

No	VERIFY the bussed electrical center (BEC) fuse 6 (30A) or fuse 9 (30A) is OK. If OK, REPAIR the circuit in question. TEST the system for normal operation.
-----------	--

D2 CHECK CIRCUIT 1204 (BK/OG) FOR AN OPEN

- Measure the resistance between the suspect subwoofer amplifier, harness side and ground as follows:

Suspect Subwoofer Amplifier	Subwoofer Amplifier Connector-Pin	Circuit
Left outboard	C4157A Pin 2	1204 (BK/OG)
Left inboard	C4158A Pin 2	1204 (BK/OG)
Right inboard	C4159A Pin 2	1204 (BK/OG)
Right outboard	C4160A Pin 2	1204 (BK/OG)

Is the resistance less than 5 ohms?

Yes	GO to D3 .
No	REPAIR the circuit in question. TEST the system for normal operation.

D3 CHECK CIRCUIT 174 (GY/BK) FOR VOLTAGE

- Ignition ON.
- Operate the audio unit in radio tuner mode.
- Measure the voltage between the suspect subwoofer speaker, harness side and ground as follows:

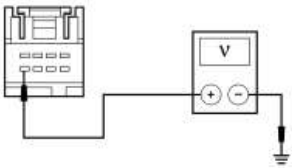
Suspect Subwoofer Amplifier	Subwoofer Amplifier Connector-Pin	Circuit
Left outboard	C4157A Pin 1	174 (GY/BK)
Left inboard	C4158A Pin 1	174 (GY/BK)
Right inboard	C4159A Pin 1	174 (GY/BK)
Right outboard	C4160A Pin 1	174 (GY/BK)

Is the voltage between 3.8 and 6.7 volts?

Yes	GO to D6 .
No	GO to D4 .

D4 CHECK CIRCUIT 174 (GY/BK) FOR A SHORT TO VOLTAGE

- Ignition OFF.
- Disconnect: Audio Unit [C290B](#) .
- Ignition ON.
- Measure the voltage between the audio unit [C290B](#) Pin 8, circuit 174 (GY/BK), harness side and ground.



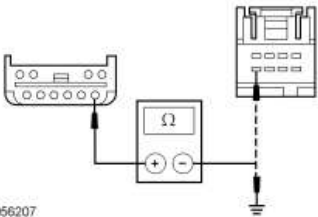
N0056196

Is any voltage present?

Yes	REPAIR the circuit. TEST the system for normal operation.
No	GO to D5 .

D5 CHECK CIRCUIT 174 (GY/BK) FOR AN OPEN OR SHORT TO GROUND

- Ignition OFF.
- Measure the resistance between the suspect subwoofer amplifier pin 8, circuit 174 (GY/BK), harness side and the audio unit [C290B](#) Pin 8, circuit 174 (GY/BK), harness side; and between the suspect subwoofer speaker pin 8, circuit 174 (GY/BK), harness side and ground.



N0056207

Is the resistance less than 5 ohms between the suspect subwoofer amplifier and the audio unit, and greater than 10,000 ohms between the suspect subwoofer amplifier and ground?

Yes	GO to D12 .
-----	-----------------------------

No	REPAIR the circuit. TEST the system for normal operation.
-----------	---

D6 CHECK THE AUDIO SIGNALS TO THE SUSPECT SUBWOOFER AMPLIFIER

- Operate the audio unit in radio tuner mode.
- Measure the AC voltage at the suspect subwoofer amplifier, harness side as follows:

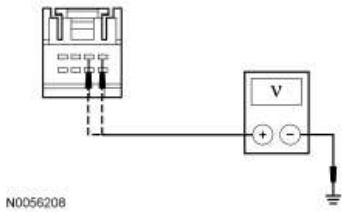
Suspect Subwoofer Amplifier	Subwoofer Amplifier Connector-Pin/ Circuit	Subwoofer Amplifier Connector-Pin/ Circuit
Left outboard	C4157A Pin 7 179 (OG/RD)	C4157A Pin 8 176 (PK/LG)
Left inboard	C4158A Pin 7 179 (OG/RD)	C4158A Pin 8 176 (PK/LG)
Right inboard	C4159A Pin 7 179 (OG/RD)	C4159A Pin 8 176 (PK/LG)
Right outboard	C4160A Pin 7 179 (OG/RD)	C4160A Pin 8 176 (PK/LG)

Is a fluctuating AC voltage present?

Yes	GO to D9 .
No	GO to D7 .

D7 CHECK CIRCUITS 176 (PK/LG) AND 179 (OG/RD) FOR A SHORT TO VOLTAGE

- Ignition OFF.
- Disconnect: Audio Unit [C290B](#) .
- Ignition ON.
- Measure the voltage between the audio unit [C290B](#) Pin 5, circuit 176 (PK/LG), harness side and ground; and between the audio unit [C290B](#) Pin 6, circuit 179 (OG/RD), harness side and ground.



N0056208

Is any voltage present?

Yes	REPAIR the circuit in question. TEST the system for normal operation.
No	GO to D8 .

D8 CHECK CIRCUITS 176 (PK/LG) AND 179 (OG/RD) FOR AN OPEN OR SHORT TO GROUND

- Ignition OFF.
- Measure the resistance between the suspect subwoofer amplifier, harness side and the audio unit, harness side; and between the suspect subwoofer amplifier, harness side and ground as follows:

Suspect Subwoofer Amplifier	Subwoofer Amplifier Connector- Pin	Audio Unit Connector- Pin	Circuit
Left outboard	C4157A Pin 8	C290B Pin 6	179 (OG/RD)
	C4157A Pin 8	C290B Pin 5	176 (PK/LG)
Left inboard	C4158A Pin 8	C290B Pin 6	179 (OG/RD)
	C4158A Pin 8	C290B Pin 5	176 (PK/LG)
Right inboard	C4159A Pin 8	C290B Pin 6	179 (OG/RD)
	C4159A Pin 8	C290B Pin 5	176 (PK/LG)
Right outboard	C4160A Pin 8	C290B Pin 6	179 (OG/RD)
	C4160A Pin 8	C290B Pin 5	176 (PK/LG)

Is the resistance less than 5 ohms between the suspect subwoofer amplifier and the audio unit, and greater than 10,000 ohms between the suspect subwoofer amplifier and ground?

Yes	GO to D12 .
No	REPAIR the circuit in question. TEST the system for normal operation.

D9 CHECK THE AUDIO CIRCUITS TO THE SUSPECT REAR SUBWOOFER

- Ignition OFF.
- Connect: Suspect Subwoofer Amplifier.
- Disconnect: Suspect Rear Subwoofer.
- Ignition ON.
- Operate the audio unit in radio tuner mode.
- Measure the AC voltage between the suspect rear subwoofer circuits, harness side as follows:

Suspect Subwoofer	Subwoofer Connector-Pin/ Circuit	Subwoofer Connector-Pin/ Circuit
Left outboard	C4161 Pin 1 800 (GY/LB)	C4161 Pin 2 801 (TN/YE)
Left inboard	C4161 Pin 3 806 (PK/LB)	C4161 Pin 4 807 (PK/LG)
Right inboard	C4162 Pin 1 802 (OG/RD)	C4162 Pin 2 803 (BN/PK)
Right outboard	C4162 Pin 3 825 (TN/LG)	C4162 Pin 4 827 (TN/WH)

Is a fluctuating AC voltage present?

Yes	INSTALL a new subwoofer for the suspect subwoofer. REFER to Subwoofer Speaker in this section. TEST the system for normal operation.
No	GO to D10 .

D10 CHECK THE AUDIO CIRCUITS TO THE SUSPECT SUBWOOFER FOR A SHORT TO VOLTAGE

- Ignition OFF.
- Disconnect: Suspect Subwoofer Amplifier [C4157B](#), [C4158B](#), [C4159B](#), or [C4160B](#) .
- Ignition ON.
- Measure the voltage between the suspect rear subwoofer, harness side and ground as follows:

Suspect Subwoofer	Subwoofer Connector-Pin	Circuit
Left outboard	C4161 Pin 1	800 (GY/LB)
	C4161 Pin 2	801 (TN/YE)
Left inboard	C4161 Pin 3	806 (PK/LB)

Suspect Subwoofer	Subwoofer Connector-Pin	Circuit
	C4161 Pin 4	807 (PK/LG)
Right inboard	C4162 Pin 1	802 (OG/RD)
	C4162 Pin 2	803 (BN/PK)
Right outboard	C4162 Pin 3	825 (TN/LG)
	C4162 Pin 4	827 (TN/WH)

Is any voltage present?

Yes	REPAIR the circuit in question. TEST the system for normal operation.
No	GO to D11 .

D11 CHECK THE AUDIO CIRCUITS TO THE SUSPECT SUBWOOFER FOR AN OPEN OR SHORT TO GROUND

- Ignition OFF.
- Measure the resistance between the suspect rear subwoofer, harness side and the rear amplifier, harness side; and between the suspect rear subwoofer, harness side and ground as follows:

Suspect Subwoofer	Subwoofer Connector-Pin	Rear Amplifier Connector-Pin	Circuit
Left outboard	C4161 Pin 1	C4157B Pin 4	800 (GY/LB)
	C4161 Pin 2	C4157B Pin 3	801 (TN/YE)
Left inboard	C4161 Pin 3	C4158B Pin 4	806 (PK/LB)
	C4161 Pin 4	C4158B Pin 3	807 (PK/LG)
Right inboard	C4162 Pin 1	C4159B Pin 4	802 (OG/RD)
	C4162 Pin 2	C4159B Pin 3	803 (BN/PK)
Right outboard	C4162 Pin 3	C4160B Pin 4	825 (TN/LG)
	C4162 Pin 4	C4160B Pin 3	827 (TN/WH)

Is the resistance less than 5 ohms between the suspect rear subwoofer and the rear subwoofer amplifier, and greater than 10,000 ohms between the suspect rear subwoofer and ground?

Yes	INSTALL a new rear subwoofer amplifier for the suspect amplifier. REFER to Subwoofer Amplifier — Luggage Compartment in this section. TEST the system for normal operation.
No	REPAIR the circuit in question. TEST the system for normal operation.

D12 CHECK FOR CORRECT AUDIO UNIT OPERATION

- Disconnect the audio unit connectors.
- Check for:
 - corrosion
 - damaged pins
 - pushed-out pins
- Connect the audio unit connectors and make sure they seat correctly.
- Operate the system and determine if the concern is still present.

Is the concern still present?

Yes	REMOVE the audio unit and SEND it to an authorized audio system repair facility. REFER to Audio Unit in this section. TEST the system for normal operation after the repair.
No	The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector.

Pinpoint Test E: Loud Popping Sound When Cycling The Ignition Switch

Refer to Wiring Diagrams Cell [130](#), Audio System/Navigation for schematic and connector information.

Normal Operation

Voltage is supplied to the audio unit through circuit 1000 (RD/BK) when the ignition switch is turned to the START position. When the audio unit receives this voltage, it mutes all speaker outputs and subwoofer amplifier enable circuits to eliminate the possibility of speaker pops during engine cranking.

Possible Causes

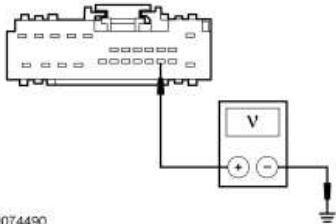
- Fuse
- Circuit 1000 (RD/BK) open
- Circuit 173 (DG/VT) short to voltage
- Circuit 174 (GY/BK) short to voltage
- Subwoofer amplifier
- Audio unit

PINPOINT TEST E : LOUD POPPING SOUND WHEN CYCLING THE IGNITION SWITCH

NOTICE: Use the correct probe adaptor(s) when making measurements. Failure to use the correct probe adaptor(s) may damage the connector.

E1 CHECK CIRCUIT 1000 (RD/BK) FOR VOLTAGE

- Ignition OFF.
- Disconnect: Audio Unit [C290D](#) .
- Disconnect: Starter Relay.
- Hold the key in the START position.
- Measure the voltage between the audio unit [C290D](#) Pin 15 circuit 1000 (RD/BK), harness side and ground.



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Is the voltage greater than 10 volts?

Yes	GO to E2 .
No	VERIFY the smart junction box (SJB) fuse 20 (10A) is OK. If OK, REPAIR the circuit. TEST the system for normal operation.

E2 ISOLATE THE FRONT/REAR SUBWOOFERS

NOTE: Repeat this step for each subwoofer amplifier.

- Ignition OFF.
- Connect: Audio Unit [C290D](#) .
- Disconnect: Suspect Subwoofer Amplifier.
- Cycle the key through all of the ignition switch positions.

Is a loud popping sound present for only one subwoofer amplifier?

Yes	INSTALL a new subwoofer amplifier for the suspect subwoofer amplifier. REFER to Subwoofer Amplifier — Door or Subwoofer Amplifier — Luggage Compartment in this section. TEST the system for normal operation.
No	GO to E3 .

E3 CHECK FOR CORRECT AUDIO UNIT OPERATION

- Connect: Starter Relay.
- Disconnect the audio unit connectors.
- Check for:
 - corrosion
 - damaged pins
 - pushed-out pins
- Connect the audio unit connectors and make sure they seat correctly.
- Operate the system and determine if the concern is still present.

Is the concern still present?

Yes	REMOVE the audio unit and SEND it to an authorized audio system repair facility. REFER to Audio Unit in this section. TEST the system for normal operation after the repair.
No	The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector.

Pinpoint Test F: The Audio Unit is Inoperative/Does Not Operate Correctly — Satellite Audio

Refer to Wiring Diagrams Cell [130](#), Audio System/Navigation for schematic and connector information.

Normal Operation

The satellite radio receiver receives voltage through circuit 729 (RD/WH), and ground through circuit 1204 (BK/OG). Digital signals are received by the satellite antenna and sent to the satellite radio receiver, which then provides audio signals to the audio unit. The satellite radio receiver and the audio unit communicate using the controller area network (CAN) through circuits 1847 (WH/OG) and 1848 (PK/OG).

Possible Causes

- Circuit 1594 (WH) open, short to ground or voltage
- Circuit 1595 (RD) open, short to ground or voltage
- Circuit 1596 (PK) open, short to ground or voltage
- Circuit 1597 (OG) open, short to ground or voltage
- Satellite radio receiver
- Audio unit

PINPOINT TEST F : THE AUDIO UNIT IS INOPERATIVE/DOES NOT OPERATE CORRECTLY — SATELLITE AUDIO

NOTICE: Use the correct probe adaptor(s) when making measurements. Failure to use the correct probe adaptor(s) may damage the connector.

F1 VERIFY AN ACTIVE SUBSCRIPTION

- Enter satellite mode on the audio unit and observe the display.

Does the display read CALL SIRIUS?

Yes	The subscription has expired. INFORM the customer to contact Sirius to re-activate the subscription.
No	GO to F2 .

F2 CHECK SATELLITE RADIO RECEIVER OPERATION

- Perform the satellite bezel diagnostic self-test.

Are alternating LH/RH tones audible?

Yes	GO to F6 .
No	GO to F3 .

F3 CHECK THE RECORDED DTCS

- Perform the satellite audio bezel diagnostic test.

Are any satellite audio system DTCs present?

Yes	If DTC B1031 SAT or DTC B1032 SAT is present, GO to Pinpoint Test G . For all other DTCs, REFER to the Satellite Radio Receiver Diagnostic Trouble Code (DTC) Index in this section.
No	GO to F4 .

F4 CHECK THE AUDIO CIRCUITS FROM THE SATELLITE RADIO RECEIVER FOR A SHORT TO VOLTAGE

- Ignition OFF.
- Disconnect: Audio Unit [C290A](#) .
- Disconnect: Satellite Radio Receiver [C3290](#) .
- Ignition ON.
- Measure the voltage between the satellite radio receiver, harness side and ground as follows:

Satellite Radio Receiver Connector-Pin	Circuit
C3290 Pin 5	1595 (RD)
C3290 Pin 6	1597 (OG)
C3290 Pin 11	1594 (WH)
C3290 Pin 12	1596 (PK)

Is any voltage present?

Yes	REPAIR the circuit in question. TEST the system for normal operation.
No	GO to F5 .

F5 CHECK THE AUDIO CIRCUITS FROM THE SATELLITE RADIO RECEIVER FOR AN OPEN OR SHORT TO GROUND

- Ignition OFF.
- Measure the resistance between the satellite radio receiver, harness side and the audio unit, harness side; and between the satellite radio receiver, harness side and ground as follows:

Satellite Radio Receiver Connector-Pin	Audio Unit Connector-Pin	Circuit
C3290 Pin 5	C290A Pin 1	1595 (RD)
C3290 Pin 6	C290A Pin 9	1597 (OG)
C3290 Pin 11	C290A Pin 2	1594 (WH)
C3290 Pin 12	C290A Pin 10	1596 (PK)

Is the resistance less than 5 ohms between the satellite radio receiver and the audio unit, and greater than 10,000 ohms between the satellite radio receiver and ground?

Yes	GO to F6 .
No	REPAIR the circuit in question. TEST the system for normal operation.

F6 ISOLATE THE SATELLITE RADIO RECEIVER

- Ignition OFF.
- Substitute a known good satellite radio receiver.
- Ignition ON.
- Operate the audio unit in satellite audio mode.

Does the system operate correctly?

Yes	SEND the original satellite radio receiver to an authorized audio system repair facility. TEST the system for normal operation.
No	INSTALL the original satellite radio receiver. REMOVE the audio unit and SEND it to an authorized audio system repair facility. REFER to Audio Unit in this section. TEST the system for normal operation after the repair.

Pinpoint Test G: Poor Reception — Satellite Audio

Normal Operation

Digital signals are received by the satellite antenna and sent to the satellite radio receiver, which then converts the signals and provides audio signals to the audio unit.

DTC B1031 — sets when an open or high resistance is detected in the satellite antenna circuit.

DTC B1032 — sets when a short to ground is detected in the satellite antenna circuit.

Possible Causes

- Satellite antenna cable
- Satellite antenna
- Satellite radio receiver

PINPOINT TEST G : POOR RECEPTION — SATELLITE AUDIO

NOTICE: Use the correct probe adaptor(s) when making measurements. Failure to use the correct probe adaptor(s) may damage the connector.

G1 REVIEW THE DTCs

- Review the DTCs from the satellite radio receiver self-test.

Is DTC B1031 or B1032 present?

Yes	GO to G3 .
No	GO to G2 .

G2 CHECK THE OPERATION OF THE SATELLITE AUDIO

- Drive the vehicle to an open location, free of obstacles.
- Operate the audio unit in satellite audio mode.

Is the reception OK?

Yes	The system is OK at this time. ADVISE the customer of the condition.
No	GO to G3 .

G3 CHECK THE SATELLITE ANTENNA CABLE

- Ignition OFF.
- Disconnect: Satellite Antenna Connection (at satellite radio receiver).
- Disconnect: Satellite Antenna Connection (at satellite antenna).
- Measure the resistance of the satellite radio antenna cable between the satellite radio receiver and the satellite antenna connection.

Is the resistance less than 1 ohm?

Yes	GO to G4 .
No	INSTALL a new satellite antenna cable. CLEAR the DTCs. REPEAT the self-test.

G4 SUBSTITUTE THE SATELLITE ANTENNA

- Install a known good satellite antenna.
- Operate the audio unit in satellite audio mode.

Is the reception OK?

Yes	INSTALL a new satellite antenna. REFER to Antenna — Satellite Radio in this section. CLEAR the DTCs. REPEAT the self-test.
No	REMOVE the satellite radio receiver and SEND it to an authorized audio system repair facility. REFER to Satellite Radio Receiver in this

section. TEST the system for normal operation after the repair.

Pinpoint Test H: No Global Positioning System (GPS) Antenna Signal

Normal Operation

The GPS antenna provides information from the GPS satellite system to the GPS receiver in the navigation module. This information is used to calculate vehicle position and direction of travel.

DTC B2204 — sets when an open or short to ground is detected in the GPS antenna circuit.

Possible Causes

- GPS antenna
- Audio unit

PINPOINT TEST H : NO GLOBAL POSITIONING SYSTEM (GPS) ANTENNA SIGNAL

NOTE: The vehicle must be driven outside of any enclosed structure to an area that is unobstructed by trees, tall buildings, and bridges.

H1 CHECK THE OPERATION OF THE GPS ICON

- Move the vehicle outside of any enclosed structure to an area that is unobstructed by trees, tall buildings, and bridges.
- Operate the audio unit in radio tuner mode.
- Press the MAP button.



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Does the GPS icon disappear?

Yes	The system is operating correctly at this time.
No	GO to H2 .

H2 CHECK THE RECORDED DTCS FROM THE NAVIGATION MODULE

- Check the recorded results from the navigation module self-test.

Are any DTCs recorded?

Yes	If DTC B2204 is present, GO to H4 . For all other DTCs, REFER to the Audio Unit Diagnostic Trouble Code (DTC) Index in this section.
No	GO to H3 .

H3 CHECK THE GPS ANTENNA MOUNTING

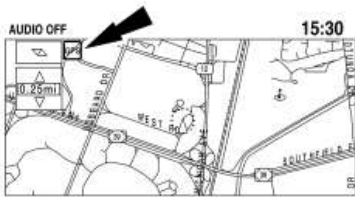
- Verify the GPS antenna is installed properly and no aftermarket equipment is obstructing it.

Is the GPS antenna mounted properly?

Yes	GO to H4 .
No	Correctly INSTALL the GPS antenna. REFER to Global Positioning System (GPS) Antenna in this section. TEST the system for normal operation.

H4 SUBSTITUTE THE GPS ANTENNA

- Install a good known GPS antenna. Refer to [Global Positioning System \(GPS\) Antenna](#) in this section.
- Move the vehicle outside of any enclosed structure to an area that is unobstructed by trees, tall buildings, and bridges.
- Operate the audio unit in radio tuner mode.
- Press the MAP button.



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Does the GPS icon disappear?

Yes	INSTALL a new GPS antenna. REFER to Global Positioning System (GPS) Antenna in this section. CLEAR the DTCs. REPEAT the self-test.
No	INSTALL the original GPS antenna. GO to H5 .

H5 CHECK FOR CORRECT AUDIO UNIT OPERATION

- Disconnect all the audio unit connectors.
- Check for:
 - corrosion
 - damaged pins

- pushed-out pins

- Connect all the audio unit connectors and make sure they seat correctly.
- Operate the system and verify the concern is still present.

Is the concern still present?

Yes	REMOVE the audio unit and SEND it to an authorized audio system repair facility. REFER to Audio Unit in this section. TEST the system for normal operation after the repair.
No	The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector. CLEAR the DTCs. REPEAT the self-test.

Pinpoint Test I: The Audible Switch Feedback Is Inoperative

Normal Operation

The audible switch feedback settings are controlled by the audio unit. The audible switch feedback can be set to ALL, TOUCH SCREEN, or NONE, depending on user preference.

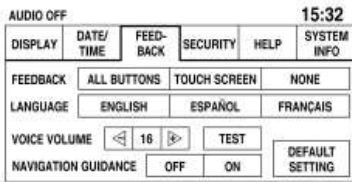
Possible Causes

- Audio unit

PINPOINT TEST I : THE AUDIBLE SWITCH FEEDBACK IS INOPERATIVE

I1 CHECK THE SWITCH DISPLAY

- Ignition ON.
- Operate the audio unit in radio tuner mode.
- Press the MENU button.
- Select the FEEDBACK tab.



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Is NONE highlighted on the audible feedback settings?

Yes	SELECT ALL BUTTONS. TEST the system for normal operation.
No	GO to I2 .

I2 CHECK FOR CORRECT AUDIO UNIT OPERATION

- Disconnect all the audio unit connectors.
- Check for:
 - corrosion
 - damaged pins
 - pushed-out pins
- Connect all the audio unit connectors and make sure they seat correctly.
- Operate the system and verify the concern is still present.

Is the concern still present?

Yes	REMOVE the audio unit and SEND it to an authorized audio system repair facility. REFER to Audio Unit in this section. TEST the system for normal operation after the repair.
No	The system is operating correctly at this time. The concern MAY have been caused by a loose or corroded connector. CLEAR the DTCs. REPEAT the self-test.

Pinpoint Test J: The Voice Guidance Is Inoperative/Does Not Operate Correctly

Normal Operation

The voice guidance settings are controlled by the audio unit. The voice guidance volume can be adjusted or turned off depending on user preference.

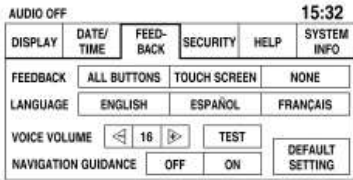
Possible Causes

- Audio unit

PINPOINT TEST J : THE VOICE GUIDANCE IS INOPERATIVE/DOES NOT OPERATE CORRECTLY

J1 CHECK THE VOICE GUIDANCE SETTINGS

- Ignition ON.
- Operate the audio unit in radio tuner mode.
- Press the MENU button.
- Select the FEEDBACK tab.



- Select DEFAULT SETTING.
- Verify the voice guidance operation.

Does the voice guidance operate correctly?

Yes	The system is operating correctly at this time.
No	GO to J2 .

J2 CHECK FOR CORRECT AUDIO UNIT OPERATION

- Disconnect all the audio unit connectors.
- Check for:
 - corrosion
 - damaged pins
 - pushed-out pins
- Connect all the audio unit connectors and make sure they seat correctly.
- Operate the system and verify the concern is still present.

Is the concern still present?

Yes	REMOVE the audio unit and SEND it to an authorized audio system repair facility. REFER to Audio Unit in this section. TEST the system for normal operation after the repair.
No	The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector. CLEAR the DTCs. REPEAT the self-test.

Pinpoint Test K: DTC B2924 — Audio Button Stuck

Normal Operation

DTC B2924 — sets as a continuous DTC when an audio unit button is detected as active for greater than 120 seconds, or sets if a button is detected as active for greater than 3 seconds during the self-test.

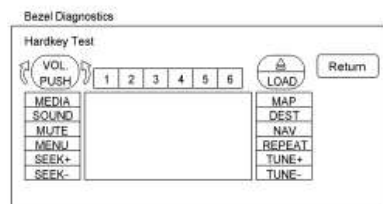
Possible Causes

- Audio unit

PINPOINT TEST K : DTC B2924 — AUDIO BUTTON STUCK

K1 CHECK FOR STUCK AUDIO UNIT BUTTONS

- Ignition ON.
 - Operate the audio unit in radio tuner mode.
 - Enter the self-diagnostic menu and select the HARDKEY TEST function.
 - **NOTE:** *If any button is pushed, the corresponding button on the screen appears highlighted.*
- Observe the buttons on the screen.



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Does the hardkey test indicate a stuck button?

Yes	GO to K2 .
No	The system is operating correctly at this time.

K2 CHECK FOR CORRECT AUDIO UNIT OPERATION

- Disconnect all the audio unit connectors.
- Check for:
 - corrosion
 - damaged pins
 - pushed-out pins
- Connect all the audio unit connectors and make sure they seat correctly.
- Operate the system and verify the concern is still present.

Is the concern still present?

Yes	REMOVE the audio unit and SEND it to an authorized audio system repair facility. REFER to Audio Unit in this section. TEST the system for normal operation after the repair.
No	The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector. CLEAR the DTCs. REPEAT the self-test.

Pinpoint Test L: The Position Cursor Is Inaccurate

Normal Operation

The primary source of vehicle location for the navigation system is the audio unit receiving the position signal through the global positioning system (GPS) antenna.

In addition, the audio unit receives the wheel pulse signal from the instrument cluster (which gateways the signal from the ABS module). This secondary signal is used to calculate vehicle position when the GPS signal is lost. It also supports the adaptive learning function of the audio unit, whereby the audio unit can compensate for long-term differences between the GPS signal location, and the actual distance traveled by the vehicle.

DTC B2204 (GPS Antenna Connection Open or Short) — sets when an open, short to ground, or short to voltage is detected in the GPS antenna circuit. If DTC B2204 is present, [GO to Pinpoint Test H.](#)

DTC U2473 (Unexpected Vehicle Speed) — sets when the calculated vehicle distance traveled based on the wheel pulse signal does not agree with the GPS antenna location. To do this, the audio unit compares the wheel pulse signal during a 4-second range, and compares it with the change in GPS antenna location. If the audio unit finds that the variation is greater than 0.5% after performing this check 4 times, it sets DTC U2473.

This pinpoint test is intended to diagnose the following:

- VSS signal concern
- Audio unit

PINPOINT TEST L : THE POSITION CURSOR IS INACCURATE

L1 CHECK THE AUDIO UNIT DTCS	
<ul style="list-style-type: none"> • Review the DTCs from the audio unit self-test. 	
Is DTC U2473 present?	
Yes	GO to L2.
No	GO to Pinpoint Test H.
L2 CHECK THE INSTRUMENT CLUSTER AND ABS MODULE DTCS	
<ul style="list-style-type: none"> • Carry out the self-test for the instrument cluster and the ABS module. 	
Are any DTCs recorded?	
Yes	REFER to Section 413-01 (instrument cluster) or Section 206-09 (ABS module) to diagnose a fault in the wheel pulse signal.
No	GO to L3.
L3 CHECK FOR CORRECT AUDIO UNIT OPERATION	
<ul style="list-style-type: none"> • Disconnect all the audio unit connectors. • Check for: <ul style="list-style-type: none"> ▪ corrosion ▪ damaged pins ▪ pushed-out pins • Connect all the audio unit connectors and make sure they seat correctly. • Operate the system and verify the concern is still present. 	
Is the concern still present?	
Yes	REMOVE the audio unit and SEND it to an authorized audio system repair facility. REFER to Audio Unit in this section. TEST the system for normal operation after the repair.

No	The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector. CLEAR the DTCs. REPEAT the self-test.
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Pinpoint Test M: The Speed Sensitive Volume Does Not Operate Correctly

Normal Operation

The speed sensitive volume function adjusts the volume based on the vehicle speed sensor (VSS) signal from the instrument cluster. The instrument cluster does not generate the VSS signal; it gateways the signal from the PCM.

DTC U0155 (Lost Communication With Instrument Panel Cluster Control Module) — sets when the VSS signal is lost for greater than 5 seconds. When the signal is lost, the audio unit turns the speed sensitive volume feature off. The smart junction box (SJB) also receives this signal, and should demonstrate symptoms if the VSS signal is lost. If no symptoms are present, this DTC can be ignored, as it may have been set by a low battery voltage condition.

This pinpoint test is intended to diagnose the following:

- Speed sensitive volume setting
- VSS signal concern
- Audio unit

PINPOINT TEST M : THE SPEED SENSITIVE VOLUME DOES NOT OPERATE CORRECTLY

M1 CHECK THE SPEEDOMETER OPERATION

- Drive the vehicle and observe the speedometer.

Does the speedometer operate correctly?

Yes	GO to M2 .
No	REFER to Section 413-01 .

M2 CHECK THE SPEED SENSITIVE VOLUME SETTING

- Turn the speed sensitive volume off. Refer to the Owner's Literature.
- Operate the audio unit in radio tuner (AM/FM) mode.
- Drive the vehicle at various speeds and observe the speaker volume.
- Set the speed sensitive volume to maximum compensation. Refer to the Owner's Literature.
- Operate the audio unit in radio tuner (AM/FM) mode.
- Drive the vehicle at various speeds and observe the speaker volume.

Does the volume remain constant with the speed sensitive volume turned off, and increase and decrease with vehicle speed with the speed sensitive volume set to maximum?

Yes	The system is operating correctly at this time. INFORM the customer of proper operation.
No	GO to M3 .

M3 CHECK FOR DTC U0155

- Ignition OFF.
- Clear any audio unit DTCs.
- Ignition ON.
- Wait 10 seconds, and re-run the audio unit self-test.
- Run the SJB self-test.

Is DTC U0155 present in both the audio unit and the SJB?

Yes	GO to M5 .
No	GO to M4 .

M4 CHECK FOR CORRECT AUDIO UNIT OPERATION

- Disconnect all the audio unit connectors.
- Check for:
 - corrosion
 - damaged pins
 - pushed-out pins
- Connect all the audio unit connectors and make sure they seat correctly.
- Operate the system and determine if the concern is still present.

Is the concern still present?

Yes	REMOVE the audio unit and SEND it to an authorized audio system repair facility. REFER to Audio Unit in this section. TEST the system for normal operation after the repair.
No	The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector. CLEAR the DTCs. REPEAT the self-test.

M5 CHECK FOR CORRECT INSTRUMENT CLUSTER OPERATION

- Disconnect the instrument cluster connector.
- Check for:
 - corrosion
 - damaged pins
 - pushed-out pins
- Connect the instrument cluster connector and make sure it seats correctly.
- Operate the system and determine if the concern is still present.

Is the concern still present?

Yes	INSTALL a new instrument cluster. REFER to Section 413-01 . CLEAR the audio unit DTCs. TEST the system for normal operation.
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No	The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector. CLEAR the DTCs. REPEAT the self-test.
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Pinpoint Test N: The Audio Unit is Inoperative/Does Not Operate Correctly — Audio Input Jack

Refer to Wiring Diagrams Cell [130](#), Audio System/Navigation for schematic and connector information.

Normal Operation

Audio signals are sent from the audio input jack to the audio unit. There are no external power or ground circuits to the audio input jack.

Possible Causes

- Circuit 2047 (RD/WH) open, short to ground or voltage
- Circuit 2048 (RD/BK) open, short to ground or voltage
- Circuit 2049 (LG/WH) open, short to ground or voltage
- Circuit 2050 (LG/BK) open, short to ground or voltage
- Audio input jack
- Audio unit

PINPOINT TEST N : THE AUDIO UNIT IS INOPERATIVE/DOES NOT OPERATE CORRECTLY — AUDIO INPUT JACK

NOTICE: Use the correct probe adaptor(s) when making measurements. Failure to use the correct probe adaptor(s) may damage the connector.

NOTE: Before performing this pinpoint test, be sure the MP3 device is operating correctly.

N1 CHECK THE AUDIO INPUT JACK CIRCUITS FOR A SHORT TO VOLTAGE

- Ignition OFF.
- Disconnect: Audio Input Jack [C3312](#) .
- Ignition ON.
- Measure the voltage between the audio input jack, harness side and ground as follows:

Audio Input Jack Connector-Pin	Circuit
C3312 Pin 1	2048 (RD/BK)
C3312 Pin 2	2047 (RD/WH)
C3312 Pin 3	2049 (LG/WH)
C3312 Pin 4	2050 (LG/BK)

Is any voltage present?

Yes	REPAIR the circuit in question. TEST the system for normal operation.
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No	GO to N2 .
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N2 CHECK THE AUDIO INPUT JACK CIRCUITS FOR AN OPEN OR SHORT TO GROUND

- Ignition OFF.
- Disconnect: Audio Unit [C290A](#) .
- Measure the resistance between the audio input jack, harness side and the audio unit, harness side; and between the audio input jack, harness side and ground as follows:

Audio Input Jack Connector-Pin	Audio Unit Connector-Pin	Circuit
C3312 Pin 1	C290A Pin 6	2048 (RD/BK)
C3312 Pin 2	C290A Pin 14	2047 (RD/WH)
C3312 Pin 3	C290A Pin 8	2049 (LG/WH)
C3312 Pin 4	C290A Pin 7	2050 (LG/BK)

Is the resistance less than 5 ohms between the audio input jack and the audio unit, and greater than 10,000 ohms between the audio input jack and ground?

Yes	GO to N3 .
No	REPAIR the circuit in question. TEST the system for normal operation.

N3 SUBSTITUTE THE AUDIO INPUT JACK

- Install a known good audio input jack.
- Operate the audio unit in auxiliary audio mode.

Does the system operate correctly?

Yes	INSTALL a new audio input jack. TEST the system for normal operation.
No	INSTALL the original audio input jack. REMOVE the audio unit and SEND it to an authorized audio system repair facility. REFER to Audio Unit in this section. TEST the system for normal operation after the repair.

