

AUDIO/VIDEO

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AUDIO - ELECTRICAL DIAGNOSTICS

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AUDIO - ELECTRICAL DIAGNOSTICS

DIAGNOSIS AND TESTING

NO ANTENNA CONNECTION

For the Audio system circuit diagram (Refer to 8 - ELECTRICAL/AUDIO - SCHEMATICS AND DIAGRAMS).

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

- **When Monitored:**
With the ignition on and the radio in seek up/down mode.
- **Set Condition:**
With the radio in seek or scan mode for two minutes and the radio does not detect an antenna connection or does not receive a radio station signal.

Possible Causes
BAD ANTENNA CONNECTION ANTENNA RADIO

1. BAD ANTENNA CONNECTION

Turn the ignition off.

Disconnect the Radio Antenna connector.

Inspect the Radio Antenna connection.

Was the Antenna connection clean and tight?

Yes >> Go To 2

No >> Repair Antenna connection as needed.
Perform BODY VERIFICATION TEST - VER 1.

2. TEST 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 BODY VERIFICATION TEST - VER 1.

NO ANTENNA CONNECTION (CONTINUED)

3. RADIO

NOTE: NOTE: Reconnect all previously disconnected components.

Turn the ignition and Radio on.

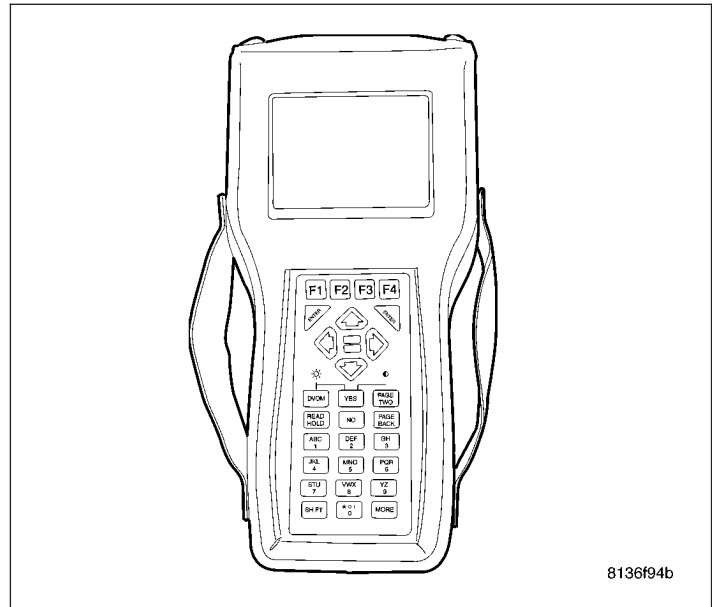
NOTE: NOTE: Move vehicle outside approximately 30ft from any structure.

With the DRBIII®, erase the audio DTC's, put the radio in seek up and seek down mode for approximately 2 minutes before proceeding.

With the DRBIII®, read the audio DTC's.

Did this DTC reset?

- Yes** >> Replace the Radio.
Perform BODY VERIFICATION TEST - VER 1.
- No** >> Test Complete.



POWER AMP SHUTDOWN - BASE RADIO

For the Audio system circuit diagram (Refer to 8 - ELECTRICAL/AUDIO - SCHEMATICS AND DIAGRAMS).

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

- **When Monitored:**
Ignition in RUN and IOD fuse installed.
- **Set Condition:**
The radio has sensed a short on the output for more than 10 seconds.

Possible Causes

FRONT SHORTED SPEAKER
 REAR SHORTED SPEAKER
 (+) CIRCUIT SHORTED TO GROUND
 SPEAKER (+) & (-) CIRCUITS SHORTED TOGETHER
 (-) CIRCUIT SHORTED TO GROUND

1. DETERMINE FAULT

Turn the ignition on.

Turn the Radio on.

With the DRBIII®, erase the audio DTC's.

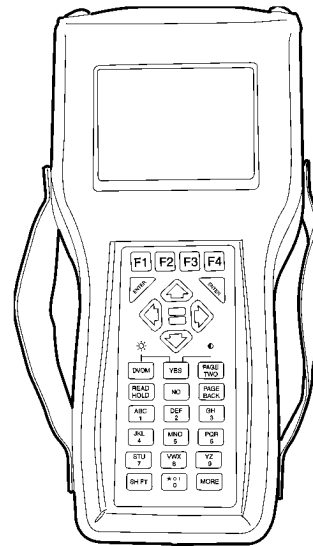
Cycle the ignition switch from off to on and wait 10 seconds.

With the DRBIII®, read the audio DTC's.

Does the DRBIII® display POWER AMP SHUT-DOWN?

Yes >> Go To 2

No >> Refer to the wiring diagrams located in the service information to help isolate a possible intermittent short.
 Perform BODY VERIFICATION TEST - VER 1.



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POWER AMP SHUTDOWN - BASE RADIO (CONTINUED)**2. FRONT SHORTED SPEAKER**

Turn the ignition off.

NOTE: NOTE: Perform this procedure after disconnecting each front speaker connector.

Disconnect each front speaker harness connector one at a time.

Turn the ignition on.

Turn the radio on.

With the DRBIII®, erase the audio DTCs.

Cycle the ignition switch from off to on and wait 10 seconds.

With the DRBIII®, read DTC's.

Does the DRBIII® display POWER AMP SHUTDOWN with all the speakers disconnected?

Yes >> Go To 3

No >> Replace the Speaker that when disconnected the DTC did not reset.
Perform BODY VERIFICATION TEST - VER 1.

3. REAR SHORTED SPEAKER

Turn the ignition off.

NOTE: NOTE: Perform this procedure after disconnecting each rear speaker connector.

Disconnect each rear speaker harness connector one at a time.

Turn the ignition on.

Turn the radio on.

With the DRBIII®, erase the audio DTCs.

Cycle the ignition switch from off to on and wait 10 seconds.

With the DRBIII®, read DTC's.

Does the DRBIII® display POWER AMP SHUTDOWN with all the rear speakers disconnected?

Yes >> Go To 4

No >> Replace the Speaker that when disconnected the DTC did not reset.
Perform BODY VERIFICATION TEST - VER 1.

4. (+) CIRCUIT SHORTED TO GROUND

Turn the ignition off.

Disconnect each front and rear speaker harness connector.

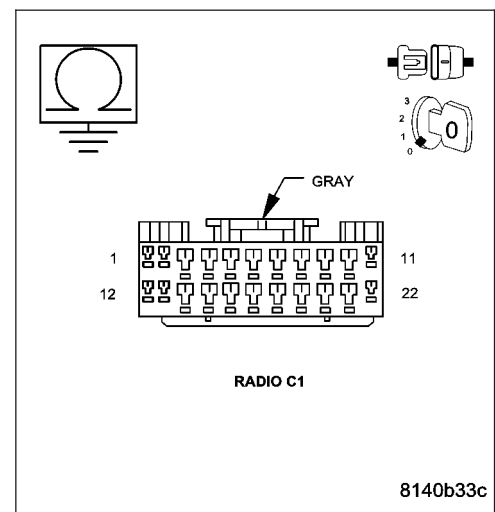
Disconnect the Radio harness connector.

Measure the resistance between ground and each speaker (+) circuit.

Is the resistance below 1000.0 (1K) ohms?

Yes >> Repair the speaker (+) circuit for a short to ground.
Perform BODY VERIFICATION TEST - VER 1.

No >> Go To 5



POWER AMP SHUTDOWN - BASE RADIO (CONTINUED)**5. (-) CIRCUIT SHORTED TO GROUND**

Turn the ignition off.

Disconnect each front and rear speaker harness connector.

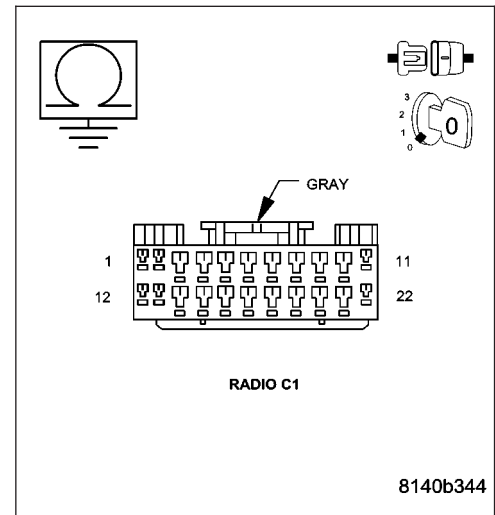
Disconnect the Radio harness connector.

Measure the resistance between ground and each speaker (-) circuit.

Is the resistance below 1000.0 (1K) ohms?

Yes >> Repair the speaker (-) circuit for a short to ground.
Perform BODY VERIFICATION TEST - VER 1.

No >> Go To 6

**6. SPEAKER (+) & (-) CIRCUITS SHORTED TOGETHER**

Turn the ignition off.

Disconnect each front and rear speaker harness connector.

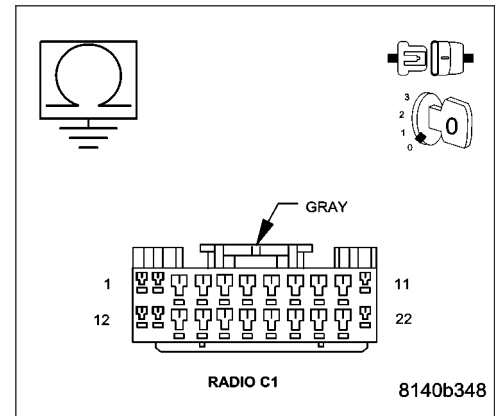
Disconnect the Radio harness connector.

Measure the resistance between each speaker (+) circuit and each speaker (-) circuit.

Is the resistance below 1000.0 (1K) ohms for any of the measurements?

Yes >> Repair the speaker circuits shorted together.
Perform BODY VERIFICATION TEST - VER 1.

No >> Go To 7

**7. SPEAKER SECTION OF RADIO**

If there are no possible causes remaining, view repair.

Repair

Replace the Radio.

Perform BODY VERIFICATION TEST - VER 1.

POWER AMP SHUTDOWN - PREMIUM

For the Audio system circuit diagram (Refer to 8 - ELECTRICAL/AUDIO - SCHEMATICS AND DIAGRAMS).

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

- **When Monitored:**
Ignition in RUN and IOD fuse installed.
- **Set Condition:**
The radio has sensed a short on the output for more than 10 seconds.

Possible Causes
AMPLIFIER (+) CIRCUIT SHORTED TO GROUND (-) CIRCUIT SHORTED TO GROUND SPEAKER (+) & (-) CIRCUITS SHORTED TOGETHER

1. DETERMINE FAULT

Turn the ignition on.

Turn the Radio on.

With the DRBIII®, erase the audio DTC's.

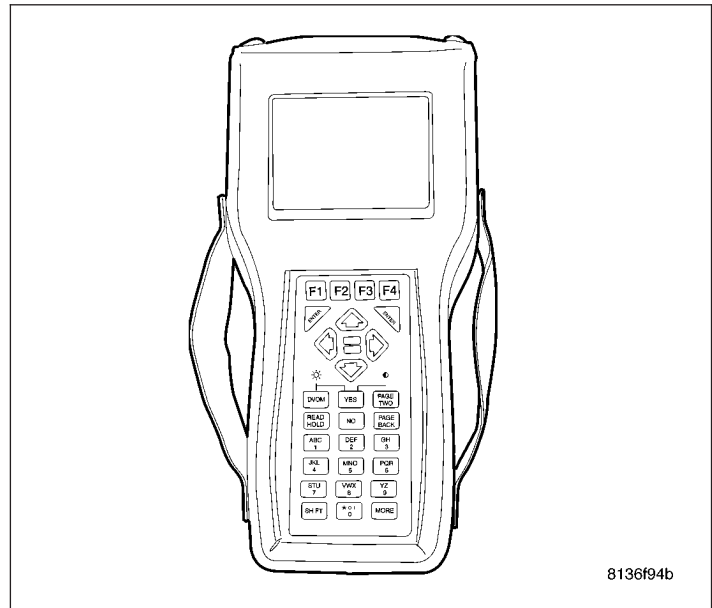
Cycle the ignition switch from off to on and wait 10 seconds.

With the DRBIII®, read the audio DTC's.

Does the DRBIII® display POWER AMP SHUTDOWN?

Yes >> Go To 2

No >> Refer to the wiring diagrams located in the service information to help isolate a possible intermittent short.
Perform BODY VERIFICATION TEST - VER 1.



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2. SPEAKER SECTION OF POWER AMPLIFIER

Turn the ignition off.

Disconnect the Power Amplifier harness connector.

Turn the ignition on.

Turn the radio on.

With the DRBIII®, erase the audio DTCs.

Cycle the ignition switch from off to on and wait 10 seconds.

With the DRBIII®, read DTC's.

Does the DRBIII® display POWER AMP SHUTDOWN?

Yes >> Go To 3

No >> Replace the Power Amplifier in accordance with the service information.
Perform BODY VERIFICATION TEST - VER 1.

POWER AMP SHUTDOWN - PREMIUM (CONTINUED)**3. (+) CIRCUIT SHORTED TO GROUND**

Turn the ignition off.

Disconnect the Power Amplifier harness connector.

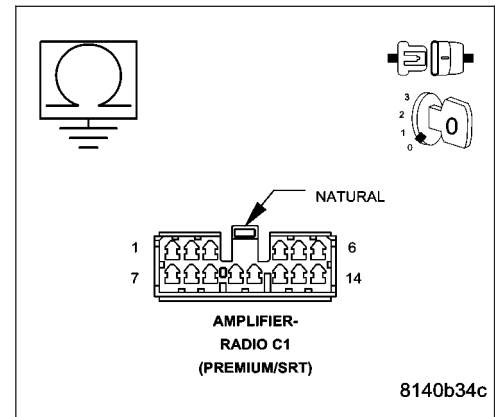
Disconnect the Radio harness connector.

Measure the resistance between ground and any speaker (+) circuit.

Is the resistance below 1000.0 (1K) ohms?

Yes >> Repair the speaker (+) circuit for a short to ground.
Perform BODY VERIFICATION TEST - VER 1.

No >> Go To 4

**4. (-) CIRCUIT SHORTED TO GROUND**

Turn the ignition off.

Disconnect the Power Amplifier harness connector.

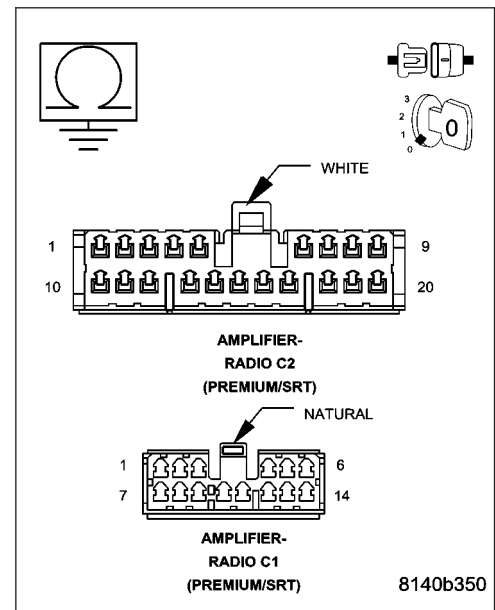
Disconnect the Radio harness connector.

Measure the resistance between ground and any speaker (-) circuit.

Is the resistance below 1000.0 (1K) ohms?

Yes >> Repair the speaker (-) circuit for a short to ground.
Perform BODY VERIFICATION TEST - VER 1.

No >> Go To 5



POWER AMP SHUTDOWN - PREMIUM (CONTINUED)**5. SPEAKER (+) & (-) CIRCUITS SHORTED TOGETHER**

Turn the ignition off.

Disconnect the Power Amplifier harness connector.

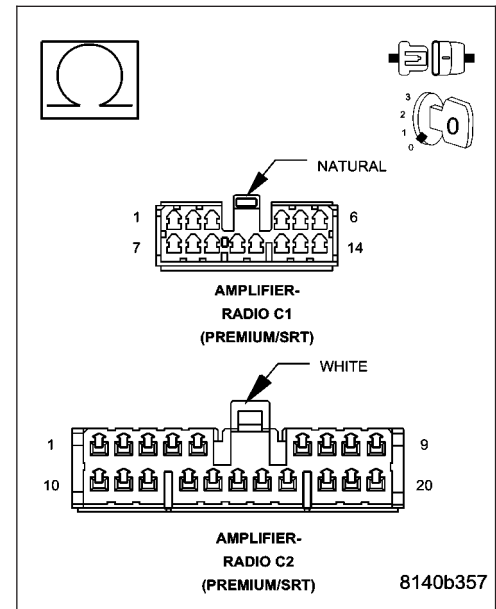
Disconnect the Radio harness connector.

Measure the resistance between each speaker (+) circuit and each speaker (-) circuit.

Is the resistance below 1000.0 (1K) ohms for any of the measurements?

Yes >> Repair the speaker circuits shorted together.
Perform BODY VERIFICATION TEST - VER 1.

No >> Go To 6

**6. SPEAKER SECTION OF RADIO**

If there are no possible causes remaining, view repair.

Repair

Replace the Radio.

Perform BODY VERIFICATION TEST - VER 1.

REMOTE RADIO SWITCH CIRCUIT HIGH

For the Audio system circuit diagram (Refer to 8 - ELECTRICAL/AUDIO - SCHEMATICS AND DIAGRAMS).

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

- **When Monitored:**
With the ignition on.
- **Set Condition:**
Remote radio control MUX circuit is open (above 5.0 volts).

Possible Causes

CLOCKSPRING SHORTED TO VOLTAGE
RADIO CONTROL MUX CIRCUIT SHORTED TO VOLTAGE
CLOCKSPRING OPEN
GROUND CIRCUIT OPEN
OPEN RADIO CONTROL MUX CIRCUIT
INSTRUMENT CLUSTER

1. DETERMINE FAULT

Turn the ignition on.

NOTE: NOTE: Make sure the DRB can communicate with the Radio before continuing.

With the DRBIII®, erase the Instrument Cluster DTC's.

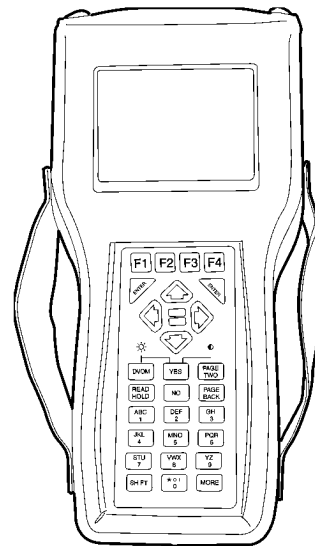
Cycle the ignition switch from off to on and wait 1 minute.

With the DRBIII®, read the DTC's.

Did this DTC reset?

Yes >> Go To 2

No >> Refer to the wiring diagrams located in the service information to help isolate a possible intermittent open or short.
Perform BODY VERIFICATION TEST - VER 1.



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REMOTE RADIO SWITCH CIRCUIT HIGH (CONTINUED)

2. CHECK VOLTAGE AT SWITCH

WARNING: WARNING: To avoid personal injury or death, turn the ignition off, disconnect the battery and wait 2 minutes before proceeding.

CAUTION: CAUTION: Do not place an intact undeployed airbag module face down on a hard surface, the airbag module will propel into the air if accidentally deployed.

Remove the Driver Airbag Module.

Disconnect either remote radio switch harness connector.

Turn the ignition on, reconnect the battery.

Measure the voltage between the Radio Control MUX circuit and the ground circuit at the remote radio switch connector.

Is the voltage above 3.6 volts?

Yes >> Go To 3

No >> Go To 5

3. CLOCKSPrING SHORTED TO VOLTAGE

Turn the ignition off.

Disconnect the Clockspring C1 harness connector.

Turn the ignition on.

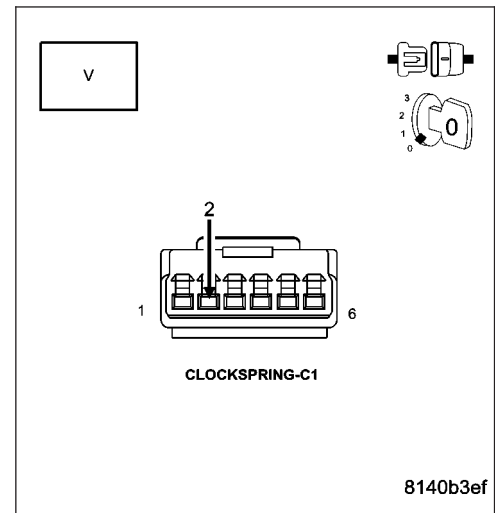
Measure the voltage of the Radio Control MUX circuit at the clockspring C1 harness connector.

Is the voltage above 5.0 volts?

Yes >> Go To 4

No >> Repair the radio control MUX circuit for a short to voltage between the clockspring and the splice. If OK, replace the Clockspring.

Perform BODY VERIFICATION TEST - VER 1.



4. RADIO CONTROL MUX CIRCUIT SHORTED TO VOLTAGE

Turn the ignition off.

Disconnect the Clockspring C1 harness connector.

Disconnect the Instrument Cluster harness connectors.

Turn the ignition on.

Measure the voltage of the Radio Control MUX circuit at the clockspring C1 harness connector.

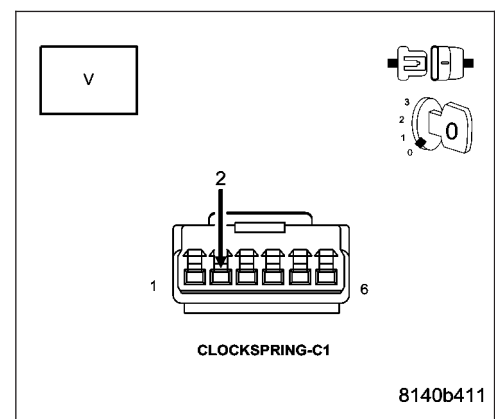
Is the voltage above 5.0 volts?

Yes >> Repair the Radio Control MUX circuit for a short to voltage between the Instrument Cluster and the Clockspring.

Perform BODY VERIFICATION TEST - VER 1.

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

Perform BODY VERIFICATION TEST - VER 1.



REMOTE RADIO SWITCH CIRCUIT HIGH (CONTINUED)**5. CLOCKSPrING OPEN**

Turn the ignition off.

Disconnect the Clockspring C1 harness connector.

Turn the ignition on.

Turn the Radio on.

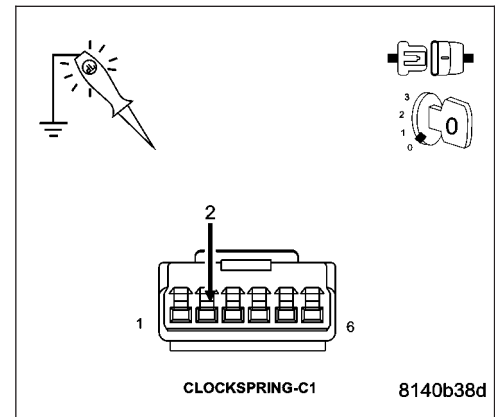
Connect a jumper wire between the Radio Control MUX circuit and the Ground circuit.

Did the radio change stations?

Yes >> Repair the ground circuit or the radio control MUX circuit for an open between the clockspring and the splice. If OK, replace the Clockspring.

Perform BODY VERIFICATION TEST - VER 1.

No >> Go To 6

**6. GROUND CIRCUIT OPEN**

Turn the ignition off.

Disconnect the Clockspring C1 harness connector.

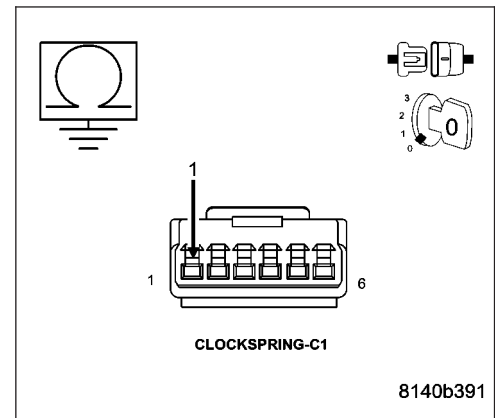
Measure the resistance between ground and the Ground circuit at the Clockspring C1 harness connector.

Is the resistance below 5.0 ohms?

Yes >> Go To 7

No >> Repair the Ground circuit for an open.

Perform BODY VERIFICATION TEST - VER 1.

**7. OPEN RADIO CONTROL MUX CIRCUIT**

Turn the ignition off.

Disconnect the Clockspring C1 harness connector.

Disconnect the Instrument Cluster harness connectors.

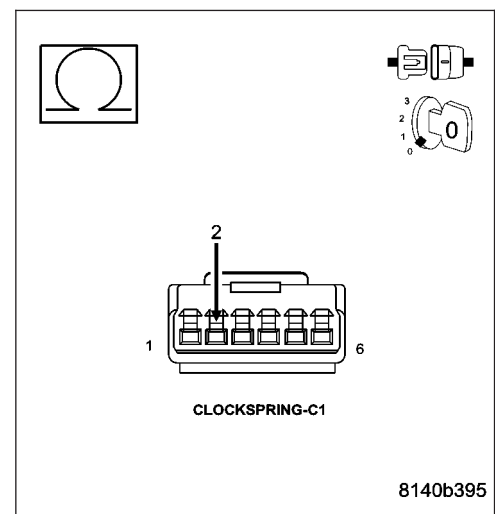
Measure the resistance of the Radio Control MUX circuit between the Instrument Cluster connector and the Clockspring C1 connector.

Is the resistance below 5.0 ohms?

Yes >> Go To 8

No >> Repair the Radio Control MUX circuit for an open between the clockspring and the Instrument Cluster.

Perform BODY VERIFICATION TEST - VER 1.



REMOTE RADIO SWITCH CIRCUIT HIGH (CONTINUED)

8. INSTRUMENT CLUSTER

If there are no possible causes remaining, view repair.

Repair

Replace the Instrument Cluster in accordance with the service information.
Perform BODY VERIFICATION TEST - VER 1.

REMOTE RADIO SWITCH CIRCUIT STUCK (CONTINUED)**2. LEFT REMOTE RADIO SWITCH STUCK OR SHORTED TO GROUND**

WARNING: WARNING: To avoid personal injury or death, turn the ignition off, disconnect the battery and wait 2 minutes before proceeding.

CAUTION: CAUTION: Do not place an intact undeployed airbag module face down on a hard surface, the airbag module will propel into the air if accidentally deployed.

Remove the Driver Airbag Module.

Disconnect the Left Remote Radio Switch harness connector.

Turn the ignition on, reconnect the battery.

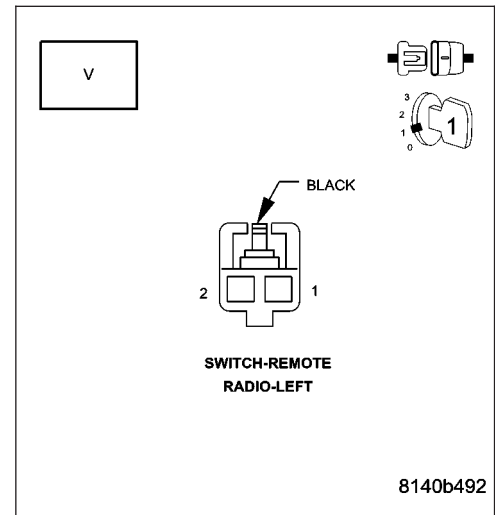
With the DRB, enter Instrument Cluster then Sensors and monitor the Remote Radio SW voltage.

Is the voltage above 3.2 volts?

Yes >> Replace the Left Remote Radio Switch.

Perform BODY VERIFICATION TEST - VER 1.

No >> Go To 3

**3. RIGHT REMOTE RADIO SWITCH STUCK OR SHORTED TO GROUND**

WARNING: WARNING: To avoid personal injury or death, turn the ignition off, disconnect the battery and wait 2 minutes before proceeding.

CAUTION: CAUTION: Do not place an intact undeployed airbag module face down on a hard surface, the airbag module will propel into the air if accidentally deployed.

Remove the Driver Airbag Module.

Disconnect the Right Remote Radio Switch harness connector.

Turn the ignition on, reconnect the battery.

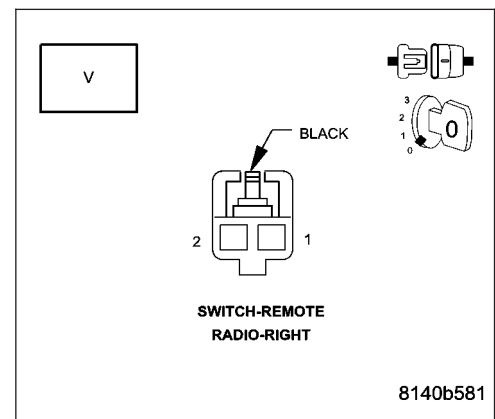
With the DRB, enter Instrument Cluster then Sensors and monitor the Remote Radio SW voltage.

Is the voltage above 3.2 volts?

Yes >> Replace the Right Remote Radio Switch.

Perform BODY VERIFICATION TEST - VER 1.

No >> Go To 4

**4. CHECK THE CLOCKSPrING**

Turn the ignition off.

Disconnect the Clockspring C4 harness connector.

Turn the ignition on.

With the DRB, enter Instrument Cluster then Sensors and monitor the Remote Radio SW voltage.

Is the voltage above 3.2 volts?

Yes >> Go To 5

No >> Go To 6

REMOTE RADIO SWITCH CIRCUIT STUCK (CONTINUED)**5. RADIO CONTROL MUX CIRCUIT SHORTED TO GROUND AT THE SWITCH**

Turn the ignition off.

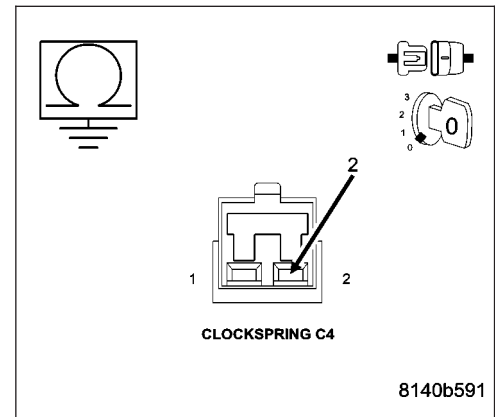
Disconnect the Clockspring C4 harness connector.

NOTE: NOTE: Ensure both remote radio switches are disconnected.

Measure the resistance between ground and the Radio Control MUX circuit at the Clockspring C4 harness connector.

Is the resistance below 5.0 ohms?

- Yes** >> Repair the Radio Control MUX circuit for a short to ground between the clockspring and the remote radio switches.
Perform BODY VERIFICATION TEST - VER 1.
- No** >> Repair the Radio Control MUX circuit for a short to the Ground circuit between the clockspring and the remote radio switches.
Perform BODY VERIFICATION TEST - VER 1.

**6. CLOCKSPRING SHORTED TO GROUND**

Turn the ignition off.

Disconnect the Clockspring C1 harness connector.

Turn the ignition on.

With the DRB, enter Instrument Cluster then Sensors and monitor the Remote Radio SW voltage.

Is the voltage above 3.2 volts?

- Yes** >> Replace the Clockspring in accordance with the service information.
Perform BODY VERIFICATION TEST - VER 1.
- No** >> Go To 7

7. RADIO CONTROL MUX CIRCUIT SHORTED TO GROUND

Turn the ignition off.

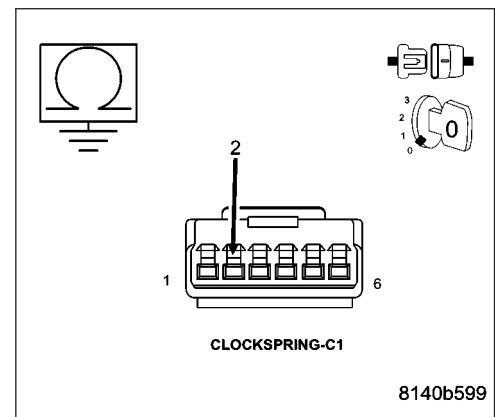
Disconnect the Clockspring C1 harness connector.

Disconnect the Instrument Cluster harness connectors.

Measure the resistance between ground and the Radio Control MUX circuit.

Is the resistance below 5.0 ohms?

- Yes** >> Repair the Radio Control MUX circuit for a short to ground between the clockspring and the Instrument Cluster.
Perform BODY VERIFICATION TEST - VER 1.
- No** >> Replace the Instrument Cluster in accordance with the service information.
Perform BODY VERIFICATION TEST - VER 1.



PCI FAILURE

For the Audio system circuit diagram (Refer to 8 - ELECTRICAL/AUDIO - SCHEMATICS AND DIAGRAMS).

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

- **When Monitored:**
When the DRBIII® performs the PCI Amplifier Test.
- **Set Condition:**
When the Amplifier detects a fault with the PCI circuitry.

Possible Causes
AMPLIFIER

1. AMPLIFIER

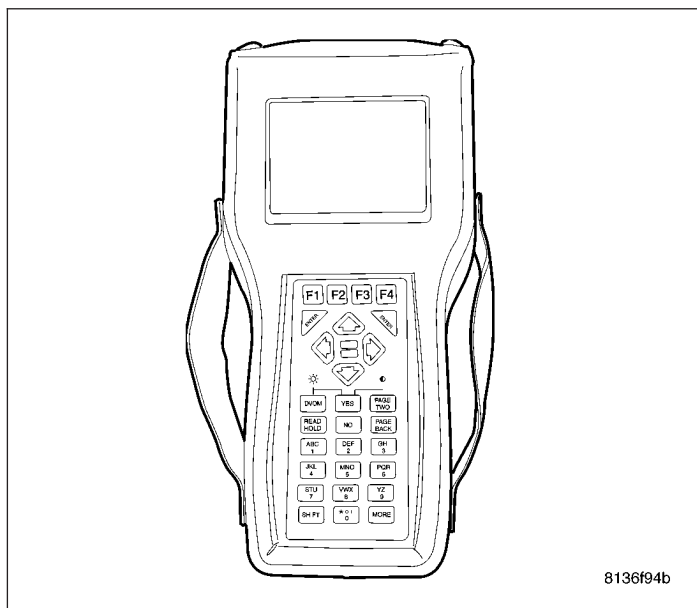
NOTE: NOTE: The fault condition must be present to continue diagnosis. Use the DRBIII® to perform the Amplifier pretest to verify the fault condition is present before continuing diagnosis.

Turn the ignition on.

With the DRBIII®, perform the Amplifier pretest.

Is the fault condition present?

- Yes** >> Replace the Amplifier in accordance with the Service Information.
Perform BODY VERIFICATION TEST - VER 1.
- No** >> Refer to the wiring diagrams in the service information to help isolate a possible intermittent condition.
Perform BODY VERIFICATION TEST - VER 1.



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SOFTWARE CHECKSUM FAILURE

For the Audio system circuit diagram (Refer to 8 - ELECTRICAL/AUDIO - SCHEMATICS AND DIAGRAMS).

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

- **When Monitored:**
When the DRBIII® performs the PCI Amplifier Test.
- **Set Condition:**
When the Amplifier detects a fault with the software checksum.

Possible Causes
AMPLIFIER

1. AMPLIFIER

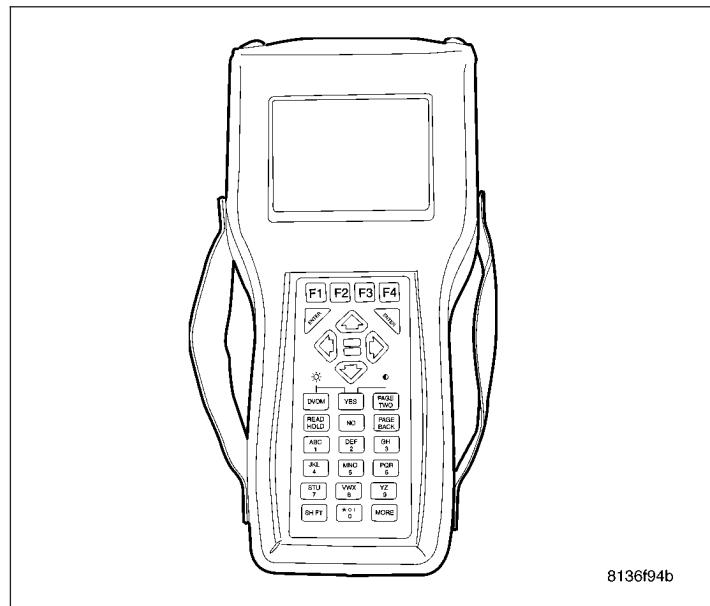
NOTE: NOTE: The fault condition must be present to continue diagnosis. Use the DRBIII® to perform the Amplifier pretest to verify the fault condition is present before continuing diagnosis.

Turn the ignition on.

With the DRBIII®, perform the Amplifier pretest.

Is the fault condition present?

- Yes** >> Replace the Amplifier in accordance with the Service Information.
Perform BODY VERIFICATION TEST - VER 1.
- No** >> Refer to the wiring diagrams in the service information to help isolate a possible intermittent condition.
Perform BODY VERIFICATION TEST - VER 1.



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RIGHT FRONT I/P CHANNEL SHORT ACROSS

For the Audio system circuit diagram (Refer to 8 - ELECTRICAL/AUDIO - SCHEMATICS AND DIAGRAMS).

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

- **When Monitored:**
When the DRBIII® performs the Speaker Output test.
- **Set Condition:**
When the Right Front I/P Speaker circuit is shorted.

Possible Causes
RIGHT FRONT I/P CHANNEL SHORT ACROSS
RIGHT FROM IP SPEAKER
RIGHT FRONT I/P SPEAKER CIRCUITS SHORTED
AMPLIFIER

1. RIGHT FRONT I/P CHANNEL SHORT ACROSS

NOTE: NOTE: The fault condition must be present to continue diagnosis. Use the DRBIII® to perform the Amplifier pretest to verify the fault condition is present before continuing diagnosis.

Turn the ignition off.

Access and disconnect the Right Front I/P Speaker harness connector.

Turn the ignition on.

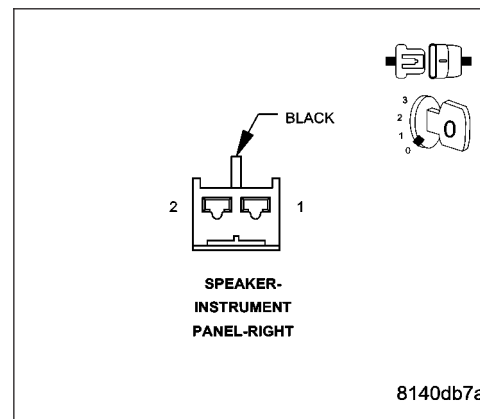
With the DRBIII®, perform the Amplifier pretest.

Is the fault condition still present?

Yes >> Go To 2

No >> Replace the Right Front I/P Speaker in accordance with the Service Information.

Perform BODY VERIFICATION TEST - VER 1.



2. RIGHT FRONT I/P SPEAKER CIRCUITS SHORTED

Turn the ignition off.

Access and disconnect the Right Front I/P Speaker harness connector.

Access and disconnect the Amplifier C2 harness connector.

Measure the resistance of the Right Front I/P Speaker (+) and (-) circuits.

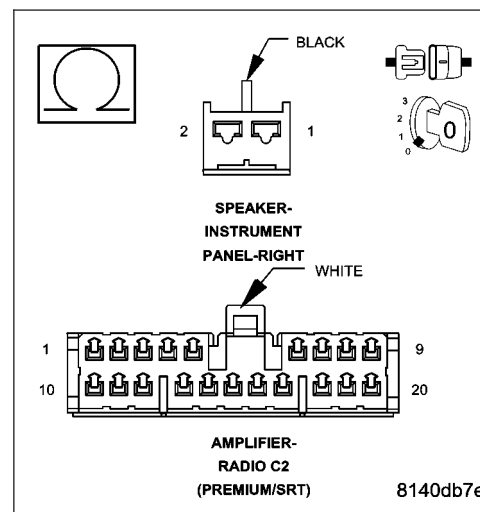
Is the resistance below 5.0 ohms?

Yes >> Repair the Right Front I/P Speaker (+) and (-) circuits for a short together.

Perform BODY VERIFICATION TEST - VER 1.

No >> Replace the Amplifier in accordance with the Service Information.

Perform BODY VERIFICATION TEST - VER 1.



RIGHT FRONT DOOR CHANNEL SHORT ACROSS

For the Audio system circuit diagram (Refer to 8 - ELECTRICAL/AUDIO - SCHEMATICS AND DIAGRAMS).

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

- **When Monitored:**
When the DRBIII® performs the Speaker Output test.
- **Set Condition:**
When the Right Front Door circuit is shorted.

Possible Causes
RIGHT FRONT DOOR CHANNEL SHORT ACROSS
RIGHT FRONT DOOR SPEAKER CIRCUITS SHORTED
RIGHT FRONT DOOR SPEAKER
AMPLIFIER

1. RIGHT FRONT DOOR CHANNEL SHORT ACROSS

NOTE: NOTE: The fault condition must be present to continue diagnosis. Use the DRBIII® to perform the Amplifier pretest to verify the fault condition is present before continuing diagnosis.

Turn the ignition off.

Access and disconnect the Right Front Door Speaker harness connector.

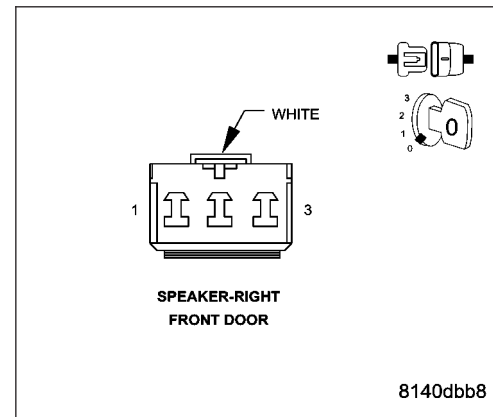
Turn the ignition on.

With the DRBIII®, perform the Amplifier pretest.

Is the fault condition still present?

Yes >> Go To 2

No >> Replace the Right Front Door Speaker in accordance with the Service Information.
Perform BODY VERIFICATION TEST - VER 1.



2. RIGHT FRONT DOOR SPEAKER CIRCUITS SHORTED

Turn the ignition off.

Access and disconnect the Right Front Door Speaker harness connector.

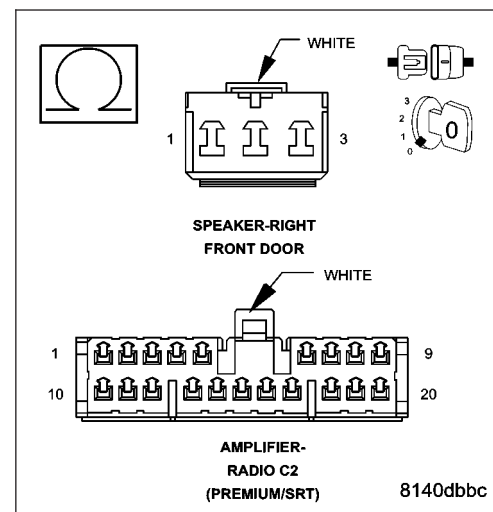
Access and disconnect the Amplifier C2 harness connector.

Measure the resistance of the Right Front Door Speaker (+) and (-) circuits.

Is the resistance below 5.0 ohms?

Yes >> Repair the Right Front Door Speaker (+) and (-) circuits for a short together.
Perform BODY VERIFICATION TEST - VER 1.

No >> Replace the Amplifier in accordance with the Service Information.
Perform BODY VERIFICATION TEST - VER 1.



LEFT REAR CHANNEL SHORT ACROSS

For the Audio system circuit diagram (Refer to 8 - ELECTRICAL/AUDIO - SCHEMATICS AND DIAGRAMS).

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

- **When Monitored:**
When the DRBIII® performs the Speaker Output test.
- **Set Condition:**
When the Left Rear Speaker circuit is shorted.

Possible Causes
LEFT REAR CHANNEL SHORT ACROSS
LEFT REAR SPEAKER CIRCUITS SHORTED
AMPLIFIER

1. LEFT REAR CHANNEL SHORT ACROSS

NOTE: NOTE: The fault condition must be present to continue diagnosis. Use the DRBIII® to perform the Amplifier pretest to verify the fault condition is present before continuing diagnosis.

Turn the ignition off.

Access and disconnect the Left Rear Speaker harness connector.

Turn the ignition on.

With the DRBIII®, perform the Amplifier pretest.

Is the fault condition still present?

Yes >> Go To 2

No >> Replace the Left Rear Speaker in accordance with the Service Information.
Perform BODY VERIFICATION TEST - VER 1.

2. LEFT REAR SPEAKER CIRCUITS SHORTED

Turn the ignition off.

Access and disconnect the Left Rear Speaker harness connector.

Access and disconnect the Amplifier C2 harness connector.

Measure the resistance of the Left Rear Speaker (+) and (-) circuits.

Is the resistance below 5.0 ohms?

Yes >> Repair the Left Rear Speaker (+) and (-) circuits for a short together.
Perform BODY VERIFICATION TEST - VER 1.

No >> Replace the Amplifier in accordance with the Service Information.
Perform BODY VERIFICATION TEST - VER 1.

RIGHT REAR CHANNEL SHORT ACROSS

For the Audio system circuit diagram (Refer to 8 - ELECTRICAL/AUDIO - SCHEMATICS AND DIAGRAMS).

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

- **When Monitored:**
When the DRBIII® performs the Speaker Output test.
- **Set Condition:**
When the Right Rear Speaker circuit is shorted.

Possible Causes
RIGHT REAR CHANNEL SHORT ACROSS AMPLIFIER
RIGHT REAR SPEAKER CIRCUITS SHORTED

1. RIGHT REAR CHANNEL SHORT ACROSS

NOTE: NOTE: The fault condition must be present to continue diagnosis. Use the DRBIII® to perform the Amplifier pretest to verify the fault condition is present before continuing diagnosis.

Turn the ignition off.

Access and disconnect the Right Rear Speaker harness connector.

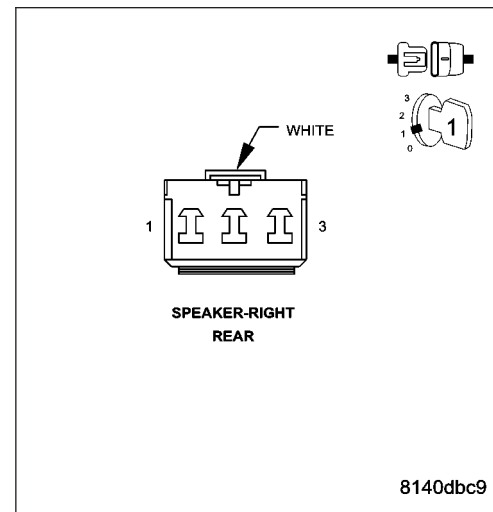
Turn the ignition on.

With the DRBIII®, perform the Amplifier pretest.

Is the fault condition still present?

Yes >> Go To 2

No >> Replace the Right Rear Speaker in accordance with the Service Information.
Perform BODY VERIFICATION TEST - VER 1.



2. RIGHT REAR SPEAKER CIRCUITS SHORTED

Turn the ignition off.

Access and disconnect the Right Rear Speaker harness connector.

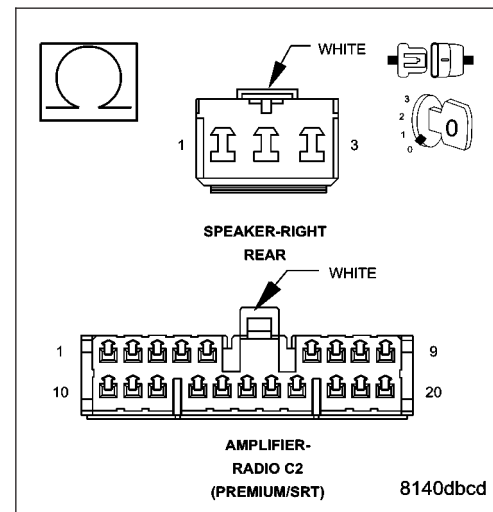
Access and disconnect the Amplifier C2 harness connector.

Measure the resistance of the Right Rear Speaker (+) and (-) circuits.

Is the resistance below 5.0 ohms?

Yes >> Repair the Right Rear Speaker (+) and (-) circuits for a short together.
Perform BODY VERIFICATION TEST - VER 1.

No >> Replace the Amplifier in accordance with the Service Information.
Perform BODY VERIFICATION TEST - VER 1.



RIGHT FRONT I/P AND LEFT FRONT DOOR CHANNELS SHORT ACROSS

For the Audio system circuit diagram (Refer to 8 - ELECTRICAL/AUDIO - SCHEMATICS AND DIAGRAMS).

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

- **When Monitored:**
When the DRBIII® performs the Speaker Output test.
- **Set Condition:**
When the Right Front I/P Speaker and Left Front Door Speaker circuits are simultaneously shorted.

Possible Causes

RIGHT FRONT I/P AND LEFT FRONT DOOR CHANNELS SHORTED ACROSS
RIGHT FRONT I/P AND LEFT FRONT DOOR SPEAKER CIRCUITS SHORTED
RIGHT FRONT IP SPEAKER AND THE LEFT FRONT DOOR SPEAKER
AMPLIFIER

1. RIGHT FRONT I/P AND LEFT FRONT DOOR CHANNELS SHORTED ACROSS

NOTE: NOTE: The fault condition must be present to continue diagnosis. Use the DRBIII® to perform the Amplifier pretest to verify the fault condition is present before continuing diagnosis.

NOTE: NOTE: Amplifier speaker circuits are both shorted simultaneously.

Turn the ignition off.

Access and disconnect the Right Front I/P and Left Front Door Speaker harness connectors.

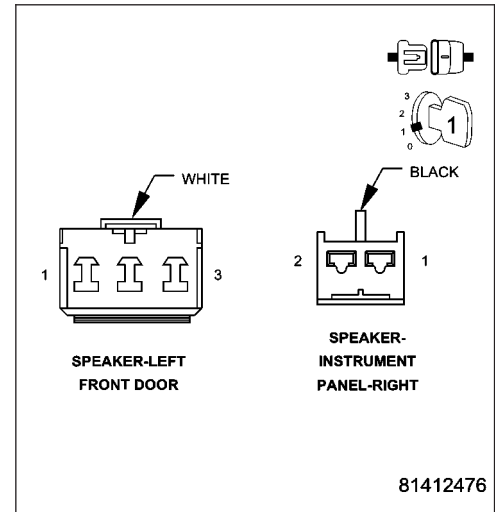
Turn the ignition on.

With the DRBIII®, perform the Amplifier pretest.

Is the fault condition still present?

Yes >> Go To 2

No >> Replace the Right Front I/P and Left Front Door Speakers in accordance with the Service Information.
Perform BODY VERIFICATION TEST - VER 1.



RIGHT FRONT I/P AND LEFT FRONT DOOR CHANNELS SHORT ACROSS (CONTINUED)**2. RIGHT FRONT I/P AND LEFT FRONT DOOR SPEAKER CIRCUITS SHORTED**

Turn the ignition off.

Access and disconnect the Right Front I/P Speaker harness connector.

Access and disconnect the Left Front Door Speaker harness connector.

Access and disconnect the Amplifier C2 harness connector.

Measure the resistance of the Right Front I/P Speaker (+) and (-) circuits.

Measure the resistance of the Left Front Door Speaker (+) and (-) circuits.

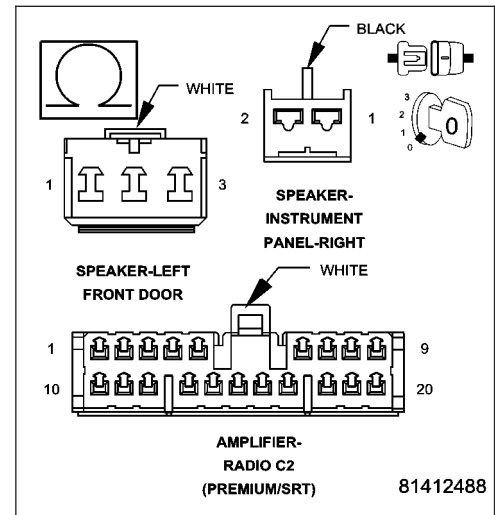
Is the resistance below 5.0 ohms on each measurement?

Yes >> Repair both Speaker (+) and (-) circuits for a short together.

Perform BODY VERIFICATION TEST - VER 1.

No >> Replace the Amplifier in accordance with the Service Information.

Perform BODY VERIFICATION TEST - VER 1.



RIGHT FRONT I/P AND RIGHT FRONT DOOR CHANNELS SHORT ACROSS

For the Audio system circuit diagram (Refer to 8 - ELECTRICAL/AUDIO - SCHEMATICS AND DIAGRAMS).

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

- **When Monitored:**
When the DRBIII® performs the Speaker Output test.
- **Set Condition:**
When the Right Front I/P Speaker and Right Front Door Speaker circuits are simultaneously shorted.

Possible Causes
RIGHT FRONT I/P AND RIGHT FRONT DOOR CHANNELS SHORTED ACROSS
RIGHT FRONT IP SPEAKER AND RIGHT FRONT DOOR SPEAKER
RIGHT FRONT I/P AND RIGHT FRONT DOOR SPEAKER CIRCUITS SHORTED
AMPLIFIER

1. RIGHT FRONT I/P AND RIGHT FRONT DOOR CHANNELS SHORTED ACROSS

NOTE: NOTE: The fault condition must be present to continue diagnosis. Use the DRBIII® to perform the Amplifier pretest to verify the fault condition is present before continuing diagnosis.

NOTE: NOTE: Amplifier speaker circuits are both shorted simultaneously.

Turn the ignition off.

Access and disconnect the Right Front I/P and Right Front Door Speaker harness connectors.

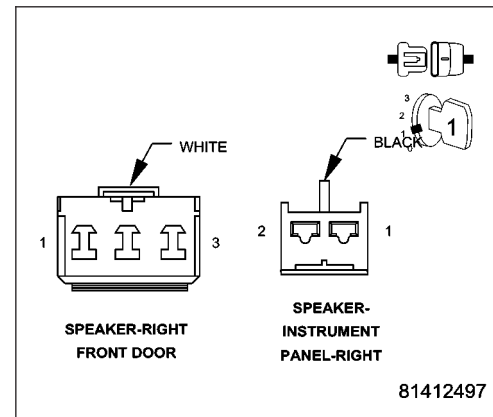
Turn the ignition on.

With the DRBIII®, perform the Amplifier pretest.

Is the fault condition still present?

Yes >> Go To 2

No >> Replace the Right Front I/P and Right Front Door Speakers in accordance with the Service Information. Perform BODY VERIFICATION TEST - VER 1.



RIGHT FRONT I/P AND RIGHT FRONT DOOR CHANNELS SHORT ACROSS (CONTINUED)**2. RIGHT FRONT I/P AND RIGHT FRONT DOOR SPEAKER CIRCUITS SHORTED**

Turn the ignition off.

Access and disconnect the Right Front I/P Speaker harness connector.

Access and disconnect the Right Front Door Speaker harness connector.

Access and disconnect the Amplifier C2 harness connector.

Measure the resistance of the Right Front I/P Speaker (+) and (-) circuits.

Measure the resistance of the Right Front Door Speaker (+) and (-) circuits.

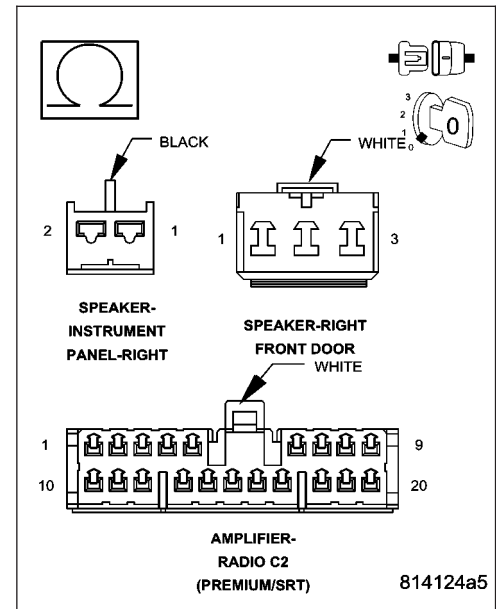
Is the resistance below 5.0 ohms on each measurement?

Yes >> Repair both Speaker (+) and (-) circuits for a short together.

Perform BODY VERIFICATION TEST - VER 1.

No >> Replace the Amplifier in accordance with the Service Information.

Perform BODY VERIFICATION TEST - VER 1.



RIGHT FRONT I/P AND LEFT REAR CHANNELS SHORT ACROSS

For the Audio system circuit diagram (Refer to 8 - ELECTRICAL/AUDIO - SCHEMATICS AND DIAGRAMS).

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

- **When Monitored:**
When the DRBIII® performs the Speaker Output test.
- **Set Condition:**
When the Right Front I/P Speaker and Left Rear Speaker circuits are simultaneously shorted.

Possible Causes
RIGHT FRONT I/P AND LEFT REAR CHANNELS SHORTED ACROSS
RIGHT FRONT I/P AND LEFT REAR SPEAKER CIRCUITS SHORTED
RIGHT FROM IP SPEAKER AND LEFT REAR SPEAKER
AMPLIFIER

1. RIGHT FRONT I/P AND LEFT REAR CHANNELS SHORTED ACROSS

NOTE: NOTE: The fault condition must be present to continue diagnosis. Use the DRBIII® to perform the Amplifier pretest to verify the fault condition is present before continuing diagnosis.

NOTE: NOTE: Amplifier speaker circuits are both shorted simultaneously.

Turn the ignition off.

Access and disconnect the Right Front I/P and Left Rear Speaker harness connectors.

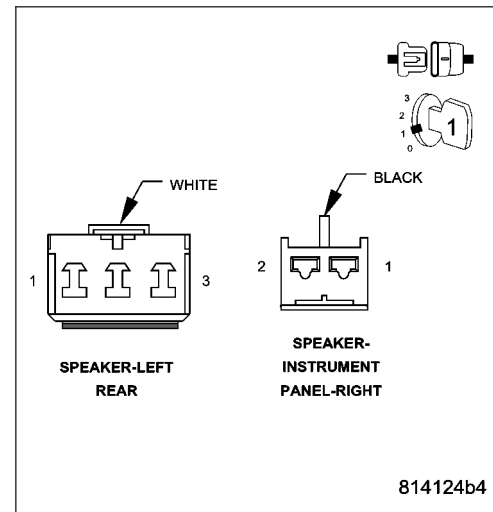
Turn the ignition on.

With the DRBIII®, perform the Amplifier pretest.

Is the fault condition still present?

Yes >> Go To 2

No >> Replace the Right Front I/P and Left Rear Speakers in accordance with the Service Information.
Perform BODY VERIFICATION TEST - VER 1.



RIGHT FRONT I/P AND LEFT REAR CHANNELS SHORT ACROSS (CONTINUED)**2. RIGHT FRONT I/P AND LEFT REAR SPEAKER CIRCUITS SHORTED**

Turn the ignition off.

Access and disconnect the Right Front I/P Speaker harness connector.

Access and disconnect the Left Rear Speaker harness connector.

Access and disconnect the Amplifier C2 harness connector.

Measure the resistance of the Right Front I/P Speaker (+) and (-) circuits.

Measure the resistance of the Left Rear Speaker (+) and (-) circuits.

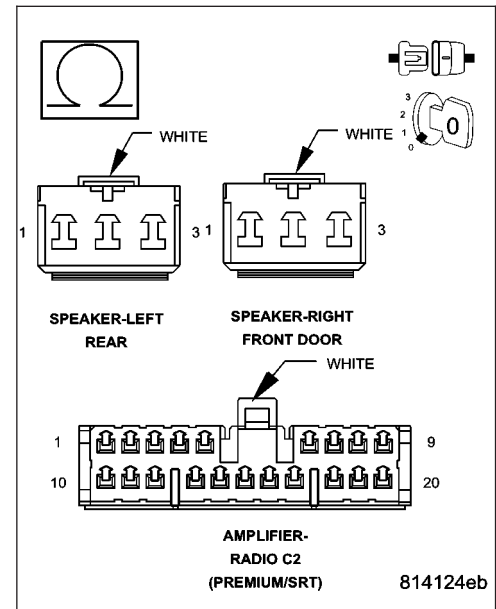
Is the resistance below 5.0 ohms on each measurement?

Yes >> Repair both Speaker (+) and (-) circuits for a short together.

Perform BODY VERIFICATION TEST - VER 1.

No >> Replace the Amplifier in accordance with the Service Information.

Perform BODY VERIFICATION TEST - VER 1.



RIGHT FRONT I/P AND RIGHT REAR CHANNELS SHORT ACROSS

For the Audio system circuit diagram (Refer to 8 - ELECTRICAL/AUDIO - SCHEMATICS AND DIAGRAMS).

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

- **When Monitored:**
When the DRBIII® performs the Speaker Output test.
- **Set Condition:**
When the Right Front I/P Speaker and Right Rear Speaker circuits are simultaneously shorted.

Possible Causes
RIGHT FRONT I/P AND RIGHT REAR CHANNELS SHORTED ACROSS
RIGHT FRONT I/P AND RIGHT REAR SPEAKER CIRCUITS SHORTED
AMPLIFIER

1. RIGHT FRONT I/P AND RIGHT REAR CHANNELS SHORTED ACROSS

NOTE: NOTE: The fault condition must be present to continue diagnosis. Use the DRBIII® to perform the Amplifier pretest to verify the fault condition is present before continuing diagnosis.

NOTE: NOTE: Amplifier speaker circuits are both shorted simultaneously.

Turn the ignition off.

Access and disconnect the Right Front I/P and Right Rear Speaker harness connectors.

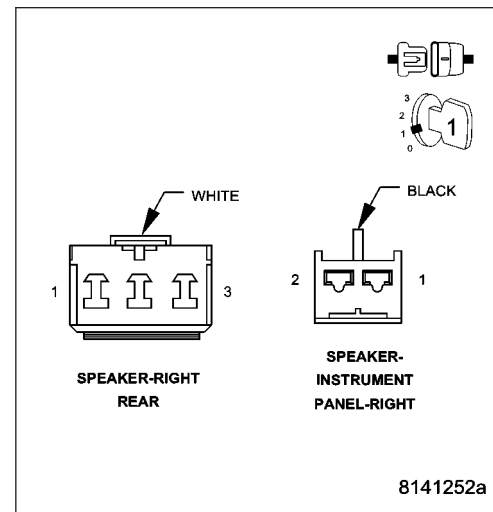
Turn the ignition on.

With the DRBIII®, perform the Amplifier pretest.

Is the fault condition still present?

Yes >> Go To 2

No >> Replace the Right Front I/P and Right Rear Speakers in accordance with the Service Information.
Perform BODY VERIFICATION TEST - VER 1.



RIGHT FRONT I/P AND RIGHT REAR CHANNELS SHORT ACROSS (CONTINUED)**2. RIGHT FRONT I/P AND RIGHT REAR SPEAKER CIRCUITS SHORTED**

Turn the ignition off.

Access and disconnect the Right Front I/P Speaker harness connector.

Access and disconnect the Right Rear Speaker harness connector.

Access and disconnect the Amplifier C2 harness connector.

Measure the resistance of the Right Front I/P Speaker (+) and (-) circuits.

Measure the resistance of the Right Rear Speaker (+) and (-) circuits.

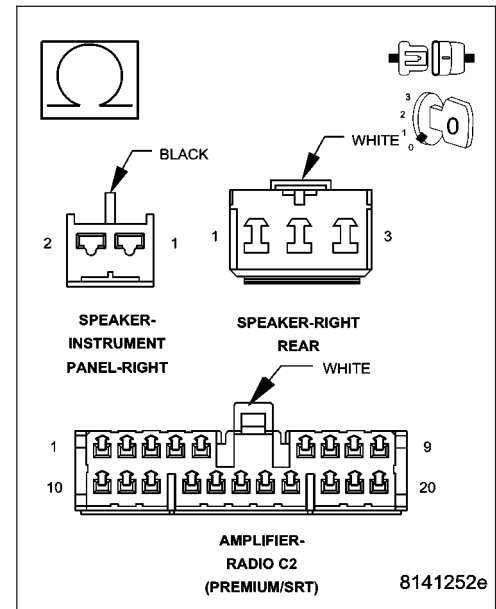
Is the resistance below 5.0 ohms on each measurement?

Yes >> Repair both Speaker (+) and (-) circuits for a short together.

Perform BODY VERIFICATION TEST - VER 1.

No >> Replace the Amplifier in accordance with the Service Information.

Perform BODY VERIFICATION TEST - VER 1.



RIGHT I/P SPEAKER AND BOTH REAR CHANNELS SHORTED ACROSS

For the Audio system circuit diagram (Refer to 8 - ELECTRICAL/AUDIO - SCHEMATICS AND DIAGRAMS).

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

- **When Monitored:**
When the DRBIII® performs the Speaker Output test.
- **Set Condition:**
When the Right I/P Speaker and both Rear Speaker circuits are simultaneously shorted.

Possible Causes

RIGHT I/P SPEAKER AND BOTH REAR CHANNELS SHORTED ACROSS
RIGHT I/P SPEAKER AND BOTH REAR SPEAKER CIRCUITS SHORTED
AMPLIFIER

1. RIGHT I/P SPEAKER AND BOTH REAR CHANNELS SHORTED ACROSS

NOTE: NOTE: The fault condition must be present to continue diagnosis. Use the DRBIII® to perform the Amplifier pretest to verify the fault condition is present before continuing diagnosis.

NOTE: NOTE: Amplifier speaker circuits are all shorted simultaneously.

Turn the ignition off.

Access and disconnect the Right I/P Speaker and both Rear Speaker harness connectors.

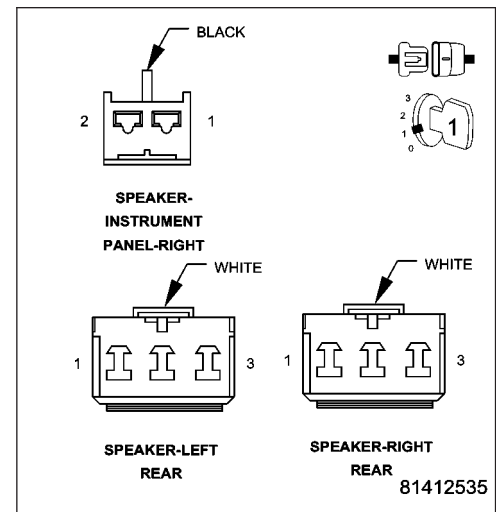
Turn the ignition on.

With the DRBIII®, perform the Amplifier pretest.

Is the fault condition still present?

Yes >> Go To 2

No >> Replace the Right I/P Speaker and both Rear Speakers in accordance with the Service Information.
Perform BODY VERIFICATION TEST - VER 1.



RIGHT I/P SPEAKER AND BOTH REAR CHANNELS SHORT ACROSS (CONTINUED)**2. RIGHT I/P SPEAKER AND BOTH REAR SPEAKER CIRCUITS SHORTED**

Turn the ignition off.

Access and disconnect the Right I/P Speaker harness connector.

Access and disconnect both Rear Speaker harness connectors.

Access and disconnect the Amplifier C2 harness connector.

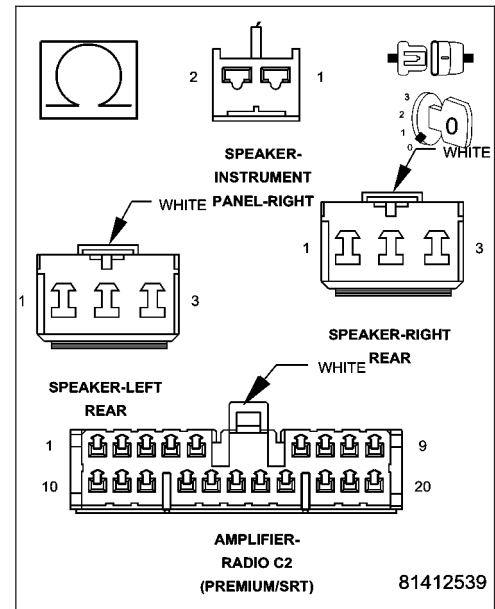
Measure the resistance of the Right I/P Speaker (+) and (-) circuits.

Measure the resistance of both Rear Speaker (+) and (-) circuits.

Is the resistance below 5.0 ohms on each measurement?

Yes >> Repair all Speaker (+) and (-) circuits for a short together.
Perform BODY VERIFICATION TEST - VER 1.

No >> Replace the Amplifier in accordance with the Service Information.
Perform BODY VERIFICATION TEST - VER 1.



RIGHT FRONT DOOR AND LEFT REAR CHANNELS SHORT ACROSS

For the Audio system circuit diagram (Refer to 8 - ELECTRICAL/AUDIO - SCHEMATICS AND DIAGRAMS).

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

- **When Monitored:**
When the DRBIII® performs the Speaker Output test.
- **Set Condition:**
When the Right Front Door Speaker and Left Rear Speaker circuits are simultaneously shorted.

Possible Causes
RIGHT FRONT DOOR AND LEFT REAR CHANNELS SHORTED ACROSS
RIGHT FRONT DOOR AND LEFT REAR SPEAKER CIRCUITS SHORTED
RIGHT FRONT DOOR SPEAKER AND LEFT REAR SPEAKER
AMPLIFIER

1. RIGHT FRONT DOOR AND LEFT REAR CHANNELS SHORTED ACROSS

NOTE: NOTE: The fault condition must be present to continue diagnosis. Use the DRBIII® to perform the Amplifier pretest to verify the fault condition is present before continuing diagnosis.

NOTE: NOTE: Amplifier speaker circuits are both shorted simultaneously.

Turn the ignition off.

Access and disconnect the Right Front Door and Left Rear Speaker harness connectors.

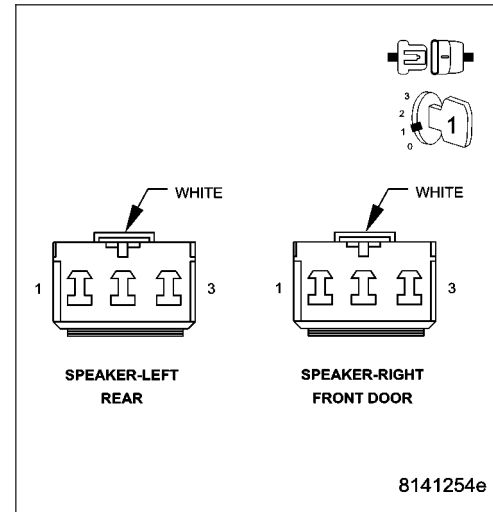
Turn the ignition on.

With the DRBIII®, perform the Amplifier pretest.

Is the fault condition still present?

Yes >> Go To 2

No >> Replace the Right Front Door and Left Rear Speakers in accordance with the Service Information.
Perform BODY VERIFICATION TEST - VER 1.



RIGHT FRONT DOOR AND LEFT REAR CHANNELS SHORT ACROSS (CONTINUED)**2. RIGHT FRONT DOOR AND LEFT REAR SPEAKER CIRCUITS SHORTED**

Turn the ignition off.

Access and disconnect the Right Front Door Speaker harness connector.

Access and disconnect the Left Rear Speaker harness connector.

Access and disconnect the Amplifier C2 harness connector.

Measure the resistance of the Right Front Door Speaker (+) and (-) circuits.

Measure the resistance of the Left Rear Speaker (+) and (-) circuits.

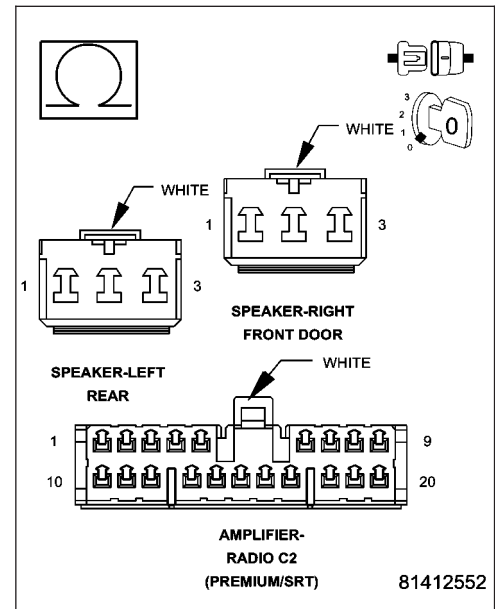
Is the resistance below 5.0 ohms on each measurement?

Yes >> Repair both Speaker (+) and (-) circuits for a short together.

Perform BODY VERIFICATION TEST - VER 1.

No >> Replace the Amplifier in accordance with the Service Information.

Perform BODY VERIFICATION TEST - VER 1.



RIGHT FRONT DOOR AND RIGHT REAR CHANNELS SHORT ACROSS

For the Audio system circuit diagram (Refer to 8 - ELECTRICAL/AUDIO - SCHEMATICS AND DIAGRAMS).

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

- **When Monitored:**
When the DRBIII® performs the Speaker Output test.
- **Set Condition:**
When the Right Front Door Speaker and Right Rear Speaker circuits are simultaneously shorted.

Possible Causes
RIGHT FRONT DOOR AND RIGHT REAR CHANNELS SHORTED ACROSS
RIGHT FRONT DOOR AND RIGHT REAR SPEAKER CIRCUITS SHORTED
RIGHT FRONT DOOR SPEAKER AND RIGHT REAR SPEAKER
AMPLIFIER

1. RIGHT FRONT DOOR AND RIGHT REAR CHANNELS SHORTED ACROSS

NOTE: NOTE: The fault condition must be present to continue diagnosis. Use the DRBIII® to perform the Amplifier pretest to verify the fault condition is present before continuing diagnosis.

NOTE: NOTE: Amplifier speaker circuits are both shorted simultaneously.

Turn the ignition off.

Access and disconnect the Right Front Door and Right Rear Speaker harness connectors.

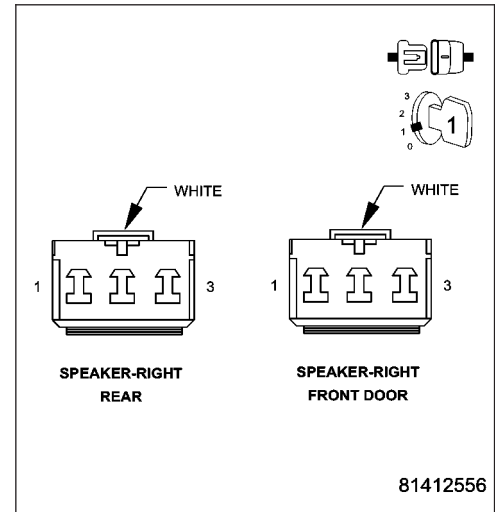
Turn the ignition on.

With the DRBIII®, perform the Amplifier pretest.

Is the fault condition still present?

Yes >> Go To 2

No >> Replace the Right Front Door and Right Rear Speakers in accordance with the Service Information.
Perform BODY VERIFICATION TEST - VER 1.



RIGHT FRONT DOOR AND RIGHT REAR CHANNELS SHORT ACROSS (CONTINUED)**2. RIGHT FRONT DOOR AND RIGHT REAR SPEAKER CIRCUITS SHORTED**

Turn the ignition off.

Access and disconnect the Right Front Door Speaker harness connector.

Access and disconnect the Right Rear Speaker harness connector.

Access and disconnect the Amplifier C2 harness connector.

Measure the resistance of the Right Front Door Speaker (+) and (-) circuits.

Measure the resistance of the Right Rear Speaker (+) and (-) circuits.

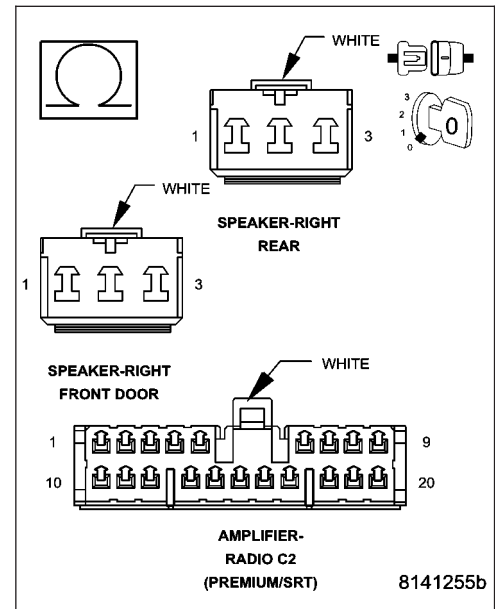
Is the resistance below 5.0 ohms on each measurement?

Yes >> Repair both Speaker (+) and (-) circuits for a short together.

Perform BODY VERIFICATION TEST - VER 1.

No >> Replace the Amplifier in accordance with the Service Information.

Perform BODY VERIFICATION TEST - VER 1.



REAR SPEAKERS SHORT TOGETHER OR TO GROUND

For the Audio system circuit diagram (Refer to 8 - ELECTRICAL/AUDIO - SCHEMATICS AND DIAGRAMS).

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

- **When Monitored:**
When the DRBIII® performs the Speaker Output Test.
- **Set Condition:**
Each Amplifier rear channel is shorted together or to ground.

Possible Causes
RIGHT REAR SPEAKER
LEFT REAR SPEAKER
REAR SPEAKER CIRCUIT SHORTED TO GROUND
REAR SPEAKER CIRCUITS SHORTED TOGETHER
AMPLIFIER

1. RIGHT REAR SPEAKER

NOTE: NOTE: The fault condition must be present to continue diagnosis. Use the DRB III to perform the Amplifier Pre-test to verify the fault condition is present before continuing diagnosis.

Turn the ignition off.

Access and disconnect the Right Rear Speaker harness connector.

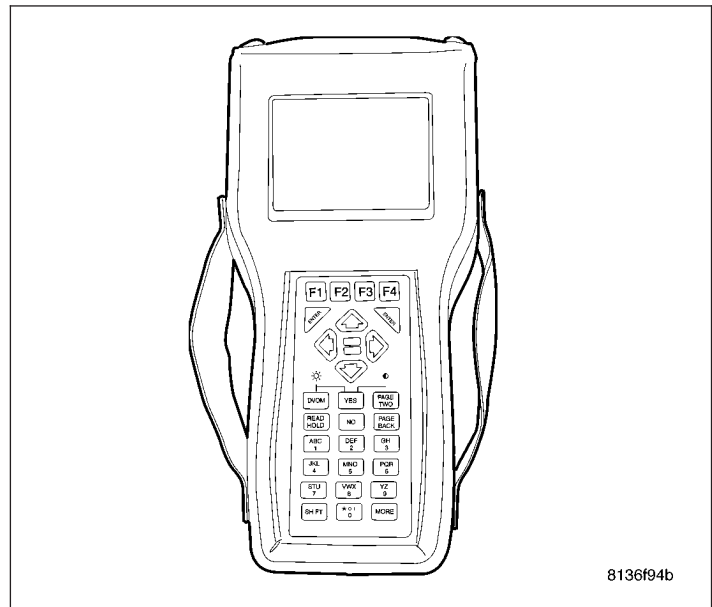
Turn the ignition on.

Using the DRB III, perform the Amplifier Pre-test.

Is the fault condition still present?

Yes >> Go To 2

No >> Replace the Right Rear Speaker in accordance with the service information.
Perform BODY VERIFICATION TEST - VER 1.



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2. LEFT REAR SPEAKER

Turn the ignition off.

Access and disconnect the Left Rear Speaker harness connector.

Turn the ignition on.

Using the DRB III, perform the Amplifier Pre-test.

Is the fault condition still present?

Yes >> Go To 3

No >> Replace the Left Rear Speaker in accordance with the service information.
Perform BODY VERIFICATION TEST - VER 1.

REAR SPEAKERS SHORT TOGETHER OR TO GROUND (CONTINUED)**3. REAR SPEAKER CIRCUIT SHORTED TO GROUND**

Turn the ignition off.

Access and disconnect the Right Rear and Left Rear Speaker harness connectors.

Disconnect the Amplifier C2 harness connector.

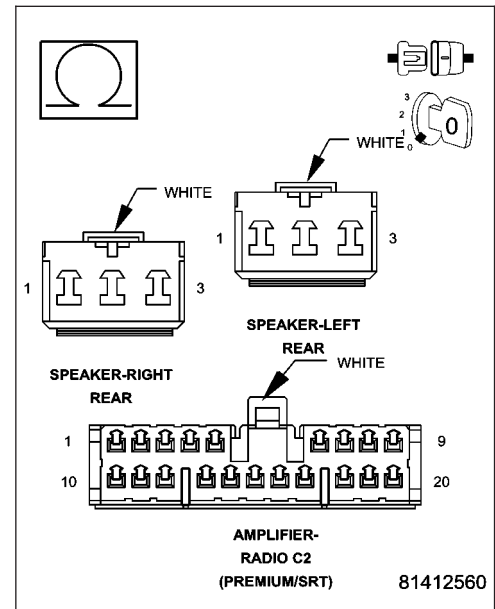
Measure the resistance between ground and each of the 4 Rear Speaker circuits.

Is the resistance above 1000 ohms for each of the measurements?

Yes >> Go To 4

No >> Repair the Rear Speaker circuit that measured below 1000 ohms for a short to ground.

Perform BODY VERIFICATION TEST - VER 1.

**4. REAR SPEAKER CIRCUITS SHORTED TOGETHER**

Turn the ignition off.

Access and disconnect the Right Rear and Left Rear Speaker harness connectors.

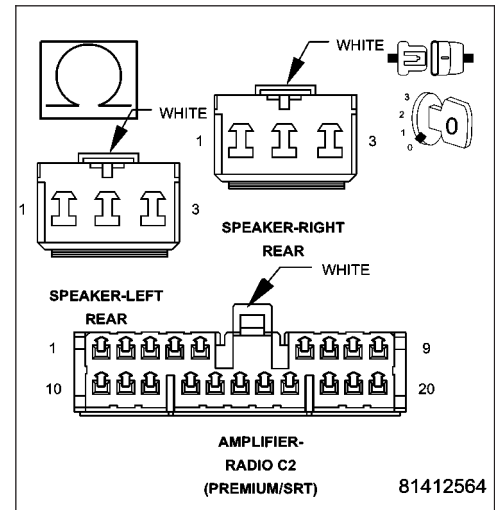
Disconnect the Amplifier C2 harness connector.

At the Amplifier C2 harness connector, measure the resistance between the Left Rear Speaker (-) circuit and the following circuits: Left Rear Speaker (+), Right Rear Speaker (-) and Right Rear Speaker (+).

Is the resistance above 1000 ohms for each of the measurements?

Yes >> Go To 5

No >> Repair the Rear Speaker circuits that are shorted together.
Perform BODY VERIFICATION TEST - VER 1.



REAR SPEAKERS SHORT TOGETHER OR TO GROUND (CONTINUED)**5. REAR SPEAKER CIRCUITS SHORTED TOGETHER**

Turn the ignition off.

Access and disconnect the Right Rear and Left Rear Speaker harness connectors.

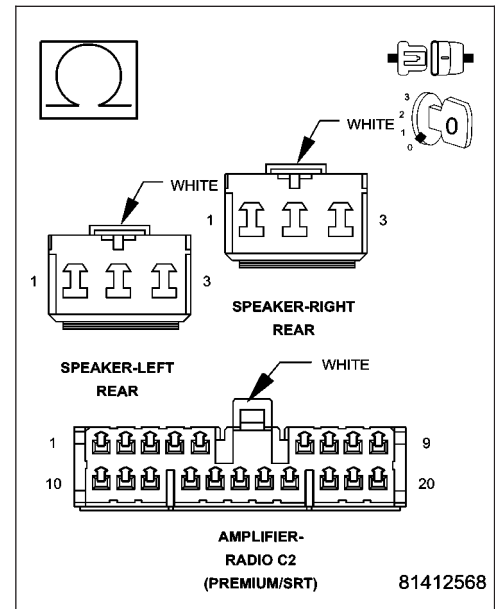
Disconnect the Amplifier C2 harness connector.

At the Amplifier C2 harness connector, measure the resistance between the Left Rear Speaker (+) circuit and the following circuits: Right Rear Speaker (-) and Right Rear Speaker (+).

Is the resistance above 1000 ohms for each of the measurements?

Yes >> Go To 6

No >> Repair the Rear Speaker circuits that are shorted together.
Perform BODY VERIFICATION TEST - VER 1.

**6. REAR SPEAKER CIRCUITS SHORTED TOGETHER**

Turn the ignition off.

Access and disconnect the Right Rear Speaker harness connector.

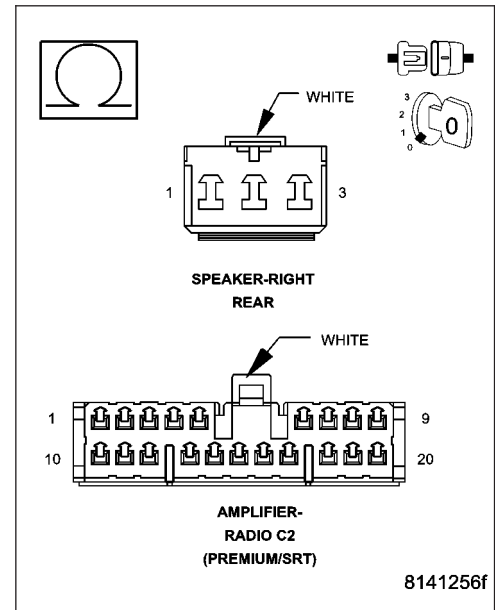
Disconnect the Amplifier C2 harness connector.

At the Amplifier C2 harness connector, measure the resistance between the Right Rear Speaker (+) circuit and Right Rear Speaker (-) circuit.

Is the resistance above 1000 ohms?

Yes >> Replace the Amplifier in accordance with the service information.
Perform BODY VERIFICATION TEST - VER 1.

No >> Repair the Rear Speaker circuits that are shorted together.
Perform BODY VERIFICATION TEST - VER 1.



LEFT FRONT INPUT NO ACTIVITY

For the Audio system circuit diagram (Refer to 8 - ELECTRICAL/AUDIO - SCHEMATICS AND DIAGRAMS).

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

- **When Monitored:**
When the DRBIII® performs the amplifier Input Test.
- **Set Condition:**
The Amplifier detects no activity on the input circuit.

Possible Causes
(+) CIRCUIT SHORTED TO GROUND (-) CIRCUIT SHORTED TO GROUND OPEN SPEAKER CIRCUITS RADIO AMPLIFIER

1. (+) CIRCUIT SHORTED TO GROUND

NOTE: NOTE: The fault condition must be present to continue diagnosis. Use the DRBIII® to perform the Amplifier pretest to verify the fault condition is present before continuing diagnosis.

Turn the ignition off.

Disconnect the Amplifier C1 harness connector.

Disconnect the Radio harness connector.

Measure the resistance between ground and the left front speaker (+) circuit.

Is the resistance below 1000.0 (1K) ohms?

Yes >> Repair the speaker (+) circuit for a short to ground.
Perform BODY VERIFICATION TEST - VER 1.

No >> Go To 2

2. (-) CIRCUIT SHORTED TO GROUND

Turn the ignition off.

Disconnect the Amplifier C1 harness connector.

Disconnect the Radio harness connector.

Measure the resistance between ground and the left front speaker (-) circuit.

Is the resistance below 1000.0 (1K) ohms?

Yes >> Repair the speaker (-) circuit for a short to ground.
Perform BODY VERIFICATION TEST - VER 1.

No >> Go To 3

LEFT FRONT INPUT NO ACTIVITY (CONTINUED)**3. OPEN SPEAKER CIRCUITS**

Turn the ignition off.

Disconnect the Amplifier C1 harness connector.

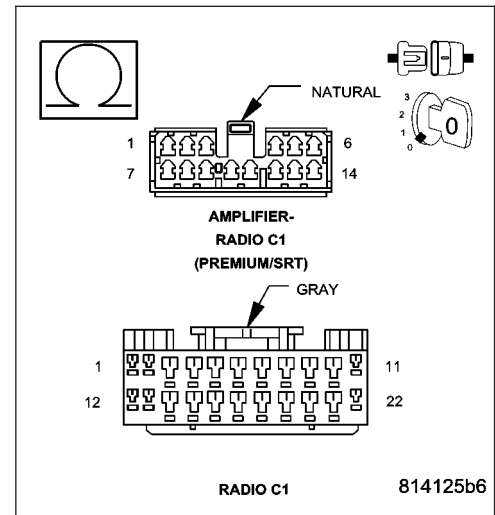
Disconnect the Radio harness connector.

Measure the resistance of each left front speaker (+) and (-) circuit between the Radio and the Amplifier.

Is the resistance below 5.0 ohms for each circuit?

Yes >> Go To 4

No >> Repair the speaker circuits for an open.
Perform BODY VERIFICATION TEST - VER 1.

**4. AMPLIFIER**

Turn the ignition off.

Reconnect the Radio harness connector.

Disconnect the Amplifier C1 harness connector.

Turn the ignition on and the Radio on to a known good radio station or have a tape or CD playing.

Turn the radio volume control up at least 25 positions.

With the voltmeter in the AC voltage scale, measure the voltage of each left front speaker circuit at the Amplifier C1 connector.

NOTE: NOTE: Perform this test on each left front speaker circuit.

Is the voltage at least 120mV AC (0.12 VAC) on each speaker circuit?

Yes >> Replace the Amplifier in accordance with the Service Information.
Perform BODY VERIFICATION TEST - VER 1.

No >> Replace the Radio.
Perform BODY VERIFICATION TEST - VER 1.

RIGHT FRONT INPUT NO ACTIVITY

For the Audio system circuit diagram (Refer to 8 - ELECTRICAL/AUDIO - SCHEMATICS AND DIAGRAMS).

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

- **When Monitored:**
When the DRBIII® performs the amplifier Input Test.
- **Set Condition:**
The Amplifier detects no activity on the input circuit.

Possible Causes
(+) CIRCUIT SHORTED TO GROUND (-) CIRCUIT SHORTED TO GROUND OPEN SPEAKER CIRCUITS AMPLIFIER

1. (+) CIRCUIT SHORTED TO GROUND

NOTE: NOTE: The fault condition must be present to continue diagnosis. Use the DRBIII® to perform the Amplifier pretest to verify the fault condition is present before continuing diagnosis.

Turn the ignition off.

Disconnect the Amplifier C1 harness connector.

Disconnect the Radio harness connector.

Measure the resistance between ground and the right front speaker (+) circuit.

Is the resistance below 1000.0 (1K) ohms?

Yes >> Repair the speaker (+) circuit for a short to ground.
Perform BODY VERIFICATION TEST - VER 1.

No >> Go To 2

2. (-) CIRCUIT SHORTED TO GROUND

Turn the ignition off.

Disconnect the Amplifier C1 harness connector.

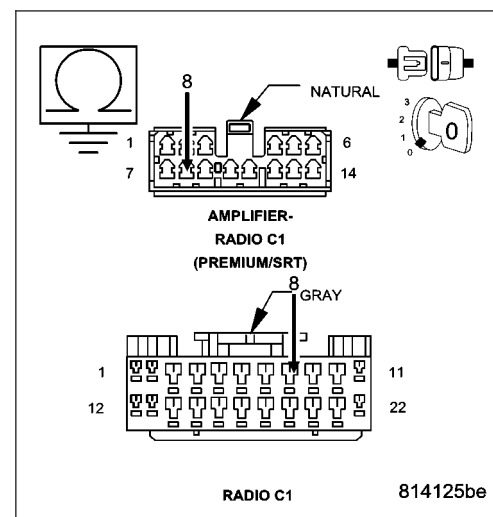
Disconnect the Radio harness connector.

Measure the resistance between ground and the right front speaker (-) circuit.

Is the resistance below 1000.0 (1K) ohms?

Yes >> Repair the speaker (-) circuit for a short to ground.
Perform BODY VERIFICATION TEST - VER 1.

No >> Go To 3



RIGHT FRONT INPUT NO ACTIVITY (CONTINUED)

3. OPEN SPEAKER CIRCUITS

Turn the ignition off.

Disconnect the Amplifier C1 harness connector.

Disconnect the Radio harness connector.

Measure the resistance of each right front speaker (+) and (-) circuit between the Radio and the Amplifier.

Is the resistance below 5.0 ohms for each circuit?

Yes >> Go To 4

No >> Repair the speaker circuits for an open.
Perform BODY VERIFICATION TEST - VER 1.

4. AMPLIFIER

Turn the ignition off.

Reconnect the Radio harness connector.

Disconnect the Amplifier C1 harness connector.

Turn the ignition on and the Radio on to a known good radio station or have a tape or CD playing.

Turn the radio volume control up at least 25 positions.

With the voltmeter in the AC voltage scale, measure the voltage of each right front speaker circuit at the Amplifier C1 connector.

NOTE: NOTE: Perform this test on each right front speaker circuit.

Is the voltage at least 120mV AC (0.12 VAC) on each speaker circuit?

Yes >> Replace the Amplifier in accordance with the Service Information.
Perform BODY VERIFICATION TEST - VER 1.

No >> Replace the Radio.
Perform BODY VERIFICATION TEST - VER 1.

LEFT REAR INPUT NO ACTIVITY

For the Audio system circuit diagram (Refer to 8 - ELECTRICAL/AUDIO - SCHEMATICS AND DIAGRAMS).

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

- **When Monitored:**
When the DRBIII® performs the amplifier Input Test.
- **Set Condition:**
The Amplifier detects no activity on the input circuit.

Possible Causes
(+) CIRCUIT SHORTED TO GROUND (-) CIRCUIT SHORTED TO GROUND OPEN SPEAKER CIRCUITS RADIO AMPLIFIER

1. (+) CIRCUIT SHORTED TO GROUND

NOTE: NOTE: The fault condition must be present to continue diagnosis. Use the DRBIII® to perform the Amplifier pretest to verify the fault condition is present before continuing diagnosis.

Turn the ignition off.

Disconnect the Amplifier C1 harness connector.

Disconnect the Radio harness connector.

Measure the resistance between ground and the left rear speaker (+) circuit.

Is the resistance below 1000.0 (1K) ohms?

Yes >> Repair the speaker (+) circuit for a short to ground.
Perform BODY VERIFICATION TEST - VER 1.

No >> Go To 2

2. (-) CIRCUIT SHORTED TO GROUND

Turn the ignition off.

Disconnect the Amplifier C1 harness connector.

Disconnect the Radio harness connector.

Measure the resistance between ground and the left rear speaker (-) circuit.

Is the resistance below 1000.0 (1K) ohms?

Yes >> Repair the speaker (-) circuit for a short to ground.
Perform BODY VERIFICATION TEST - VER 1.

No >> Go To 3

LEFT REAR INPUT NO ACTIVITY (CONTINUED)

3. OPEN SPEAKER CIRCUITS

Turn the ignition off.

Disconnect the Amplifier C1 harness connector.

Disconnect the Radio harness connector.

Measure the resistance of each left rear speaker (+) and (-) circuit between the Radio and the Amplifier.

Is the resistance below 5.0 ohms for each circuit?

Yes >> Go To 4

No >> Repair the speaker circuits for an open.
Perform BODY VERIFICATION TEST - VER 1.

4. AMPLIFIER

Turn the ignition off.

Reconnect the Radio harness connector.

Disconnect the Amplifier C1 harness connector.

Turn the ignition on and the Radio on to a known good radio station or have a tape or CD playing.

Turn the radio volume control up at least 25 positions.

With the voltmeter in the AC voltage scale, measure the voltage of each left rear speaker circuit at the Amplifier C1 connector.

NOTE: NOTE: Perform this test on each left rear speaker circuit.

Is the voltage at least 120mV AC (0.12 VAC) on each speaker circuit?

Yes >> Replace the Amplifier in accordance with the Service Information.
Perform BODY VERIFICATION TEST - VER 1.

No >> Replace the Radio.
Perform BODY VERIFICATION TEST - VER 1.

RIGHT REAR INPUT NO ACTIVITY

For the Audio system circuit diagram (Refer to 8 - ELECTRICAL/AUDIO - SCHEMATICS AND DIAGRAMS).

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

- **When Monitored:**
When the DRBIII® performs the amplifier Input Test.
- **Set Condition:**
The Amplifier detects no activity on the input circuit.

Possible Causes
(+) CIRCUIT SHORTED TO GROUND (-) CIRCUIT SHORTED TO GROUND AMPLIFIER OPEN SPEAKER CIRCUITS

1. (+) CIRCUIT SHORTED TO GROUND

NOTE: NOTE: The fault condition must be present to continue diagnosis. Use the DRBIII® to perform the Amplifier pretest to verify the fault condition is present before continuing diagnosis.

Turn the ignition off.

Disconnect the Amplifier C1 harness connector.

Disconnect the Radio harness connector.

Measure the resistance between ground and the right rear speaker (+) circuit.

Is the resistance below 1000.0 (1K) ohms?

Yes >> Repair the speaker (+) circuit for a short to ground.
Perform BODY VERIFICATION TEST - VER 1.

No >> Go To 2

2. (-) CIRCUIT SHORTED TO GROUND

Turn the ignition off.

Disconnect the Amplifier C1 harness connector.

Disconnect the Radio harness connector.

Measure the resistance between ground and the right rear speaker (-) circuit.

Is the resistance below 1000.0 (1K) ohms?

Yes >> Repair the speaker (-) circuit for a short to ground.
Perform BODY VERIFICATION TEST - VER 1.

No >> Go To 3

RIGHT REAR INPUT NO ACTIVITY (CONTINUED)

3. OPEN SPEAKER CIRCUITS

Turn the ignition off.

Disconnect the Amplifier C1 harness connector.

Disconnect the Radio harness connector.

Measure the resistance of each right rear speaker (+) and (-) circuit between the Radio and the Amplifier.

Is the resistance below 5.0 ohms for each circuit?

Yes >> Go To 4

No >> Repair the speaker circuits for an open.
Perform BODY VERIFICATION TEST - VER 1.

4. AMPLIFIER

Turn the ignition off.

Reconnect the Radio harness connector.

Disconnect the Amplifier C1 harness connector.

Turn the ignition on and the Radio on to a known good radio station or have a tape or CD playing.

Turn the radio volume control up at least 25 positions.

With the voltmeter in the AC voltage scale, measure the voltage of each right rear speaker circuit at the Amplifier C1 connector.

NOTE: NOTE: Perform this test on each right rear speaker circuit.

Is the voltage at least 120mV AC (0.12 VAC) on each speaker circuit?

Yes >> Replace the Amplifier in accordance with the Service Information.
Perform BODY VERIFICATION TEST - VER 1.

No >> Replace the Radio.
Perform BODY VERIFICATION TEST - VER 1.

LOW VOLTAGE LEVEL

For the Audio system circuit diagram (Refer to 8 - ELECTRICAL/AUDIO - SCHEMATICS AND DIAGRAMS).

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

- **Set Condition:**

The radio detects lower than normal voltage.

Possible Causes
CHARGING SYSTEM
VOLTAGE LEVEL AT RADIO
RADIO

1. CHECK CHARGING SYSTEM

Check the charging system in accordance with the service information.

Is the charging system operating properly?

Yes >> Go To 2

No >> Refer to the appropriate service information and repair as necessary.
Perform BODY VERIFICATION TEST - VER 1.

2. CHECK VOLTAGE LEVEL AT RADIO

Turn the ignition off.

Disconnect the Radio harness connector.

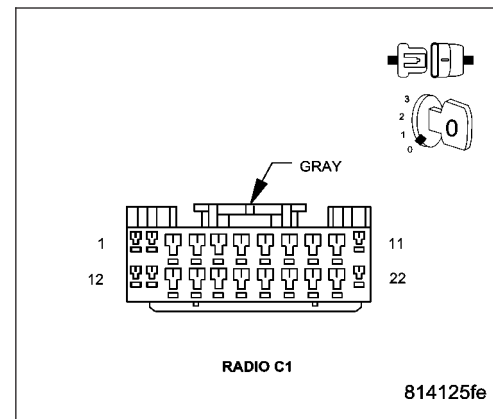
Start the engine.

Measure the voltage of each Fused B+ circuit and the Fused Ignition Switch Output circuit.

Is the voltage above or approximately 14 volts for each measurement?

Yes >> Go To 3

No >> Repair the circuit for high resistance.
Perform BODY VERIFICATION TEST - VER 1.



3. RADIO

NOTE: Note: Reconnect all previously disconnected components.

Turn the ignition and Radio on.

With the DRBIII®, erase the audio DTC's.

Start the engine.

With the DRBIII®, read the audio DTC's.

Did this DTC reset?

Yes >> Replace the Radio.

Perform BODY VERIFICATION TEST - VER 1.

No >> Test Complete.

RADIO AND NAV GPS ANTENNA NOT CONNECTED

For the Audio system circuit diagram (Refer to 8 - ELECTRICAL/AUDIO - SCHEMATICS AND DIAGRAMS).

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

- **When Monitored:**
With the radio on
- **Set Condition:**
The Radio detects a improper antenna signal

Possible Causes
BAD ANTENNA CONNECTION ANTENNA RADIO

1. BAD ANTENNA CONNECTION

Turn the ignition off.

Disconnect the Antenna connectors.

Inspect the Antenna connections.

Was the Antenna connections clean and tight?

Yes >> Go To 2

No >> Repair the Antenna connections as needed.
Perform BODY VERIFICATION TEST - VER 1.

2. ANTENNA

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

Are the Antennas ok?

Yes >> Go To 3

No >> Repair or replace the Antenna assemblies as necessary.
Perform BODY VERIFICATION TEST - VER 1.

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 Integrated Power Module (IPM) 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 Integrated Power Module (IPM). 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.

CONDITION	POSSIBLE CAUSES	CORRECTION
	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 Integrated Power Module (IPM). 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 Integrated Power Module (IPM). 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.
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.

CONDITION	POSSIBLE CAUSES	CORRECTION
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

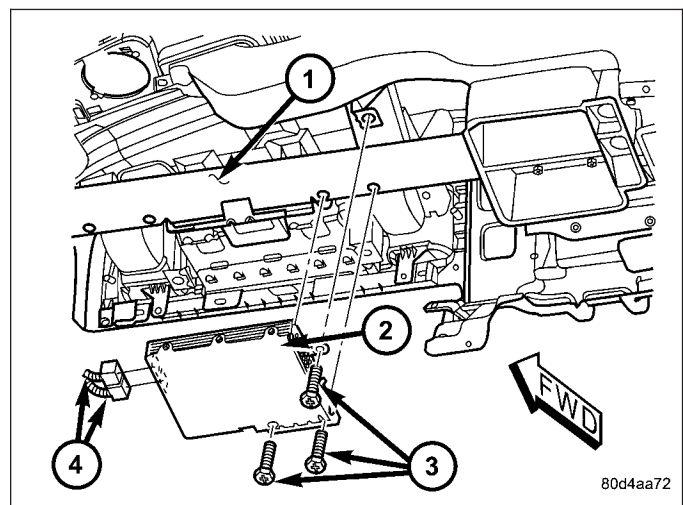
The power amplifier electronically increases the frequency response of the normal audio signal output from the radio amplifier in order to improve the acoustic performance of the speakers. On vehicles equipped with an amplifier, the amplifier section of the radio becomes a pre-amplifier.

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

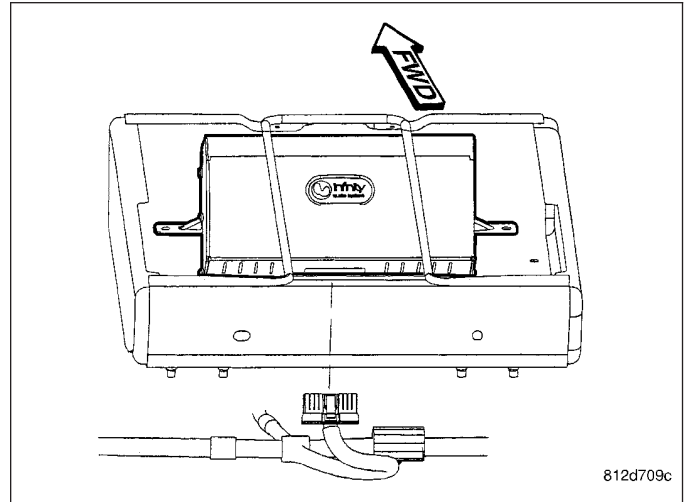
INSTRUMENT PANEL MOUNTED

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

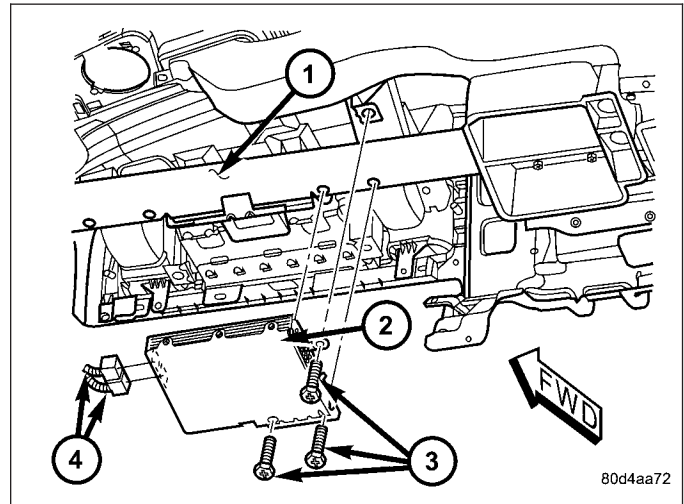
1. Disconnect and isolate the battery negative cable.
2. Raise center seat cushion to access amplifier.
3. Remove mounting fasteners.
4. Disconnect electrical harness connector and remove amplifier.



INSTALLATION

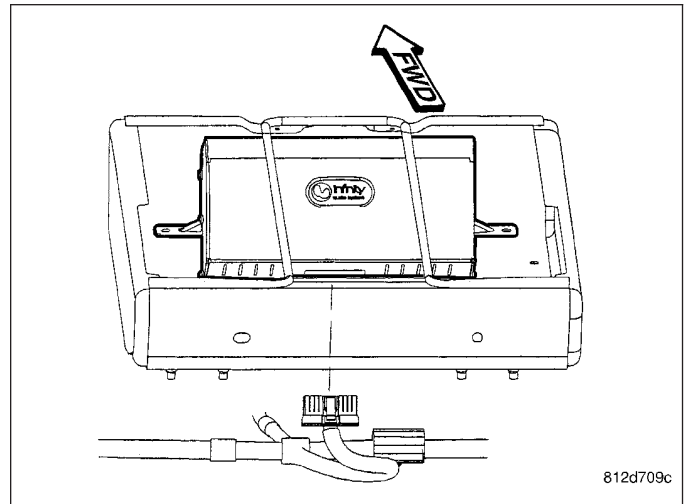
INSTRUMENT PANEL MOUNTED

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

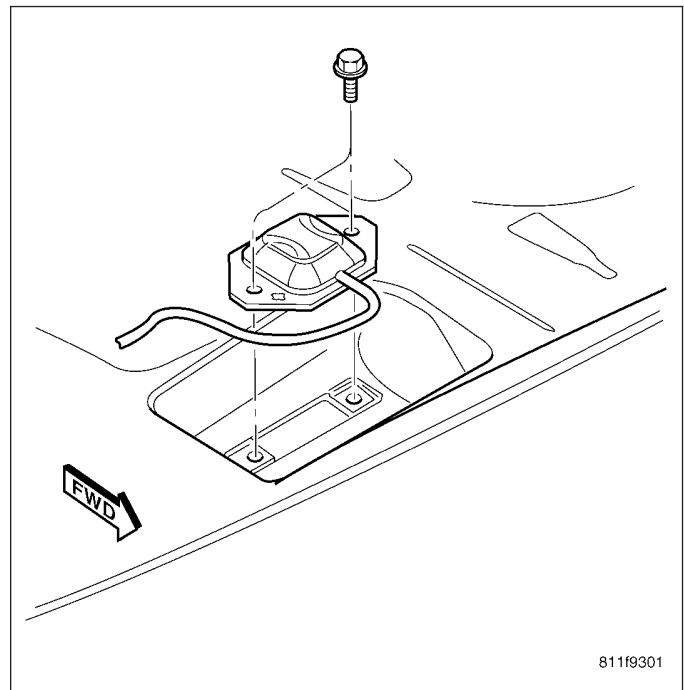
1. Connect electrical harness connector and position amplifier.
2. Install and tighten mounting fasteners.
3. Lower center seat.
4. Connect battery negative cable.



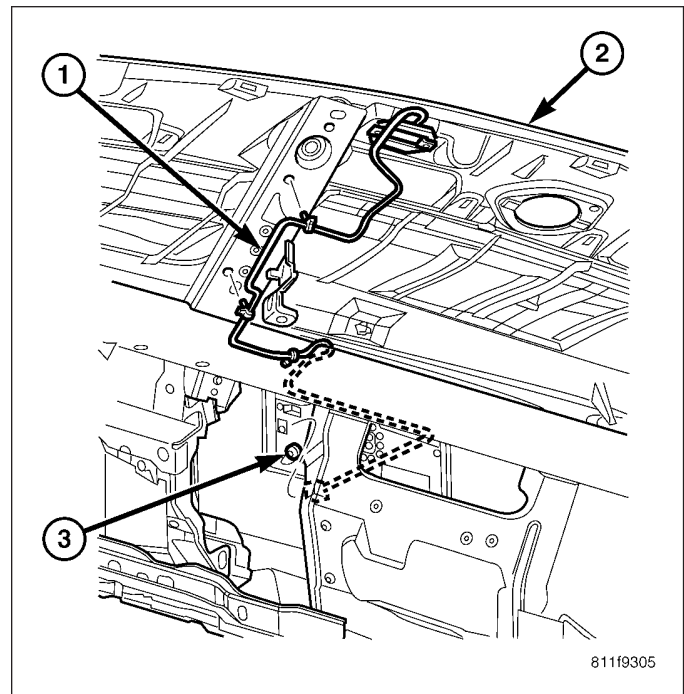
ANTENNA - NAVIGATION

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.

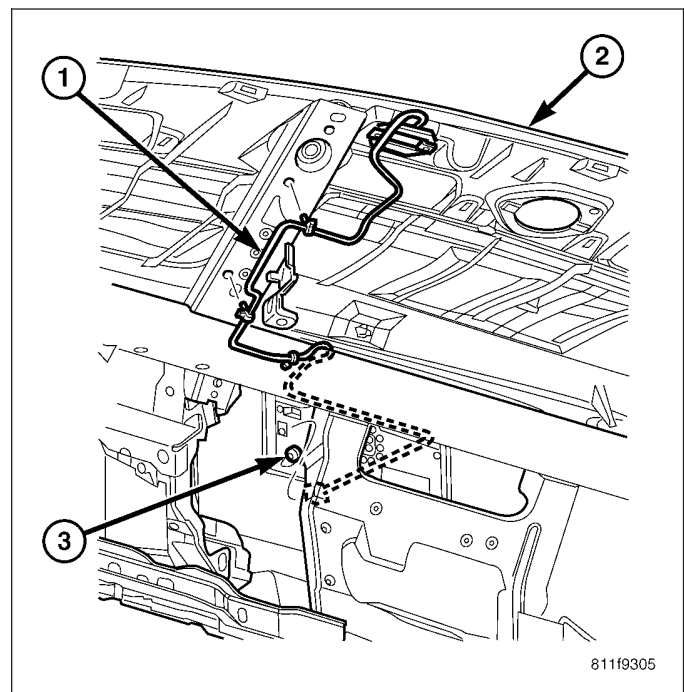


5. Cut each end of the cable (1) and leave remaining portion in the instrument panel.

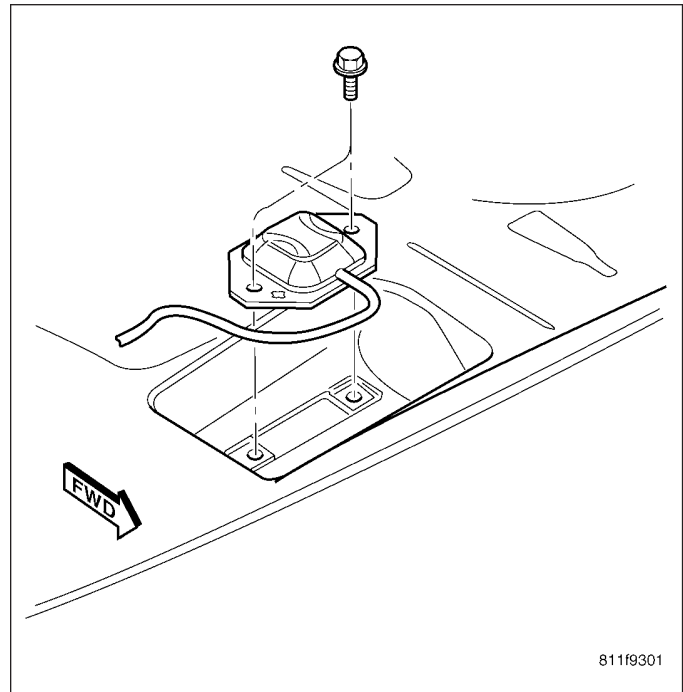


INSTALLATION

1. Position new antenna cable to wire harness. Secure into place.



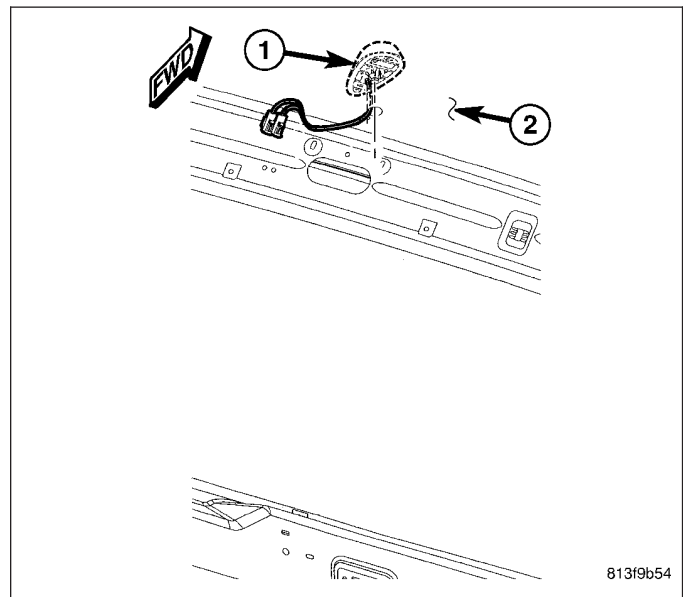
2. Install antenna mounting fasteners.
3. Install radio (Refer to 8 - ELECTRICAL/AUDIO/RADIO - INSTALLATION).
4. Install instrument panel top cover (Refer to 23 - BODY/INSTRUMENT PANEL/INSTRUMENT PANEL TOP COVER - INSTALLATION).
5. Connect battery negative cable.



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.

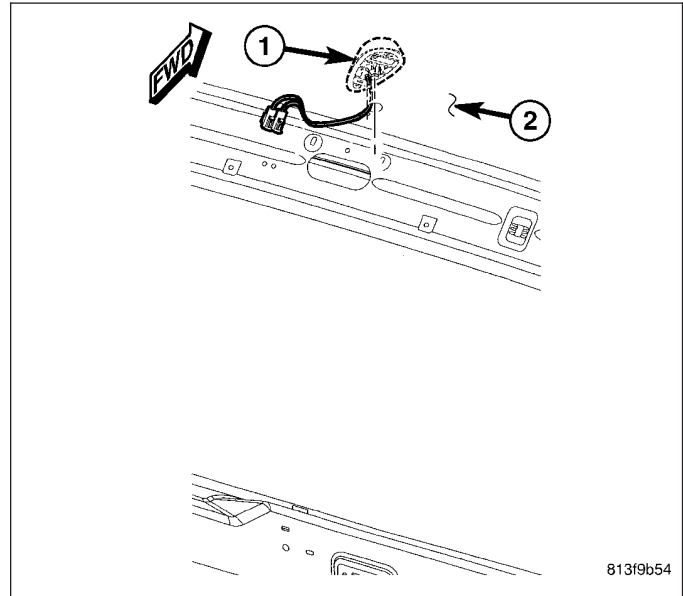


OPERATION

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.

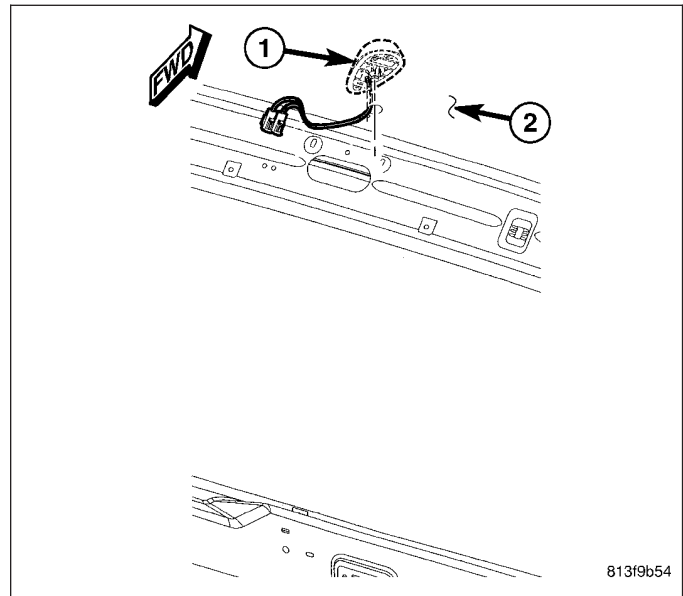
REMOVAL

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 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.

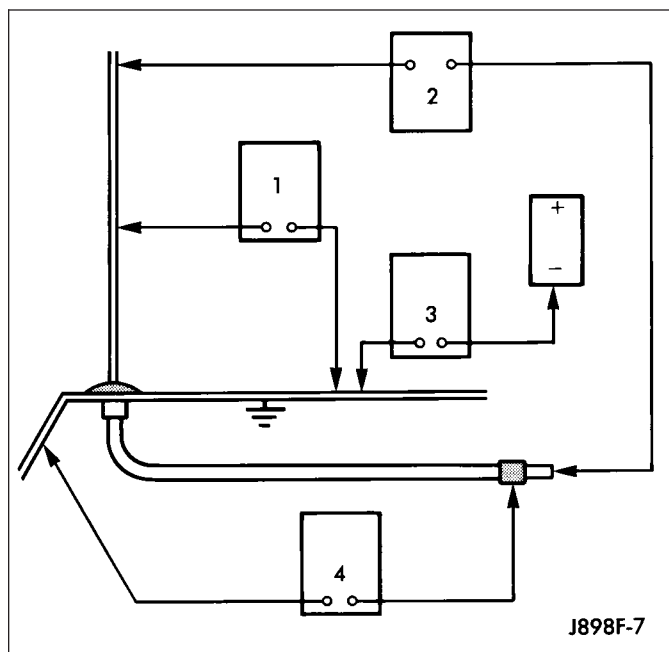
The ohmmeter test lead connections for each test are shown in the illustration.

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.

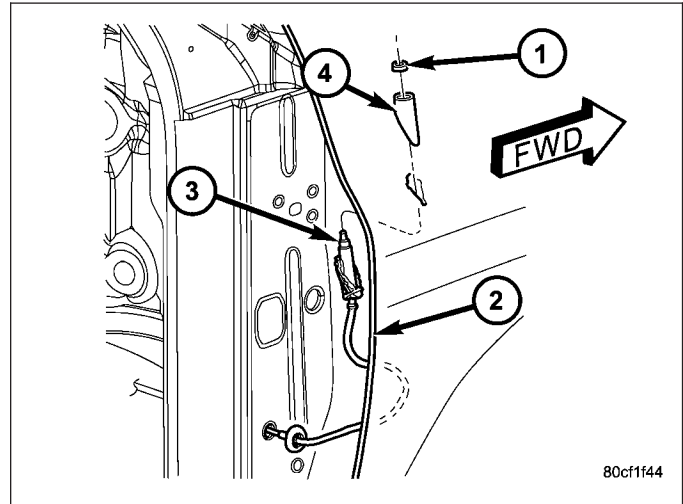
TEST 4

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.

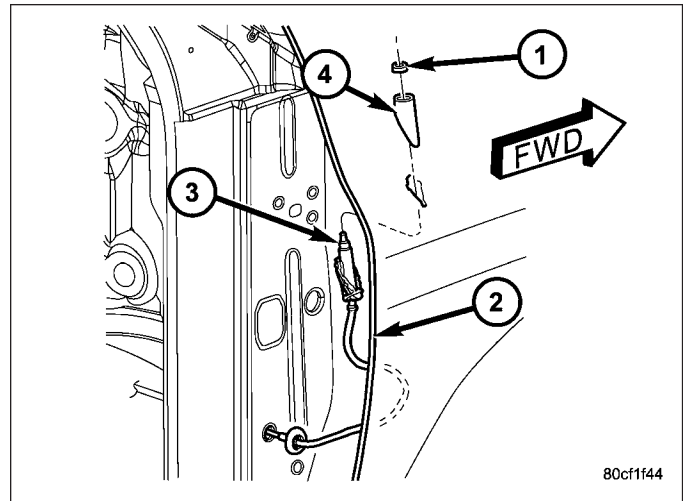
REMOVAL

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.



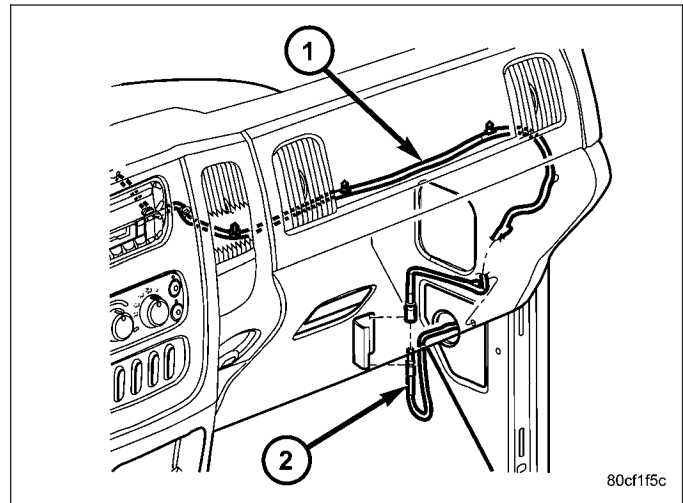
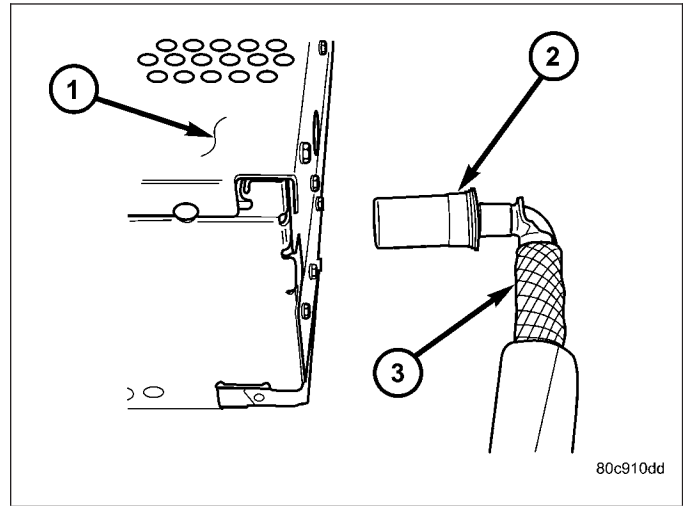
ANTENNA CABLE - INSTRUMENT PANEL

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).

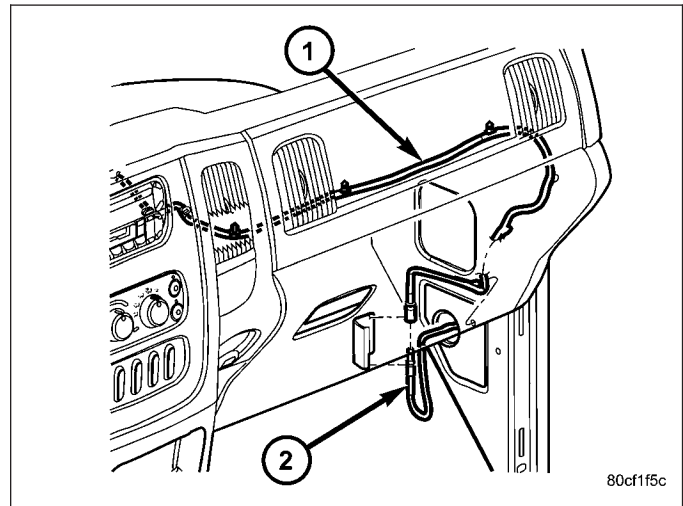
CAUTION: Pulling the antenna cable straight out of the radio without pulling on the locking antenna connector could damage the cable or radio.

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

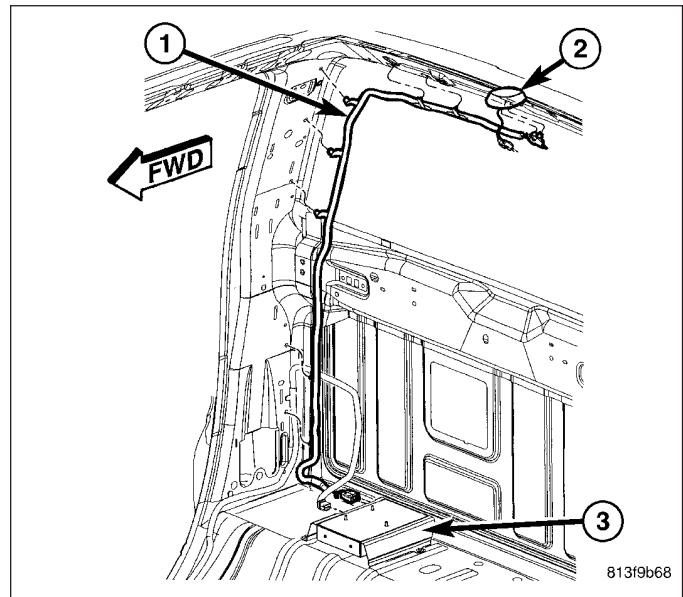
1. Install antenna cable (1) to instrument panel by pressing retaining fasteners into position.
2. Connect instrument panel antenna cable to antenna body and cable (2).
3. Install radio (Refer to 8 - ELECTRICAL/AUDIO/RADIO - INSTALLATION).
4. Install the instrument panel lower right center bezel (Refer 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

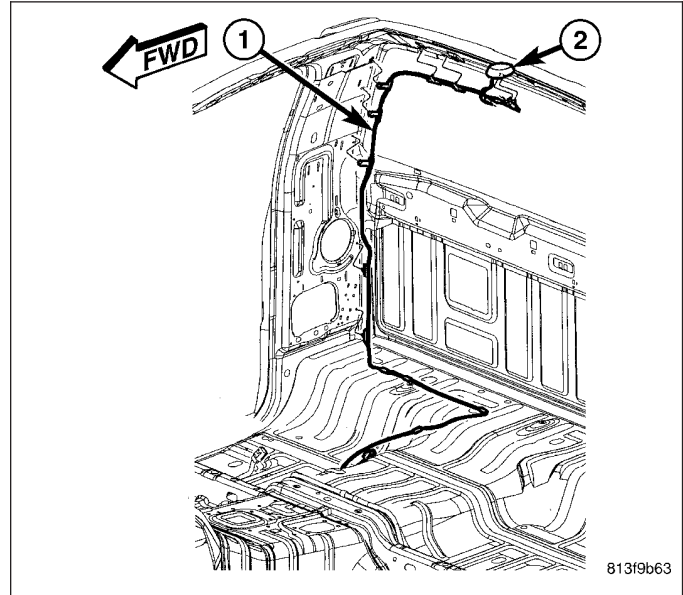
The satellite radio antenna cable (1) connects the roof mounted antenna (2) to the satellite receiver (3). It has two connectors at each end and is routed above the headliner, then down the right side of the vehicle floor below the carpet.



REMOVAL

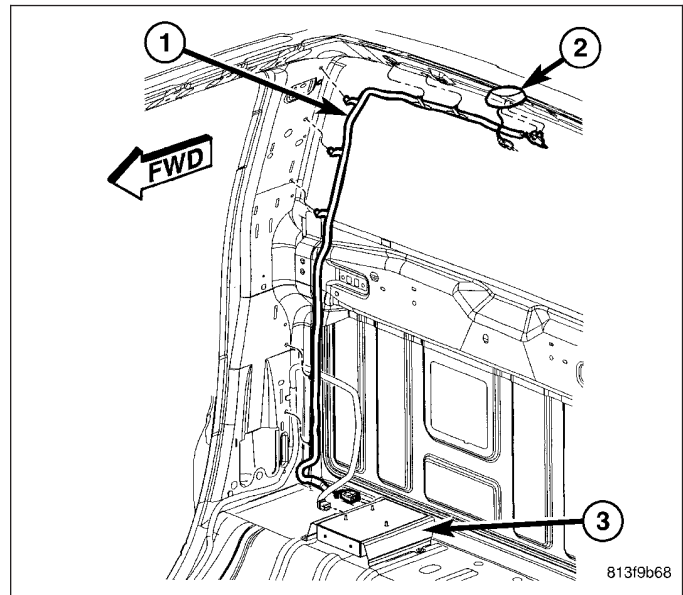
REGULAR CAB

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

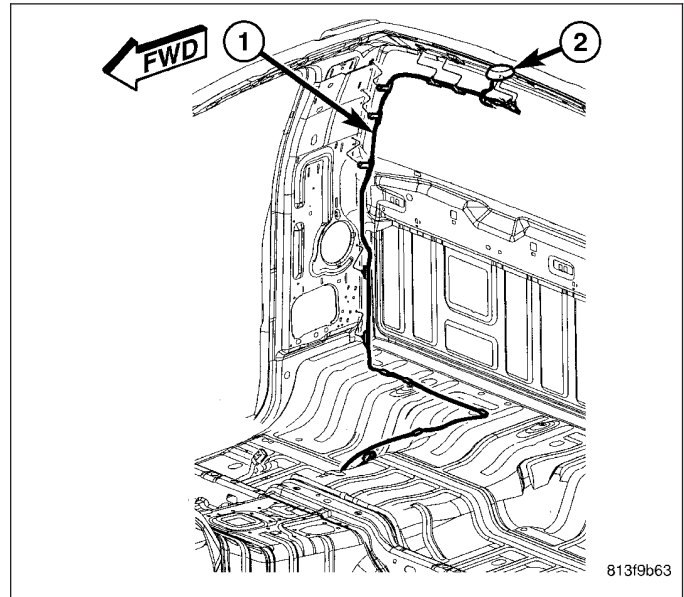
1. Disconnect and isolate the battery negative cable.
2. Lower the rear portion of the headliner as necessary to access the underside of the satellite antenna (2) (Refer to 23 - BODY/INTERIOR/HEADLINER - REMOVAL).
3. Remove the C-pillar upper trim panel (Refer to 23 - BODY/INTERIOR/C-PILLAR TRIM - REMOVAL).
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

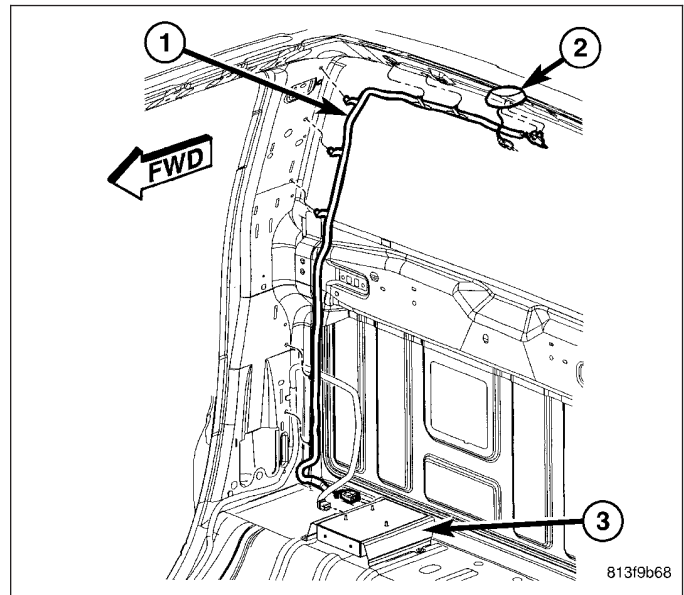
REGULAR CAB

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

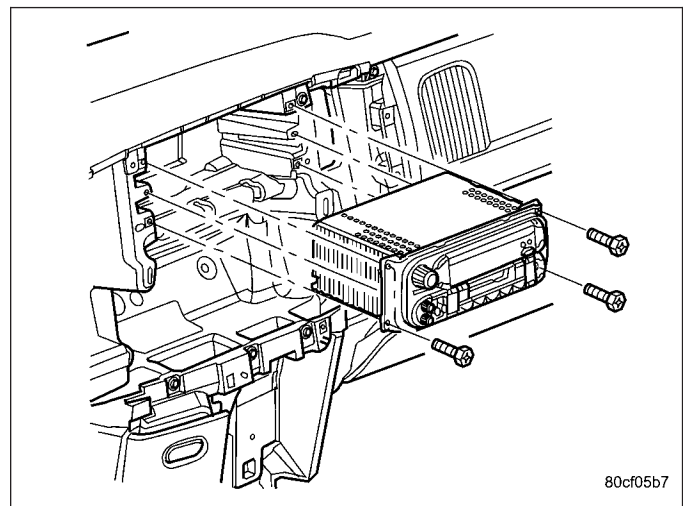
All factory-installed radio receivers can communicate on the Programmable Communications Interface (PCI) data bus network. All factory-installed receivers include an electronic digital clock function.

OPERATION

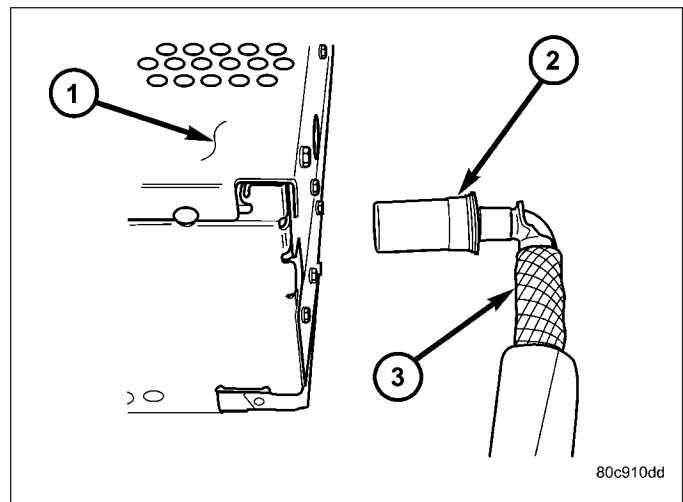
The radio receiver operates on ignition switched battery current that is available only when the ignition switch is in the On or Accessory positions. The electronic digital clock function of the radio operates on fused battery current supplied through the IOD fuse, regardless of the ignition switch position.

REMOVAL

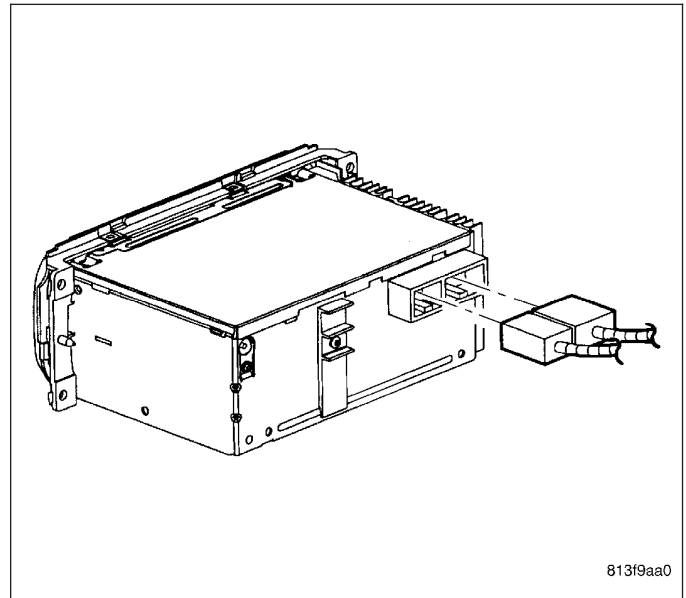
1. Disconnect and isolate the battery negative cable.
2. Remove center instrument panel bezel (Refer to 23 - BODY/INSTRUMENT PANEL/INSTRUMENT PANEL CENTER BEZEL - REMOVAL).
3. Remove radio mounting fasteners.



CAUTION: Pulling the antenna cable straight out of the radio without pulling on the locking antenna connector could damage the cable or radio.

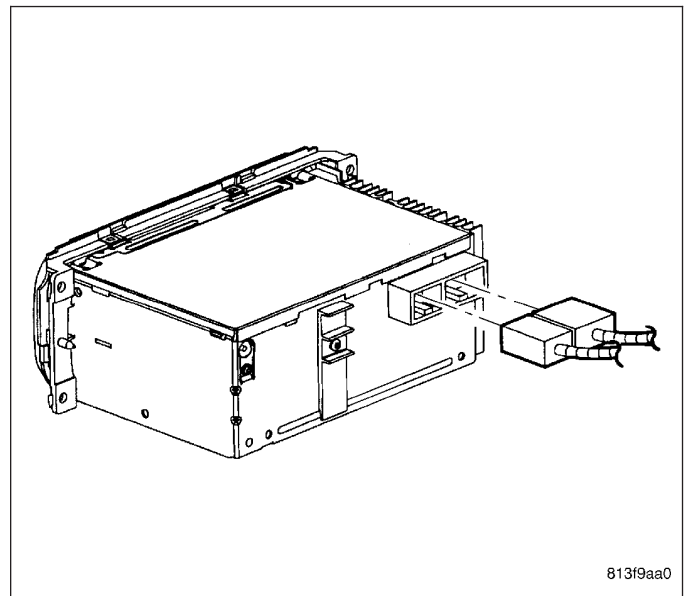


4. Disconnect the antenna cable by pulling the locking antenna connector (2) away from the radio.
5. Disconnect electrical harness connector.

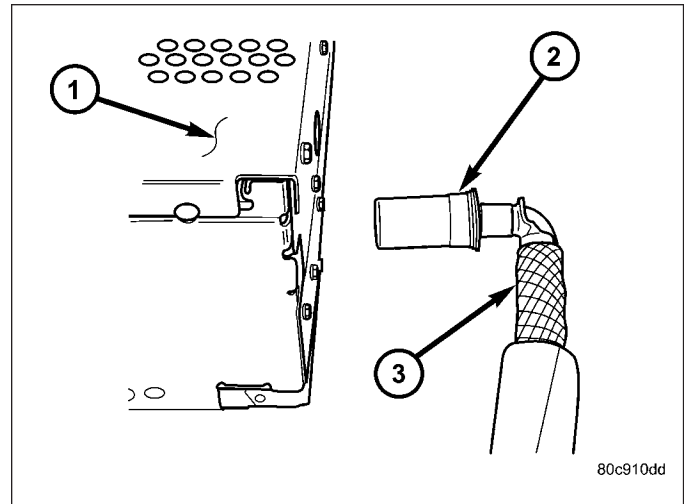


INSTALLATION

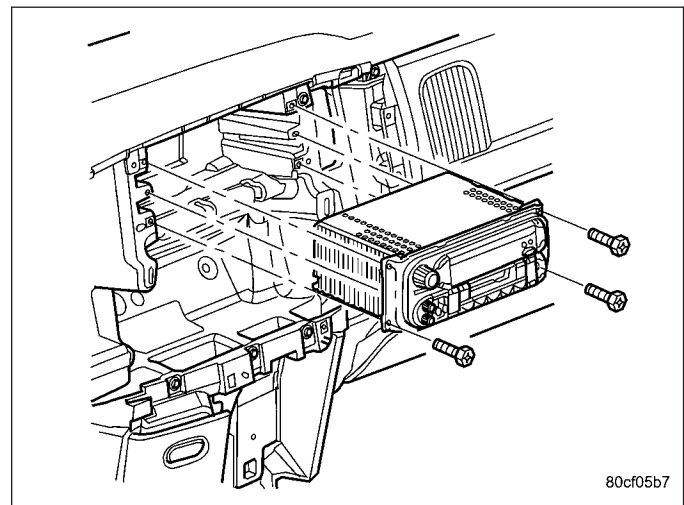
1. Connect electrical harness connector to radio.



2. Install antenna cable (3) to radio (1).



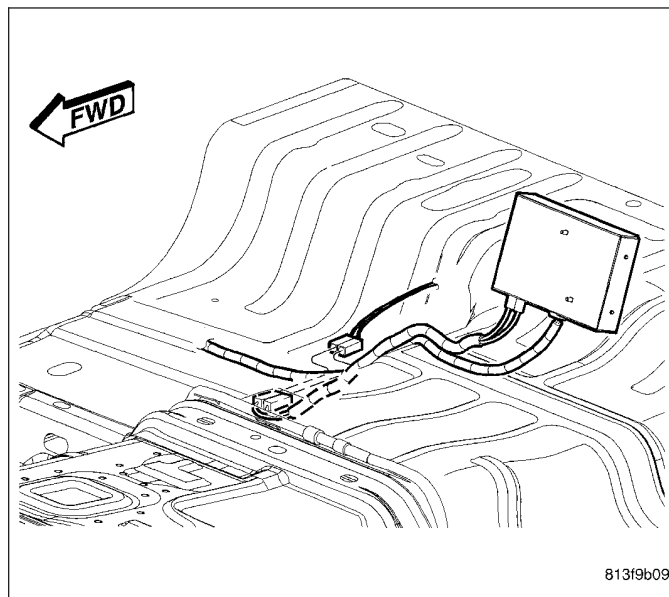
3. Position radio to instrument panel.
4. Install and tighten mounting fasteners.
5. Install instrument panel center bezel (Refer to 23 - BODY/INSTRUMENT PANEL/INSTRUMENT PANEL CENTER BEZEL - INSTALLATION).
6. Connect battery negative cable.



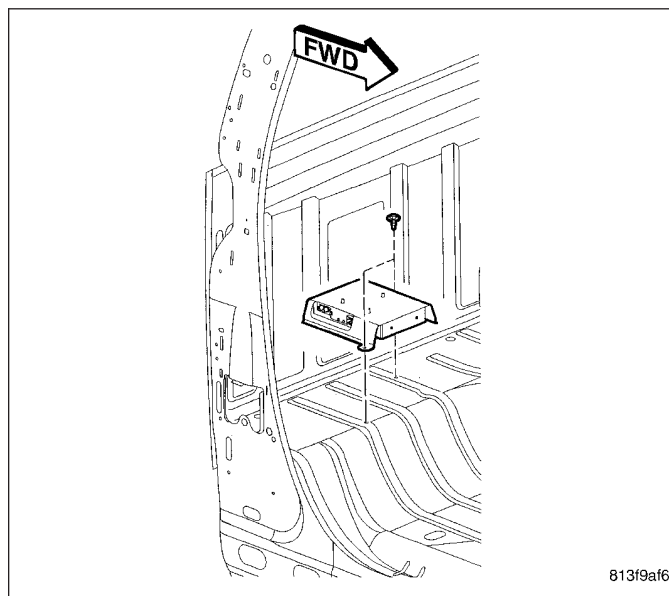
RECEIVER-SATELLITE

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:

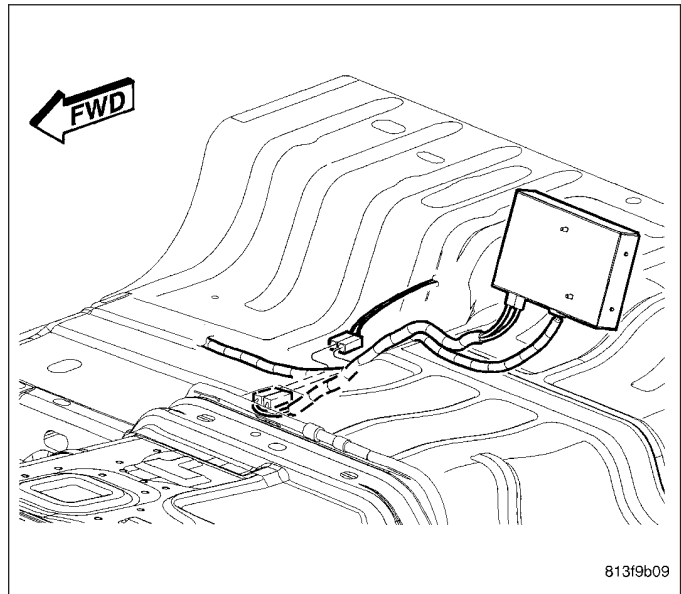
- Electronic Serial Number / Sirius Identification Number (ESN/SID) of the unit to be replaced
- ESN/SID of the replacement receiver
- Vehicle Owner's name and address
- VIN

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.

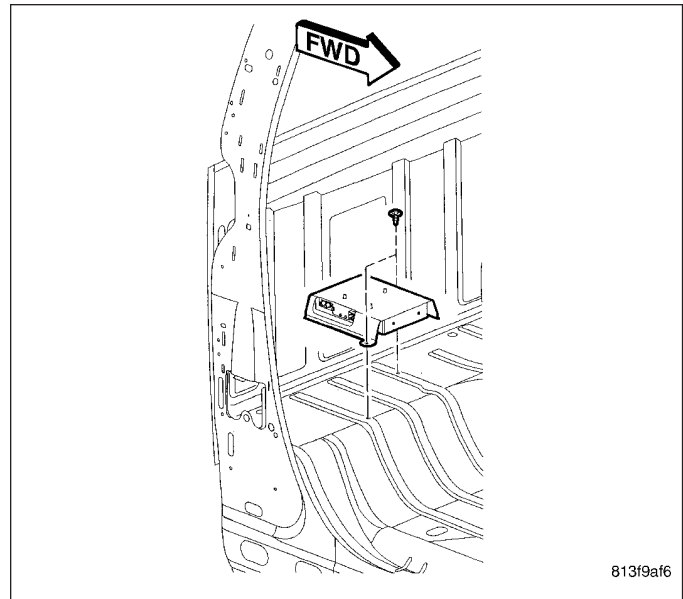
REGULAR CAB

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.

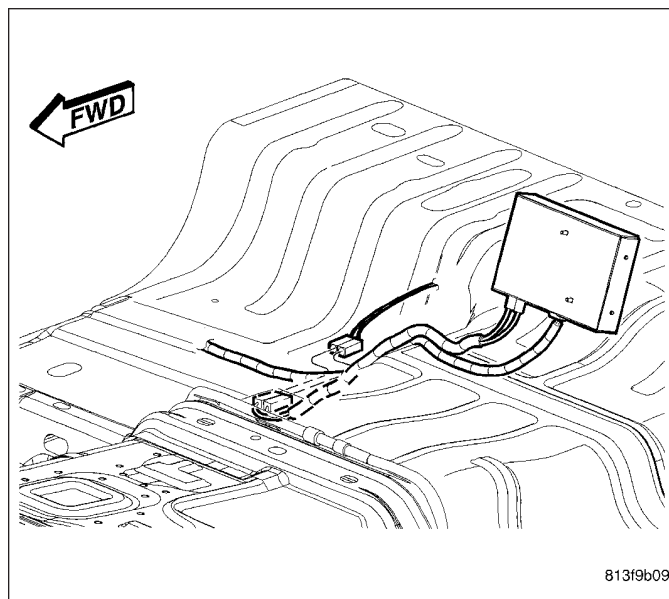
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- Electronic Serial Number / Sirius Identification Number (ESN/SID) of the unit to be replaced
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- VIN

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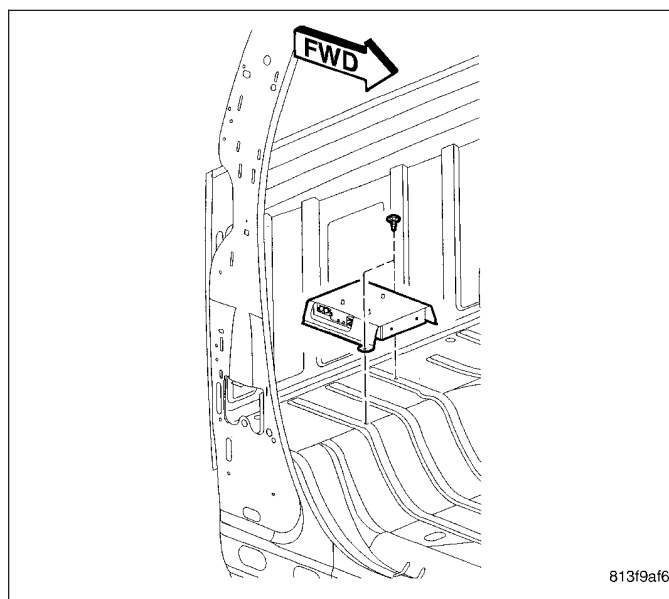
The vehicle must be outside with the audio system powered on, in the satellite radio mode, to receive the activation signal.

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.

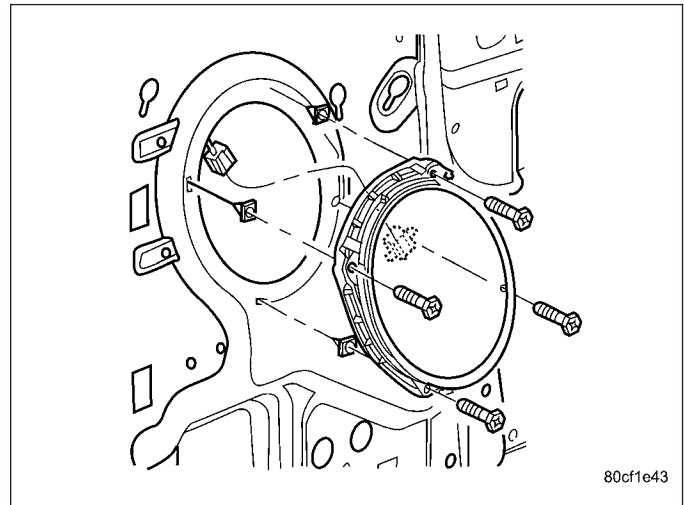
1. If all speakers are inoperative, check the fuses in the Integrated Power Module (IPM). If OK, go to Step 2. If not OK, repair the shorted circuit or component as required and replace the faulty fuse.
2. Check the amplifier fuse (if equipped) in the IPM. If OK, go to Step 3. If not OK, repair the shorted 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 a 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

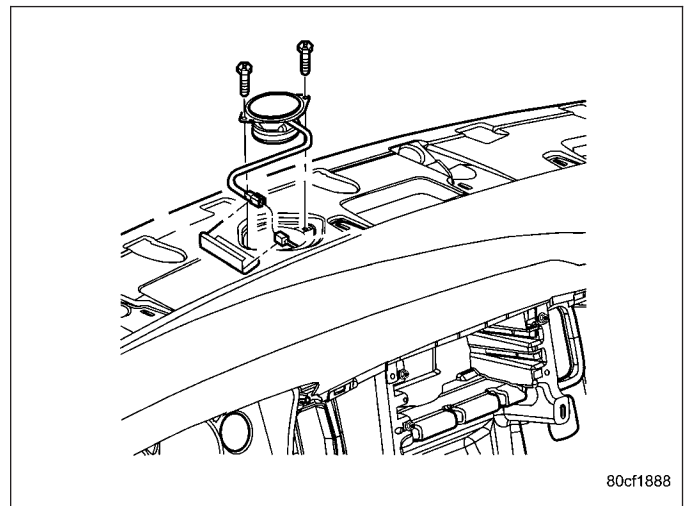
FRONT DOOR SPEAKER

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.



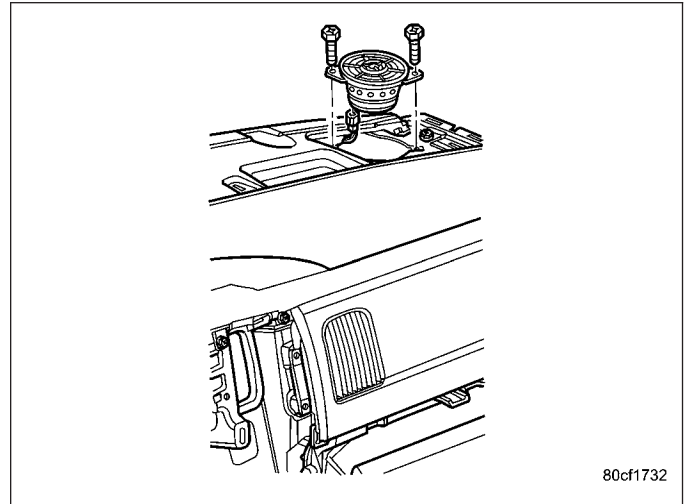
INSTRUMENT PANEL CENTER SPEAKER

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.



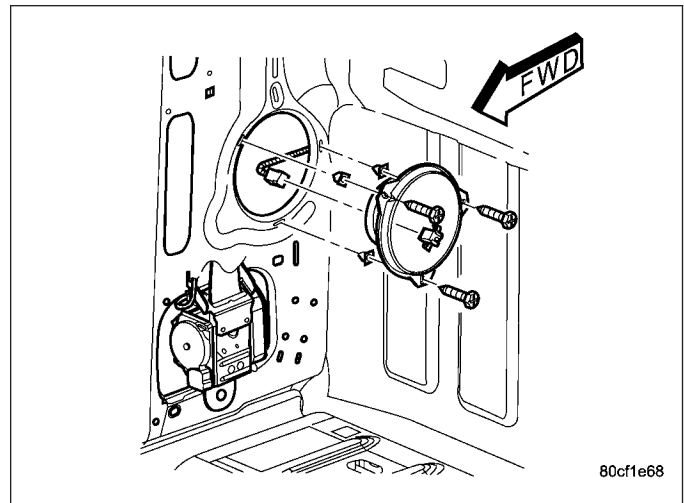
INSTRUMENT PANEL END SPEAKER

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.



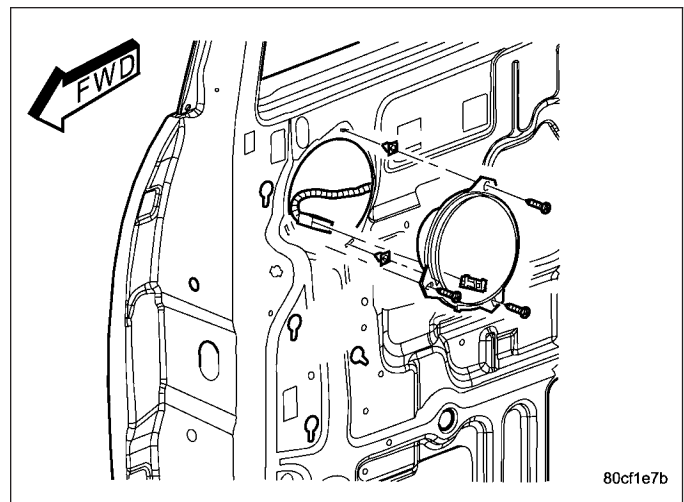
REAR CAB SIDE SPEAKER

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.



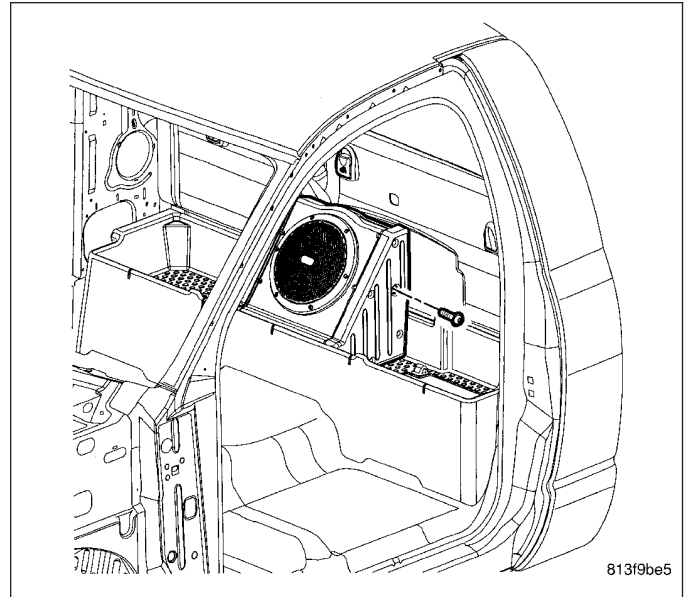
REAR DOOR SPEAKER

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.

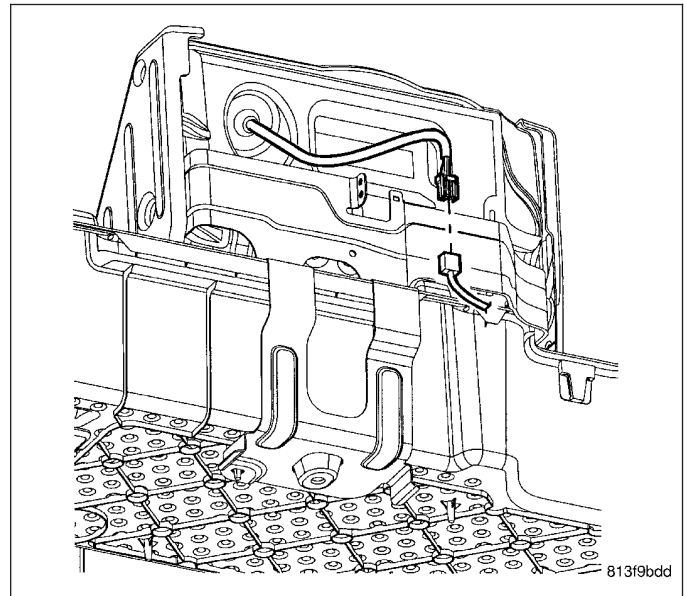


SUBWOOFER - REGULAR CAB

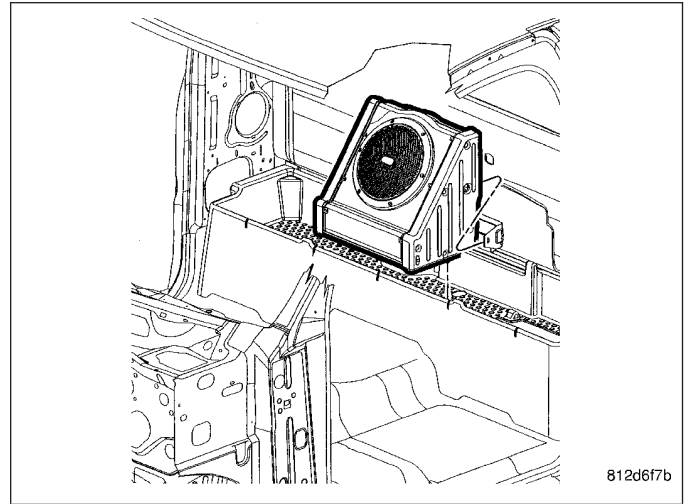
1. Disconnect and isolate the battery negative cable.
2. Remove mounting fasteners to subwoofer housing.



3. Disconnect electrical harness connector.

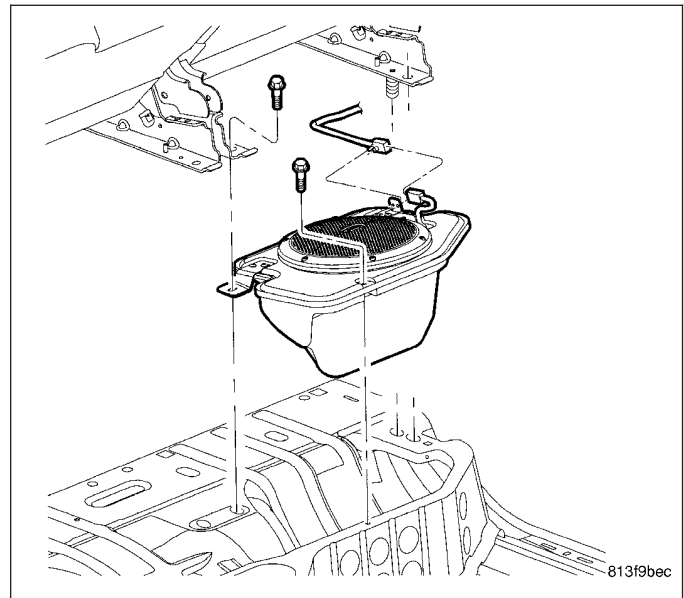


4. Remove subwoofer from vehicle.



SUBWOOFER - QUAD CAB

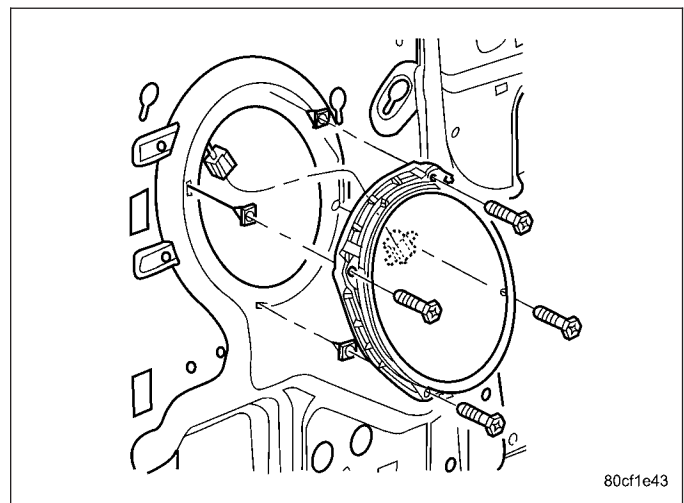
1. Disconnect and isolate the battery negative cable.
2. Raise left rear seat to access subwoofer.
3. Disconnect electrical harness connector.
4. Remove mounting fasteners and remove subwoofer.



INSTALLATION

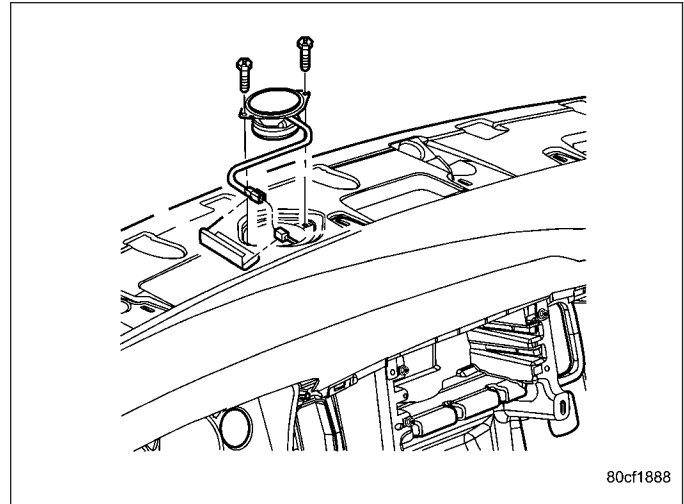
FRONT DOOR SPEAKER

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.



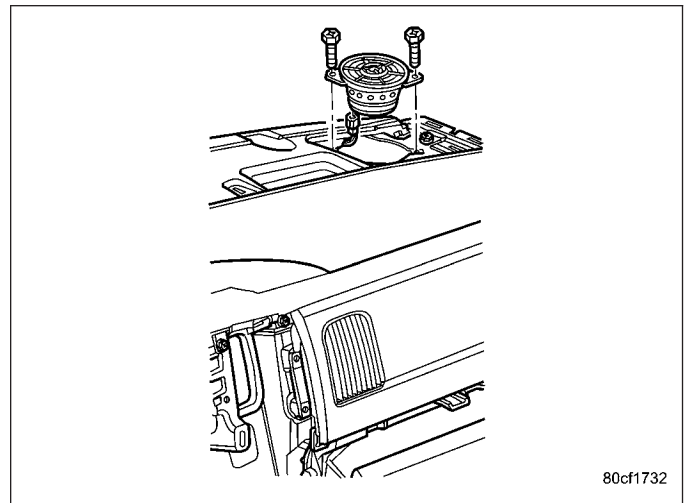
INSTRUMENT PANEL CENTER SPEAKER

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.



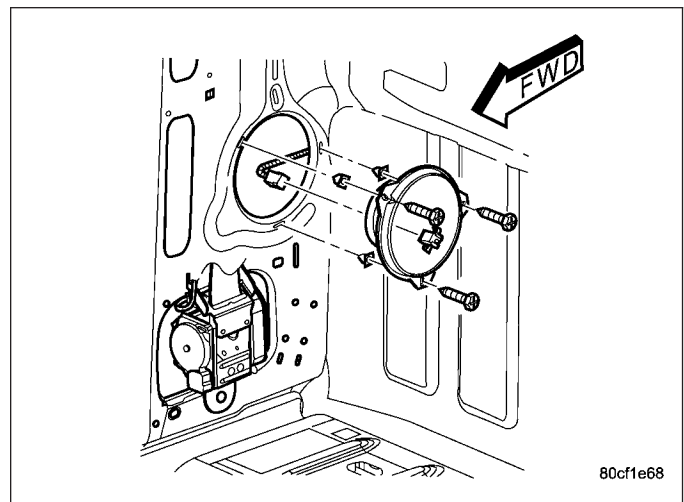
INSTRUMENT PANEL END SPEAKER

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.



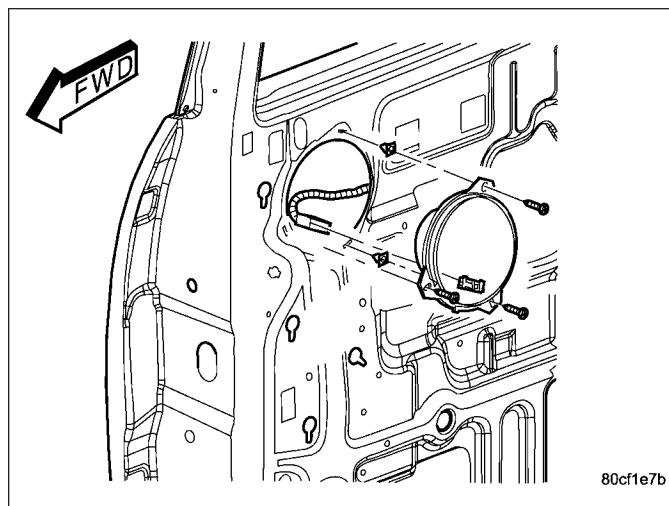
REAR CAB SIDE SPEAKER

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.



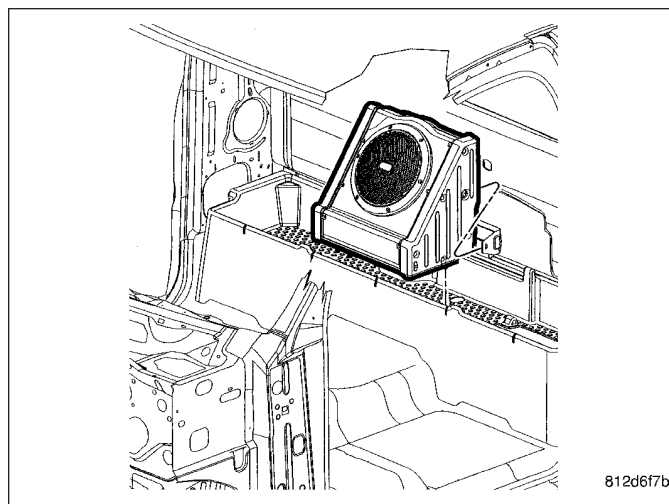
REAR DOOR SPEAKER

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.

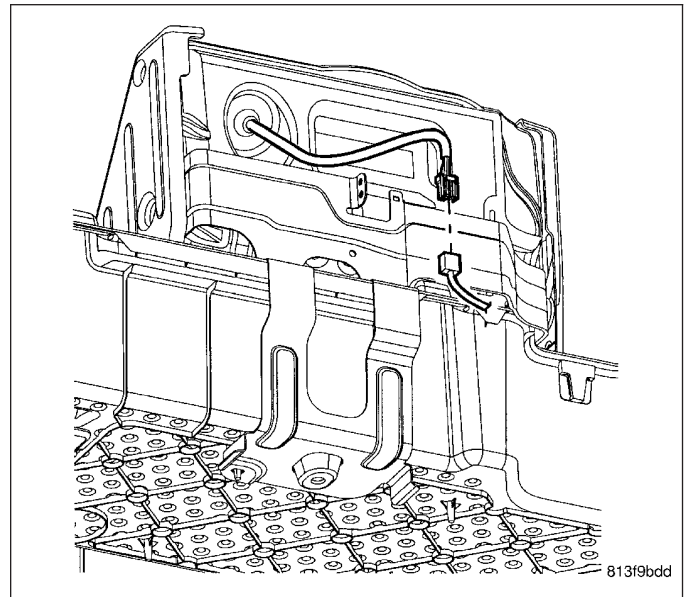


SUBWOOFER - REGULAR CAB

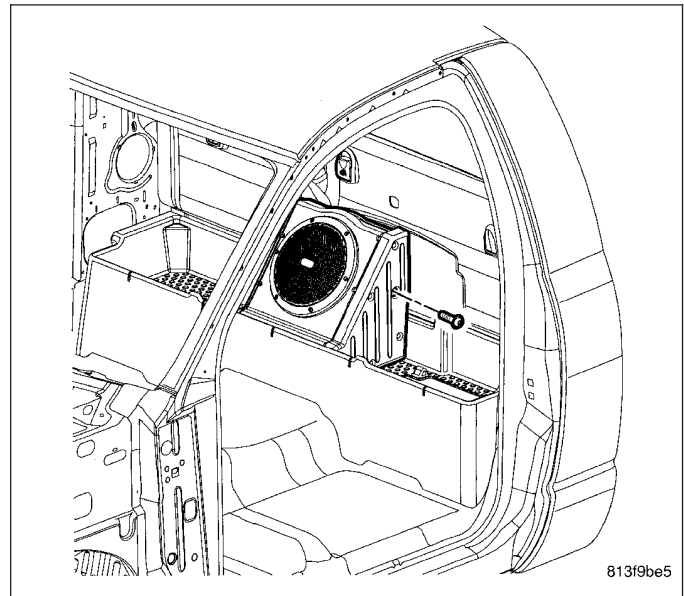
1. Position subwoofer housing into the vehicle.



2. Connect electrical harness connector.

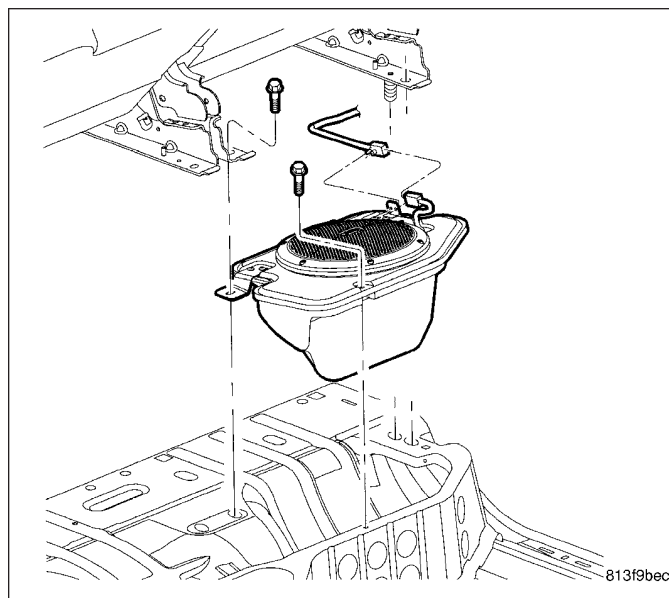


3. Install mounting fasteners.
4. Connect battery negative cable.



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

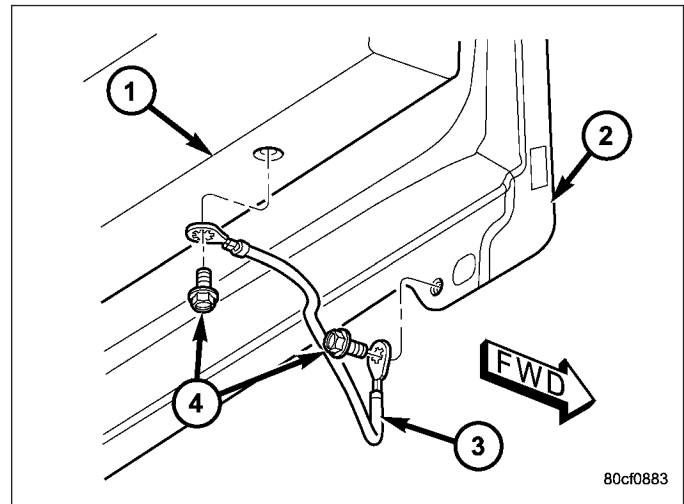
these high current components may result in radio noise caused by induced voltages created as the high current seeks alternative ground paths through components or circuits intended for use by, or in close proximity to the audio system components or circuits.

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

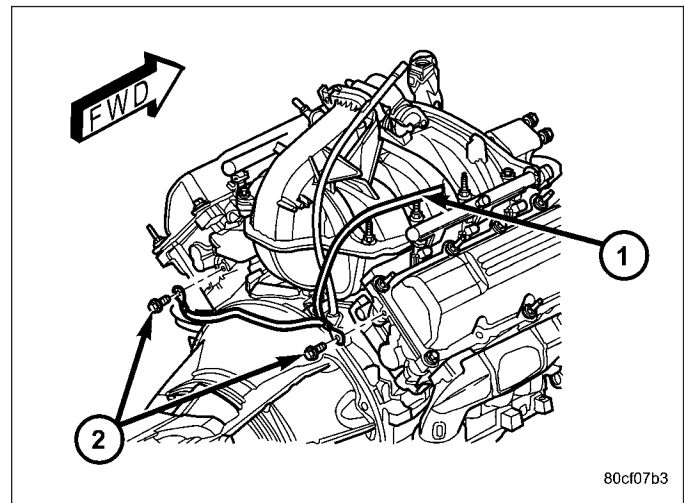
BED TO CAB

1. Disconnect and isolate the battery negative cable.
2. Remove the attaching bolts and strap.

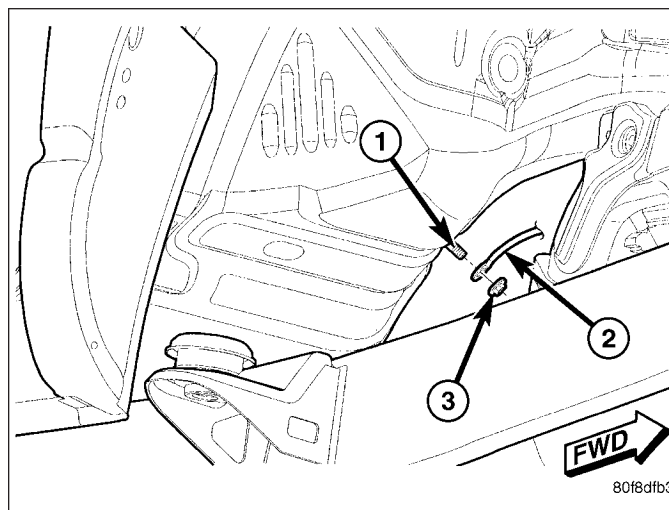


ENGINE TO HEAT SHIELD - 3.7L ENGINE

1. Disconnect and isolate the battery negative cable.
2. Remove the attaching bolts (2) from the cylinder heads.

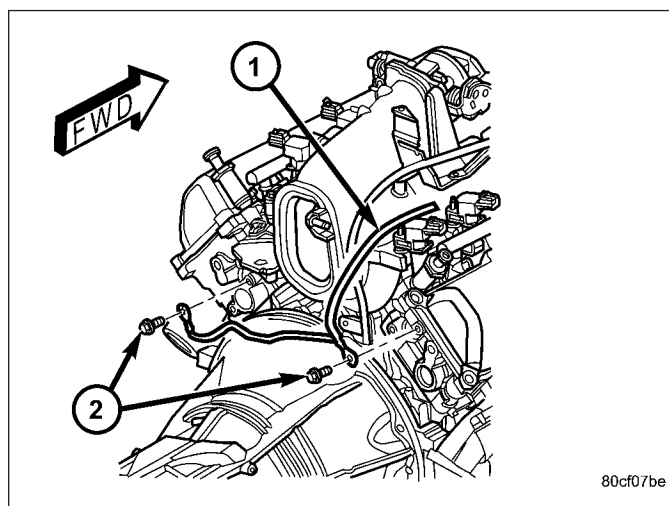


3. Remove nut (3) from heat shield (1) and remove strap (2).

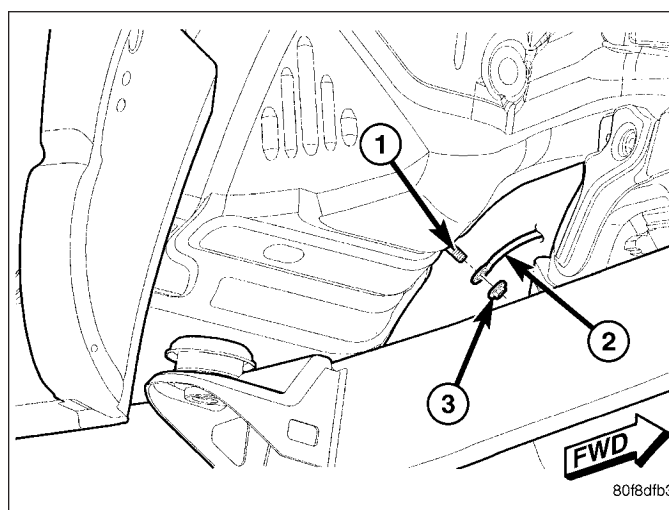


ENGINE TO HEAT SHIELD - 4.7L AND 5.7L ENGINE

1. Disconnect and isolate the battery negative cable.
2. Remove the attaching bolts (2) from the cylinder heads.



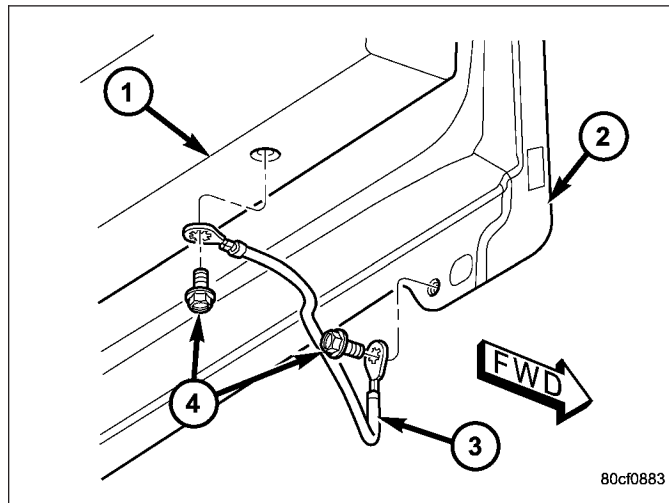
3. Remove nut (3) from heat shield (1) and remove strap (2).



INSTALLATION

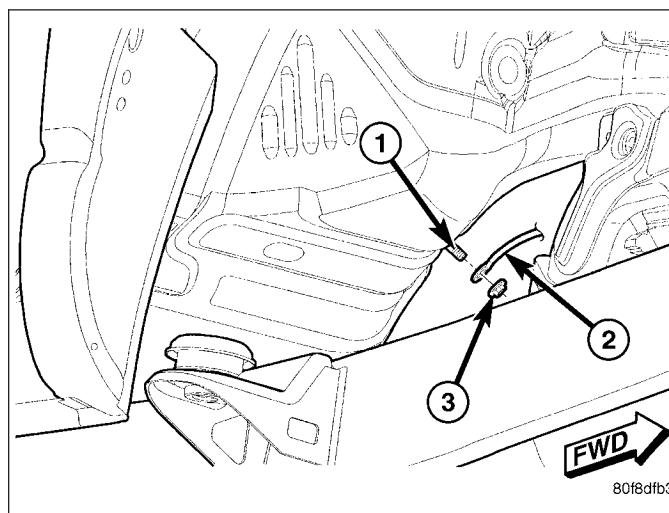
BED TO CAB

1. Install the ground strap (3) and mounting fasteners (4).
2. Tighten mounting fasteners.
3. Connect the battery negative cable.

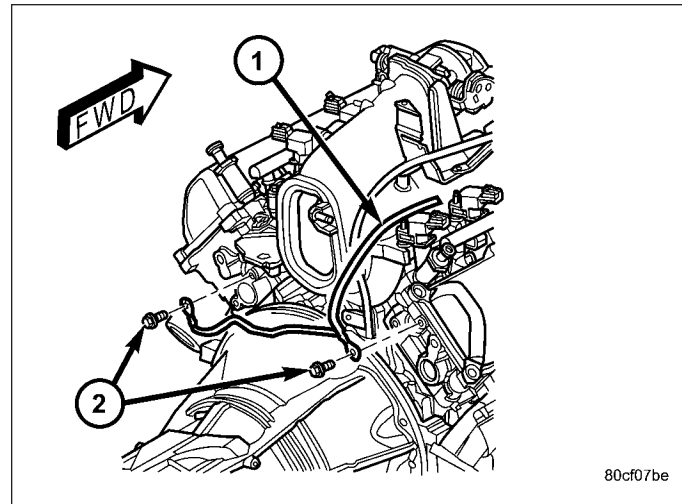


ENGINE TO HEAT SHIELD

1. Install the mounting fastener (3) and ground strap (2) to the heat shield (1).
2. Tighten mounting fastener.



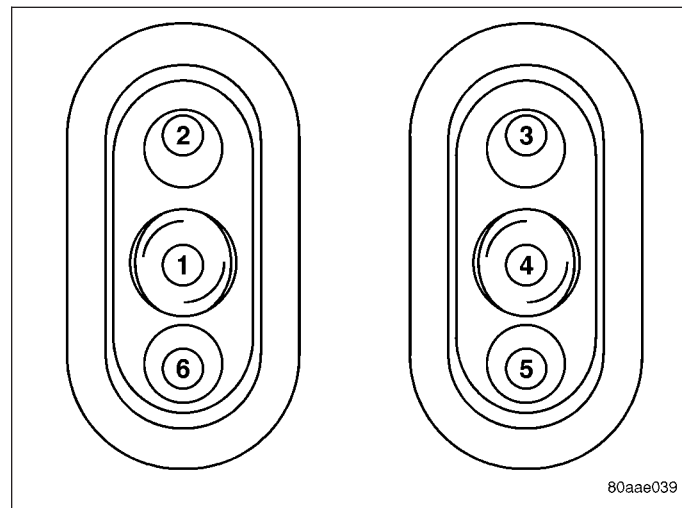
3. Install the retaining bolt and ground strap to the engine cylinder heads.
4. Tighten the retaining bolts.
5. Connect the battery negative cable.



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 Integrated Power Module (IPM) through the clockspring. The IPM 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 IPM 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 IPM or the PCI data bus, the use of a scan tool and the proper Diagnostic Procedures information is recommended.

DIAGNOSIS AND TESTING

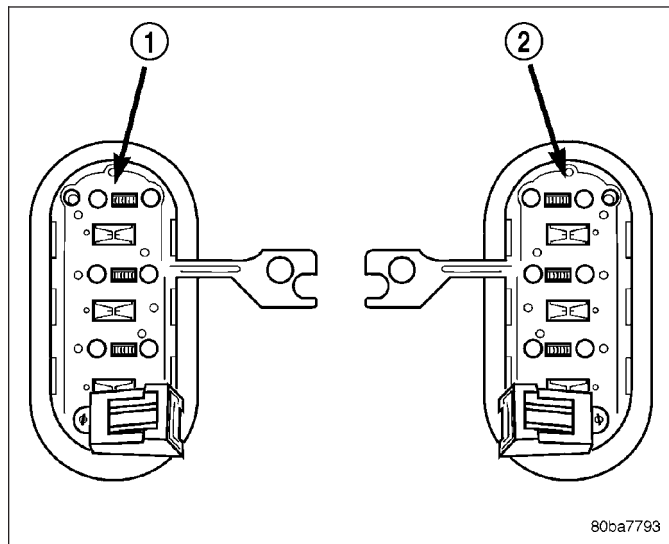
REMOTE SWITCHES

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.



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REMOTE RADIO SWITCH TEST TABLE

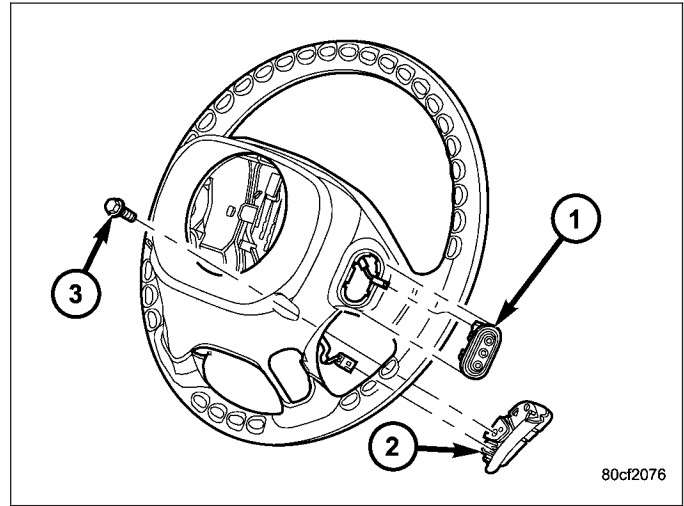
Switch	Switch Position	Resistance
Right (White)	Volume Up	1.210 Kilohms ± 1%
Right (White)	Volume Down	3.010 Kilohms ± 1%
Right (White)	Mode Advance	0.0511 Kilohms ± 1%
Left (Black)	Seek Up	0.261 Kilohms ± 1%
Left (Black)	Seek Down	0.681 Kilohms ± 1%
Left (Black)	Pre-Set Station Advance	0.162 Kilohms ± 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 Integrated Power Module (IPM) as required.
5. Disconnect and isolate the battery negative cable. Disconnect the 22-way instrument panel wire harness connector from the IPM. 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 IPM 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 IPM. There should be continuity. If OK, refer to the proper Diagnostic Procedures manual to test the IPM 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.

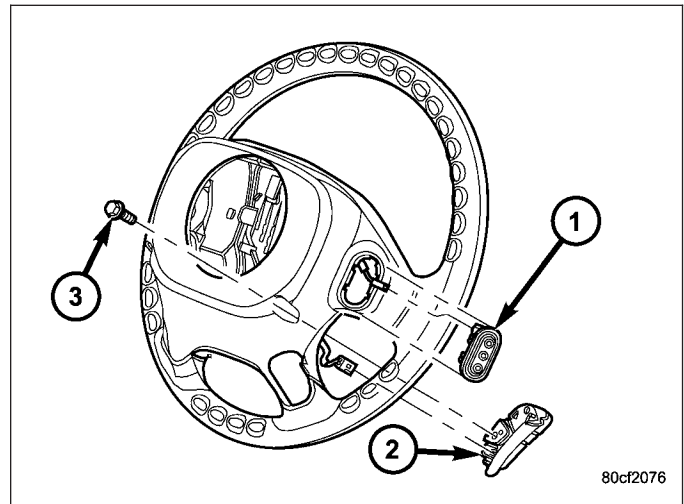
1. Disconnect and isolate the battery negative cable.
2. Remove the driver airbag (Refer to 8 - ELECTRICAL/RESTRAINTS/DRIVER AIRBAG - REMOVAL).
3. Remove the speed control switches (2) (Refer to 8 - ELECTRICAL/SPEED CONTROL/SWITCH - REMOVAL).
4. Unplug the wire harness connector from the remote radio 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.



AUDIO - SRT10 - AMP - ELECTRICAL DIAGNOSTICS

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AUDIO - SRT10 - AMP - ELECTRICAL DIAGNOSTICS

DIAGNOSIS AND TESTING

LOOPBACK FAILURE - INTERNAL ERROR

For the Audio Amplifier system circuit diagram (Refer to 8 - ELECTRICAL/AUDIO - SCHEMATICS AND DIAGRAMS).

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

Possible Causes
AMP FAILURE

1. AMP FAILURE

Cycle the ignition switch from on to off to on.

With the DRBIII®, read Amplifier DTCs.

Is the DTC active at this time?

Yes >> This is an internal AMP Failure. Replace the Amplifier in accordance with the service information.
Perform BODY VERIFICATION TEST — VER 1.

No >> Test Complete.
Perform BODY VERIFICATION TEST — VER 1.

PCI BUS LOW/BUSY

For the Audio Amplifier system circuit diagram (Refer to 8 - ELECTRICAL/AUDIO - SCHEMATICS AND DIAGRAMS).

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

Possible Causes
WIRING HARNESS INTERMITTENT OPEN PCI BUS CIRCUIT AT THE DATA LINK CONNECTOR (DLC) PCI BUS CIRCUIT SHORTED TO VOLTAGE MODULE SHORT TO VOLTAGE PCI BUS CIRCUIT SHORTED TO GROUND MODULE SHORT TO GROUND

1. PCI BUS UNABLE TO COMMUNICATE WITH DRBIII®

NOTE: Note: Determine which modules this vehicle is equipped with before beginning.

NOTE: NOTE: When attempting to communicate with any of the modules on this vehicle, the DRBIII® will display 1 of 2 different communication errors: a NO RESPONSE message or a BUS +/- SIGNALS OPEN message.

Turn the ignition on.

Using the DRBIII®, attempt to communicate with the following control modules:

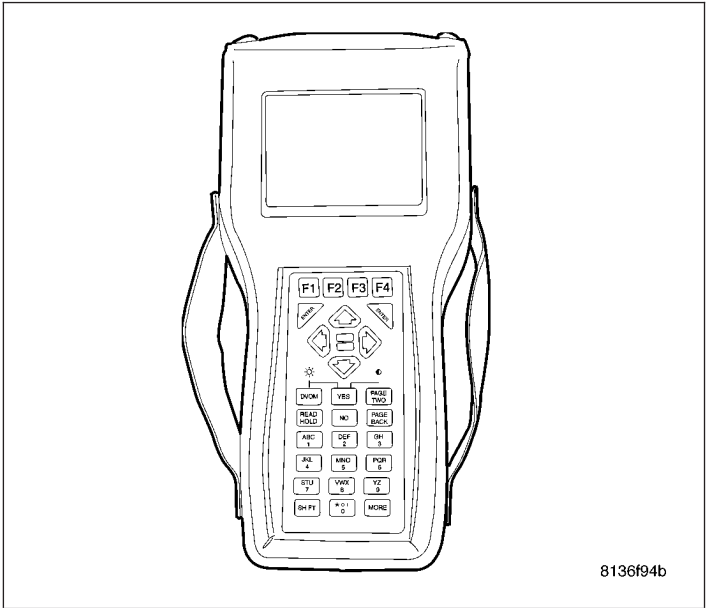
Airbag Control Module

Front Control Module

Instrument Cluster

Was the DRBIII® able to communicate with one or more Module(s)?

- Yes** >> Go To 2
- No** >> Go To 3



PCI BUS LOW/BUSY (CONTINUED)

2. WIRING HARNESS INSPECTION

Turn the ignition off.

NOTE: Note: Visually inspect the related wiring harness. Look for any chafed, pierced, pinched, or partially broken wires.

NOTE: Note: Visually inspect the related wire harness connectors. Look for broken, bent, pushed out, or corroded terminals.

NOTE: NOTE: If the DRBIII® can not communicate with a single module, refer to the category list for the related symptom.

Were any problems found?

Yes >> Repair wiring harness/connectors as necessary.
Perform the BODY VERIFICATION TEST — VER 1.

No >> Test Complete.
Perform the BODY VERIFICATION TEST — VER 1.

3. OPEN PCI BUS CIRCUIT AT THE DATA LINK CONNECTOR (DLC)

Turn the ignition off.

Disconnect the PCM harness connector. Note:

Disconnect the DRBIII® from the Data Link Connector (DLC).

Disconnect the negative battery cable.

Measure the resistance of the PCI Bus circuit between the Data Link Connector (DLC) and the PCM harness connector.

Is the resistance below 5.0 ohms?

Yes >> Go To 4

No >> Repair the PCI Bus circuit for an open.
Perform the BODY VERIFICATION TEST — VER 1.

4. MEASURE THE VOLTAGE OF THE PCI BUS CIRCUIT

NOTE: NOTE: Reconnect the PCM harness connector and the negative battery cable.

Turn the ignition on.

Measure the voltage of the PCI Bus circuit at the Data Link Connector (DLC).

Is the voltage above 7.0 volts?

Yes >> Go To 5

No >> Go To 6

PCI BUS LOW/BUSY (CONTINUED)

5. PCI BUS CIRCUIT SHORTED TO VOLTAGE

Turn the ignition off.

Using a voltmeter, connect one end to the PCI Bus circuit at the DLC, and the other end to ground.

NOTE: Note: When performing the next step turn the ignition off (wait one minute) before disconnecting any module. When the module is disconnected turn the ignition on to check for a short to voltage.

Turn the ignition on.

While monitoring the voltmeter, disconnect each module the vehicle is equipped with one at a time.

Is the voltage steadily above 7.0 volts with all the modules disconnected?

Yes >> Repair the PCI Bus circuit for a short to voltage.
Perform the BODY VERIFICATION TEST — VER 1.

No >> Test Complete.
Perform the BODY VERIFICATION TEST — VER 1.

6. PCI BUS CIRCUIT SHORTED TO GROUND

Turn the ignition off.

Disconnect the negative battery cable.

Using a ohmmeter, connect one end to the PCI Bus circuit at the DLC, and the other end to ground.

While monitoring the ohmmeter, disconnect each module the vehicle is equipped with one at a time.

NOTE: NOTE: Total bus resistance to ground thru all of the modules is typically between 350 to 1000 ohms. The more modules on the bus, the lower the total bus resistance will be.

Is the resistance below 150.0 ohms with all the modules disconnected?

Yes >> Repair the PCI Bus circuit for a short to ground.
Perform the BODY VERIFICATION TEST — VER 1.

No >> Test Complete.
Perform the BODY VERIFICATION TEST — VER 1.

NO COMMUNICATION WITH RADIO

For the Audio Amplifier system circuit diagram (Refer to 8 - ELECTRICAL/AUDIO - SCHEMATICS AND DIAGRAMS).

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

Possible Causes
GROUND CIRCUIT OPEN FUSED B(+) CIRCUIT OPEN FUSED IGNITION SWITCH OUTPUT CIRCUIT OPEN OPEN PCI BUS CIRCUIT

1. ATTEMPT TO COMMUNICATE WITH THE MIC

Turn the ignition on.

With the DRBIII®, attempt to communicate with the Instrument Cluster.

Was the DRBIII® able to I/D or communicate with the Instrument Cluster?

Yes >> Go To 2

No >> Refer to the communication symptom list for problems related to no communication with the Instrument Cluster.

Perform BODY VERIFICATION TEST — VER 1.

2. GROUND CIRCUIT OPEN

Turn the ignition off.

Disconnect the radio harness connector.

Using a 12-volt test light connected to 12-volts, probe the ground circuit.

Is the test light illuminated?

Yes >> Go To 3

No >> Repair the ground circuit for an open.

Perform BODY VERIFICATION TEST — VER 1.

3. FUSED B(+) CIRCUIT OPEN

Turn the ignition off.

Disconnect the Radio harness connector.

Using a 12-volt test light connected to ground, probe the Fused B(+) circuits.

Is the test light illuminated?

Yes >> Go To 4

No >> Repair the Fused B+ circuit for an open.

Perform BODY VERIFICATION TEST — VER 1.

NO COMMUNICATION WITH RADIO (CONTINUED)

4. FUSED IGNITION SWITCH OUTPUT CIRCUIT OPEN

Turn the ignition off.

Disconnect the Radio harness connector.

Turn the ignition on.

Using a 12-volt test light connected to ground, probe the Fused Ignition Switch Output circuit.

Is the test light illuminated?

Yes >> Go To 5

No >> Repair the Fused Ignition Switch Output circuit for an open.
Perform BODY VERIFICATION TEST — VER 1.

5. OPEN PCI BUS CIRCUIT

NOTE: NOTE: Ensure there is PCI Bus communication with other modules on the vehicle before proceeding. If not, refer to the symptom list from the menu and repair as necessary.

Disconnect the Radio harness connector.

Use Scope input cable CH7058, Cable to Probe adapter CH7062, and the red and black test probes.

Connect the scope input cable to the channel one connector on the DRBIII®. Attach the red and black leads and the cable to probe adapter to the scope input cable.

With the DRBIII® select Pep Module Tools.

Select lab scope.

Select Live Data.

Select 12 volt square wave.

Press F2 for Scope.

Press F2 and use the down arrow to set voltage range to 20 volts. Press F2 again when complete.

Connect the Black lead to the chassis ground. Connect the Red lead to the PCI Bus circuit in the Radio connector.

Turn the ignition on.

Observe the voltage display on the DRBIII® Lab Scope.

Does the voltage pulse from 0 to approximately 7.5 volts?

Yes >> Test Complete.
Perform BODY VERIFICATION TEST — VER 1.

No >> Repair the PCI Bus circuit for an open.
Perform BODY VERIFICATION TEST — VER 1.

CHANNEL X DC OFFSET

For the Audio Amplifier system circuit diagram (Refer to 8 - ELECTRICAL/AUDIO - SCHEMATICS AND DIAGRAMS).

For a complete wiring diagram Refer to Section 8W.

NOTE: All symptoms listed through CHANNEL 1 DC OFFSET thru CHANNEL 8 DC OFFSET are diagnosed using the same tests. The title for the tests will be CHANNEL X DC OFFSET. Use the 8W wiring section for circuit ID's and wiring repairs.

Possible Causes
AMP FAILURE

1. AMP FAILURE

Cycle the ignition switch from on to off to on.

With the DRBIII®, read Amplifier DTCs.

Is the DTC active at this time?

Yes >> This is an internal AMP Failure. Replace the Amplifier in accordance with the service information.
Perform BODY VERIFICATION TEST — VER 1.

No >> Test Complete.
Perform BODY VERIFICATION TEST — VER 1.

CHANNEL X CIRCUIT SHORT TO GROUND

For the Audio Amplifier system circuit diagram (Refer to 8 - ELECTRICAL/AUDIO - SCHEMATICS AND DIAGRAMS).

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

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

Possible Causes
CHANNEL X (+) CIRCUIT SHORTED TO GROUND CHANNEL X (-) CIRCUIT SHORTED TO GROUND SPEAKER AMPLIFIER

1. INTERMITTENT CONDITION

NOTE: NOTE: This is a generic test for all Speakers listed for Channel 1 thru Channel 8. Use the following diagnostics for the specific speaker that set the DTC. Refer to 8W for circuit ID's and wiring repairs.

Turn the ignition on.

Turn the ignition off.

Turn the ignition on.

With the DRBIII®, read Amplifier DTCs.

Is the Channel X Circuit Short to Ground DTC active?

Yes >> Go To 2

No >> The conditions that caused this code to set are not present at this time. Use the wiring diagrams/schematics as a guide to locate and inspect the related wiring and connectors.
Perform BODY VERIFICATION TEST - VER 1.

2. CHANNEL X (+) CIRCUIT SHORTED TO GROUND

Disconnect the appropriate Speaker harness connector.

Disconnect the Amplifier harness connectors.

Measure the resistance between ground and the Channel X (+) circuit at the speaker harness connector.

Is the resistance below 100 ohms?

Yes >> Repair the short to ground in the Channel X (+) circuit.
Perform BODY VERIFICATION TEST - VER 1.

No >> Go To 3

3. CHANNEL X (-) CIRCUIT SHORTED TO GROUND

Measure the resistance between ground and the Channel X (-) circuit at the speaker harness connector.

Is the resistance below 100 ohms?

Yes >> Repair the short to ground in the Channel X (-) circuit.
Perform BODY VERIFICATION TEST - VER 1.

No >> Go To 4

CHANNEL X CIRCUIT SHORT TO GROUND (CONTINUED)

4. SPEAKER

Connect the Speaker harness connector.

Measure the resistance between ground and the Channel X (+) circuit at the Amplifier harness connector.

Is the resistance below 100 ohms?

- Yes** >> Replace the Speaker per Service Information.
 Perform BODY VERIFICATION TEST - VER 1.
- No** >> Replace the Amplifier per Service Information.
 Perform BODY VERIFICATION TEST - VER 1.
-

CHANNEL X SHORT TO BATTERY

For the Audio Amplifier system circuit diagram (Refer to 8 - ELECTRICAL/AUDIO - SCHEMATICS AND DIAGRAMS).

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

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

Possible Causes
CHANNEL X (+) CIRCUIT SHORTED TO BATTERY CHANNEL X (-) CIRCUIT SHORTED TO BATTERY AMPLIFIER

1. INTERMITTENT CONDITION

NOTE: NOTE: This is a generic test for all Speakers Channel 1 Short to Battery thur Channel 8 Short to Battery. Use the following diagnostics for the specific speaker that set the DTC. Use the 8W wiring diagrams for circuit ID's and wiring repairs.

Turn the ignition on.

Turn the ignition off.

Turn the ignition on.

With the DRBIII®, read Amplifier DTCs.

Is the Channel X Circuit Short to Battery DTC active?

Yes >> Go To 2

No >> The conditions that caused this code to set are not present at this time. Use the wiring diagrams/schematics as a guide to locate and inspect the related wiring and connectors.
Perform BODY VERIFICATION TEST - VER 1.

2. CHANNEL X (+) CIRCUIT SHORTED TO BATTERY

NOTE: NOTE: This is a generic test for all Speakers. Use the following diagnostics for the specific speaker that set the DTC.

Turn the ignition off.

Disconnect the appropriate Speaker harness connector.

Disconnect the Amplifier harness connectors.

Turn the ignition on.

Measure the voltage on the Channel X (+) circuit at the Speaker harness connector.

Is the voltage above 1.0 volt?

Yes >> Repair the short to battery voltage in the Channel X (+) circuit.
Perform BODY VERIFICATION TEST - VER 1.

No >> Go To 3

CHANNEL X SHORT TO BATTERY (CONTINUED)

3. CHANNEL X (-) CIRCUIT SHORTED TO BATTERY

Measure the voltage on the Channel X (-) circuit at the speaker harness connector.

Is the voltage above 1.0 volt?

Yes >> Repair the short to battery voltage in the Channel X (-) circuit.
Perform BODY VERIFICATION TEST - VER 1.

No >> Test Complete.

CHANNEL X OPEN

For the Audio Amplifier system circuit diagram (Refer to 8 - ELECTRICAL/AUDIO - SCHEMATICS AND DIAGRAMS).

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
CHANNEL X (-) CIRCUIT SHORTED TO CHANNEL X (+) CIRCUIT SPEAKER AMPLIFIER

1. INTERMITTENT CONDITION

NOTE: NOTE: This is a generic test for all Speakers Channel 1 Open thur Channel 8 Open. Use the following diagnostics for the specific speaker that set the DTC. Use the 8W wiring diagrams for circuit ID's and wiring repairs.

Turn the ignition on.

Turn the ignition off.

Turn the ignition on.

With the DRBIII®, read Amplifier DTCs.

Is the Channel X Shorted Together DTC active?

- Yes** >> Go To 2
- No** >> The conditions that caused this code to set are not present at this time. Use the wiring diagrams/schematics as a guide to locate and inspect the related wiring and connectors.
- Perform BODY VERIFICATION TEST - VER 1.

2. CHANNEL X (-) CIRCUIT SHORTED TO CHANNEL X (+) CIRCUIT

Turn the ignition off.

Disconnect the Amplifier harness connectors.

Disconnect the appropriate Speaker harness connector.

Measure the resistance between the Channel X (-) circuit and the Channel X (+) circuit at the Speaker harness connector.

Is the resistance below 5.0 ohms?

- Yes** >> Go To 3
- No** >> Repair the short between the Channel X (-) circuit and the Channel X (+) circuit.
- Perform BODY VERIFICATION TEST - VER 1.

CHANNEL X OPEN (CONTINUED)

3. SPEAKER

Measure the resistance of the Speaker between the Channel XX (-) circuit terminal and the Channel XX (+) circuit terminal at the Speaker.

Is the resistance below 1.0 ohm?

- Yes** >> Replace the Speaker per Service Information.
 Perform BODY VERIFICATION TEST - VER 1.
- No** >> Replace the Amplifier per Service Information.
 Perform BODY VERIFICATION TEST - VER 1.
-

CHANNEL X SHORT TOGETHER

For the Audio Amplifier system circuit diagram (Refer to 8 - ELECTRICAL/AUDIO - SCHEMATICS AND DIAGRAMS).

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

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

Possible Causes
CHANNEL X (-) CIRCUIT SHORTED TO CHANNEL X (+) CIRCUIT
SPEAKER
AMPLIFIER

1. INTERMITTENT CONDITION

NOTE: NOTE: This is a generic test for all Speakers Channel 1 thru Channel 8. Use the following diagnostics for the specific speaker that set the DTC. Use the 8W wiring diagrams for circuit ID's and wiring repairs.

Turn the ignition on.

Turn the ignition off.

Turn the ignition on.

With the DRBIII®, read Amplifier DTCs.

Is the Channel X Shorted Together DTC active?

- Yes**
 >> Go To 2
- No**
 >> The conditions that caused this code to set are not present at this time. Use the wiring diagrams/schematics as a guide to locate and inspect the related wiring and connectors.
 Perform BODY VERIFICATION TEST - VER 1.

2. CHANNEL X (-) CIRCUIT SHORTED TO CHANNEL X (+) CIRCUIT

Turn the ignition off.

Disconnect the Amplifier harness connectors.

Disconnect the appropriate Speaker harness connector.

Measure the resistance between the Channel X (-) circuit and the Channel X (+) circuit at the Speaker harness connector.

Is the resistance below 5.0 ohms?

- Yes**
 >> Go To 3
- No**
 >> Repair the short between the Channel X (-) circuit and the Channel X (+) circuit.
 Perform BODY VERIFICATION TEST - VER 1.

CHANNEL X SHORT TOGETHER (CONTINUED)

3. SPEAKER

Measure the resistance of the Speaker between the Channel XX (-) circuit terminal and the Channel XX (+) circuit terminal at the Speaker.

Is the resistance below 1.0 ohm?

- Yes** >> Replace the Speaker per Service Information.
 Perform BODY VERIFICATION TEST - VER 1.
- No** >> Replace the Amplifier per Service Information.
 Perform BODY VERIFICATION TEST - VER 1.
-

CABIN EQ MISMATCH

For the Audio Amplifier system circuit diagram (Refer to 8 - ELECTRICAL/AUDIO - SCHEMATICS AND DIAGRAMS).

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
CHECK AMPLIFIER BUSSED INPUTS AND OUTPUTS FCM ACTIVE ON THE BUS CIRCUIT ACTIVE DTCS STORED IN THE FCM FRONT CONTROL MODULE

1. INTERMITTENT CONDITION

Turn the ignition on.

Turn the radio on.

With the DRBIII®, erase Amplifier DTCs.

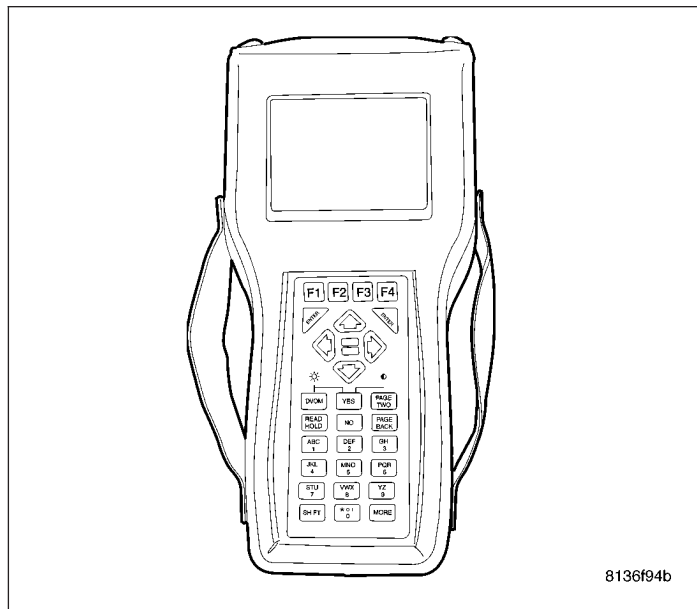
With the DRBIII®, reset the Amplifier.

With the DRBIII®, read Amplifier DTCs.

Is the DTC active at this time?

Yes >> Go To 2

No >> The conditions that caused this code to set are not present at this time. Use the wiring diagrams/schematics as a guide to locate and inspect the related wiring and connectors.
Perform BODY VERIFICATION TEST - VER 1.



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2. CHECK AMPLIFIER BUSSED INPUTS AND OUTPUTS

With the DRBIII®, in Amplifier Data Display, read the Cabin EQ# settings in the Bussed Inputs and Bussed Outputs Sections.

NOTE: NOTE: The Cabin EQ# settings in the Inputs/Outputs sections should match one another. The Cabin EQ# in the Inputs section is the information that is received from the FCM. The Cabin EQ# in the Outputs section, is the information stored in the Amp Memory.

Dos the Cabin EQ# settings match one another?

Yes >> Replace the Amplifier per Service Information.
Perform BODY VERIFICATION TEST - VER 1.

No >> Go To 3

CABIN EQ MISMATCH (CONTINUED)

3. FCM ACTIVE ON THE BUS CIRCUIT

With the DRBIII®, attempt to communicate with the FCM.

Are you able to communicate with the FCM?

Yes >> Go To 4

No >> Refer to the Communication Category for related symptoms/DTCs.
Perform BODY VERIFICATION TEST - VER 1.

4. ACTIVE DTCS STORED IN THE FCM

With the DRBIII®, erase FCM DTCs.

Turn the ignition off.

Wait at least 10 seconds.

Turn the ignition on.

With the DRBIII®, read FCM DTCs.

Are any DTCs active present?

Yes >> Refer to the symptom list for problems related to the Front Control Module.
Perform BODY VERIFICATION TEST - VER 1.

No >> Replace the Front Control Module per Service Information.
Perform BODY VERIFICATION TEST - VER 1.

SOFTWARE CHECKSUM FAILURE

For the Audio Amplifier system circuit diagram (Refer to 8 - ELECTRICAL/AUDIO - SCHEMATICS AND DIAGRAMS).

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

- **When Monitored:**
With the ignition on
- **Set Condition:**
The Amplifier sets an internal software failure

Possible Causes
AMPLIFIER

1. Amplifier

- Turn the ignition on.
- Turn the radio on.
- With the DRBIII®, erase Amplifier DTCs.
- With the DRBIII®, reset the Amplifier.
- With the DRBIII®, read Amplifier DTCs.

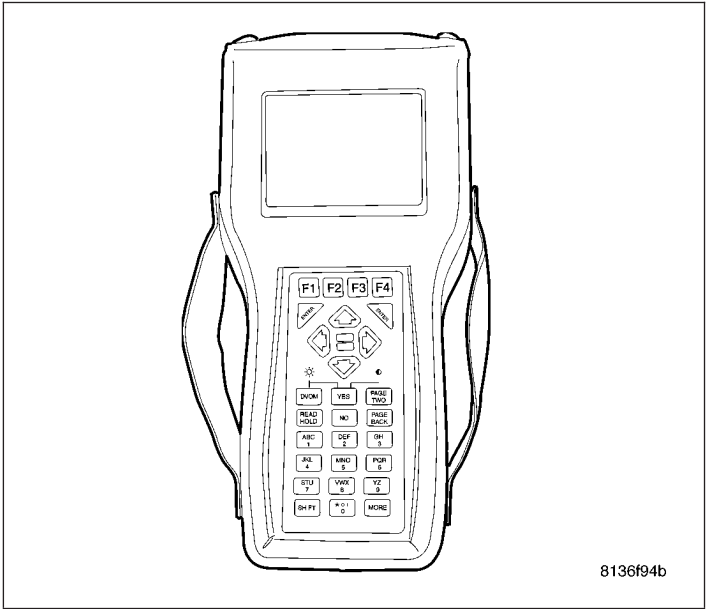
- Is the DTC: SOFTWARE CHECKSUM FAILURE active at this time?

Yes

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

>> The conditions that caused this code to set are not present at this time. Use the wiring diagrams/schematics as a guide to locate and inspect the related wiring and connectors.

Perform BODY VERIFICATION TEST - VER 1.



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BATTERY VOLTAGE LOW

For the Audio Amplifier system circuit diagram (Refer to 8 - ELECTRICAL/AUDIO - SCHEMATICS AND DIAGRAMS).

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

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

Possible Causes

BATTERY VOLTAGE LOW AT AMPLIFIER
CHARGING SYSTEM DTCS IN PCM
AMPLIFIER

1. INTERMITTENT CONDITION

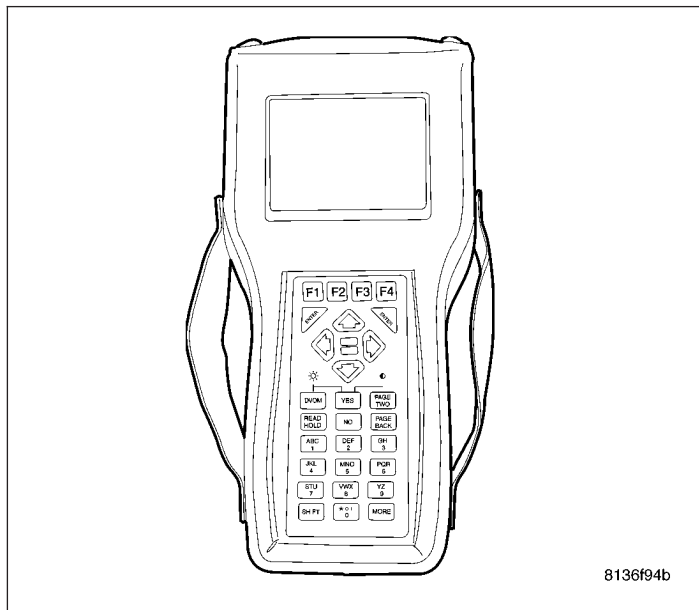
Cycle the ignition switch from on to off to on.

With the DRBIII®, read Amplifier DTCs.

Is the DTC active at this time?

Yes >> Go To 2

No >> The conditions that caused this code to set are not present at this time. Use the wiring diagrams/schematics as a guide to locate and inspect the related wiring and connectors.
Perform BODY VERIFICATION TEST - VER 1.



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2. BATTERY VOLTAGE LOW AT AMPLIFIER

With the DRBIII® in Data Display, read the Amplifier battery voltage.

Is the voltage less than 9.0 volts?

Yes >> Go To 3

No >> Replace the Amplifier per Service Information.
Perform BODY VERIFICATION TEST - VER 1.

BATTERY VOLTAGE LOW (CONTINUED)

3. CHARGING SYSTEM DTCS IN PCM

With the DRBIII® read PCM DTCS.

Are any Charging System related DTCS set in the PCM?

- Yes** >> Diagnose and repair the DTCS using the Powertrain Diagnostic Manual.
Perform BODY VERIFICATION TEST - VER 1.
- No** >> Replace the Amplifier per Service Information.
Perform BODY VERIFICATION TEST - VER 1.
-

BATTERY VOLTAGE HIGH

For the Audio Amplifier system circuit diagram (Refer to 8 - ELECTRICAL/AUDIO - SCHEMATICS AND DIAGRAMS).

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

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

Possible Causes

BATTERY VOLTAGE HIGH AT AMPLIFIER
CHARGING SYSTEM DTCS IN PCM
AMPLIFIER

1. INTERMITTENT CONDITION

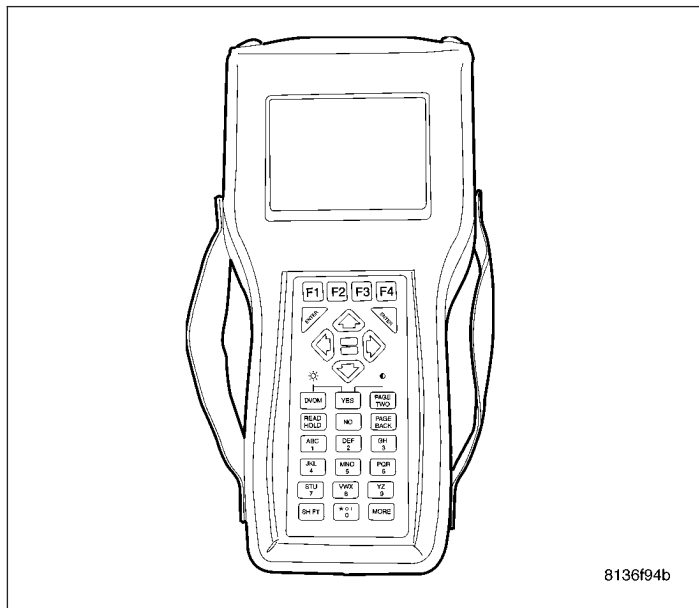
Cycle the ignition switch from on to off to on.

With the DRBIII®, read Amplifier DTCs.

Is the DTC active at this time?

Yes >> Go To 2

No >> The conditions that caused this code to set are not present at this time. Use the wiring diagrams/schematics as a guide to locate and inspect the related wiring and connectors.
Perform BODY VERIFICATION TEST - VER 1.



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2. BATTERY VOLTAGE HIGH AT AMPLIFIER

With the DRBIII® in Data Display, read the Amplifier battery voltage.

Is the voltage greater than 16.5 volts?

Yes >> Go To 3

No >> Replace the Amplifier per Service Information.
Perform BODY VERIFICATION TEST - VER 1.

BATTERY VOLTAGE HIGH (CONTINUED)

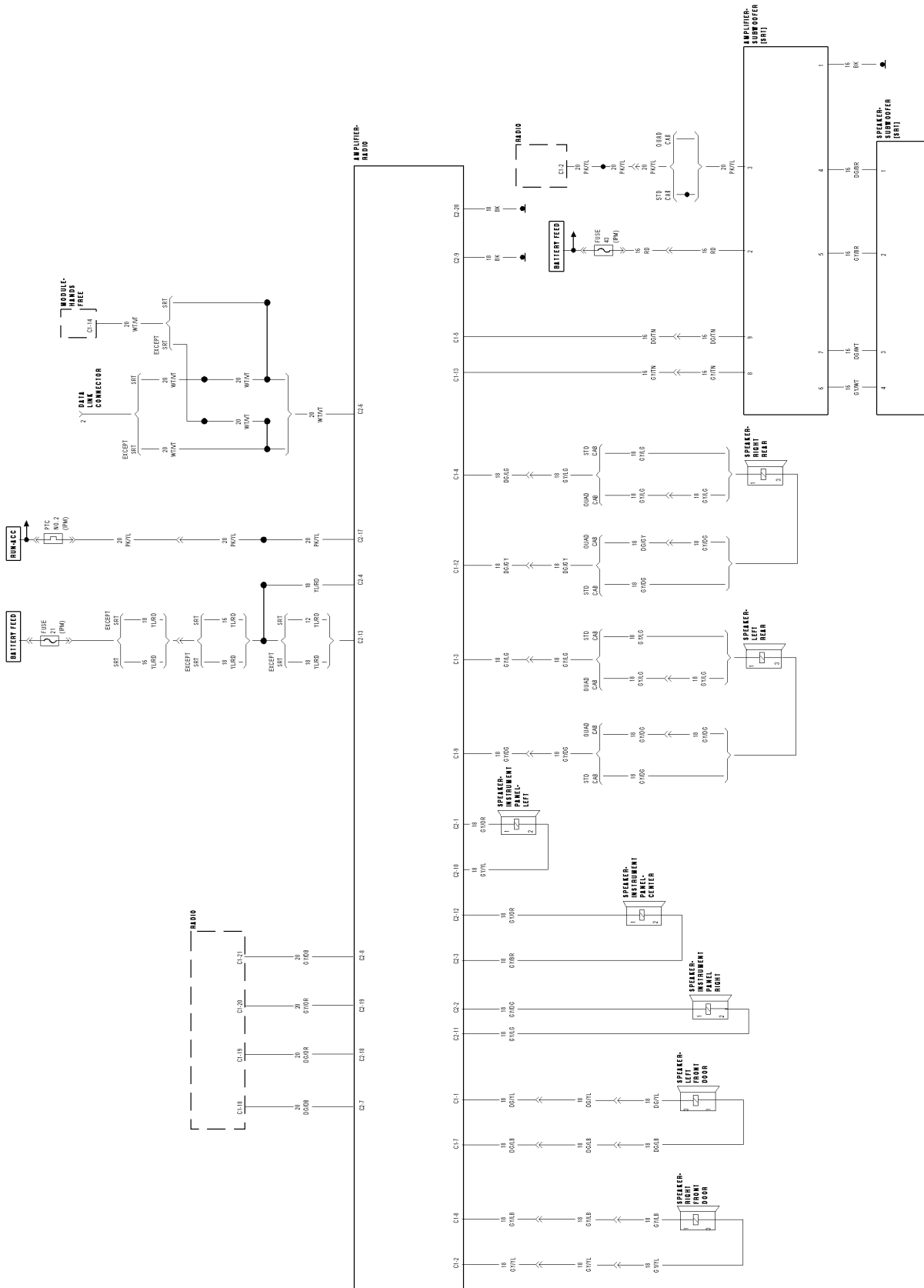
3. CHARGING SYSTEM DTCS IN PCM

With the DRBIII® read PCM DTCS.

Are any Charging System related DTCS set in the PCM?

- Yes** >> Diagnose and repair the DTCS using the Powertrain Diagnostic Manual.
 Perform BODY VERIFICATION TEST - VER 1.
- No** >> Replace the Amplifier per Service Information.
 Perform BODY VERIFICATION TEST - VER 1.
-

SCHEMATICS AND DIAGRAMS



AUDIO AMPLIFIER SCHEMATIC