

# AUDIO/VIDEO

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## AUDIO SYSTEM

### DESCRIPTION

An audio system is standard factory-installed equipment on this model unless the radio delete option is specified. Several combinations of radio receivers are offered on this model. 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 (RB1) is available on this vehicle. With this system, the operator has the option of choosing a street address, point of interest, trip itinerary and other features outlined in the operator's manual.

The audio system includes the following components:

- Antenna
- Antenna - satellite radio (if equipped)
- Multiplexer (if equipped)
- Radio noise suppression components
- Radio receiver
- Satellite receiver module (if equipped)
- Speakers

## AUDIO SYSTEM (Continued)

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 DRB III® scan tool and the proper Diagnostic Procedures manual are recommended.

Refer to the appropriate wiring information in this service manual for complete standard and premium audio system circuit diagrams. The wiring information includes proper wire and connector repair procedures, further details on wire harness routing and retention, as well as pin-out and location views for the various wire harness connectors, splices, and grounds.

## 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 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. For complete operating instructions, refer to the manual included with the vehicle.

The audio system components operate on battery current received through a fuse in the Junction Block (JB) on a fused ignition switch output (run-acc) circuit so that the system will only operate when the ignition switch is in the On or Accessory positions.

## DIAGNOSIS AND TESTING - AUDIO

**Any diagnosis of the Audio system should begin with the use of the DRB III® diagnostic tool. For information on the use of the DRB III®, refer to the appropriate Diagnostic Service Manual.**

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.

**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 faulty.	1. Check radio fuse and Ignition-Off Draw (IOD) fuse in Junction Block (JB). Replace fuses, if required.
	2. Radio connector faulty.	2. Check for loose or corroded radio connector. Repair, if required.
	3. Wiring faulty.	3. Check for shorted or open wires. Repair wiring, if required.
	4. Radio ground faulty.	4. Check for continuity between radio chassis and a known good ground. There should be continuity. Repair ground, if required.
	5. Radio faulty.	5. Refer to appropriate Diagnostic Service Manual.
	6. Speakers faulty.	6. Replace speaker as necessary.

## AUDIO SYSTEM (Continued)

CONDITION	POSSIBLE CAUSES	CORRECTION
NO SATELLITE RADIO AUDIO (PERFORM ALL DIAGNOSIS OUTDOORS)	1. Subscription service has expired (with subscription expired, one channel is still available) 2. Items on roof blocking satellite antenna. 3. Frayed, broken or faulty antenna cable.	1. Contact satellite radio provider. 2. Remove or reposition items to allow clear space around antenna. 3. Replace satellite antenna cable.
NO RADIO DISPLAY	1. Fuse faulty. 2. Radio connector faulty. 3. Wiring faulty. 4. Radio ground faulty. 5. Radio faulty.	1. Check radio fuse and Ignition-Off Draw (IOD) fuse in Junction Block (JB). Replace fuses, if required. 2. Check for loose or corroded radio connector. Repair, if required. 3. Check for battery voltage at radio connector. Repair wiring, if required. 4. Check for continuity between radio chassis and a known good ground. There should be continuity. Repair ground, if required. 5. Refer to appropriate Diagnostic Service Manual.
CLOCK WILL NOT KEEP SET TIME	1. Fuse faulty. 2. Radio connector faulty. 3. Wiring faulty. 4. Radio ground faulty. 5. Radio faulty.	1. Check Ignition-Off Draw (IOD) fuse in the Junction Block (JB). Replace fuse, if required. 2. Check for loose or corroded radio connector. Repair, if required. 3. Check for battery voltage at radio connector. Repair wiring, if required. 4. Check for continuity between radio chassis and a known good ground. There should be continuity. Repair ground, if required. 5. Refer to appropriate Diagnostic Service Manual.
POOR RADIO RECEPTION	1. Antenna faulty. 2. Radio ground faulty. 3. Radio noise suppression faulty. 4. Radio faulty.	1. (Refer to 8 - ELECTRICAL/AUDIO/ANTENNA BODY & CABLE - DIAGNOSIS AND TESTING). 2. Check for continuity between radio chassis and a known good ground. There should be continuity. Repair ground, if required. 3. Repair or replace ground strap as necessary. 4. Refer to appropriate Diagnostic Service Manual.
NO/POOR TAPE OPERATION	1. Faulty tape. 2. Foreign objects behind tape door. 3. Dirty cassette tape head. 4. Faulty tape deck.	1. Insert known good tape and test operation. 2. Remove foreign objects and test operation. 3. Clean head with Mopar Cassette Head Cleaner. 4. Exchange or replace radio, if required.

## AUDIO SYSTEM (Continued)

CONDITION	POSSIBLE CAUSES	CORRECTION
NO COMPACT DISC OPERATION	1. Faulty CD.	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. Faulty CD player.	4. Refer to appropriate Diagnostic Service Manual.

## AMPLIFIER

## DESCRIPTION

## MIDLINe AND INFINITY I SYSTEM

The amplifier is located in the right front cowl panel.

## INFINITY II SYSTEM

The amplifier is located beneath the trunk liner covering the right quarter inner panel.

## OPERATION

For specific operation of each individual system, refer to the vehicles owners manual, Audio System Operation Manual.

When the radio system is ON, and all or some speakers are not operating or have a noise distortion refer to the diagnostic tests. 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.

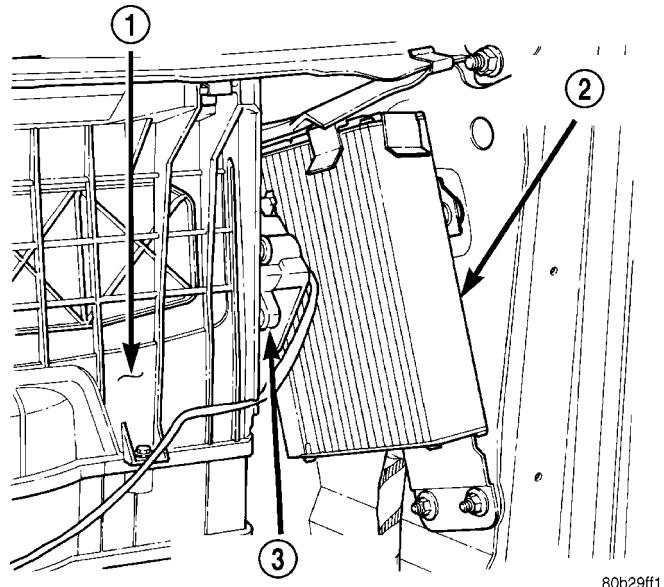
## REMOVAL

## MIDLINe/INFINITY I SYSTEM

- (1) Disconnect and isolate the negative battery cable.
- (2) Remove right under panel silencer/duct.
- (3) Remove mounting fastener to remote amplifier (Fig. 1).
- (4) Pull amplifier inboard and then pull downward to remove from upper retaining clips.
- (5) Disconnect two wiring connectors.
- (6) Remove remote amplifier from vehicle.

## INFINITY II SYSTEM

- (1) Disconnect and isolate the negative battery cable.
- (2) Inside trunk, pull the trunk liner aside (right quarter panel passenger side).



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**Fig. 1 Midline/Infinity Remote Amplifier Location**

1 - HVAC UNIT  
2 - REMOTE AMPLIFIER  
3 - RECIRCULATION AIR MOTOR

- (3) Remove three retaining screws (Fig. 2).
- (4) Disconnect two wire connectors.
- (5) Remove remote amplifier from vehicle.

## INSTALLATION

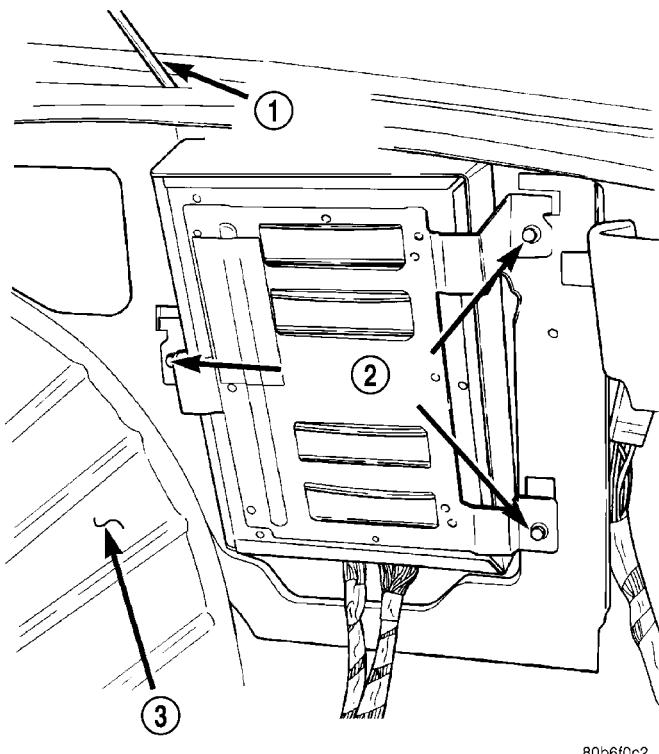
## MIDLINe/INFINITY I SYSTEM

- (1) Install the remote amplifier into vehicle.
- (2) Connect two wiring connectors.
- (3) Push the amplifier upward and then outboard to install into upper retaining clips.
- (4) Install mounting fastener to remote amplifier.
- (5) Install right under panel silencer/duct.
- (6) Connect the negative battery cable.

## INFINITY II SYSTEM

- (1) Install remote amplifier into vehicle.
- (2) Connect two wire connectors.
- (3) Install three retaining screws.
- (4) Install the trunk liner (right quarter panel passenger side).

## AMPLIFIER (Continued)

**Fig. 2** Infinity II Remote Amplifier Location

1 - RIGHT DECKLID SUPPORT  
 2 - RETAINING SCREWS  
 3 - RIGHT INNER FENDER WELL

(5) Connect the negative battery cable.

## ANTENNA BODY &amp; CABLE

## REMOVAL

(1) Disconnect and isolate the battery negative cable.  
 (2) Inside trunk, pull passenger side trunk liner aside.  
 (3) Unplug antenna lead from base of antenna mast.  
 (4) Remove antenna mast by unscrewing mast from antenna body.  
 (5) Remove screw from mounting bracket.  
 (6) Pull antenna body down through the rubber grommet.

## INSTALLATION

(1) Push antenna body up through the rubber grommet in the quarter panel.  
 (2) Install the screw to the mounting bracket.  
 (3) Install antenna mast. Tighten to 2 N·m (15 in. lbs.). **Ensure that the antenna mast is fully seated on antenna base and that there is no gap between the mast and base.**  
 (4) Plug antenna lead into the antenna base.

(5) Install the passenger side trunk liner.  
 (6) Connect the battery negative cable.

## ANTENNA - SATELLITE RADIO

## DESCRIPTION

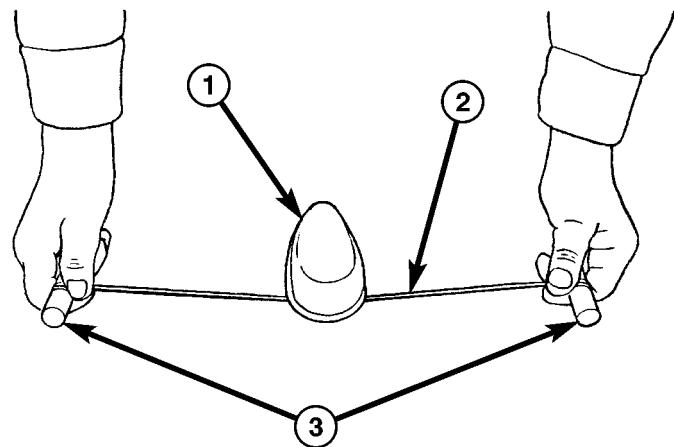
The satellite radio antenna is secured by adhesive foam and two retainers which protrude through a hole in the roof panel. Two wire from the antenna are connected to the body harness above the headliner.

## 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 (Refer to 23 - BODY/INTERIOR/HEADLINER - REMOVAL).  
 (3) A adhesive removal tool can be created by using a 18 to 24 inch piece of nylon cord wrapped around two handles. (Fig. 3). Using the removal tool, guide the nylon cord under the dust seal on the forward side of the antenna. Grab the handles and work the cord through the adhesive. Continue this for 360° around the antenna.

**Fig. 3** ANTENNA REMOVAL

1 - SATELLITE ANTENNA  
 2 - NYLON CORD  
 3 - WOODEN DOWEL ROD

(4) Disconnect the wire harness connectors from the antenna.

## ANTENNA - SATELLITE RADIO (Continued)

(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.

(6) Remove any remaining adhesive with isopropyl alcohol and a lint free cloth. If original antenna is being reinstalled, remove adhesive from antenna mounting surface.

## INSTALLATION

(1) If original antenna is being installed, remove backing from adhesive and apply to antenna base.

(2) Remove backing from the adhesive on the antenna.

(3) Insert wire harness through hole in roof panel. Press antenna into position until both retainers snap into place.

(4) Connect wire harness connectors to antenna.

(5) Install headliner (Refer to 23 - BODY/INTERIOR/HEADLINER - INSTALLATION).

(6) Connect battery negative cable.

## ANTENNA - NAVIGATION RADIO

## REMOVAL

(1) Disconnect and isolate the battery negative cable.

(2) Remove the radio (Refer to 8 - ELECTRICAL/AUDIO/RADIO - REMOVAL).

(3) Disconnect antenna from radio. Remove tape securing antenna to air duct, and remove antenna.

## INSTALLATION

(1) Secure antenna to air duct.

(2) Connect antenna to radio.

(3) Install radio (Refer to 8 - ELECTRICAL/AUDIO/RADIO - INSTALLATION).

(4) Connect battery negative cable.

## ANTENNA CABLE - SATELLITE RADIO

## DESCRIPTION

The satellite radio antenna connects the roof mounted antenna to the satellite receiver module. 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

(1) Disconnect and isolate the battery negative cable.

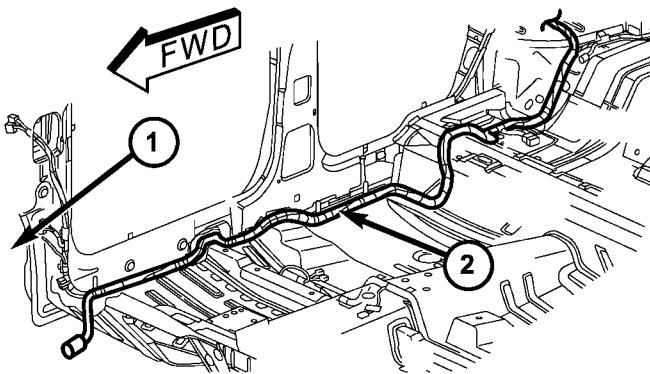
(2) Lower the rear portion of the headliner as necessary to access the underside of the satellite antenna (Refer to 23 - BODY/INTERIOR/HEADLINER - REMOVAL).

(3) Remove the lower quarter trim panel (Refer to 23 - BODY/INTERIOR/LOWER QUARTER TRIM - REMOVAL).

(4) Remove the front and rear door sill trim (Refer to 23 - BODY/INTERIOR/DOOR SILL TRIM - REMOVAL).

(5) Push carpet back to access body harness.

(6) Detach the antenna cable from the body harness (Fig. 4). Disconnect wire harness connectors at each end of the cable.



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**Fig. 4 ANTENNA CABLE - SATELLITE RADIO**

1 - SATELLITE RECEIVER MODULE

2 - SATELLITE RADIO ANTENNA CABLE

## INSTALLATION

(1) Secure the antenna cable to the body harness. Connect the wire harness connectors at each end of the antenna cable.

(2) Install the front and rear door sill trim (Refer to 23 - BODY/INTERIOR/DOOR SILL TRIM - INSTALLATION).

(3) Install the lower quarter trim (Refer to 23 - BODY/INTERIOR/LOWER QUARTER TRIM - INSTALLATION).

(4) Install the headliner (Refer to 23 - BODY/INTERIOR/HEADLINER - INSTALLATION).

(5) Connect the battery negative cable.

## CD CHANGER

### DESCRIPTION

The 6 Disc In-Dash CD Changer (if equipped) is located in the existing cubby bin. It is a cartridge-less changer controlled by the radio and allows the occupants to load up to six discs, one at a time.

### OPERATION

Due to its compact design, the CD changer can only carry out one operation at a time. For example, you can not load a new disc while playing another at the same time. Each operation happens sequentially.

The radio unit provides control over all features of the CD changer with the exception of the CD load and eject functions, which are controlled by buttons located on the front of the CD changer. All features you would expect, such as Disc Up/Down, Track Up/Down, Random and Scan are controlled by the radio, which also displays all relevant CD changer information on the radio display.

The CD changer contains a Load/Eject button and an indicator light for each of the six disc positions. The individual light indicates whether a CD is currently loaded in that particular chamber of the CD changer. Pressing the individual Load/Eject button for a particular chamber will eject a disc currently present in that chamber. If the chamber is currently empty, actuating the Load/Eject button will position that chamber to receive and load a new disc in that chamber.

### REMOVAL

(1) Open hood and disconnect the negative battery cable remote terminal from the remote battery post.

(2) Remove ash receiver (if applicable).

(3) Using a trim stick (special tool #C-4755), gently pry out on center trim bezel. Disconnect wiring connectors to HVAC controls, cigar lighter/auxiliary power outlet and traction control switch.

(4) Remove instrument panel center trim bezel.

(5) Remove two retaining screws to in-dash CD changer.

(6) Pull CD changer out of instrument panel, disconnect wiring and remove from vehicle.

### INSTALLATION

(1) Connect wiring and install CD changer into instrument panel. Make sure the rubber bumper engages into the instrument panel.

(2) Install two retaining screws to in-dash CD changer.

(3) Install instrument panel center trim bezel.

(4) Connect wiring connectors to HVAC controls, cigar lighter/auxiliary power outlet and traction control switch.

(5) Place center trim bezel into position and snap into place.

(6) Install ash receiver (if applicable).

(7) Connect the negative battery cable remote terminal to the remote battery post.

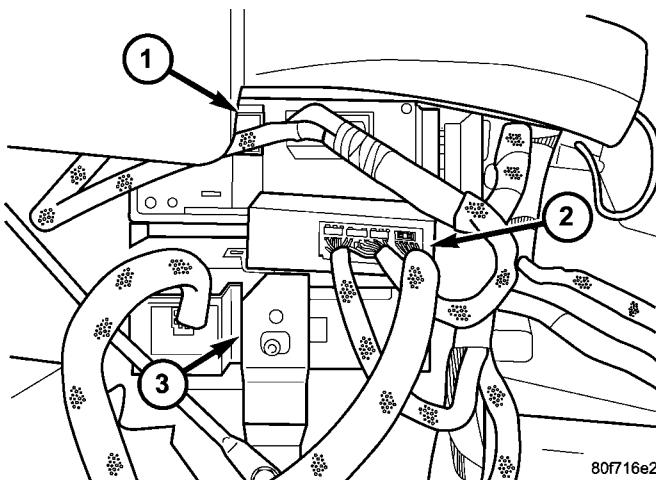
## MULTIPLEXER

### REMOVAL

(1) Disconnect and isolate the battery negative cable.

(2) Remove the radio (Refer to 8 - ELECTRICAL/AUDIO/RADIO - REMOVAL).

(3) Remove mounting fasteners (Fig. 5).



**Fig. 5 MULTIPLEXER**

1 - RADIO  
2 - MULTIPLEXER  
3 - CD CHANGER

(4) Disconnect wire harness connectors and remove multiplexer.

### INSTALLATION

(1) Connect wire harness connectors and place multiplexer into position.

(2) Install mounting fasteners.

(3) Install radio (Refer to 8 - ELECTRICAL/AUDIO/RADIO - INSTALLATION).

(4) Connect battery negative cable.

## RADIO

### DESCRIPTION

Available factory-installed radio receivers for this model include:

- AM/FM/cassette/CD (RAZ sales code)
- AM/FM/cassette with CD changer control feature (RBB sales code)

## RADIO (Continued)

- AM/FM/CD with CD changer control (RBK sales code)
- AM/FM/cassette/CD with CD changer control (RAD, RBT or RBY sales code) - export only
- AM/FM/DVD with GPS navigation (RB1 sales code)

All factory-installed radio receivers can communicate on the Programmable Communications Interface (PCI) data bus network. All factory-installed receivers are stereo Electronically Tuned Radios (ETR) and include an electronic digital clock function.

These radio receivers can only be serviced by an authorized radio repair station. See the latest Warranty Policies and Procedures manual for a current listing of authorized radio repair stations.

## 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.

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.

## REMOVAL

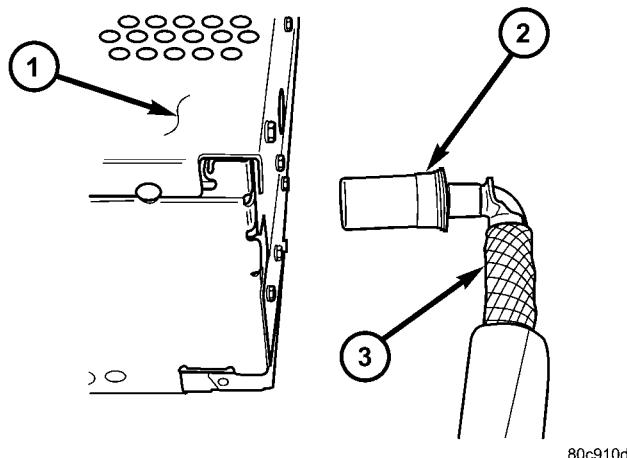
- (1) Disconnect and isolate the battery negative cable.
- (2) Remove instrument panel center trim bezel. (Refer to 23 - BODY/INSTRUMENT PANEL/INSTRUMENT PANEL CENTER BEZEL - REMOVAL).
- (3) Remove four radio mounting screws.
- (4) Pull radio from panel and disconnect wiring from radio.

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

- (5) Disconnect the antenna cable by pulling the locking antenna connector away from the radio (Fig. 6).
- (6) Remove radio from vehicle.

## INSTALLATION

- (1) Place radio near instrument panel opening.
- (2) Connect wiring and antenna lead to radio and slide into place.
- (3) Install four radio mounting screws.



**Fig. 6 ANTENNA TO RADIO**

1 - RADIO  
2 - LOCKING ANTENNA CONNECTOR  
3 - INSTRUMENT PANEL ANTENNA CABLE

(4) Install instrument panel center trim bezel. (Refer to 23 - BODY/INSTRUMENT PANEL/INSTRUMENT PANEL CENTER BEZEL - INSTALLATION).

(5) Connect the battery negative cable.

## RADIO NOISE SUPPRESSION GROUND STRAP

## DESCRIPTION

Some components used on the vehicles are equipped with a capacitor to suppress radio frequency interference/static.

Ground straps are mounted from the engine to each shock tower and from the body to the muffler. The ground straps should be securely tightened to assure good metal to metal contact.

## OPERATION

Capacitors are mounted in various locations internal to the generator, instrument cluster and windshield wiper motor.

Ground straps conduct very small high frequency electrical signals to ground and require clean large surface area contact.

## REAR WINDOW ANTENNA

### REMOVAL

**WARNING:** DO NOT OPERATE THE VEHICLE WITHIN 24 HOURS OF REAR WINDOW GLASS INSTALLATION. IT TAKES AT LEAST 24 HOURS FOR URETHANE ADHESIVE TO CURE. IF IT IS NOT CURED, THE REAR WINDOW GLASS MAY NOT PERFORM PROPERLY IN AN ACCIDENT. BE SURE TO REFER TO THE URETHANE MANUFACTURER'S DIRECTIONS FOR CURING TIME SPECIFICATIONS, AND DO NOT USE ADHESIVE AFTER ITS EXPIRATION DATE.

**CAUTION:** Open the left front door glass before installing the rear window to avoid pressurizing the passenger compartment if a door is slammed before the urethane bonding is fully cured. Water leaks can result.

(1) Remove upper quarter trim panel (Refer to 23 - BODY/INTERIOR/UPPER QUARTER TRIM - REMOVAL).

(2) Disconnect the wire connectors from rear window defogger, and rear window mounted radio antenna, if so equipped.

(3) Remove rear window (Refer to 23 - BODY/STATIONARY GLASS/BACKLITE - REMOVAL).

### INSTALLATION

(1) Install rear window (Refer to 23 - BODY/STATIONARY GLASS/BACKLITE - INSTALLATION).

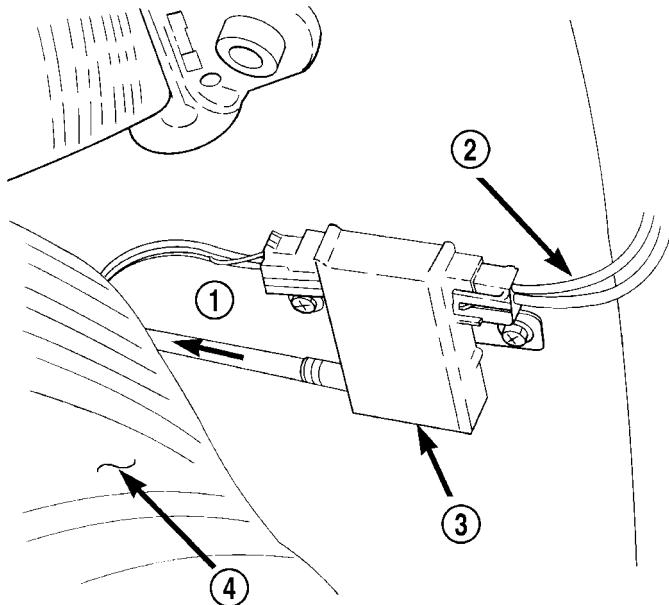
(2) Connect rear window defogger wiring connector, and rear window mounted radio antenna connector.

(3) Install upper quarter trim panel (Refer to 23 - BODY/INTERIOR/UPPER QUARTER TRIM - INSTALLATION).

## REAR WINDOW ANTENNA MODULE

### DESCRIPTION

The integrated rear window antenna incorporates the rear window defogger and a electronic module to receive radio signals. The module is located in the right C-pillar behind the trim panel (Fig. 7).



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**Fig. 7 Rear Defogger/Antenna Module**

- 1 - TO RADIO
- 2 - TO BACKLITE
- 3 - REAR DEFOGGER/ANTENNA MODULE
- 4 - REAR SEAT

### OPERATION

The AM and FM signals are received via isolated unheated lines along the top of the rear window.

**NOTE:** If aftermarket window shading is added, it cannot be of the metallic type. Metallic type window shading can cause poor radio reception.

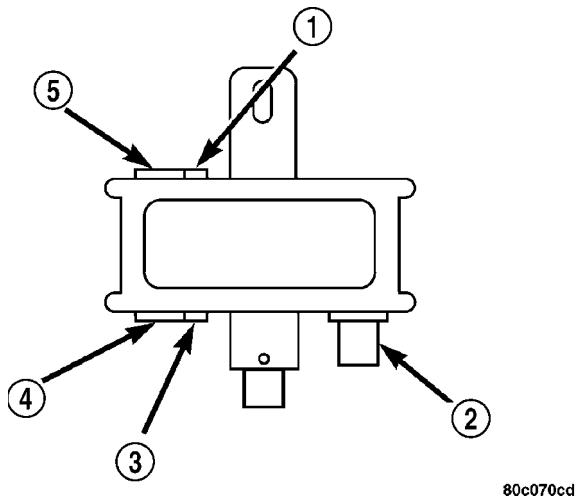
**NOTE:** If an accessory cellular phone glass mount antenna is installed, it should only be installed so as to avoid contact with any of the rear glass grid lines.

### DIAGNOSIS AND TESTING - REAR WINDOW ANTENNA MODULE

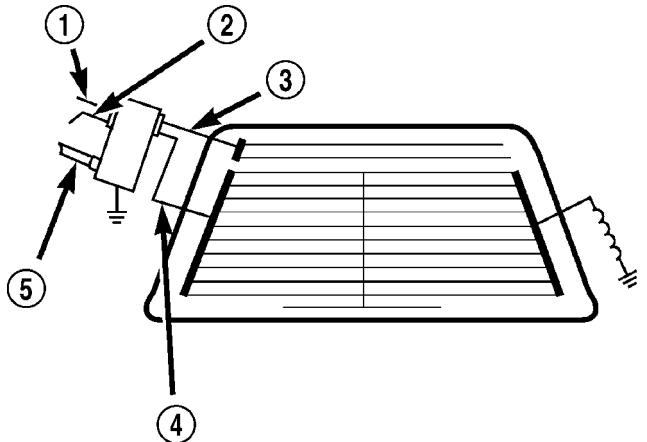
**NOTE:** Due to a capacitor integral with the coaxial cable, the coax cable can not be tested. The continuity test between the center pin of the coax to the antenna does not apply. An ohm meter check to the center pin of the coaxial cable will falsely indicate an open circuit. The coaxial shield to ground test can be performed. Verify coaxial cable performance by using a known good cable.

## REAR WINDOW ANTENNA MODULE (Continued)

Before performing any antenna service procedures, verify that Rear Window Defogger is operating properly (Fig. 8) and (Fig. 9). If no, repair as necessary. (Refer to 8 - ELECTRICAL/HEATED GLASS - DIAGNOSIS AND TESTING). Any repairs to either the AM or FM grid should be preformed as in Electrically Heated Systems, Grid Line and Terminal Repair.

**Fig. 8 Rear Window Antenna Module**

- 1 - TO FM/DEFOGGER GRID LINES
- 2 - RADIO COAX CONNECTOR
- 3 - 12 VOLT FEED TO REAR WINDOW DEFOGGER
- 4 - 12 VOLT FEED TO MODULE
- 5 - TO AM GRID LINES

**Fig. 9 Rear Window Grid Lines and Module**

- 1 - B+ FOR AMPLIFIER
- 2 - B+ FOR REAR WINDOW DEFOGGER
- 3 - AM
- 4 - FM & REAR WINDOW DEFOGGER
- 5 - RADIO COAX

(1) Check that the rear window adhesive does not come in contact with any portion of the grid lines or bus bars. There should be a minimum of 2 mm gap between adhesive and the grid lines or bus bars. If not OK, repair as necessary. If OK, go to Step 2.

(2) Check for proper radio coaxial cable connections at the radio and rear window antenna module. If not OK, repair as necessary. If OK, go to Step 3.

(3) Loss of reception on only one band (AM or FM) may indicate a continuity problem on the rear window grids. Test the grid lines with an ohmmeter. If not OK, repair grid lines as necessary. If OK, go to Step 5.

(4) Reception degradation when the rear window defogger is actuated may indicate discontinuity in the heated grid lines.

(5) Turn the radio and rear window defogger ON position. Using a voltmeter, test for battery voltage at the X60 and C15 circuit terminals of the rear window antenna module wire harness connector (Fig. 8). If not OK, check fuses, if fuses are OK, repair wire harness as necessary. Refer to Wiring Diagrams for circuit information.

(6) Ensure that the rear window defogger ground wire with integral coil in the C-pillar has a good ground. If not OK, repair as necessary. If OK, go to Step 7.

**CAUTION:**

**Rear Window Defogger must be in the OFF position**

(7) Quick check of the module:

- Place the ignition switch in the ACC position with the radio in the ON position on an appropriate station (AM/FM).

- Tune to a AM station

- Using a grounded jumper wire, momentarily short the AM lead to the grid lines (Fig. 9).

- There should be an audible CRACKLE through the speakers indicating circuit continuity.

- Tune to a FM station

- Using a grounded jumper wire, momentarily short the FM lead to the grid lines (Fig. 9).

- There should be an audible CRACKLE through the speakers indicating circuit continuity.

If not OK, go to Step 8. If OK, go to Step 9.

(8) Using a ohmmeter, check continuity between the module wire connector and:

- — AM grid lines.

- — FM/rear window antenna grid lines.

If not OK, repair as necessary. (Refer to 8 - ELECTRICAL/HEATED GLASS - DIAGNOSIS AND TESTING). If OK, go to Step 9.

(9) If neither AM or FM can be received, use a known good radio and verify. If not OK, use a known good antenna module and verify. If OK, either exchange radio or replace antenna module.

## REAR WINDOW ANTENNA MODULE (Continued)

## REMOVAL

- (1) Open hood and disconnect the negative battery cable remote terminal from the remote battery post.
- (2) Remove right upper quarter trim panel. (Refer to 23 - BODY/INTERIOR/UPPER QUARTER TRIM - REMOVAL).
- (3) Remove the attaching screw from module.
- (4) Disconnect wire connectors and radio antenna coaxial cable (Fig. 8).
- (5) Remove module from vehicle.

## INSTALLATION

- (1) Install module from vehicle.
- (2) Connect wire connectors and radio antenna coaxial cable (Fig. 8).
- (3) Install the attaching screw to module.
- (4) Install right upper quarter trim panel. (Refer to 23 - BODY/INTERIOR/UPPER QUARTER TRIM - INSTALLATION).
- (5) Connect the negative battery cable remote terminal to the remote battery post.

## REMOTE SWITCHES

## DESCRIPTION

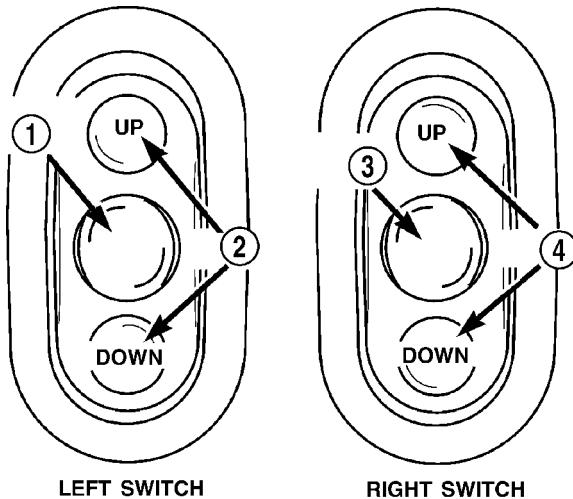
Remote radio control switches are rocker-type switch units (Fig. 10) are mounted in the upper spoke covers of the rear (instrument panel side) steering wheel trim cover. The switch unit on the left side is the seek switch and has seek up, seek down, and preset station advance switch functions. The switch unit on the right side is the volume control switch and has volume up, volume down, and mode advance switch functions.

The two remote radio switch units are each retained in a mounting hole located on opposite sides of the rear steering wheel trim cover by four integral snap features. A plastic bracket on the back of each switch unit provides additional support for the unit by extending towards the center of the steering wheel where it is clamped between the steering wheel armature and the steering wheel rear trim cover mounting boss by the trim cover mounting screw.

The two remote radio switch units share a common steering wheel wire harness with the vehicle speed control switches. The steering wheel wire harness is connected to the instrument panel wire harness through the clockspring.

## OPERATION

The six switches in the two remote radio switch units are normally open, resistor multiplexed momentary switches that are hard wired to the Body Control Module (BCM) through the clockspring. The



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Fig. 10 REMOTE RADIO SWITCHES

1 - PRESET ADVANCE  
 2 - SEEK  
 3 - MODE ADVANCE  
 4 - VOLUME

BCM 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 BCM 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 BCM or the PCI data bus, the use of a DRB III scan tool and the proper Body Diagnostic Procedures manual are recommended.

For more information on the features and control functions for each of the remote radio switches, see the owner's manual in the vehicle glove box.

## DIAGNOSIS AND TESTING - REMOTE SWITCHES

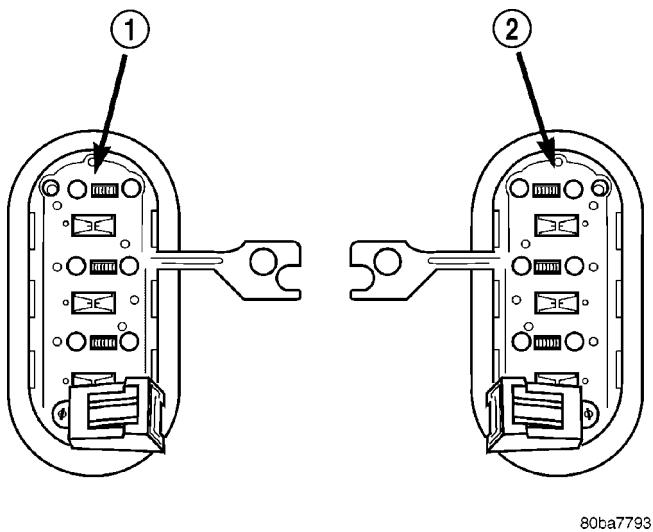
**Any diagnosis of the Audio system should begin with the use of the DRB III® diagnostic tool. For information on the use of the DRB III®, refer to the appropriate Diagnostic Service Manual.**

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.

## REMOTE SWITCHES (Continued)

**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. Remove the remote radio switch(es) (Fig. 11) from the steering wheel.



**Fig. 11 REMOTE RADIO SWITCHES**

1 - BLACK (LEFT) SWITCH  
2 - WHITE (RIGHT) SWITCH

(2) Use an ohmmeter to check the switch resistances as shown in the Remote Radio Switch Test table. If the remote radio switch resistances check OK, go to Step 3. If not OK, replace the faulty switch.

**REMOTE RADIO SWITCH TEST**

Switch	Switch Position	Resistance
Right (White)	Volume Up	1.210 Kilohms
Right (White)	Volume Down	3.010 Kilohms
Right (White)	Mode Advance	0.0511 Kilohms

Switch	Switch Position	Resistance
Left (Black)	Seek Up	0.261 Kilohms
Left (Black)	Seek Down	0.681 Kilohms
Left (Black)	Pre-Set Station Advance	0.162 Kilohms

(3) Reconnect 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 4. If not OK, repair the open or shorted radio control mux circuit to the Body Control Module (BCM) as required.

(4) Disconnect and isolate the battery negative cable. Disconnect the 22-way instrument panel wire harness connector from the BCM. 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 5. If not OK, repair the shorted remote radio switch ground circuit to the BCM as required.

(5) 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 BCM. There should be continuity. If OK, refer to the proper Body Diagnostic Procedures manual to test the BCM 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.**

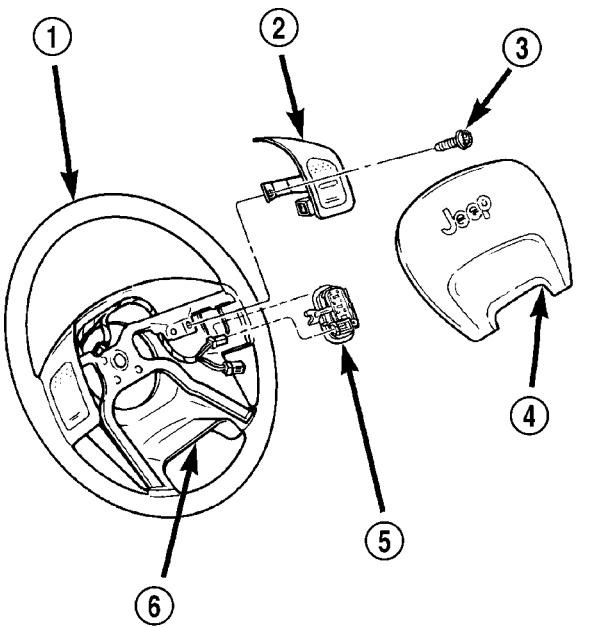
(1) Disconnect and isolate the battery negative cable.

## REMOTE SWITCHES (Continued)

(2) Remove the driver side airbag module from the steering wheel. (Refer to 8 - ELECTRICAL/RESTRAINTS/DRIVER AIRBAG - REMOVAL).

(3) Remove the speed control switch located on the same side of the steering wheel as the remote radio switch that is being serviced. (Refer to 8 - ELECTRICAL/SPEED CONTROL/SWITCH - REMOVAL).

(4) Disconnect the steering wheel wire harness connector from the connector receptacle of the remote radio switch (Fig. 12).



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**Fig. 12 REMOTE RADIO SWITCHES - REMOVE/INSTALL - TYPICAL**

- 1 - STEERING WHEEL
- 2 - SPEED CONTROL SWITCH
- 3 - SCREW
- 4 - DRIVER SIDE AIRBAG MODULE
- 5 - REMOTE RADIO SWITCH
- 6 - REAR TRIM COVER

(5) From the inside of the steering wheel rear trim cover, press firmly and evenly outward on the back of the switch to disengage the four snap features that secure the switch to the inside of the mounting hole.

(6) From the outside of the steering wheel rear trim cover, remove the remote radio switch from the trim cover mounting hole.

## 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) Position the remote radio switch to the mounting hole on the outside of the steering wheel rear trim cover. Be certain that the connector receptacle is oriented toward the bottom of the switch and pointed toward the center of the steering wheel.

(2) Press firmly and evenly on the remote radio switch until each of the switch snap features is fully engaged in the mounting hole of the steering wheel rear trim cover.

(3) Reconnect the steering wheel wire harness connector to the connector receptacle of the remote radio switch.

(4) Install the speed control switch located on the same side of the steering wheel as the remote radio switch. (Refer to 8 - ELECTRICAL/SPEED CONTROL/SWITCH - INSTALLATION).

(5) Install the driver side airbag module to the steering wheel. (Refer to 8 - ELECTRICAL/RESTRAINTS/DRIVER AIRBAG - INSTALLATION).

(6) Connect the battery negative cable.

## SATELLITE RECEIVER MODULE

### DESCRIPTION

The satellite receiver module is located in the right front cowl area behind the trim panel.

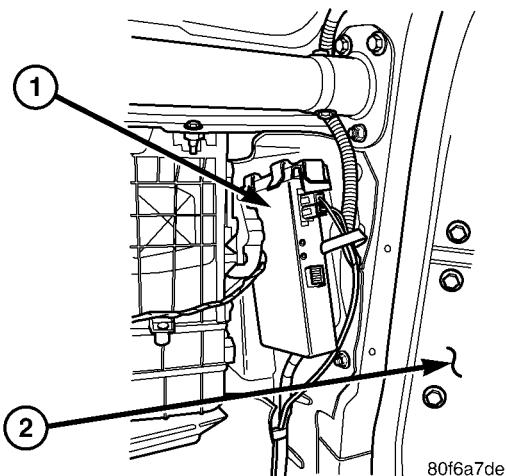
### OPERATION

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 and accessory feed circuits and will operate with the ignition key in the run or accessory position only.

## SATELLITE RECEIVER MODULE (Continued)

## REMOVAL

- (1) Disconnect and isolate the battery negative cable.
- (2) Remove instrument panel silencer (Refer to 23 - BODY/INSTRUMENT PANEL/INSTRUMENT PANEL TOP COVER - REMOVAL).
- (3) Remove mounting fasteners (Fig. 13).

**Fig. 13 SATELLITE RECEIVER MODULE**

1 - SATELLITE RECEIVER MODULE  
2 - FRONT PASSENGER DOOR

- (4) Pull satellite receiver module inboard, and then downward to remove from upper retaining clips.
- (5) Disconnect wiring harness connectors.
- (6) Remove satellite receiver module from vehicle.

## INSTALLATION

- (1) Install the satellite receiver module to the vehicle.
- (2) Connect the wire harness connectors.
- (3) Push the module upward, and then outboard to install into upper retaining clips.
- (4) Install mounting fasteners.
- (5) Install instrument panel silencer (Refer to 23 - BODY/INSTRUMENT PANEL/INSTRUMENT PANEL TOP COVER - INSTALLATION).
- (6) Connect the battery negative cable.

## SPEAKER

## DESCRIPTION

There are four different system combinations available on the LH models. They are a Base, Midline, Infinity I, and Infinity II system.

## BASE SYSTEM

The Base System includes:

- Two 6.5 inch round, full-range speakers in the front doors.

- Two 6 x 9-inch, full-range speakers mounted in the rear shelf panel.

## MIDLINE SYSTEM

The Midline System includes:

- A compact 120 watt power amplifier with four output channels.
- Two 2.5 inch, round single-cone speakers in the lower front corners of the front door windows.
- Two 6.5 inch, round single-cone speakers in the front doors.
- Two 6 x 9-inch, full range speakers mounted in the rear shelf panel.

## INFINITY I SYSTEM

The Infinity I System includes:

- A 240 watt Infinity power amplifier with six output channels
- One 2.5 inch, round single-cone, spatial imaging speaker in the center of the instrument panel.
- Two 2.5 inch round, single cone, spatial imaging speakers in the lower corners of the front door windows.
- Two 6.5 inch, round single-cone speakers in the front doors.
- Two 6 x 9-inch, single-cone speakers mounted in the rear shelf panel.

## INFINITY II SYSTEM

The Infinity II System includes:

- A 360 watt power amplifier with nine output channels, one for each speaker location.
- One 2.5 inch, round single-cone, spatial imaging speaker in the center of the instrument panel.
- Two 2.5 inch round, single cone, spatial imaging speakers in the lower corners of the front door windows.
- Two 6.5 inch, round single-cone speakers in the front doors.
- Two 6 x 9-inch, single-cone speakers mounted in the rear shelf panel.
- Two 2.5 inch, round speakers mounted in the rear doors.

## 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.

## SPEAKER (Continued)

## DIAGNOSIS AND TESTING - SPEAKER

Any diagnosis of the Audio system should begin with the use of the DRB III® diagnostic tool. For information on the use of the DRB III®, refer to the appropriate Diagnostic Service Manual.

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.

**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 may result.

(1) If all speakers are inoperative, check the radio fuses in the junction block. 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 junction block. 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 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 - LOWER

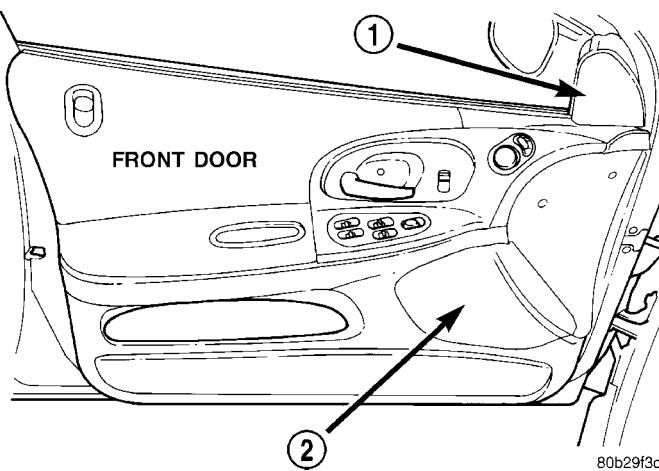
(1) Disconnect and isolate the battery negative cable.

(2) Open drivers door.

(3) Using a trim stick (special tool #C-4755), carefully pry speaker grille away from door trim panel (Fig. 14).

(4) Remove three speaker retaining screws.

(5) Pull speaker away from door and disconnect wiring.



**Fig. 14 Front Door Speakers**

1 - INFINITY SPEAKERS  
2 - DOOR SPEAKER

## FRONT DOOR - UPPER

(1) Disconnect and isolate the battery negative cable.

(2) Open drivers door.

(3) Remove two speaker enclosure attachment screws holding the enclosure ring and grill to the door.

(4) Remove two speaker retaining screws.

## SPEAKER (Continued)

(5) Pull speaker away from door and disconnect wiring.

## INSTRUMENT PANEL

(1) Disconnect and isolate the battery negative cable.

(2) Remove instrument panel top cover.

(3) Remove two retaining screws to center speaker and disconnect wiring connector.

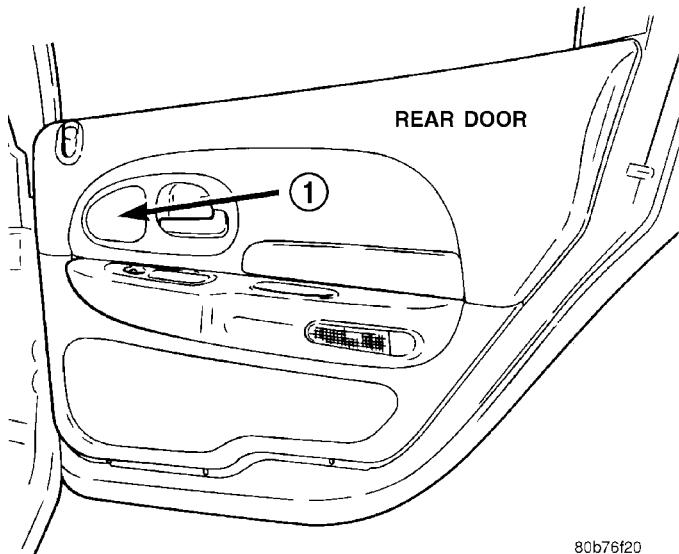
(4) Remove speaker from vehicle.

## REAR DOOR

(1) Disconnect and isolate the battery negative cable.

(2) Open rear door.

(3) Using a trim stick (special tool #C-4755), carefully pry speaker grille away from door trim panel (Fig. 15).



**Fig. 15 Rear Door Speaker**

## 1 - DOOR SPEAKER

(4) Remove two speaker retaining screws.

(5) Pull speaker away from door and disconnect wiring.

## REAR SHELF

(1) Disconnect and isolate the battery negative cable.

(2) Remove the rear shelf trim panel. (Refer to 23 - BODY/INTERIOR/REAR SHELF TRIM PANEL - REMOVAL).

(3) Remove four retaining screws.

(4) Remove speaker and disconnect wire connector.

## INSTALLATION

## FRONT DOOR - LOWER

(1) Connect wiring and place speaker in door speaker opening.

(2) Install three speaker retaining screws.

(3) Place speaker grille into place and firmly press into place.

(4) Connect battery negative cable.

## FRONT DOOR - UPPER

(1) Connect wiring and place speaker in door speaker opening.

(2) Install two speaker retaining screws.

(3) Install two speaker enclosure attachment screws holding the enclosure ring and grill to the door.

(4) Connect battery negative cable.

## INSTRUMENT PANEL

(1) Place speaker into position on instrument panel.

(2) Connect wiring connector, install two retaining screws to center speaker.

(3) Install instrument panel top cover.

(4) Connect battery negative cable.

## REAR DOOR

(1) Connect wiring and place speaker in door speaker opening.

(2) Install two speaker retaining screws.

(3) Place speaker grille into place and firmly snap into place on the door trim panel.

(4) Connect battery negative cable.

## REAR SHELF

(1) Connect wire connector and place speaker into speaker opening.

**CAUTION: Be sure that the wiring connectors are facing forward when installed.**

(2) Install the four retaining screws.

(3) Install the rear shelf trim panel.

(4) Connect battery negative cable.