

AUDIO/VIDEO

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AUDIO - ELECTRICAL DIAGNOSTICS

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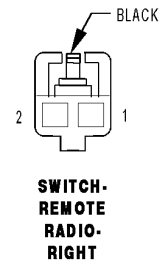
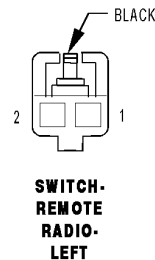
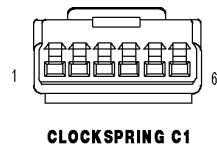
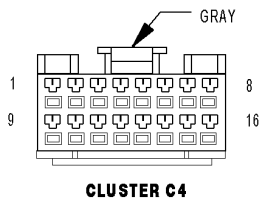
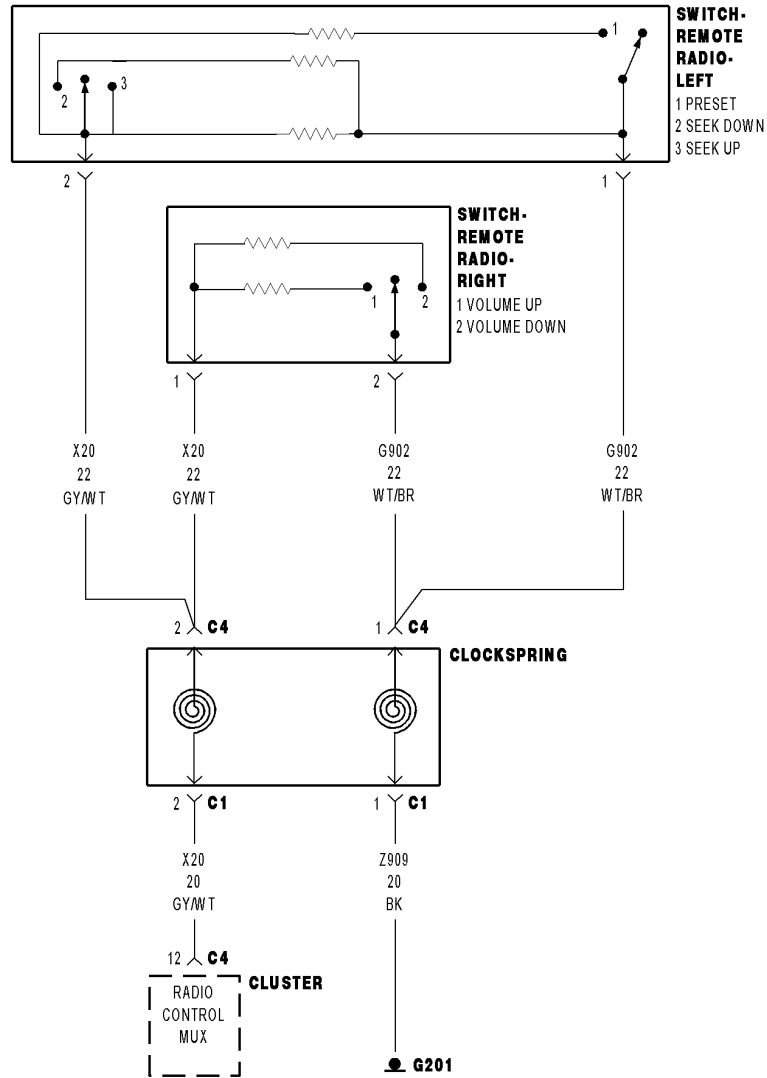
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AUDIO - ELECTRICAL DIAGNOSTICS

DIAGNOSIS AND TESTING

B1428-REMOTE RADIO SWITCH INPUT CIRCUIT STUCK



For a complete wiring diagram Refer to Section 8W.

- **When Monitored:**

With the ignition in any position except off.

- **Set Condition:**

The Instrument Cluster detects a stuck switch state on the (X20) Radio Control MUX circuit for more than 30 seconds.

Possible Causes
(X20) RADIO CONTROL MUX CIRCUIT SHORT TO GROUND (X20) RADIO CONTROL MUX CIRCUIT SHORT TO (Z909) GROUND LEFT REMOTE RADIO SWITCH RIGHT REMOTE RADIO SWITCH CLOCKSPRING INSTRUMENT CLUSTER (CCN)

Diagnostic Test

1. CHECK FOR ACTIVE DTC

With the scan tool, read the active DTC's.

Cycle the ignition switch from off to on at least 5 times, leaving the ignition on for a minimum of 90 seconds per cycle.

With the scan tool, read the active DTC's.

Does the scan tool display B1428: REMOTE RADIO SWITCH INPUT CIRCUIT STUCK?

Yes >> Go To 2

No >> The condition that caused the symptom is currently not present. Inspect the related wiring for a possible intermittent condition. Look for any chafed, pierced, pinched, or partially broken wires.

Perform the BODY VERIFICATION TEST — VER 1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

2. LEFT REMOTE RADIO SWITCH

Turn the ignition off.

Disconnect the Left Remote Radio Switch harness connector.

Turn the ignition on.

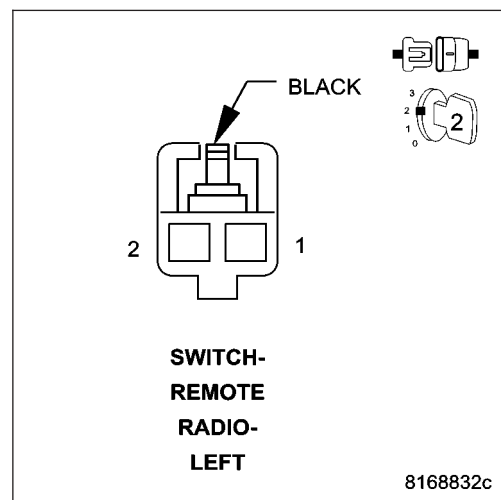
With the scan tool monitor the Remote Radio Control Switch voltage.

Is the voltage approximately 5.0 volts?

Yes >> Replace the Left Remote Radio Switch in accordance with the service information.

Perform BODY VERIFICATION TEST – VER 1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

No >> Go To 3



3. RIGHT REMOTE RADIO SWITCH

Turn the ignition off.

Disconnect the Right Remote Radio Switch harness connector.

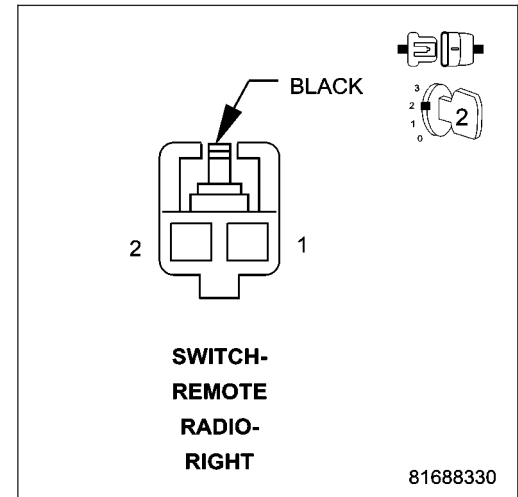
Turn the ignition on.

With the scan tool monitor the Remote Radio Control Switch voltage.

Is the voltage approximately 5.0 volts?

Yes >> Replace the Right Remote Radio Switch in accordance with the service information.
Perform BODY VERIFICATION TEST – VER 1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

No >> Go To 4



4. CLOCKSPRING

Turn the ignition off.

Disconnect the Clockspring C1 harness connector.

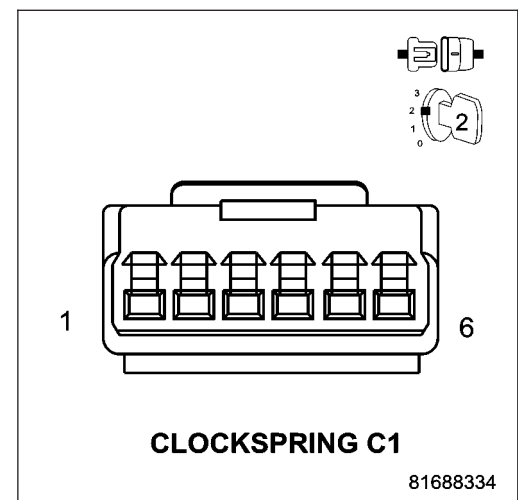
Turn the ignition on.

With the scan tool monitor the Remote Radio Control Switch voltage.

Is the voltage approximately 5.0 volts?

Yes >> Check the (X20) Radio Control MUX circuit for a short between the clockspring and the remote radio switches. If ok, replace the Clockspring in accordance with the service information.
Perform BODY VERIFICATION TEST – VER 1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

No >> Go To 5



5. (X20) RADIO CONTROL MUX CIRCUIT SHORT TO GROUND

Turn the ignition off.

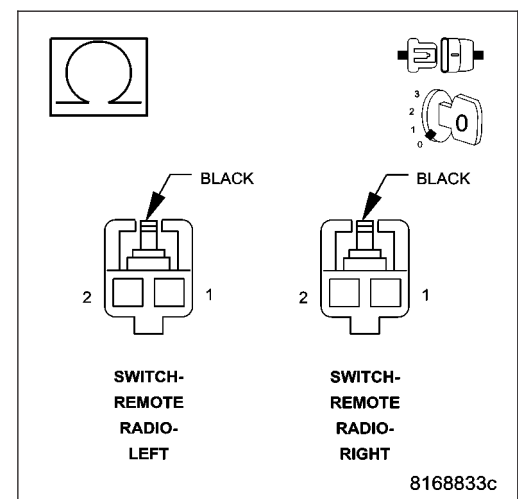
Disconnect the Instrument Cluster C4 harness connector.

Measure the resistance between ground and the (X20) Radio Control MUX circuit.

Is the resistance below 100.0 ohms?

Yes >> Repair the (X20) Radio Control MUX circuit for a short to ground.
Perform BODY VERIFICATION TEST – VER 1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

No >> Go To 6



6. (X20) RADIO CONTROL MUX CIRCUIT SHORT TO (Z909) GROUND CIRCUIT

Disconnect left and right Remote Radio Switch harness connectors.

Measure the resistance between the (X20) Radio Control MUX circuit and the (Z909) Ground circuit.

Is the resistance below 100.0 ohms?

Yes >> Repair the (X20) Radio Control MUX circuit for a short to the (Z909) Ground circuit.

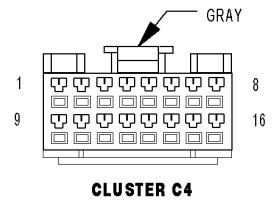
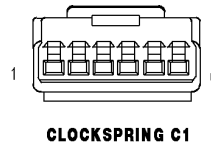
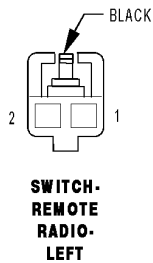
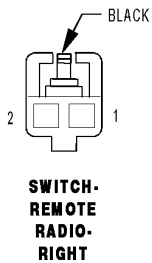
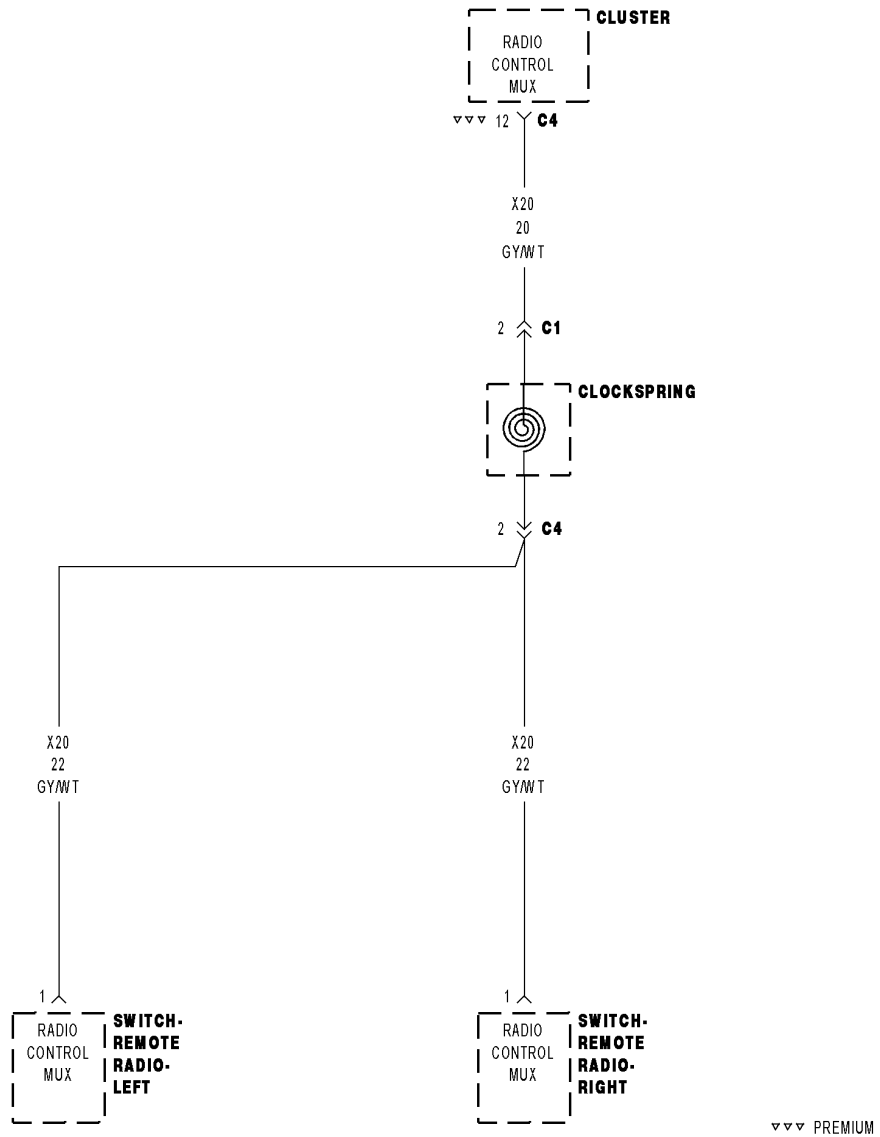
Perform BODY VERIFICATION TEST – VER 1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

No >> Replace the Instrument Cluster in accordance with the service information.

Perform BODY VERIFICATION TEST – VER 1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

ART UNDER CONSTRUCTION

B1427-REMOTE RADIO SWITCH INPUT CIRCUIT HIGH



For a complete wiring diagram Refer to Section 8W.

- **When Monitored:**
With the Radio on.
- **Set Condition:**
The CCN Detects the Radio Control MUX circuit is open or shorted to voltage.

Possible Causes
(X20) REMOTE CONTROL MUX CIRCUIT OPEN (X20) REMOTE CONTROL MUX CIRCUIT SHORT TO VOLTAGE LEFT REMOTE RADIO SWITCH RIGHT REMOTE RADIO SWITCH CLOCKSPRING INSTRUMENT CLUSTER (CCN)

Diagnostic Test

1. CHECK FOR ACTIVE DTC

With the scan tool, read the active DTC's.

Turn the ignition on.

With the scan tool, read the active DTC's.

Does the scan tool display B1427: REMOTE RADIO SWITCH INPUT CIRCUIT HIGH?

Yes >> Go To 2

No >> The condition that caused the symptom is currently not present. Inspect the related wiring for a possible intermittent condition. Look for any chafed, pierced, pinched, or partially broken wires.

Perform the BODY VERIFICATION TEST — VER 1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

2. LEFT REMOTE RADIO SWITCH

Turn the ignition off.

Disconnect the Left Remote Radio Switch harness connector.

Turn the ignition on.

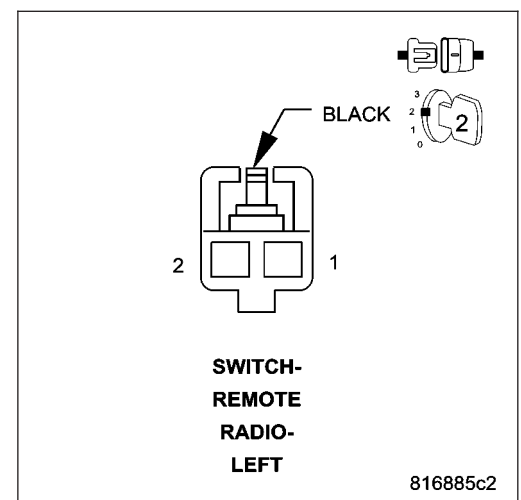
With the scan tool monitor the Remote Radio Control Switch voltage.

Is the voltage approximately 5.0 volts?

Yes >> Replace the Left Remote Radio Switch in accordance with the service information.

Perform BODY VERIFICATION TEST – VER 1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

No >> Go To 3



3. RIGHT REMOTE RADIO SWITCH

Turn the ignition off.

Disconnect the Right Remote Radio Switch harness connector.

Turn the ignition on.

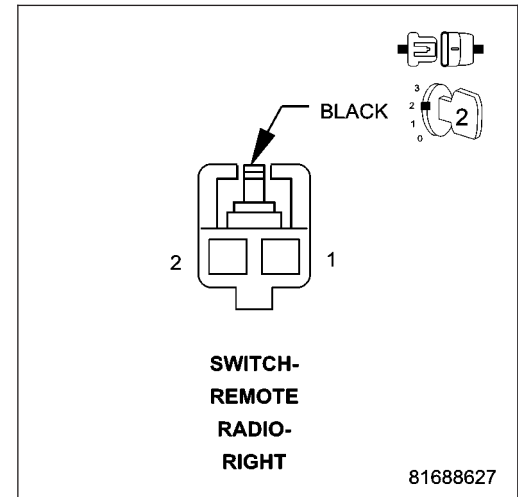
With the scan tool monitor the Remote Radio Control Switch voltage.

Is the voltage approximately 5.0 volts?

Yes >> Replace the Right Remote Radio Switch in accordance with the service information.

Perform BODY VERIFICATION TEST – VER 1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

No >> Go To 4



4. CLOCKSPrING

Turn the ignition off.

Disconnect the Clockspring C1 harness connector.

Turn the ignition on.

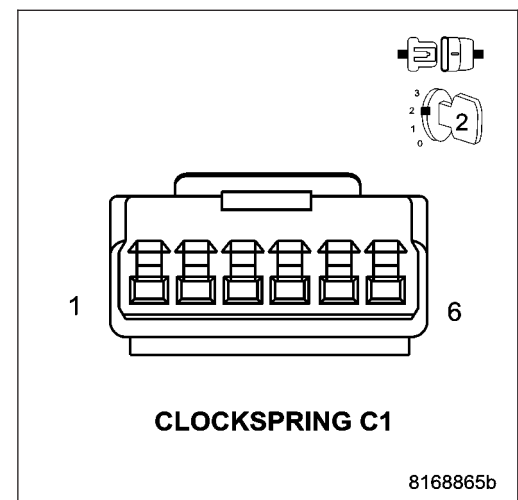
With the scan tool monitor the Remote Radio Control Switch voltage.

Is the voltage approximately 5.0 volts?

Yes >> Check the (X20) Radio Control MUX circuit for a open between the clockspring and the remote radio switches. If ok, replace the Clockspring in accordance with the service information.

Perform BODY VERIFICATION TEST – VER 1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

No >> Go To 5



5. (X20) RADIO CONTROL MUX CIRCUIT SHORT TO VOLTAGE

Turn the ignition off.

Disconnect the Instrument Cluster C4 harness connector.

Turn the ignition on.

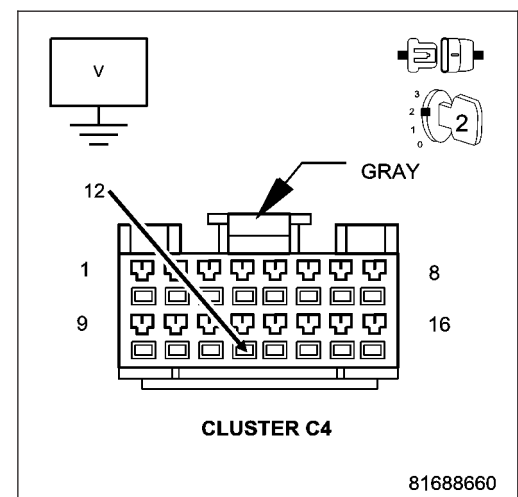
Measure the voltage on the (X20) Radio Control MUX circuit.

Is the voltage above 10.0 volts?

Yes >> Repair the (X20) Radio Control MUX circuit for a short to voltage.

Perform BODY VERIFICATION TEST – VER 1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

No >> Go To 6

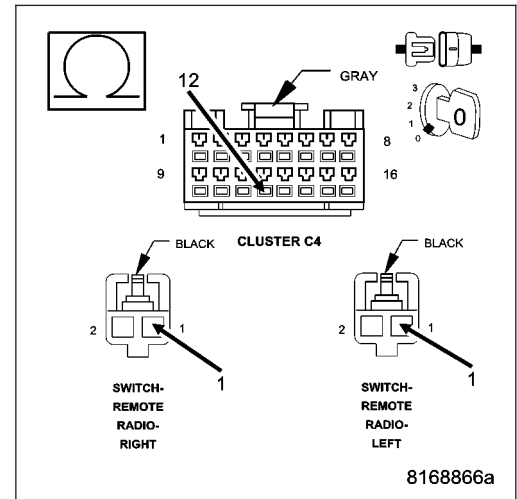


6. (X20) RADIO CONTROL MUX CIRCUIT OPEN

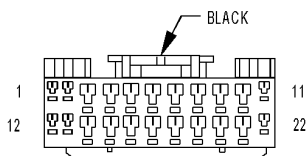
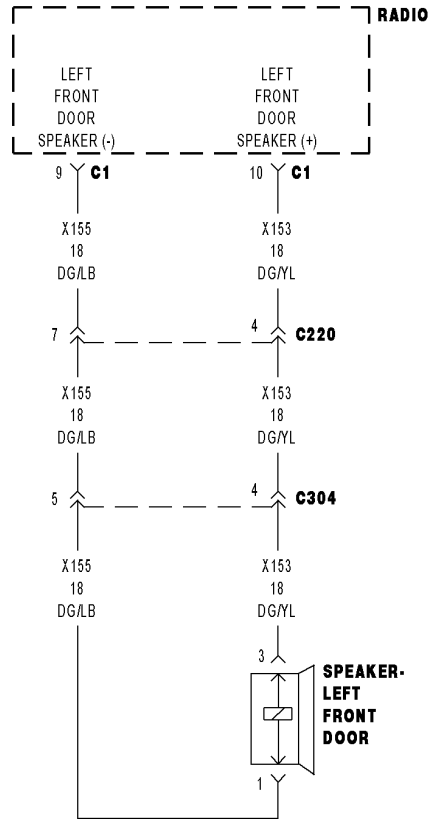
Disconnect the Instrument Cluster C4 harness connector.
 Measure the resistance of the (X20) Radio Control MUX circuit.

Is the resistance above 100.0 ohms?

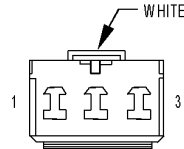
- Yes** >> Repair the (X20) Radio Control MUX circuit for a open.
 Perform BODY VERIFICATION TEST – VER 1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)
- No** >> Replace the Instrument Cluster in accordance with the service information.
 Perform BODY VERIFICATION TEST – VER 1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)



B1401-FRONT LEFT AUDIO SPEAKER OUTPUT CIRCUIT LOW



RADIO C1



SPEAKER-LEFT FRONT DOOR

816ab5c9

For a complete wiring diagram Refer to Section 8W.

- **When Monitored:**
- With the Radio on.
- **Set Condition:**
- When the Output circuit is LOW for more than 3 seconds.

Possible Causes
(X153) LEFT FRONT DOOR SPEAKER (+) CIRCUIT SHORTED TO GROUND
(X155) LEFT FRONT DOOR SPEAKER (-) CIRCUIT SHORTED TO GROUND
SPEAKER

Diagnostic Test

1. INTERMITTENT CONDITION

Turn the ignition on.
 With the Scan Tool, clear all Audio DTC's.
 Turn the Radio on.
 With the Scan Tool, read the DTC information.

Does the Scan Tool read: B1401-FRONT LEFT AUDIO SPEAKER OUTPUT CIRCUIT LOW?

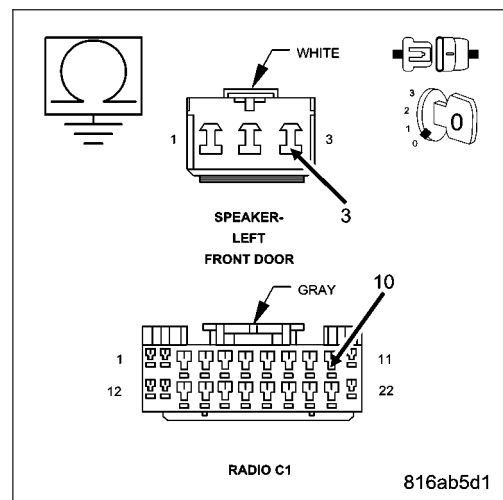
- Yes** >> Go To 3
- No** >> The condition that caused the symptom is currently not present. Inspect the related wiring for a possible intermittent condition. Look for any chafed, pierced, pinched, or partially broken wires.
 Perform the BODY VERIFICATION TEST VER 1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

2. (X153) LEFT FRONT DOOR SPEAKER (+) CIRCUIT SHORTED TO GROUND

Turn the ignition off.
 Disconnect the Radio C1 harness connector.
 Disconnect the Front Left Audio Speaker connector.
 Measure the resistance between the (X153) Left Front Door Speaker (+) circuit and ground.

Is the resistance below 5.0 ohms?

- Yes** >> Repair short to ground on the (X153) Left Front Door Speaker (+) circuit.
 Perform the BODY VERIFICATION TEST VER 1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)
- No** >> Go To 3



3. (X155) LEFT FRONT DOOR SPEAKER (-) CIRCUIT SHORTED TO GROUND

Turn the ignition off.

Disconnect the Radio C1 harness connector.

Disconnect the Front Left Audio Speaker connector.

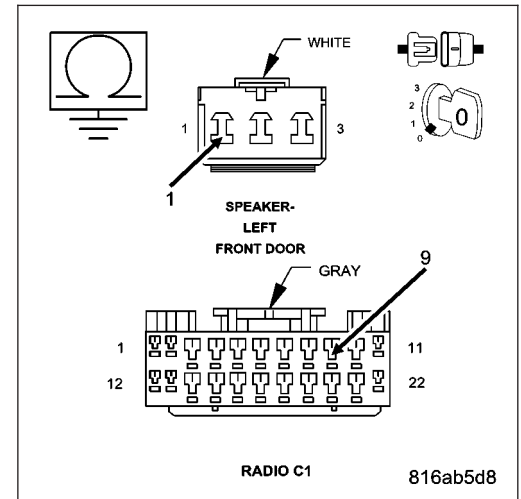
Measure the resistance between the (X155) Left Front Door Speaker (-) circuit and ground.

Is the resistance below 5.0 ohms?

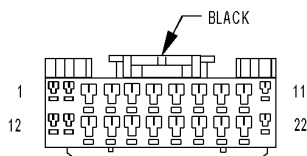
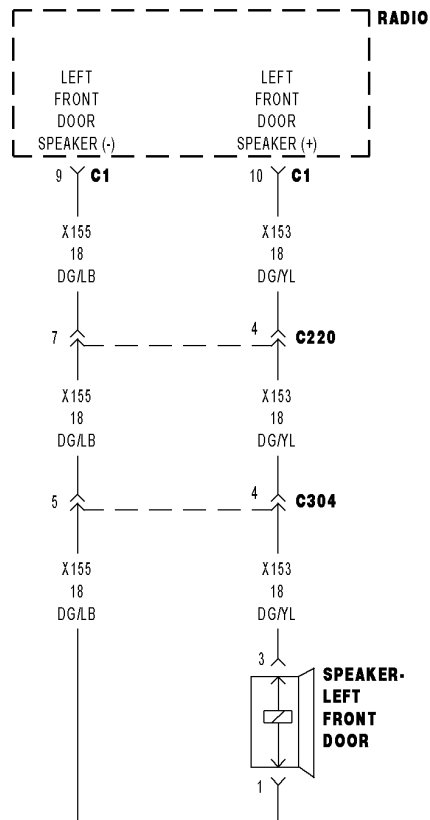
Yes >> Repair short to ground on the (X155) Left Front Door Speaker (-) circuit.

No >> Replace the Left Front Door Speaker in accordance with the service information.

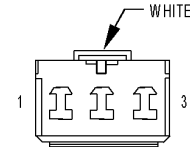
Perform the BODY VERIFICATION TEST VER 1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)



B1402-FRONT LEFT AUDIO SPEAKER OUTPUT CIRCUIT HIGH



RADIO C1



SPEAKER-LEFT FRONT DOOR

816ab5c9

For a complete wiring diagram Refer to Section 8W.

Possible Causes

SPEAKER

(X153) LEFT FRONT DOOR SPEAKER CIRCUIT (+)

(X155) LEFT FRONT DOOR SPEAKER CIRCUIT (-)

Diagnostic Test

1. INTERMITTENT CONDITION

Turn the ignition on, then off, and then on again.

With the scan tool, read Radio DTCs.

Does the scan tool display active: B1402-FRONT LEFT AUDIO SPEAKER OUTPUT CIRCUIT HIGH?**Yes** >> Go To 2**No** >> The conditions that caused this code to set are not present at this time. Using the wiring diagram/schematic as a guide, inspect the wiring and connectors.

Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

2. CHECK FOR VOLTAGE ON THE (X153) SPEAKER (+) CIRCUIT

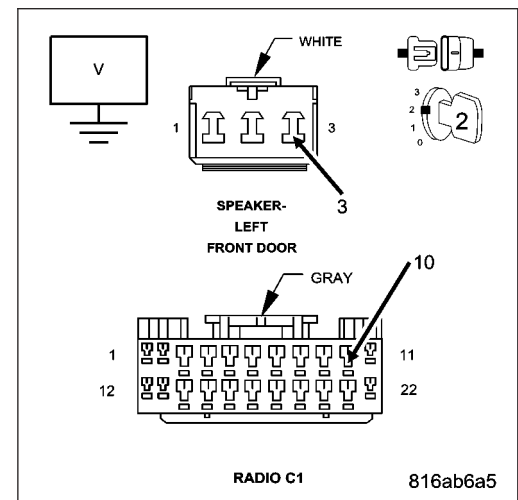
Turn the ignition off.

Disconnect the Radio C1 harness connector.

Disconnect the Left Front Door Speaker harness connector.

Turn the ignition on.

Measure for voltage on the (X153) Speaker (+) circuit.

Is the voltage above 10.0 volts?**Yes** >> Repair the (X153) Speaker (+) circuit for a short to voltage. Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)**No** >> Go To 3

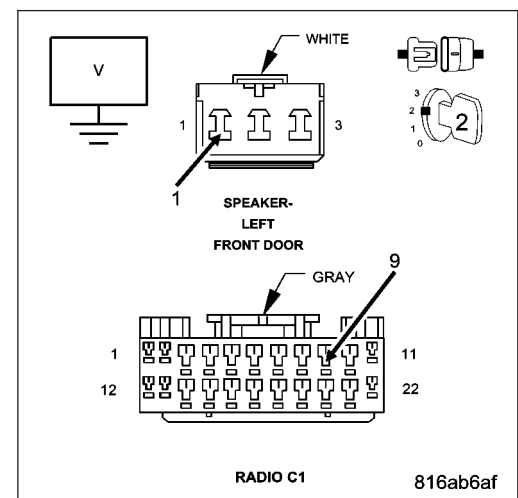
3. CHECK FOR VOLTAGE ON THE (X155) SPEAKER (-) CIRCUIT

Turn the ignition on.

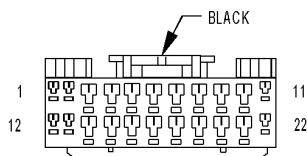
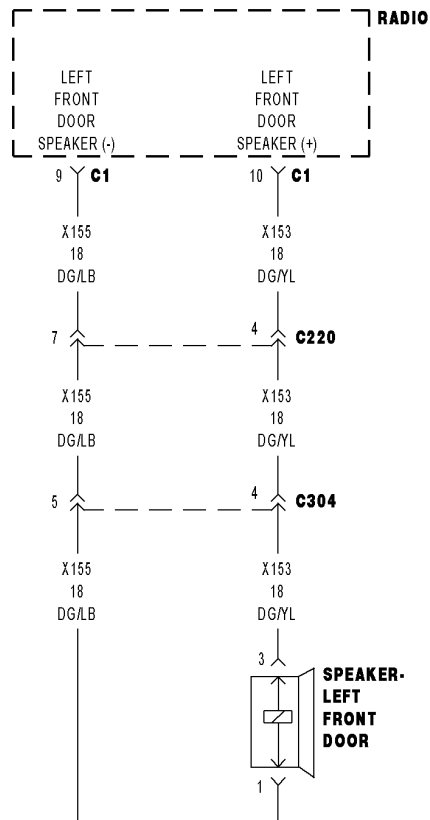
Measure for voltage on the (X155) Speaker (-) circuit.

Is the voltage above 10.0 volts?**Yes** >> Repair the (X155) Speaker (-) circuit for a short to voltage. Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)**No** >> Replace the Radio in accordance with the service information.

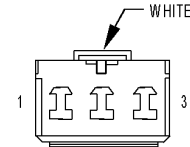
Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)



B1403-FRONT LEFT AUDIO SPEAKER OUTPUT CIRCUIT OPEN



RADIO C1



SPEAKER-LEFT FRONT DOOR

816ab5c9

For a complete wiring diagram Refer to Section 8W.

- **When Monitored:**
- With the Radio on.
- **Set Condition:**
- When the Output circuit is open for more than 3 seconds. The Radio will not set the fault if the radio confirms an amplifier is on the BUS.

Possible Causes
(X153) LEFT FRONT DOOR SPEAKER CIRCUIT (+) OPEN
(X155) LEFT FRONT DOOR SPEAKER CIRCUIT (-) OPEN
SPEAKER

Diagnostic Test

1. INTERMITTENT CONDITION

Turn the ignition on.

With the Scan Tool, clear all Audio DTC's.

Turn the Radio on.

With the Scan Tool, read the DTC information.

Does the Scan Tool read: B1403-FRONT LEFT AUDIO SPEAKER OUTPUT CIRCUIT OPEN?

Yes >> Go To 2

No >> The condition that caused the symptom is currently not present. Inspect the related wiring for a possible intermittent condition. Look for any chafed, pierced, pinched, or partially broken wires.

Perform the BODY VERIFICATION TEST VER 1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

2. (X153) LEFT FRONT DOOR SPEAKER CIRCUIT (+) OPEN

Turn the ignition off.

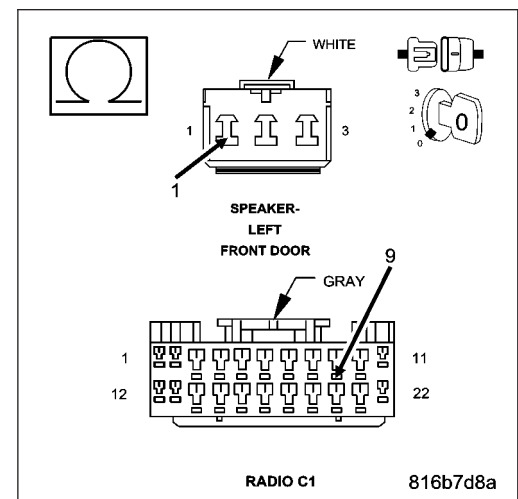
Disconnect the Radio C1 harness connector.

Disconnect the Left Front Door Speaker harness connector.

Measure the resistance of the (X153) Left Front Door Speaker (+) circuit between the Radio C1 connector, and the Left Front Door Speaker harness connector.

Is the resistance below 5.0 ohms?

Yes >> Go To 3



- No** >> Repair open in the (X153) Left Front Door Speaker (+) circuit. Perform the BODY VERIFICATION TEST VER 1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

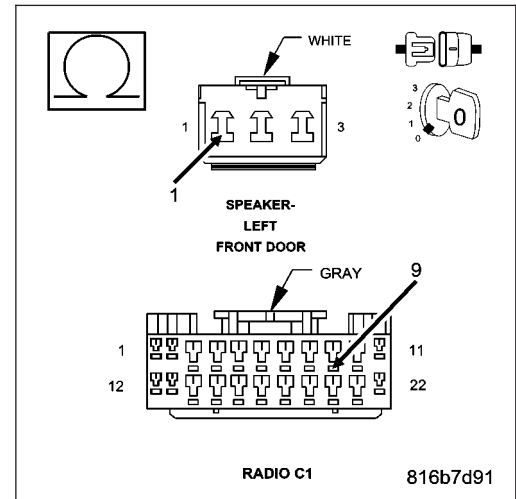
3. (X155) LEFT FRONT DOOR SPEAKER CIRCUIT (-) OPEN

Turn the ignition off.

Measure the resistance of the (X155) Left Front Door Speaker (-) circuit between the Radio C1 connector, and the Left Front Door Speaker harness connector.

Is the resistance below 5.0 ohms?

Yes >> Go To 4



No >> Repair open in the (X155) Left Front Door Speaker (-) circuit. Perform the BODY VERIFICATION TEST VER 1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

4. SPEAKER

Turn the ignition off.

Disconnect the Left Front Door Speaker.

Turn the ignition on.

Turn the Radio on.

With the Scan Tool, clear all Audio DTC's.

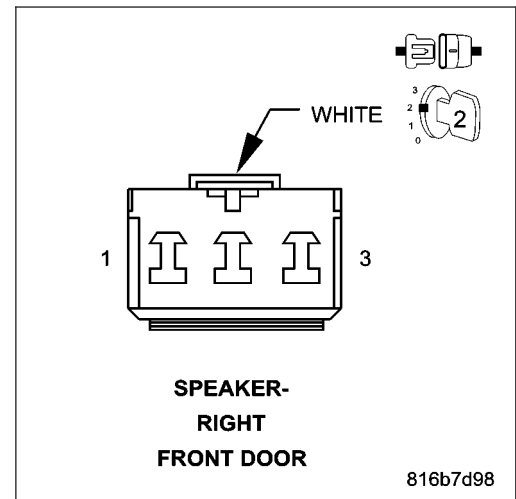
With the Scan Tool, read the DTC information.

Does the Scan Tool read: B1403-FRONT LEFT AUDIO SPEAKER OUTPUT CIRCUIT OPEN?

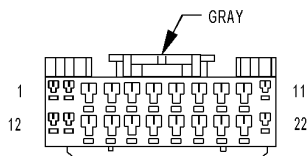
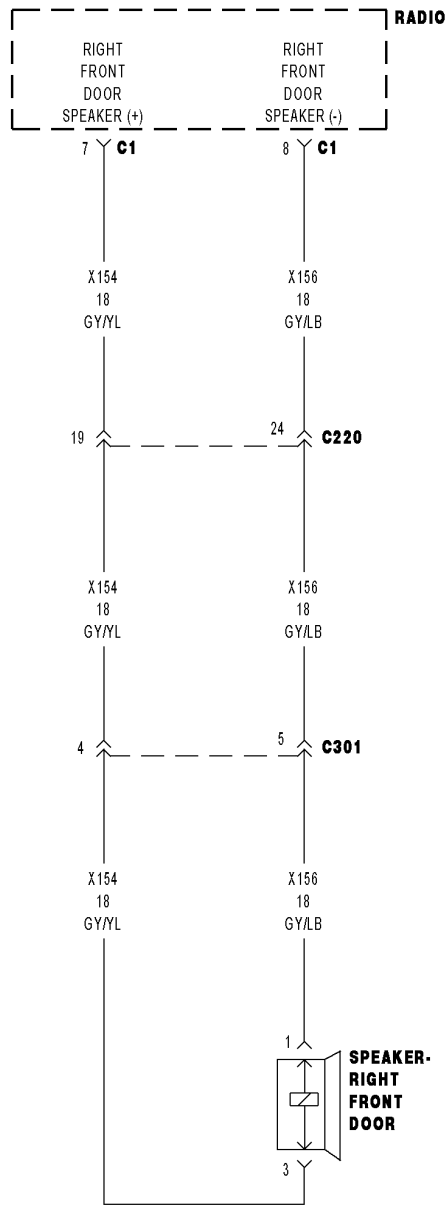
Yes >> Replace the Speaker in accordance with the service information.

Perform the BODY VERIFICATION TEST VER 1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

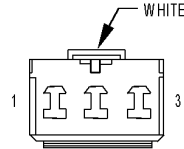
No >> Test Complete.



B1405-FRONT RIGHT AUDIO SPEAKER OUTPUT CIRCUIT LOW



RADIO C1



SPEAKER-RIGHT FRONT DOOR

816ab715

For a complete wiring diagram Refer to Section 8W.

- **When Monitored:**
- With the Radio on.
- **Set Condition:**
- When the Output circuit is LOW for more than 3 seconds.

Possible Causes
(X154) RIGHT FRONT DOOR SPEAKER (+) CIRCUIT SHORTED TO GROUND
(X156) RIGHT FRONT DOOR SPEAKER (-) CIRCUIT SHORTED TO GROUND
SPEAKER

Diagnostic Test

1. INTERMITTENT CONDITION

Turn the ignition on.
 With the Scan Tool, clear all Audio DTC's.
 Turn the Radio on.
 With the Scan Tool, read the DTC information.

Does the Scan Tool read: B1405-FRONT RIGHT AUDIO SPEAKER OUTPUT CIRCUIT LOW?

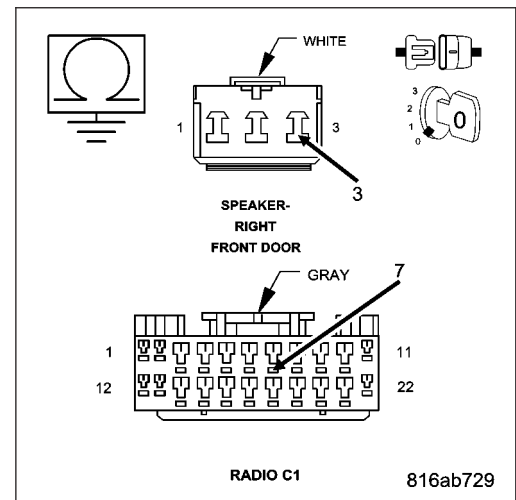
- Yes** >> Go To 2
- No** >> The condition that caused the symptom is currently not present. Inspect the related wiring for a possible intermittent condition. Look for any chafed, pierced, pinched, or partially broken wires.
 Perform the BODY VERIFICATION TEST VER 1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

2. (X154) RIGHT FRONT DOOR SPEAKER (+) CIRCUIT SHORTED TO GROUND

Turn the ignition off.
 Disconnect the Radio C1 harness connector.
 Disconnect the Right Front Door Speaker harness connector.
 Measure the resistance between ground and the (X154) Right Front Door Speaker (+) circuit.

Is the resistance below 5.0 ohms?

- Yes** >> Repair short to ground in the (X154) Right Front Door Speaker (+) circuit.
 Perform the BODY VERIFICATION TEST VER 1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)
- No** >> Go To 3



3. (X156) RIGHT FRONT DOOR SPEAKER (-) CIRCUIT SHORTED TO GROUND

Turn the ignition off.

Disconnect the Radio C1 harness connector.

Disconnect the Right Front Door Speaker harness connector.

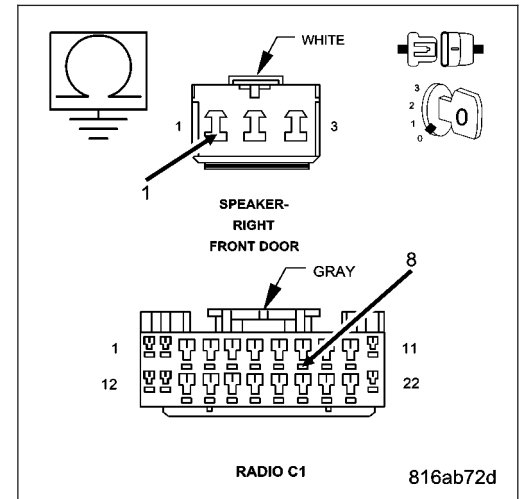
Measure the resistance between ground and the (X156) Right Front Door Speaker (-) circuit.

Is the resistance below 5.0 ohms?

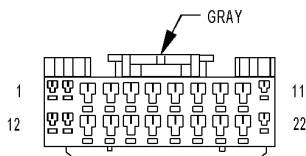
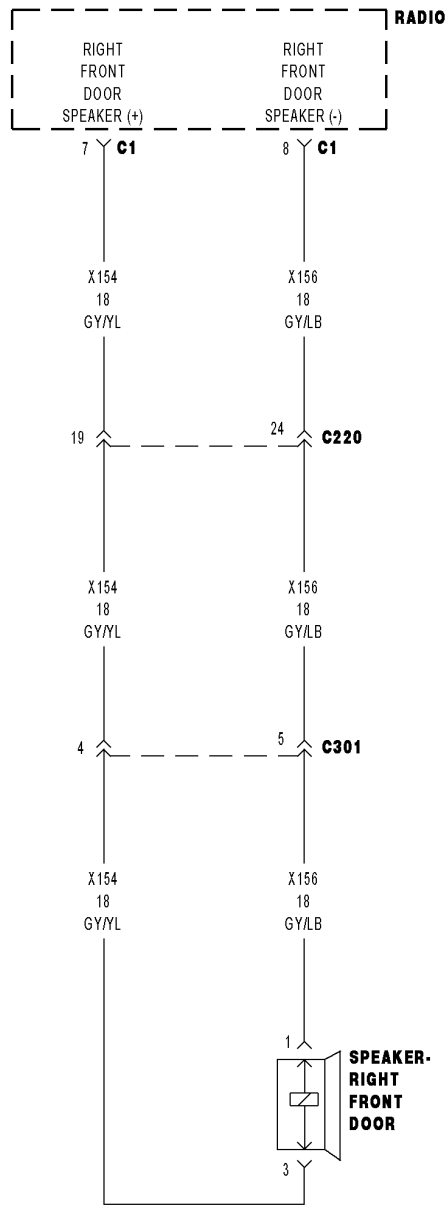
Yes >> Repair short to ground in the (X156) Right Front Door Speaker (-) circuit.

No >> Replace the Right Front Door Speaker in accordance with the service information.

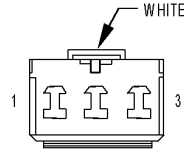
Perform the BODY VERIFICATION TEST VER 1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)



B1406-FRONT RIGHT AUDIO SPEAKER OUTPUT CIRCUIT HIGH



RADIO C1



SPEAKER-RIGHT FRONT DOOR

816ab715

For a complete wiring diagram Refer to Section 8W.

Possible Causes

(X202) SPEAKER OUTPUT CIRCUIT (+)
 (X292) SPEAKER OUTPUT CIRCUIT (-)
 SPEAKER

Diagnostic Test

1. INTERMITTENT CONDITION

Turn the ignition on, then off, and then on again.

With the scan tool, read Radio DTCs.

Does the scan tool display active: B1406-FRONT RIGHT AUDIO SPEAKER OUTPUT CIRCUIT HIGH?

Yes >> Go To 2

No >> The conditions that caused this code to set are not present at this time. Using the wiring diagram/schematic as a guide, inspect the wiring and connectors.

Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

2. CHECK FOR VOLTAGE ON THE (X154) RIGHT FRONT DOOR SPEAKER (+) CIRCUIT

Turn the ignition off.

Disconnect the Radio C1 harness connector.

Disconnect the Right Front Door Speaker harness connector.

Turn the ignition on.

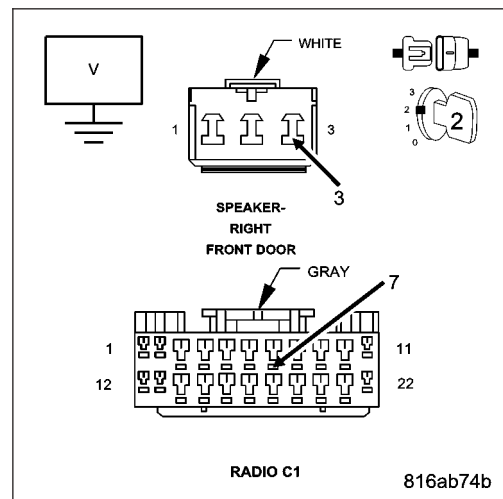
Measure for voltage on the (X154) Right Front Door Speaker (+) circuit.

Is the voltage above 10.0 volts?

Yes >> Repair the (X154) Right Front Door Speaker (+) circuit for a short to voltage.

Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

No >> Go To 3



3. CHECK FOR VOLTAGE ON THE (X156) RIGHT FRONT DOOR SPEAKER (-) CIRCUIT

Turn the ignition on.

Measure for voltage on the (X156) Right Front Door Speaker (-) circuit.

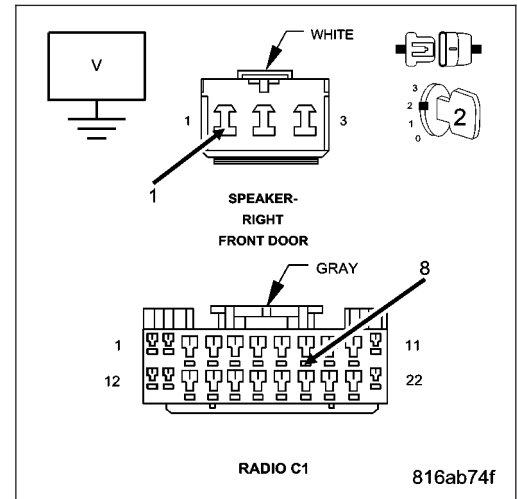
Is the voltage above 10.0 volts?

Yes >> Repair the (X156) Right Front Door Speaker (-) circuit for a short to voltage.

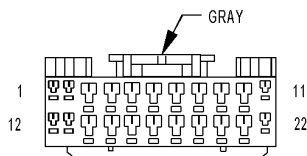
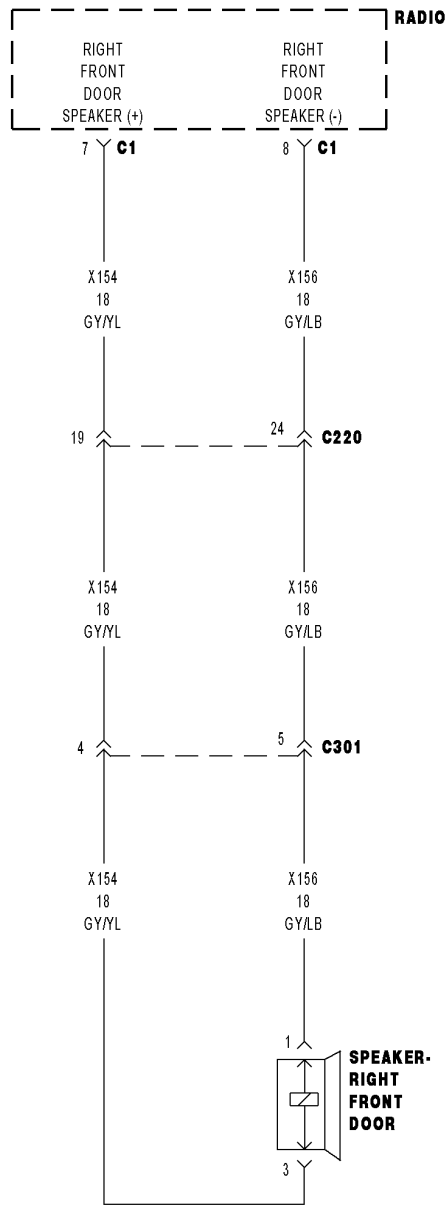
Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

No >> Replace the Radio in accordance with the service information.

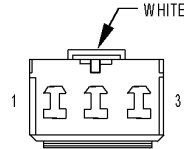
Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)



B1407-FRONT RIGHT AUDIO SPEAKER OUTPUT CIRCUIT OPEN



RADIO C1



SPEAKER-RIGHT FRONT DOOR

8168715

For a complete wiring diagram Refer to Section 8W.

- **When Monitored:**
- With the Radio on.
- **Set Condition:**
- When the Output circuit is open for more than 3 seconds. The Radio will not set the fault if the radio confirms an amplifier is on the BUS.

Possible Causes
(X154) RIGHT FRONT DOOR SPEAKER (+) CIRCUIT OPEN
(X156) RIGHT FRONT DOOR SPEAKER (-) CIRCUIT OPEN
SPEAKER

Diagnostic Test

1. INTERMITTENT CONDITION

Turn the ignition on.
 With the Scan Tool, clear all Audio DTC's.
 Turn the Radio on.
 With the Scan Tool, read the DTC information.

Does the Scan Tool read: B1407-FRONT RIGHT AUDIO SPEAKER OUTPUT CIRCUIT OPEN?

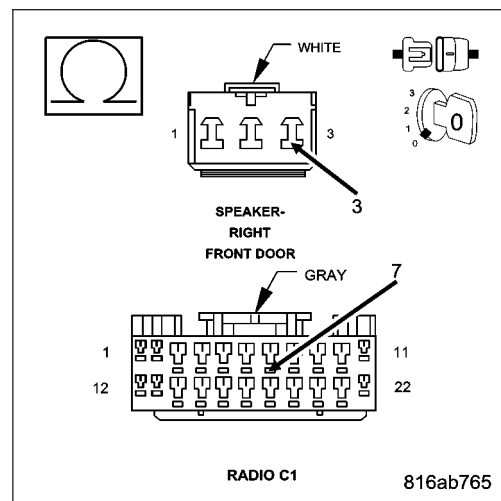
- Yes** >> Go To 2
- No** >> The condition that caused the symptom is currently not present. Inspect the related wiring for a possible intermittent condition. Look for any chafed, pierced, pinched, or partially broken wires.
 Perform the BODY VERIFICATION TEST VER 1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

2. (X154) RIGHT FRONT DOOR SPEAKER (+) CIRCUIT OPEN

Turn the ignition off.
 Disconnect the Radio C1 harness connector.
 Disconnect the Right Front Door Speaker harness connector.
 Measure the resistance of the (X154) Right Front Door Speaker (+) circuit between the Radio C1 connector and the Right Front Door Speaker harness connector.

Is the resistance below 5.0 ohms for each circuit?

- Yes** >> Go To 3
- No** >> Repair open in the (X154) Right Front Door Speaker (+) circuit.
 Perform the BODY VERIFICATION TEST VER 1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)



3. (X156) RIGHT FRONT DOOR SPEAKER (-) CIRCUIT OPEN

Turn the ignition off.

Disconnect the Radio C1 harness connector.

Disconnect the Right Front Door Speaker harness connector.

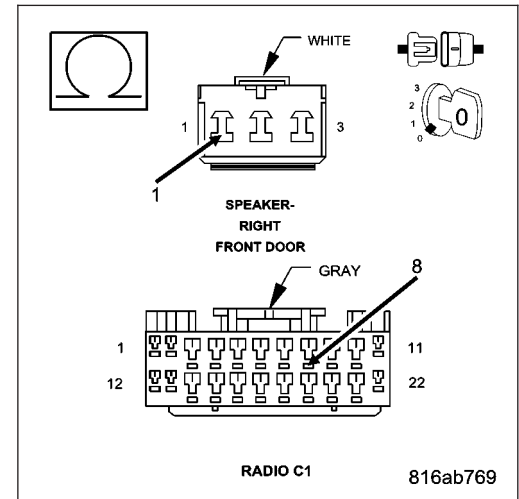
Measure the resistance of the (X156) Right Front Door Speaker (-) circuit between the Radio C1 connector and the Right Front Door Speaker harness connector.

Is the resistance below 5.0 ohms for each circuit?

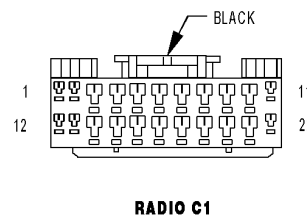
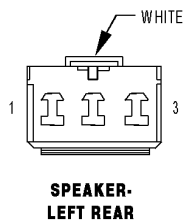
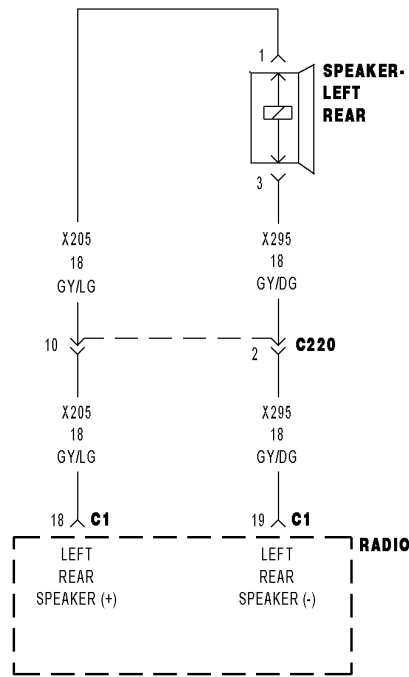
Yes >> Replace the Right Front Door Speaker in accordance with the service information.

No >> Repair open in the (X156) Right Front Door Speaker (-) circuit.

Perform the BODY VERIFICATION TEST VER 1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)



B1409-REAR LEFT AUDIO SPEAKER OUTPUT CIRCUIT LOW



816ab78c

For a complete wiring diagram Refer to Section 8W.

- **When Monitored:**
- With the Radio on.
- **Set Condition:**
- When the Output circuit is LOW for more than 3 seconds.

Possible Causes
(X205) LEFT REAR SPEAKER (+) CIRCUIT SHORTED TO GROUND
(X295) LEFT REAR SPEAKER (-) CIRCUIT SHORTED TO GROUND
SPEAKER

Diagnostic Test

1. INTERMITTENT CONDITION

Turn the ignition on.
 With the Scan Tool, clear all Audio DTC's.
 Turn the Radio on.
 With the Scan Tool, read the DTC information.

Does the Scan Tool read: B1409-REAR LEFT AUDIO SPEAKER OUTPUT CIRCUIT LOW?

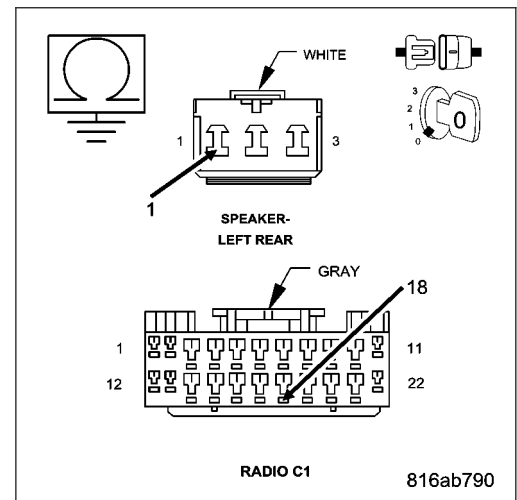
- Yes** >> Go To 2
- No** >> The condition that caused the symptom is currently not present. Inspect the related wiring for a possible intermittent condition. Look for any chafed, pierced, pinched, or partially broken wires.
 Perform the BODY VERIFICATION TEST VER 1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

2. (X205) LEFT REAR SPEAKER (+) CIRCUIT SHORTED TO GROUND

Turn the ignition off.
 Disconnect the Radio C1 harness connector.
 Disconnect the Left Rear Speaker harness connector.
 Measure the resistance between ground and the (X205) Left Rear Speaker (+) circuit.

Is the resistance below 5.0 ohms?

- Yes** >> Repair short to ground on the (X205) Left Rear Speaker (+) circuit.
 Perform the BODY VERIFICATION TEST VER 1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)
- No** >> Go To 3



3. (X295) LEFT REAR SPEAKER (-) CIRCUIT SHORTED TO GROUND

Turn the ignition off.

Disconnect the Radio C1 harness connector.

Disconnect the Left Rear Speaker harness connector.

Measure the resistance between ground and the (X295) Left Rear Speaker (-) circuit.

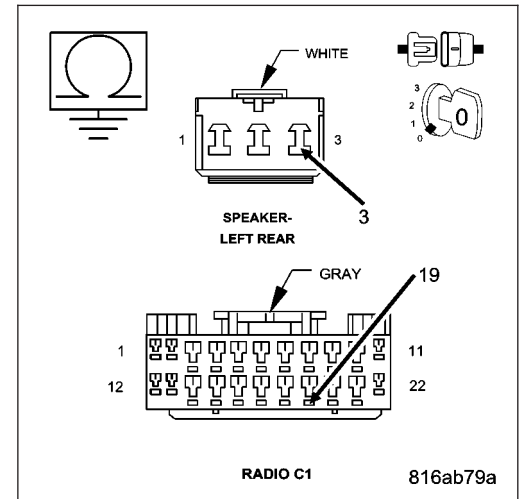
Is the resistance below 5.0 ohms?

Yes >> Repair short to ground on the (X295) Left Rear Speaker (-) circuit.

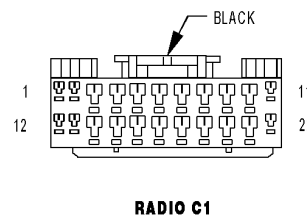
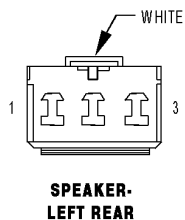
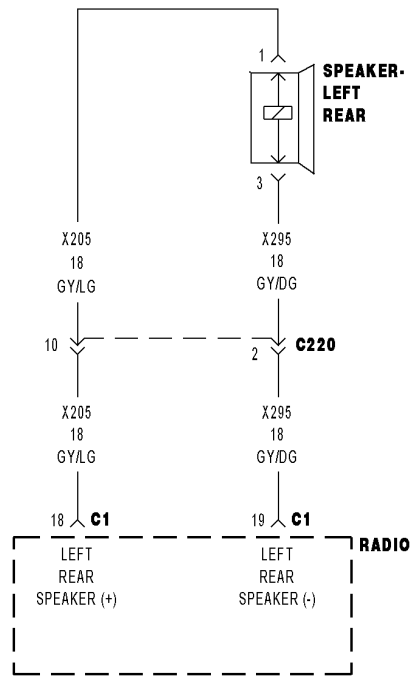
Perform the BODY VERIFICATION TEST VER 1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

No >> Replace the Left Rear Speaker in accordance with the service information.

Perform the BODY VERIFICATION TEST VER 1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)



B140A-REAR LEFT AUDIO SPEAKER OUTPUT CIRCUIT HIGH



816ab78c

For a complete wiring diagram Refer to Section 8W.

Possible Causes
(X205) LEFT REAR SPEAKER (+) CIRCUIT SHORTED TO VOLTAGE (X295) LEFT REAR SPEAKER (-) CIRCUIT SHORTED TO VOLTAGE SPEAKER

Diagnostic Test

1. INTERMITTENT CONDITION

Turn the ignition on, then off, and then on again.

With the scan tool, read Radio DTCs.

Does the scan tool display active: B140A-REAR LEFT AUDIO SPEAKER OUTPUT CIRCUIT HIGH?

Yes >> Go To 2

No >> The conditions that caused this code to set are not present at this time. Using the wiring diagram/schematic as a guide, inspect the wiring and connectors.

Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

2. CHECK FOR VOLTAGE ON THE (X205) LEFT REAR SPEAKER (+) CIRCUIT

Turn the ignition off.

Disconnect the Radio C1 harness connector.

Disconnect the Left Rear Speaker harness connector.

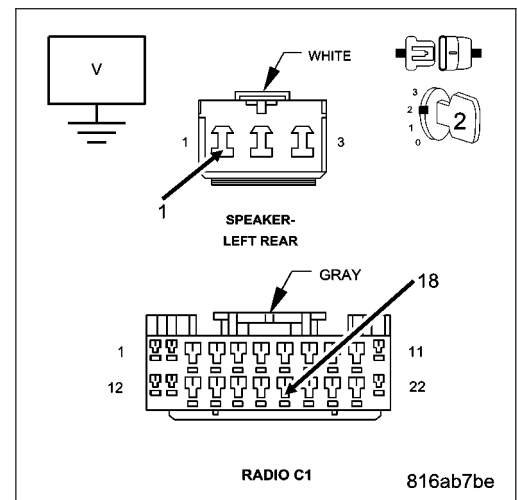
Measure for voltage on the (X205) Left Rear Speaker (+) circuit.

Is the voltage above 10.0 volts?

Yes >> Repair the (X205) Left Rear Speaker (+) circuit for a short to voltage.

Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

No >> Go To 3



3. CHECK FOR VOLTAGE ON THE (X295) LEFT REAR SPEAKER (-) CIRCUIT

Turn the ignition on.

Measure for voltage on the (X295) Left Rear Speaker (-) circuit.

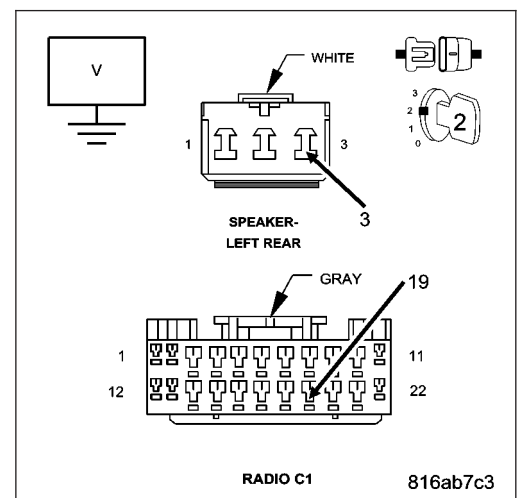
Is the voltage above 10.0 volts?

Yes >> Repair the (X295) Left Rear Speaker (-) circuit for a short to voltage.

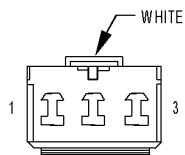
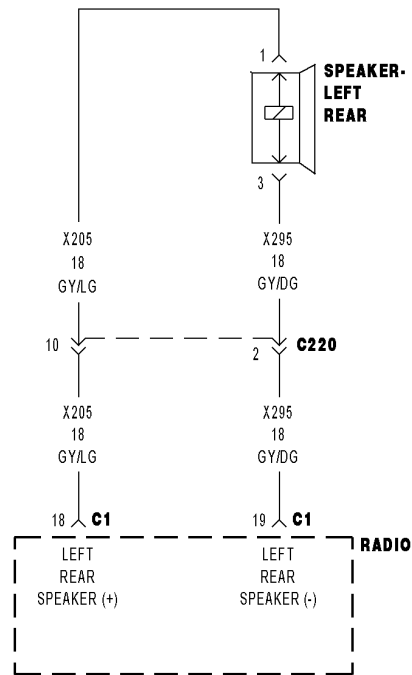
Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

No >> Replace the Radio in accordance with the service information.

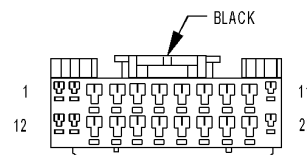
Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)



B140B-REAR LEFT AUDIO SPEAKER OUTPUT CIRCUIT OPEN



**SPEAKER-
LEFT REAR**



RADIO C1

- **When Monitored:**
- With the Radio on.
- **Set Condition:**
- When the Output circuit is open for more than 3 seconds. The Radio will not set the fault if the radio confirms an amplifier is on the BUS.

Possible Causes
(X205) LEFT REAR SPEAKER (+) CIRCUIT OPEN
(X295) LEFT REAR SPEAKER (-) CIRCUIT OPEN
SPEAKER

Diagnostic Test

1. Intermittent Condition

Turn the ignition on.
 With the Scan Tool, clear all Audio DTC's.
 Turn the Radio on.
 With the Scan Tool, read the DTC information.

Does the Scan Tool read: B140B-REAR LEFT AUDIO SPEAKER OUTPUT CIRCUIT OPEN?

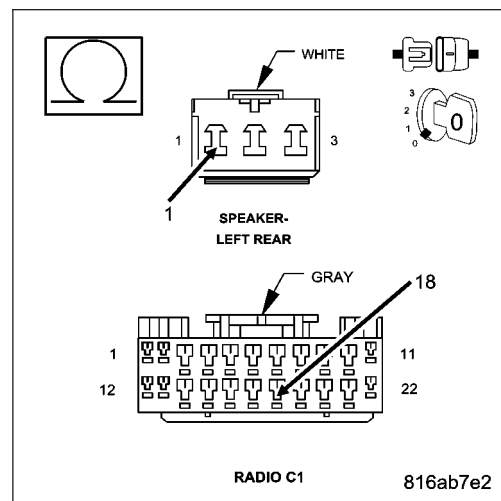
- Yes** >> Go To 2
- No** >> The condition that caused the symptom is currently not present. Inspect the related wiring for a possible intermittent condition. Look for any chafed, pierced, pinched, or partially broken wires.
 Perform the BODY VERIFICATION TEST VER 1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

2. (X205) LEFT REAR SPEAKER (+) CIRCUIT OPEN

Turn the ignition off.
 Disconnect the Radio C1 harness connector.
 Disconnect the Rear Left Audio Speaker connector.
 Measure the resistance of (X205) Left Rear Speaker (+) circuit between the Radio C1 connector, and the Left Rear Speaker harness connector.

Is the resistance below 5.0 ohms?

- Yes** >> Go To 3
- No** >> Repair open in the (X205) Left Rear Speaker (+) circuit.
 Perform the BODY VERIFICATION TEST VER 1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)



3. (X295) LEFT REAR SPEAKER (-) CIRCUIT OPEN

Turn the ignition off.

Disconnect the Radio C1 harness connector.

Disconnect the Rear Left Audio Speaker connector.

Measure the resistance of (X295) Left Rear Speaker (-) circuit between the Radio C1 connector, and the Left Rear Speaker harness connector.

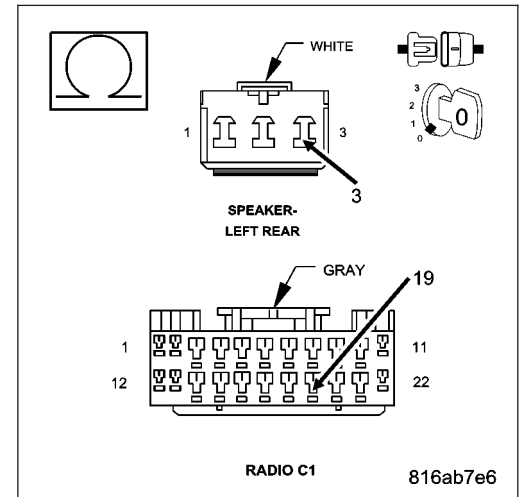
Is the resistance below 5.0 ohms?

Yes >> Replace the Left Rear Speaker in accordance with the service information.

Perform the BODY VERIFICATION TEST VER 1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

No >> Repair open in the (X295) Left Rear Speaker (-) circuit.

Perform the BODY VERIFICATION TEST VER 1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)



B140D-REAR RIGHT AUDIO SPEAKER OUTPUT CIRCUIT LOW**ART UNDER CONSTRUCTION**

For a complete wiring diagram Refer to Section 8W.

- **When Monitored:**
- With the Radio on.
- **Set Condition:**
- When the Output circuit is LOW for more than 3 seconds.

Possible Causes

(X206) RIGHT REAR SPEAKER (+) CIRCUIT SHORTED TO GROUND
 (X296) RIGHT REAR SPEAKER (-) CIRCUIT SHORTED TO GROUND
 SPEAKER

Diagnostic Test**1. Intermittent Condition**

Turn the ignition on.

With the Scan Tool, clear all Audio DTC's.

Turn the Radio on.

With the Scan Tool, read the DTC information.

Does the Scan Tool read: B140D-REAR RIGHT AUDIO SPEAKER OUTPUT CIRCUIT LOW?

Yes >> Go To 3

No >> The condition that caused the symptom is currently not present. Inspect the related wiring for a possible intermittent condition. Look for any chafed, pierced, pinched, or partially broken wires.
 Perform the BODY VERIFICATION TEST VER 1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

2. (X206) RIGHT REAR SPEAKER (+) CIRCUIT SHORTED TO GROUND

Turn the ignition off.

Disconnect the Radio C1 harness connector.

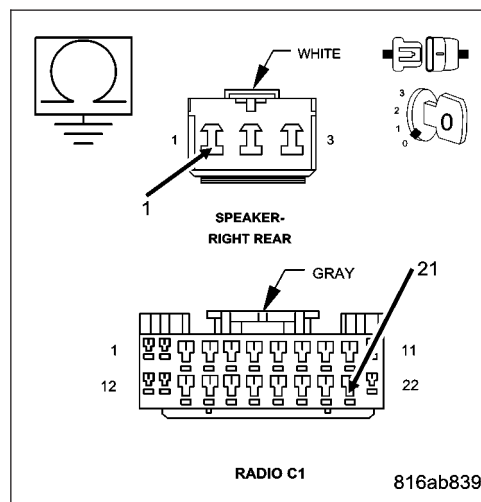
Disconnect the Right Rear Speaker harness connector.

Measure the resistance between ground and the (X206) Right Rear Speaker (+) circuit.

Is the resistance below 5.0 ohms?

Yes >> Repair short to ground on the (X206) Right Rear Speaker (+) circuit.
 Perform the BODY VERIFICATION TEST VER 1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

No >> Go To 3



3. (X296) RIGHT REAR SPEAKER (-) CIRCUIT SHORTED TO GROUND

Turn the ignition off.

Disconnect the Radio C1 harness connector.

Disconnect the Right Rear Speaker harness connector.

Measure the resistance between ground and the (X296) Right Rear Speaker (-) circuit.

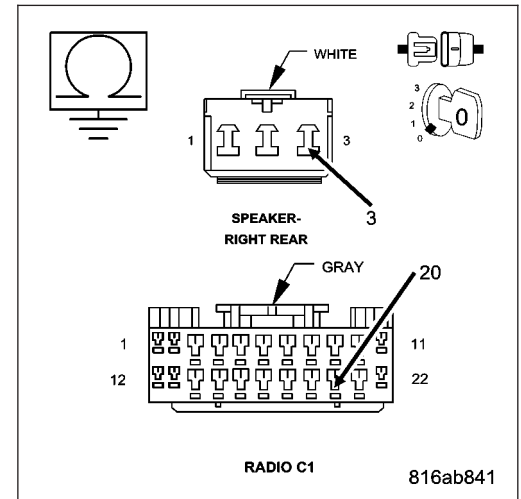
Is the resistance below 5.0 ohms?

Yes >> Repair short to ground on the (X296) Right Rear Speaker (-) circuit.

Perform the BODY VERIFICATION TEST VER 1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

No >> Replace the Right Rear Speaker in accordance with the service information.

Perform the BODY VERIFICATION TEST VER 1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)



B140E-REAR RIGHT AUDIO SPEAKER OUTPUT CIRCUIT HIGH**ART UNDER CONSTRUCTION**

For a complete wiring diagram Refer to Section 8W.

Possible Causes

(X206) RIGHT REAR SPEAKER CIRCUIT (+) SHORTED TO VOLTAGE
 (X296) RIGHT REAR SPEAKER CIRCUIT (-) SHORTED TO VOLTAGE
 RADIO

Diagnostic Test**1. INTERMITTENT CONDITION**

Turn the ignition on, then off, and then on again.

With the scan tool, read Radio DTCs.

Does the scan tool display active: B140E-REAR RIGHT AUDIO SPEAKER OUTPUT CIRCUIT HIGH?

Yes >> Go To 2

No >> The conditions that caused this code to set are not present at this time. Using the wiring diagram/schematic as a guide, inspect the wiring and connectors.

Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

2. (X206) RIGHT REAR SPEAKER CIRCUIT (+) SHORTED TO VOLTAGE

Turn the ignition off.

Disconnect the Radio C1 harness connector.

Disconnect the Right Rear Speaker harness connector.

Turn the ignition on.

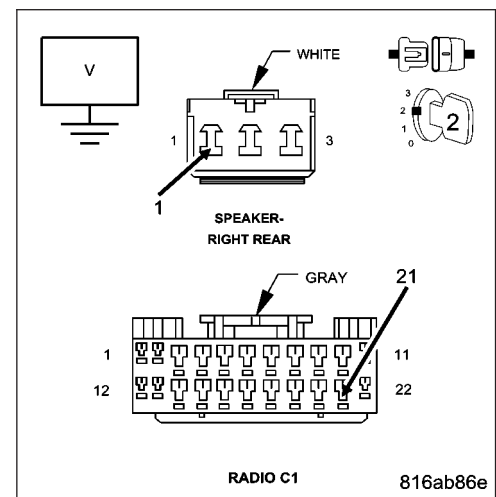
Measure for voltage on the (X206) Right Rear Speaker (+) circuit.

Is the voltage above 10.0 volts?

Yes >> Repair the (X206) Right Rear Speaker (+) circuit for a short to voltage.

Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

No >> Go To 3



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3. CHECK FOR VOLTAGE ON THE (X296) Right Rear SPEAKER (-) CIRCUIT

Turn the ignition on.

Measure for voltage on the (X296) Right Rear Speaker (-) circuit.

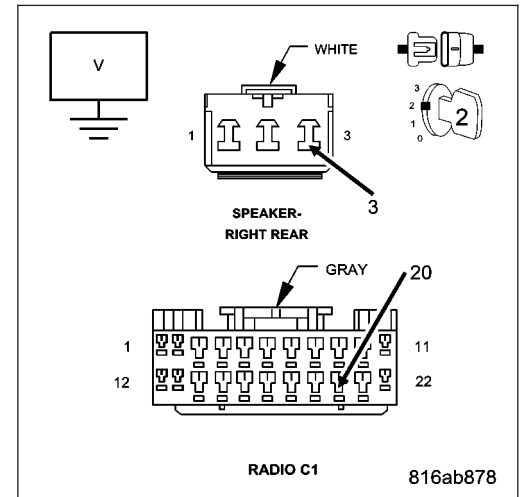
Is the voltage above 10.0 volts?

Yes >> Repair the (X296) Right Rear Speaker (-) circuit for a short to voltage.

Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

No >> Replace the Radio in accordance with the service information.

Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)



B140F-REAR RIGHT AUDIO SPEAKER OUTPUT CIRCUIT OPEN

For a complete wiring diagram Refer to Section 8W.

- **When Monitored:**
- With the Radio on.
- **Set Condition:**
- When the Output circuit is open for more than 3 seconds. The Radio will not set the fault if the radio confirms an amplifier is on the BUS.

Possible Causes
(X206) RIGHT REAR SPEAKER (+) CIRCUIT OPEN
(X296) RIGHT REAR SPEAKER (-) CIRCUIT OPEN
SPEAKER

Diagnostic Test**1. Intermittent Condition**

Turn the ignition on.

With the Scan Tool, clear all Audio DTC's.

Turn the Radio on.

With the Scan Tool, read the DTC information.

Does the Scan Tool read: B140F-REAR RIGHT AUDIO SPEAKER OUTPUT CIRCUIT OPEN?

Yes >> Go To 3

No >> The condition that caused the symptom is currently not present. Inspect the related wiring for a possible intermittent condition. Look for any chafed, pierced, pinched, or partially broken wires.
Perform the BODY VERIFICATION TEST VER 1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

2. (X206) RIGHT REAR SPEAKER (+) CIRCUIT OPEN

Turn the ignition off.

Disconnect the Radio C1 harness connector.

Disconnect the Right Rear Speaker harness connector.

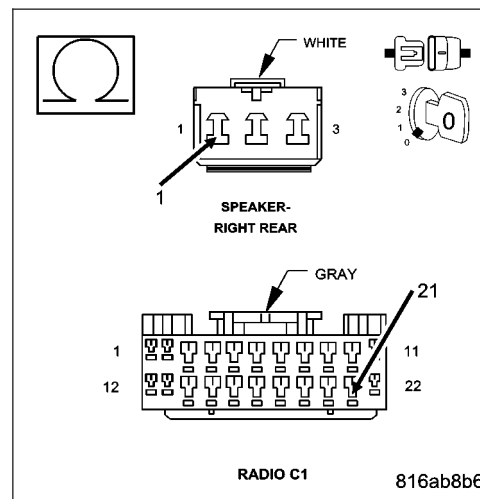
Measure the resistance of the (X206) Right Rear Speaker (+) circuit between the Radio C1 connector, and the Right Rear Speaker harness connector.

Is the resistance below 5.0 ohms?

Yes >> Go To 3

Perform the BODY VERIFICATION TEST VER 1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

No >> Repair open in the (X206) Right Rear Speaker (+) circuit.
Perform the BODY VERIFICATION TEST VER 1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)



3. (X296) RIGHT REAR SPEAKER (-) CIRCUIT OPEN

Turn the ignition off.

Disconnect the Radio C1 harness connector.

Disconnect the Right Rear Speaker harness connector.

Measure the resistance of the (X296) Right Rear Speaker (-) circuit between the Radio C1 connector, and the Right Rear Speaker harness connector.

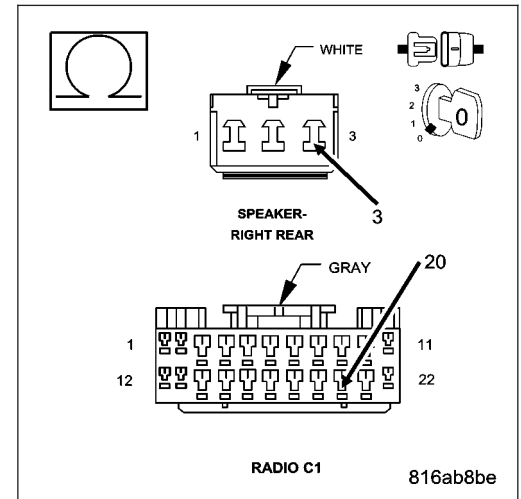
Is the resistance below 5.0 ohms?

Yes >> Replace the Right Rear Speaker in accordance with the service information.

Perform the BODY VERIFICATION TEST VER 1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

No >> Repair open in the (X296) Right Rear Speaker (-) circuit.

Perform the BODY VERIFICATION TEST VER 1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)



B1420-AUDIO CASSETTE ERROR/INOPERABLE CASSETTE

For a complete wiring diagram Refer to Section 8W.

- **When Monitored:**
- Continuously with the ignition on and the radio Cassette player turned on.
- **Set Condition:**
- The code will set when a damaged Cassette is placed in the Cassette Player.

Possible Causes
CASSETTE READ FAILURE

Diagnostic Test**1. RADIO**

Replace the problem Cassette with a good, clean, undamaged, cassette.

Turn the radio cassette player on.

With the Scan Tool, read DTC's.

Does the Scan Tool display: B1420: AUDIO CASSETTE ERROR/INOPERABLE CASSETTE?

- Yes** >> Eject the inoperative cassette and replace the Radio/Cassette Player in accordance with the service information.
Perform the BODY VERIFICATION TEST — VER 1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)
- No** >> Test Complete.

B1421-AUDIO CD READ ERROR/INOPERABLE DISC

For a complete wiring diagram Refer to Section 8W.

- **When Monitored:**
- Continuously with the ignition on and the radio CD player turned on.
- **Set Condition:**
- The code will set if a CD that is not formatted as a music CD is installed in the radio CD player.

Possible Causes
CD READ FAILURE

Diagnostic Test**1. RADIO**

Replace the problem CD with a good, clean, unscratched, music CD.

Turn the radio CD player on.

With the Scan Tool, read DTC's.

Does the Scan Tool display: B1421 Audio CD Read Error/Inoperable Disc?

- Yes** >> Eject the inoperative CD and replace the CD in accordance with the service information.
Perform the BODY VERIFICATION TEST — VER 1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)
- No** >> Test Complete.

B1422-AUDIO DVD READ ERROR/INOPERABLE DISC

For a complete wiring diagram **Refer to Section 8W.**

- **When Monitored:**
- Continuously with the ignition on and the DVD player turned on.
- **Set Condition:**
- The code will set if a DVD that is not formatted as a DVD is installed in the DVD player.

Possible Causes
DVD READ FAILURE

Diagnostic Test**1. DVD PLAYER**

Replace the problem DVD with a good, clean, unscratched DVD.

Turn the DVD player on.

With the Scan Tool, read DTC's.

Does the Scan Tool display: B1422 Audio DVD Read Error/Inoperable Disc?

- Yes** >> Eject the inoperative DVD and replace the DVD in accordance with the service information.
Perform the BODY VERIFICATION TEST — VER 1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)
- No** >> Test Complete.

B1429-RADIO DISPLAY HIGH TEMPERATURE

For a complete wiring diagram Refer to Section 8W.

- **When Monitored:**
- Continuously with the ignition and Navigation Radio on.
- **Set Condition:**
- The code will set if the temperature inside the display exceeds 158°F

Possible Causes
HIGH TEMPERATURE FAILURE

Diagnostic Test

1. VERIFY THAT DTC B1429—RADIO DISPLAY HIGH TEMPERATURE IS ACTIVE.

With the Scan Tool, erase the Audio DTC's.

Start the engine and allow the engine to reach normal operating temperature.

If the vehicle has been in the hot sunlight or extreme cold, move the vehicle indoors and open the doors to allow the inside temperature to stabilize.

The radio display should operate to 158°F.

With the Scan Tool, read the DTC's.

Does the Scan Tool display, B1429— Radio Display High Temperature?

- Yes** >> Replace the Radio in accordance with the service information.
Perform the BODY VERIFICATION TEST — VER 1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)
- No** >> Test Complete.

B142A-RADIO UNIT HIGH TEMPERATURE

For a complete wiring diagram Refer to Section 8W.

- **When Monitored:**
- Continuously with the ignition and Radio on.
- **Set Condition:**
- The code will set if the temperature inside the radio is above +65°C (+145°F)

Possible Causes
HIGH TEMPERATURE FAILURE

Diagnostic Test**1. VERIFY THAT DTC B142A—RADIO UNIT HIGH TEMPERATURE IS ACTIVE.**

With the Scan Tool, erase the Audio DTC's.

Start the engine and allow the engine to reach normal operating temperature.

If the vehicle has been in the hot sunlight or extreme cold, move the vehicle indoors and open the doors to allow the inside temperature to stabilize.

The Radio should operate between —23°C and 65°C (—10°F and +145°F).

With the Scan Tool, read the DTC's.

Does the Scan Tool display, B142A— Radio Unit High Temperature?

- Yes** >> Replace the Radio in accordance with the service information.
 Perform the BODY VERIFICATION TEST — VER 1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)
- No** >> Test Complete.

B142D-AUDIO ANTENNA NOT CONNECTED

For a complete wiring diagram Refer to Section 8W.

- **When Monitored:**
- With the ignition on and the radio in seek mode.
- **Set Condition:**
- With the radio in seek mode for two loops around the band. The radio does not detect an antenna connection or does not receive a radio station signal.

Possible Causes
BAD ANTENNA CONNECTION RADIO

Diagnostic Test

1. Test Antenna

Turn the ignition off.

Disconnect the Radio Antenna connector.

Inspect the Radio Antenna connection.

Was the Antenna connection clean and secure?

Yes >> Go To 2

No >> Repair the Antenna connection as needed.

Perform the BODY VERIFICATION TEST — VER1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

2. ANTENNA

Refer to the Audio System in the service information and test the antenna in accordance with the service procedure.

Is the Antenna ok?

Yes >> Go To 3

No >> Repair or replace the Antenna assembly as necessary.

Perform the BODY VERIFICATION TEST — VER1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

3. RADIO

NOTE: Reconnect all previously disconnected components.

NOTE: Move vehicle outside approximately 30ft (9.14m) from any structure.

Turn the ignition and radio on.

With the Scan Tool, erase the audio DTC's, put the radio in seek up and down mode for 2 loops around the band cycle before proceeding.

With the Scan Tool, read the audio DTC's.

Did this DTC reset?

Yes >> Replace the radio in accordance with the service information.

Perform the BODY VERIFICATION TEST-VER1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

No >> Test Complete.

B142E-GPS ANTENNA NOT CONNECTED

For a complete wiring diagram Refer to Section 8W.

- **When Monitored:**
- With the ignition on and the radio in navigation mode.
- **Set Condition:**
- With the radio does not detect GPS antenna connection.

Possible Causes
BAD ANTENNA CONNECTION RADIO

Always perform the Pre-Diagnostic Troubleshooting procedure before proceeding.

Diagnostic Test**1. TEST ANTENNA**

Turn the ignition off.
Disconnect the GPS Antenna connector.
Inspect the GPS Antenna connection.

Was the Antenna connection clean and secure?

Yes >> Go To 2

No >> Repair the Antenna connection as needed.

Perform the BODY VERIFICATION TEST — VER1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

2. ANTENNA

Refer to the Audio System in the service information and test the antenna in accordance with the service procedure.

Is the Antenna ok?

Yes >> Go To 3

No >> Repair or replace the Antenna assembly as necessary.

Perform the BODY VERIFICATION TEST — VER1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

3. RADIO

NOTE: Reconnect all previously disconnected components.

NOTE: Move vehicle outside approximately 30ft from any structure.

Turn the ignition and radio on.

With the Scan Tool, erase the audio DTC's and operate the navigation system.

With the Scan Tool, read the audio DTC's.

Did this DTC reset?

Yes >> Replace the radio in accordance with the service information.

Perform the BODY VERIFICATION TEST-VER1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

No >> Test Complete.

B1488–CABIN EQ MISMATCH PERFORMANCE

For a complete wiring diagram Refer to Section 8W.

- **When Monitored:**
- With the ignition on.
- **Set Condition:**
- If the cabin EQ message is incompatible with the EQ's stored in the amplifier for 10 consecutive cycles, then the amplifier will set this DTC.

POSSIBLE CAUSES
NO COMMUNICATION WITH FRONT CONTROL MODULE ACTIVE FCM DTCs AMPLIFIER

Diagnostic Test

1. CHECK FOR AN INTERMITTENT CONDITION

Turn the ignition on.

Turn the radio on.

With the scan tool, erase Amplifier DTCs.

With the scan tool, reset the amplifier.

With the scan tool, read Amplifier DTCs.

Does the scan tool display active: B1488–CABIN EQ MISMATCH PERFORMANCE?

Yes >> Go To 2

No >> The conditions that caused this code to set are not present at this time. Using the wiring diagram/schematic as a guide, inspect the wiring and connectors.
Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

2. CHECK AMPLIFIER BUSSED INPUTS/OUTPUTS

With the scan tool in Amplifier Data Display, read the Cabin EQ settings in the Bussed Inputs and Bussed Outputs Sections.

NOTE: The Cabin EQ settings in the Inputs/Outputs section should match one another. The Cabin EQ# in the Inputs section is the information that is received from the TIPM. The Cabin EQ in the Outputs section is the information that is Stored in the Amplifier's memory.

The Cabin EQ settings are as follows:

- •\$51: HB Premium 1 (w/o Subwoofer)
- •\$52: HB Premium 2 (with Subwoofer)

Do the Cabin EQ settings match one another?

Yes >> Replace the Amplifier in accordance to the service information.

Perform the BODY VERIFICATION TEST-VER 1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

No >> Go To 3

3. VERIFY COMMUNICATION WITH FRONT CONTROL MODULE

With the scan tool in ECU VIEW, read active modules on the BUS.

Does the scan tool show the Front Control Module active on the BUS?

Yes >> Go To 4

No >> Refer to the Communication category for the related symptoms.
Perform the BODY VERIFICATION TEST VER 1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

4. CHECK FRONT CONTROL MODULE FOR ACTIVE DTCs

With the scan tool, erase FCM DTCs.

Turn the ignition off. Wait approximately 10 seconds.

Turn the ignition on.

With the scan tool, read FCM DTCs.

Are any active DTCs present?

Yes >> Refer to symptom list for problems related to the Front Control Module.
Perform the BODY VERIFICATION TEST VER 1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

No >> Replace the Front Control Module in accordance with the Service Information.
Perform the BODY VERIFICATION TEST-VER.1 (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

B210D-BATTERY VOLTAGE LOW

For a complete wiring diagram Refer to Section 8W.

- **When Monitored:**
- With the ignition on.
- **Set Condition:**
- If the module detects that the battery voltage is less than 9.0 volts for 1 second.

Possible Causes
VEHICLE CHARGING SYSTEM
AMPLIFIER

Diagnostic Test

1. CHECK FOR AN INTERMITTENT CONDITION

Turn the ignition on, then off, and then on again.

With the scan tool, read Amplifier DTCs.

Does the scan tool display active: B210D-BATTERY VOLTAGE LOW?

Yes >> Go To 2

No >> The conditions that caused this code to set are not present at this time. Using the wiring diagram/schematic as a guide, inspect the wiring and connectors.
Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

2. CHECK THE BATTERY VOLTAGE TO THE AMPLIFIER

With the scan tool in Data Display, read Amplifier battery voltage.

Is the battery voltage less than 9.0 volts?

Yes >> Go To 3

No >> Replace the Amplifier in accordance with the Service Information.
Perform OCS VERIFICATION TEST - VER 1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

3. CHECK FOR CHARGING SYSTEM RELATED DTCs IN THE POWERTRAIN CONTROL MODULE (PCM)

With the scan tool in ECU View, select PCM and check for any Charging System related DTCs.

Does the scan tool display any Charging System related DTCs?

Yes >> Diagnose and repair the DTCs. Refer to (Refer to 9 - ENGINE - DIAGNOSIS AND TESTING).

No >> Replace the Amplifier in accordance with the Service Information.
Perform OCS VERIFICATION TEST - VER 1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

B210E-BATTERY VOLTAGE HIGH

For a complete wiring diagram Refer to Section 8W.

- **When Monitored:**
- With the ignition on.
- **Set Condition:**
- If the module detects that the battery voltage is greater 16.5 volts for 1 second.

Possible Causes
VEHICLE CHARGING SYSTEM
AMPLIFIER

Diagnostic Test**1. CHECK FOR AN INTERMITTENT CONDITION**

Turn the ignition on, then off, and then on again.

With the scan tool, read Amplifier DTCs.

Does the scan tool display active: B210E-BATTERY VOLTAGE HIGH?

Yes >> Go To 2

No >> The conditions that caused this code to set are not present at this time. Using the wiring diagram/schematic as a guide, inspect the wiring and connectors.
Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

2. CHECK THE BATTERY VOLTAGE TO THE AMPLIFIER

With the scan tool in Data Display, read Amplifier battery voltage.

Is the battery voltage greater than 16.5 volts?

Yes >> Go To 3

No >> Replace the Amplifier in accordance with the Service Information.
Perform OCS VERIFICATION TEST - VER 1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

3. CHECK FOR CHARGING SYSTEM RELATED DTCs IN THE POWERTRAIN CONTROL MODULE (PCM)

With the scan tool in ECU View, select PCM and check for any Charging System related DTCs.

Does the scan tool display any Charging System related DTCs?

Yes >> Diagnose and repair the DTCs. Refer to (Refer to 9 - ENGINE - DIAGNOSIS AND TESTING).

No >> Replace the Amplifier in accordance with the Service Information.
Perform OCS VERIFICATION TEST - VER 1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

B221E-RADIO INTERNAL

For a complete wiring diagram **Refer to Section 8W.**

- **When Monitored:**
 - Continuously with the ignition on and radio turned on.
- **Set Condition:**
 - The code will set if the radio detects a radio internal failure.

Possible Causes
RADIO INTERNAL FAILURE

Diagnostic Test

1. Verify DTC B221E-RADIO INTERNAL IS ACTIVE

NOTE: If a DTC is set, erase the DTC and attempt to reset the DTC. If the DTC resets, follow test.

This is an internal radio failure

[View repair](#)

Does the DTC reset and read B221E-Radio Internal?

Repair

Replace the Radio in accordance with the service information.

Perform the BODY VERIFICATION TEST — VER 1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

B221F-AMPLIFIER INTERNAL

For a complete wiring diagram **Refer to Section 8W.**

- **When Monitored:**
- With the ignition on.
- **Set Condition:**
- The Amplifier detects a software checksum test failure.

Possible Causes
AMPLIFIER

Diagnostic Test**1. REPLACE THE AMPLIFIER**

When this code is set, the Amplifier must be replaced.

Repair

Replace the Amplifier in accordance with the Service Information.

Perform the BODY VERIFICATION TEST-VER 1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

B1460-CHANNEL 1 AUDIO SPEAKER OUTPUT CIRCUIT PERFORMANCE

For a complete wiring diagram Refer to Section 8W.

- **When Monitored:**
- With the ignition on.
- **Set Condition:**
- This DTC will set if a DC offset occurs on the output channel, the amplifier shall set a DTC after a maturity rate of 5 ± 1 sec.

Possible Causes
AMPLIFIER

Diagnostic Test

1. CHECK FOR AN INTERMITTENT CONDITION

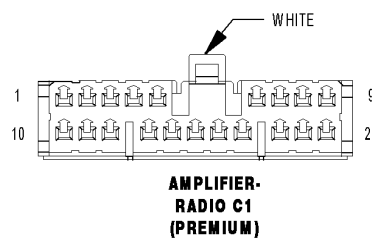
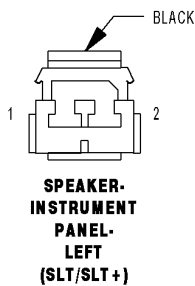
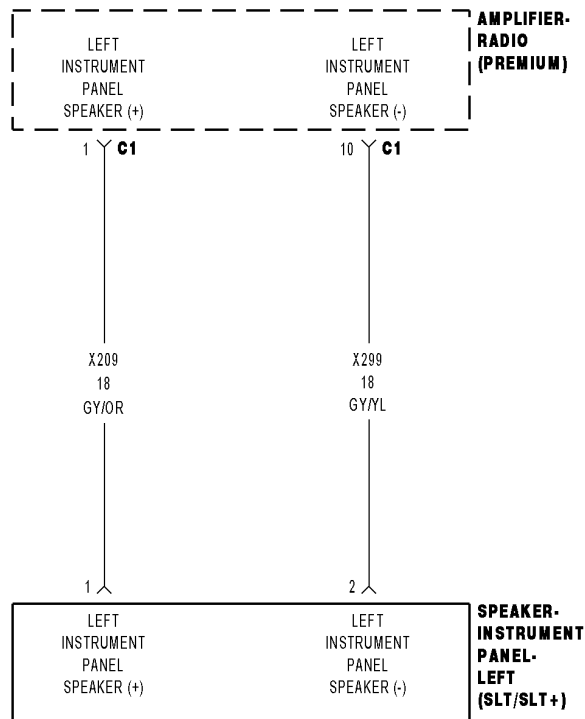
Turn the ignition on, then off, and then on again.

With the scan tool, read Amplifier DTCs.

Does the scan tool display active: B1460-CHANNEL 1 AUDIO SPEAKER OUTPUT CIRCUIT PERFORMANCE?

- Yes** >> Replace the amplifier in accordance with the service information.
Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)
- No** >> The conditions that caused this code to set are not present at this time. Using the wiring diagram/schematic as a guide, inspect the wiring and connectors.
Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

B1461-CHANNEL 1 AUDIO SPEAKER OUTPUT CIRCUIT LOW



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For a complete wiring diagram Refer to Section 8W.

- **When Monitored:**
- With the ignition on.
- **Set Condition:**
- The Amplifier detects a shorted to ground condition on the speaker output circuit.

Possible Causes

(X209) AMPLIFIED LEFT FRONT I/P SPEAKER (+) CIRCUIT SHORTED TO GROUND
 (X299) AMPLIFIED LEFT FRONT I/P SPEAKER (-) CIRCUIT SHORTED TO GROUND
 LEFT FRONT I/P SPEAKER
 AMPLIFIER

Diagnostic Test

1. CHECK FOR AN INTERMITTENT CONDITION

Turn the ignition on, then off, and then on again.

With the scan tool, read Amplifier DTCs.

Does the scan tool display active: B1461-CHANNEL 1 AUDIO SPEAKER OUTPUT CIRCUIT LOW?

Yes >> Go To 2

No >> The conditions that caused this code to set are not present at this time. Using the wiring diagram/schematic as a guide, inspect the wiring and connectors.

Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

2. CHECK THE (X209) AMPLIFIED LEFT FRONT I/P SPEAKER (+) CIRCUIT FOR A SHORT TO GROUND

Disconnect the Amplifier C1 harness connector.

Disconnect the Left I/P Speaker harness connector.

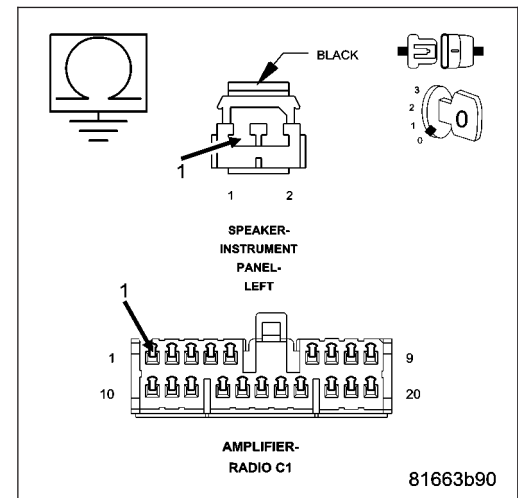
Measure the resistance between ground and the (X209) Amplified Left Front I/P Speaker (+) circuit.

Is the resistance below 10K ohms?

Yes >> Repair the (X209) Amplified Left Front I/P Speaker (+) circuit for a short to ground.

Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

No >> Go To 3



3. CHECK THE (X299) AMPLIFIED LEFT FRONT I/P SPEAKER (-) CIRCUIT FOR A SHORT TO GROUND

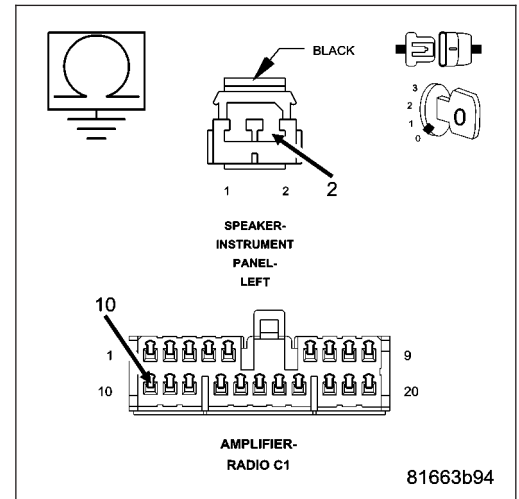
Measure the resistance between ground and the (X299) Amplified Left Front I/P Speaker (-) circuit.

Is the resistance below 10K ohms?

Yes >> Repair the (X299) Amplified Left Front I/P Speaker (-) for a short to ground.

Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

No >> Go To 4



4. CHECK OPERATION OF THE AMPLIFIED LEFT FRONT I/P SPEAKER

Turn the ignition off.

Reconnect and reinstall the Left Front I/P Speaker.

Measure the resistance of the speaker circuit between the Amplifier C1 harness connector and ground.

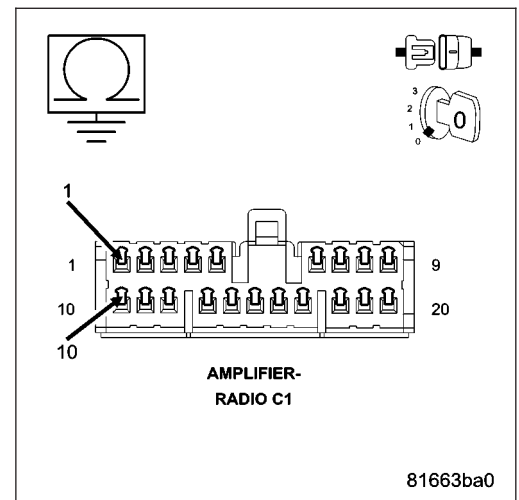
Is the resistance below 10K ohms?

Yes >> Replace the Left Front I/P Speaker in accordance with the service information.

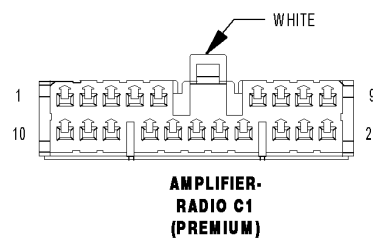
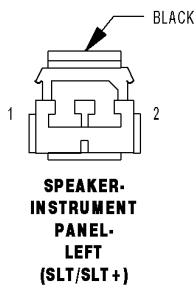
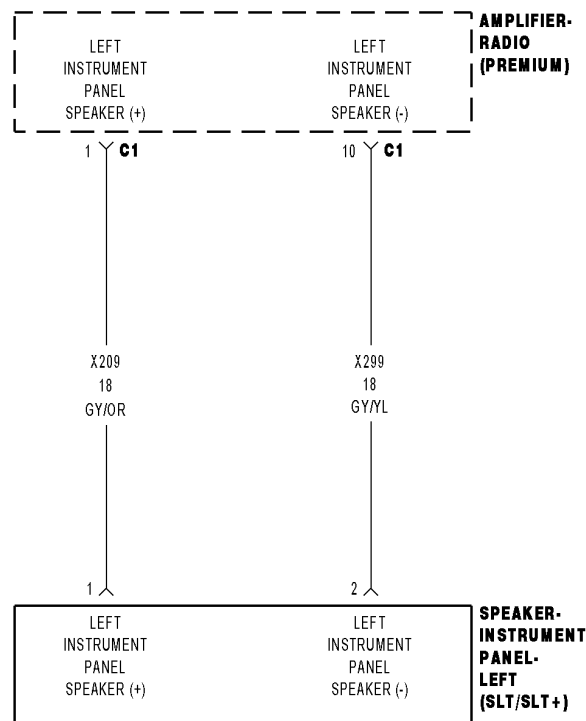
Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

No >> Replace the Amplifier in accordance with the service information.

Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)



B1462-CHANNEL 1 AUDIO SPEAKER OUTPUT CIRCUIT HIGH



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For a complete wiring diagram Refer to Section 8W.

- **When Monitored:**
- With the ignition on.
- **Set Condition:**
- The Amplifier detects a short to battery condition on the output circuit.

Possible Causes
(X209) AMPLIFIED LEFT I/P SPEAKER (+) CIRCUIT SHORT TO VOLTAGE
(X299) AMPLIFIED LEFT I/P SPEAKER (-) CIRCUIT SHORT TO VOLTAGE
AMPLIFIER

Diagnostic Test

1. CHECK FOR AN INTERMITTENT CONDITION

Turn the ignition on, then off, and then on again.

With the scan tool, read Amplifier DTCs.

Does the scan tool display active: B1462-CHANNEL 1 AUDIO SPEAKER OUTPUT CIRCUIT HIGH?

Yes >> Go To 2

No >> The conditions that caused this code to set are not present at this time. Using the wiring diagram/schematic as a guide, inspect the wiring and connectors.

Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

2. CHECK FOR VOLTAGE ON THE (X209) AMPLIFIED LEFT I/P SPEAKER (+) CIRCUIT

Turn the ignition off.

Disconnect the Amplifier C1 harness connector.

Disconnect the Amplified Left I/P Speaker harness connector.

Turn the ignition on.

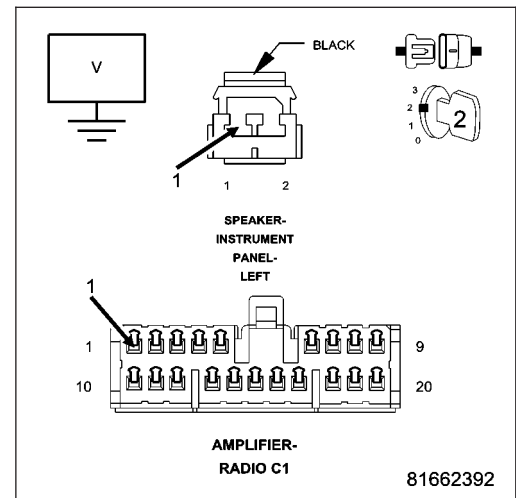
Measure for voltage on the (X209) Amplified Left I/P Speaker (+) circuit.

Is the voltage above 10.0 volts?

Yes >> Repair the (X209) Amplified Left I/P Speaker (+) circuit for a short to voltage.

Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

No >> Go To 3



3. CHECK FOR VOLTAGE ON THE (X299) AMPLIFIED LEFT I/P SPEAKER (-) CIRCUIT

Measure for voltage on the (X299) Amplified Left I/P Speaker (-) circuit.

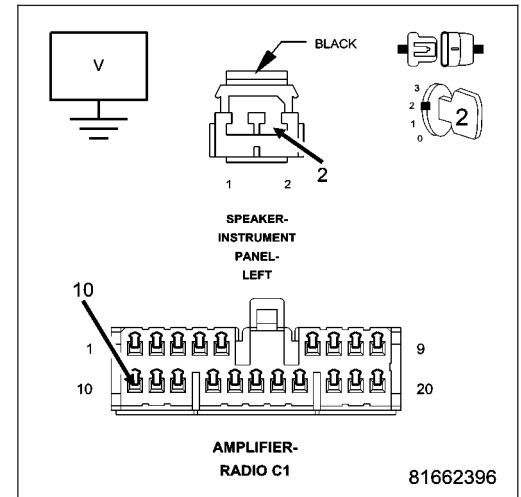
Is the voltage above 10.0 volts?

Yes >> Repair the (X299) Amplified Left I/P Speaker (-) circuit for a short to voltage.

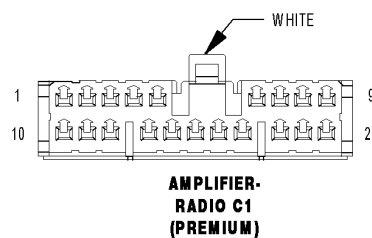
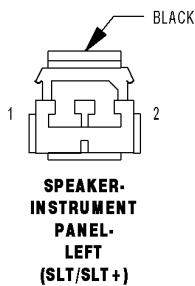
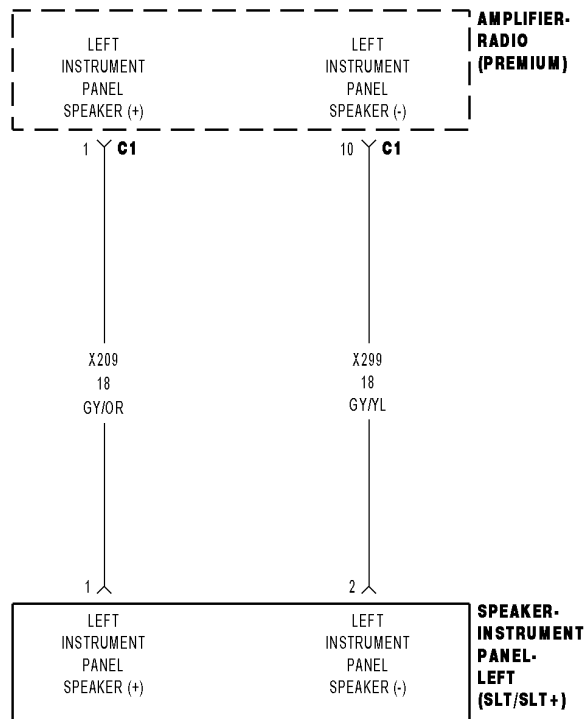
Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

No >> Replace the Amplifier in accordance with the service information.

Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)



B1463-CHANNEL 1 AUDIO SPEAKER OUTPUT CIRCUIT OPEN



816ae08c

For a complete wiring diagram Refer to Section 8W.

- **When Monitored:**
- Amplifier Bus wake-up. Amplifier reset with scan tool.
- **Set Condition:**
- The Amplifier detects an open condition on the speaker output circuit.

Possible Causes

(X209) AMPLIFIED LEFT I/P SPEAKER (+) CIRCUIT OPEN
 (X299) AMPLIFIED LEFT I/P SPEAKER (-) CIRCUIT OPEN
 LEFT FRONT I/P SPEAKER
 AMPLIFIER

Diagnostic Test

1. CHECK FOR AN INTERMITTENT CONDITION

Turn the ignition on.

Turn the radio on.

With the scan tool, erase Amplifier DTCs.

With the scan tool, reset the amplifier.

With the scan tool, read Amplifier DTCs.

Does the scan tool display active: B1463-CHANNEL 1 AUDIO SPEAKER OUTPUT CIRCUIT OPEN?

Yes >> Go To 2

No >> The conditions that caused this code to set are not present at this time. Using the wiring diagram/schematic as a guide, inspect the wiring and connectors.

Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

2. CHECK THE OPERATION OF THE LEFT FRONT I/P SPEAKER

Disconnect the Left I/P Speaker harness connector.

Turn the radio on and turn the volume to mid level.

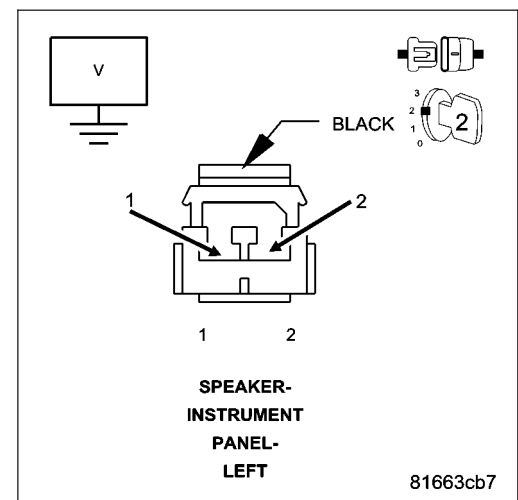
With a voltmeter set to read in A/C voltage, measure the voltage of the Amplified Left I/P Speaker circuits in the Amplified Left I/P Speaker harness connector.

Is the voltage present greater than 1 volt?

Yes >> Replace the Amplified Left I/P Speaker in accordance with the service information.

Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

No >> Go To 3



3. CHECK THE (X209) AMPLIFIED LEFT I/P SPEAKER (+) CIRCUIT FOR AN OPEN

Turn the ignition off.

Disconnect the Amplifier C1 harness connector.

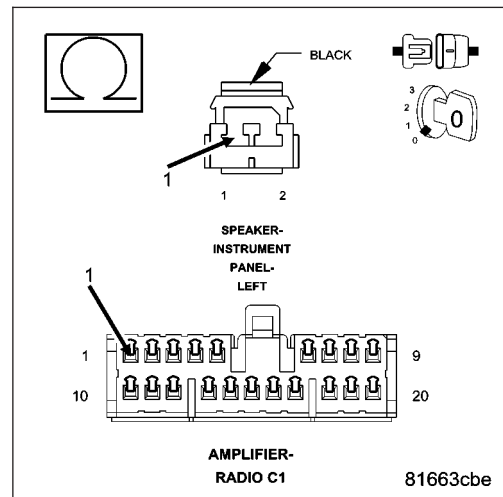
Measure the resistance of the (X209) Amplified Left I/P Speaker (+) circuit between the Amplifier C1 harness connector and the Amplified Left I/P Speaker harness connector.

Is the resistance below 5.0 ohms?

Yes >> Go To 4

No >> Repair the (X209) Amplified Left I/P Speaker (+) circuit for an open.

Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)



4. CHECK THE (X299) AMPLIFIED LEFT I/P SPEAKER (-) CIRCUIT FOR AN OPEN

Turn the ignition off.

Disconnect the Amplifier C1 harness connector.

Measure the resistance of the (X299) Amplified Left I/P Speaker (-) circuit between the Amplifier C1 harness connector and the Amplified Left I/P Speaker harness connector.

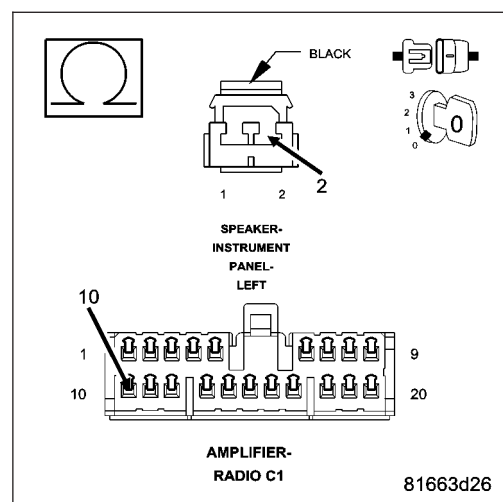
Is the resistance below 5.0 ohms?

Yes >> Replace the Amplifier in accordance with the service information.

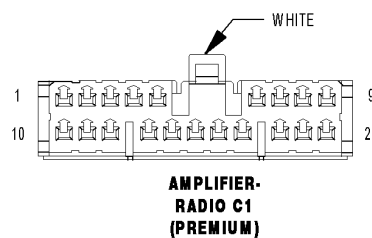
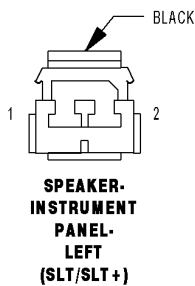
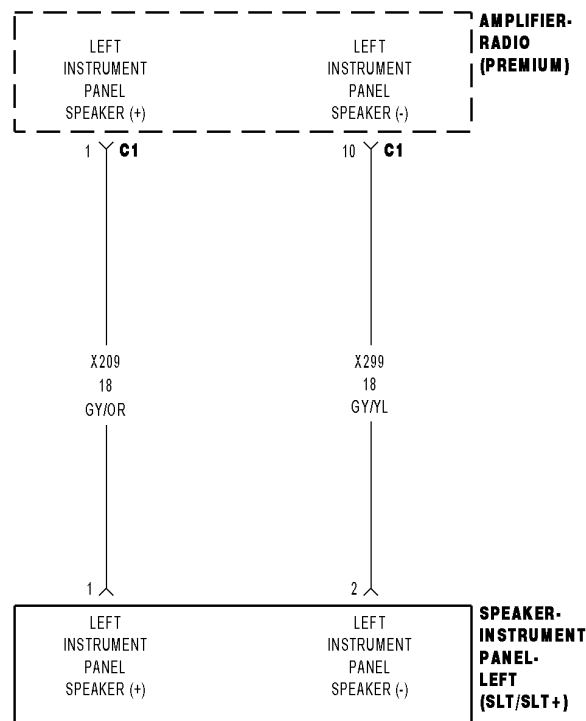
Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

No >> Repair the (X299) Amplified Left I/P Speaker (-) circuit for an open.

Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)



B1464-CHANNEL 1 AUDIO SPEAKER OUTPUT CIRCUIT SHORTED TOGETHER



816ae08c

For a complete wiring diagram Refer to Section 8W.

- **When Monitored:**
- With the ignition on. Radio volume at 25 or higher.
- **Set Condition:**
- The amplifier detects that the output circuits are shorted together.

Possible Causes

(X209) AMPLIFIED LEFT I/P SPEAKER (+) CIRCUIT SHORTED TO THE (X299) AMPLIFIED LEFT I/P SPEAKER (-) CIRCUIT
 AMPLIFIED LEFT I/P SPEAKER
 AMPLIFIER

Diagnostic Test

1. CHECK FOR AN INTERMITTENT CONDITION

Turn the ignition on, then off, and then on again.

With the scan tool, erase Amplifier DTCs.

Turn the radio on.

Turn the volume level to 25.

With the scan tool, read Amplifier DTCs.

Does the scan tool display active: B1464-CHANNEL 1 AUDIO SPEAKER OUTPUT CIRCUIT SHORTED TOGETHER?

Yes >> Go To 2

No >> The conditions that caused this code to set are not present at this time. Using the wiring diagram/schematic as a guide, inspect the wiring and connectors.
 Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

2. CHECK THE OPERATION OF THE AMPLIFIED LEFT I/P SPEAKER

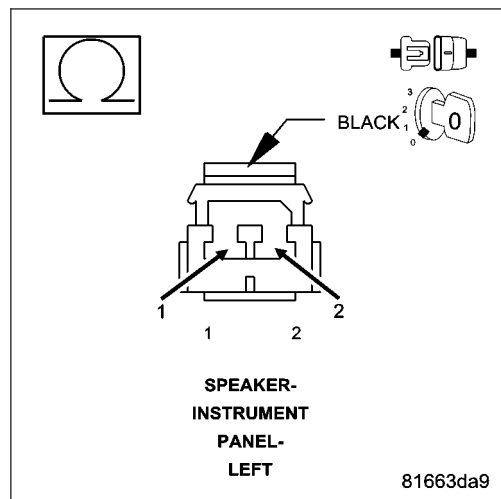
Disconnect the Amplified Left I/P Speaker.

Measure the resistance of the speaker between the two terminals.

Is the resistance of the speaker less than 1 ohm?

Yes >> Replace the Amplified Left I/P Speaker in accordance with the service information.
 Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

No >> Go To 3



3. CHECK THE (X209) AMPLIFIED LEFT I/P SPEAKER (+) CIRCUIT, AND THE (X299) AMPLIFIED LEFT I/P SPEAKER (-) CIRCUITS FOR A SHORT TOGETHER

Turn the ignition off.

Disconnect the Amplifier C1 harness connector.

Measure the resistance between the (X209) Amplified Left I/P Speaker (+) circuit, and the (X299) Amplified Left I/P Speaker (-) circuit.

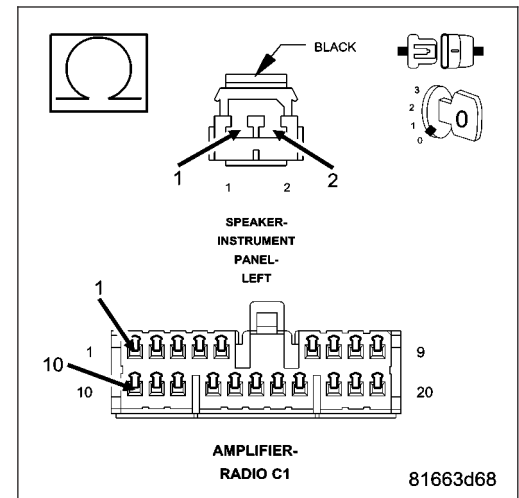
Is the resistance below 10K ohms?

Yes >> Repair the (X209) Amplified Left I/P Speaker (+) circuit, and the (X299) Amplified Left I/P Speaker (-) circuit for a short together.

Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

No >> Replace the Amplifier in accordance with the service information.

Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)



B1465-CHANNEL 2 AUDIO SPEAKER OUTPUT CIRCUIT PERFORMANCE

For a complete wiring diagram Refer to Section 8W.

- **When Monitored:**
- With the ignition on.
- **Set Condition:**
- This DTC will set if a DC offset occurs on the output channel, the amplifier shall set a DTC after a maturity rate of 5 ± 1 sec.

Possible Causes
AMPLIFIER

Diagnostic Test

1. CHECK FOR AN INTERMITTENT CONDITION

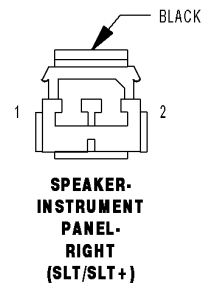
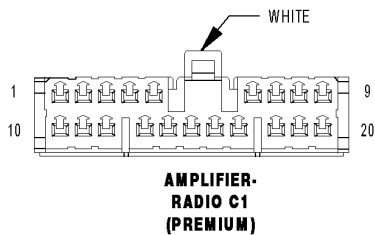
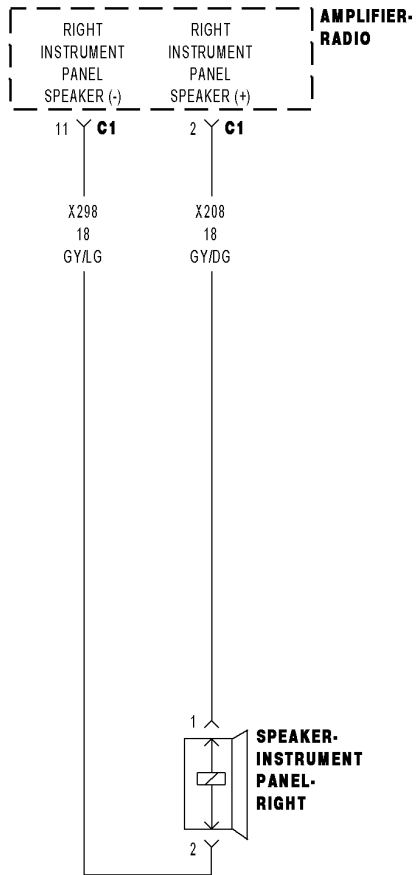
Turn the ignition on, then off, and then on again.

With the scan tool, read amplifier DTCs.

Does the scan tool display active: B1465-CHANNEL 2 AUDIO SPEAKER OUTPUT CIRCUIT PERFORMANCE?

- Yes** >> Replace the Amplifier in accordance with the service information.
Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)
- No** >> The conditions that caused this code to set are not present at this time. Using the wiring diagram/schematic as a guide, inspect the wiring and connectors.
Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

B1466-CHANNEL 2 AUDIO SPEAKER OUTPUT CIRCUIT LOW



816ac498

For a complete wiring diagram Refer to Section 8W.

- **When Monitored:**
- With the ignition on.
- **Set Condition:**
- The Amplifier detects a shorted to ground condition on the speaker output circuit.

Possible Causes
(X208) AMPLIFIED RIGHT FRONT I/P SPEAKER (+) CIRCUIT SHORTED TO GROUND (X298) AMPLIFIED RIGHT FRONT I/P SPEAKER (-) CIRCUIT SHORTED TO GROUND RIGHT FRONT I/P SPEAKER AMPLIFIER

Diagnostic Test

1. CHECK FOR AN INTERMITTENT CONDITION

Turn the ignition on, then off, and then on again.

With the scan tool, read Amplifier DTCs.

Does the scan tool display active: B1466-CHANNEL 2 AUDIO SPEAKER OUTPUT CIRCUIT LOW?

Yes >> Go To 2

No >> The conditions that caused this code to set are not present at this time. Using the wiring diagram/schematic as a guide, inspect the wiring and connectors.
 Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

2. CHECK THE (X208) AMPLIFIED RIGHT FRONT I/P SPEAKER (+) CIRCUIT FOR A SHORT TO GROUND

Disconnect the Amplifier C1 harness connector.

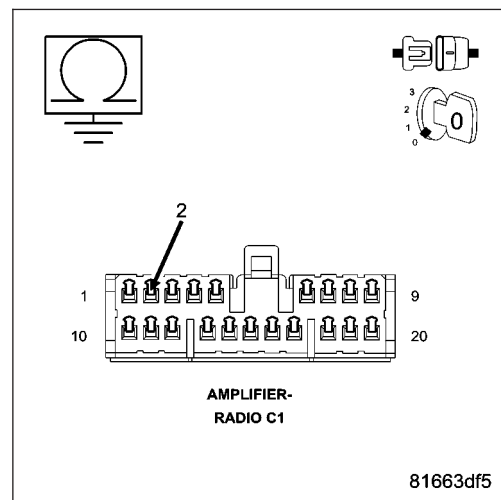
Disconnect the Right Front I/P Speaker harness connector.

Measure the resistance between ground and the (X208) Amplified Right Front I/P Speaker (+) circuit.

Is the resistance below 10K ohms?

Yes >> Repair the (X208) Amplified Right Front I/P Speaker (+) circuit for a short to ground.
 Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

No >> Go To 3



3. CHECK THE (X298) AMPLIFIED RIGHT FRONT I/P SPEAKER (-) CIRCUIT FOR A SHORT TO GROUND

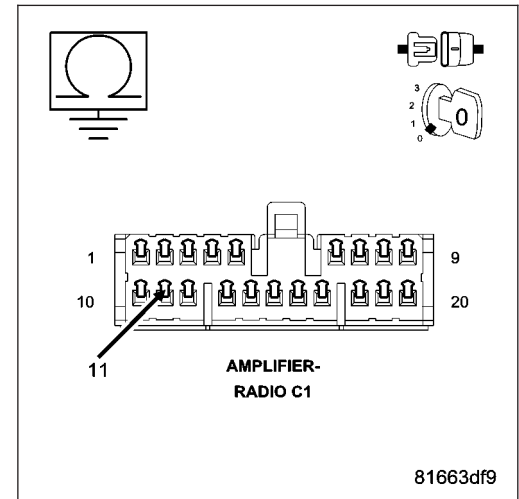
Measure the resistance between ground and the (X298) Amplified Right Front I/P Speaker (-) circuit.

Is the resistance below 10K ohms?

Yes >> Repair the (X298) Amplified Right Front I/P Speaker (-) for a short to ground.

Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

No >> Go To 4



4. CHECK OPERATION OF THE AMPLIFIED RIGHT FRONT I/P SPEAKER

Turn the ignition off.

Reconnect and reinstall the Right Front I/P Speaker.

Measure the resistance of the speaker circuit between the Amplifier C1 harness connector and ground.

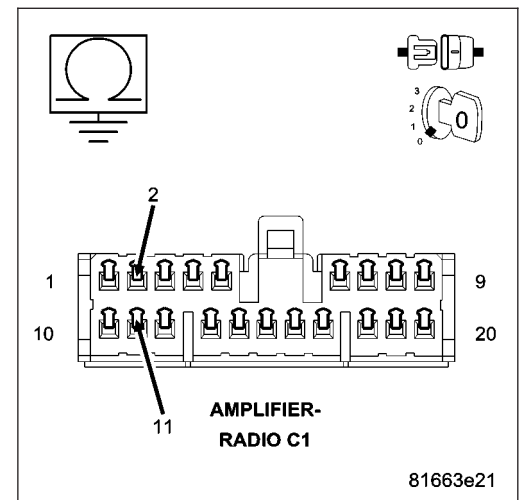
Is the resistance below 10K ohms?

Yes >> Replace the Right Front I/P Speaker in accordance with the service information.

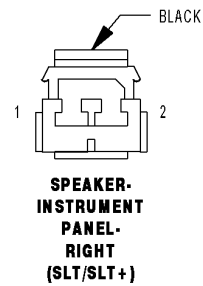
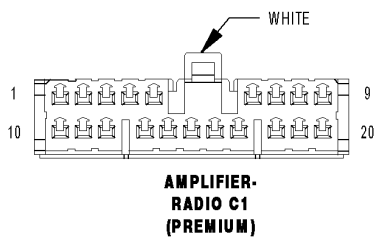
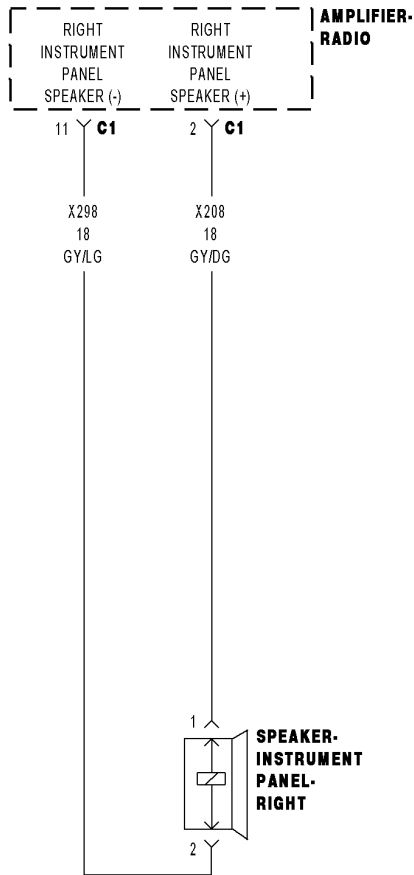
Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

No >> Replace the Amplifier in accordance with the service information.

Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)



B1467-CHANNEL 2 AUDIO SPEAKER OUTPUT CIRCUIT HIGH



816ac498

For a complete wiring diagram Refer to Section 8W.

- **When Monitored:**
- With the ignition on.
- **Set Condition:**
- The Amplifier detects a short to battery condition on the output circuit.

Possible Causes

(X208) AMPLIFIED RIGHT I/P SPEAKER (+) CIRCUIT SHORT TO VOLTAGE
 (X298) AMPLIFIED RIGHT I/P SPEAKER (-) CIRCUIT SHORT TO VOLTAGE
 AMPLIFIER

Diagnostic Test

1. CHECK FOR AN INTERMITTENT CONDITION

Turn the ignition on, then off, and then on again.

With the scan tool, read Amplifier DTCs.

Does the scan tool display active: B1467-CHANNEL 2 AUDIO SPEAKER OUTPUT CIRCUIT HIGH?

Yes >> Go To 2

No >> The conditions that caused this code to set are not present at this time. Using the wiring diagram/schematic as a guide, inspect the wiring and connectors.

Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

2. CHECK FOR VOLTAGE ON THE (X208) AMPLIFIED RIGHT I/P SPEAKER (+) CIRCUIT

Turn the ignition off.

Disconnect the Amplifier C1 harness connector.

Disconnect the Amplified Right I/P Speaker harness connector.

Turn the ignition on.

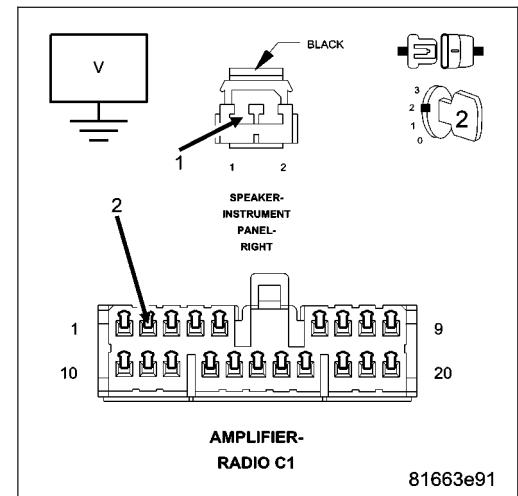
Measure for voltage on the (X208) Amplified Right I/P Speaker (+) circuit.

Is the voltage above 10.0 volts?

Yes >> Repair the (X208) Amplified Right I/P Speaker (+) circuit for a short to voltage.

Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

No >> Go To 3



3. CHECK FOR VOLTAGE ON THE (X298) AMPLIFIED RIGHT I/P SPEAKER (-) CIRCUIT

Measure for voltage on the (X298) Amplified Right I/P Speaker (-) circuit.

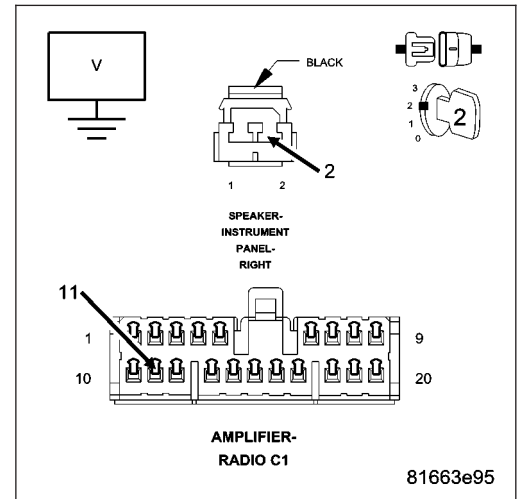
Is the voltage above 10.0 volts?

Yes >> Repair the (X298) Amplified Right I/P Speaker (-) circuit for a short to voltage.

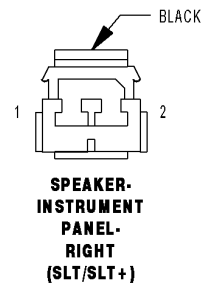
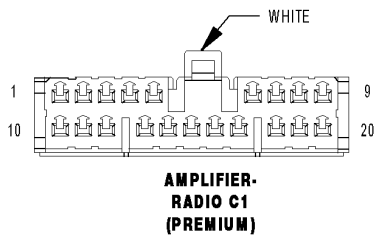
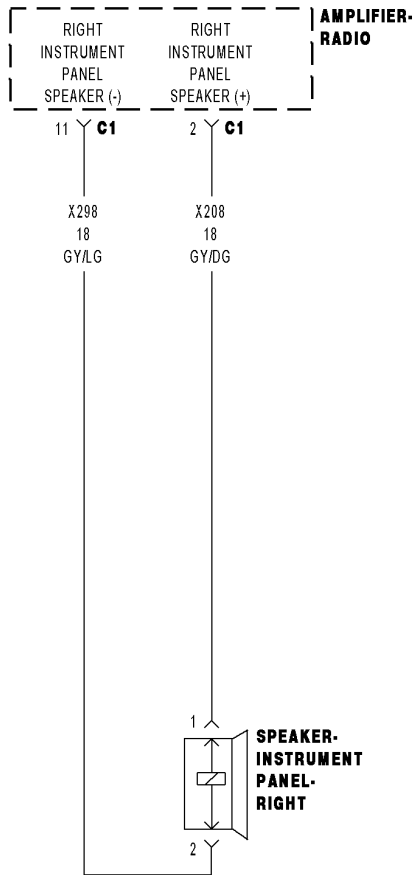
Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

No >> Replace the Amplifier in accordance with the service information.

Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)



B1468-CHANNEL 2 AUDIO SPEAKER OUTPUT CIRCUIT OPEN



816ac498

For a complete wiring diagram Refer to Section 8W.

- **When Monitored:**
- Amplifier Bus wake-up. Amplifier reset with scan tool.
- **Set Condition:**
- The Amplifier detects an open condition on the speaker output circuit.

Possible Causes

(X208) AMPLIFIED RIGHT I/P SPEAKER (+) CIRCUIT OPEN
 (X298) AMPLIFIED RIGHT I/P SPEAKER (-) CIRCUIT OPEN
 RIGHT I/P SPEAKER
 AMPLIFIER

Diagnostic Test

1. CHECK FOR AN INTERMITTENT CONDITION

Turn the ignition on.

Turn the radio on.

With the scan tool, erase Amplifier DTCs.

With the scan tool, reset the amplifier.

With the scan tool, read Amplifier DTCs.

Does the scan tool display active: B1468-CHANNEL 2 AUDIO SPEAKER OUTPUT CIRCUIT OPEN?

Yes >> Go To 2

No >> The conditions that caused this code to set are not present at this time. Using the wiring diagram/schematic as a guide, inspect the wiring and connectors.

Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

2. CHECK THE OPERATION OF THE RIGHT FRONT I/P SPEAKER

Disconnect the Right I/P Speaker harness connector.

Turn the radio on and turn the volume to mid level.

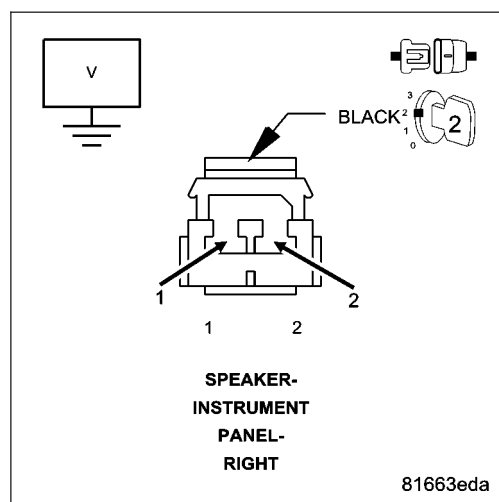
With a voltmeter set to read in A/C voltage, measure the voltage of the Amplified Right I/P Speaker circuits in the Amplified Right I/P Speaker harness connector.

Is the voltage present greater than 1 volt?

Yes >> Replace the Amplified Right I/P Speaker in accordance with the service information.

Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

No >> Go To 3



3. CHECK THE (X208) AMPLIFIED RIGHT I/P SPEAKER (+) CIRCUIT FOR AN OPEN

Turn the ignition off.

Disconnect the Amplifier C1 harness connector.

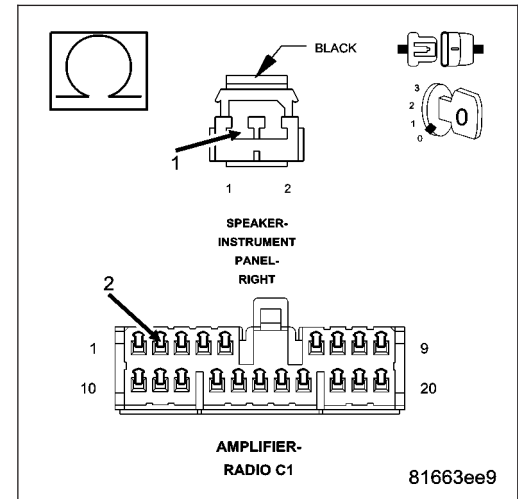
Measure the resistance of the (X208) Amplified Right I/P Speaker (+) circuit between the Amplifier C2 harness connector and the Amplified Right I/P Speaker harness connector.

Is the resistance below 5.0 ohms?

Yes >> Go To 4

No >> Repair the (X208) Amplified Right I/P Speaker (+) circuit for an open.

Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)



4. CHECK THE (X298) AMPLIFIED RIGHT I/P SPEAKER (-) CIRCUIT FOR AN OPEN

Turn the ignition off.

Disconnect the Amplifier C1 harness connector.

Measure the resistance of the (X298) Amplified Right I/P Speaker (-) circuit between the Amplifier C1 harness connector and the Amplified Right I/P Speaker harness connector.

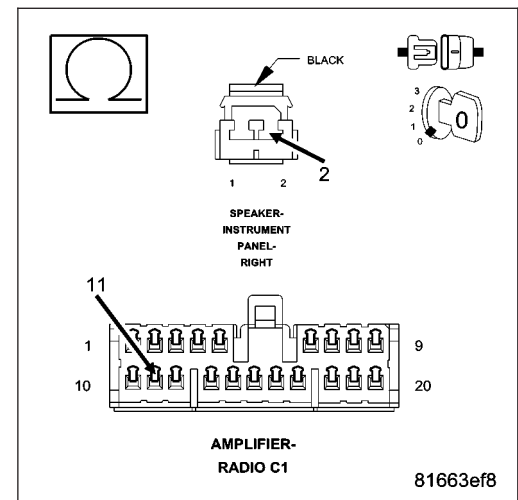
Is the resistance below 5.0 ohms?

Yes >> Replace the Amplifier in accordance with the service information.

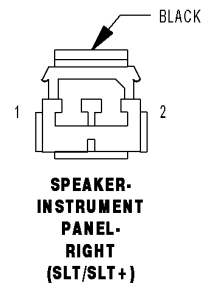
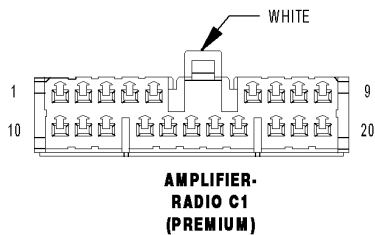
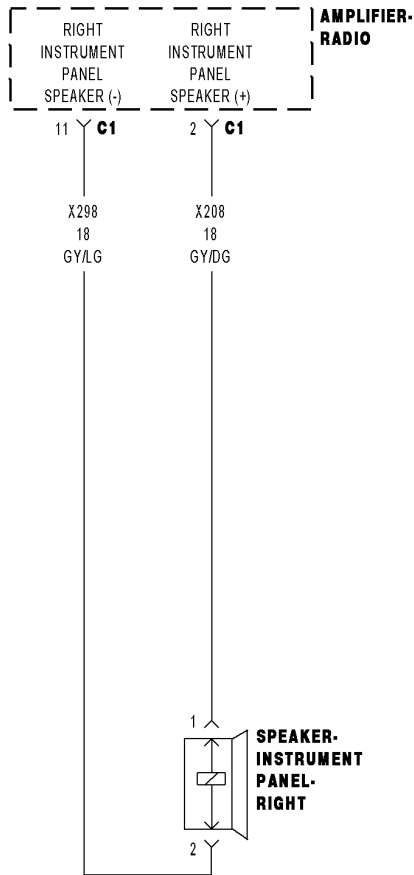
Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

No >> Repair the (X298) Amplified Right I/P Speaker (-) circuit for an open.

Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)



B1469-CHANNEL 2 AUDIO SPEAKER OUTPUT CIRCUIT SHORTED TOGETHER



816ae498

For a complete wiring diagram Refer to Section 8W.

- **When Monitored:**
- With the ignition on. Radio volume at 25 or higher.
- **Set Condition:**
- The amplifier detects that the output circuits are shorted together.

Possible Causes

(X208) AMPLIFIED RIGHT I/P SPEAKER (+) CIRCUIT SHORTED TO THE (X298) AMPLIFIED RIGHT I/P SPEAKER (-) CIRCUIT
 AMPLIFIED RIGHT I/P SPEAKER
 AMPLIFIER

Diagnostic Test

1. CHECK FOR AN INTERMITTENT CONDITION

Turn the ignition on, then off, and then on again.

With the scan tool, erase Amplifier DTCs.

Turn the radio on.

Turn the volume level to 25.

With the scan tool, read Amplifier DTCs.

Does the scan tool display active: B1469-CHANNEL 2 AUDIO SPEAKER OUTPUT CIRCUIT SHORTED TOGETHER?

Yes >> Go To 2

No >> The conditions that caused this code to set are not present at this time. Using the wiring diagram/schematic as a guide, inspect the wiring and connectors.
 Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

2. CHECK THE OPERATION OF THE AMPLIFIED RIGHT I/P SPEAKER

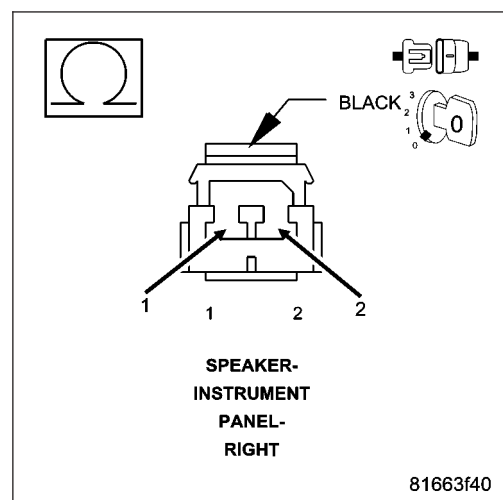
Disconnect the Amplified Right I/P Speaker.

Measure the resistance of the speaker between the two terminals.

Is the resistance of the speaker less than 1 ohm?

Yes >> Replace the Amplified Right I/P Speaker in accordance with the service information.
 Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

No >> Go To 3



3. CHECK THE (X208) AMPLIFIED RIGHT I/P SPEAKER (+) CIRCUIT, AND THE (X298) AMPLIFIED RIGHT I/P SPEAKER (-) CIRCUITS FOR A SHORT TOGETHER

Turn the ignition off.

Disconnect the Amplifier C1 harness connector.

Measure the resistance between the (X208) Amplified Right I/P Speaker (+) circuit, and the (X298) Amplified Right I/P Speaker (-) circuit.

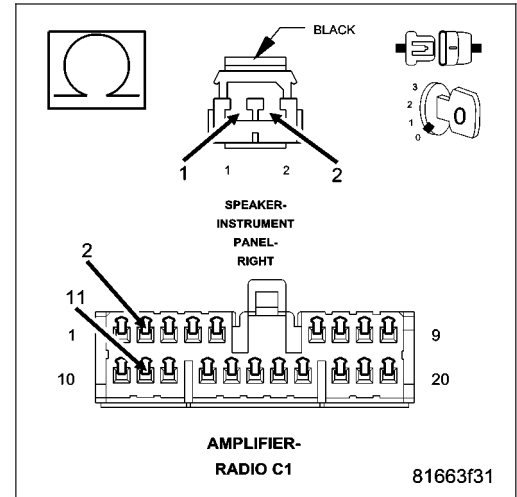
Is the resistance below 10K ohms?

Yes >> Repair the (X208) Amplified Right I/P Speaker (+) circuit, and the (X298) Amplified Right I/P Speaker (-) circuit for a short together.

Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

No >> Replace the Amplifier in accordance with the service information.

Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)



B146A-CHANNEL 3 AUDIO SPEAKER OUTPUT CIRCUIT PERFORMANCE

For a complete wiring diagram Refer to Section 8W.

- **When Monitored:**
- With the ignition on.
- **Set Condition:**
- This DTC will set if a DC offset occurs on the output channel, the amplifier shall set a DTC after a maturity rate of 5 ± 1 sec.

Possible Causes
AMPLIFIER

Diagnostic Test

1. CHECK FOR AN INTERMITTENT CONDITION

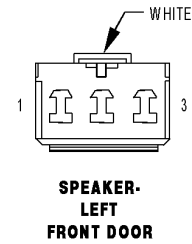
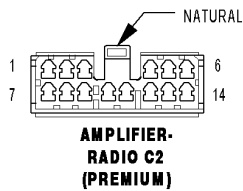
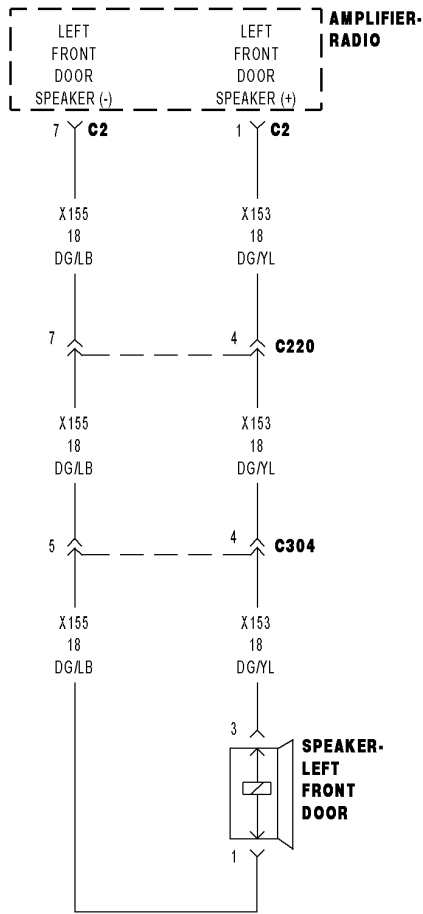
Turn the ignition on, then off, and then on again.

With the scan tool, read Amplifier DTCs.

Does the scan tool display active: B146A-CHANNEL 3 AUDIO SPEAKER OUTPUT CIRCUIT PERFORMANCE?

- Yes** >> Replace the amplifier in accordance with the service information.
Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)
- No** >> The conditions that caused this code to set are not present at this time. Using the wiring diagram/schematic as a guide, inspect the wiring and connectors.
Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

B146B-CHANNEL 3 AUDIO SPEAKER OUTPUT CIRCUIT LOW



816aeetc

For a complete wiring diagram Refer to Section 8W.

- **When Monitored:**
- With the ignition on.
- **Set Condition:**
- The Amplifier detects a shorted to ground condition on the speaker output circuit.

Possible Causes

(X153) LEFT FRONT DOOR SPEAKER (+) CIRCUIT SHORTED TO GROUND
 (X155) LEFT FRONT DOOR SPEAKER (-) CIRCUIT SHORTED TO GROUND
 LEFT FRONT DOOR SPEAKER
 AMPLIFIER

Diagnostic Test

1. CHECK FOR AN INTERMITTENT CONDITION

Turn the ignition on, then off, and then on again.

With the scan tool, read Amplifier DTCs.

Does the scan tool display active: B146B-CHANNEL 3 AUDIO SPEAKER OUTPUT CIRCUIT LOW?

Yes >> Go To 2

No >> The conditions that caused this code to set are not present at this time. Using the wiring diagram/schematic as a guide, inspect the wiring and connectors.

Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

2. CHECK THE (X153) LEFT FRONT DOOR SPEAKER (+) CIRCUIT FOR A SHORT TO GROUND

Disconnect the Amplifier C2 harness connector.

Disconnect the Left Front Door Speaker harness connector.

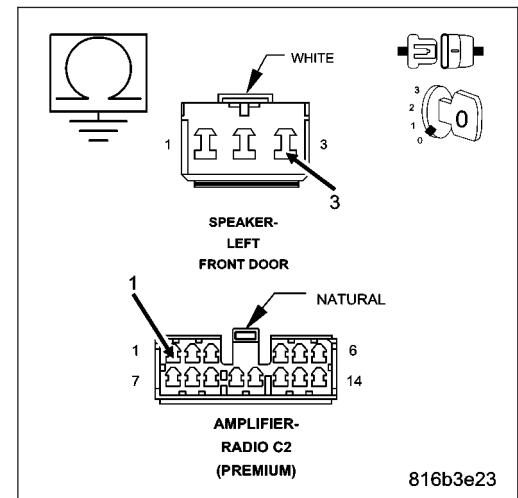
Measure the resistance between ground and the (X153) Left Front Door Speaker (+) circuit.

Is the resistance below 5.0 ohms?

Yes >> Repair the (X153) Left Front Door Speaker (+) circuit for a short to ground.

Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

No >> Go To 3



3. CHECK THE (X155) LEFT FRONT DOOR SPEAKER (-) CIRCUIT FOR A SHORT TO GROUND

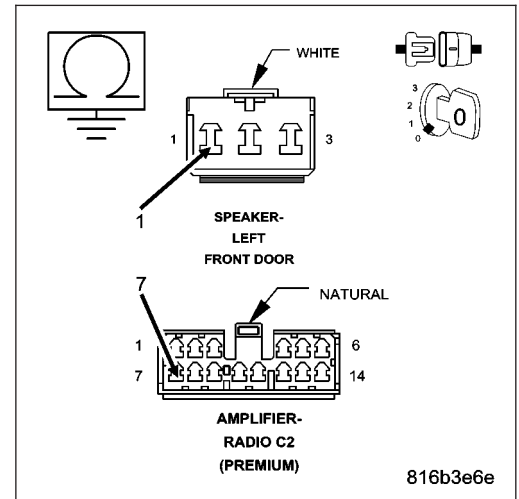
Measure the resistance between ground and the (X155) Left Front Door Speaker (-) circuit.

Is the resistance below 5.0 ohms?

Yes >> Repair the (X155) Left Front Door Speaker (-) for a short to ground.

Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

No >> Go To 4



4. CHECK OPERATION OF THE LEFT FRONT DOOR SPEAKER

Turn the ignition off.

Reconnect and reinstall the Left Front Door Speaker.

Measure the resistance of the speaker circuit between the Amplifier C2 harness connector and ground.

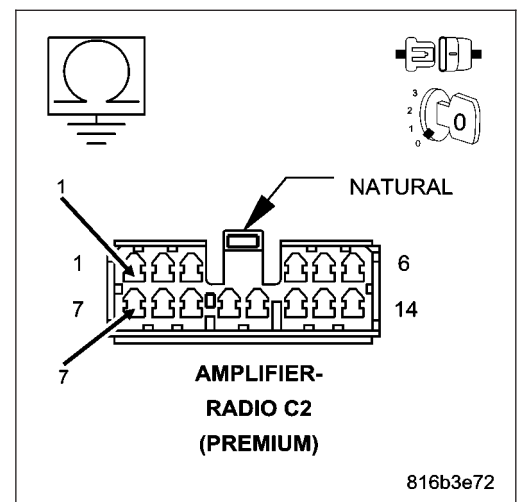
Is the resistance below 10K ohms?

Yes >> Replace the Left Front Door Speaker in accordance with the service information.

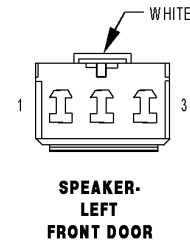
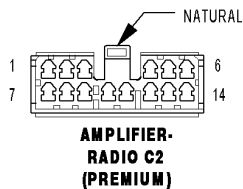
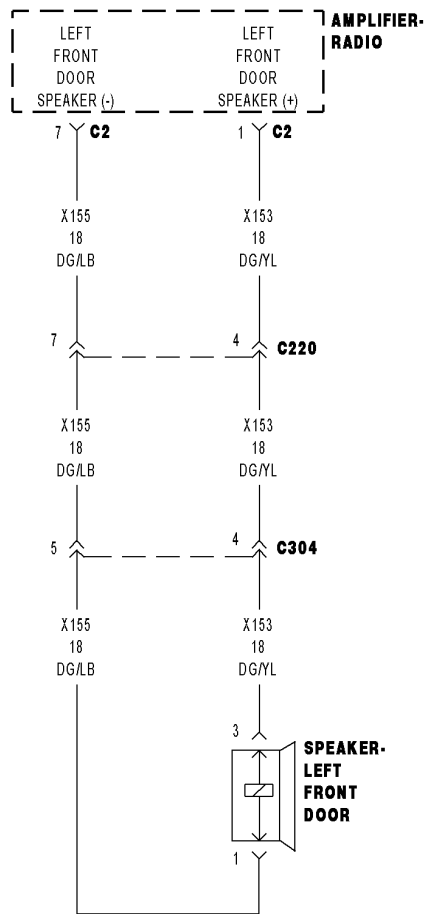
Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

No >> Replace the Amplifier in accordance with the service information.

Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)



B146C-CHANNEL 3 AUDIO SPEAKER OUTPUT CIRCUIT HIGH



816aeetc

For a complete wiring diagram Refer to Section 8W.

- **When Monitored:**
- With the ignition on.
- **Set Condition:**
- The Amplifier detects a short to battery condition on the output circuit.

Possible Causes
(X153) LEFT FRONT DOOR SPEAKER (+) CIRCUIT SHORT TO VOLTAGE
(X155) LEFT FRONT DOOR SPEAKER (-) CIRCUIT SHORT TO VOLTAGE
AMPLIFIER

Diagnostic Test

1. CHECK FOR AN INTERMITTENT CONDITION

Turn the ignition on, then off, and then on again.

With the scan tool, read Amplifier DTCs.

Does the scan tool display active: B146C-CHANNEL 3 AUDIO SPEAKER OUTPUT CIRCUIT HIGH?

Yes >> Go To 2

No >> The conditions that caused this code to set are not present at this time. Using the wiring diagram/schematic as a guide, inspect the wiring and connectors.

Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

2. CHECK FOR VOLTAGE ON THE (X153) LEFT FRONT DOOR SPEAKER (+) CIRCUIT

Turn the ignition off.

Disconnect the Amplifier C2 harness connector.

Disconnect the Left Front Door Speaker harness connector.

Turn the ignition on.

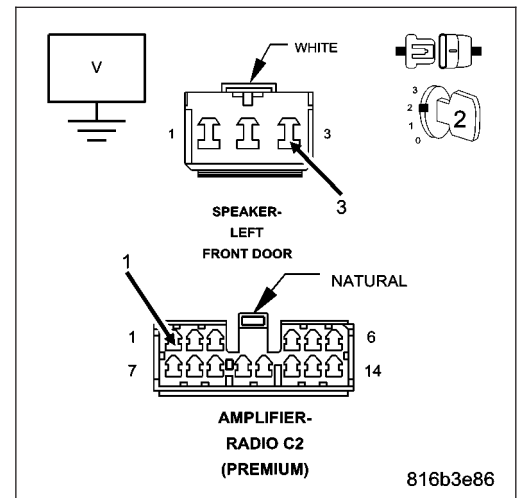
Measure for voltage on the (X153) Left Front Door Speaker (+) circuit.

Is the voltage above 10.0 volts?

Yes >> Repair the (X153) Left Front Door Speaker (+) circuit for a short to voltage.

Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

No >> Go To 3



3. CHECK FOR VOLTAGE ON THE (X155) LEFT FRONT DOOR SPEAKER (-) CIRCUIT

Measure for voltage on the (X155) Left Front Door Speaker (-) circuit.

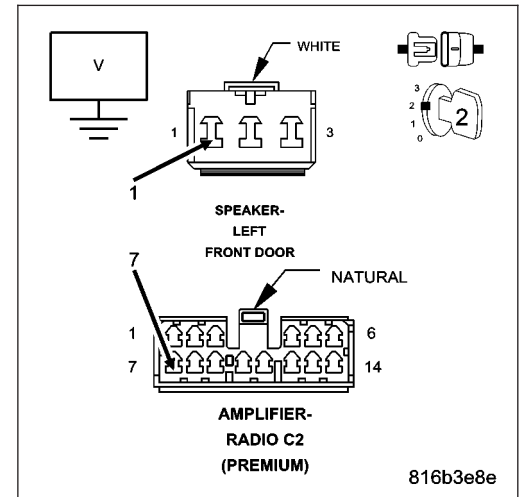
Is the voltage above 10.0 volts?

Yes >> Repair the (X155) Left Front Door Speaker (-) circuit for a short to voltage.

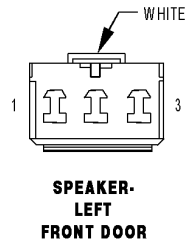
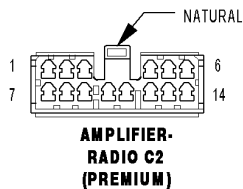
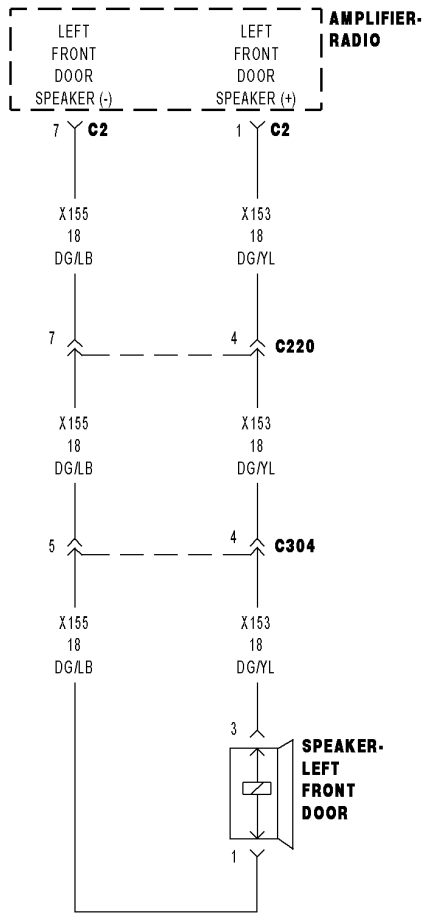
Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

No >> Replace the Amplifier in accordance with the service information.

Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)



B146D-CHANNEL 3 AUDIO SPEAKER OUTPUT CIRCUIT OPEN



For a complete wiring diagram Refer to Section 8W.

- **When Monitored:**
- Amplifier Bus wake-up. Amplifier reset with scan tool.
- **Set Condition:**
- The Amplifier detects an open condition on the speaker output circuit.

Possible Causes
(X153) LEFT FRONT DOOR SPEAKER (+) (X155) LEFT FRONT DOOR SPEAKER (-) LEFT FRONT DOOR SPEAKER AMPLIFIER

Diagnostic Test

1. CHECK FOR AN INTERMITTENT CONDITION

Turn the ignition on.

Turn the radio on.

With the scan tool, erase Amplifier DTCs.

With the scan tool, reset the amplifier.

With the scan tool, read Amplifier DTCs.

Does the scan tool display active: B146D-CHANNEL 3 AUDIO SPEAKER OUTPUT CIRCUIT OPEN?

Yes >> Go To 2

No >> The conditions that caused this code to set are not present at this time. Using the wiring diagram/schematic as a guide, inspect the wiring and connectors.

Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

2. CHECK THE OPERATION OF THE LEFT FRONT DOOR SPEAKER

Disconnect the Left Front Door Speaker harness connector.

Turn the radio on and turn the volume to mid level.

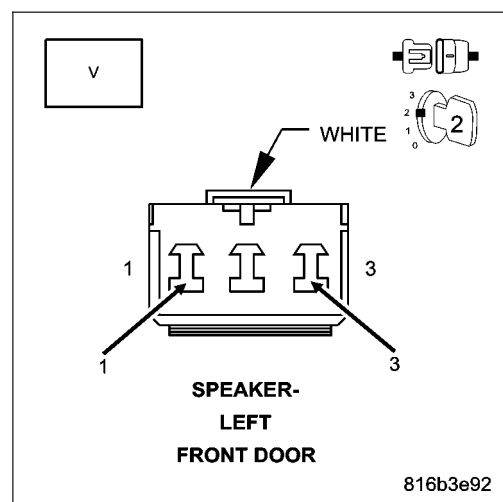
With a voltmeter set to read in A/C voltage, measure the voltage of the Left Front Door Speaker circuits in the Left Front Door Speaker harness connector.

Is the voltage present greater than 1 volt?

Yes >> Replace the Left Front Door Speaker in accordance with the service information.

Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

No >> Go To 3



3. CHECK THE (X153) LEFT FRONT DOOR SPEAKER (+) CIRCUIT FOR AN OPEN

Turn the ignition off.

Disconnect the Amplifier C2 harness connector.

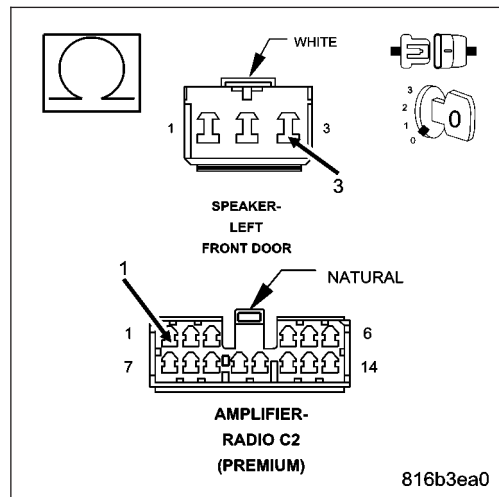
Measure the resistance of the (X153) Left Front Door Speaker (+) circuit between the Amplifier C2 harness connector and the Left Rear Speaker harness connector.

Is the resistance below 5.0 ohms?

Yes >> Go To 4

No >> Repair the (X153) Left Front Door Speaker (+) circuit for an open.

Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)



4. CHECK THE (X155) LEFT FRONT DOOR SPEAKER (-) CIRCUIT FOR AN OPEN

Turn the ignition off.

Measure the resistance of the (X155) Left Front Door Speaker (-) circuit between the Amplifier C2 harness connector and the Left Front Door Speaker harness connector.

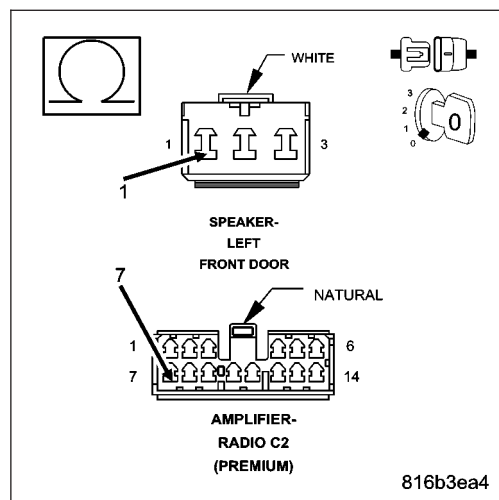
Is the resistance below 5.0 ohms?

Yes >> Replace the Amplifier in accordance with the service information.

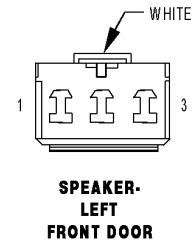
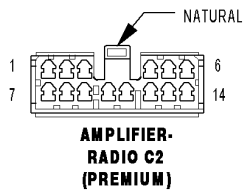
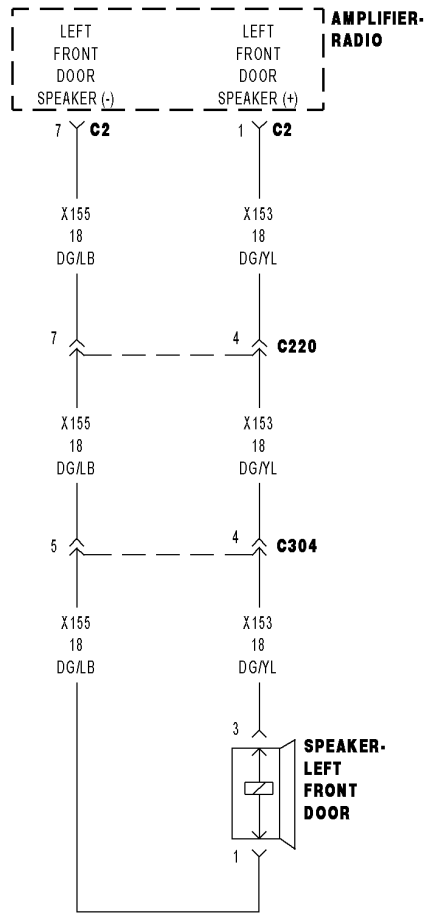
Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

No >> Repair the (X155) Left Front Door Speaker (-) circuit for an open.

Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)



B146E-CHANNEL 3 AUDIO SPEAKER OUTPUT CIRCUIT SHORTED TOGETHER



816aeetc

For a complete wiring diagram Refer to Section 8W.

- **When Monitored:**
- With the ignition on. Radio volume at 25 or higher.
- **Set Condition:**
- The amplifier detects that the output circuits are shorted together.

Possible Causes

(X153) LEFT FRONT DOOR SPEAKER (+) CIRCUIT SHORTED TO THE (X155) LEFT FRONT DOOR SPEAKER (-) CIRCUIT
LEFT FRONT DOOR SPEAKER
AMPLIFIER

Diagnostic Test

1. CHECK FOR AN INTERMITTENT CONDITION

Turn the ignition on, then off, and then on again.

With the scan tool, erase Amplifier DTCs.

Turn the radio on.

Turn the volume level to 25.

With the scan tool, read Amplifier DTCs.

Does the scan tool display active: B146E-CHANNEL 3 AUDIO SPEAKER OUTPUT CIRCUIT SHORTED TOGETHER?

Yes >> Go To 2

No >> The conditions that caused this code to set are not present at this time. Using the wiring diagram/schematic as a guide, inspect the wiring and connectors.
Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

2. CHECK THE OPERATION OF THE LEFT FRONT DOOR SPEAKER

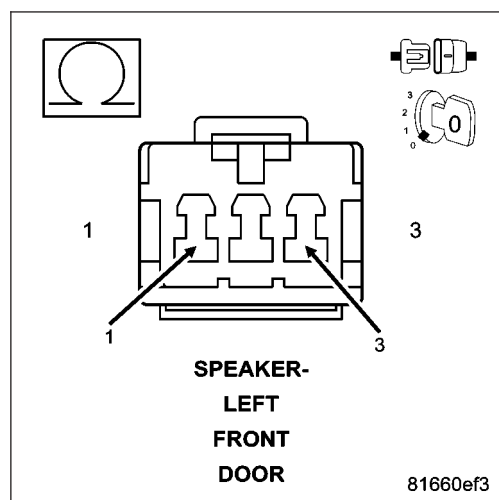
Disconnect the Left Front Door Speaker.

Measure the resistance of the speaker between the two terminals.

Is the resistance of the speaker less than 1 ohm?

Yes >> Replace the Left Front Door Speaker in accordance with the service information.
Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

No >> Go To 3



3. CHECK THE (X153) LEFT FRONT DOOR SPEAKER (+) CIRCUIT, AND THE (X155) LEFT FRONT DOOR SPEAKER (-) CIRCUITS FOR A SHORT TOGETHER

Turn the ignition off.

Disconnect the Amplifier C2 harness connector.

Measure the resistance between the (X153) Left Front Door Speaker (+) circuit, and the (X155) Left Front Door Speaker (-) circuit.

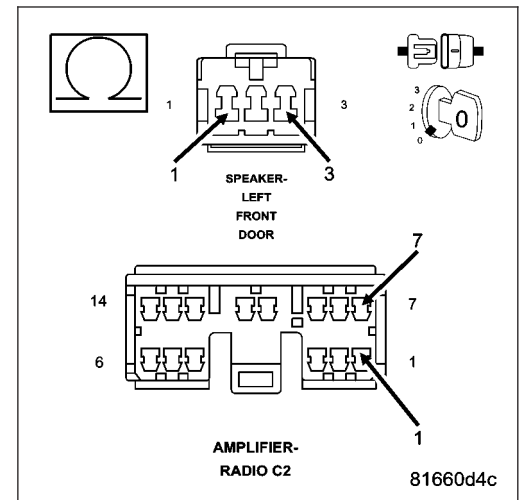
Is the resistance below 5.0 ohms?

Yes >> Repair the (X153) Left Front Door Speaker (+) circuit, and the (X155) Left Front Door Speaker (-) circuit for a short together.

Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

No >> Replace the Amplifier in accordance with the service information.

Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)



B146F-CHANNEL 4 AUDIO SPEAKER OUTPUT CIRCUIT PERFORMANCE

For a complete wiring diagram Refer to Section 8W.

- **When Monitored:**
- With the ignition on.
- **Set Condition:**
- This DTC will set if a DC offset occurs on the output channel, the amplifier shall set a DTC after a maturity rate of 5 ± 1 sec.

Possible Causes
AMPLIFIER

Diagnostic Test**1. CHECK FOR AN INTERMITTENT CONDITION**

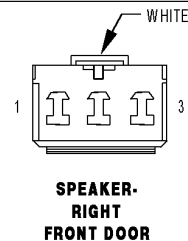
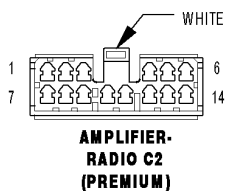
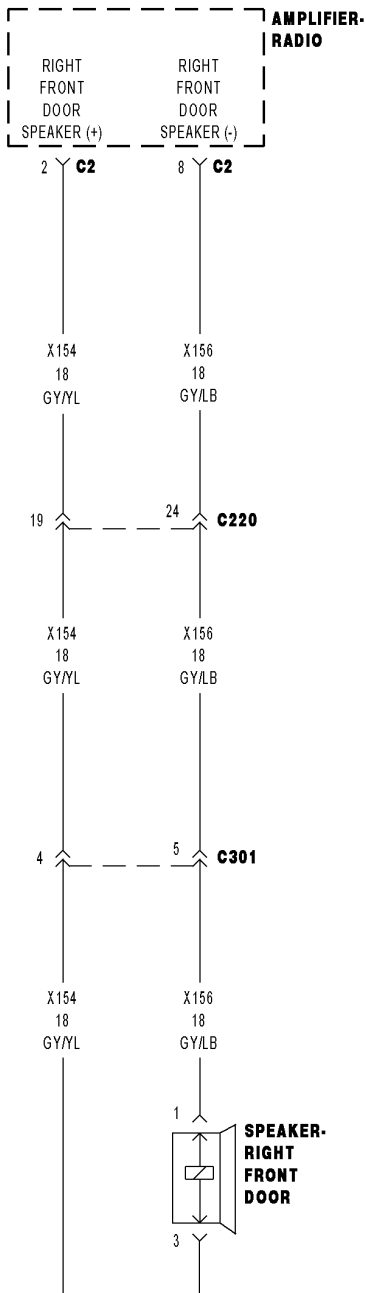
Turn the ignition on, then off, and then on again.

With the scan tool, read amplifier DTCs.

Does the scan tool display active: B146F-CHANNEL 4 AUDIO SPEAKER OUTPUT CIRCUIT PERFORMANCE?

- Yes** >> Replace the Amplifier in accordance with the service information.
Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)
- No** >> The conditions that caused this code to set are not present at this time. Using the wiring diagram/schematic as a guide, inspect the wiring and connectors.
Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

B1470-CHANNEL 4 AUDIO SPEAKER OUTPUT CIRCUIT LOW



8168351

For a complete wiring diagram Refer to Section 8W.

- **When Monitored:**
- With the ignition on.
- **Set Condition:**
- The Amplifier detects a shorted to ground condition on the speaker output circuit.

Possible Causes
(X154) RIGHT FRONT DOOR SPEAKER (+) CIRCUIT SHORTED TO GROUND (X156) RIGHT FRONT DOOR SPEAKER (-) CIRCUIT SHORTED TO GROUND RIGHT FRONT DOOR SPEAKER AMPLIFIER

Diagnostic Test

1. CHECK FOR AN INTERMITTENT CONDITION

Turn the ignition on, then off, and then on again.

With the scan tool, read Amplifier DTCs.

Does the scan tool display active: B1470-CHANNEL 4 AUDIO SPEAKER OUTPUT CIRCUIT LOW?

Yes >> Go To 2

No >> The conditions that caused this code to set are not present at this time. Using the wiring diagram/schematic as a guide, inspect the wiring and connectors.
 Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

2. CHECK THE (X154) RIGHT FRONT DOOR SPEAKER (+) CIRCUIT FOR A SHORT TO GROUND

Disconnect the Amplifier C2 harness connector.

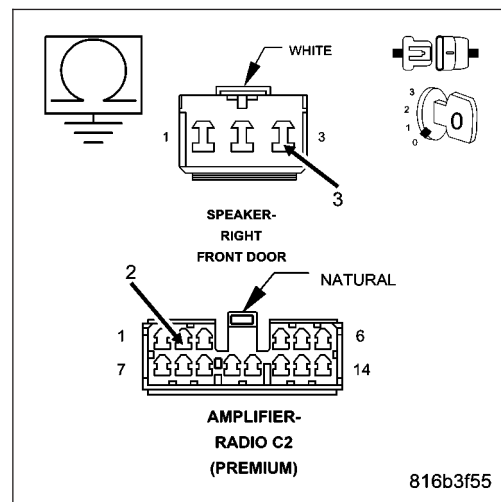
Disconnect the Right Front Door Speaker harness connector.

Measure the resistance between the (X154) Right Front Door Speaker (+) circuit and ground.

Is the resistance below 5.0 ohms?

Yes >> Repair the (X154) Left Front Door Speaker (+) circuit for a short to ground.
 Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

No >> Go To 3



3. CHECK THE (X156) RIGHT FRONT DOOR SPEAKER (-) CIRCUIT FOR A SHORT TO GROUND

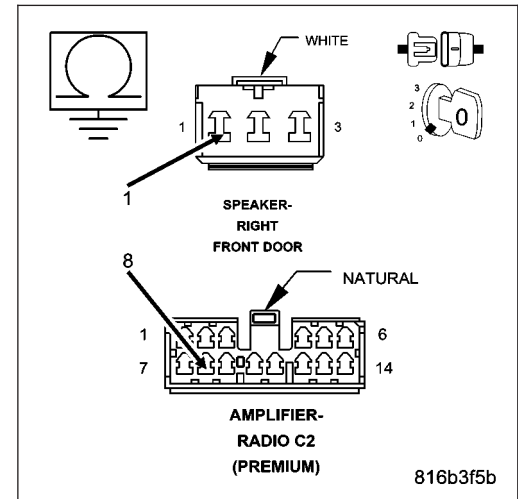
Measure the resistance between ground and the (X156) Right Front Door Speaker (-) circuit.

Is the resistance below 5.0 ohms?

Yes >> Repair the (X156) Right Front Door Speaker (-) for a short to ground.

Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

No >> Go To 4



4. CHECK OPERATION OF THE RIGHT FRONT DOOR SPEAKER

Turn the ignition off.

Reconnect and reinstall the Right Front Door Speaker.

Measure the resistance of the speaker circuit between the Amplifier C2 harness connector and ground.

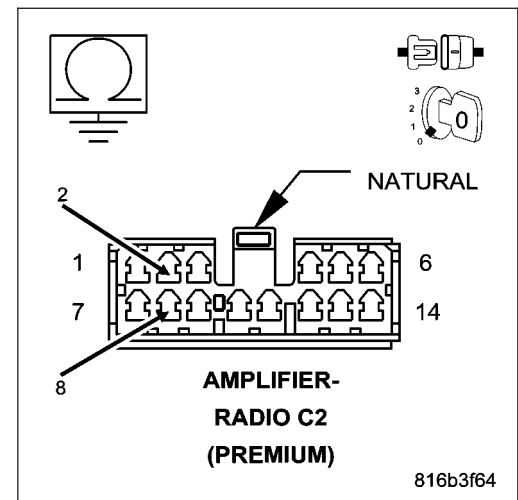
Is the resistance below 10K ohms?

Yes >> Replace the Right Front Door Speaker in accordance with the service information.

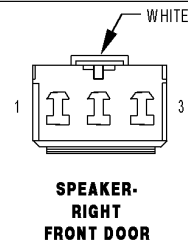
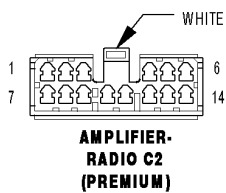
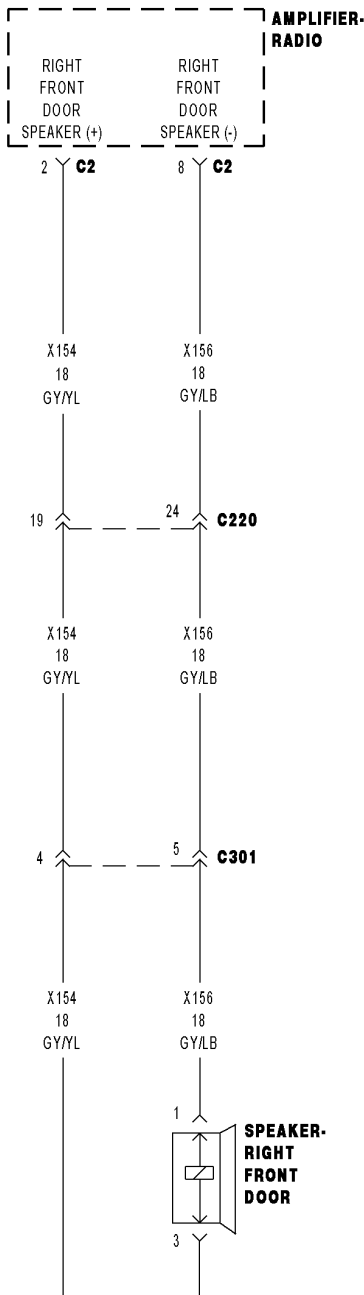
Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

No >> Replace the Amplifier in accordance with the service information.

Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)



B1471-CHANNEL 4 AUDIO SPEAKER OUTPUT CIRCUIT HIGH



8168351

For a complete wiring diagram Refer to Section 8W.

- **When Monitored:**
- With the ignition on.
- **Set Condition:**
- The Amplifier detects a short to battery condition on the output circuit.

Possible Causes

(X154) RIGHT FRONT DOOR SPEAKER (+) CIRCUIT SHORT TO VOLTAGE
 (X156) RIGHT FRONT DOOR SPEAKER (-) CIRCUIT SHORT TO VOLTAGE
 AMPLIFIER

Diagnostic Test

1. CHECK FOR AN INTERMITTENT CONDITION

Turn the ignition on, then off, and then on again.

With the scan tool, read Amplifier DTCs.

Does the scan tool display active: B1471-CHANNEL 4 AUDIO SPEAKER OUTPUT CIRCUIT HIGH?

Yes >> Go To 2

No >> The conditions that caused this code to set are not present at this time. Using the wiring diagram/schematic as a guide, inspect the wiring and connectors.

Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

2. CHECK FOR VOLTAGE ON THE (X154) RIGHT FRONT DOOR SPEAKER (+) CIRCUIT

Turn the ignition off.

Disconnect the Amplifier C2 harness connector.

Disconnect the Right Front Door Speaker harness connector.

Turn the ignition on.

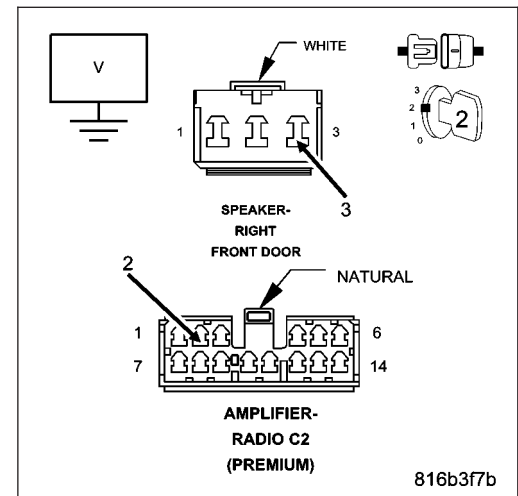
Measure for voltage on the (X154) Right Front Door Speaker (+) circuit.

Is the voltage above 10.0 volts?

Yes >> Repair the (X154) Right Front Door Speaker (+) circuit for a short to voltage.

Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

No >> Go To 3



3. CHECK FOR VOLTAGE ON THE (X156) RIGHT FRONT DOOR SPEAKER (-) CIRCUIT

Turn the ignition on.

Measure for voltage on the (X156) Right Front Door Speaker (-) circuit.

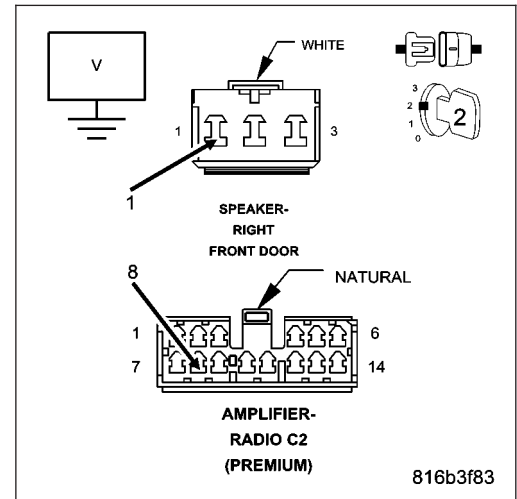
Is the voltage above 10.0 volts?

Yes >> Repair the (X156) Right Front Door Speaker (-) circuit for a short to voltage.

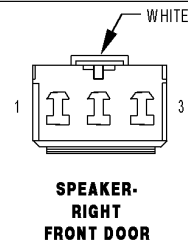
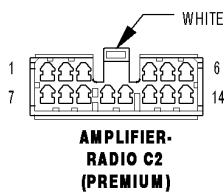
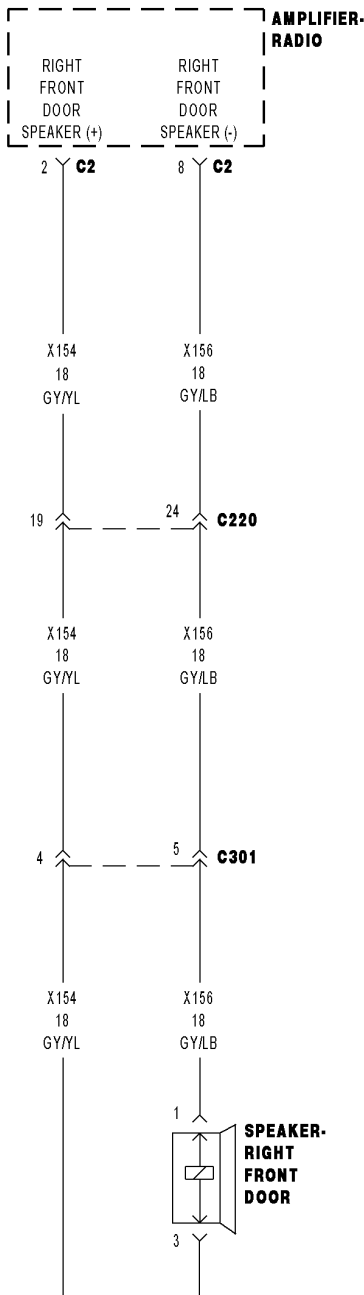
Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

No >> Replace the Amplifier in accordance with the service information.

Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)



B1472-CHANNEL 4 AUDIO SPEAKER OUTPUT CIRCUIT OPEN



8168351

For a complete wiring diagram Refer to Section 8W.

- **When Monitored:**
- Amplifier Bus wake-up. Amplifier reset with scan tool.
- **Set Condition:**
- The Amplifier detects an open condition on the speaker output circuit.

Possible Causes
(X154) RIGHT FRONT DOOR SPEAKER (+) CIRCUIT OPEN (X156) RIGHT FRONT DOOR SPEAKER (-) CIRCUIT OPEN RIGHT FRONT DOOR SPEAKER AMPLIFIER

Diagnostic Test

1. CHECK FOR AN INTERMITTENT CONDITION

- Turn the ignition on.
- Turn the radio on.
- With the scan tool, erase Amplifier DTCs.
- With the scan tool, reset the amplifier.
- With the scan tool, read Amplifier DTCs.

Does the scan tool display active: B1472-CHANNEL 4 AUDIO SPEAKER OUTPUT CIRCUIT OPEN?

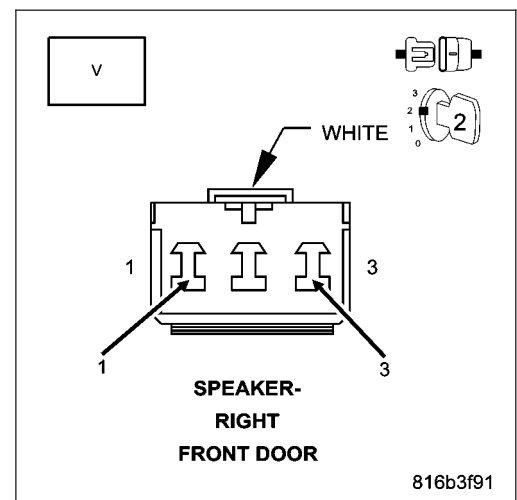
- Yes** >> Go To 2
- No** >> The conditions that caused this code to set are not present at this time. Using the wiring diagram/schematic as a guide, inspect the wiring and connectors.
 Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

2. CHECK THE OPERATION OF THE RIGHT FRONT DOOR SPEAKER

- Disconnect the Right Front Door Speaker harness connector.
- Turn the radio on and turn the volume to mid level.
- With a voltmeter set to read in A/C voltage, measure the voltage of the Right Front Door Speaker circuits in the Right Front Door Speaker harness connector.

Is the voltage present greater than 1 volt?

- Yes** >> Replace the Right Front Door Speaker in accordance with the service information.
 Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)
- No** >> Go To 3



3. CHECK THE (X154) RIGHT FRONT DOOR SPEAKER (+) CIRCUIT FOR AN OPEN

Turn the ignition off.

Disconnect the Amplifier C2 harness connector.

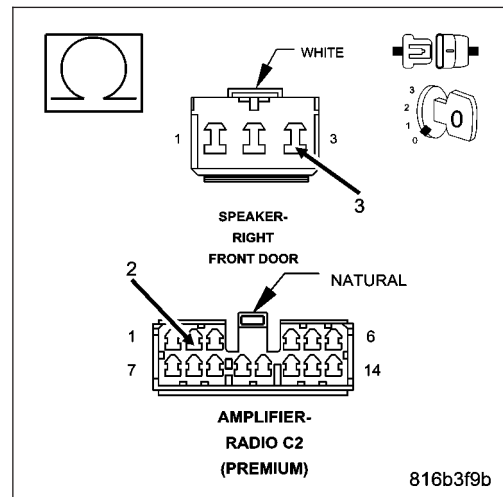
Measure the resistance of the (X154) Right Front Door Speaker (+) circuit between the Amplifier C2 harness connector and the Right Front Door Speaker harness connector.

Is the resistance below 5.0 ohms?

Yes >> Go To 4

No >> Repair the (X154) Right Front Door Speaker (+) circuit for an open.

Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)



4. CHECK THE (X156) RIGHT FRONT DOOR SPEAKER (-) CIRCUIT FOR AN OPEN

Turn the ignition off.

Disconnect the Amplifier C2 harness connector.

Measure the resistance of the (X156) Right Front Door Speaker (-) circuit between the Amplifier C2 harness connector and the Right Front Door Speaker harness connector.

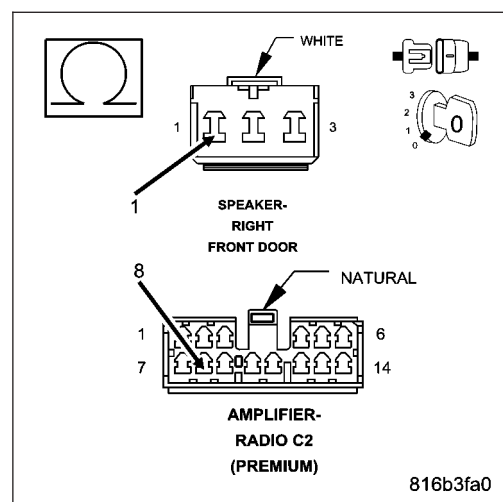
Is the resistance below 5.0 ohms?

Yes >> Replace the Amplifier in accordance with the service information.

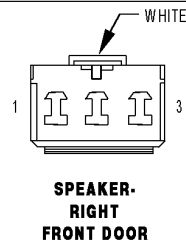
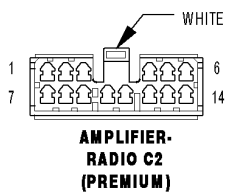
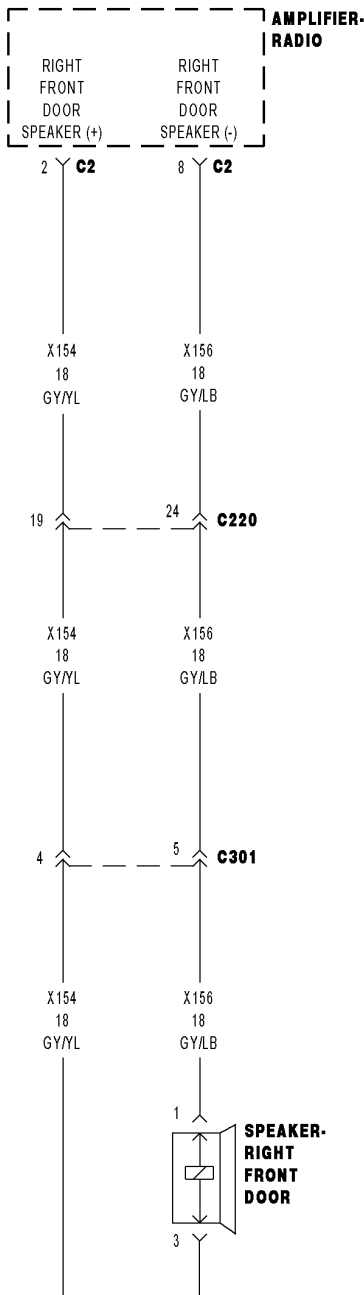
Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

No >> Repair the (X156) Right Front Door Speaker (-) circuit for an open.

Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)



B1473-CHANNEL 4 AUDIO SPEAKER OUTPUT CIRCUIT SHORTED TOGETHER



8168351

For a complete wiring diagram Refer to Section 8W.

- **When Monitored:**
- With the ignition on. Radio volume at 25 or higher.
- **Set Condition:**
- The amplifier detects that the output circuits are shorted together.

Possible Causes

(X154) RIGHT FRONT DOOR SPEAKER (+) CIRCUIT SHORTED TO THE (X156) RIGHT FRONT DOOR SPEAKER (-) CIRCUIT
 RIGHT FRONT DOOR SPEAKER
 AMPLIFIER

Diagnostic Test

1. CHECK FOR AN INTERMITTENT CONDITION

Turn the ignition on, then off, and then on again.

With the scan tool, erase Amplifier DTCs.

Turn the radio on.

Turn the volume level to 25.

With the scan tool, read Amplifier DTCs.

Does the scan tool display active: B1473-CHANNEL 4 AUDIO SPEAKER OUTPUT CIRCUIT SHORTED TOGETHER?

Yes >> Go To 2

No >> The conditions that caused this code to set are not present at this time. Using the wiring diagram/schematic as a guide, inspect the wiring and connectors.
 Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

2. CHECK THE OPERATION OF THE RIGHT FRONT DOOR SPEAKER

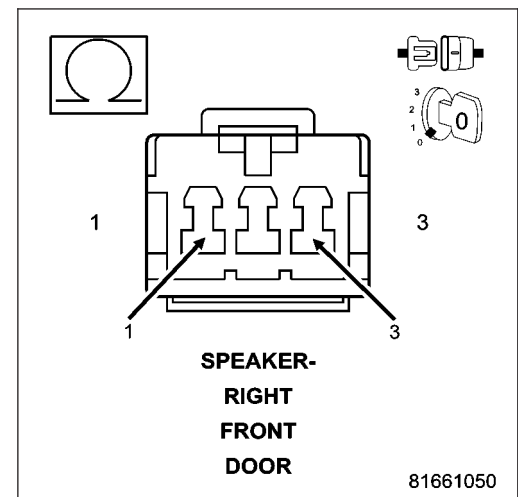
Disconnect the Right Front Door Speaker.

Measure the resistance of the speaker between the two terminals.

Is the resistance of the speaker less than 1 ohm?

Yes >> Replace the Right Front Door Speaker in accordance with the service information.
 Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

No >> Go To 3



3. CHECK THE (X154) RIGHT FRONT DOOR SPEAKER (+) CIRCUIT, AND THE (X156) RIGHT FRONT DOOR SPEAKER (-) CIRCUITS FOR A SHORT TOGETHER

Turn the ignition off.

Disconnect the Amplifier C2 harness connector.

Measure the resistance between the (X154) Right Front Door Speaker (+) circuit, and the (X156) Right Front Door Speaker (-) circuit.

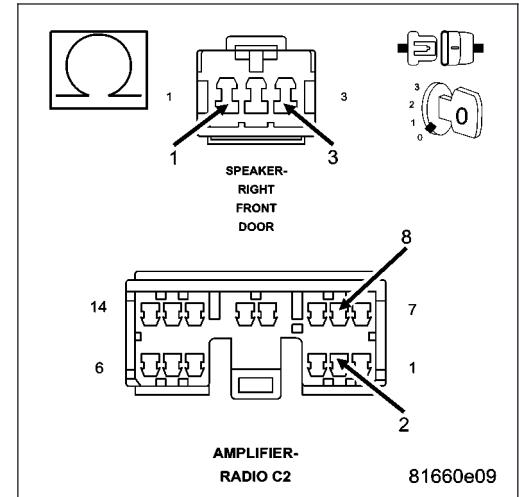
Is the resistance below 10K ohms?

Yes >> Repair the (X154) Right Front Door Speaker (+) circuit, and the (X156) Right Front Door Speaker (-) circuit for a short together.

Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

No >> Replace the Amplifier in accordance with the service information.

Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)



B1474-CHANNEL 5 AUDIO SPEAKER OUTPUT CIRCUIT PERFORMANCE

For a complete wiring diagram Refer to Section 8W.

- **When Monitored:**
- With the ignition on.
- **Set Condition:**
- This DTC will set if a DC offset occurs on the output channel, the amplifier shall set a DTC after a maturity rate of 5 ± 1 sec.

Possible Causes
AMPLIFIER

Diagnostic Test

1. CHECK FOR AN INTERMITTENT CONDITION

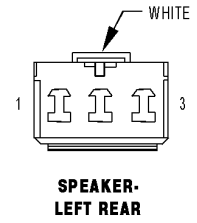
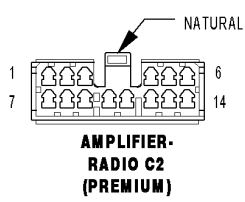
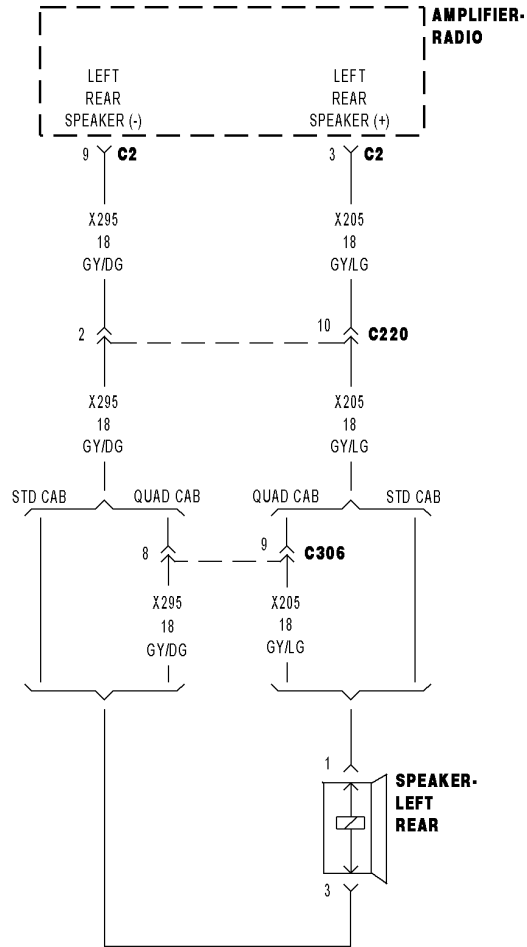
Turn the ignition on, then off, and then on again.

With the scan tool, read Amplifier DTCs.

Does the scan tool display active: B1474-CHANNEL 5 AUDIO SPEAKER OUTPUT CIRCUIT PERFORMANCE?

- Yes** >> Replace the Amplifier in accordance with the service information.
Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)
- No** >> The conditions that caused this code to set are not present at this time. Using the wiring diagram/schematic as a guide, inspect the wiring and connectors.
Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

B1475-CHANNEL 5 AUDIO SPEAKER OUTPUT CIRCUIT LOW



For a complete wiring diagram Refer to Section 8W.

- **When Monitored:**
- With the ignition on.
- **Set Condition:**
- The Amplifier detects a shorted to ground condition on the speaker output circuit.

Possible Causes

(X205) LEFT REAR SPEAKER (+) CIRCUIT SHORTED TO GROUND
 (X295) LEFT REAR SPEAKER (-) CIRCUIT SHORTED TO GROUND
 LEFT REAR SPEAKER
 AMPLIFIER

Diagnostic Test

1. CHECK FOR AN INTERMITTENT CONDITION

Turn the ignition on, then off, and then on again.

With the scan tool, read Amplifier DTCs.

Does the scan tool display active: B1475-CHANNEL 5 OUTPUT CIRCUIT LOW?

Yes >> Go To 2

No >> The conditions that caused this code to set are not present at this time. Using the wiring diagram/schematic as a guide, inspect the wiring and connectors.
 Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

2. CHECK THE (X205) LEFT REAR SPEAKER (+) CIRCUIT FOR A SHORT TO GROUND

Disconnect the Amplifier C2 harness connector.

Disconnect the Left Rear Speaker harness connector.

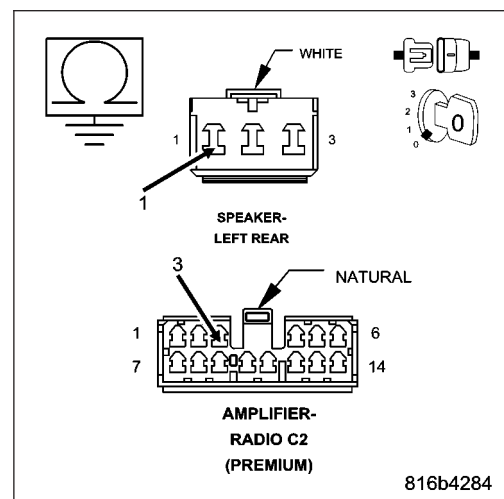
Measure the resistance between ground and the (X205) Left Rear Speaker (+) circuit.

Is the resistance below 5.0 ohms?

Yes >> Repair the (X205) Left Rear Speaker (+) circuit for a short to ground.

Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

No >> Go To 3



3. CHECK THE (X295) LEFT REAR SPEAKER (-) CIRCUIT FOR A SHORT TO GROUND

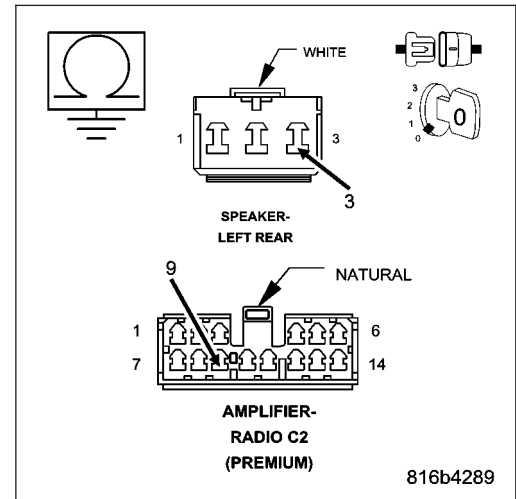
Measure the resistance between ground and the (X295) Left Rear Speaker (-) circuit.

Is the resistance below 5.0 ohms?

Yes >> Repair the (X295) Left Rear Speaker (-) for a short to ground.

Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

No >> Go To 4



4. CHECK OPERATION OF THE AMPLIFIED LEFT REAR SPEAKER

Turn the ignition off.

Reconnect and reinstall the Left Rear Speaker.

Measure the resistance of the speaker circuit between the Amplifier C2 harness connector and ground.

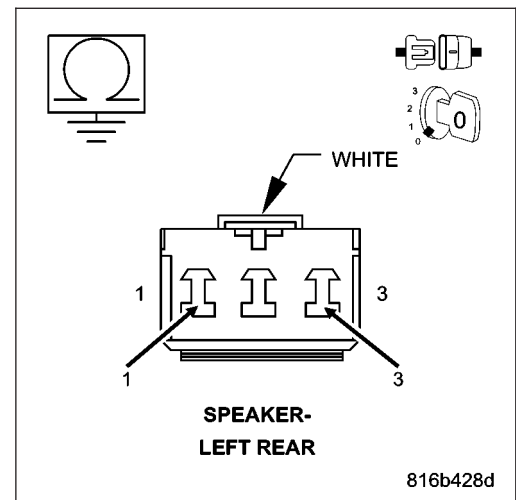
Is the resistance below 10K ohms?

Yes >> Replace the Left Rear Speaker in accordance with the service information.

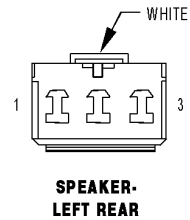
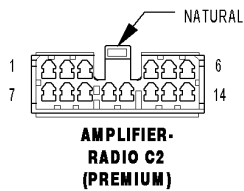
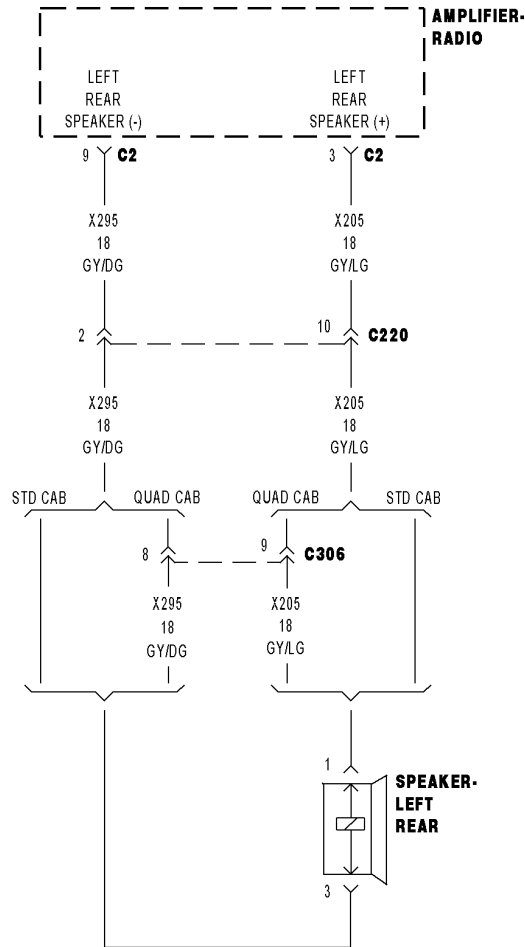
Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

No >> Replace the Amplifier in accordance with the service information.

Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)



B1476-CHANNEL 5 AUDIO SPEAKER OUTPUT CIRCUIT HIGH



For a complete wiring diagram Refer to Section 8W.

- **When Monitored:**
- With the ignition on.
- **Set Condition:**
- The Amplifier detects a short to battery condition on the output circuit.

Possible Causes
(X205) LEFT REAR SPEAKER (+) CIRCUIT SHORT TO VOLTAGE
(X295) LEFT REAR SPEAKER (-) CIRCUIT SHORT TO VOLTAGE
AMPLIFIER

Diagnostic Test

1. CHECK FOR AN INTERMITTENT CONDITION

Turn the ignition on, then off, and then on again.

With the scan tool, read Amplifier DTCs.

Does the scan tool display active: B1476-CHANNEL 5 AUDIO SPEAKER OUTPUT CIRCUIT HIGH?

Yes >> Go To 2

No >> The conditions that caused this code to set are not present at this time. Using the wiring diagram/schematic as a guide, inspect the wiring and connectors.
 Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

2. CHECK FOR VOLTAGE ON THE (X205) LEFT REAR SPEAKER (+) CIRCUIT

Turn the ignition off.

Disconnect the Amplifier C2 harness connector.

Disconnect the Left Rear Speaker harness connector.

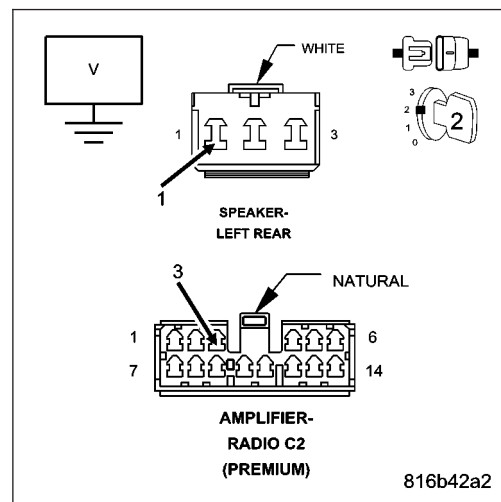
Turn the ignition on.

Measure for voltage on the (X205) Left Rear Speaker (+) circuit.

Is the voltage above 10.0 volts?

Yes >> Repair the (X205) Left Rear Speaker (+) circuit for a short to voltage.
 Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

No >> Go To 3



3. CHECK FOR VOLTAGE ON THE (X295) LEFT REAR SPEAKER (-) CIRCUIT

Measure for voltage on the (X295) Left Rear Speaker (-) circuit.

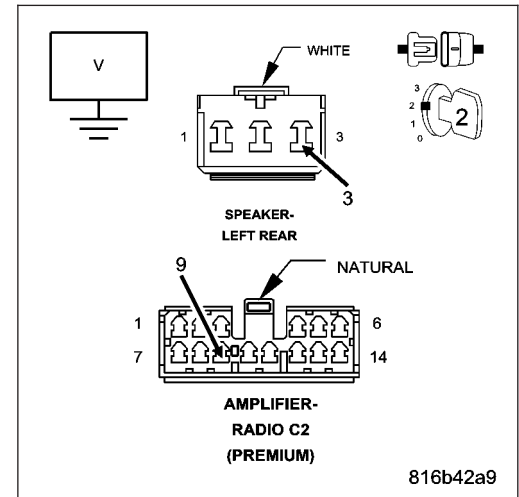
Is the voltage above 10.0 volts?

Yes >> Repair the (X295) Left Rear Speaker (-) circuit for a short to voltage.

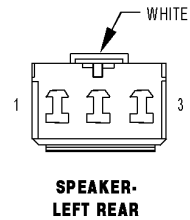
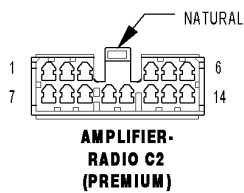
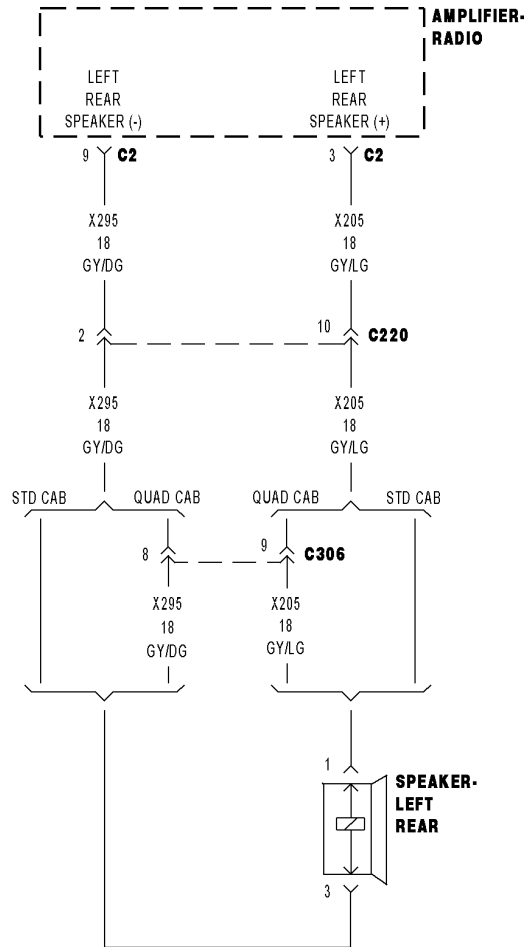
Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

No >> Replace the Amplifier in accordance with the service information.

Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)



B1477-CHANNEL 5 AUDIO SPEAKER OUTPUT CIRCUIT OPEN



For a complete wiring diagram Refer to Section 8W.

- **When Monitored:**
- Amplifier Bus wake-up. Amplifier reset with scan tool.
- **Set Condition:**
- The Amplifier detects an open condition on the speaker output circuit.

Possible Causes
(X205) LEFT REAR SPEAKER (+) CIRCUIT OPEN (X295) LEFT REAR SPEAKER (-) CIRCUIT OPEN LEFT REAR SPEAKER AMPLIFIER

Diagnostic Test

1. CHECK FOR AN INTERMITTENT CONDITION

Turn the ignition on.

Turn the radio on.

With the scan tool, erase Amplifier DTCs.

With the scan tool, reset the amplifier.

With the scan tool, read Amplifier DTCs.

Does the scan tool display active: B1477-CHANNEL 5 AUDIO SPEAKER OUTPUT CIRCUIT OPEN?

Yes >> Go To 2

No >> The conditions that caused this code to set are not present at this time. Using the wiring diagram/schematic as a guide, inspect the wiring and connectors.

Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

2. CHECK THE OPERATION OF THE LEFT REAR SPEAKER

Disconnect the Left Rear Speaker harness connector.

Turn the radio on and turn the volume to mid level.

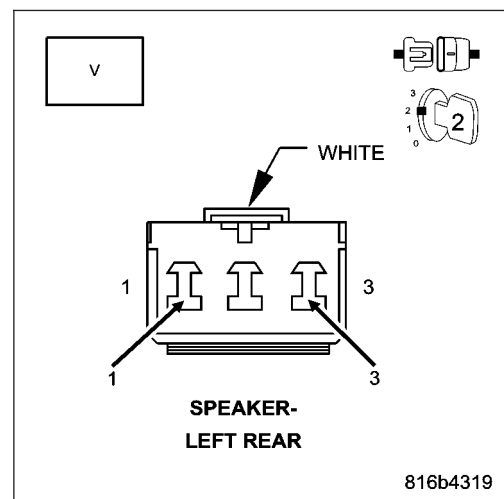
With a voltmeter set to read in A/C voltage, measure the voltage of the Left Rear Speaker circuits in the Left Rear Speaker harness connector.

Is the voltage present greater than 1 volt?

Yes >> Replace the Left Rear Speaker in accordance with the service information.

Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

No >> Go To 3



3. CHECK THE (X205) LEFT REAR SPEAKER (+) CIRCUIT FOR AN OPEN

Turn the ignition off.

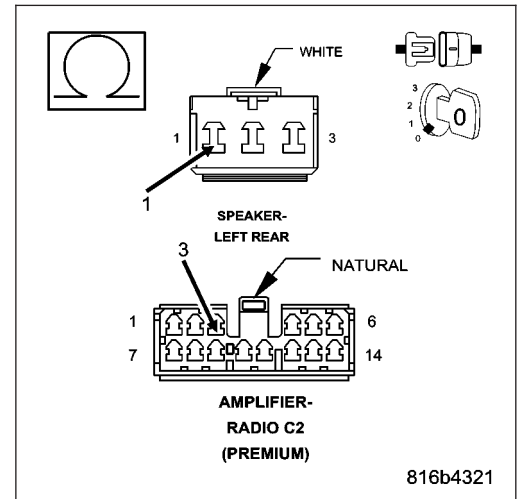
Disconnect the Amplifier C2 harness connector.

Measure the resistance of the (X205) Left Rear Speaker (+) circuit between the Amplifier C2 harness connector and the Left Rear Speaker harness connector.

Is the resistance below 5.0 ohms?

Yes >> Go To 4

No >> Repair the (X205) Left Rear Speaker (+) circuit for an open. Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)



4. CHECK THE (X295) LEFT REAR SPEAKER (-) CIRCUIT FOR AN OPEN

Turn the ignition off.

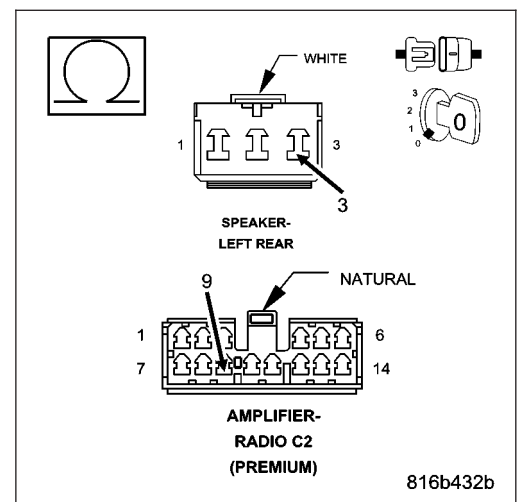
Disconnect the Amplifier C2 harness connector.

Measure the resistance of the (X295) Left Rear Speaker (-) circuit between the Amplifier C2 harness connector and the Left Rear Speaker harness connector.

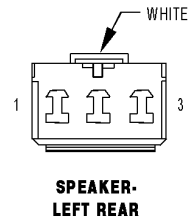
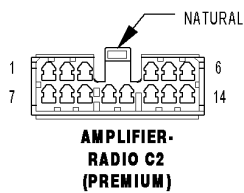
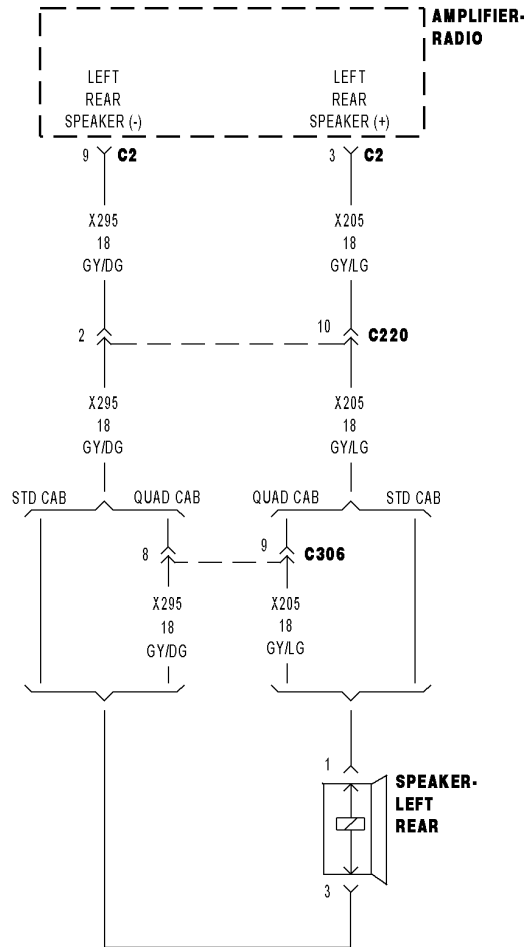
Is the resistance below 5.0 ohms?

Yes >> Replace the Amplifier in accordance with the service information. Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

No >> Repair the (X295) Left Rear Shelf Speaker (-) circuit for an open. Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)



B1478-CHANNEL 5 AUDIO SPEAKER OUTPUT CIRCUIT SHORTED TOGETHER



For a complete wiring diagram Refer to Section 8W.

- **When Monitored:**
- With the ignition on. Radio volume at 25 or higher.
- **Set Condition:**
- The amplifier detects that the output circuits are shorted together.

Possible Causes

(X205) LEFT REAR SPEAKER (+) CIRCUIT SHORTED TO THE (X295) LEFT REAR SPEAKER (-) CIRCUIT
LEFT REAR SPEAKER
AMPLIFIER

Diagnostic Test

1. CHECK FOR AN INTERMITTENT CONDITION

Turn the ignition on, then off, and then on again.

With the scan tool, erase Amplifier DTCs.

Turn the radio on.

Turn the volume level to 25.

With the scan tool, read Amplifier DTCs.

Does the scan tool display active: B1478-CHANNEL 5 AUDIO SPEAKER OUTPUT CIRCUIT SHORTED TOGETHER?

Yes >> Go To 2

No >> The conditions that caused this code to set are not present at this time. Using the wiring diagram/schematic as a guide, inspect the wiring and connectors.

Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

2. CHECK THE OPERATION OF THE LEFT REAR SPEAKER

Disconnect the Left Rear Speaker.

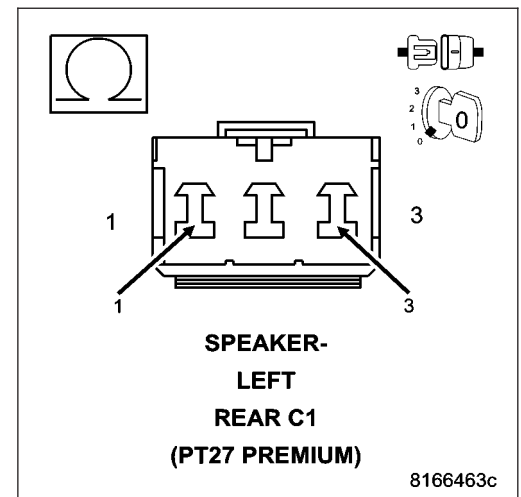
Measure the resistance of the speaker between the two terminals.

Is the resistance of the speaker less than 1 ohm?

Yes >> Replace the Left Rear Speaker in accordance with the service information.

Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

No >> Go To 3



3. CHECK THE (X205) LEFT REAR SPEAKER (+) CIRCUIT, AND THE (X295) LEFT REAR SPEAKER (-) CIRCUITS FOR A SHORT TOGETHER

Turn the ignition off.

Disconnect the Amplifier C2 harness connector.

Measure the resistance between the (X205) Left Rear Speaker (+) circuit, and the (X295) Left Rear Speaker (-) circuit.

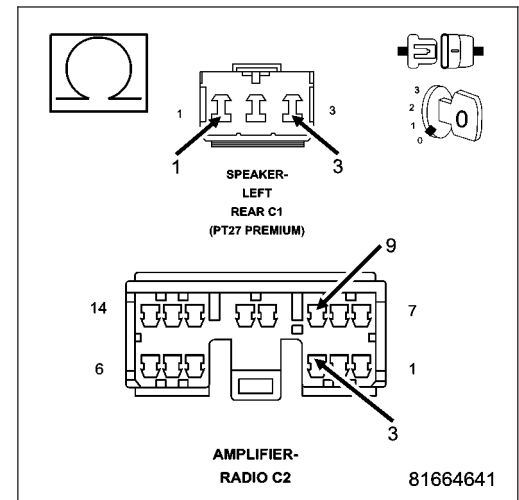
Is the resistance below 10K ohms?

Yes >> Repair the (X205) Left Rear Speaker (+) circuit, and the (X295) Left Rear Speaker (-) circuit for a short together.

Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

No >> Replace the Amplifier in accordance with the service information.

Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)



B1479-CHANNEL 6 AUDIO SPEAKER OUTPUT CIRCUIT PERFORMANCE

For a complete wiring diagram Refer to Section 8W.

- **When Monitored:**
- With the ignition on.
- **Set Condition:**
- This DTC will set if a DC offset occurs on the output channel, the amplifier shall set a DTC after a maturity rate of 5 ± 1 sec.

Possible Causes
AMPLIFIER

Diagnostic Test

1. CHECK FOR AN INTERMITTENT CONDITION

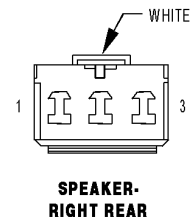
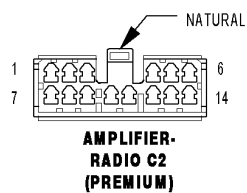
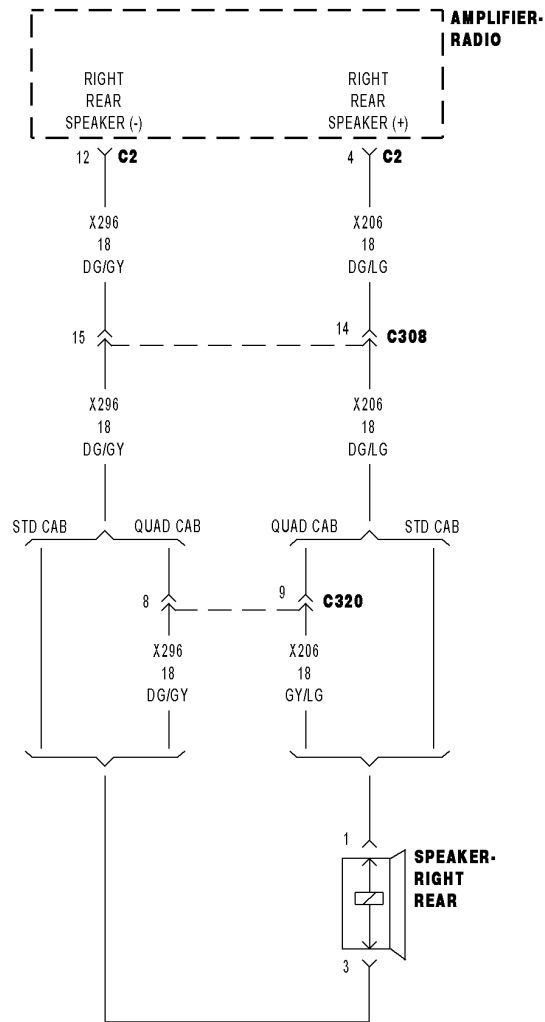
Turn the ignition on, then off, and then on again.

With the scan tool, read Amplifier DTCs.

Does the scan tool display active: B1479-CHANNEL 6 AUDIO SPEAKER OUTPUT CIRCUIT PERFORMANCE?

- Yes** >> Replace the amplifier in accordance with the service information.
Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)
- No** >> The conditions that caused this code to set are not present at this time. Using the wiring diagram/schematic as a guide, inspect the wiring and connectors.
Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

B147A-CHANNEL 6 AUDIO SPEAKER OUTPUT CIRCUIT LOW



For a complete wiring diagram Refer to Section 8W.

- **When Monitored:**
- With the ignition on.
- **Set Condition:**
- The Amplifier detects a shorted to ground condition on the speaker output circuit.

Possible Causes
(X206) RIGHT REAR SPEAKER (+) CIRCUIT SHORTED TO GROUND (X296) RIGHT REAR SPEAKER (-) CIRCUIT SHORTED TO GROUND RIGHT REAR SPEAKER AMPLIFIER

Diagnostic Test

1. CHECK FOR AN INTERMITTENT CONDITION

Turn the ignition on, then off, and then on again.

With the scan tool, read Amplifier DTCs.

Does the scan tool display active: B147A-CHANNEL 6 AUDIO SPEAKER OUTPUT CIRCUIT LOW?

Yes >> Go To 2

No >> The conditions that caused this code to set are not present at this time. Using the wiring diagram/schematic as a guide, inspect the wiring and connectors.

Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

2. CHECK THE (X206) RIGHT REAR SPEAKER (+) CIRCUIT FOR A SHORT TO GROUND

Disconnect the Amplifier C2 harness connector.

Disconnect the Right Rear Speaker harness connector.

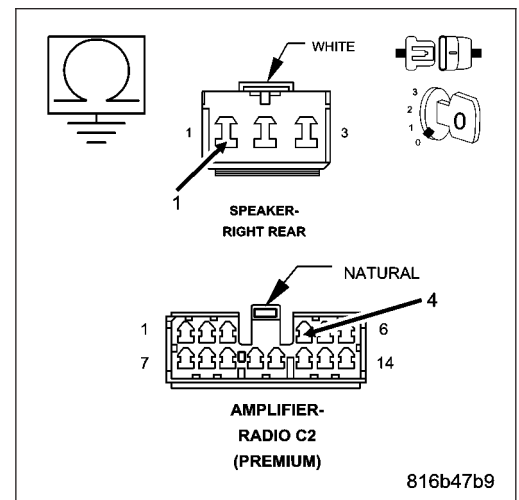
Measure the resistance between ground and the (X206) Right Rear Speaker (+) circuit.

Is the resistance below 5.0 ohms?

Yes >> Repair the (X206) Right Rear Speaker (+) circuit for a short to ground.

Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

No >> Go To 3



3. CHECK THE (X296) RIGHT REAR SPEAKER (-) CIRCUIT FOR A SHORT TO GROUND

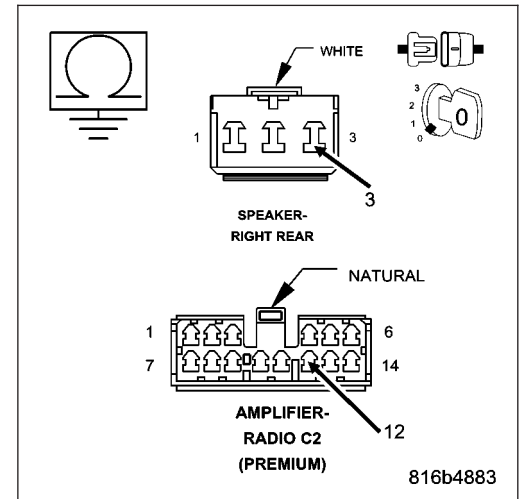
Measure the resistance between ground and the (X296) Right Rear Speaker (-) circuit.

Is the resistance below 5.0 ohms?

Yes >> Repair the (X296) Right Rear Speaker (-) for a short to ground.

Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

No >> Go To 4



4. CHECK OPERATION OF THE RIGHT REAR SPEAKER

Turn the ignition off.

Reconnect and reinstall the Right Rear Speaker.

Measure the resistance of the speaker circuit between the Amplifier C2 harness connector and ground.

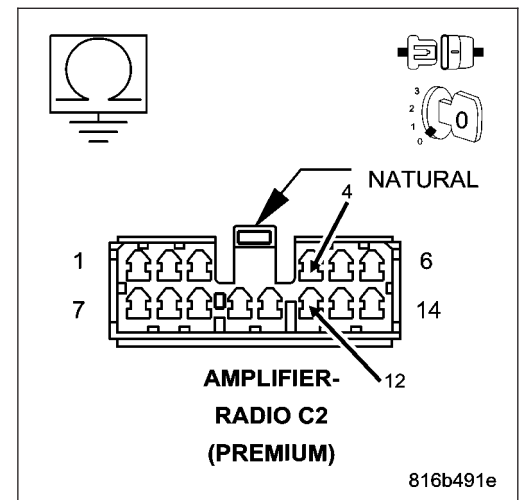
Is the resistance below 10K ohms?

Yes >> Replace the Right Rear Shelf Speaker in accordance with the service information.

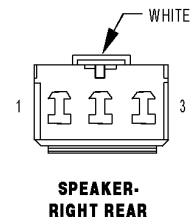
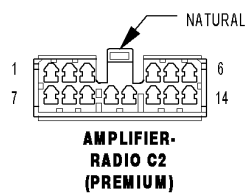
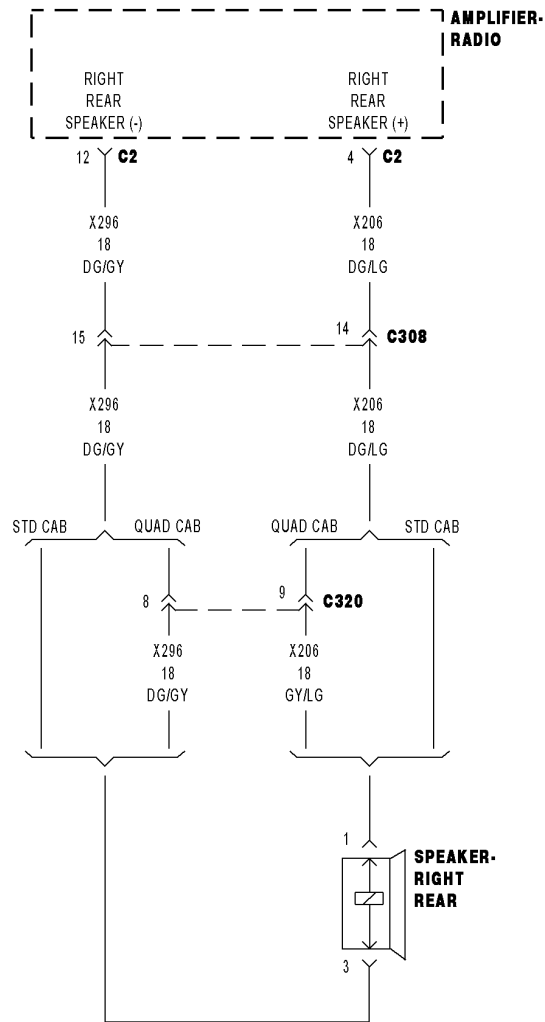
Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

No >> Replace the Amplifier in accordance with the service information.

Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)



B147B-CHANNEL 6 AUDIO SPEAKER OUTPUT CIRCUIT HIGH



For a complete wiring diagram Refer to Section 8W.

- **When Monitored:**
- With the ignition on.
- **Set Condition:**
- The Amplifier detects a short to battery condition on the output circuit.

Possible Causes
(X206) RIGHT REAR SPEAKER (+) CIRCUIT SHORT TO VOLTAGE (X296) RIGHT REAR SPEAKER (-) CIRCUIT SHORT TO VOLTAGE AMPLIFIER

Diagnostic Test

1. CHECK FOR AN INTERMITTENT CONDITION

Turn the ignition on, then off, and then on again.

With the scan tool, read Amplifier DTCs.

Does the scan tool display active: B147B-CHANNEL 6 AUDIO SPEAKER OUTPUT CIRCUIT HIGH?

Yes >> Go To 2

No >> The conditions that caused this code to set are not present at this time. Using the wiring diagram/schematic as a guide, inspect the wiring and connectors.

Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

2. CHECK FOR VOLTAGE ON THE (X206) RIGHT REAR SPEAKER (+) CIRCUIT

Turn the ignition off.

Disconnect the Amplifier C2 harness connector.

Disconnect the Right Rear Speaker harness connector.

Turn the ignition on.

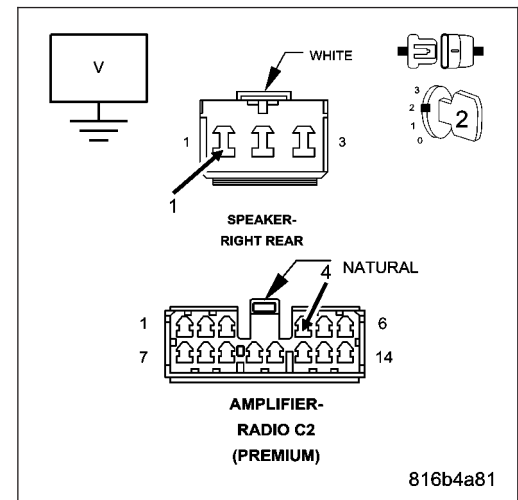
Measure for voltage on the (X206) Right Rear Speaker (+) circuit.

Is the voltage above 10.0 volts?

Yes >> Repair the (X206) Right Rear Speaker (+) circuit for a short to voltage.

Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

No >> Go To 3



3. CHECK FOR VOLTAGE ON THE (X296) RIGHT REAR SPEAKER (-) CIRCUIT

Measure for voltage on the (X296) Right Rear Speaker (-) circuit.

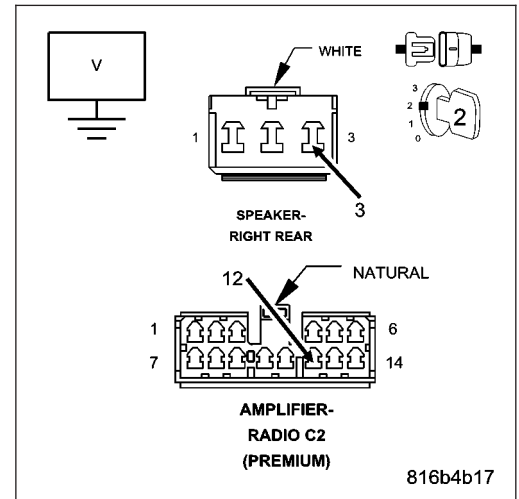
Is the voltage above 10.0 volts?

Yes >> Repair the (X296) Right Rear Speaker (-) circuit for a short to voltage.

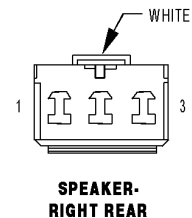
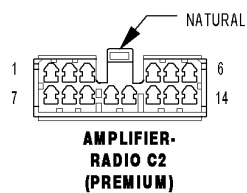
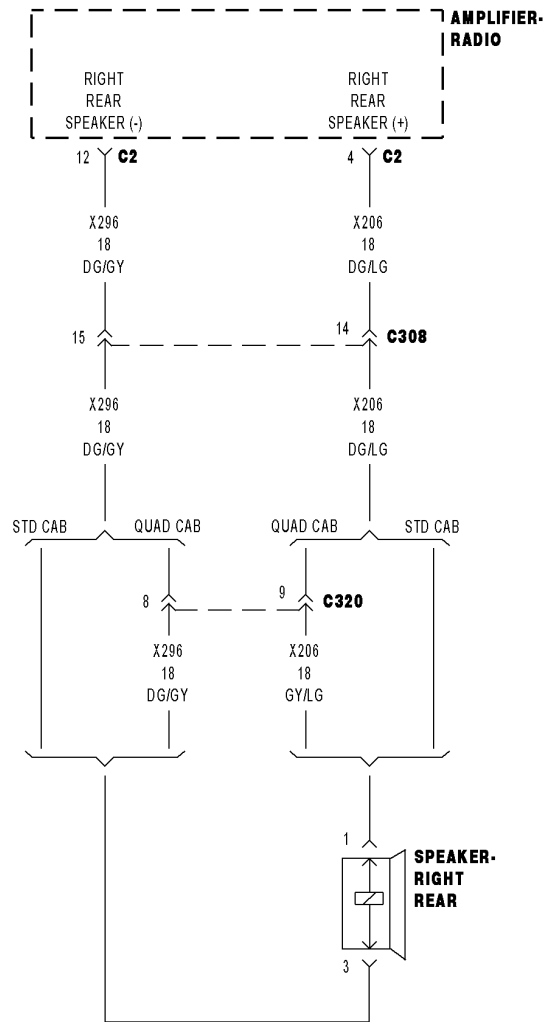
Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

No >> Replace the Amplifier in accordance with the service information.

Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)



B147C-CHANNEL 6 AUDIO SPEAKER OUTPUT CIRCUIT OPEN



For a complete wiring diagram Refer to Section 8W.

- **When Monitored:**
- Amplifier Bus wake-up. Amplifier reset with scan tool.
- **Set Condition:**
- The Amplifier detects an open condition on the speaker output circuit.

Possible Causes
(X206) RIGHT REAR SPEAKER (+) CIRCUIT OPEN (X296) RIGHT REAR SPEAKER (-) CIRCUIT OPEN RIGHT REAR SPEAKER AMPLIFIER

Diagnostic Test

1. CHECK FOR AN INTERMITTENT CONDITION

- Turn the ignition on.
- Turn the radio on.
- With the scan tool, erase Amplifier DTCs.
- With the scan tool, reset the amplifier.
- With the scan tool, read Amplifier DTCs.

Does the scan tool display active: B147C-CHANNEL 6 AUDIO SPEAKER OUTPUT CIRCUIT OPEN?

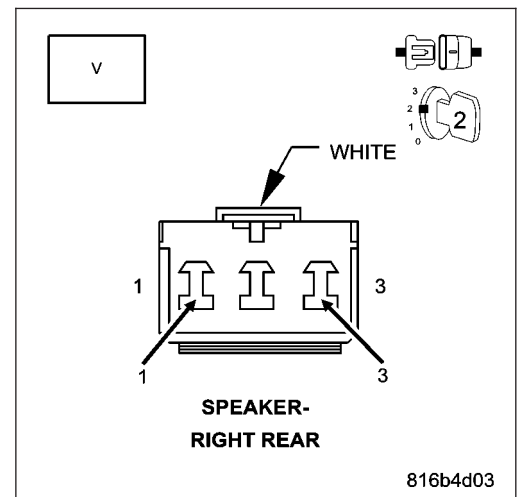
- Yes** >> Go To 2
- No** >> The conditions that caused this code to set are not present at this time. Using the wiring diagram/schematic as a guide, inspect the wiring and connectors.
 Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

2. CHECK THE OPERATION OF THE RIGHT REAR SPEAKER

- Disconnect the Right Rear Speaker harness connector.
- Turn the radio on and turn the volume to mid level.
- With a voltmeter set to read in A/C voltage, measure the voltage of the Right Rear Speaker circuits in the Right Rear Speaker harness connector.

Is the voltage present greater than 1 volt?

- Yes** >> Replace the Right Rear Speaker in accordance with the service information.
 Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)
- No** >> Go To 3



3. CHECK THE (X206) RIGHT REAR SPEAKER (+) CIRCUIT FOR AN OPEN

Turn the ignition off.

Disconnect the Amplifier C2 harness connector.

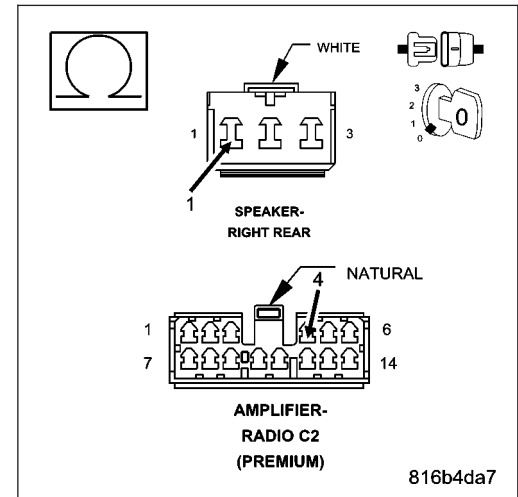
Measure the resistance of the (X206) Right Rear Speaker (+) circuit between the Amplifier C2 harness connector and the Right Rear Speaker harness connector.

Is the resistance below 5.0 ohms?

Yes >> Go To 4

No >> Repair the (X206) Right Rear Speaker (+) circuit for an open.

Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)



4. CHECK THE (X296) RIGHT REAR SPEAKER (-) CIRCUIT FOR AN OPEN

Turn the ignition off.

Disconnect the Amplifier C2 harness connector.

Measure the resistance of the (X296) Right Rear Speaker (-) circuit between the Amplifier C2 harness connector and the Right Rear Speaker harness connector.

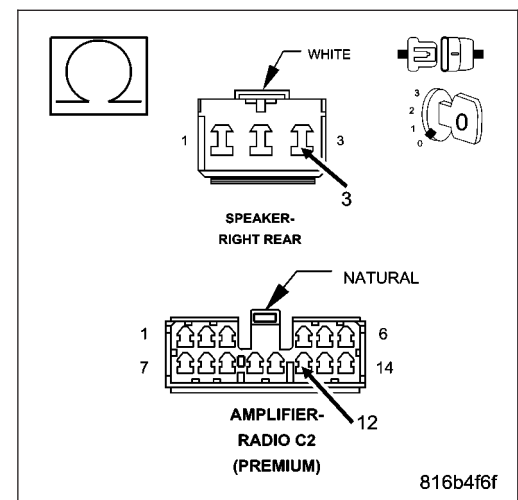
Is the resistance below 5.0 ohms?

Yes >> Replace the Amplifier in accordance with the service information.

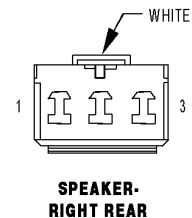
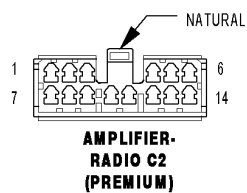
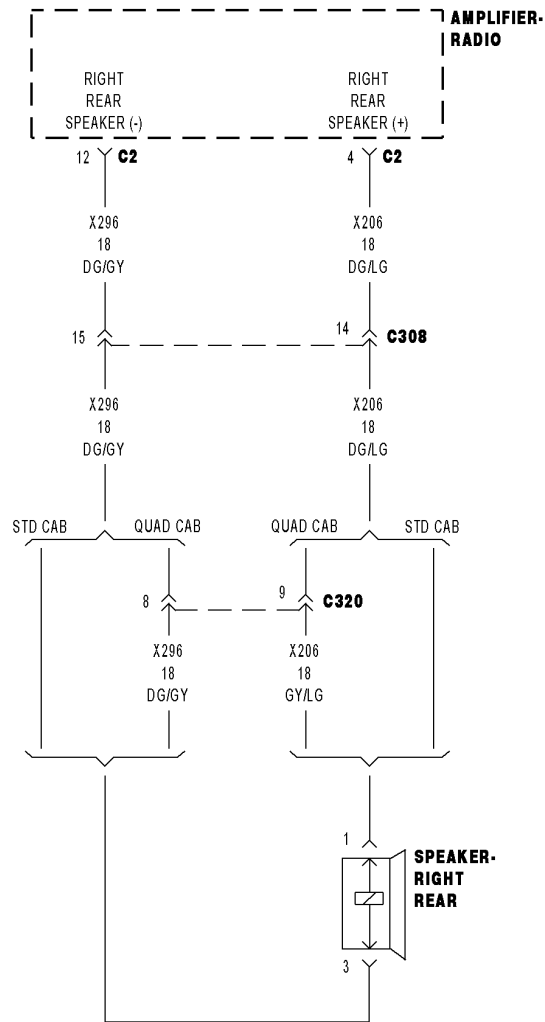
Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

No >> Repair the (X296) Right Rear Shelf Speaker (-) circuit for an open.

Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)



B147D-CHANNEL 6 AUDIO SPEAKER OUTPUT CIRCUIT SHORTED TOGETHER



For a complete wiring diagram Refer to Section 8W.

- **When Monitored:**
- With the ignition on. Radio volume at 25 or higher.
- **Set Condition:**
- The amplifier detects that the output circuits are shorted together.

Possible Causes

(X206) RIGHT REAR SPEAKER (+) CIRCUIT SHORTED TO THE (X296) RIGHT REAR SPEAKER (-) CIRCUIT
RIGHT REAR SHELF SPEAKER
AMPLIFIER

Diagnostic Test

1. CHECK FOR AN INTERMITTENT CONDITION

Turn the ignition on, then off, and then on again.

With the scan tool, erase Amplifier DTCs.

Turn the radio on.

Turn the volume level to 25.

With the scan tool, read Amplifier DTCs.

Does the scan tool display active: B147D-CHANNEL 6 AUDIO SPEAKER OUTPUT CIRCUIT SHORTED TOGETHER?

Yes >> Go To 2

No >> The conditions that caused this code to set are not present at this time. Using the wiring diagram/schematic as a guide, inspect the wiring and connectors.
Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

2. CHECK THE OPERATION OF THE RIGHT REAR SPEAKER

Disconnect the Right Rear Speaker.

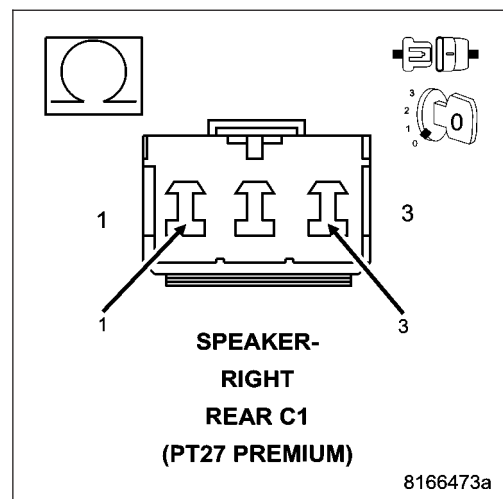
Measure the resistance of the speaker between the two terminals.

Is the resistance of the speaker less than 1 ohm?

Yes >> Replace the Right Rear Speaker in accordance with the service information.

Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

No >> Go To 3



3. CHECK THE (X206) RIGHT REAR SPEAKER (+) CIRCUIT, AND THE (X296) RIGHT REAR SPEAKER (-) CIRCUITS FOR A SHORT TOGETHER

Turn the ignition off.

Disconnect the Amplifier C2 harness connector.

Measure the resistance between the (X206) Right Rear Speaker (+) circuit, and the (X296) Right Rear Speaker (-) circuit.

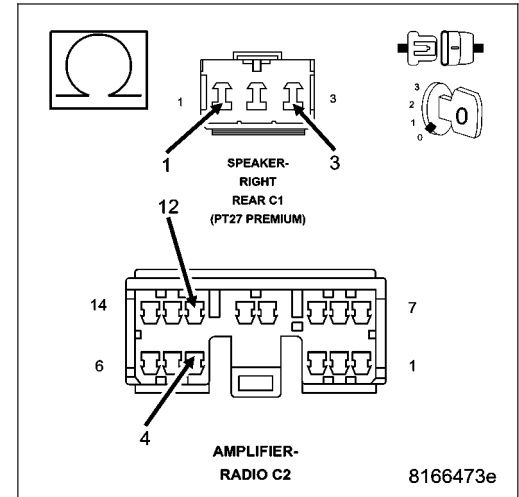
Is the resistance below 5.0 ohms?

Yes >> Repair the (X206) Right Rear Speaker (+) circuit, and the (X296) Right Rear Speaker (-) circuit for a short together.

Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

No >> Replace the Amplifier in accordance with the service information.

Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)



B147E-CHANNEL 7 AUDIO SPEAKER OUTPUT CIRCUIT PERFORMANCE

For a complete wiring diagram Refer to Section 8W.

- **When Monitored:**
- With the ignition on.
- **Set Condition:**
- This DTC will set if a DC offset occurs on the output channel, the amplifier shall set a DTC after a maturity rate of 5 ± 1 sec.

Possible Causes
AMPLIFIER

Diagnostic Test

1. CHECK FOR AN INTERMITTENT CONDITION

Turn the ignition on, then off, and then on again.

With the scan tool, read Amplifier DTCs.

Does the scan tool display active: B147E-CHANNEL 7 AUDIO SPEAKER OUTPUT CIRCUIT PERFORMANCE?

- Yes** >> Replace the Amplifier in accordance with the service information.
Perform BODY VERIFICATION TEST VER-1.
- No** >> The conditions that caused this code to set are not present at this time. Using the wiring diagram/schematic as a guide, inspect the wiring and connectors.
Perform BODY VERIFICATION TEST VER-1.

B147F-CHANNEL 7 AUDIO SPEAKER OUTPUT CIRCUIT LOW

For a complete wiring diagram Refer to Section 8W.

- **When Monitored:**
- With the ignition on.
- **Set Condition:**
- The Amplifier detects a shorted to ground condition on the speaker output circuit.

Possible Causes
(X205) LEFT REAR SPEAKER (+) CIRCUIT SHORTED TO GROUND (X295) LEFT REAR SPEAKER (-) CIRCUIT SHORTED TO GROUND LEFT REAR SPEAKER AMPLIFIER

Diagnostic Test**1. CHECK FOR AN INTERMITTENT CONDITION**

Turn the ignition on, then off, and then on again.

With the scan tool, read Amplifier DTCs.

Does the scan tool display active: B147F-CHANNEL 7 AUDIO SPEAKER OUTPUT CIRCUIT LOW?

Yes >> Go To 2

No >> The conditions that caused this code to set are not present at this time. Using the wiring diagram/schematic as a guide, inspect the wiring and connectors.

Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

2. CHECK THE (X205) LEFT REAR SPEAKER (+) CIRCUIT FOR A SHORT TO GROUND

Disconnect the Amplifier C2 harness connector.

Disconnect the Left Rear Speaker harness connector.

Measure the resistance between ground and the (X205) Left Rear Speaker (+) circuit.

Is the resistance below 5.0 ohms?

Yes >> Repair the (X205) Left Rear Speaker (+) circuit for a short to ground.

Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

No >> Go To 3

3. CHECK THE (X295) LEFT REAR SPEAKER (-) CIRCUIT FOR A SHORT TO GROUND

Measure the resistance between ground and the (X295) Left Rear Speaker (-) circuit.

Is the resistance below 5.0 ohms?

Yes >> Repair the (X295) Left Rear Speaker (-) for a short to ground.

Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

No >> Go To 4

4. CHECK OPERATION OF THE AMPLIFIED LEFT REAR SPEAKER

Turn the ignition off.

Reconnect and reinstall the Left Rear Speaker.

Measure the resistance of the speaker circuit between the Amplifier C2 harness connector and ground.

Is the resistance below 10K ohms?

- Yes** >> Replace the Left Rear Speaker in accordance with the service information.
Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)
- No** >> Replace the Amplifier in accordance with the service information.
Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

B1480-CHANNEL 7 AUDIO SPEAKER OUTPUT CIRCUIT HIGH

For a complete wiring diagram Refer to Section 8W.

- **When Monitored:**
- With the ignition on.
- **Set Condition:**
- The Amplifier detects a short to battery condition on the output circuit.

Possible Causes
(X205) LEFT REAR SPEAKER (+) CIRCUIT SHORT TO VOLTAGE (X295) LEFT REAR SPEAKER (-) CIRCUIT SHORT TO VOLTAGE AMPLIFIER

Diagnostic Test**1. CHECK FOR AN INTERMITTENT CONDITION**

Turn the ignition on, then off, and then on again.

With the scan tool, read Amplifier DTCs.

Does the scan tool display active: B1480-CHANNEL 7 AUDIO SPEAKER OUTPUT CIRCUIT HIGH?

Yes >> Go To 2

No >> The conditions that caused this code to set are not present at this time. Using the wiring diagram/schematic as a guide, inspect the wiring and connectors.

Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

2. CHECK FOR VOLTAGE ON THE (X205) LEFT REAR SPEAKER (+) CIRCUIT

Turn the ignition off.

Disconnect the Amplifier C2 harness connector.

Disconnect the Left Rear Speaker harness connector.

Turn the ignition on.

Measure for voltage on the (X205) Left Rear Speaker (+) circuit.

Is the voltage above 10.0 volts?

Yes >> Repair the (X205) Left Rear Speaker (+) circuit for a short to voltage.

Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

No >> Go To 3

3. CHECK FOR VOLTAGE ON THE (X295) LEFT REAR SPEAKER (-) CIRCUIT

Measure for voltage on the (X295) Left Rear Speaker (-) circuit.

Is the voltage above 10.0 volts?

Yes >> Repair the (X295) Left Rear Speaker (-) circuit for a short to voltage.

Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

No >> Replace the Amplifier in accordance with the service information.

Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

B1481-CHANNEL 7 AUDIO SPEAKER OUTPUT CIRCUIT OPEN

For a complete wiring diagram Refer to Section 8W.

- **When Monitored:**
- Amplifier Bus wake-up. Amplifier reset with scan tool.
- **Set Condition:**
- The Amplifier detects an open condition on the speaker output circuit.

Possible Causes
(X205) LEFT REAR SPEAKER (+) CIRCUIT OPEN
(X295) LEFT REAR SPEAKER (-) CIRCUIT OPEN
LEFT REAR SPEAKER
AMPLIFIER

Diagnostic Test

1. CHECK FOR AN INTERMITTENT CONDITION

Turn the ignition on.

Turn the radio on.

With the scan tool, erase Amplifier DTCs.

With the scan tool, reset the amplifier.

With the scan tool, read Amplifier DTCs.

Does the scan tool display active: B1481-CHANNEL 7 AUDIO SPEAKER OUTPUT CIRCUIT OPEN?

Yes >> Go To 2

No >> The conditions that caused this code to set are not present at this time. Using the wiring diagram/schematic as a guide, inspect the wiring and connectors.
Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

2. CHECK THE OPERATION OF THE LEFT REAR SPEAKER

Disconnect the Left Rear Speaker harness connector.

Turn the radio on and turn the volume to mid level.

With a voltmeter set to read in A/C voltage, measure the voltage of the Left Rear Speaker circuits in the Left Rear Speaker harness connector.

Is the voltage present greater than 1 volt?

Yes >> Replace the Left Rear Speaker in accordance with the service information.

Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

No >> Go To 3

3. CHECK THE (X205) LEFT REAR SPEAKER (+) CIRCUIT FOR AN OPEN

Turn the ignition off.

Disconnect the Amplifier C2 harness connector.

Measure the resistance of the (X205) Left Rear Speaker (+) circuit between the Amplifier C2 harness connector and the Left Rear Speaker harness connector.

Is the resistance below 5.0 ohms?

Yes >> Go To 4

No >> Repair the (X205) Left Rear Speaker (+) circuit for an open.
Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

4. CHECK THE (X295) LEFT REAR SPEAKER (-) CIRCUIT FOR AN OPEN

Turn the ignition off.

Disconnect the Amplifier C2 harness connector.

Measure the resistance of the (X295) Left Rear Speaker (-) circuit between the Amplifier C2 harness connector and the Left Rear Speaker harness connector.

Is the resistance below 5.0 ohms?

Yes >> Replace the Amplifier in accordance with the service information.
Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

No >> Repair the (X295) Left Rear Shelf Speaker (-) circuit for an open.
Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

B1482-CHANNEL 7 AUDIO SPEAKER OUTPUT CIRCUIT SHORTED TOGETHER

For a complete wiring diagram Refer to Section 8W.

- **When Monitored:**
- With the ignition on. Radio volume at 25 or higher.
- **Set Condition:**
- The amplifier detects that the output circuits are shorted together.

Possible Causes
(X205) LEFT REAR SPEAKER (+) CIRCUIT SHORTED TO THE (X295) LEFT REAR SPEAKER (-) CIRCUIT LEFT REAR SPEAKER AMPLIFIER

Diagnostic Test

1. CHECK FOR AN INTERMITTENT CONDITION

Turn the ignition on, then off, and then on again.

With the scan tool, erase Amplifier DTCs.

Turn the radio on.

Turn the volume level to 25.

With the scan tool, read Amplifier DTCs.

Does the scan tool display active: B1482-CHANNEL 7 AUDIO SPEAKER OUTPUT CIRCUIT SHORTED TOGETHER?

Yes >> Go To 2

No >> The conditions that caused this code to set are not present at this time. Using the wiring diagram/schematic as a guide, inspect the wiring and connectors.
Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

2. CHECK THE OPERATION OF THE LEFT REAR SPEAKER

Disconnect the Left Rear Speaker.

Measure the resistance of the speaker between the two terminals.

Is the resistance of the speaker less than 1 ohm?

Yes >> Replace the Left Rear Speaker in accordance with the service information.

Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

No >> Go To 3

3. CHECK THE (X205) LEFT REAR SPEAKER (+) CIRCUIT, AND THE (X295) LEFT REAR SPEAKER (-) CIRCUITS FOR A SHORT TOGETHER

Turn the ignition off.

Disconnect the Amplifier C2 harness connector.

Measure the resistance between the (X205) Left Rear Speaker (+) circuit, and the (X295) Left Rear Speaker (-) circuit.

Is the resistance below 10K ohms?

Yes >> Repair the (X205) Left Rear Speaker (+) circuit, and the (X295) Left Rear Speaker (-) circuit for a short together.

Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

No >> Replace the Amplifier in accordance with the service information.

Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

B1483–CHANNEL 8 AUDIO SPEAKER OUTPUT CIRCUIT/PERFORMANCE

For a complete wiring diagram Refer to Section 8W.

- **When Monitored:**
- With the ignition on.
- **Set Condition:**
- This DTC will set if a DC offset occurs on the output channel, the amplifier shall set a DTC after a maturity rate of 5 ± 1 sec.

Possible Causes
AMPLIFIER

Diagnostic Test**1. CHECK FOR AN INTERMITTENT CONDITION**

Turn the ignition on, then off, and then on again.

With the scan tool, read Amplifier DTCs.

Does the scan tool display active: B1483–CHANNEL 8 AUDIO SPEAKER OUTPUT CIRCUIT/PERFORMANCE?

- Yes** >> Replace the Amplifier in accordance with the service information.
Perform BODY VERIFICATION TEST VER-1.
- No** >> The conditions that caused this code to set are not present at this time. Using the wiring diagram/schematic as a guide, inspect the wiring and connectors.
Perform BODY VERIFICATION TEST VER-1.

B1484-CHANNEL 8 AUDIO SPEAKER OUTPUT CIRCUIT LOW

For a complete wiring diagram Refer to Section 8W.

- **When Monitored:**
- With the ignition on.
- **Set Condition:**
- The Amplifier detects a shorted to ground condition on the speaker output circuit.

Possible Causes
(X206) RIGHT REAR SPEAKER (+) CIRCUIT SHORTED TO GROUND
(X296) RIGHT REAR SPEAKER (-) CIRCUIT SHORTED TO GROUND
RIGHT REAR SPEAKER
AMPLIFIER

Diagnostic Test**1. CHECK FOR AN INTERMITTENT CONDITION**

Turn the ignition on, then off, and then on again.

With the scan tool, read Amplifier DTCs.

Does the scan tool display active: B1484-CHANNEL 8 AUDIO SPEAKER OUTPUT CIRCUIT LOW?

Yes >> Go To 2

No >> The conditions that caused this code to set are not present at this time. Using the wiring diagram/schematic as a guide, inspect the wiring and connectors.

Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

2. CHECK THE (X206) RIGHT REAR SPEAKER (+) CIRCUIT FOR A SHORT TO GROUND

Disconnect the Amplifier C2 harness connector.

Disconnect the Right Rear Speaker harness connector.

Measure the resistance between ground and the (X206) Right Rear Speaker (+) circuit.

Is the resistance below 5.0 ohms?

Yes >> Repair the (X206) Right Rear Speaker (+) circuit for a short to ground.

Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

No >> Go To 3

3. CHECK THE (X296) RIGHT REAR SPEAKER (-) CIRCUIT FOR A SHORT TO GROUND

Measure the resistance between ground and the (X296) Right Rear Speaker (-) circuit.

Is the resistance below 5.0 ohms?

Yes >> Repair the (X296) Right Rear Speaker (-) for a short to ground.

Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

No >> Go To 4

4. CHECK OPERATION OF THE RIGHT REAR SPEAKER

Turn the ignition off.

Reconnect and reinstall the Right Rear Speaker.

Measure the resistance of the speaker circuit between the Amplifier C2 harness connector and ground.

Is the resistance below 10K ohms?

- Yes** >> Replace the Right Rear Shelf Speaker in accordance with the service information.
Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)
- No** >> Replace the Amplifier in accordance with the service information.
Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

B1485-CHANNEL 8 AUDIO SPEAKER OUTPUT CIRCUIT HIGH

For a complete wiring diagram Refer to Section 8W.

- **When Monitored:**
- With the ignition on.
- **Set Condition:**
- The Amplifier detects a short to battery condition on the output circuit.

Possible Causes
(X206) RIGHT REAR SPEAKER (+) CIRCUIT SHORT TO VOLTAGE (X296) RIGHT REAR SPEAKER (-) CIRCUIT SHORT TO VOLTAGE AMPLIFIER

Diagnostic Test**1. CHECK FOR AN INTERMITTENT CONDITION**

Turn the ignition on, then off, and then on again.

With the scan tool, read Amplifier DTCs.

Does the scan tool display active: B1485-CHANNEL 8 AUDIO SPEAKER OUTPUT CIRCUIT HIGH?

Yes >> Go To 2

No >> The conditions that caused this code to set are not present at this time. Using the wiring diagram/schematic as a guide, inspect the wiring and connectors.

Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

2. CHECK FOR VOLTAGE ON THE (X206) RIGHT REAR SPEAKER (+) CIRCUIT

Turn the ignition off.

Disconnect the Amplifier C2 harness connector.

Disconnect the Right Rear Speaker harness connector.

Turn the ignition on.

Measure for voltage on the (X206) Right Rear Speaker (+) circuit.

Is the voltage above 10.0 volts?

Yes >> Repair the (X206) Right Rear Speaker (+) circuit for a short to voltage.

Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

No >> Go To 3

3. CHECK FOR VOLTAGE ON THE (X296) RIGHT REAR SPEAKER (-) CIRCUIT

Measure for voltage on the (X296) Right Rear Speaker (-) circuit.

Is the voltage above 10.0 volts?

Yes >> Repair the (X296) Right Rear Speaker (-) circuit for a short to voltage.

Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

No >> Replace the Amplifier in accordance with the service information.

Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

B1486-CHANNEL 8 AUDIO SPEAKER OUTPUT CIRCUIT OPEN

For a complete wiring diagram Refer to Section 8W.

- **When Monitored:**
- Amplifier Bus wake-up. Amplifier reset with scan tool.
- **Set Condition:**
- The Amplifier detects an open condition on the speaker output circuit.

Possible Causes
(X206) RIGHT REAR SPEAKER (+) CIRCUIT OPEN (X296) RIGHT REAR SPEAKER (-) CIRCUIT OPEN RIGHT REAR SPEAKER AMPLIFIER

Diagnostic Test

1. CHECK FOR AN INTERMITTENT CONDITION

Turn the ignition on.

Turn the radio on.

With the scan tool, erase Amplifier DTCs.

With the scan tool, reset the amplifier.

With the scan tool, read Amplifier DTCs.

Does the scan tool display active: B1486-CHANNEL 8 AUDIO SPEAKER OUTPUT CIRCUIT OPEN?

Yes >> Go To 2

No >> The conditions that caused this code to set are not present at this time. Using the wiring diagram/schematic as a guide, inspect the wiring and connectors.
Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

2. CHECK THE OPERATION OF THE RIGHT REAR SPEAKER

Disconnect the Right Rear Speaker harness connector.

Turn the radio on and turn the volume to mid level.

With a voltmeter set to read in A/C voltage, measure the voltage of the Right Rear Speaker circuits in the Right Rear Speaker harness connector.

Is the voltage present greater than 1 volt?

Yes >> Replace the Right Rear Speaker in accordance with the service information.

Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

No >> Go To 3

3. CHECK THE (X206) RIGHT REAR SPEAKER (+) CIRCUIT FOR AN OPEN

Turn the ignition off.

Disconnect the Amplifier C2 harness connector.

Measure the resistance of the (X206) Right Rear Speaker (+) circuit between the Amplifier C2 harness connector and the Right Rear Speaker harness connector.

Is the resistance below 5.0 ohms?

Yes >> Go To 4

No >> Repair the (X206) Right Rear Speaker (+) circuit for an open.

Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

4. CHECK THE (X296) RIGHT REAR SPEAKER (-) CIRCUIT FOR AN OPEN

Turn the ignition off.

Disconnect the Amplifier C2 harness connector.

Measure the resistance of the (X296) Right Rear Speaker (-) circuit between the Amplifier C2 harness connector and the Right Rear Speaker harness connector.

Is the resistance below 5.0 ohms?

Yes >> Replace the Amplifier in accordance with the service information.

Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

No >> Repair the (X296) Right Rear Shelf Speaker (-) circuit for an open.

Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

B1487-CHANNEL 8 AUDIO SPEAKER OUTPUT CIRCUIT SHORTED TOGETHER

For a complete wiring diagram Refer to Section 8W.

- **When Monitored:**
- With the ignition on. Radio volume at 25 or higher.
- **Set Condition:**
- The amplifier detects that the output circuits are shorted together.

Possible Causes
(X206) RIGHT REAR SPEAKER (+) CIRCUIT SHORTED TO THE (X296) RIGHT REAR SPEAKER (-) CIRCUIT RIGHT REAR SHELF SPEAKER AMPLIFIER

Diagnostic Test

1. CHECK FOR AN INTERMITTENT CONDITION

Turn the ignition on, then off, and then on again.

With the scan tool, erase Amplifier DTCs.

Turn the radio on.

Turn the volume level to 25.

With the scan tool, read Amplifier DTCs.

Does the scan tool display active: B1487-CHANNEL 8 AUDIO SPEAKER OUTPUT CIRCUIT SHORTED TOGETHER?

Yes >> Go To 2

No >> The conditions that caused this code to set are not present at this time. Using the wiring diagram/schematic as a guide, inspect the wiring and connectors.
Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

2. CHECK THE OPERATION OF THE RIGHT REAR SPEAKER

Disconnect the Right Rear Speaker.

Measure the resistance of the speaker between the two terminals.

Is the resistance of the speaker less than 1 ohm?

Yes >> Replace the Right Rear Speaker in accordance with the service information.

Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

No >> Go To 3

3. CHECK THE (X206) RIGHT REAR SPEAKER (+) CIRCUIT, AND THE (X296) RIGHT REAR SPEAKER (-) CIRCUITS FOR A SHORT TOGETHER

Turn the ignition off.

Disconnect the Amplifier C2 harness connector.

Measure the resistance between the (X206) Right Rear Speaker (+) circuit, and the (X296) Right Rear Speaker (-) circuit.

Is the resistance below 5.0 ohms?

Yes >> Repair the (X206) Right Rear Speaker (+) circuit, and the (X296) Right Rear Speaker (-) circuit for a short together.

Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

No >> Replace the Amplifier in accordance with the service information.

Perform BODY VERIFICATION TEST VER-1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

AUDIO - SERVICE INFORMATION

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AUDIO - SERVICE INFORMATION

DESCRIPTION

Several combinations of radio receivers and speaker systems are offered. The audio system uses an ignition switched source of battery current so that the system will only operate when the ignition switch is in the RUN or ACCESSORY positions.

A optional navigation radio (RB4) is available on this vehicle. With this system, the operator has the option of choosing a street address, point of interest, trip itinerary as well as other features.

The audio system includes the following components:

- Antenna (radio, navigation, satellite)
- Power amplifier (with premium speaker system only)
- Radio noise suppression components
- Radio receiver
- Remote radio switches (if equipped)
- Satellite receiver (if equipped)
- Speakers

Certain functions and features of the audio system rely upon resources shared with other electronic modules in the vehicle over the Programmable Communication Interface (PCI) bus network. The data bus network allows the sharing of sensor information. For diagnosis of these electronic modules or of the data bus network, the use of a scan tool and the proper Diagnostic Procedures information is recommended.

OPERATION

The audio system components are designed to provide audio entertainment and information through the reception, tuning and amplification of locally broadcast radio signals in both the Amplitude Modulating (AM) and Frequency Modulating (FM) commercial frequency ranges.

The audio system components operate on battery current received through a fuse in the Totally Integrated Power Module (TIPM) on a fused ignition switch output (run-acc) circuit so that the system will only operate when the ignition switch is in the Run or Accessory positions.

The optional navigation radio system receives GPS signals from up to eight satellites to display the position and direction of the vehicle. Map information is supplied through a DVD-ROM. An electronic gyro-sensor and the vehicle's speed sensor enable the system to display the present vehicle position even in locations where GPS signals may be blocked.

When a destination is selected, the navigation system uses information from the map to quickly calculate a route. As the vehicle is driven along the chosen route, the operator is guided with pictorial displays and voice prompts.

On vehicles that are equipped with the optional remote radio switches, the Instrument Cluster receives hard wired resistor multiplexed inputs from the remote radio switches. The programming in the Instrument Cluster allows it to process those inputs and send the proper messages to the radio receiver over the Programmable Communication Interface (PCI) bus network to control the radio volume up or down, station seek up or down, preset station advance, and mode advance functions.

DIAGNOSIS AND TESTING

AUDIO

Any diagnosis of the Audio system should begin with the use of a scan tool. For information on the use of the scan tool, refer to the appropriate Diagnostic Service information.

Refer to the appropriate wiring information.

WARNING: Disable the airbag system before attempting any steering wheel, steering column, seat belt tensioner, side airbag, or instrument panel component diagnosis or service. Disconnect and isolate the battery negative (ground) cable, then wait two minutes for the airbag system capacitor to discharge before performing further diagnosis or service. This is the only sure way to disable the airbag system. Failure to take the proper precautions could result in accidental airbag deployment and possible personal injury.

AUDIO SYSTEM DIAGNOSIS TABLE

CONDITION	POSSIBLE CAUSES	CORRECTION
NO AUDIO	1. Fuse inoperative.	1. Check radio fuse and Ignition-Off Draw (IOD) fuse in the Totally Integrated Power Module (TIPM). Replace fuses, if required.
	2. Radio/amplifier (if equipped) connector damaged.	2. Check for loose or corroded radio/amplifier connector. Repair, as required.
	3. Wiring damaged.	3. Check for shorted or open wires. Repair wiring as required.
	4. Radio/amplifier (if equipped) ground damaged.	4. Check for continuity between radio chassis and a known good ground. There should be continuity. Repair ground as required.
	5. Radio/amplifier (if equipped) inoperative.	5. Refer to appropriate Diagnostic Service information.
	6. Speakers inoperative.	6. Refer to appropriate Diagnostic Service information.
NO RADIO DISPLAY	1. Fuse inoperative.	1. Check radio fuse and Ignition-Off Draw (IOD) fuse in Totally Integrated Power Module (TIPM). Replace fuses as required.
	2. Radio connector damaged.	2. Check for loose or corroded radio connector. Repair as required.
	3. Wiring damaged.	3. Check for battery voltage at radio connector. Repair wiring as required.
	4. Radio ground damaged.	4. Check for continuity between radio chassis and a known good ground. There should be continuity. Repair ground as required.
	5. Radio inoperative.	5. Refer to appropriate Diagnostic Service information.
CLOCK WILL NOT KEEP SET TIME	1. Fuse inoperative.	1. Check Ignition-Off Draw (IOD) fuse in the Totally Integrated Power Module (TIPM). Replace fuse if required.
	2. Radio connector damaged.	2. Check for loose or corroded radio connector. Repair as required.
	3. Wiring damaged.	3. Check for battery voltage at radio connector. Repair wiring as required.
	4. Radio ground damaged.	4. Check for continuity between radio chassis and a known good ground. There should be continuity. Repair ground as required.
	5. Radio inoperative.	5. Refer to appropriate Diagnostic Service information.
POOR RADIO RECEPTION	1. Antenna inoperative.	1. (Refer to 8 - ELECTRICAL/AUDIO/ANTENNA BODY & CABLE - DIAGNOSIS AND TESTING).
	2. Radio ground damaged.	2. Check for continuity between radio chassis and a known good ground. There should be continuity. Repair ground as required.
	3. Radio noise suppression inoperative or damaged.	3. Repair or replace ground strap as necessary.
	4. Radio inoperative.	4. Refer to appropriate Diagnostic Service information.

CONDITION	POSSIBLE CAUSES	CORRECTION
SOUND DISTORTION (VIBRATION FROM SPEAKER AREA, BUZZING - HUMMING)	1. Door trim panel loose or missing fasteners.	1. Inspect door trim panel and correct as necessary. Replace any missing fasteners.
	2. Water shield loose or misaligned.	2. Inspect water shield and adjust as required.
	3. Items placed in door trim panel map pockets vibrating or moving from side to side.	3. Remove items from door trim panel. Ensure that vibration is no longer present.
NO/POOR TAPE OPERATION	1. Tape damaged.	1. Insert known good tape and test operation.
	2. Foreign objects behind tape door.	2. Remove foreign objects and test operation.
	3. Cassette tape head dirty.	3. Clean head with Mopar Cassette Head Cleaner.
	4. Radio inoperative.	4. Refer to appropriate Diagnostic Service inoperative.
NO COMPACT DISC OPERATION	1. CD damaged.	1. Insert known good CD and test operation.
	2. Foreign material on CD.	2. Clean CD and test operation.
	3. Condensation on CD or optics.	3. Allow temperature of vehicle interior to stabilize and test operation.
	4. Radio inoperative.	4. Refer to appropriate Diagnostic Service information.

AMPLIFIER

DESCRIPTION

The optional Infinity premium speaker system includes a separate Infinity audio power amplifier. The amplifier is an eight-channel unit rated at 368 total output watts. The amplifier is located behind the glove box. If equipped, an additional amplifier rated at 140 watts is located under the center passenger seat.

OPERATION

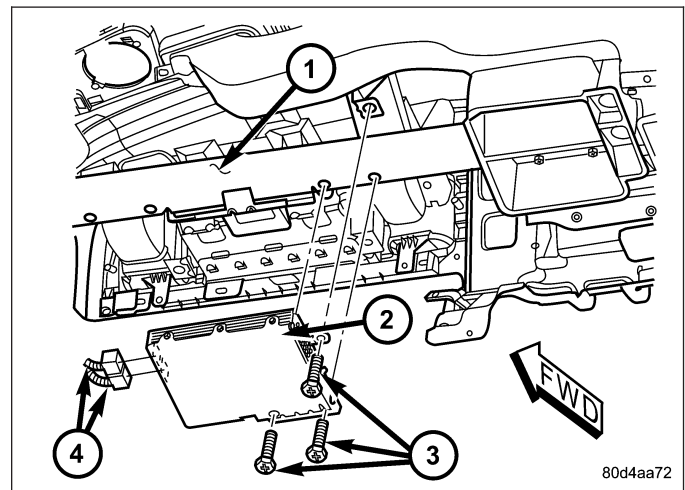
The power amplifier electronically increases the frequency response of the normal audio signal output from the radio amplifier in order to improve the acoustic performance of the speakers. On vehicles equipped with an amplifier, the amplifier section of the radio becomes a pre-amplifier.

The amplifier receives audio signal inputs for speaker channels from the radio, then sends amplified audio outputs through six separate channels with dedicated feed and return circuits to the individual speakers.

REMOVAL

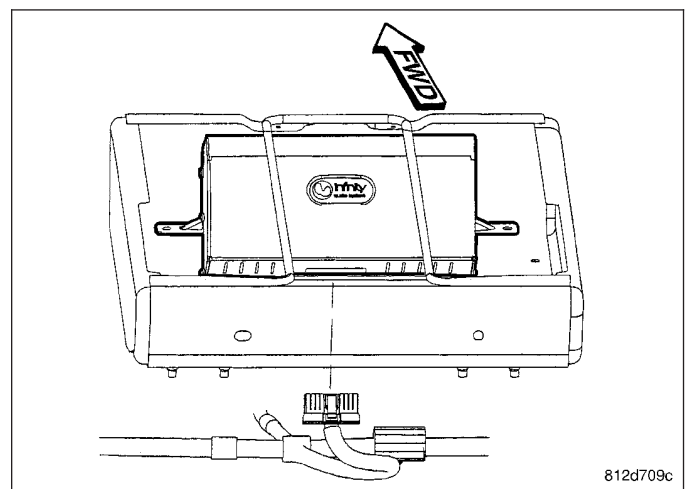
INSTRUMENT PANEL MOUNTED

1. Disconnect and isolate the battery negative cable.
2. Remove glove box (Refer to 23 - BODY/INSTRUMENT PANEL/GLOVE BOX - REMOVAL).
3. Remove instrument panel center bezel (Refer to 23 - BODY/INSTRUMENT PANEL/INSTRUMENT PANEL CENTER BEZEL - REMOVAL).
4. Remove instrument panel lower right center bezel (Refer to 23 - BODY/INSTRUMENT PANEL/IP LOWER RIGHT CENTER BEZEL - REMOVAL).
5. Disconnect electrical harness connector (4) from amplifier (2)
6. Remove mounting bolts (3) and amplifier.



CENTER SEAT MOUNTED

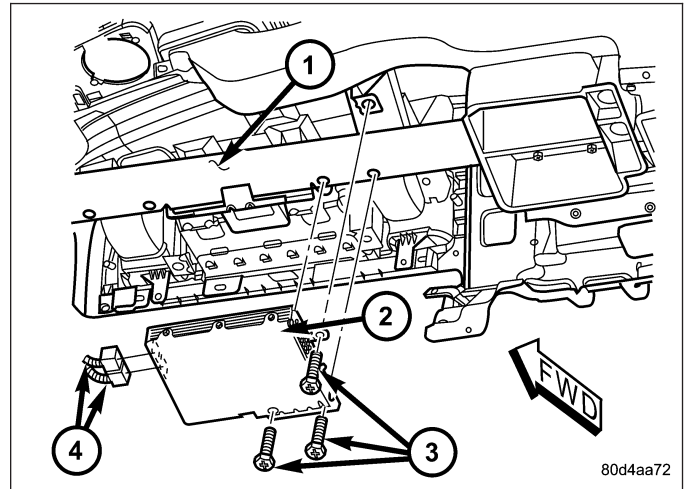
1. Disconnect and isolate the battery negative cable.
2. Raise center seat cushion to access amplifier.
3. Remove mounting fasteners.
4. Disconnect electrical harness connector and remove amplifier.



INSTALLATION

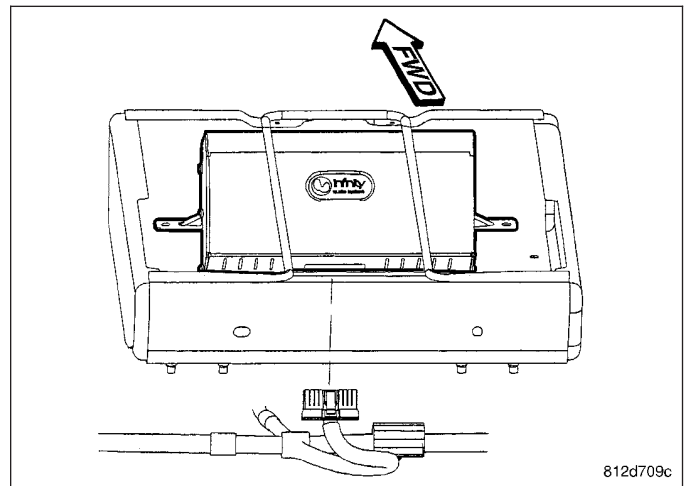
INSTRUMENT PANEL MOUNTED

1. Connect electrical harness connector (4) and install amplifier (2).
2. Install and tighten mounting bolts (3).
3. Install instrument panel lower right center bezel (Refer to 23 - BODY/INSTRUMENT PANEL/IP LOWER RIGHT CENTER BEZEL - INSTALLATION).
4. Install instrument panel center bezel (Refer to 23 - BODY/INSTRUMENT PANEL/INSTRUMENT PANEL CENTER BEZEL - INSTALLATION).
5. Install glove box (Refer to 23 - BODY/INSTRUMENT PANEL/GLOVE BOX - INSTALLATION).
6. Connect battery negative cable.



CENTER SEAT MOUNTED

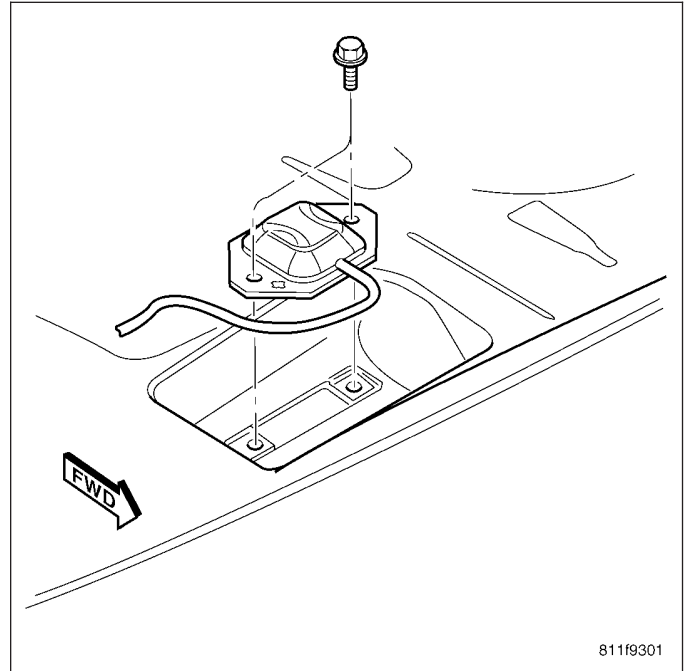
1. Connect electrical harness connector and position amplifier.
2. Install and tighten mounting fasteners.
3. Lower center seat.
4. Connect battery negative cable.



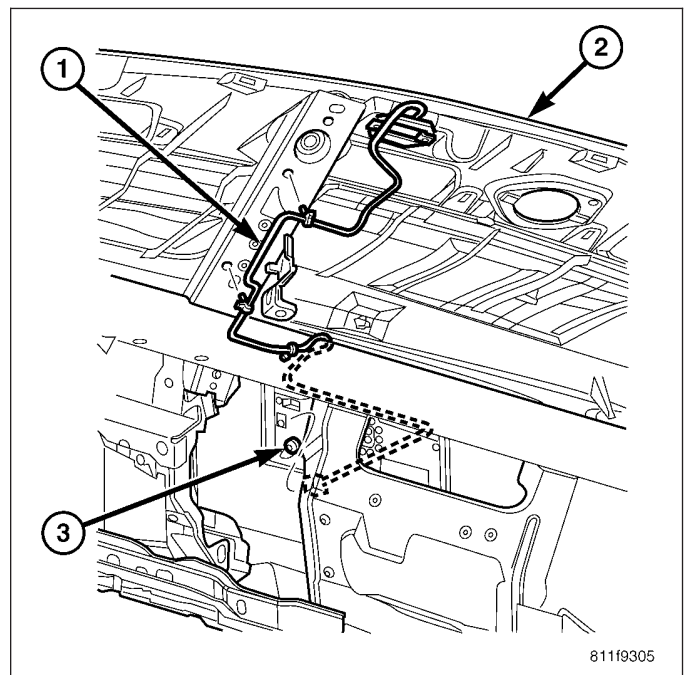
ANTENNA - NAVIGATION

REMOVAL

1. Disconnect and isolate the battery negative cable.
2. Remove the instrument panel top cover (Refer to 23 - BODY/INSTRUMENT PANEL/INSTRUMENT PANEL TOP COVER - REMOVAL).
3. Remove the radio (Refer to 8 - ELECTRICAL/AUDIO/RADIO - REMOVAL).
4. Remove the antenna mounting fasteners.

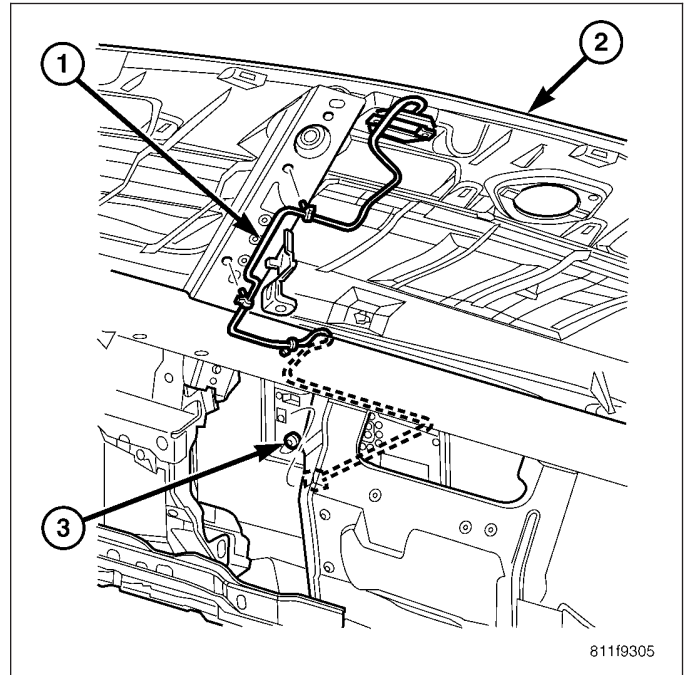


5. Cut each end of the cable (1) and leave remaining portion in the instrument panel.

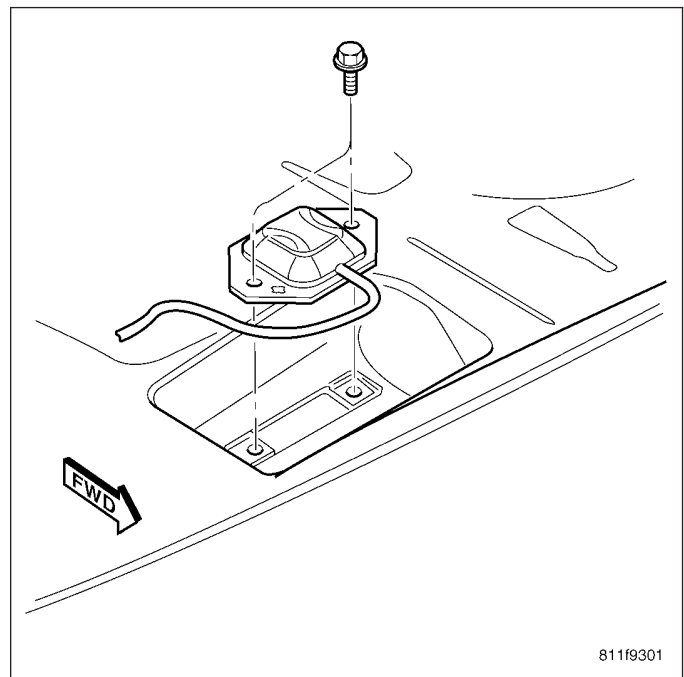


INSTALLATION

1. Position new antenna cable to wire harness.
Secure into place.



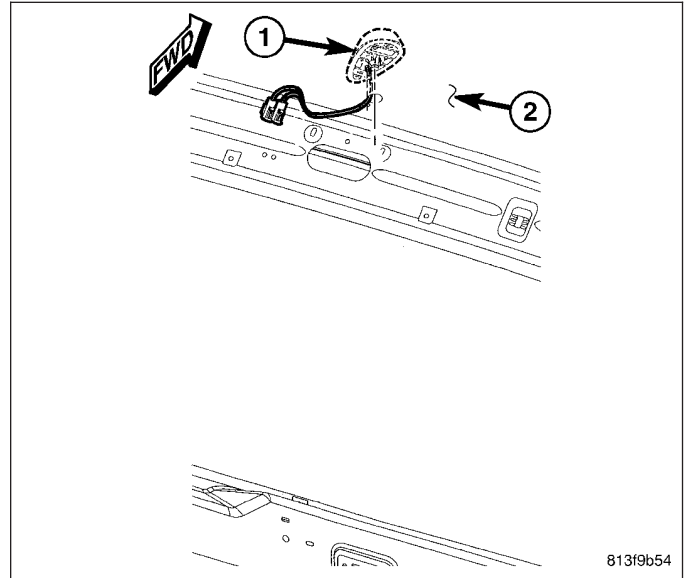
2. Install antenna mounting fasteners.
3. Install radio (Refer to 8 - ELECTRICAL/AUDIO/RADIO - INSTALLATION).
4. Install instrument panel top cover (Refer to 23 - BODY/INSTRUMENT PANEL/INSTRUMENT PANEL TOP COVER - INSTALLATION).
5. Connect battery negative cable.



ANTENNA-SATELLITE

DESCRIPTION

The satellite radio antenna (1) is secured by a bolt and two retainers that protrude through a hole in the roof panel (2). Two connectors from the antenna are connected to the satellite receiver cable.

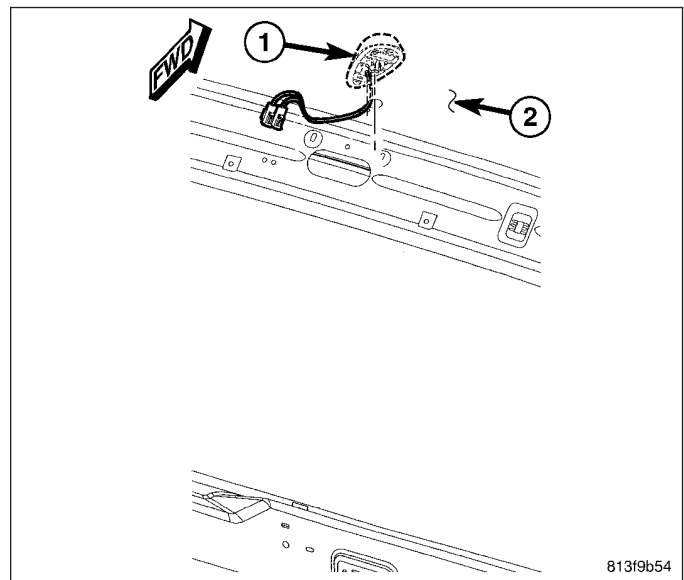


OPERATION

The satellite radio antenna receives signals from orbiting satellites and sends these signals to the satellite receiver module. The satellite radio antenna must have open space in which to operate. Items carried on the roof, parking inside etc. can have an effect on the antenna's ability to receive signals.

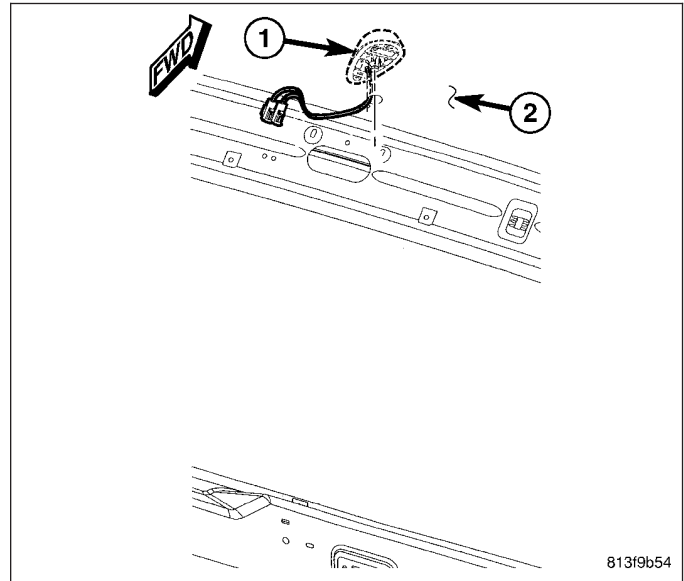
REMOVAL

1. Disconnect and isolate the battery negative cable.
2. Lower the rear portion of the headliner as necessary to access underside of antenna (1) (Refer to 23 - BODY/INTERIOR/HEADLINER - REMOVAL).
3. Disconnect the antenna cables.
4. Remove retaining fastener.
5. From inside the vehicle, and using a flat bladed tool, depress one of the retaining tabs on the antenna. Push up the one side of the antenna connector through the roof panel. Depress the other side of the connector and remove the antenna.



INSTALLATION

1. Insert wire harness through hole in roof panel (2).
Press antenna (1) into position until both retainers snap into place.
2. Install and tighten mounting fastener.
3. Connect antenna cables.
4. Install headliner (Refer to 23 - BODY/INTERIOR/
HEADLINER - INSTALLATION).
5. Connect battery negative cable.



ANTENNA BODY & CABLE

DESCRIPTION

The antenna body and cable is secured below the fender panel by the antenna cap nut through a mounting hole in the right front fender. The primary coaxial antenna cable is then routed beneath the fender sheet metal and through a entry hole in the right cowl side panel into the interior of the vehicle. Inside the vehicle, the primary coaxial cable is connected to a secondary instrument panel antenna coaxial cable with an in-line connector that is located behind the right kick panel. The secondary coaxial cable is then routed behind the instrument panel to the back of the radio.

OPERATION

The antenna body and cable connects the antenna mast to the radio. The radio antenna is an electromagnetic circuit component used to capture radio frequency signals that are broadcast by local commercial radio stations in both the Amplitude Modulating (AM) and Frequency Modulating (FM) frequency ranges. These electromagnetic radio frequency signals induce small electrical modulations into the antenna as they move past the mast. The antenna body transfers the weak electromagnetic radio waves induced into the rigid antenna mast into the center conductor of the flexible primary antenna coaxial cable. The braided outer shield of the antenna coaxial cable is grounded through both the antenna body and the radio chassis, effectively shielding the radio waves as they are conducted to the radio. The radio then tunes and amplifies the weak radio signals into stronger electrical signals in order to operate the audio system speakers.

DIAGNOSIS AND TESTING

ANTENNA BODY AND CABLE

The following four tests are used to diagnose the antenna with an ohmmeter:

- **Test 1** - Mast to ground test
- **Test 2** - Tip-of-mast to tip-of-conductor test
- **Test 3** - Body ground to battery ground test
- **Test 4** - Body ground to antenna coaxial cable shield test.

WARNING: Disable the airbag system before attempting any steering wheel, steering column, seat belt tensioner, side airbag, or instrument panel component diagnosis or service. Disconnect and isolate the battery negative (ground) cable, then wait two minutes for the airbag system capacitor to discharge before performing further diagnosis or service. This is the only sure way to disable the airbag system. Failure to take the proper precautions could result in accidental airbag deployment and possible personal injury.

The ohmmeter test lead connections for each test are shown in the illustration.

NOTE: This model has a two-piece antenna coaxial cable. Tests 2 and 4 must be conducted in two steps to isolate an antenna cable problem. First, test the primary antenna cable (integral to the antenna body and cable) from the coaxial cable connector behind the right side kick panel to the antenna body. Then, test the secondary antenna cable (instrument panel antenna cable) from the coaxial cable connector behind the right side kick panel to the coaxial cable connector at the radio.

TEST 1

Test 1 determines if the antenna mast is insulated from ground. Proceed as follows:

1. Disconnect and isolate the antenna coaxial cable connector behind the right side kick panel.
2. Touch one ohmmeter test lead to the tip of the antenna mast. Touch the other test lead to known ground. Check the ohmmeter reading for continuity.
3. There should be no continuity. If OK, go to Test 2. If not OK, replace the faulty antenna body and cable.

TEST 2

Test 2 checks the antenna conductor components for an open circuit. This test should be performed first on the entire antenna circuit, from the antenna mast to the center conductor of the coaxial cable connector at the radio. If an open circuit is detected, each of the three antenna conductor components (antenna mast, antenna body and cable, instrument panel antenna cable) should be isolated and tested individually to locate the exact component that is the source of the open circuit. To begin this test, proceed as follows:

1. Disconnect the instrument panel antenna cable coaxial connector from the back of the radio.
2. Touch one ohmmeter test lead to the tip of the antenna mast. Touch the other test lead to the center conductor pin of the instrument panel antenna cable coaxial connector for the radio. Check the ohmmeter reading for continuity.
3. There should be continuity. The ohmmeter should register only a fraction of an ohm resistance. High or infinite resistance indicates a damaged or open antenna conductor. If OK, go to Test 3. If not OK, isolate and test each of the individual antenna conductor components. Replace only the faulty antenna conductor component.

TEST 3

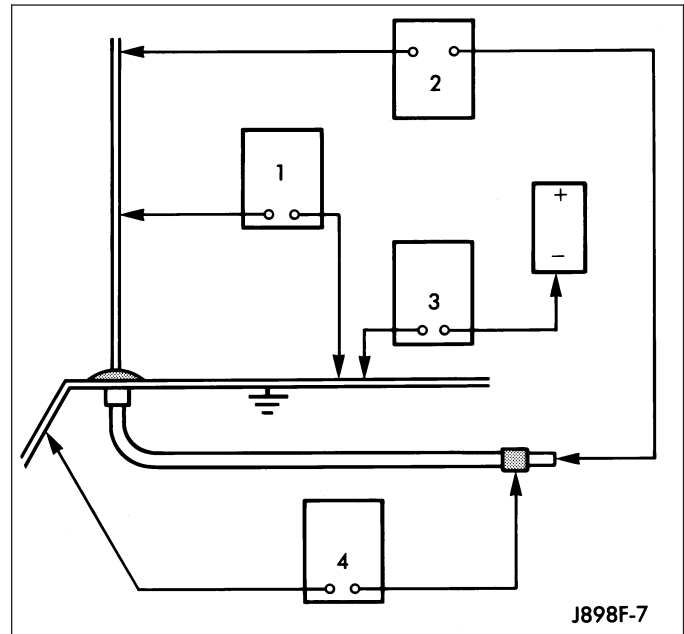
Test 3 checks the condition of the vehicle body ground connection. To begin this test, proceed as follows:

1. This test must be performed with the battery positive cable disconnected from the battery. Disconnect and isolate both battery cables, negative cable first.
2. Reconnect the battery negative cable.
3. Touch one ohmmeter test lead to a good clean ground point on the vehicle fender. Touch the other test lead to the battery negative terminal post. Check the ohmmeter reading for continuity.
4. There should be continuity. The ohmmeter should register less than one ohm resistance. High or infinite resistance indicates a loose, corroded, or damaged connection between the battery negative terminal and the vehicle body. If OK, go to Test 4. If not OK, check the battery negative cable connection to the vehicle body and the radio noise suppression ground strap connections to the engine and the vehicle body for being loose or corroded. Clean or tighten these connections as required.

TEST 4

Test 4 checks the condition of the connection between the antenna coaxial cable shield and the vehicle body ground as follows:

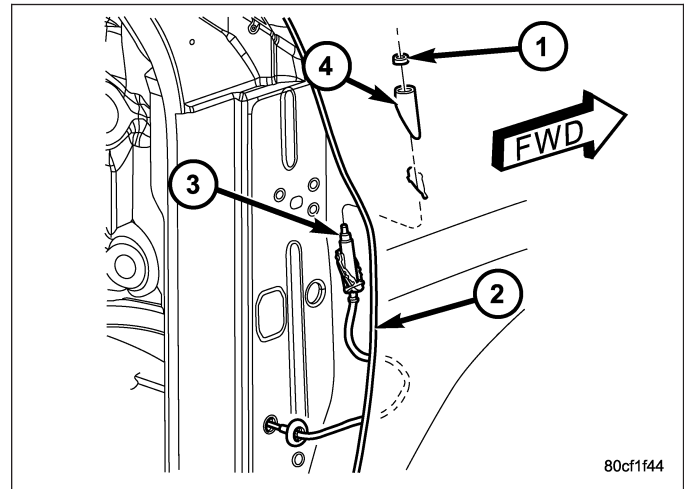
1. Disconnect and isolate the antenna coaxial cable connector behind the right side kick panel.



2. Touch one ohmmeter test lead to a good clean ground point on the vehicle fender. Touch the other test lead to the outer crimp on the antenna coaxial cable connector. Check the ohmmeter reading for continuity.
3. There should be continuity. The ohmmeter should register less than one ohm resistance. High or infinite resistance indicates a loose, corroded, or damaged connection between the antenna body and the vehicle body or between the antenna body and the antenna coaxial cable shield. If not OK, clean the antenna body to fender mating surfaces and tighten the antenna cap nut to specifications.
4. Check the resistance again with an ohmmeter. If the resistance is still more than one ohm, replace the faulty antenna body and cable.

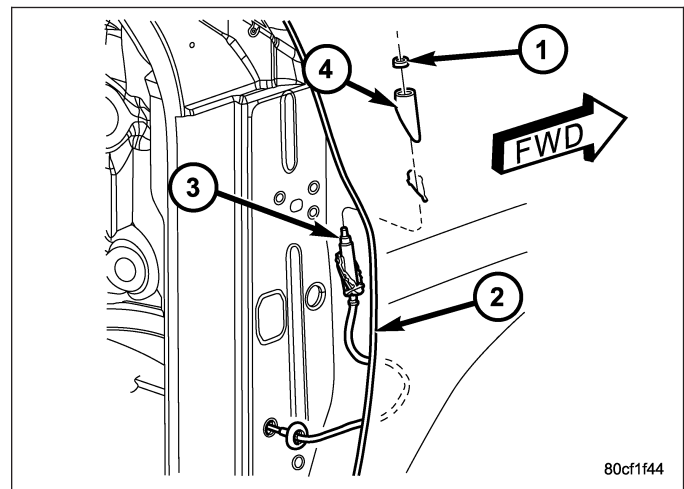
REMOVAL

1. Disconnect and isolate the battery negative cable.
2. Remove the right side kick panel.
3. Disconnect antenna body cable (2) from instrument panel cable.
4. Securely tie a suitable length of cord or twine to the antenna half of the coaxial cable connector. This cord will be used to pull the cable back into position during installation.
5. Remove the antenna mast.
6. Remove the antenna cap nut (1) using an antenna nut wrench (Special Tool C-4816).
7. Remove the antenna adapter (4).
8. With the right door open, pull the antenna body assembly out through the opening between the fender and body.



INSTALLATION

1. Tie the cord that was used during the removal procedure to the cable being installed.
2. Using the cord, pull the antenna cable through the hole in the door opening and seat grommet into place.
3. Connect the antenna body and cable (2) to the instrument panel cable.
4. Install the right side kick panel.
5. Insert the antenna body through the hole in the fender and install adapter (4).
6. Install and tighten the antenna cap nut (1).
7. Install the antenna mast.
8. Connect the battery negative cable.

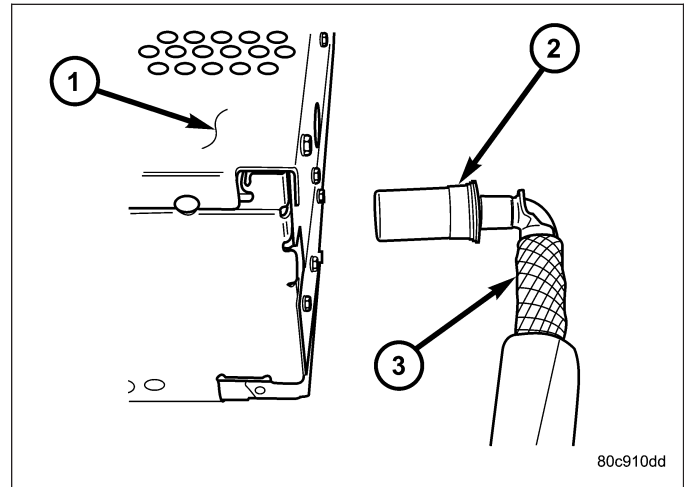


ANTENNA CABLE - INSTRUMENT PANEL

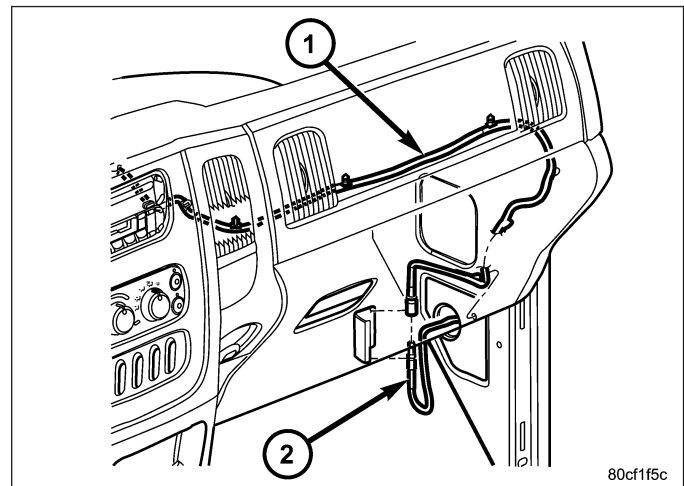
REMOVAL

1. Disconnect and isolate the battery negative cable.
2. Remove the glove box (Refer to 23 - BODY/INSTRUMENT PANEL/GLOVE BOX - REMOVAL).
3. Remove the instrument panel center bezel (Refer to 23 - BODY/INSTRUMENT PANEL/INSTRUMENT PANEL CENTER BEZEL - REMOVAL).
4. Remove the instrument panel lower right center bezel (Refer to 23 - BODY/INSTRUMENT PANEL/IP LOWER RIGHT CENTER BEZEL - REMOVAL).
5. Remove the radio (Refer to 8 - ELECTRICAL/AUDIO/RADIO - REMOVAL).

CAUTION: Pulling the antenna cable straight out of the radio without pulling on the locking antenna connector could damage the cable or radio.

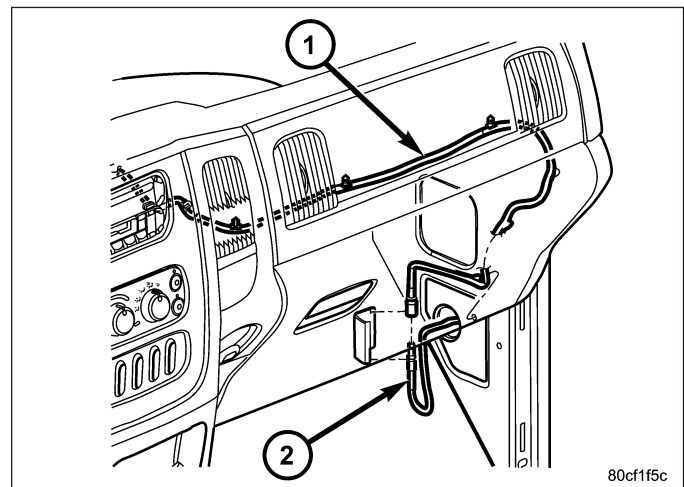


6. Disconnect the antenna cable by pulling the locking antenna connector away from the radio.
7. Remove antenna cable from instrument panel by pulling on retaining fasteners.



INSTALLATION

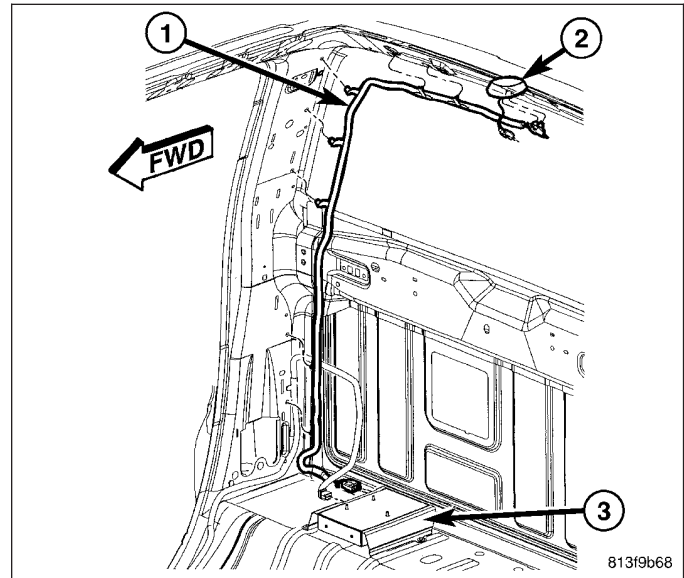
1. Install antenna cable (1) to instrument panel by pressing retaining fasteners into position.
2. Connect instrument panel antenna cable to antenna body and cable (2).
3. Install radio (Refer to 8 - ELECTRICAL/AUDIO/RADIO - INSTALLATION).
4. Install the instrument panel lower right center bezel (Refer to 23 - BODY/INSTRUMENT PANEL/IP LOWER RIGHT CENTER BEZEL - INSTALLATION).
5. Install the instrument panel center bezel (Refer to 23 - BODY/INSTRUMENT PANEL/INSTRUMENT PANEL CENTER BEZEL - INSTALLATION).
6. Install the glove box (Refer to 23 - BODY/INSTRUMENT PANEL/GLOVE BOX - INSTALLATION).
7. Connect the battery negative cable.



ANTENNA CABLE - SATELLITE RADIO

DESCRIPTION

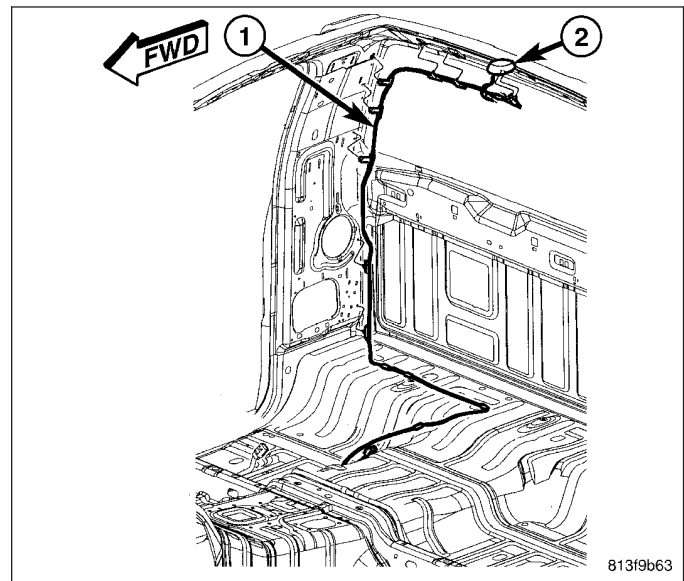
The satellite radio antenna cable (1) connects the roof mounted antenna (2) to the satellite receiver (3). It has two connectors at each end and is routed above the headliner, then down the right side of the vehicle floor below the carpet.



REMOVAL

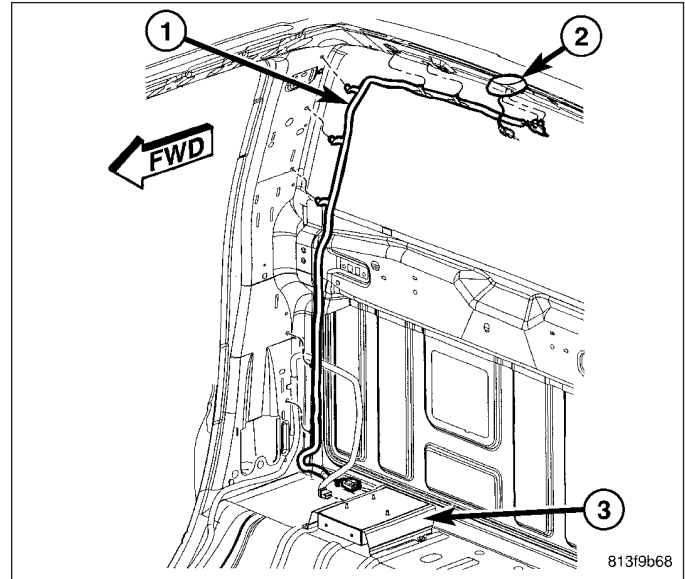
REGULAR CAB

1. Disconnect and isolate the battery negative cable.
2. Lower the rear portion of the headliner as necessary to access the underside of the satellite antenna (2) (Refer to 23 - BODY/INTERIOR/HEADLINER - REMOVAL).
3. Remove the B-pillar upper trim panel (Refer to 23 - BODY/INTERIOR/B-PILLAR UPPER TRIM - REMOVAL).
4. Remove the B-pillar lower trim panel (Refer to 23 - BODY/INTERIOR/B-PILLAR LOWER TRIM - REMOVAL).
5. Move carpet to access cable (1).
6. Disconnect each end of the cable.

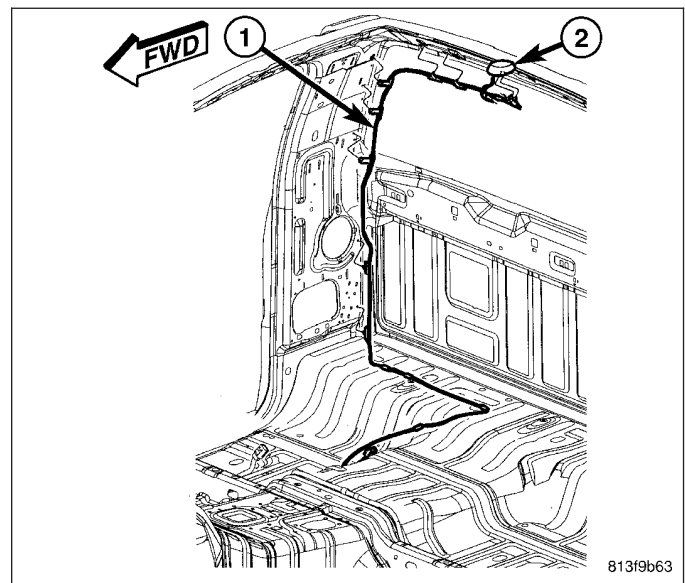


QUAD CAB

1. Disconnect and isolate the battery negative cable.
2. Lower the rear portion of the headliner as necessary to access the underside of the satellite antenna (2) (Refer to 23 - BODY/INTERIOR/HEADLINER - REMOVAL).
3. Remove the C-pillar upper trim panel (Refer to 23 - BODY/INTERIOR/C-PILLAR TRIM - REMOVAL).
4. Remove the C-pillar lower trim panel (Refer to 23 - BODY/INTERIOR/C-PILLAR TRIM - REMOVAL).
5. Move carpet to access cable (1).
6. Disconnect each end of the cable.

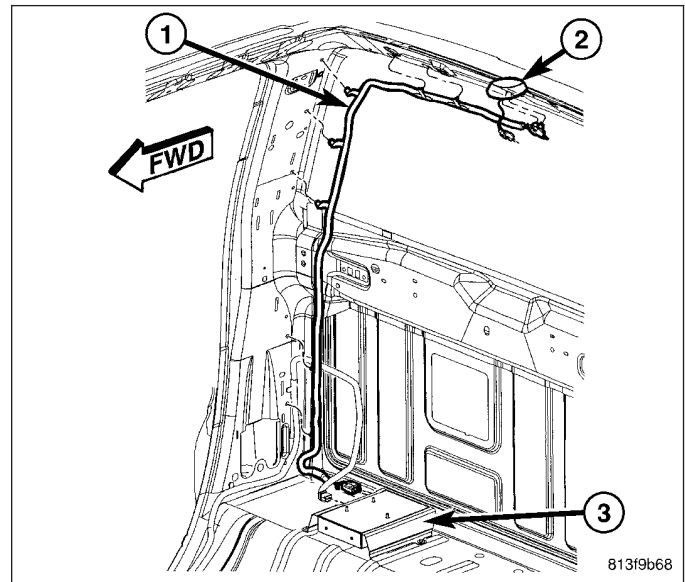
**INSTALLATION****REGULAR CAB**

1. Connect each end of the cable (1).
2. Place carpet into position.
3. Install the B-pillar lower trim panel (Refer to 23 - BODY/INTERIOR/B-PILLAR LOWER TRIM - INSTALLATION).
4. Install the B-pillar upper trim panel. Remove the C-pillar upper trim panel.
5. Install the headliner (Refer to 23 - BODY/INTERIOR/HEADLINER - INSTALLATION).
6. Connect the battery negative cable.



QUAD CAB

1. Connect each end of the cable (1).
2. Place carpet into position.
3. Install the C-pillar lower trim panel (Refer to 23 - BODY/INTERIOR/C-PILLAR TRIM - INSTALLATION).
4. Install the C-pillar upper trim panel (Refer to 23 - BODY/INTERIOR/C-PILLAR TRIM - INSTALLATION).
5. Install the headliner (Refer to 23 - BODY/INTERIOR/HEADLINER - INSTALLATION).
6. Connect the battery negative cable.



RADIO

DESCRIPTION

Available radio receivers for this vehicle include:

- AM/FM/cassette with CD changer control feature (RBB sales code)
- AM/FM/cassette/CD/ with CD changer control feature (RAZ sales code)
- AM/FM/CD with CD changer control feature (RBK sales code)
- AM/FM/cassette/CD with CD changer control (RBY sales code)
- AM/FM/multiple CD (RBQ sales code)
- AM/FM/CD with GPS navigation (RB4 sales code)
- AM/FM/cassette/CD (RBY sales code) - export only

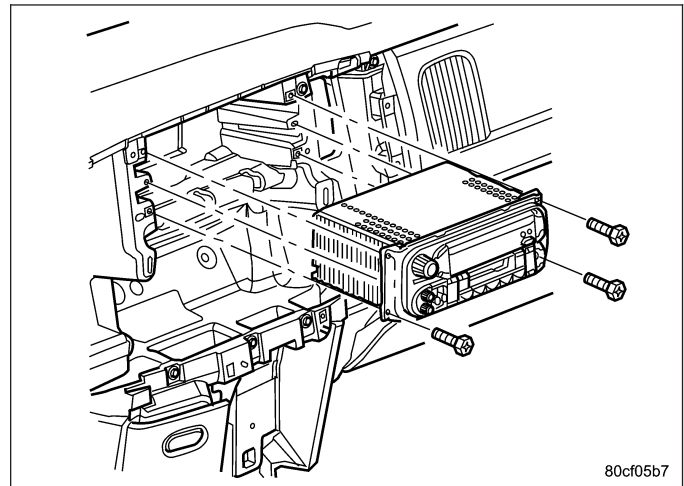
All factory-installed radio receivers can communicate on the Programmable Communications Interface (PCI) data bus network. All factory-installed receivers include an electronic digital clock function.

OPERATION

The radio receiver operates on ignition switched battery current that is available only when the ignition switch is in the On or Accessory positions. The electronic digital clock function of the radio operates on fused battery current supplied through the IOD fuse, regardless of the ignition switch position.

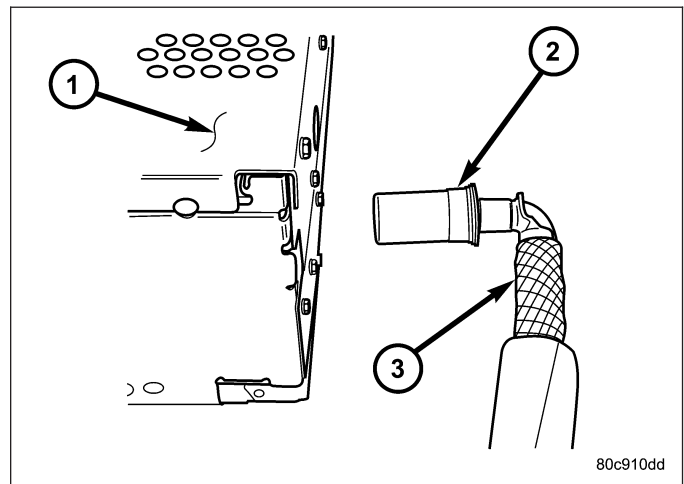
REMOVAL

1. Disconnect and isolate the battery negative cable.
2. Remove center instrument panel bezel (Refer to 23 - BODY/INSTRUMENT PANEL/INSTRUMENT PANEL CENTER BEZEL - REMOVAL).
3. Remove radio mounting fasteners.

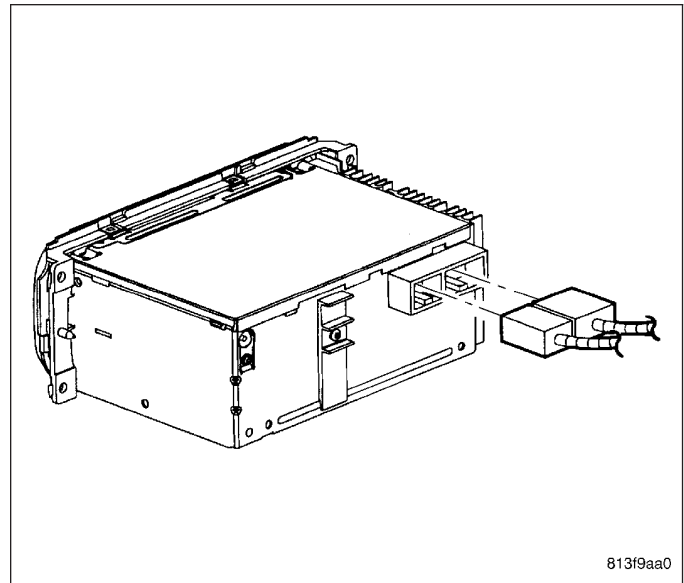


CAUTION: Pulling the antenna cable straight out of the radio without pulling on the locking antenna connector could damage the cable or radio.

4. Disconnect the antenna cable by pulling the locking antenna connector (2) away from the radio.

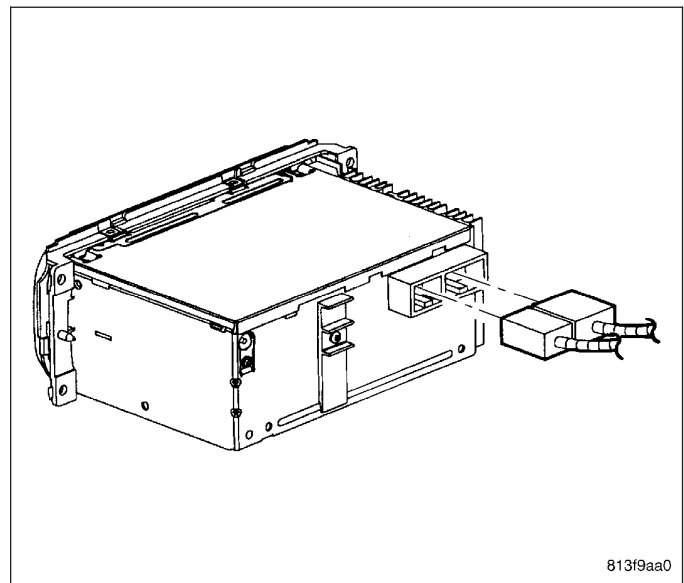


5. Disconnect electrical harness connector.

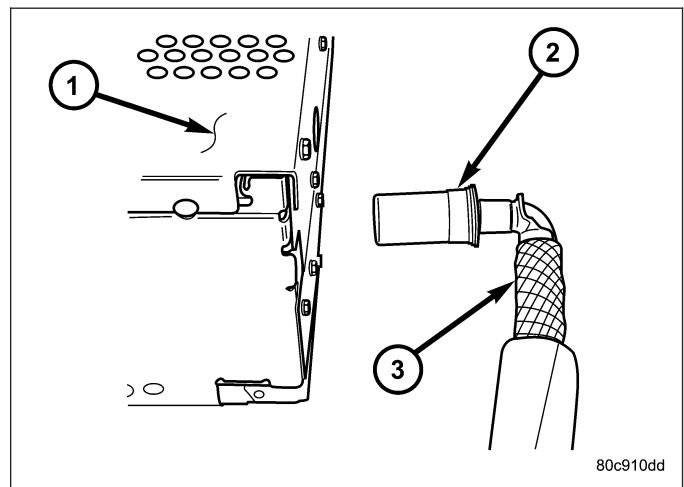


INSTALLATION

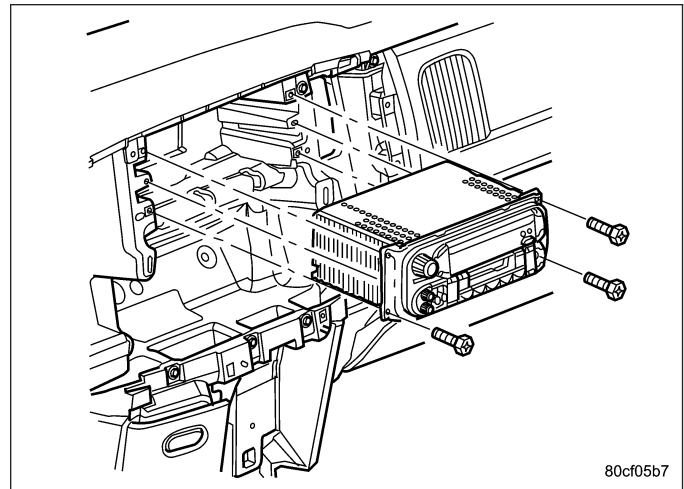
1. Connect electrical harness connector to radio.



2. Install antenna cable (3) to radio (1).



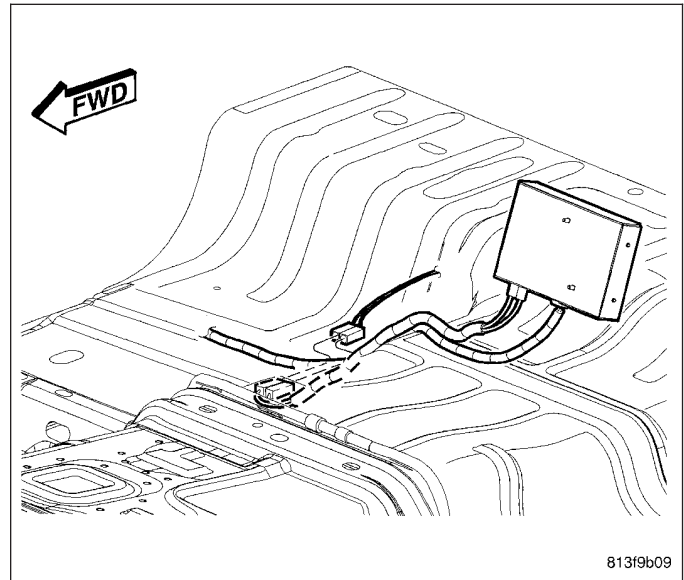
3. Position radio to instrument panel.
4. Install and tighten mounting fasteners.
5. Install instrument panel center bezel (Refer to 23 - BODY/INSTRUMENT PANEL/INSTRUMENT PANEL CENTER BEZEL - INSTALLATION).
6. Connect battery negative cable.



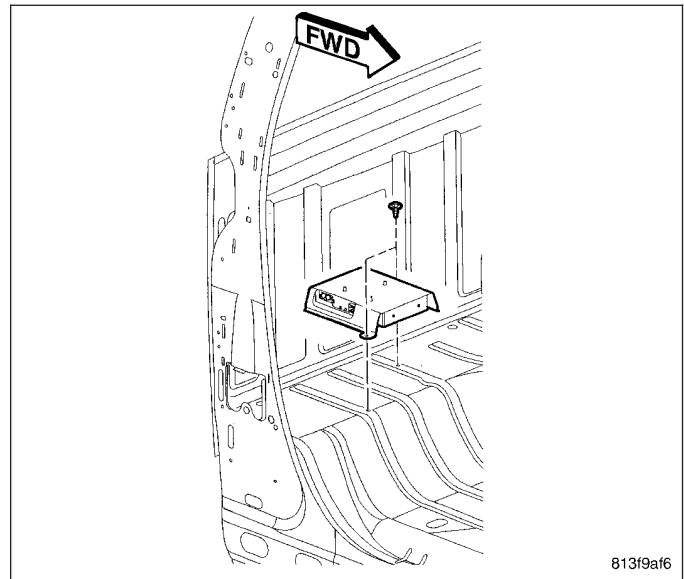
RECEIVER-SATELLITE

DESCRIPTION

The satellite receiver for the regular cab is located behind the center seat on the floor.



The satellite receiver for the quad cab is located in the right rear corner of the cab, on the floor.



OPERATION

The satellite receiver module receives signals from the roof mounted antenna and processes this information before it is sent to the radio. The module operates on both battery feed circuits and CAN bus messages. It will operate with the ignition key in the run or accessory position only.

REMOVAL

NOTE:

If the owner's satellite service was active before the satellite receiver module was replaced the new satellite receiver module will have to be activated. The existing satellite receiver module will have to be deactivated before the replacement satellite receiver module can be activated.

To activate Sirius satellite radio service, call Sirius at their toll-free number. Please have the following information available when activating a system:

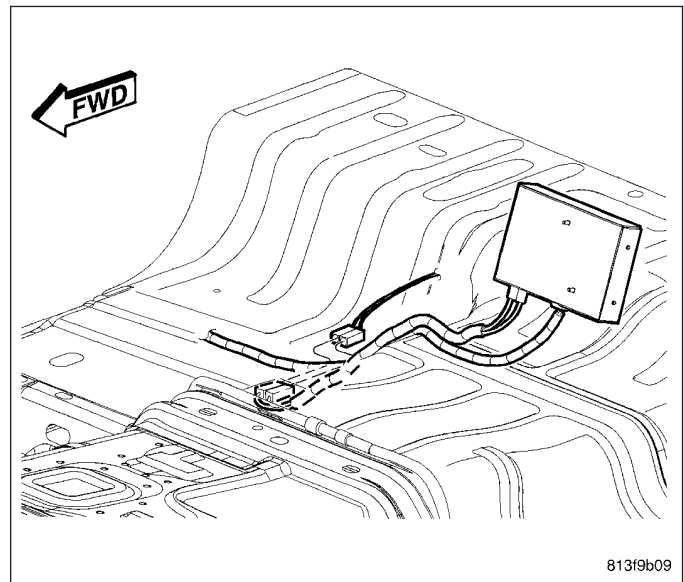
- Electronic Serial Number / Sirius Identification Number (ESN/SID) of the unit to be replaced
- ESN/SID of the replacement receiver
- Vehicle Owner's name and address
- VIN

The ESN/SID number can be obtained through the radio display by following the steps in the satellite radio owners manual.

The vehicle must be outside with the audio system powered on, in the satellite radio mode, to receive the activation signal.

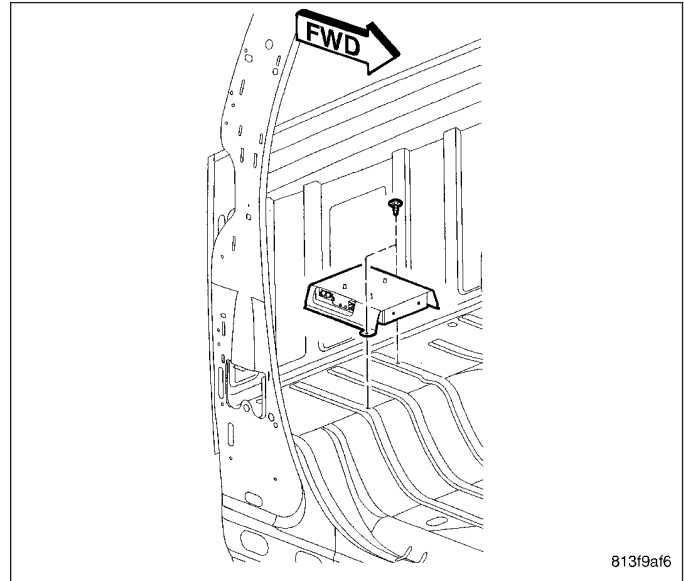
REGULAR CAB

1. Disconnect and isolate the battery negative cable.
2. Place front passenger seat in the forward position.
3. Remove the mounting fasteners.
4. Disconnect the antenna cable and electrical harness connectors.
5. Remove the satellite receiver.



QUAD CAB

1. Disconnect and isolate the battery negative cable.
2. Remove the mounting fasteners.
3. Disconnect the antenna cable and electrical harness connectors.
4. Remove the satellite receiver.



INSTALLATION

REGULAR CAB

NOTE:

If the owner's satellite service was active before the satellite receiver was replaced, the new satellite receiver will have to be activated. The existing satellite receiver will have to be deactivated before the replacement satellite receiver can be activated.

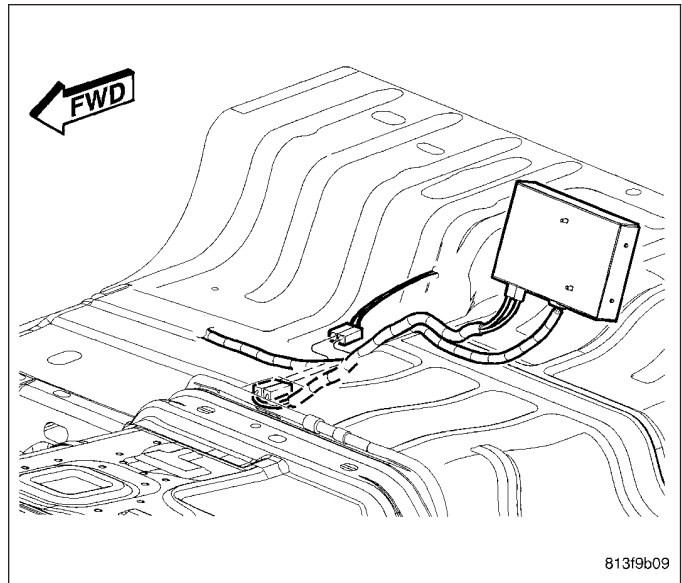
To activate Sirius satellite radio service, call Sirius at their toll-free number. Please have the following information available when activating a system:

- Electronic Serial Number / Sirius Identification Number (ESN/SID) of the unit to be replaced
- ESN/SID of the replacement receiver
- Vehicle Owner's name and address
- VIN

The ESN/SID number can be obtained through the radio display by following the steps in the satellite radio owners manual.

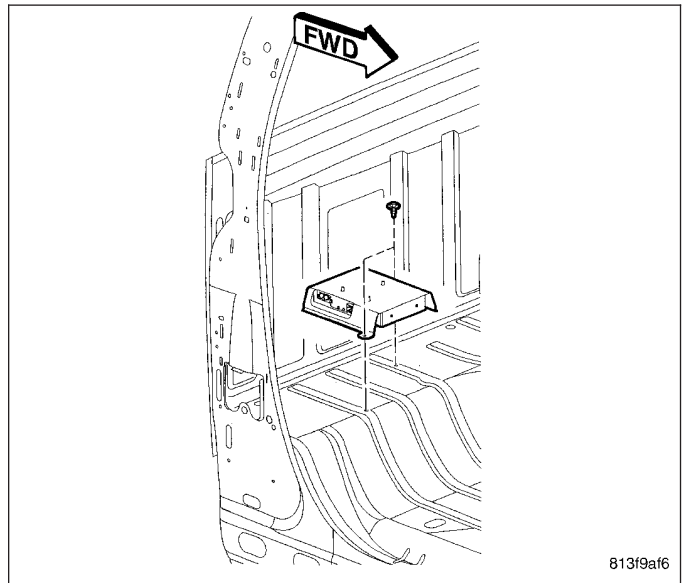
The vehicle must be outside with the audio system powered on, in the satellite radio mode, to receive the activation signal.

1. Connect antenna cable and electrical harness connector to receiver.
2. Position module and install mounting fasteners. Tighten fasteners.
3. Connect battery negative cable.



QUAD CAB

1. Connect antenna cable and electrical harness connector to receiver.
2. Position receiver and install mounting fasteners. Tighten fasteners.
3. Connect battery negative cable.



SPEAKER

DESCRIPTION

STANDARD

The standard equipment speaker system includes speakers in four locations. One 15.2 X 22.8 centimeter (6 X 9 inch) full-range speaker is located in each front door. There is also one full-range 13.3 centimeter (5.25 inch) diameter full-range speaker located in each rear door (quad cab) or B-pillar (regular cab).

PREMIUM

The optional premium speaker system features eleven Premium model speakers in seven locations. Each of the standard speakers is replaced with Premium model speakers. One 8.8 centimeter (3.50 inch) diameter speaker is located on each end of the instrument panel top pad. One 6.3 centimeter (2.50 inch) diameter speaker is located in the center of the instrument panel top pad. One 15.2 X 22.8 centimeter (6 X 9 inch) Premium speaker is located in each front door. There is also one coaxial 13.3 centimeter (5.25 inch) diameter Premium full-range speaker located in each rear door (quad cab) or B-pillar (regular cab). The premium speaker system also includes a power amplifier mounted behind the glove box. The total available power of the premium speaker system is 368 watts. If equipped, a 25.4 centimeter (10 inch) subwoofer is located behind the center passenger seat along with a amplifier (rated at 150 watts) located under the center passenger seat. The total available power if equipped with the subwoofer and second power amplifier is 518 watts.

OPERATION

Two wires connected to each speaker, one feed circuit (+) and one return circuit (-), allow the audio output signal electrical current to flow through the voice coil. For complete circuit diagrams, refer to the appropriate wiring information. The wiring information includes wiring diagrams, proper wire and connector repair procedures, details of wire harness routing and retention, connector pin-out information and location views for the various wire harness connectors, splices and grounds.

DIAGNOSIS AND TESTING

SPEAKER

Any diagnosis of the Audio system should begin with the use of a scan tool. For information on the use of the scan tool, refer to the appropriate Diagnostic Service information.

Refer to the appropriate wiring information.

WARNING: Disable the airbag system before attempting any steering wheel, steering column, seat belt tensioner, side airbag, or instrument panel component diagnosis or service. Disconnect and isolate the battery negative (ground) cable, then wait two minutes for the airbag system capacitor to discharge before performing further diagnosis or service. This is the only sure way to disable the airbag system. Failure to take the proper precautions could result in accidental airbag deployment and possible personal injury.

CAUTION: The speaker output of the radio is a “floating ground” system. Do not allow any speaker lead to short to ground, as damage to the radio and/or amplifier may result.

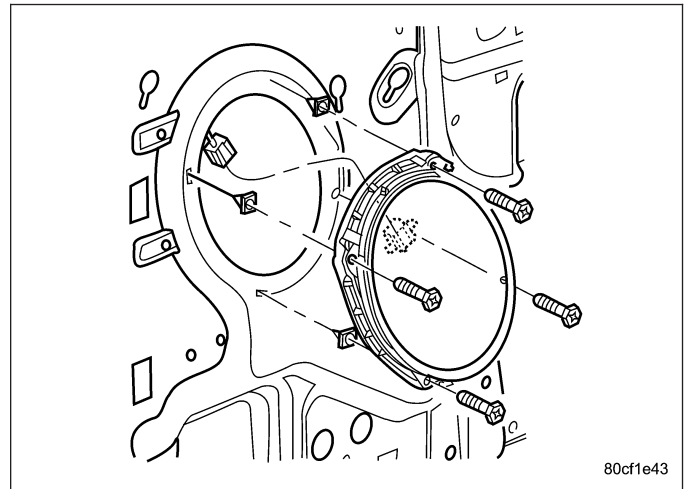
1. If all speakers are inoperative, check the fuses in the Totally Integrated Power Module (TIPM). If OK, go to Step 2. If not OK, repair the shorted circuit or component as required and replace the faulty fuse.
2. Check the amplifier fuse (if equipped) in the TIPM. If OK, go to Step 3. If not OK, repair the shorted circuit or component as required and replace the faulty fuse.
3. Turn the ignition switch to the ON position. Turn the radio receiver ON. Adjust the balance and fader control controls to check the performance of each individual speaker. Note the speaker locations that are not performing correctly. Go to Step 4.
4. Turn the radio receiver OFF. Turn the ignition OFF. Disconnect and isolate the battery negative cable. If vehicle is **not** equipped with an amplifier, remove the radio receiver. If vehicle is equipped with an amplifier, disconnect wire harness connector at output side of amplifier. Go to Step 5.

5. Check both the speaker feed (+) circuit and return (-) circuit cavities for the inoperative speaker at the radio receiver wire harness connector for continuity to ground. There should be no continuity. If OK, go to Step 6. If not OK, repair the shorted speaker feed (+) and/or return (-) circuits(s) to the speaker as required.
6. Disconnect wire harness connector at the inoperative speaker. Check for continuity between the speaker feed (+) circuit cavities of the radio receiver wire harness connector or if equipped, the amplifier wire harness connector and the speaker wire harness connector. Repeat the check between the speaker return (-) circuit cavities of the radio receiver wire harness connector and the speaker wire harness connector. In each case, there should be continuity. If OK, replace the faulty speaker. If not OK, repair the open speaker feed (+) and/or return (-) circuits(s) as required.

REMOVAL

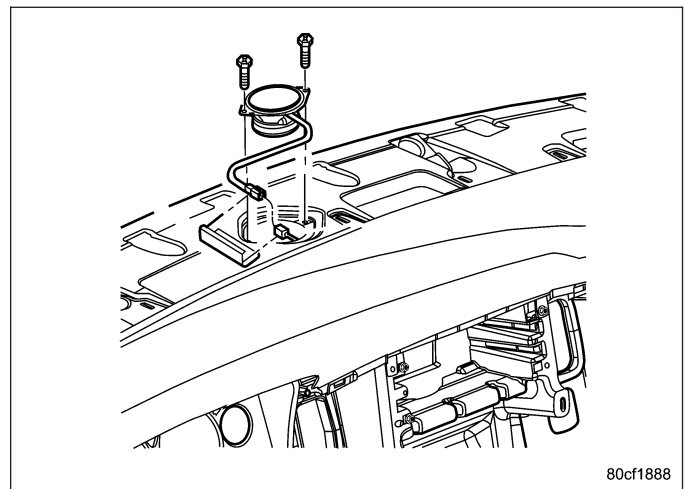
FRONT DOOR SPEAKER

1. Disconnect and isolate the battery negative cable.
2. Remove front door trim panel (Refer to 23 - BODY/DOOR - FRONT/TRIM PANEL - REMOVAL).
3. Remove mounting fasteners.
4. Disconnect electrical harness connector and remove speaker.



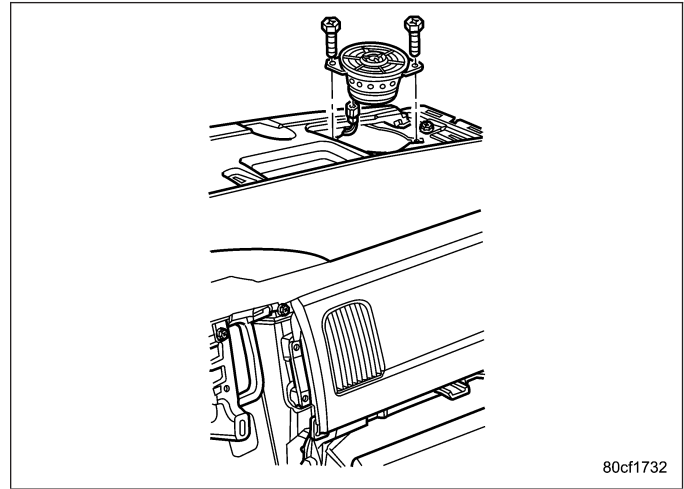
INSTRUMENT PANEL CENTER SPEAKER

1. Disconnect and isolate the battery negative cable.
2. Remove instrument panel top cover (Refer to 23 - BODY/INSTRUMENT PANEL/INSTRUMENT PANEL TOP COVER - REMOVAL).
3. Remove speaker mounting fasteners.
4. Disconnect electrical harness connector and remove speaker.



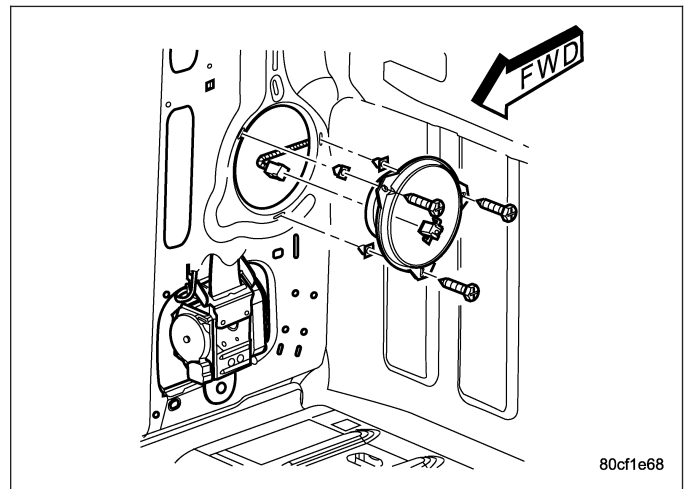
INSTRUMENT PANEL END SPEAKER

1. Disconnect and isolate the battery negative cable.
2. Remove instrument panel top cover (Refer to 23 - BODY/INSTRUMENT PANEL/INSTRUMENT PANEL TOP COVER - REMOVAL).
3. Remove speaker mounting fasteners.
4. Disconnect electrical harness connector and remove speaker.



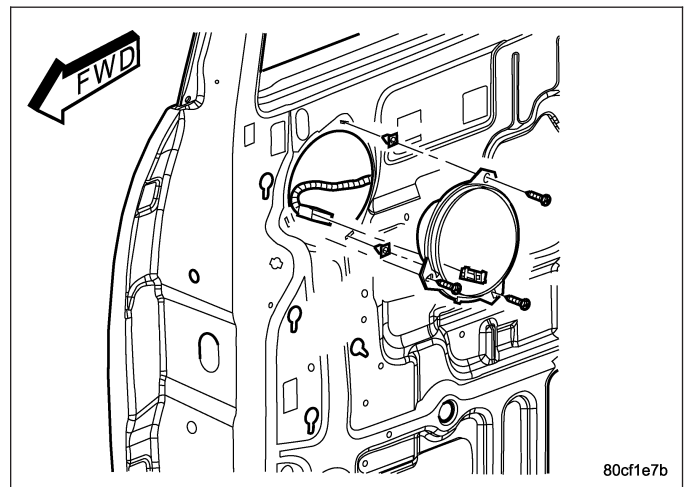
REAR CAB SIDE SPEAKER

1. Disconnect and isolate the battery negative cable.
2. Remove B-pillar lower trim (Refer to 23 - BODY/INTERIOR/B-PILLAR LOWER TRIM - REMOVAL).
3. Remove speaker mounting fasteners.
4. Disconnect electrical harness connector and remove speaker.



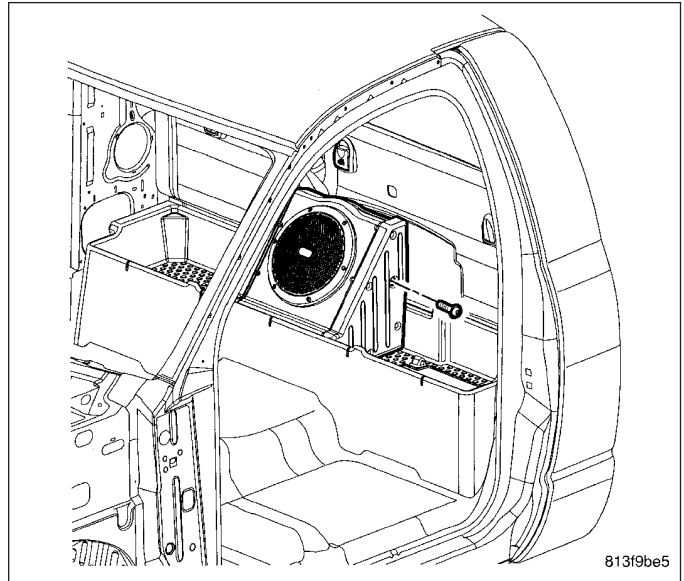
REAR DOOR SPEAKER

1. Disconnect and isolate the battery negative cable.
2. Remove rear door trim panel (Refer to 23 - BODY/DOORS - REAR/TRIM PANEL - REMOVAL).
3. Remove speaker mounting fasteners.
4. Disconnect electrical harness connector and remove speaker.

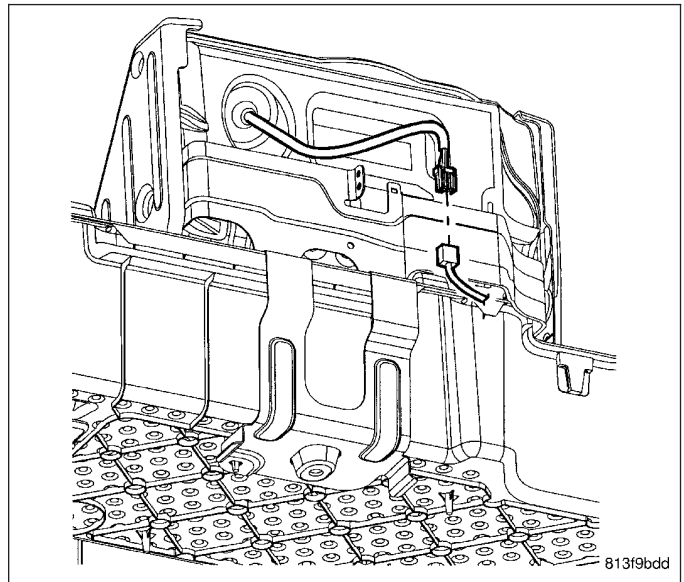


SUBWOOFER - REGULAR CAB

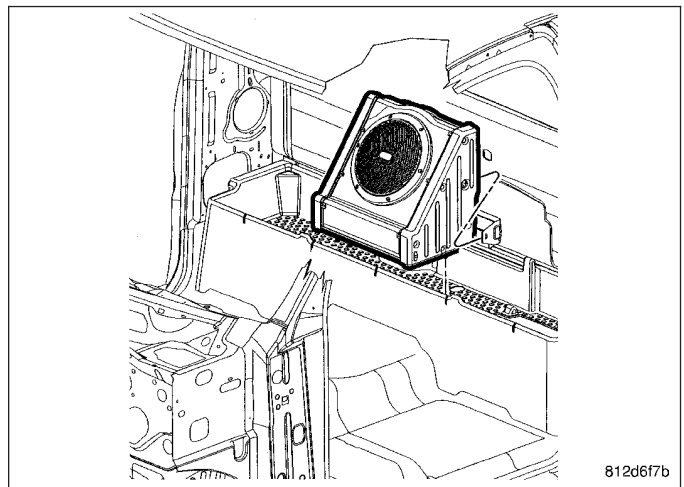
1. Disconnect and isolate the battery negative cable.
2. Remove mounting fasteners to subwoofer housing.



3. Disconnect electrical harness connector.

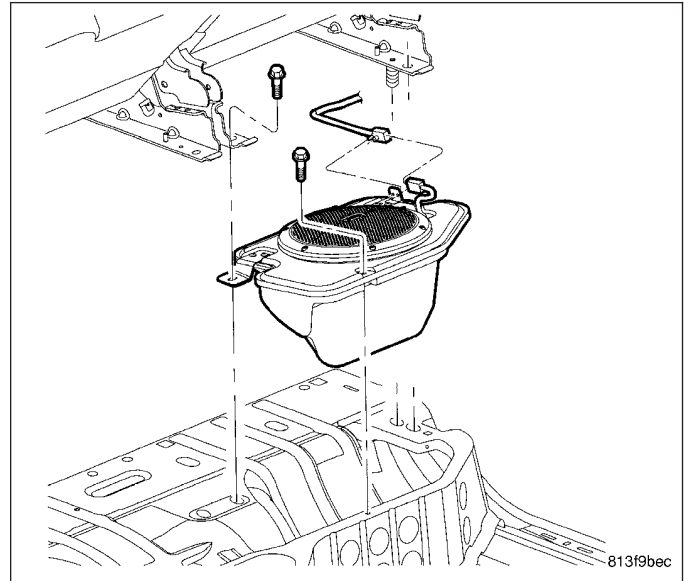


4. Remove subwoofer from vehicle.



SUBWOOFER - QUAD CAB

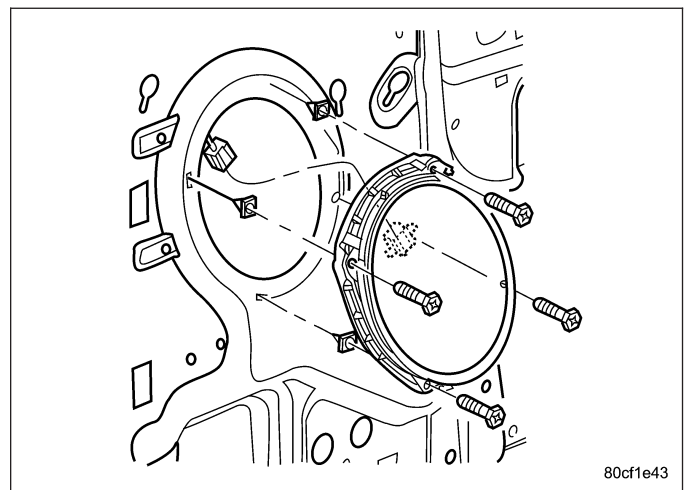
1. Disconnect and isolate the battery negative cable.
2. Raise left rear seat to access subwoofer.
3. Disconnect electrical harness connector.
4. Remove mounting fasteners and remove subwoofer.



INSTALLATION

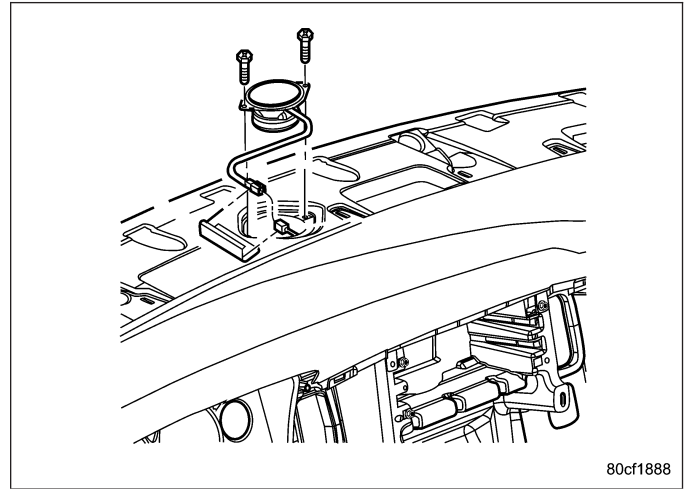
FRONT DOOR SPEAKER

1. Connect electrical harness connector and install speaker.
2. Install and tighten mounting fasteners.
3. Install front door trim panel (Refer to 23 - BODY/DOOR - FRONT/TRIM PANEL - INSTALLATION).
4. Connect battery negative cable.



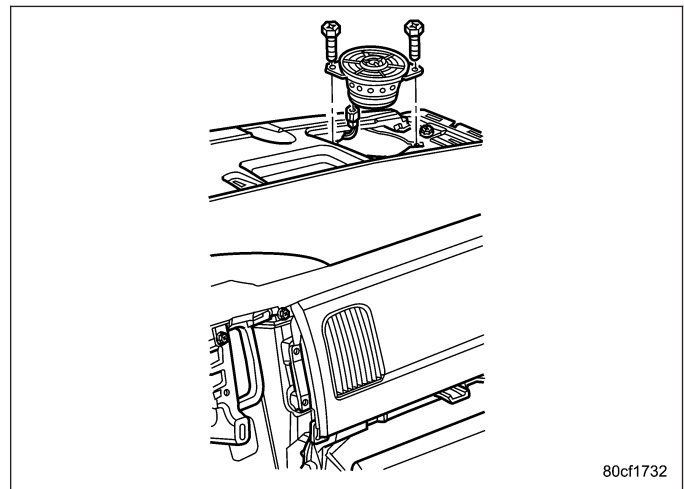
INSTRUMENT PANEL CENTER SPEAKER

1. Connect electrical harness connector and install speaker.
2. Install and tighten mounting fasteners.
3. Install instrument panel top cover (Refer to 23 - BODY/INSTRUMENT PANEL/INSTRUMENT PANEL TOP COVER - INSTALLATION).
4. Connect battery negative cable.



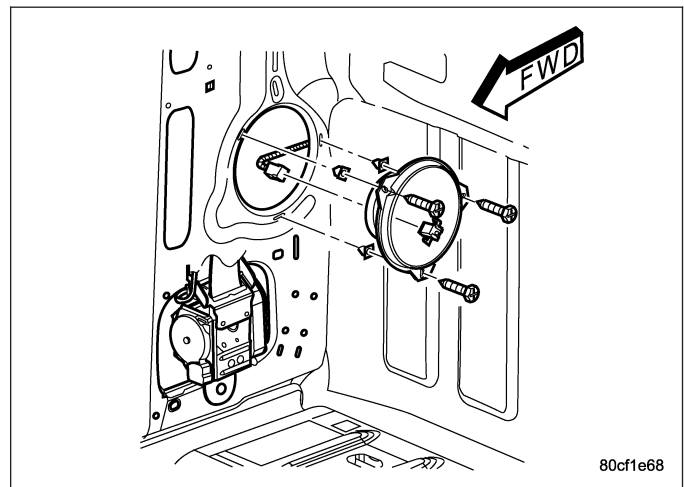
INSTRUMENT PANEL END SPEAKER

1. Connect electrical harness connector and install speaker.
2. Install and tighten mounting fasteners.
3. Install instrument panel top cover (Refer to 23 - BODY/INSTRUMENT PANEL/INSTRUMENT PANEL TOP COVER - INSTALLATION).
4. Connect battery negative cable.



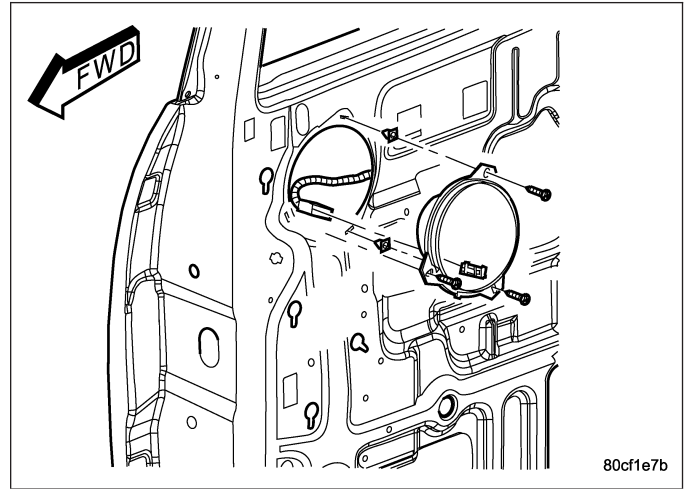
REAR CAB SIDE SPEAKER

1. Connect electrical harness connector and install speaker.
2. Install and tighten mounting fasteners.
3. Install B-pillar lower trim (Refer to 23 - BODY/INTERIOR/B-PILLAR LOWER TRIM - INSTALLATION).
4. Connect battery negative cable.



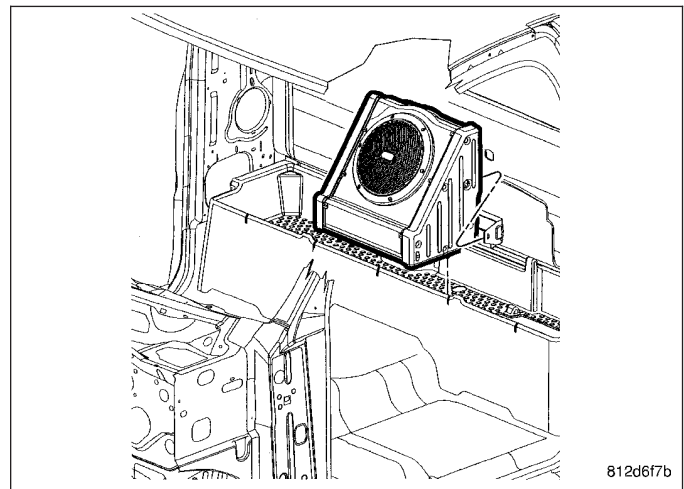
REAR DOOR SPEAKER

1. Connect electrical harness connector and install speaker.
2. Install and tighten mounting fasteners.
3. Install rear door trim panel (Refer to 23 - BODY/DOORS - REAR/TRIM PANEL - INSTALLATION).
4. Connect battery negative cable.

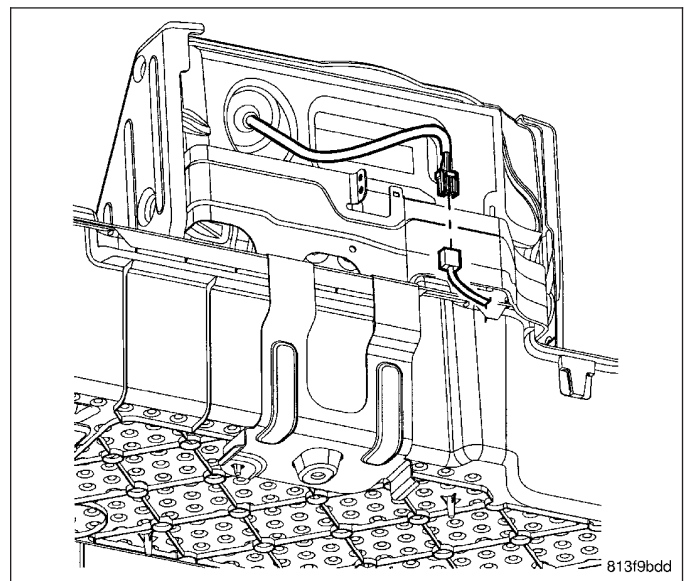


SUBWOOFER - REGULAR CAB

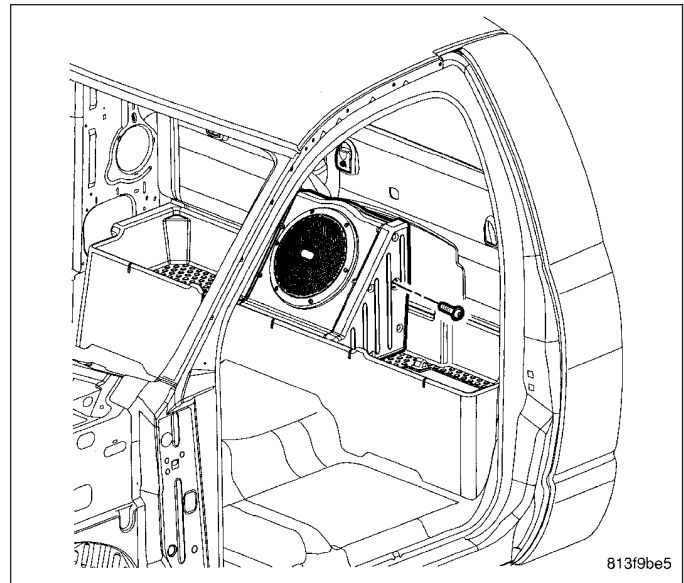
1. Position subwoofer housing into the vehicle.



2. Connect electrical harness connector.

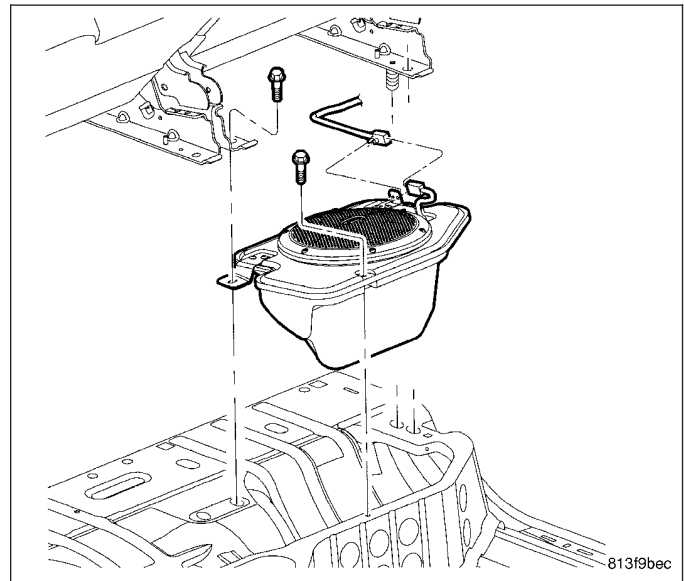


3. Install mounting fasteners.
4. Connect battery negative cable.



SUBWOOFER – QUAD CAB

1. Position subwoofer to vehicle.
2. Connect electrical harness connector.
3. Install and tighten mounting fasteners.
4. Lower seat.
5. Connect battery negative cable.



SUPPRESSION COMPONENTS - RADIO NOISE

DESCRIPTION

Radio noise suppression devices are installed on this vehicle. Radio Frequency Interference (RFI) and ElectroMagnetic Interference (EMI) can be produced by any on-board or external source of electromagnetic energy. These electromagnetic energy sources can radiate electromagnetic signals through the air, or conduct them through the vehicle electrical system.

When the audio system converts RFI or EMI to an audible acoustic wave form, it is referred to as radio noise. This undesirable radio noise is generally manifested in the form of "buzzing," "hissing," "popping," "clicking," "crackling," and/or "whirring" sounds. In most cases, RFI and EMI radio noise can be suppressed using a combination of vehicle and component grounding, filtering and shielding techniques. This vehicle is equipped with factory-installed radio noise suppression devices that were designed to minimize exposure to typical sources of RFI and EMI; thereby, minimizing radio noise complaints.

Factory-installed radio noise suppression is accomplished primarily through circuitry or devices that are integral to the factory-installed radios, audio power amplifiers and other on-board electrical components such as generators, wiper motors, blower motors, and fuel pumps that have been found to be potential sources of RFI or EMI. External radio noise suppression devices that are used on this vehicle to control RFI or EMI, and can be serviced, include the following:

- **Engine-to-body ground strap** - This length of braided ground strap has an eyelet terminal connector crimped to each end. One end is secured to the engine cylinder head(s). The other is secured to the plenum at the exhaust heat shield forward/outer attaching stud.
- **Resistor-type spark plugs** - This type of spark plug has an internal resistor connected in series between the spark plug terminal and the center electrode to help reduce the production of electromagnetic radiation that can result in radio noise.

OPERATION

There are two common strategies that can be used to suppress Radio Frequency Interference (RFI) and ElectroMagnetic Interference (EMI) radio noise. The first suppression strategy involves preventing the production of RFI and EMI electromagnetic signals at their sources. The second suppression strategy involves preventing the reception of RFI and EMI electromagnetic signals by the audio system components.

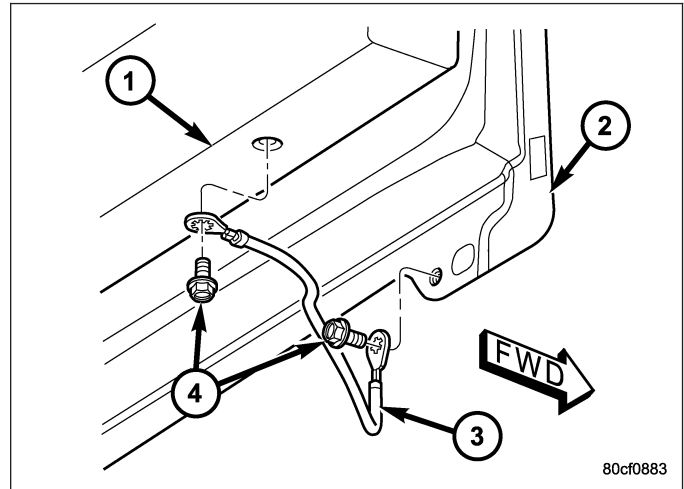
The use of braided ground straps in key locations is part of the RFI and EMI prevention strategy. These ground straps ensure adequate ground paths, particularly for high current components such as many of those found in the starting, charging, ignition, engine control and transmission control systems. An insufficient ground path for any of these high current components may result in radio noise caused by induced voltages created as the high current seeks alternative ground paths through components or circuits intended for use by, or in close proximity to the audio system components or circuits.

Preventing the reception of RFI and EMI is accomplished by ensuring that the audio system components are correctly installed in the vehicle. Loose, corroded or improperly soldered wire harness connections, improperly routed wiring and inadequate audio system component grounding can all contribute to the reception of RFI and EMI. A properly grounded antenna body and radio chassis, as well as a shielded antenna coaxial cable with clean and tight connections will each help reduce the potential for reception of RFI and EMI.

REMOVAL

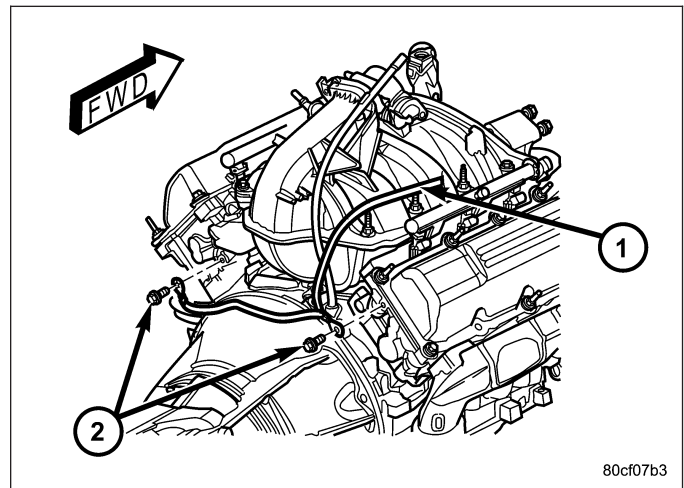
BED TO CAB

1. Disconnect and isolate the battery negative cable.
2. Remove the attaching bolts and strap.

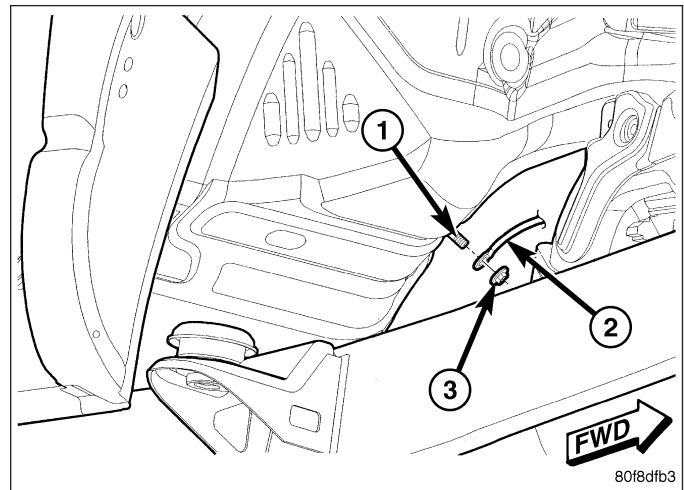


ENGINE TO HEAT SHIELD - 3.7L ENGINE

1. Disconnect and isolate the battery negative cable.
2. Remove the attaching bolts (2) from the cylinder heads.

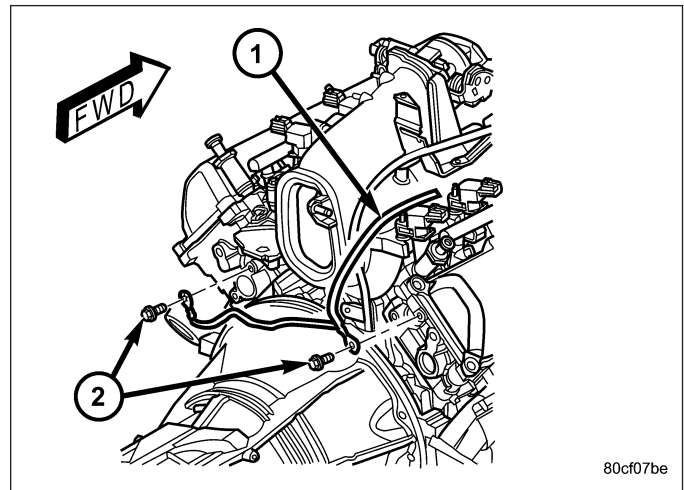


3. Remove nut (3) from heat shield (1) and remove strap (2).

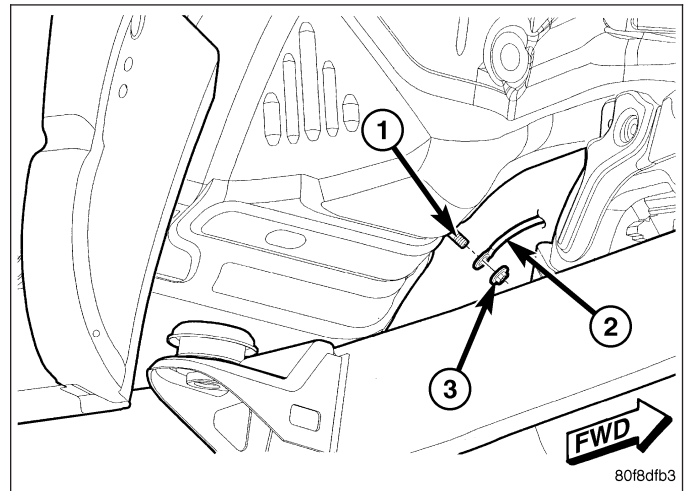


ENGINE TO HEAT SHIELD - 4.7L AND 5.7L ENGINE

1. Disconnect and isolate the battery negative cable.
2. Remove the attaching bolts (2) from the cylinder heads.



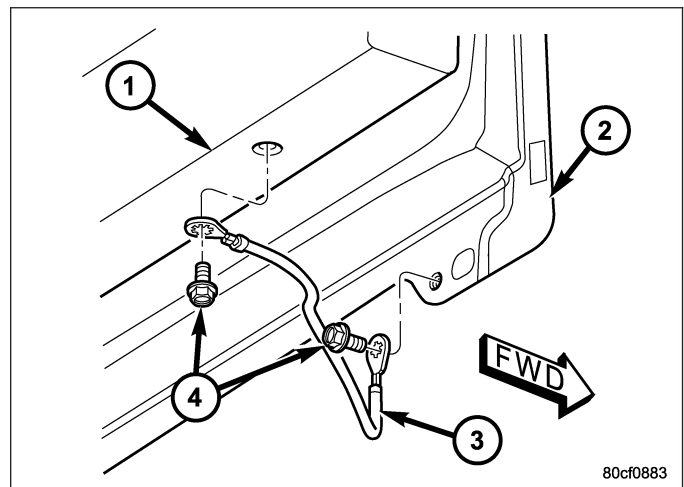
3. Remove nut (3) from heat shield (1) and remove strap (2).



INSTALLATION

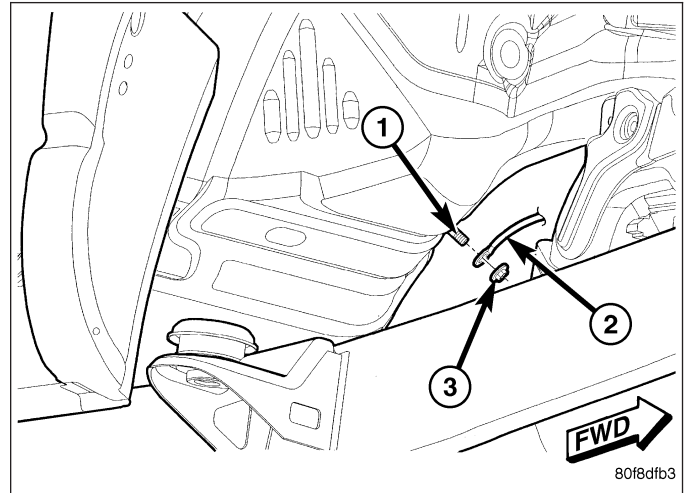
BED TO CAB

1. Install the ground strap (3) and mounting fasteners (4).
2. Tighten mounting fasteners.
3. Connect the battery negative cable.

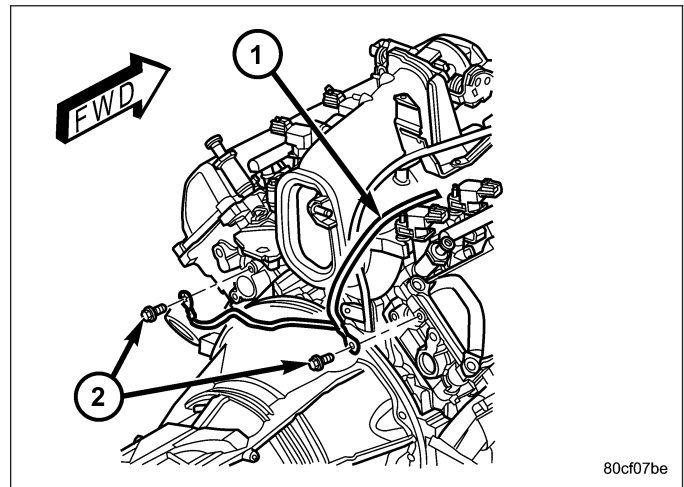


ENGINE TO HEAT SHIELD

1. Install the mounting fastener (3) and ground strap (2) to the heat shield (1).
2. Tighten mounting fastener.



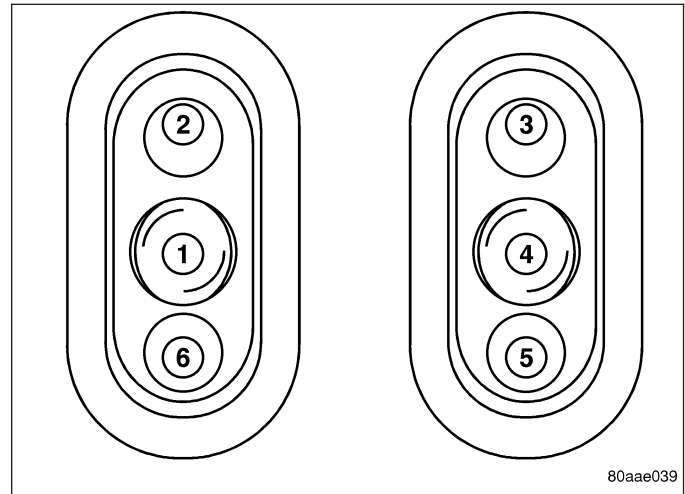
3. Install the retaining bolt and ground strap to the engine cylinder heads.
4. Tighten the retaining bolts.
5. Connect the battery negative cable.



SWITCH - REMOTE RADIO

DESCRIPTION

Two rocker-type switches (if equipped) are mounted on the back (instrument panel side) of the steering wheel spokes. The switch on the left spoke is the seek switch and has seek up, seek down, and preset station advance functions. The switch on the right spoke is the volume control switch and has volume up, and volume down functions. The switch on the right spoke also includes a "mode" control that allows the driver to sequentially select AM radio, FM radio, cassette player, CD player or CD changer (if equipped).



OPERATION

The six switches in the two remote radio switch units are normally open, resistor multiplexed momentary switches that are hard wired to the Totally Integrated Power Module (TIPM) through the clockspring. The TIPM sends a five volt reference signal to both switch units on one circuit, and senses the status of all of the switches by reading the voltage drop on a second circuit.

When the TIPM senses an input (voltage drop) from any one of the remote radio switches, it sends the proper switch status messages on the Programmable Communication Interface (PCI) data bus network to the radio receiver. The electronic circuitry within the radio receiver is programmed to respond to these remote radio switch status messages by adjusting the radio settings as requested. For diagnosis of the TIPM or the PCI data bus, the use of a scan tool and the proper Diagnostic Procedures information is recommended.

DIAGNOSIS AND TESTING

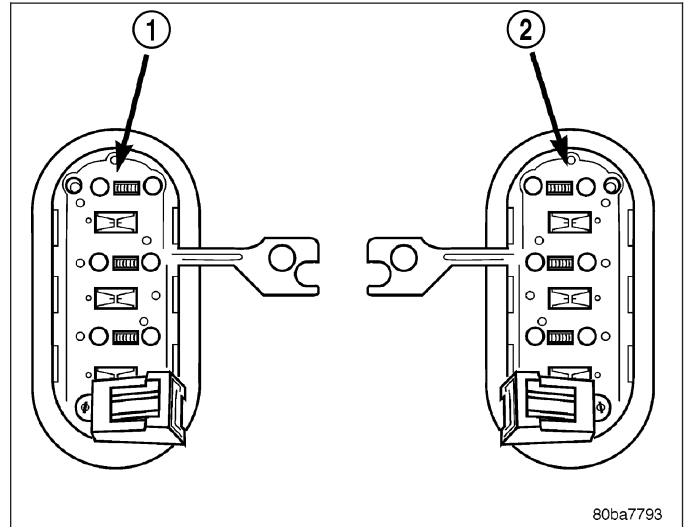
REMOTE SWITCHES

Any diagnosis of the Audio system should begin with the use of scan tool. For information on the use of the scan tool, refer to the appropriate Diagnostic Service information.

For complete circuit diagrams, refer to the appropriate wiring information.

WARNING: Disable the airbag system before attempting any steering wheel, steering column, seat belt tensioner, side airbag, or instrument panel component diagnosis or service. Disconnect and isolate the battery negative (ground) cable, then wait two minutes for the airbag system capacitor to discharge before performing further diagnosis or service. This is the only sure way to disable the airbag system. Failure to take the proper precautions could result in accidental airbag deployment and possible personal injury.

1. Disconnect and isolate the battery negative cable.
2. Remove the remote radio switch(es) from the steering wheel (Refer to 8 - ELECTRICAL/AUDIO/REMOTE SWITCHES - REMOVAL).
3. Use an ohmmeter to check the switch resistances as shown in the Remote Radio Switch Test chart. If the remote radio switch resistances check OK, go to Step 4. If not OK, replace the faulty switch.



REMOTE RADIO SWITCH TEST TABLE

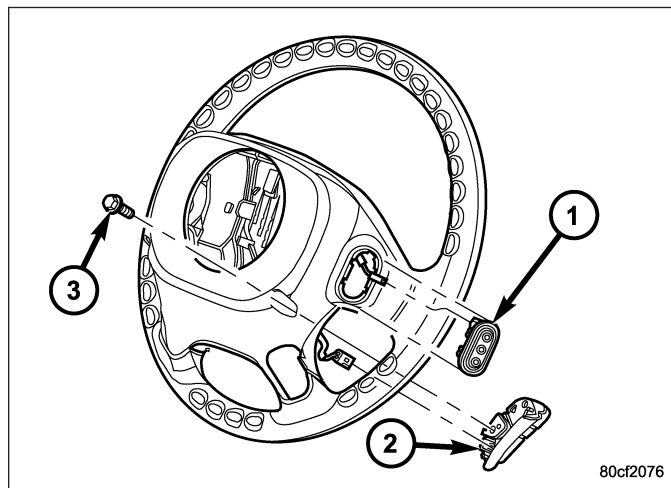
Switch	Switch Position	Resistance
Right (White)	Volume Up	1.210 Kilohms ± 1%
Right (White)	Volume Down	3.010 Kilohms ± 1%
Right (White)	Mode Advance	0.0511 Kilohms ± 1%
Left (Black)	Seek Up	0.261 Kilohms ± 1%
Left (Black)	Seek Down	0.681 Kilohms ± 1%
Left (Black)	Pre-Set Station Advance	0.162 Kilohms ± 1%

4. Connect the battery negative cable. Turn the ignition switch to the On position. Check for 5 volts at the radio control mux circuit cavities of the steering wheel wire harness connectors for both remote radio switches. If OK, go to Step 5. If not OK, repair the open or shorted radio control mux circuit to the Totally Integrated Power Module (TIPM) as required.
5. Disconnect and isolate the battery negative cable. Disconnect the 22-way instrument panel wire harness connector from the TIPM. Check for continuity between the remote radio switch ground circuit cavities of the steering wheel wire harness connectors for both remote radio switches and a good ground. There should be no continuity. If OK, go to Step 6. If not OK, repair the shorted remote radio switch ground circuit to the TIPM as required.
6. Check for continuity between the remote radio switch ground circuit cavities of the steering wheel wire harness connectors for both remote radio switches and the 22-way instrument panel wire harness connector for the TIPM. There should be continuity. If OK, refer to the proper Diagnostic Procedures manual to test the TIPM and the PCI data bus. If not OK, repair the open remote radio switch ground circuit as required.

REMOVAL

WARNING: Disable the airbag system before attempting any steering wheel, steering column, seat belt tensioner, side airbag, or instrument panel component diagnosis or service. Disconnect and isolate the battery negative (ground) cable, then wait two minutes for the airbag system capacitor to discharge before performing further diagnosis or service. This is the only sure way to disable the airbag system. Failure to take the proper precautions could result in accidental airbag deployment and possible personal injury.

1. Disconnect and isolate the battery negative cable.
2. Remove the driver airbag (Refer to 8 - ELECTRICAL/RESTRAINTS/DRIVER AIRBAG - REMOVAL).
3. Remove the speed control switches (2) (Refer to 8 - ELECTRICAL/SPEED CONTROL/SWITCH - REMOVAL).
4. Unplug the wire harness connector from the remote radio switch (1).
5. Depress the tabs on each side of each switch and push the switch through the rear steering wheel cover.



INSTALLATION

WARNING: Disable the airbag system before attempting any steering wheel, steering column, seat belt tensioner, side airbag, or instrument panel component diagnosis or service. Disconnect and isolate the battery negative (ground) cable, then wait two minutes for the airbag system capacitor to discharge before performing further diagnosis or service. This is the only sure way to disable the airbag system. Failure to take the proper precautions could result in accidental airbag deployment and possible personal injury.

1. Install remote radio switch (1) to the steering wheel.
2. Connect the wire harness to the remote radio switch.
3. Install the speed control switches (2) (Refer to 8 - ELECTRICAL/SPEED CONTROL/SWITCH - INSTALLATION).
4. Install the driver airbag (Refer to 8 - ELECTRICAL/RESTRAINTS/DRIVER AIRBAG - INSTALLATION).
5. Connect the battery negative cable.

