKB	Parking brake ON/OFF state is displayed.
REV	Reverse signal ON/OFF state is displayed.
SPEED	Vehicle speed is displayed in km/h.

TAIL	Tail signal (Light control switch) ON/OFF state is displayed.

HINT:

- Only items sending vehicle signals will be displayed.
- This screen displays vehicle signals input to the navigation receiver assembly.
- This screen is updated once per second when vehicle input signals change.

1. When the "Vehicle Signal Check Mode" screen is displayed, check all the vehicle signal conditions.

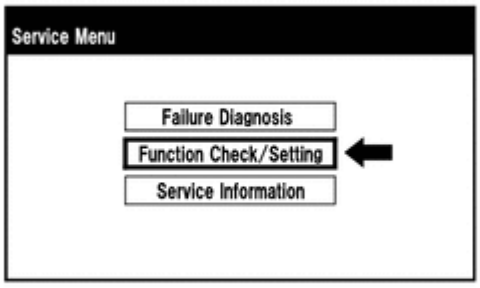
8. **CHECK HANDS-FREE VOICE QUALITY AND VOLUME SETTING**

HINT:

- The hands-free volume of a "Bluetooth" compatible phone can be adjusted using the following procedure.
- Illustrations may differ from the actual vehicle screen depending on the device settings and options. Therefore, some detailed areas may not be shown exactly the same as on the actual vehicle screen.

a. Enter diagnostic mode. Refer to **DTC CHECK / CLEAR**.

b. Select "Function Check/Setting" from the "Service Menu" screen.



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Fig. 50: Screen Display - Service Menu
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

c. Select "HF Voice Quality Setting" from the "Function Check/Setting I" screen.

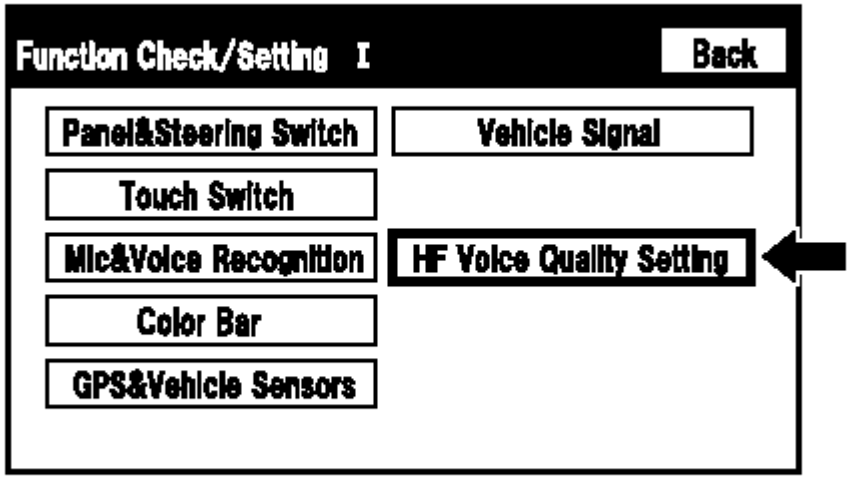
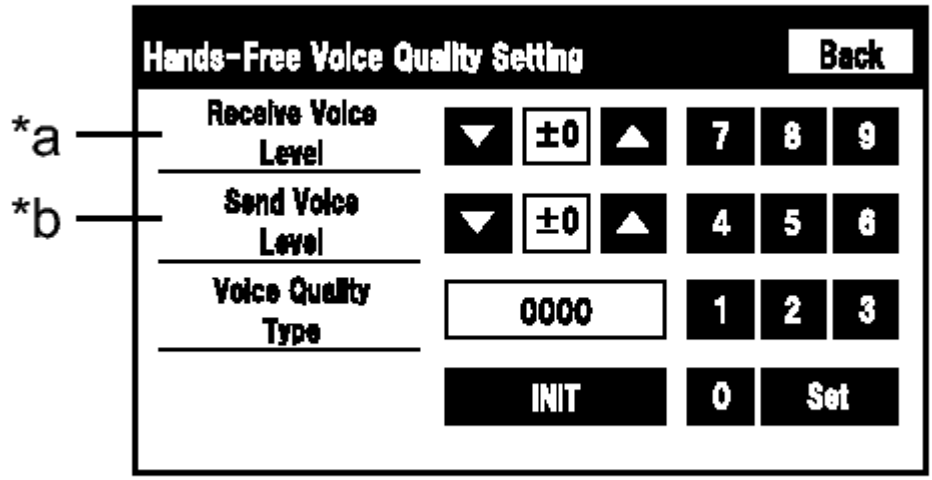


Fig. 51: Screen Display - Function Check/Setting I
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

d. Hands-Free Voice Quality Setting (Receive/Send Voice Level adjustment)



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Fig. 52: Screen Display - Hands-Free Voice Quality Setting
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

SCREEN DESCRIPTION

Display	Content
*a: Receive voice level adjustment	Setting for the voice level received from "Bluetooth" compatible phones.
*b: Send voice level adjustment	Setting for the voice level sent from "Bluetooth" compatible phones.

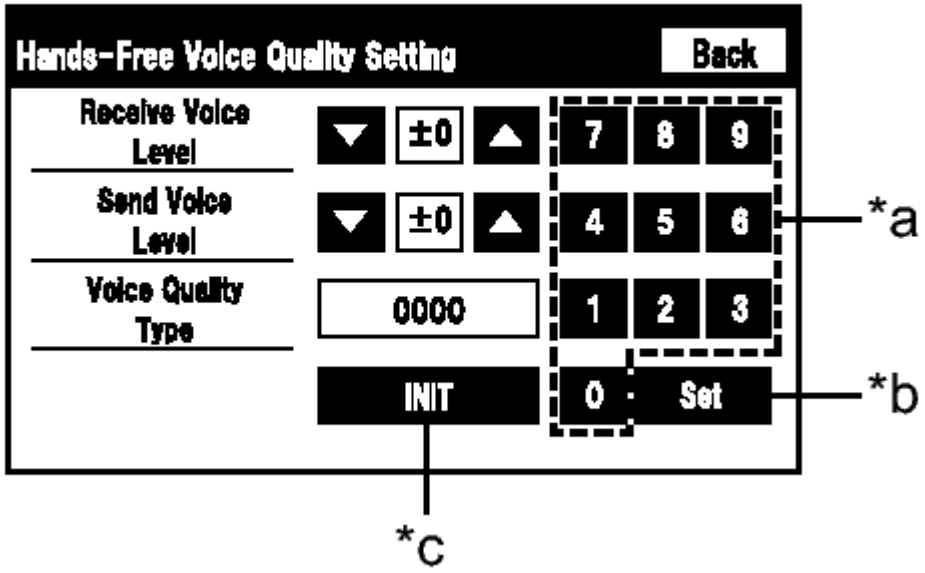
NOTE: **Sound quality may deteriorate when the receive voice or send voice level is changed more than necessary. For this reason, check that the received voice or send voice quality is still acceptable after changing this setting.**

1. If the voice level is low, press the up button, and if the voice level is loud, press the down button.

   HINT:

   - Settings will be applied when the up or down button is selected.
   - The receive voice level adjustment ranges from -5 to +1.
   - The send voice level adjustment ranges from -5 to +4.
   - The initial level is "0".

e. Hands-Free Voice Quality Setting (Voice Quality Type adjustment)



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Fig. 53: Screen Display - Hands-Free Voice Quality Setting
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

SCREEN DESCRIPTION

*a	Numeric keypad
*b	Setting button
*c	Reset button

1. If necessary, refer to the table below to adjust the voice quality type with the numeric keypad.
2. When adjusting the settings, use the number pad on the screen to input the voice quality type according to the table.

SETTINGS

Parameter	Target Phenomenon	Voice Quality Type	Positive Effects of Changing Voice Quality	Negative Effects of Changing Voice Quality
A	The change in background noise the	1000	The change in background noise the	Background noise when not talking

(Noise)	other party hears becomes unpleasant.		other party hears is reduced.	becomes large.
B (Noise)	The volume of the noise the other party hears temporarily becomes large.	2000	The temporary noise is reduced.	The volume of voice may drop temporarily.
C (Echo)	The other party hears weak echoes.	0100	The amount of echo is reduced (low level).	Sound quality of the other party deteriorates (low level).
D (Echo)	The other party hears strong echoes.	0200	The amount of echo is reduced (high level).	Sound quality of the other party deteriorates (high level).
E (Quality)	The other party hears harsh noises.	0010	Sound the other party hears becomes soft.	Sound the other party hears becomes muffled.
F (Quality)	You hear harsh noises.	0020	Sound you hear becomes soft.	Sound you hear becomes muffled.

SETTINGS (WHEN MULTIPLE PHENOMENON OCCURRED)

Parameter	Target Phenomenon	Voice Quality Type	Positive Effects of Changing Voice Quality	Negative Effects of Changing Voice Quality
A+C	The change in background noise the other party hears becomes unpleasant and the other	1100	• The change in background noise the other party hears is reduced. • The amount of	• Background noise when not talking becomes large. • Sound quality of the other

	party hears weak echoes.		echo is reduced (low level).	party deteriorates (low level).
A+D	The change in background noise the other party hears becomes unpleasant and the other party hears strong echoes.	1200	• The change in background noise the other party hears is reduced. • The amount of echo is reduced (high level).	• Background noise when not talking becomes large. • Sound quality of the other party deteriorates (high level).
B+C	The volume of the noise the other party hears temporarily becomes large and the other party hears weak echoes.	2100	• The temporary noise is reduced. • The amount of echo is reduced (low level).	• The volume of voice may drop temporarily. • Sound quality of the other party deteriorates (low level).
B+D	The volume of the noise the other party hears temporarily becomes large and the other party hears strong echoes.	2200	• The temporary noise is reduced. • The amount of echo is reduced (high level).	• The volume of voice may drop temporarily. • Sound quality of the other party deteriorates (high level).
C+E	The other party hears weak echoes and harsh noises.	0110	• The amount of echo is reduced (low level). • Sound the other party hears	• Sound quality of the other party deteriorates (low level). • Sound the other party hears

			becomes soft.	becomes muffled.
C+F	The other party hears weak echoes and you hear harsh noises.	0120	• The amount of echo is reduced (low level). • Sound you hear becomes soft.	• Sound quality of the other party deteriorates (low level). • Sound you hear becomes muffled.

HINT:

- The default value is "0000".
- Settings will be applied when the setting button is selected.
- If voice quality type values that are not in the table are input, the setting will not be applied and a positive effect may not be gained.
- If the quality of phone calls decreases due to the changed settings, return the settings to "0000" by pressing the "INIT" switch.

PROBLEM SYMPTOMS TABLE

PROBLEM SYMPTOMS TABLE

HINT:

- Use the table below to help determine the cause of problem symptoms. If multiple suspected areas are listed, the potential causes of the symptoms are listed in order of probability in the "Suspected Area" column of the table. Check each symptom by checking the suspected areas in the order they are listed. Replace parts as necessary.
- Inspect the fuses and relays related to this system before inspecting the suspected areas below.

DISPLAY FUNCTION

Symptom	Suspected Area	See
Pressing power switch does not turn on system.	Proceed to "Navigation Receiver Assembly Power Source Circuit"	Refer to **Navigation Receiver Assembly Power Source Circuit**
	Navigation receiver assembly	Refer to **REMOVAL**
Black screen. (No image appears on navigation/audio screen.)	Proceed to "Black Screen"	Refer to **Black Screen**
	Navigation receiver assembly	Refer to **REMOVAL**
	Proceed to "Display does not Dim when Light Control Switch is Turned ON"	Refer to **Display does not Dim when Light Control Switch is Turned ON**

Display does not dim (does not change to night screen) with tail switch on.	Proceed to "Illumination Circuit"	Refer to **Illumination Circuit**
	Navigation receiver assembly	Refer to **REMOVAL**
Power does not turn off. (Screen remains on.)	Proceed to "Navigation Receiver Assembly Power Source Circuit"	Refer to **Navigation Receiver Assembly Power Source Circuit**
	Navigation receiver assembly	Refer to **REMOVAL**
Screen is distorted.	Proceed to "Navigation Receiver Assembly Power Source Circuit"	Refer to **Navigation Receiver Assembly Power Source Circuit**
	Navigation receiver assembly	Refer to **REMOVAL**
Screen flicker or color distortion.	Proceed to "Screen Flicker or Color Distortion"	Refer to **Screen Flicker or Color Distortion**
	Proceed to "Navigation Receiver Assembly Power Source Circuit"	Refer to **Navigation Receiver Assembly Power Source Circuit**
	Navigation receiver assembly	Refer to **REMOVAL**

PANEL SWITCH AND TOUCH SWITCH FUNCTION

Symptom	Suspected Area	See
Illumination for panel switches does not come on with tail switch on.	Proceed to "Illumination for Panel Switch does not Come on with Tail Switch ON"	Refer to **Illumination for Panel Switch does not Come on with Tail Switch ON**
	Proceed to "Illumination Circuit"	Refer to **Illumination Circuit**
	Navigation receiver assembly	Refer to **REMOVAL**
Panel switches do not function.	Proceed to "Panel Switches do not Function"	Refer to **Panel Switches do not Function**
	Proceed to "Navigation Receiver Assembly Power Source Circuit"	Refer to **Navigation Receiver Assembly Power Source Circuit**
	Navigation receiver assembly	Refer to **REMOVAL**
Touch panel switch does not function.	Proceed to "Touch Panel Switch does not Function"	Refer to **Touch Panel Switch does not Function**
	Proceed to "Navigation Receiver Assembly Power Source Circuit"	Refer to **Navigation Receiver Assembly Power Source Circuit**
	Navigation receiver assembly	Refer to **REMOVAL**
Navigation function switches can be operated while vehicle is driving.	Proceed to "Parking Brake Switch Circuit"	Refer to **Parking Brake Switch Circuit**
	Navigation receiver assembly	Refer to **REMOVAL**

STEERING PAD SWITCH FUNCTION

Symptom	Suspected Area	See
System cannot be operated by	Proceed to "Panel Switches do not Function"	Refer to **Panel Switches do not Function**
	Proceed to "Steering Pad Switch	Refer to **Steering Pad Switch**

steering pad switch.	Circuit"	**Circuit**
	Navigation receiver assembly	Refer to **REMOVAL**
Illumination for steering pad switch does not come on with tail switch on.	Proceed to "Illumination Circuit"	Refer to **Illumination Circuit**
	Navigation receiver assembly	Refer to **REMOVAL**

NAVIGATION FUNCTION

Symptom	Suspected Area	See
SD card cannot be inserted.	Check the SD card	Refer to **PRECAUTION**
	Check the SD card slot	-
	Navigation receiver assembly	Refer to **REMOVAL**
SD card cannot be ejected.	Check the SD card slot	-
	Navigation receiver assembly	Refer to **REMOVAL**
GPS mark is not displayed.	Proceed to "GPS Mark is not Displayed"	Refer to **GPS Mark is not Displayed**
	Antenna cord sub-assembly (navigation antenna)	Refer to **REMOVAL**
	Navigation receiver assembly	Refer to **REMOVAL**
Date and time on navigation screen is different from actual date and time.	Proceed to "GPS Mark is not Displayed"	Refer to **GPS Mark is not Displayed**
	Antenna cord sub-assembly (navigation antenna)	Refer to **REMOVAL**
	Navigation receiver assembly	Refer to **REMOVAL**
Vehicle position mark deviates from correct position and does not return to correct position.	Proceed to "GPS Mark is not Displayed"	Refer to **GPS Mark is not Displayed**
	Antenna cord sub-assembly (navigation antenna)	Refer to **REMOVAL**
	Navigation receiver assembly	Refer to **REMOVAL**
Cursor or map rotates when vehicle is stopped.	Proceed to "Cursor or Map Rotates when Vehicle Stopped"	Refer to **Cursor or Map Rotates when Vehicle Stopped**
	Navigation receiver assembly	Refer to **REMOVAL**
Vehicle position mark is not updated.	Proceed to "Vehicle Position Mark is not Updated"	Refer to **Vehicle Position Mark is not Updated**
	SD card (map data)	-
	Navigation receiver assembly	Refer to **REMOVAL**
Current position display does not appear.	Proceed to "Current Position Display does not Appear"	Refer to **Current Position Display does not Appear**
	SD card (map data)	-
	Antenna cord sub-assembly (navigation antenna)	Refer to **REMOVAL**
	Navigation receiver assembly	Refer to **REMOVAL**
	Proceed to "Voice Guidance	Refer to **Voice Guidance does not**

Voice guidance does not function.	does not Function"	**Function**
	SD card (map data)	-
	Navigation receiver assembly	Refer to **REMOVAL**
Map display is incomplete.	Proceed to "Map Display Incomplete"	Refer to **Map Display Incomplete**
	SD card (map data)	-
	Navigation receiver assembly	Refer to **REMOVAL**
Route cannot be calculated.	Proceed to "Route cannot be Calculated"	Refer to **Route cannot be Calculated**
	SD card (map data)	-
	Navigation receiver assembly	Refer to **REMOVAL**
Speed signal does not change in vehicle signal check mode.	Proceed to "Vehicle Speed Signal Circuit"	Refer to **Vehicle Speed Signal Circuit**
	Navigation receiver assembly	Refer to **REMOVAL**
Reverse signal does not change in vehicle signal check mode.	Proceed to "Reverse Signal Circuit"	Refer to **Reverse Signal Circuit**
	Navigation receiver assembly	Refer to **REMOVAL**
Parking brake switch signal does not change in vehicle signal check mode.	Proceed to "Parking Brake Switch Circuit"	Refer to **Parking Brake Switch Circuit**
	Navigation receiver assembly	Refer to **REMOVAL**

GENERAL AUDIO FUNCTION

Symptom	Suspected Area	See
No sound can be heard from speakers.	Proceed to "No Sound can be Heard from Speakers"	Refer to **No Sound can be Heard from Speakers**
	Proceed to "Speaker circuit"	Refer to **Speaker Circuit**
	Navigation receiver assembly	Refer to **REMOVAL**
Abnormal noise occurs.	Proceed to "Noise Occurs"	Refer to **Noise Occurs**
	Navigation receiver assembly	Refer to **REMOVAL**
Sound quality is bad in all modes. (Volume is too low.)	Check that the ASL function is off	-
	Proceed to "Poor Sound Quality in All Modes (Low Volume)"	Refer to **Poor Sound Quality in All Modes (Low Volume)**
	Proceed to "Speaker circuit"	Refer to **Speaker Circuit**
	Navigation receiver assembly	Refer to **REMOVAL**
RSE sound cannot be heard or sound quality is bad.*1	Proceed to "Sound Signal Circuit between Navigation Receiver Assembly and Television Display Assembly"	Refer to **Sound Signal Circuit between Navigation Receiver Assembly and Television Display Assembly**
	Proceed to "Mute Signal Circuit between Navigation Receiver Assembly and Television Display Assembly"	Refer to **Mute Signal Circuit between Navigation Receiver Assembly and Television Display Assembly**

	Navigation receiver assembly	Refer to **REMOVAL**
ASL does not function.	Check that the ASL function is on	-
	Proceed to "Vehicle Speed Signal Circuit"	Refer to **Vehicle Speed Signal Circuit**
	Navigation receiver assembly	Refer to **REMOVAL**

*1: w/ Rear Seat Entertainment System

FM OR AM RADIO FUNCTION

Symptom	Suspected Area	See
Radio broadcast cannot be received or poor reception.	Proceed to "Radio Broadcast cannot be Received or Poor Reception"	Refer to **Radio Broadcast cannot be Received or Poor Reception**
Radio broadcast can be received but radio station cannot be displayed. (Some radio stations do not provide their name information.)	Navigation receiver assembly	Refer to **REMOVAL**
Only "HD Radio" stations cannot be heard or selected, or their analog or digital sound cannot be changed.	Check the "HD Radio" settings	-
	Navigation receiver assembly	Refer to **REMOVAL**
"iPod" tagging function cannot be used.	Check if a message indicating that the capacity for tag information is full is displayed	-
	Proceed to "USB Audio System Recognition/Play Error"	Refer to **USB Audio System Recognition/Play Error**
	No. 1 stereo jack adapter assembly	Refer to **REMOVAL**
	Navigation receiver assembly	Refer to **REMOVAL**

CD PLAYER FUNCTION

Symptom	Suspected Area	See
CD cannot be inserted/played or CD is ejected right after insertion.	Proceed to "CD cannot be Inserted or is Ejected Right After Insertion"	Refer to **CD cannot be Inserted or is Ejected Right After Insertion**
CD cannot be ejected.	Proceed to "CD cannot be Ejected"	Refer to **CD cannot be Ejected**
CD sound skips.	Proceed to "CD Sound Skips"	Refer to **CD Sound Skips**
Sound quality is bad only when CD is played. (Volume is too low.)	Proceed to "Sound Quality is Bad Only when CD is Played (Volume is Too Low)"	Refer to **Sound Quality is Bad Only when CD is Played (Volume is Too Low)**

AUX FUNCTION

Symptom	Suspected Area	See
External device sound cannot be heard or sound quality is bad. (Stereo jack is used.)	Proceed to "Sound Signal Circuit between Navigation Receiver Assembly and Stereo Jack Adapter"	Refer to **Sound Signal Circuit between Navigation Receiver Assembly and Stereo Jack Adapter**
	No. 1 stereo jack adapter assembly	Refer to **REMOVAL**
	Navigation receiver assembly	Refer to **REMOVAL**
"AUX" is not displayed on system check mode screen.	Proceed to "Sound Signal Circuit between Navigation Receiver Assembly and Stereo Jack Adapter"	Refer to **Sound Signal Circuit between Navigation Receiver Assembly and Stereo Jack Adapter**
	No. 1 stereo jack adapter assembly	Refer to **REMOVAL**
	Navigation receiver assembly	Refer to **REMOVAL**

VOICE RECOGNITION FUNCTION

Symptom	Suspected Area	See
Voice menu screen is not displayed. (Voice recognition function does not turn on.)	Check if the voice recognition prompts function is "On"	-
	Proceed to "Panel Switches do not Function"	Refer to **Panel Switches do not Function**
	Proceed to "Steering Pad Switch Circuit"	Refer to **Steering Pad Switch Circuit**
	Navigation receiver assembly	Refer to **REMOVAL**
When voice recognition switch is pressed, a short beep is emitted but voice cannot be recognized properly.	Proceed to "Voice is not Recognized"	Refer to **Voice is not Recognized**
	Proceed to "Microphone Circuit between Microphone and Navigation Receiver Assembly"	Refer to **Microphone Circuit between Microphone and Navigation Receiver Assembly**
	Navigation receiver assembly	Refer to **REMOVAL**

"BLUETOOTH" HANDS-FREE FUNCTION

Symptom	Suspected Area	See
Bluetooth is inoperative.	Proceed to "Microphone Circuit between Microphone and Navigation Receiver Assembly"	Refer to **Microphone Circuit between Microphone and Navigation Receiver Assembly**
	Navigation receiver assembly	Refer to **REMOVAL**
Cellular phone registration failure, phone directory transfer failure.	Proceed to "Cellular Phone Registration Failure, Phone Directory Transfer Failure"	Refer to **Cellular Phone Registration Failure, Phone Directory Transfer Failure**
	Proceed to "Cellular Phone cannot Send/Receive"	Refer to **Cellular Phone cannot Send/Receive**

Cellular phone cannot send/receive.	Proceed to "Steering Pad Switch Circuit"	Refer to **Steering Pad Switch Circuit**
	Navigation receiver assembly	Refer to **REMOVAL**
Cellular phone cannot make outgoing/incoming calls or call in a certain place.	Proceed to "Cellular Phone cannot Send/Receive"	Refer to **Cellular Phone cannot Send/Receive**
	Navigation receiver assembly	Refer to **REMOVAL**
The other caller's voice cannot be heard, is too quiet, or distorted.	Proceed to "The Other Caller's Voice cannot be Heard, is too Quiet, or Distorted"	Refer to **The Other Caller's Voice cannot be Heard, is too Quiet, or Distorted**
	Navigation receiver assembly	Refer to **REMOVAL**
The other caller cannot hear your voice, or your voice is too quiet or distorted.	Proceed to "The Other Caller cannot Hear Your Voice, or Your Voice is too Quiet or Distorted"	Refer to **The Other Caller cannot Hear Your Voice, or Your Voice is too Quiet or Distorted**
	Proceed to "Microphone Circuit between Microphone and Navigation Receiver Assembly"	Refer to **Microphone Circuit between Microphone and Navigation Receiver Assembly**
	Roof console box assembly (telephone microphone assembly)	Refer to **REMOVAL**
	Navigation receiver assembly	Refer to **REMOVAL**

"BLUETOOTH" AUDIO FUNCTION

Symptom	Suspected Area	See
Portable player cannot be registered.	Proceed to "Portable Player cannot be Registered"	Refer to **Portable Player cannot be Registered**
	Navigation receiver assembly	Refer to **REMOVAL**
Portable player cannot be connected manually/automatically.	Proceed to "Portable Player cannot be Registered"	Refer to **Portable Player cannot be Registered**
	Proceed to "Portable Player cannot be Connected Manually/Automatically"	Refer to **Portable Player cannot be Connected Manually/Automatically**
	Navigation receiver assembly	Refer to **REMOVAL**
Cellular phone with portable audio function cannot be recognized as "Bluetooth" audio device even when connected using "Bluetooth".	Proceed to "Portable Player cannot be Registered"	Refer to **Portable Player cannot be Registered**
	Proceed to "Portable Player cannot be Connected Manually/Automatically"	Refer to **Portable Player cannot be Connected Manually/Automatically**
	Navigation receiver assembly	Refer to **REMOVAL**
Sound of portable player cannot be heard from speakers, or sound is low.	Proceed to "Sound of Portable Player cannot be Heard from Speakers or Sound is Low"	Refer to **Sound of Portable Player cannot be Heard from Speakers or Sound is Low**
	Navigation receiver assembly	Refer to **REMOVAL**

Portable player does not play even after "Bluetooth" audio mode is selected.	Proceed to "Does not Play even after Bluetooth Audio Mode is Selected"	Refer to **Does not Play even after Bluetooth Audio Mode is Selected**
	Navigation receiver assembly	Refer to **REMOVAL**
Portable player does not play.	Proceed to "Does not Play even after Bluetooth Audio Mode is Selected"	Refer to **Does not Play even after Bluetooth Audio Mode is Selected**
	Navigation receiver assembly	Refer to **REMOVAL**
Track information such as track number, track name, elapsed play time and playlist is not displayed.	Proceed to "Portable Player cannot be Operated Using In-vehicle Device or Track Information is not Displayed on In-vehicle Device"	Refer to **Portable Player cannot be Operated Using In-vehicle Device or Track Information is not Displayed on In-vehicle Device**
	Navigation receiver assembly	Refer to **REMOVAL**
Operation switches for portable player such as play, pause, repeat, random and scan are not displayed.	Proceed to "Portable Player cannot be Operated Using In-vehicle Device or Track Information is not Displayed on In-vehicle Device"	Refer to **Portable Player cannot be Operated Using In-vehicle Device or Track Information is not Displayed on In-vehicle Device**
	Navigation receiver assembly	Refer to **REMOVAL**
Battery condition of portable player is not displayed.	Proceed to "Portable Player cannot be Operated Using In-vehicle Device or Track Information is not Displayed on In-vehicle Device"	Refer to **Portable Player cannot be Operated Using In-vehicle Device or Track Information is not Displayed on In-vehicle Device**
	Navigation receiver assembly	Refer to **REMOVAL**
"Bluetooth" signal condition is not displayed.	Proceed to "Portable Player cannot be Operated Using In-vehicle Device or Track Information is not Displayed on In-vehicle Device"	Refer to **Portable Player cannot be Operated Using In-vehicle Device or Track Information is not Displayed on In-vehicle Device**
	Navigation receiver assembly	Refer to **REMOVAL**
Portable player cannot pause, select file, fast forward, fast rewind, play at random or scan.	Proceed to "Portable Player cannot be Operated Using In-vehicle Device or Track Information is not Displayed on In-vehicle Device"	Refer to **Portable Player cannot be Operated Using In-vehicle Device or Track Information is not Displayed on In-vehicle Device**
	Navigation receiver assembly	Refer to **REMOVAL**
Noise occurs or sound skips when portable player plays.	Proceed to "Noise Occurs or Sound Skips when Portable Player Plays"	Refer to **Noise Occurs or Sound Skips when Portable Player Plays**
	Navigation receiver assembly	Refer to **REMOVAL**
Registered device cannot be deleted.	Proceed to "Registered Device cannot be Deleted"	Refer to **Registered Device cannot be Deleted**
	Navigation receiver assembly	Refer to **REMOVAL**

USB AUDIO SYSTEM FUNCTION

Symptom	Suspected Area	See
USB audio system sound cannot be heard or sound quality is bad. (USB connector is used.)	Proceed to "Data Signal Circuit between Navigation Receiver and Stereo Jack Adapter"	Refer to **Data Signal Circuit between Navigation Receiver Assembly and Stereo Jack Adapter**
	No. 1 stereo jack adapter assembly	Refer to **REMOVAL**
	Navigation receiver assembly	Refer to **REMOVAL**
USB device or "iPod" is not recognized.	Proceed to "USB Audio System Recognition/Play Error"	Refer to **USB Audio System Recognition/Play Error**
	Proceed to "Data Signal Circuit between Navigation Receiver and Stereo Jack Adapter"	Refer to **Data Signal Circuit between Navigation Receiver Assembly and Stereo Jack Adapter**
	No. 1 stereo jack adapter assembly	Refer to **REMOVAL**
	Navigation receiver assembly	Refer to **REMOVAL**
Track information such as track, artist and album names are not displayed.	Proceed to "USB Audio System Recognition/Play Error"	Refer to **USB Audio System Recognition/Play Error**
	Proceed to "Data Signal Circuit between Navigation Receiver and Stereo Jack Adapter"	Refer to **Data Signal Circuit between Navigation Receiver Assembly and Stereo Jack Adapter**
	No. 1 stereo jack adapter assembly	Refer to **REMOVAL**
	Navigation receiver assembly	Refer to **REMOVAL**
USB device or "iPod" is recognized but cannot play nor play in a sorted order.	Proceed to "USB Audio System Recognition/Play Error"	Refer to **USB Audio System Recognition/Play Error**
	Proceed to "Data Signal Circuit between Navigation Receiver and Stereo Jack Adapter"	Refer to **Data Signal Circuit between Navigation Receiver Assembly and Stereo Jack Adapter**
	No. 1 stereo jack adapter assembly	Refer to **REMOVAL**
	Navigation receiver assembly	Refer to **REMOVAL**
Album cover art cannot be displayed.	Check that Display Cover Art on the "iPod" Settings screen is set to on	-
	Check that a JPEG file is used for the cover art	-
"iPod" battery cannot be charged.	Proceed to "USB Audio System Recognition/Play Error"	Refer to **USB Audio System Recognition/Play Error**
	No. 1 stereo jack adapter assembly	Refer to **REMOVAL**
	Navigation receiver assembly	Refer to **REMOVAL**

ENTUNE SYSTEM FUNCTION

Symptom	Suspected Area	See
	If an error message is displayed, refer to the Owner's Manual	-
	Access Entune service website and check if the cellular phone is compatible with the service	-

Entune system function error.	Open the cellular phone application again	-
	Restart the cellular phone	-
	Contact TOYOTA Entune support center and follow the instructions	-
	Navigation receiver assembly	Refer to **REMOVAL**
Software keyboard cannot be used on Entune screen.	Access Entune service website and check if the cellular phone is compatible with the service	-
	Open the cellular phone application again	-
	Restart the cellular phone	-
	Contact TOYOTA Entune support center and follow the instructions	-
	Navigation receiver assembly	Refer to **REMOVAL**
Center voice recognition is not possible. (Voice recognition on navigation system is normal.)	Access Entune service website and check if the cellular phone is compatible with the service	-
	Open the cellular phone application again	-
	Restart the cellular phone	-
	Check if application can be used on the cellular phone	-
	Contact TOYOTA Entune support center and follow the instructions	-
	Navigation receiver assembly	Refer to **REMOVAL**
Call cannot be made via Entune screen. (Bluetooth hands-free function is normal.)	Access Entune service website and check if the cellular phone is compatible with the service	-
	Open the cellular phone application again	-
	Restart the cellular phone	-
	Contact TOYOTA Entune support center and follow the instructions	-
	Navigation receiver assembly	Refer to **REMOVAL**
Destination cannot be set via Entune screen. (Navigation function is normal.)	Contact TOYOTA Entune support center and follow the instructions	-
	Open the cellular phone application again	-

	Restart the cellular phone	-
	Navigation receiver assembly	Refer to **REMOVAL**
Sound of Entune system skips or cannot be heard. (Sound from other sources is normal.)	Access Entune service website and check if the cellular phone is compatible with the service	-
	Open the cellular phone application again	-
	Restart the cellular phone	-
	Check if application can be used on the cellular phone	-
	Contact TOYOTA Entune support center and follow the instructions	-
	Navigation receiver assembly	Refer to **REMOVAL**

TERMINALS OF ECU

TERMINALS OF ECU

1. **NAVIGATION RECEIVER ASSEMBLY**

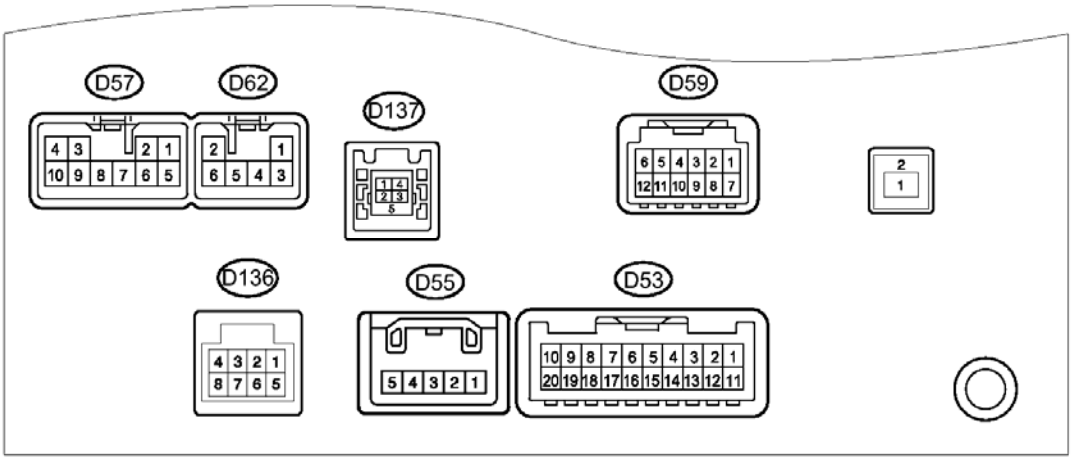


Fig. 54: Navigation Receiver Assembly Connector Terminal Identification
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

Terminal No. (Symbol)	Wiring Color	Terminal Description	Condition	Specified Condition
D57-1 (FR+) -		Sound signal	Audio system	A waveform synchronized

D57-7 (GND)	LG - BR	(Front right)	playing	with sounds is output
D57-2 (FL+) - D57-7 (GND)	P - BR	Sound signal (Front left)	Audio system playing	A waveform synchronized with sounds is output
D57-3 (ACC) - D57-7 (GND)	GR - BR	Power source (ACC)	Ignition switch off	Below 1 V
			Ignition switch ACC	11 to 14 V
D57-4 (B) - D57-7 (GND)	SB - BR	Power source (+B)	Always	11 to 14 V
D57-5 (FR-) - D57-7 (GND)	L - BR	Sound signal (Front right)	Audio system playing	A waveform synchronized with sounds is output
D57-6 (FL-) - D57-7 (GND)	V - BR	Sound signal (Front left)	Audio system playing	A waveform synchronized with sounds is output
D57-7 (GND) - Body ground	BR - Body ground	Ground	Always	Below 1 V
D57-10 (ILL+) - D57-7 (GND)	G - BR	Illumination signal	Light control switch off	Below 1 V
			Light control switch TAIL or HEAD	11 to 14 V
D62-1 (RR+) - D57-7 (GND)	R - BR	Sound signal (Rear right)	Audio system playing	A waveform synchronized with sounds is output
D62-2 (RL+) - D57-7 (GND)	B - BR	Sound signal (Rear left)	Audio system playing	A waveform synchronized with sounds is output
D62-3 (RR-) - D57-7 (GND)	W - BR	Sound signal (Rear right)	Audio system playing	A waveform synchronized with sounds is output
D62-5 (ILL-) -	GR -	Illumination	Light control switch off	Below 1 V
			Light control	

D57-7 (GND)	BR	signal	switch TAIL or HEAD	11 to 14 V
D62-6 (RL-) - D57-7 (GND)	Y - BR	Sound signal (Rear left)	Audio system playing	A waveform synchronized with sounds is output
D55-1 (PKB) - D57-7 (GND)	R - BR	Parking brake signal	See "Vehicle Signal Check Mode" in Operation Check. Refer to **OPERATION CHECK**	-
D55-3 (SPD) - D57-7 (GND)	LG - BR	Vehicle speed signal	See "Vehicle Signal Check Mode" in Operation Check. Refer to **OPERATION CHECK**	-
D55-5 (REV) - D57-7 (GND)	B - BR	Reverse signal	See "Vehicle Signal Check Mode" in Operation Check. Refer to **OPERATION CHECK**	-
D53-6 (SWG) - Body ground	SB - Body ground	Steering pad switch signal	Always	Below 1 V
D53-7 (SW1) - D53-6 (SWG)	B - SB	Steering pad switch signal	No switch pushed	2.16 to 2.81 V
			Seek+ switch pushed	0.00 to 0.37 V
			Seek- switch pushed	0.44 to 0.68 V
			Volume+ switch pushed	0.98 to 1.38 V
			Volume- switch pushed	1.57 to 2.09 V
			No switch is pushed	2.16 to 2.81 V

D53-8 (SW2) - D53-6 (SWG)	LG - SB	Steering pad switch signal	MODE switch pushed	0.00 to 0.37 V
			On hook switch pushed	0.44 to 0.68 V
			Off hook switch pushed	0.98 to 1.38 V
			Voice switch pushed	1.57 to 2.09 V
D53-11 (V+) - D53-12 (V-)	B - Shielded	Television camera image signal	Ignition switch ON, Shift lever in R Camera lens not covered, displaying an image	Pulse generation (Refer to **Fig. 55**)
			Ignition switch ON, Shift lever in R Camera lens covered, blacking out screen	Pulse generation (Refer to **Fig. 55**)
D53-12 (V-) - D57-7 (GND)	W - BR	Television camera signal ground	Always	Below 1 V
D53-13 (CA+) - D57-7 (GND)	R - BR	Television camera power supply	Ignition switch ON, Shift lever in R	5.5 to 7.05 V
D53-14 (CGND) - D57-7 (GND)	Shielded - BR	Shielded ground	Always	Below 1 V
D53-15 (ARI) - D57-7 (GND)	R - BR	Sound signal (right)	External device playing (When stereo jack used)	A waveform synchronized with sounds is output
D53-16 (ASGN) - D57-7 (GND)	B - BR	Ground	Always	Below 1 V
D53-17 (ALI) -	W - BR	Sound signal	External device playing	A waveform synchronized

D57-7 (GND)		(left)	(When stereo jack used)	with sounds is output
D53-18 (AGND) - D57-7 (GND)	Shielded - BR	Shielded ground	Always	Below 1 V
D53-19 (AUXI) - D57-7 (GND)	B - BR	External device connection detection signal	External device connected	Below 1 V
D59-2 (CDR+) - D57-7 (GND)*1	B - BR	Sound signal (Right)	RSE system playing	A waveform synchronized with sounds is output
D59-3 (CDR-) - D57-7 (GND)*1	W - BR	Sound signal (Right)	RSE system playing	A waveform synchronized with sounds is output
D59-4 (CDL+) - D57-7 (GND)*1	R - BR	Sound signal (Left)	RSE system playing	A waveform synchronized with sounds is output
D59-5 (CDL-) - D57-7 (GND)*1	G - BR	Sound signal (Left)	RSE system playing	A waveform synchronized with sounds is output
D59-6 (MUTE) - D57-7 (GND)*1	R - BR	Mute signal	RSE system playing	Above 3.5 V
			RSE system changing mode	Below 1 V
D59-9 (TXM+) *1	B	AVC-LAN communication signal	-	-
D59-10 (TXM-) *1	W	AVC-LAN communication signal	-	-
D136-1 (SNS2) - D57-7 (GND)	B - BR	Microphone connection detection signal	Always	Below 1 V
D136-2 (MIC+) -		Microphone	See "Microphone & Voice Recognition	

D57-7 (GND)	B - BR	voice signal	Check". Refer to **OPERATION CHECK**	-
D136-3 (MACC) - D57-7 (GND)	R - BR	Microphone power supply	Ignition switch off	Below 1 V
			Ignition switch ON	4 to 6 V
D136-5 (MIC-) - Body ground	W - Body ground	Microphone voice signal	See "Microphone & Voice Recognition Check". Refer to **OPERATION CHECK**	-
D136-6 (SGND) - D57-7 (GND)	Shielded - BR	Shielded ground	Always	Below 1 V
D137-1	-	Power source	-	-
D137-2	-	Data signal	-	-
D137-3	-	Data signal	-	-
D137-4	-	Ground	-	-
D137-5	-	Shielded ground	-	-

*1: w/ Rear Seat Entertainment System

a. Reference (Oscilloscope waveform):

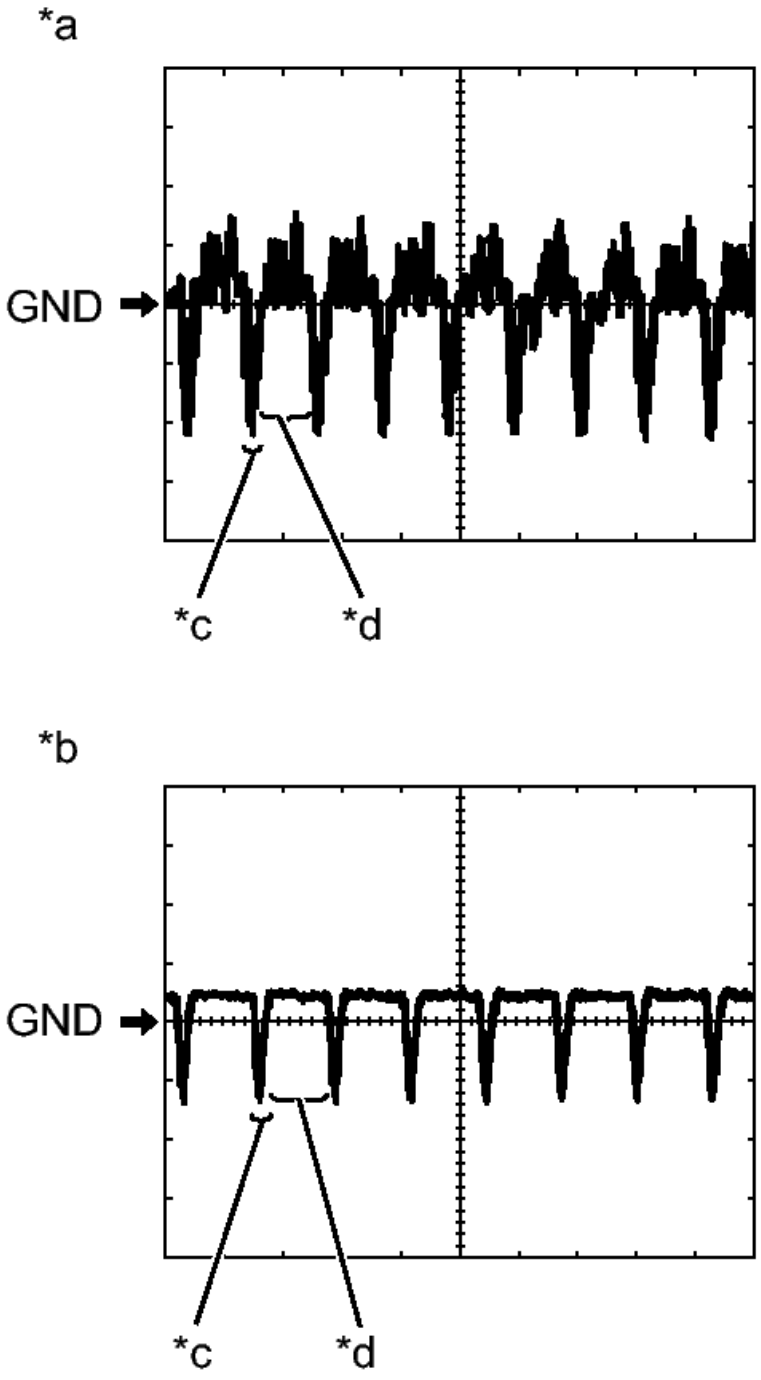


Fig. 55: Identifying Waveform 1 & 2
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

1. Waveform 1 (camera lens not covered, displaying an image)

MEASUREMENT CONDITION

Item	Content
Terminal No. (Symbol)	D53-11 (V+) - D53-12 (V-)
Tool Setting	0.2 V/DIV., 50 µs/DIV.
Condition	Ignition switch ON, Shift lever in R

HINT:

The video waveform changes according to the image sent by the rear television camera assembly.

2. Waveform 2 (camera lens covered, blacking out the screen)

MEASUREMENT CONDITION

Item	Content
Terminal No. (Symbol)	D53-11 (V+) - D53-12 (V-)
Tool Setting	0.2 V/DIV., 50 µs/DIV.
Condition	Ignition switch ON, Shift lever in R

HINT:

The video waveform changes according to the image sent by the rear television camera assembly.

TEXT IN ILLUSTRATION

*a	Waveform 1 (camera lens not covered, displaying an image)
*b	Waveform 2 (camera lens covered, blacking out the screen)
*c	Synchronized Signal
*d	Video Waveform

DTC CHECK / CLEAR

DTC CHECK / CLEAR

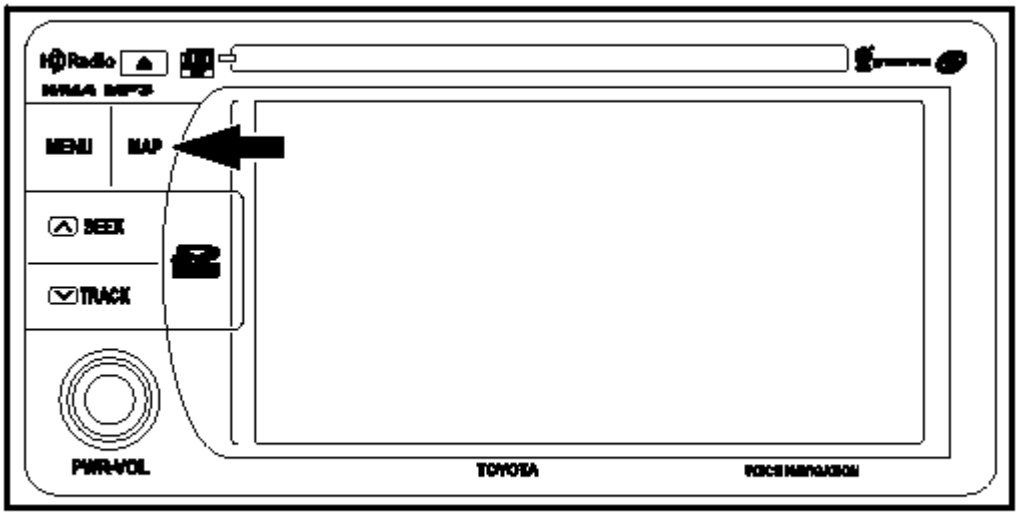
1. **START DIAGNOSTIC MODE**

   HINT:

   - Illustrations may differ from the actual vehicle screen depending on the device settings and options. Therefore, some detailed areas may not be shown exactly the same as on the actual vehicle screen.
   - If the system cannot enter diagnostic mode, inspect all AVC-LAN communication components and repair or replace problem parts. Refer to **AVC-LAN Circuit** .
   - After the ignition switch is turned to ON, check that the map is displayed before starting diagnostic mode. Otherwise, some items cannot be checked.

   a. Start the engine.

   b. While pressing and holding the "MAP" switch, operate the light control switch: off --> turn on --> turn off --> turn on --> turn off --> turn on --> turn off.



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Fig. 56: Identifying "MAP" Switch
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

c. Diagnostic mode starts and the "Service Menu" screen will be displayed. Service inspection starts automatically and the result will be displayed.

2. **FAILURE DIAGNOSIS**
   a. The "Failure Diagnosis" screen will be displayed by pressing the "Failure Diagnosis" switch on the "Service Menu" screen.

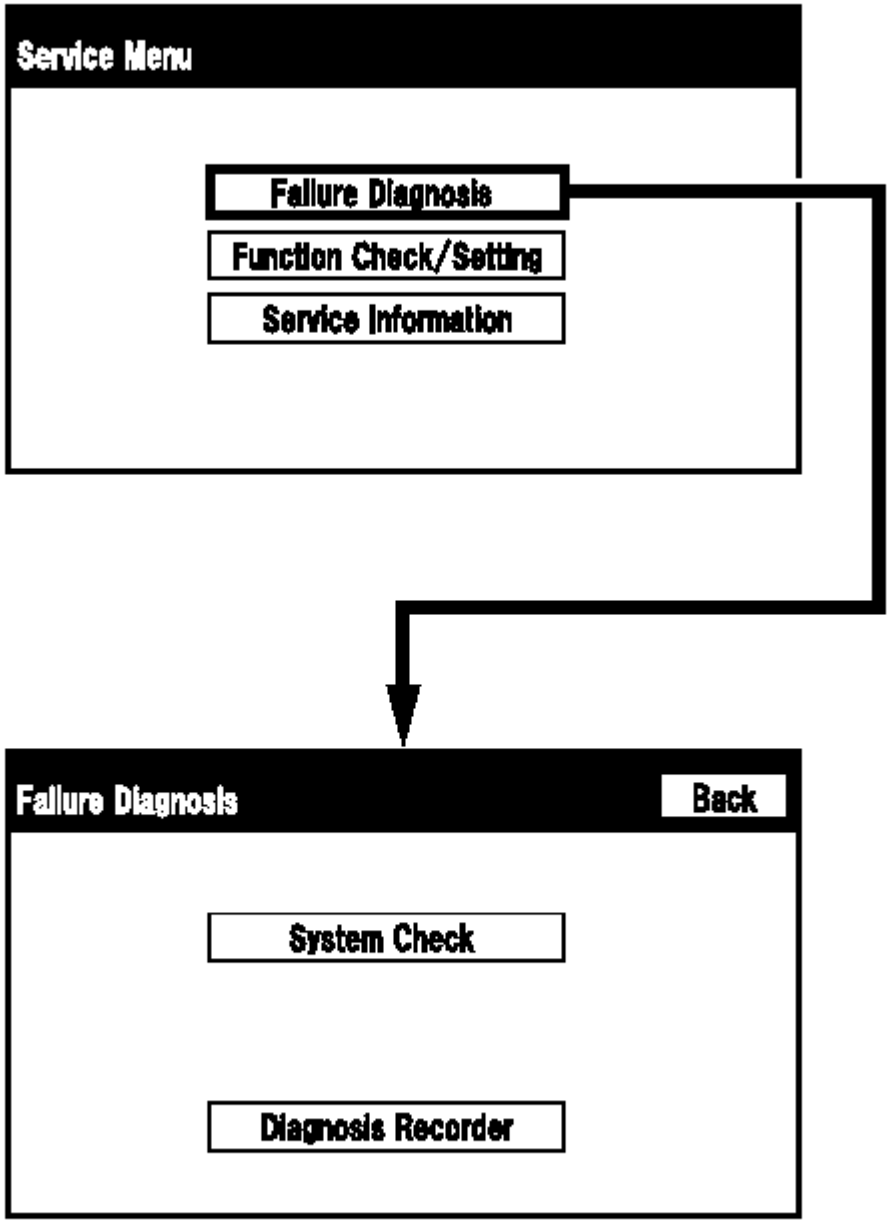


Fig. 57: Screen Display - "Failure Diagnosis"
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

3. **SYSTEM CHECK**
    a. The "System Check Mode" screen will be displayed by pressing the "System Check" switch on the

"Failure Diagnosis" screen.

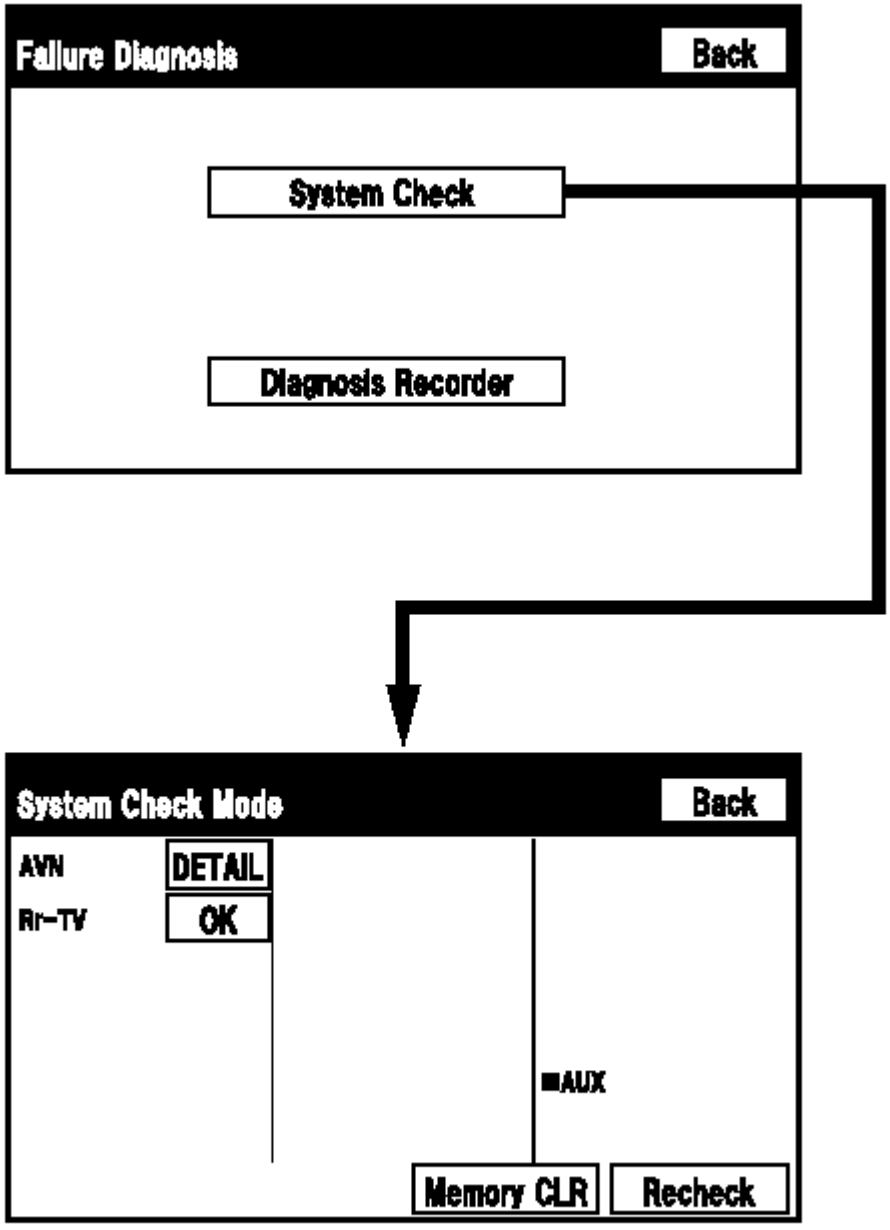


Fig. 58: Screen Display - "System Check Mode"
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

4. **CHECK DTC (CHECK USING SYSTEM CHECK MODE SCREEN)**

HINT:

- Refer to Diagnosis Display Detailed Description for further details on the "System Check Mode" screen. Refer to **OPERATION CHECK**.
- When "NCON" is displayed for all devices connected using the AVC-LAN, or when all device names are not displayed, check if there is a short circuit in the AVC-LAN or devices connected to the AVC-LAN. Repair or replace parts as necessary. Refer to **AVC-LAN Circuit** .

a. System check mode screen description

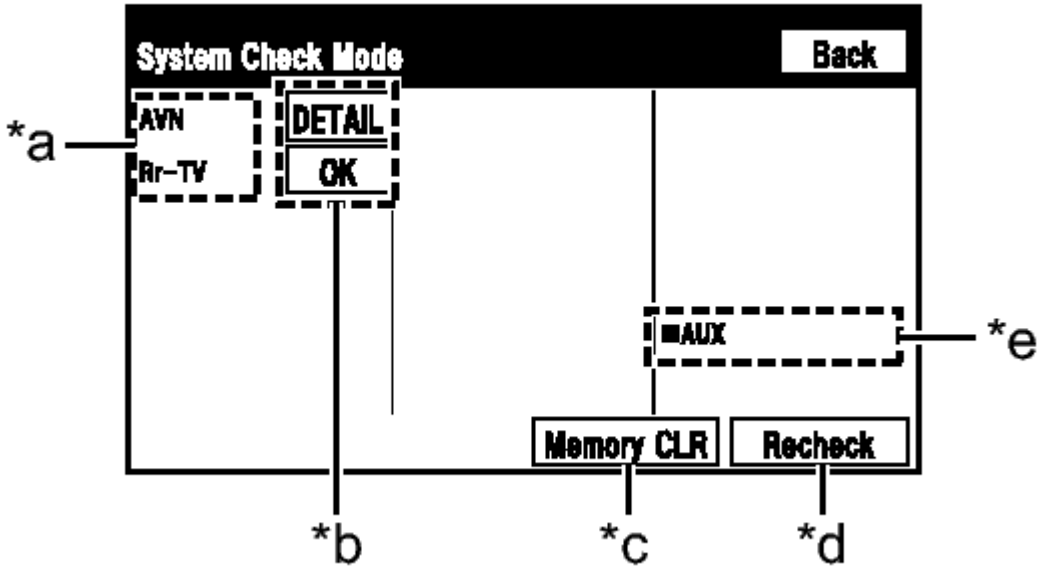


Fig. 59: Identifying "System Check Mode" Screen Description
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

SCREEN DESCRIPTION

Display	Content
*a: Device	• Device Name List No. 1 displays some of the devices that make up the navigation system.

Name List No. 1	• The names of the components from Device Name List No. 1 are shown in the following table.
*b: Check Result	Result codes for all devices are displayed.
*c: Memory Clear	• Present and history DTCs and registered connected device names are cleared. • Press the "Memory CLR" switch for 3 seconds.
*d: Recheck	• A system check will be performed again after the memory is cleared. • The "Recheck" switch will dim during a system check.
	• Device Name List No. 2 displays some of the devices that

*e: Device Name List No. 2	make up the navigation system. • The names of the components from Device Name List No. 2 are shown in the following table.

***A: DEVICE NAME LIST NO. 1 DESCRIPTION**

Name	Component	Connection Method
AVN	Navigation receiver assembly	-
Rr-TV	Television display assembly	Communication line for AVC-LAN

***B: CHECK RESULT DESCRIPTION**

Result	Meaning	Action
OK	The device does not respond with a DTC.	-
DETAIL	The device responds with a DTC.	Look up the DTC in "Unit Check Mode".
	The device was previously	- Check power supply wire harness

NCON	present, but does not respond in diagnostic mode.	of the device. - Check the AVC-LAN of the device.
NRES	The device responds in diagnostic mode, but gives no DTC information.	- Check power supply wire harness of the device. - Check the AVC-LAN of the device.

***E: DEVICE NAME LIST NO. 2 DESCRIPTION**

Name	Component	Connection Method
AUX	No. 1 stereo jack adapter assembly	Vehicle wire harness

b. Unit check mode screen description

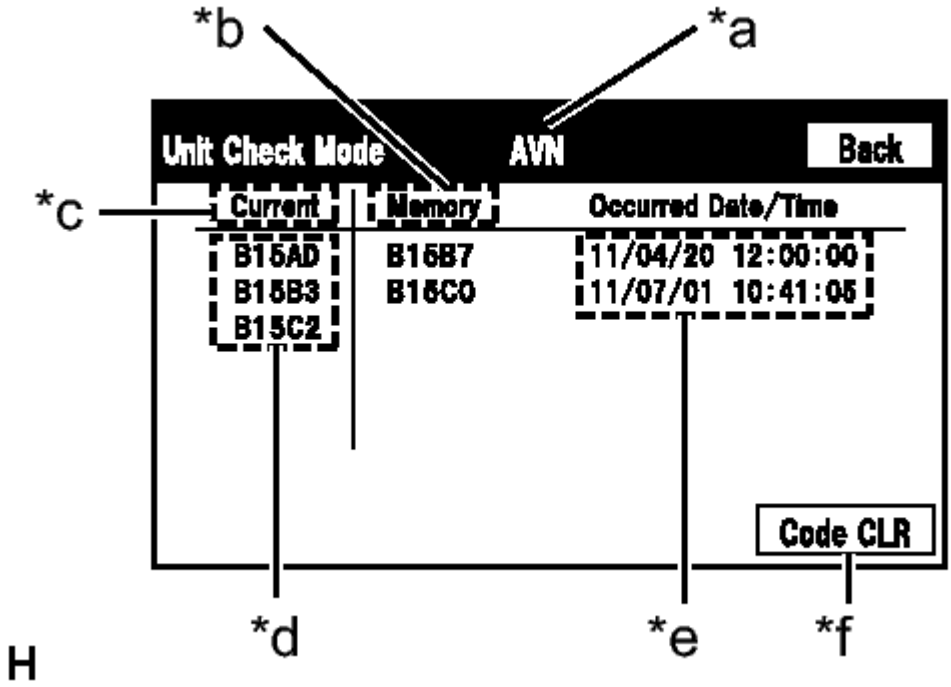


Fig. 60: Unit Check Mode Screen Description
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

SCREEN DESCRIPTION

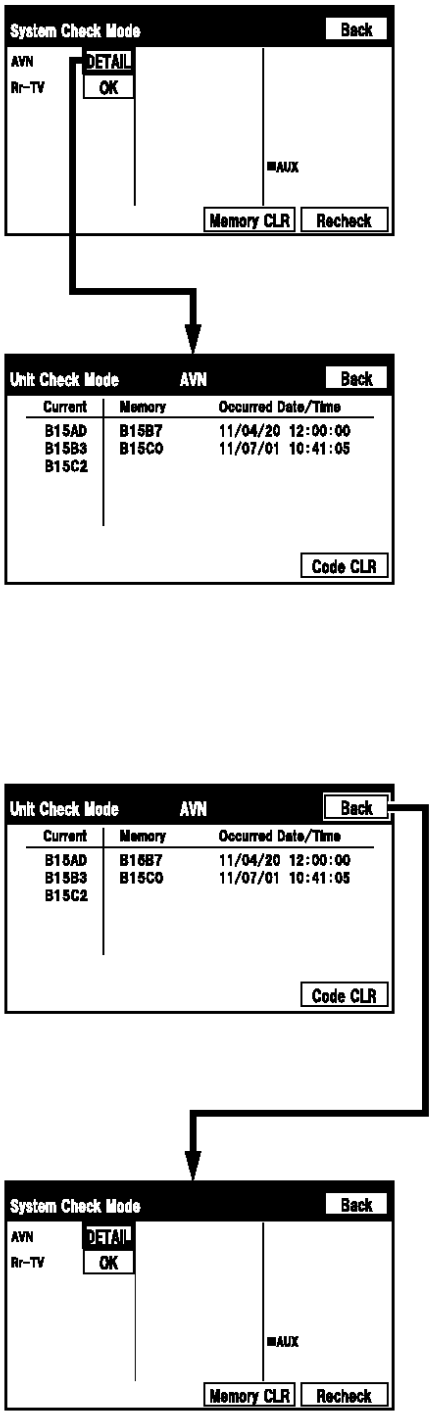
Display	Content
*a: Device name	Target device
*b: History DTC	Diagnostic memory results and stored DTCs are displayed.
*c: Current DTC	DTCs output in the service check are displayed.
*d: DTC	DTC (Diagnostic Trouble Code)
*e:	The time and date of history DTCs are displayed.

Timestamp	(The year is displayed in 2-digit format.)
*f: Diagnosis clear switch	Pushing this switch for 3 seconds clears the diagnostic memory data of the target device. (Both response to diagnostic system check result and the displayed data are cleared.)

HINT:

- This screen is updated once per second.
- A maximum of 6 DTCs can be displayed for history and present DTCs.

c. Read the system check result.



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Fig. 61: Identifying System Check Result Screens
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

1. If the check result is "DETAIL", touch the displayed check result to view the results on the "Unit Check Mode" screen and record them.

NOTE: **A maximum of 6 DTCs can be displayed for history and present DTCs on the "Unit check mode" screen. Therefore, when 6 DTCs are displayed, troubleshoot those DTCs first and then check the "Unit check mode" screen again to see if any other DTCs are displayed.**

HINT:

- When all results are "OK", this means that no DTCs are present.
- When proceeding to view the results of another device, press the "Back" switch to return to the "System Check Mode" screen. Repeat the step above to view the results of other devices.

2. Check the details of the DTCs. Refer to **DIAGNOSTIC TROUBLE CODE CHART**.

5. **DTC CLEAR/RECHECK (CLEAR USING SYSTEM CHECK MODE SCREEN)**
   a. Clear DTC

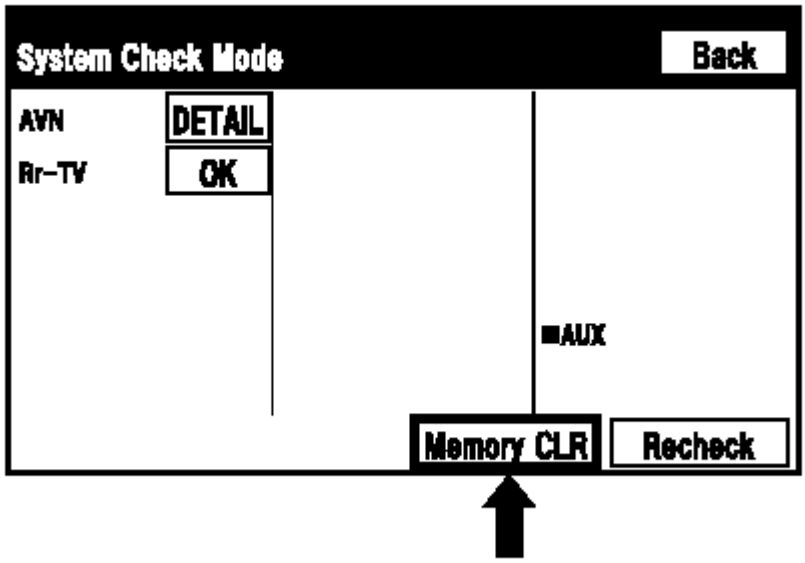


Fig. 62: Screen Display - DTC Clear/Recheck
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

1. Press the "Memory CLR" switch for 3 seconds.
2. Confirm that the check results are cleared.

HINT:

- To clear the DTC for a specific device, clear the DTC using the "Unit Check Mode" screen.

- When clearing a DTC using the "Unit Check Mode" screen, press the "Code CLR" switch for 3 seconds.

b. Recheck

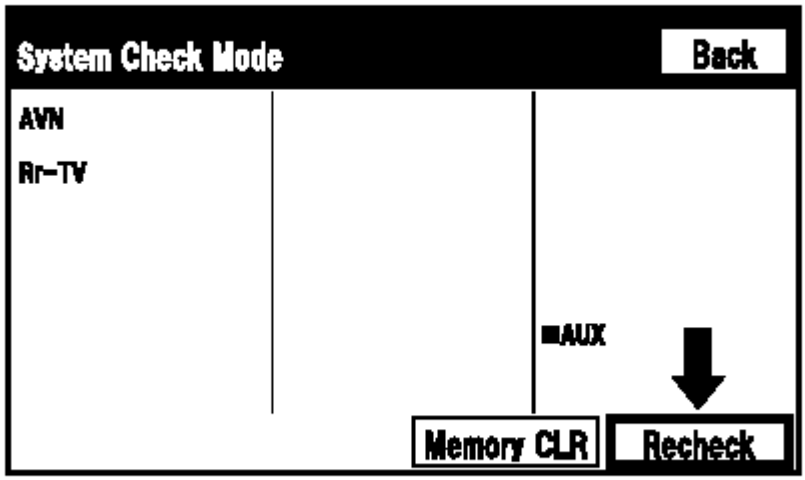


Fig. 63: Screen Display - DTC Clear/Recheck
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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.

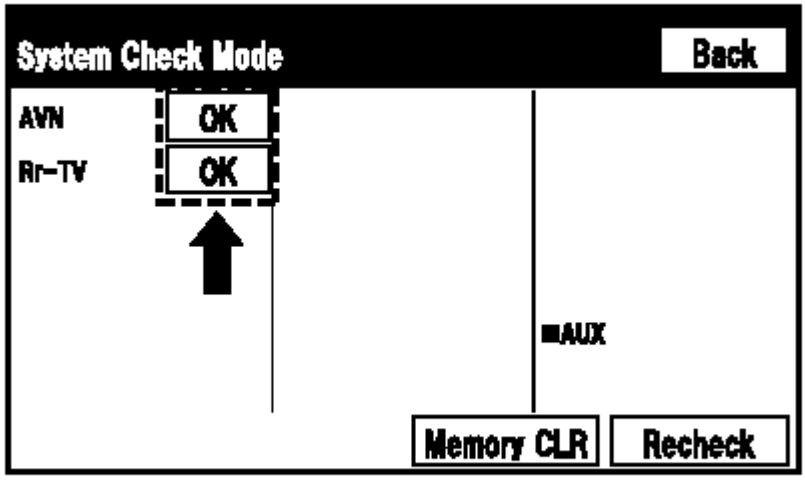


Fig. 64: Identifying "OK"
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

HINT:

When a DTC was cleared using the "Unit Check Mode" screen, press the "Back" switch to return to the "System Check Mode" screen and perform this operation.

6. **FINISH DIAGNOSTIC MODE**
   a. Turn the ignition switch off.

DIAGNOSTIC TROUBLE CODE CHART

DIAGNOSTIC TROUBLE CODE CHART

NAVIGATION SYSTEM

DTC Code	Detection Item	See
B1551	HD Radio Tuner Malfunction	Refer to **DTC B1551: HD Radio Tuner Malfunction; DTC B15A0: LAN Master Malfunction; DTC B15AD: Navigation Processor Malfunction; DTC B15B0: Display Screen Malfunction; DTC B15B3: Radio Tuner Malfunction; DTC B15B4: CD Changer Malfunction; DTC B15B7: Bluetooth Module Malfunction**
B1579	Voice Recognition Microphone Disconnected	Refer to **DTC B1579: Voice Recognition Microphone Disconnected**

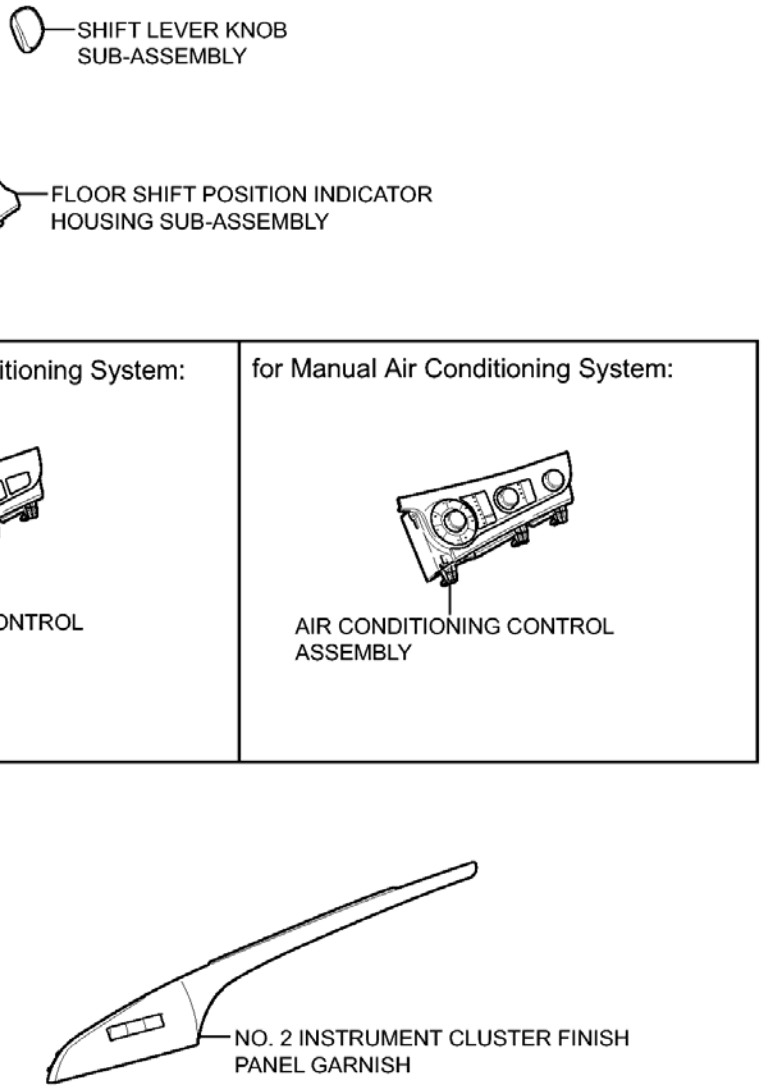
B158B	Touch Switch Malfunction	Refer to **DTC B158B: Touch Switch Malfunction**
B158C	SD Card Communication Malfunction	Refer to **DTC B158C: SD Card Communication Malfunction**
B1595	No Response from Rear Seat Entertainment System	Refer to **DTC B1595: No Response from Rear Seat Entertainment System; DTC B15D5: Rear Seat Entertainment System Disconnected**
B15A0	LAN Master Malfunction	Refer to **DTC B1551: HD Radio Tuner Malfunction; DTC B15A0: LAN Master Malfunction; DTC B15AD: Navigation Processor Malfunction; DTC B15B0: Display Screen Malfunction; DTC B15B3: Radio Tuner Malfunction; DTC B15B4: CD Changer Malfunction; DTC B15B7: Bluetooth Module Malfunction**
B15A5	Rear Seat Entertainment System Malfunction	Refer to **DTC B15A5: Rear Seat Entertainment System Malfunction**
B15AD	Navigation Processor Malfunction	Refer to **DTC B1551: HD Radio Tuner Malfunction; DTC B15A0: LAN Master Malfunction; DTC B15AD: Navigation Processor Malfunction; DTC B15B0: Display Screen Malfunction; DTC B15B3: Radio Tuner Malfunction; DTC B15B4: CD Changer Malfunction; DTC B15B7: Bluetooth Module Malfunction**
B15B0	Display Screen Malfunction	Refer to **DTC B1551: HD Radio Tuner Malfunction; DTC B15A0: LAN Master Malfunction; DTC B15AD: Navigation Processor Malfunction; DTC B15B0: Display Screen Malfunction; DTC B15B3: Radio Tuner Malfunction; DTC B15B4: CD Changer Malfunction; DTC B15B7: Bluetooth Module Malfunction**
B15B3	Radio Tuner Malfunction	Refer to **DTC B1551: HD Radio Tuner Malfunction; DTC B15A0: LAN Master Malfunction; DTC B15AD: Navigation Processor Malfunction; DTC B15B0: Display Screen Malfunction; DTC B15B3: Radio Tuner Malfunction; DTC B15B4: CD Changer Malfunction; DTC B15B7: Bluetooth Module Malfunction**
B15B4	CD Changer Malfunction	Refer to **DTC B1551: HD Radio Tuner Malfunction; DTC B15A0: LAN Master Malfunction; DTC B15AD: Navigation Processor Malfunction; DTC B15B0: Display Screen Malfunction; DTC**

		B15B3: Radio Tuner Malfunction; DTC B15B4: CD Changer Malfunction; DTC B15B7: Bluetooth Module Malfunction
B15B7	Bluetooth Module Malfunction	Refer to **DTC B1551: HD Radio Tuner Malfunction; DTC B15A0: LAN Master Malfunction; DTC B15AD: Navigation Processor Malfunction; DTC B15B0: Display Screen Malfunction; DTC B15B3: Radio Tuner Malfunction; DTC B15B4: CD Changer Malfunction; DTC B15B7: Bluetooth Module Malfunction**
B15C0	Short in GPS Antenna	Refer to **DTC B15C0: Short in GPS Antenna; DTC B15C1: Open in GPS Antenna**
B15C1	Open in GPS Antenna	Refer to **DTC B15C0: Short in GPS Antenna; DTC B15C1: Open in GPS Antenna**
B15C2	Speed Signal Malfunction	Refer to **DTC B15C2: Speed Signal Malfunction**
B15C3	Speaker Output Short	Refer to **DTC B15C3: Speaker Output Short**
B15D5	Rear Seat Entertainment System Disconnected	Refer to **DTC B1595: No Response from Rear Seat Entertainment System; DTC B15D5: Rear Seat Entertainment System Disconnected**

NAVIGATION RECEIVER

COMPONENTS

ILLUSTRATION

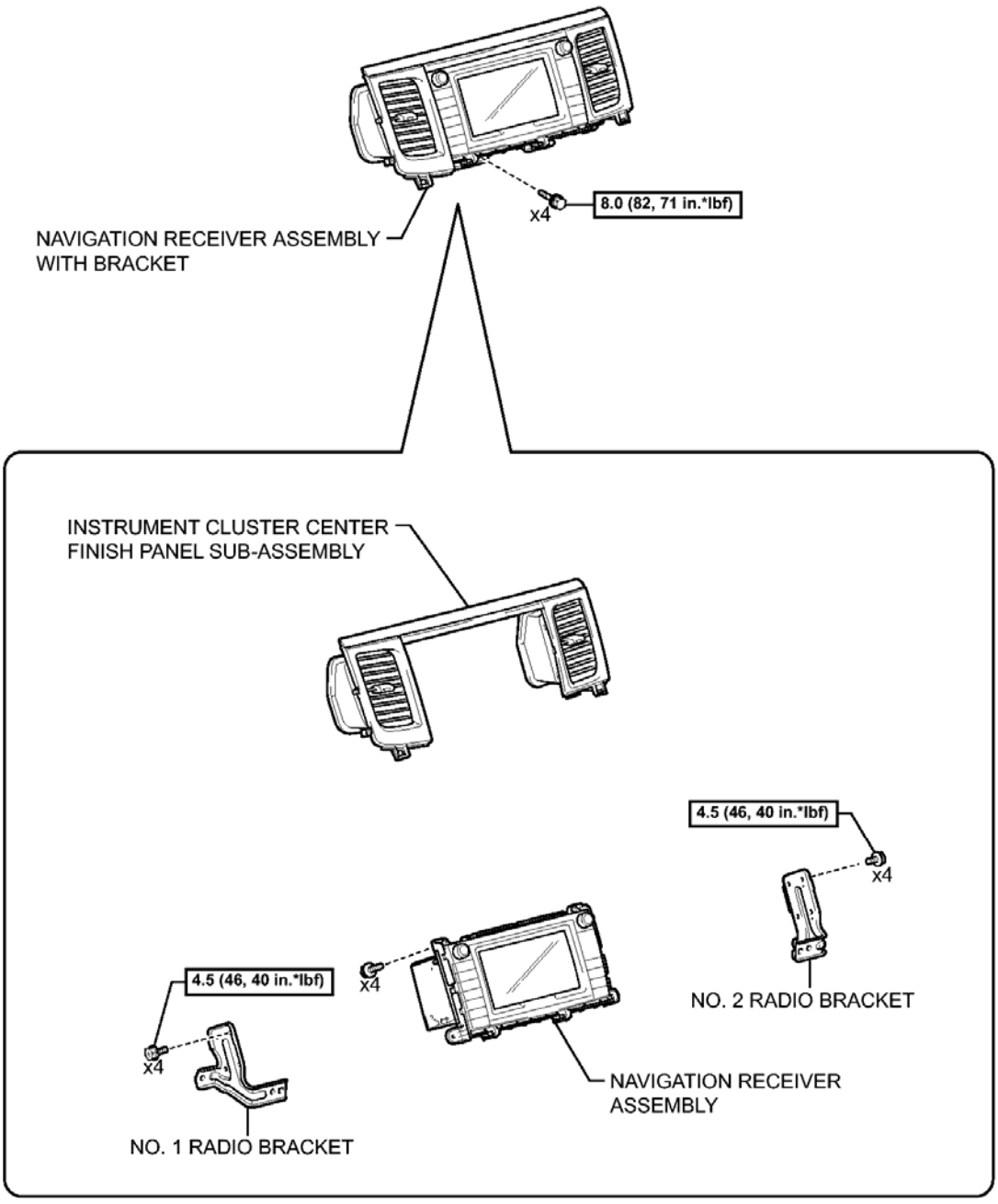


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Fig. 1: Navigation Receiver Replacement Components (1 Of 4)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

ILLUSTRATION

for DVD with USB Audio System:



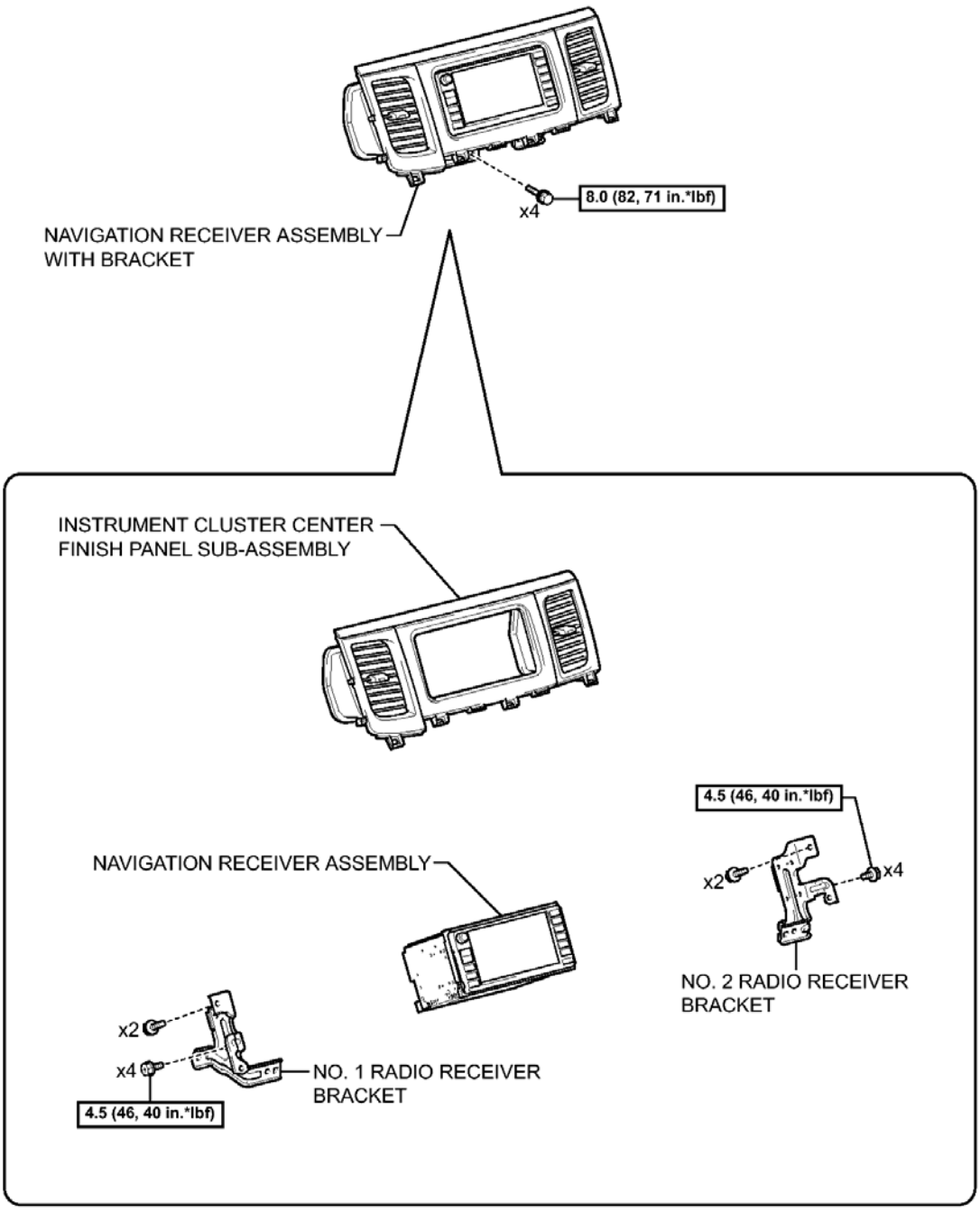
N*m (kgf*cm, ft.*lbf): Specified torque

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Fig. 2: Navigation Receiver Replacement Components With Torque Specifications (2 Of 4)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

ILLUSTRATION

for DVD without USB Audio System:



N*m (kgf*cm, ft.*lbf): Specified torque

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Fig. 3: Navigation Receiver Replacement Components With Torque Specifications (3 Of 4)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

ILLUSTRATION

for SD:

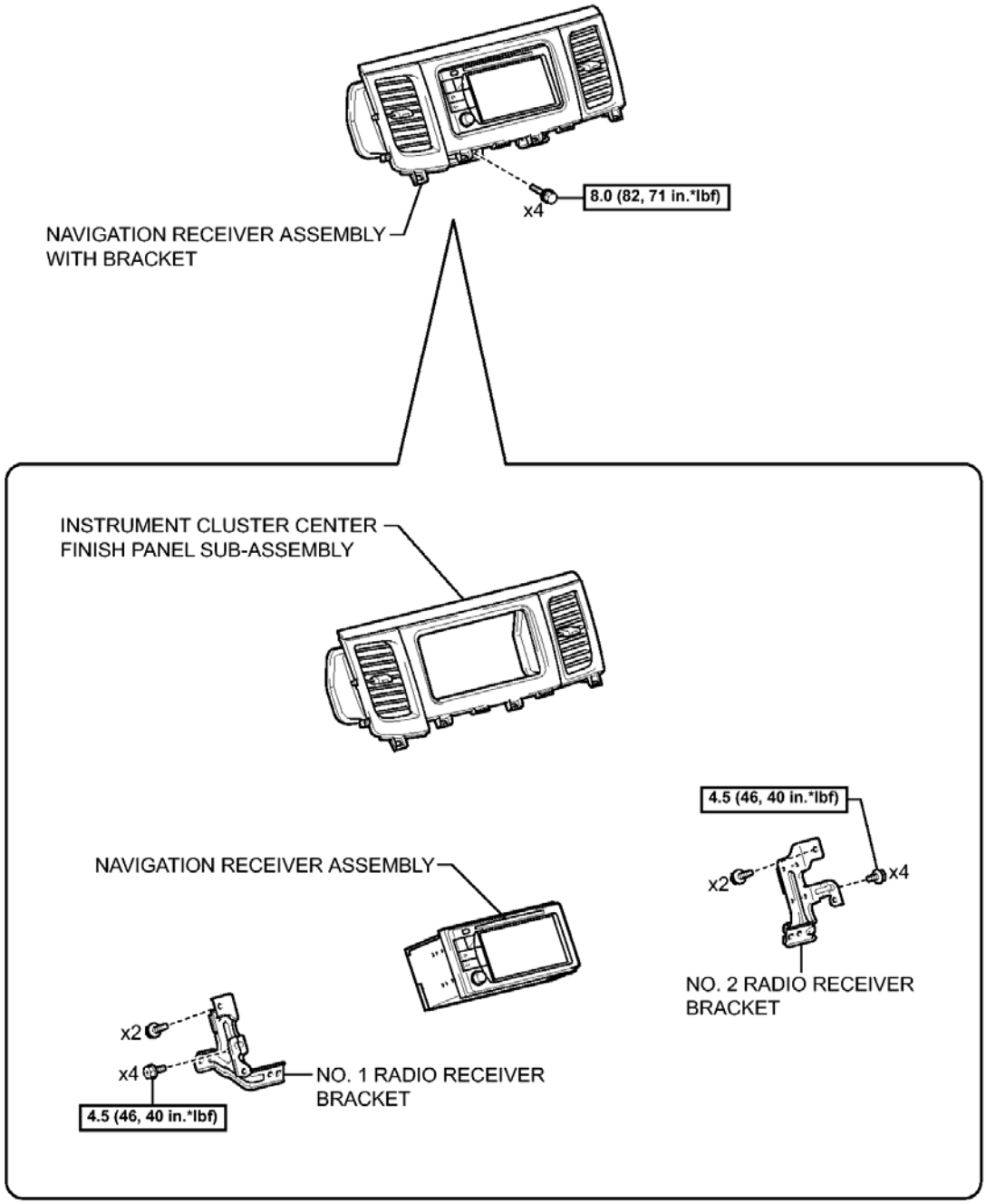


Fig. 4: Navigation Receiver Replacement Components With Torque Specifications (4 Of 4)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

REMOVAL

REMOVAL

1. **REMOVE NO. 2 INSTRUMENT CLUSTER FINISH PANEL GARNISH** . Refer to **REMOVAL - Step 23**
2. **REMOVE SHIFT LEVER KNOB SUB-ASSEMBLY**
3. **REMOVE FLOOR SHIFT POSITION INDICATOR HOUSING SUB-ASSEMBLY** . Refer to **REMOVAL - Step 25**
4. **REMOVE AIR CONDITIONING CONTROL ASSEMBLY (for Manual Air Conditioning System)** . Refer to **REMOVAL - Step 4**
5. **REMOVE AIR CONDITIONING CONTROL ASSEMBLY (for Automatic Air Conditioning System)** . Refer to **REMOVAL - Step 4**
6. **REMOVE NAVIGATION RECEIVER ASSEMBLY WITH BRACKET (for DVD with USB Audio System)**
   a. Remove the 4 bolts.

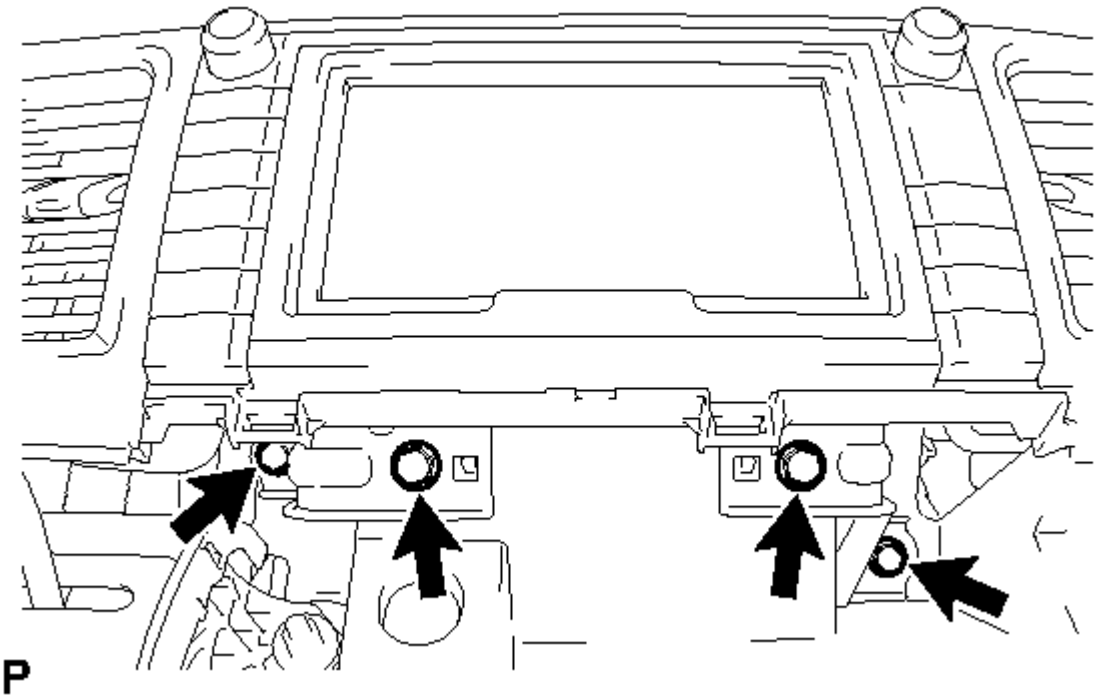


Fig. 5: Identifying Navigation Receiver Assembly Bracket & Screws
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

   b. Disengage the 9 clips and 2 claws.

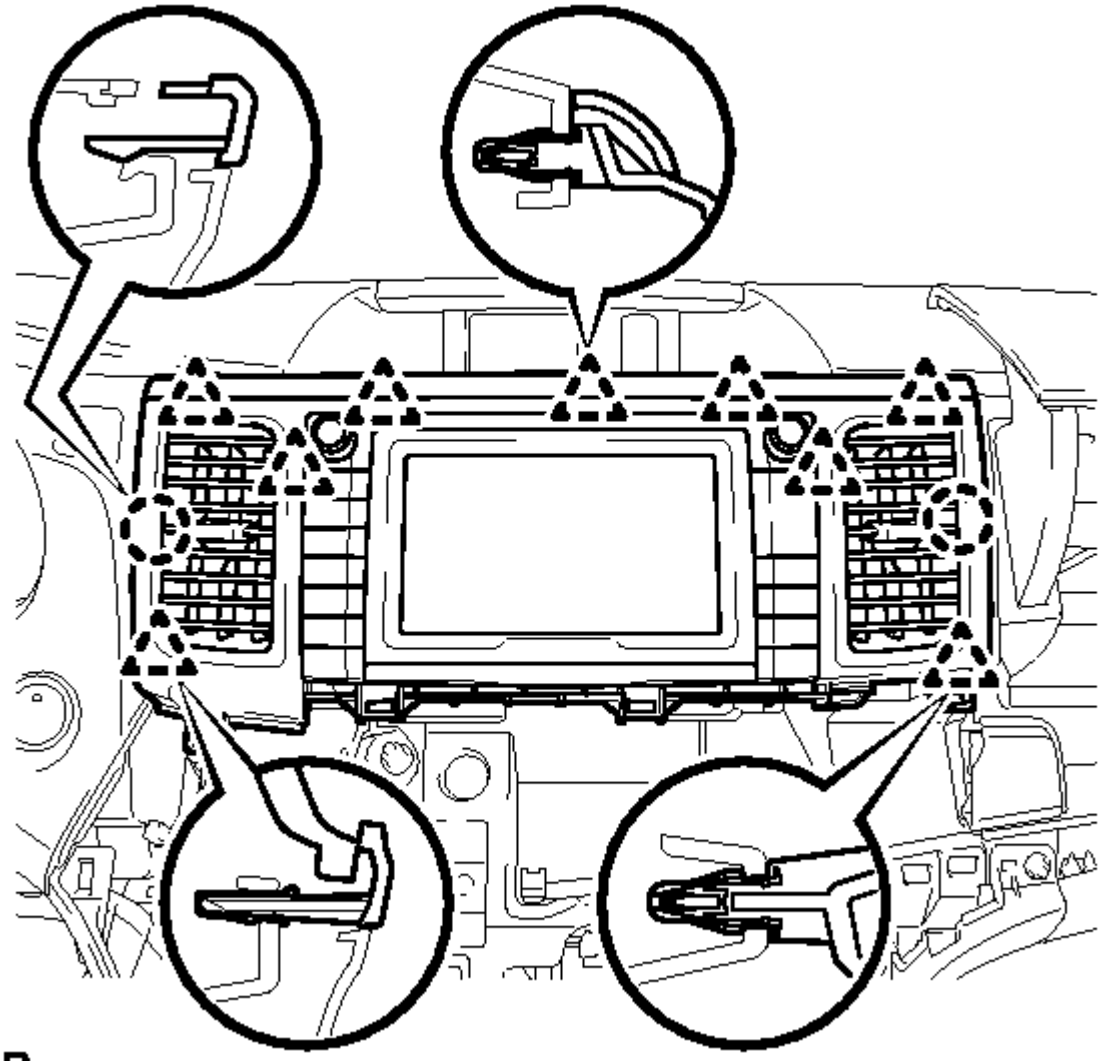
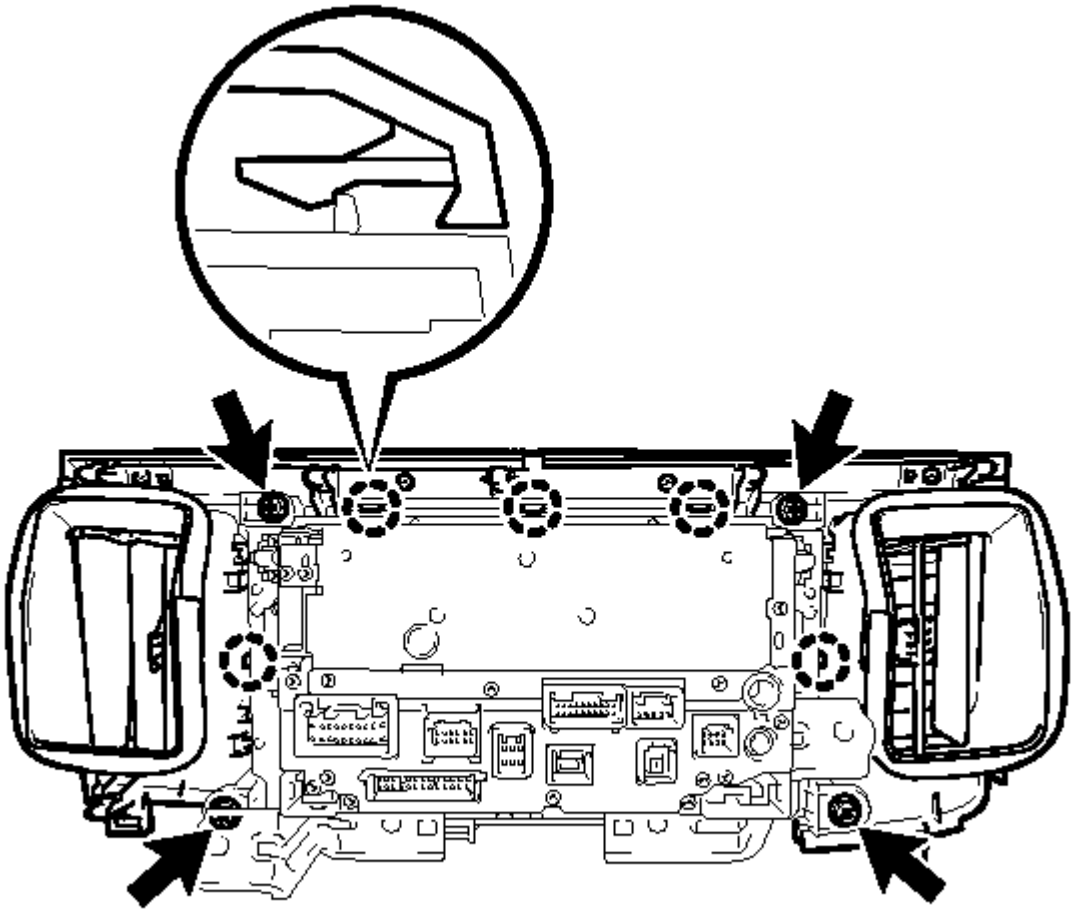


Fig. 6: Disengaging Navigation Receiver Assembly Clips & Claws
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

c. Disconnect the connectors and remove the navigation receiver assembly with bracket.

7. **REMOVE INSTRUMENT CLUSTER CENTER FINISH PANEL SUB-ASSEMBLY (for DVD with USB Audio System)**

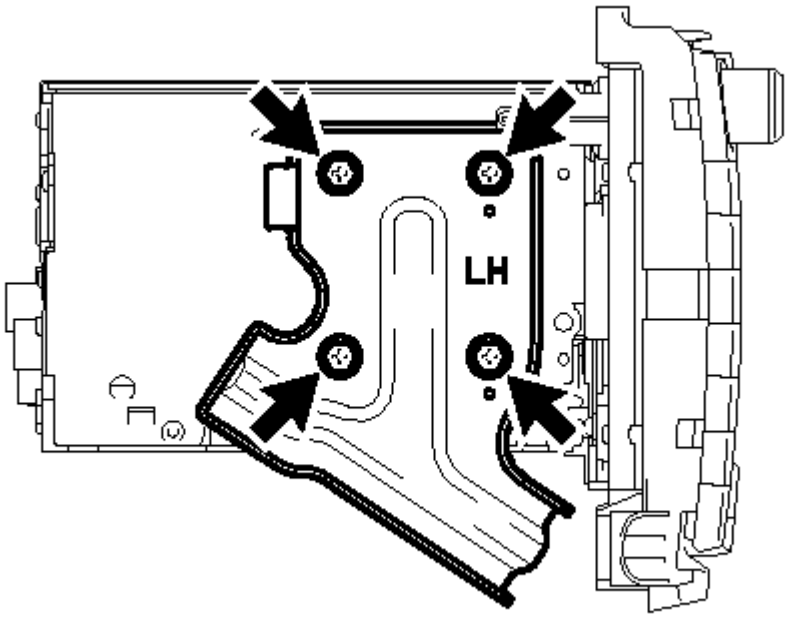


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Fig. 7: Identifying Instrument Cluster Center Finish Panel Sub-Assembly Screws & Claws
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

a. Remove the 4 screws.
b. Disengage the 5 claws and remove the instrument cluster center finish panel sub-assembly.

8. **REMOVE NO. 1 RADIO BRACKET (for DVD with USB Audio System)**

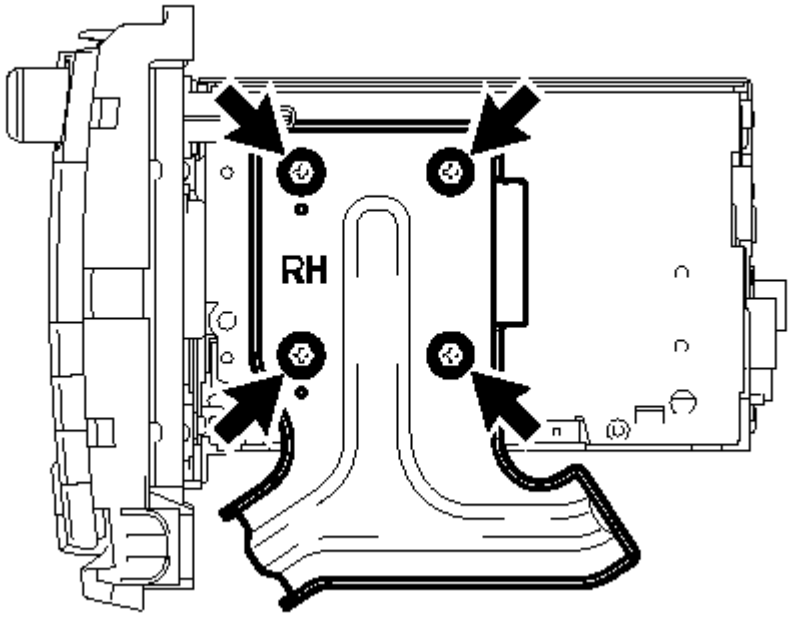


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Fig. 8: Identifying No. 1 Radio Bracket & Bolts
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

a. Remove the 4 bolts and No. 1 radio bracket.

9. **REMOVE NO. 2 RADIO BRACKET (for DVD with USB Audio System)**



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Fig. 9: Identifying No. 2 Radio Bracket & Screws

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

a. Remove the 4 bolts and No. 2 radio bracket.

10. **REMOVE NAVIGATION RECEIVER ASSEMBLY WITH BRACKET (for DVD without USB Audio System)**

a. Remove the 4 bolts.

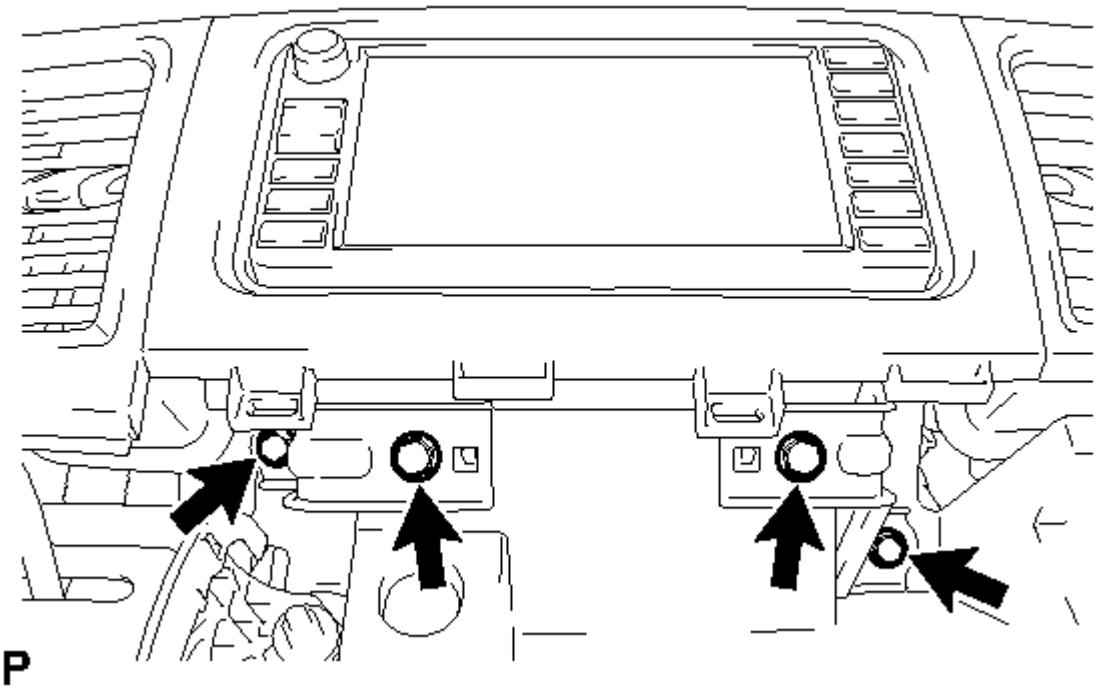


Fig. 10: Identifying Navigation Receiver Assembly Bracket & Screws
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

b. Disengage the 7 clips and 2 claws.

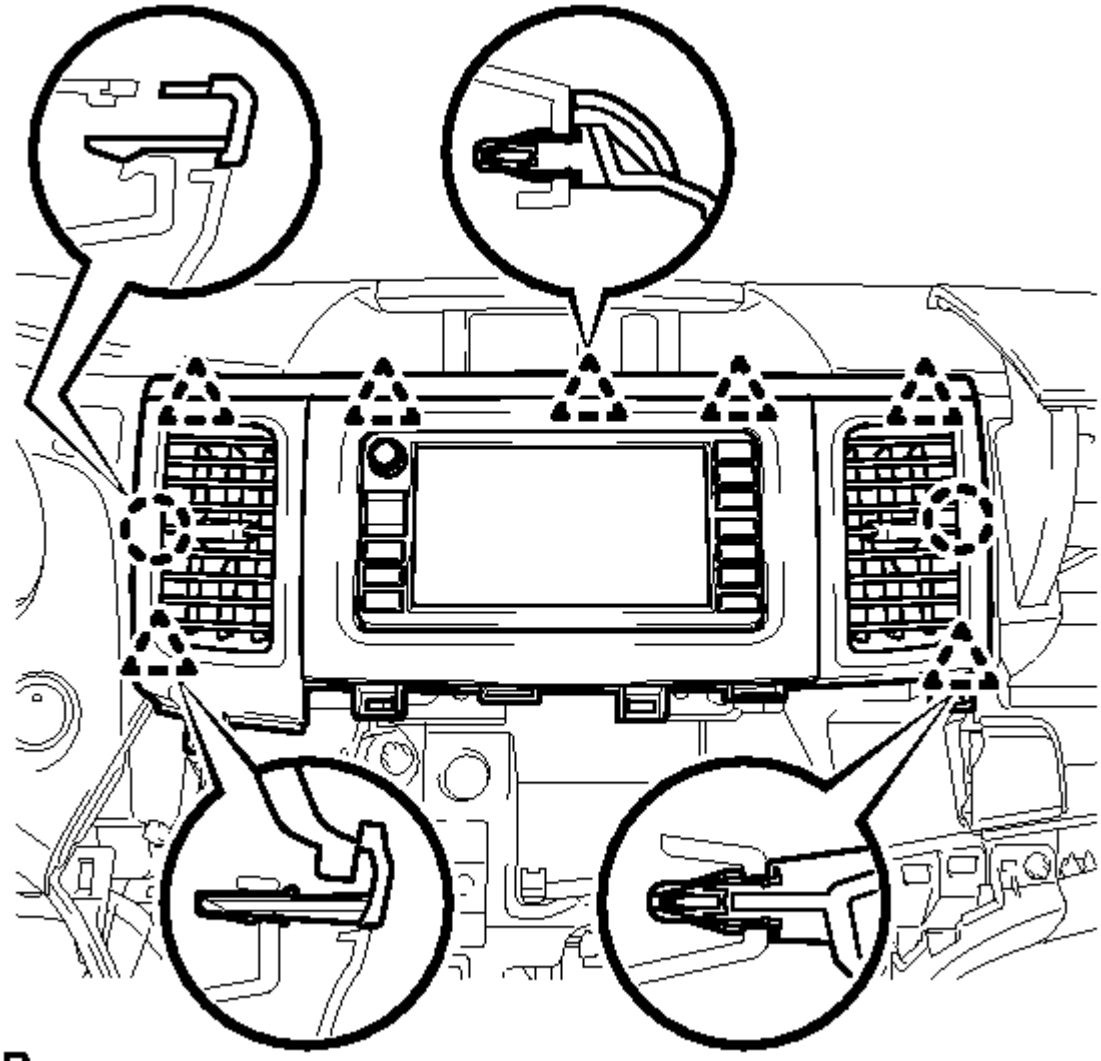
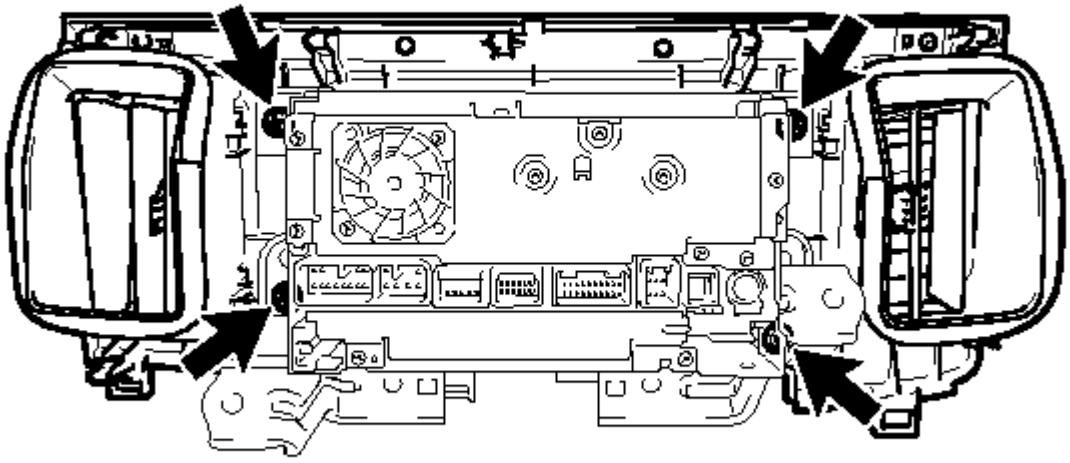


Fig. 11: Disengaging Navigation Receiver Assembly Clips & Claws
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

c. Disconnect the connectors and remove the navigation receiver assembly with bracket.

11. **REMOVE INSTRUMENT CLUSTER CENTER FINISH PANEL SUB-ASSEMBLY (for DVD without USB Audio System)**

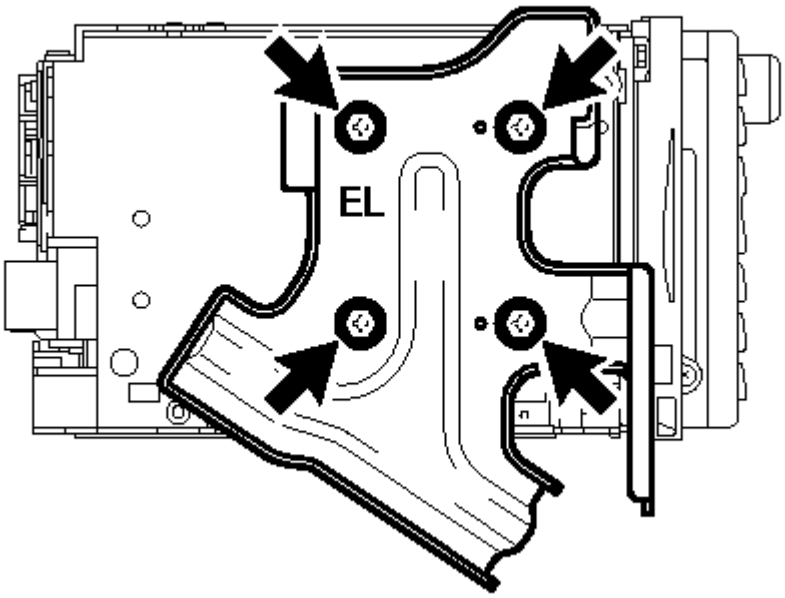


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Fig. 12: Identifying Instrument Cluster Center Finish Panel Sub-Assembly Screws
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

a. Remove the 4 screws and the instrument cluster center finish panel sub-assembly.

12. **REMOVE NO. 1 RADIO RECEIVER BRACKET (for DVD without USB Audio System)**



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Fig. 13: Identifying No. 1 Radio Receiver Bracket & Screws

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

a. Remove the 4 bolts and No. 1 radio receiver bracket.

13. **REMOVE NO. 2 RADIO RECEIVER BRACKET (for DVD without USB Audio System)**

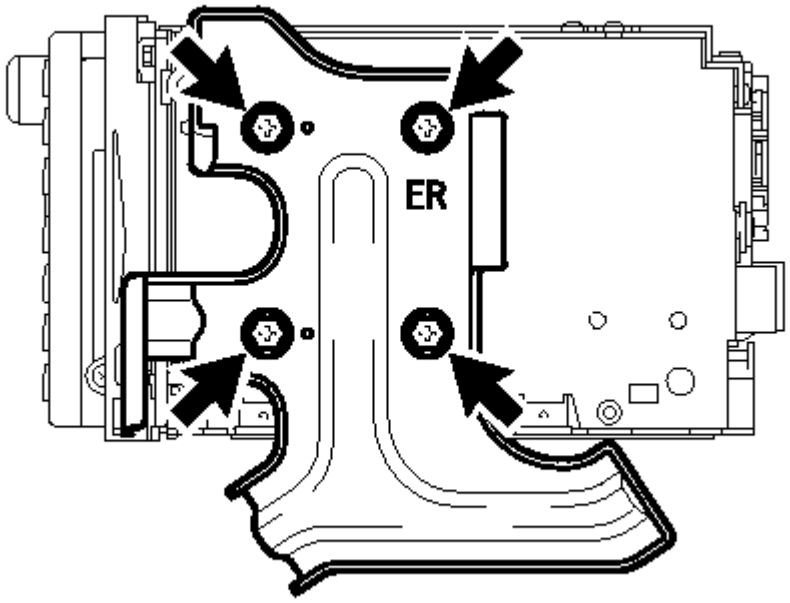


Fig. 14: Identifying No. 2 Radio Receiver Bracket & Screws
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

a. Remove the 4 bolts and No. 2 radio receiver bracket.

14. **REMOVE NAVIGATION RECEIVER ASSEMBLY WITH BRACKET (for SD)**

a. Remove the 4 bolts.

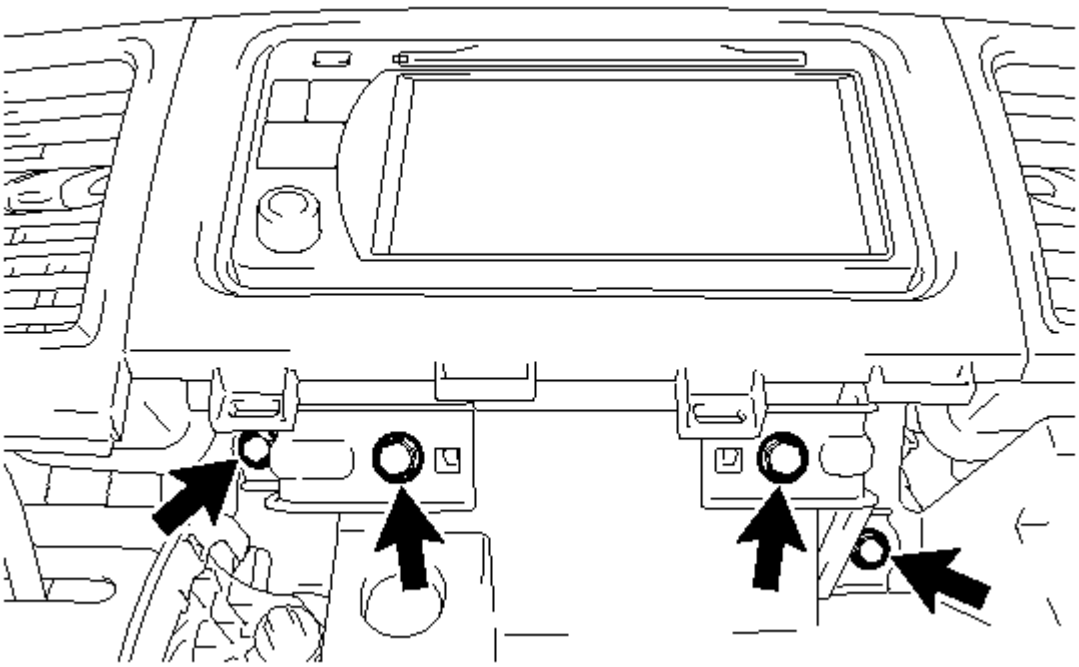


Fig. 15: Identifying Navigation Receiver Assembly With Bracket (For SD)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

b. Disengage the 7 clips and 2 claws.

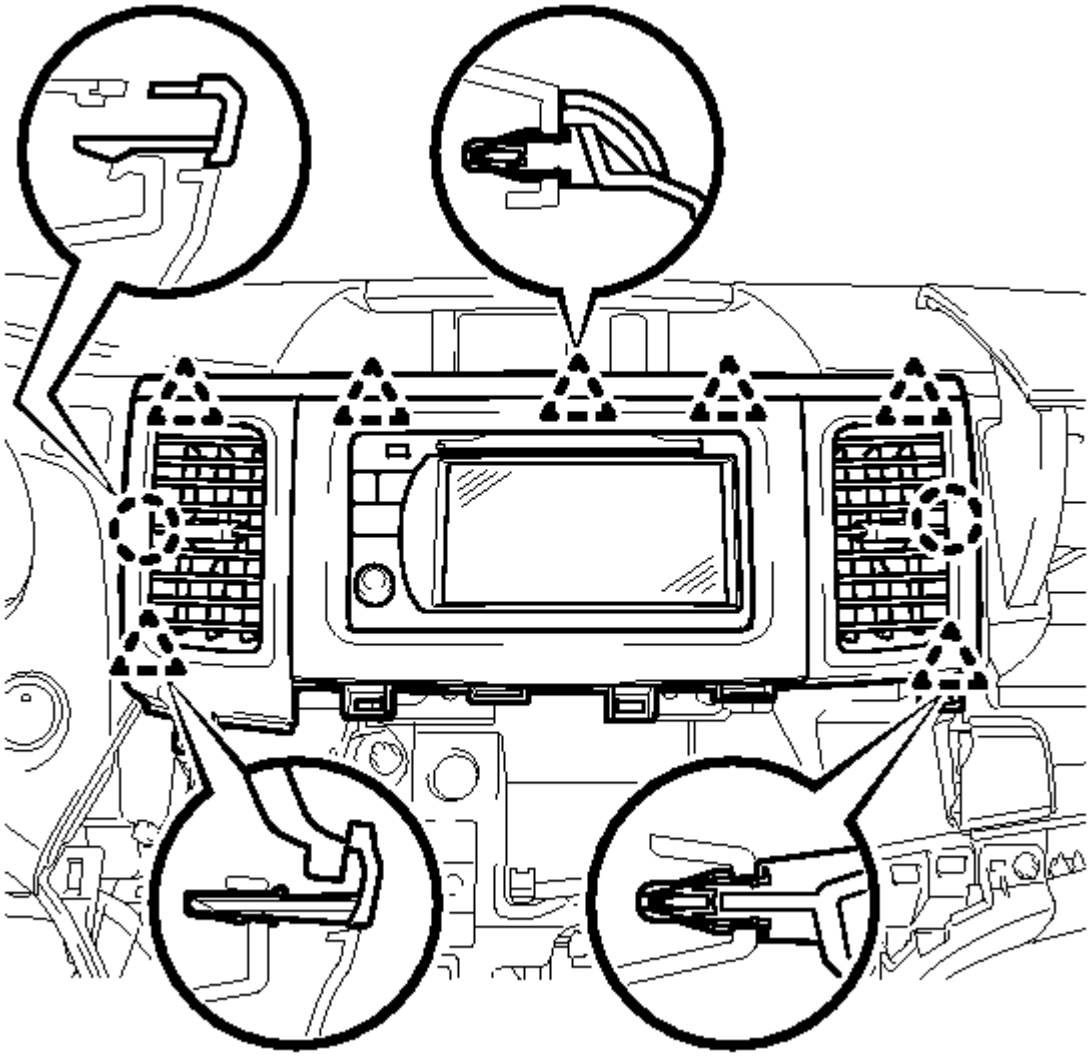


Fig. 16: Identifying Clips & Claws
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

c. Disconnect the connectors and remove the navigation receiver assembly with bracket.

15. **REMOVE INSTRUMENT CLUSTER CENTER FINISH PANEL SUB-ASSEMBLY (for SD)**

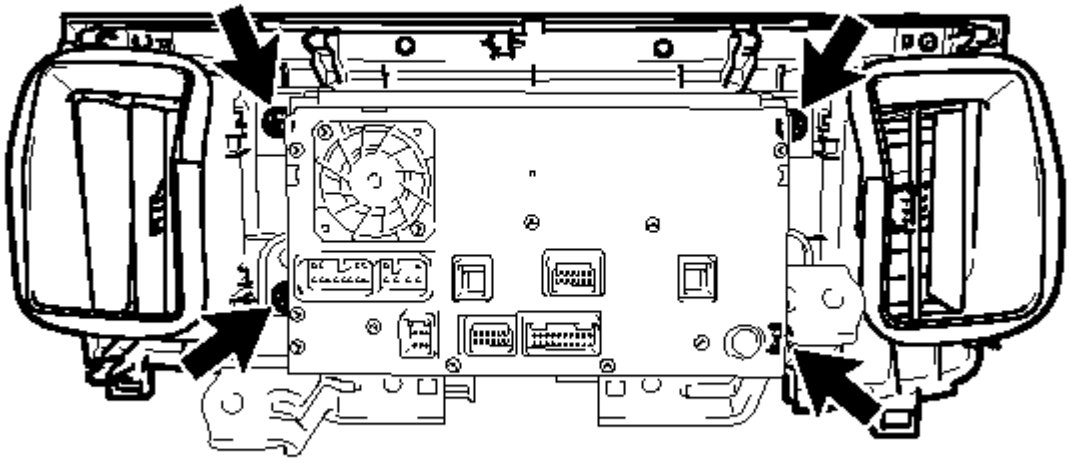


Fig. 17: Identifying Instrument Cluster Center Finish Panel Sub-Assembly (For SD)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

a. Remove the 4 screws and the instrument cluster center finish panel sub-assembly.

16. **REMOVE NO. 1 RADIO RECEIVER BRACKET (for SD)**

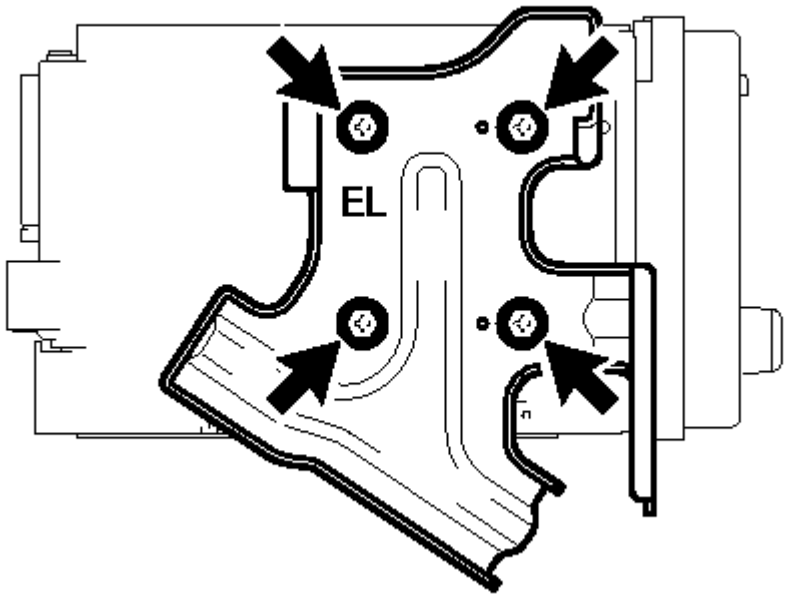


Fig. 18: Identifying No. 1 Radio Receiver Bracket (For SD)

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

a. Remove the 4 bolts and No. 1 radio receiver bracket.

17. **REMOVE NO. 2 RADIO RECEIVER BRACKET (for SD)**

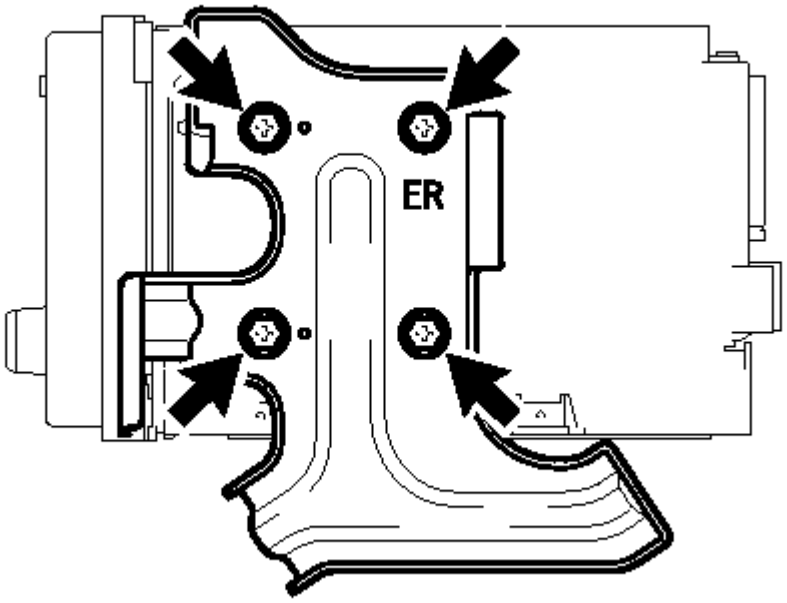


Fig. 19: Identifying No. 2 Radio Receiver Bracket (For SD)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

a. Remove the 4 bolts and No. 2 radio receiver bracket.

INSTALLATION

INSTALLATION

1. **INSTALL NO. 2 RADIO BRACKET (for DVD with USB Audio System)**
   a. Install the No. 2 radio bracket with the 4 bolts.

      Torque: 4.5 N*m (46 kgf*cm, 40 in.*lbf)

2. **INSTALL NO. 1 RADIO BRACKET (for DVD with USB Audio System)**
   a. Install the No. 1 radio bracket with the 4 bolts.

      Torque: 4.5 N*m (46 kgf*cm, 40 in.*lbf)

3. **INSTALL INSTRUMENT CLUSTER CENTER FINISH PANEL SUB-ASSEMBLY (for DVD with USB Audio System)**

a. Engage the 5 claws and install the instrument cluster center finish panel sub-assembly.
b. Install the 4 screws.

4. **INSTALL NAVIGATION RECEIVER ASSEMBLY WITH BRACKET (for DVD with USB Audio System)**
   a. Connect the connectors.
   b. Engage the 9 clips and 2 claws and install the navigation receiver assembly with bracket.
   c. Install the 4 bolts.

   Torque: 8.0 N*m (82 kgf*cm, 71 in.*lbf)

5. **INSTALL NO. 2 RADIO RECEIVER BRACKET (for DVD without USB Audio System)**
   a. Install the No. 2 radio receiver bracket with the 4 bolts.

   Torque: 4.5 N*m (46 kgf*cm, 40 in.*lbf)

6. **INSTALL NO. 1 RADIO RECEIVER BRACKET (for DVD without USB Audio System)**
   a. Install the No. 1 radio receiver bracket with the 4 bolts.

   Torque: 4.5 N*m (46 kgf*cm, 40 in.*lbf)

7. **INSTALL INSTRUMENT CLUSTER CENTER FINISH PANEL SUB-ASSEMBLY (for DVD without USB Audio System)**
   a. Install the instrument cluster center finish panel sub-assembly with the 4 screws.
8. **INSTALL NAVIGATION RECEIVER ASSEMBLY WITH BRACKET (for DVD without USB Audio System)**
   a. Connect the connectors.
   b. Engage the 7 clips and 2 claws and install the navigation receiver assembly with bracket.
   c. Install the 4 bolts.

   Torque: 8.0 N*m (82 kgf*cm, 71 in.*lbf)

9. **INSTALL NO. 2 RADIO RECEIVER BRACKET (for SD)**
   a. Install the No. 2 radio receiver bracket with the 4 bolts.

   Torque: 4.5 N*m (46 kgf*cm, 40 in.*lbf)

10. **INSTALL NO. 1 RADIO RECEIVER BRACKET (for SD)**
    a. Install the No. 1 radio receiver bracket with the 4 bolts.

    Torque: 4.5 N*m (46 kgf*cm, 40 in.*lbf)

11. **INSTALL INSTRUMENT CLUSTER CENTER FINISH PANEL SUB-ASSEMBLY (for SD)**
    a. Install the instrument cluster center finish panel sub-assembly with the 4 screws.

12. **INSTALL NAVIGATION RECEIVER ASSEMBLY WITH BRACKET (for SD)**
    a. Connect the connectors.
    b. Engage the 7 clips and 2 claws and install the navigation receiver assembly with bracket.
    c. Install the 4 bolts.

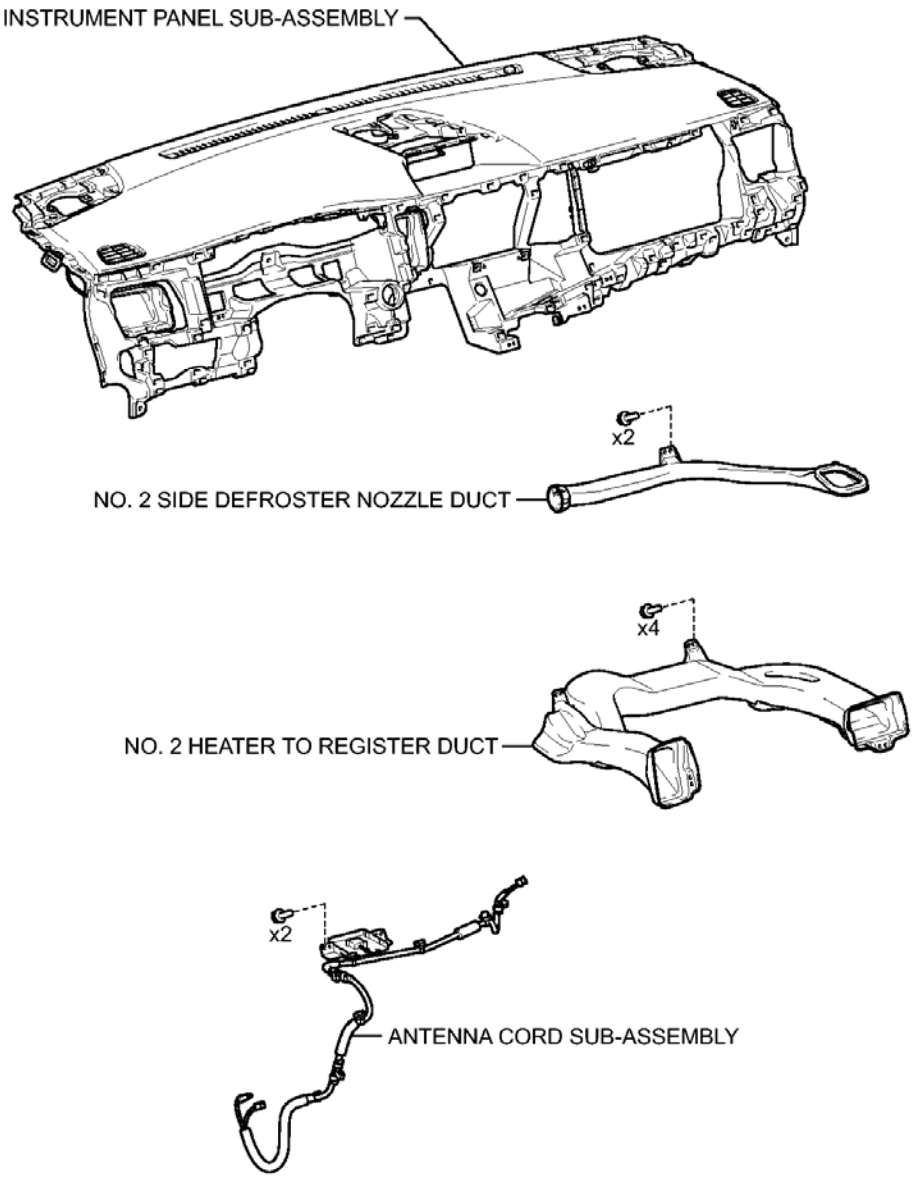
    Torque: 8.0 N*m (82 kgf*cm, 71 in.*lbf)

13. **INSTALL AIR CONDITIONING CONTROL ASSEMBLY (for Manual Air Conditioning System)** . Refer to **INSTALLATION - Step 1**
14. **INSTALL AIR CONDITIONING CONTROL ASSEMBLY (for Automatic Air Conditioning System)** . Refer to **INSTALLATION - Step 1**
15. **INSTALL FLOOR SHIFT POSITION INDICATOR HOUSING SUB-ASSEMBLY** . Refer to **INSTALLATION - Step 33**
16. **INSTALL SHIFT LEVER KNOB SUB-ASSEMBLY**
17. **INSTALL NO. 2 INSTRUMENT CLUSTER FINISH PANEL GARNISH** . Refer to **INSTALLATION - Step 35**

NAVIGATION ANTENNA

COMPONENTS

ILLUSTRATION



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Fig. 20: Navigation Antenna Replacement Components
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

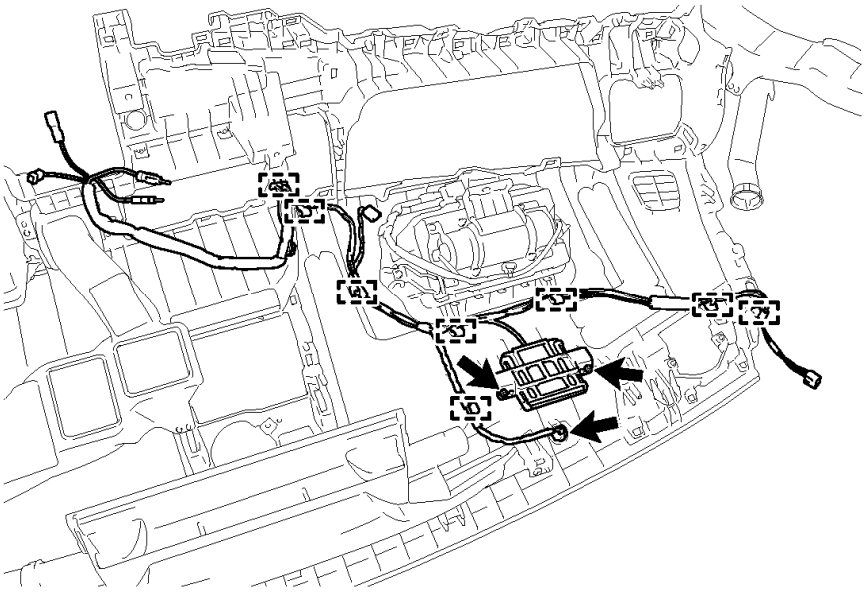
REMOVAL

REMOVAL

1. **REMOVE INSTRUMENT PANEL SUB-ASSEMBLY**

Refer to **REMOVAL**

2. **REMOVE NO. 2 SIDE DEFROSTER NOZZLE DUCT** . Refer to **DISASSEMBLY - Step 4**
3. **REMOVE NO. 2 HEATER TO REGISTER DUCT** . Refer to **DISASSEMBLY - Step 6**
4. **REMOVE ANTENNA CORD SUB-ASSEMBLY (for Automatic Air Conditioning System without Safety Connect System)**

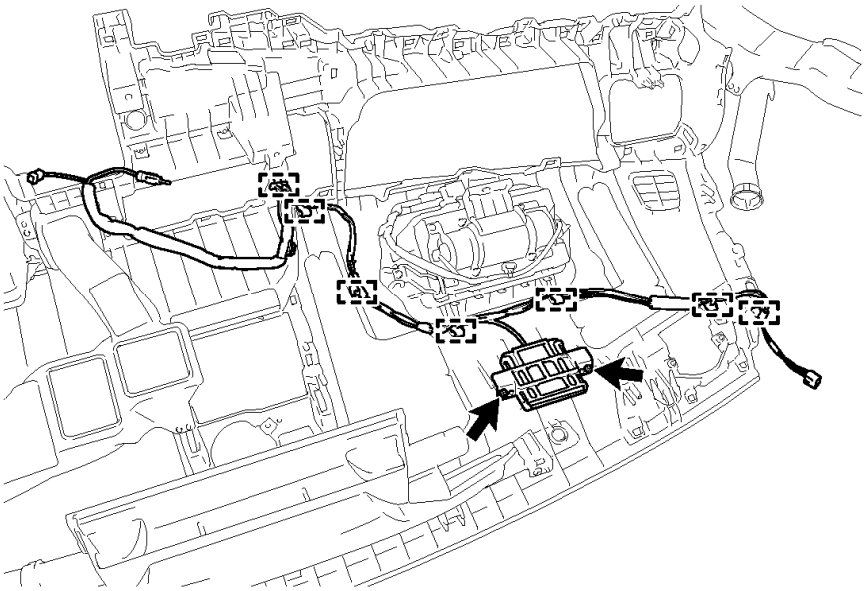


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Fig. 21: Identifying Antenna Cord Sub-Assembly, Connector & Fasteners (For Automatic Air Conditioning System With Navigation System)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

   a. Remove the 2 screws.
   b. Disconnect the connector.
   c. Disengage the 8 clamps and remove the antenna cord.

5. **REMOVE ANTENNA CORD SUB-ASSEMBLY (for Manual Air Conditioning System without Safety Connect System)**

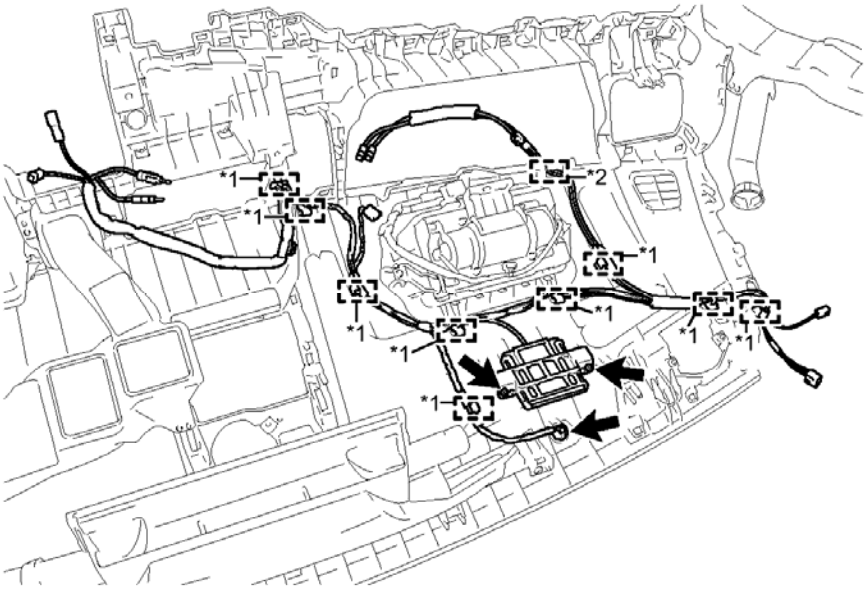


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Fig. 22: Identifying Antenna Cord Sub-Assembly Screws & Clamps (For Manual Air Conditioning System Without Safety Connect System)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

a. Remove the 2 screws.
b. Disengage the 7 clamps and remove the antenna cord.

6. **REMOVE ANTENNA CORD SUB-ASSEMBLY (w/ Safety Connect System)**



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Fig. 23: Identifying Antenna Cord Sub-Assembly, Connector & Fasteners (For Safety Connect System With Navigation System)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

TEXT IN ILLUSTRATION

*1	Clamp	*2	Hook

a. Remove the 2 screws.
b. Disconnect the connector.
c. Disengage the 9 clamps, hook and remove the antenna cord.

INSTALLATION

INSTALLATION

1. **INSTALL ANTENNA CORD SUB-ASSEMBLY (for Automatic Air Conditioning System without Safety Connect System)**
   a. Engage the 8 clamps and install the antenna cord.
   b. Connect the connector.
   c. Install the 2 screws.
2. **INSTALL ANTENNA CORD SUB-ASSEMBLY (for Manual Air Conditioning System without Safety Connect System)**
   a. Engage the 7 clamps and install the antenna cord.
   b. Install the 2 screws.
3. **INSTALL ANTENNA CORD SUB-ASSEMBLY (w/ Safety Connect System)**
   a. Engage the 9 clamps, hook and install the antenna cord.
   b. Connect the connector.
   c. Install the 2 screws.
4. **INSTALL NO. 2 HEATER TO REGISTER DUCT** . Refer to **REASSEMBLY - Step 10**
5. **INSTALL NO. 2 SIDE DEFROSTER NOZZLE DUCT** . Refer to **REASSEMBLY - Step 12**
6. **INSTALL INSTRUMENT PANEL SUB-ASSEMBLY**

   Refer to **INSTALLATION**