2004 ACCESSORIES & EQUIPMENT

Entertainment - C/K SUV

SPECIFICATIONS

FASTENER TIGHTENING SPECIFICATIONS

Fastener Tightening Specifications

Application	Specification	
	Metric	English
Amplifier Retaining Screws	3.4 N.m	30 lb in
Antenna Cable Mounting Screw	5 N.m	44 lb in
Antenna Mast	6 N.m	53 lb in
Antenna Mounting Nut	5 N.m	44 lb in
Console Side Panel Screws	2 N.m	18 lb in
Digital Radio Antenna Retaining Bolt	6 N.m	53 lb in
DVD Player Retaining Bolts	9 N.m	80 lb in
Mounting Bracket Bolts	6 N.m	18 lb in
Radio Antenna Module Retaining Bolt	9 N.m	80 lb in
Radio Control Module Retaining Bolt	9 N.m	80 lb in
Radio Retaining Screws	1.6 N.m	14 lb in
Speaker to Mounting Screws - Rear Door	6 N.m	53 lb in
Subwoofer Assembly Retaining Screws	6 N.m	53 lb in
Trim Bezel Screws	2 N.m	18 lb in

SCHEMATIC AND ROUTING DIAGRAMS

ENTERTAINMENT SCHEMATIC ICONS

Entertainment Schematic Icons

Icon	Icon Definition
	CAUTION: **When performing service on or near the SIR components or the SIR wiring, the SIR system must be disabled. Refer to SIR Disabling and Enabling Zones. Failure to observe the correct procedure could cause deployment of the SIR components, personal injury, or unnecessary SIR system repairs.**

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RADIO/AUDIO SYSTEM SCHEMATICS (BASE/UPLEVEL RADIO - UQ3/UQ5)

Refer to Radio in System Wiring Diagrams .

RADIO/AUDIO SYSTEM SCHEMATICS (RADIO - UQ7 W/O Y91 - NON CLASS 2 AMP)

Refer to Radio in System Wiring Diagrams .

RADIO/AUDIO SYSTEM SCHEMATICS (LUX RADIO - UQ7 W/ Y91 - CLASS 2 AMP)

Refer to Radio in System Wiring Diagrams .

STEERING WHEEL CONTROLS SCHEMATICS

Refer to Radio in System Wiring Diagrams .

VIDEO SYSTEM SCHEMATICS

Refer to Radio in System Wiring Diagrams .

COMPONENT LOCATOR

ENTERTAINMENT COMPONENT VIEWS

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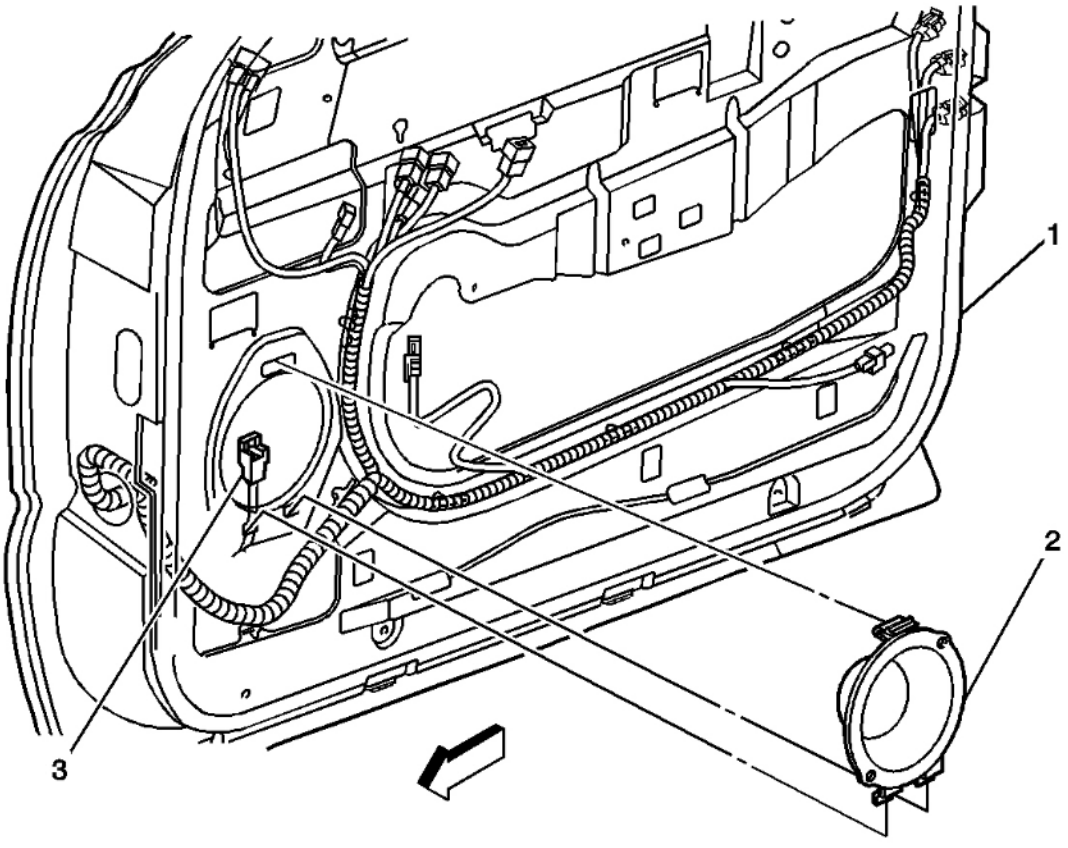


Fig. 1: Speaker - RF Door Component View
Courtesy of GENERAL MOTORS CORP.

Callouts For Fig. 1

Callout	Component Name
1	Door-RF
2	Speaker-RF Door
3	Speaker-RF Door Connector

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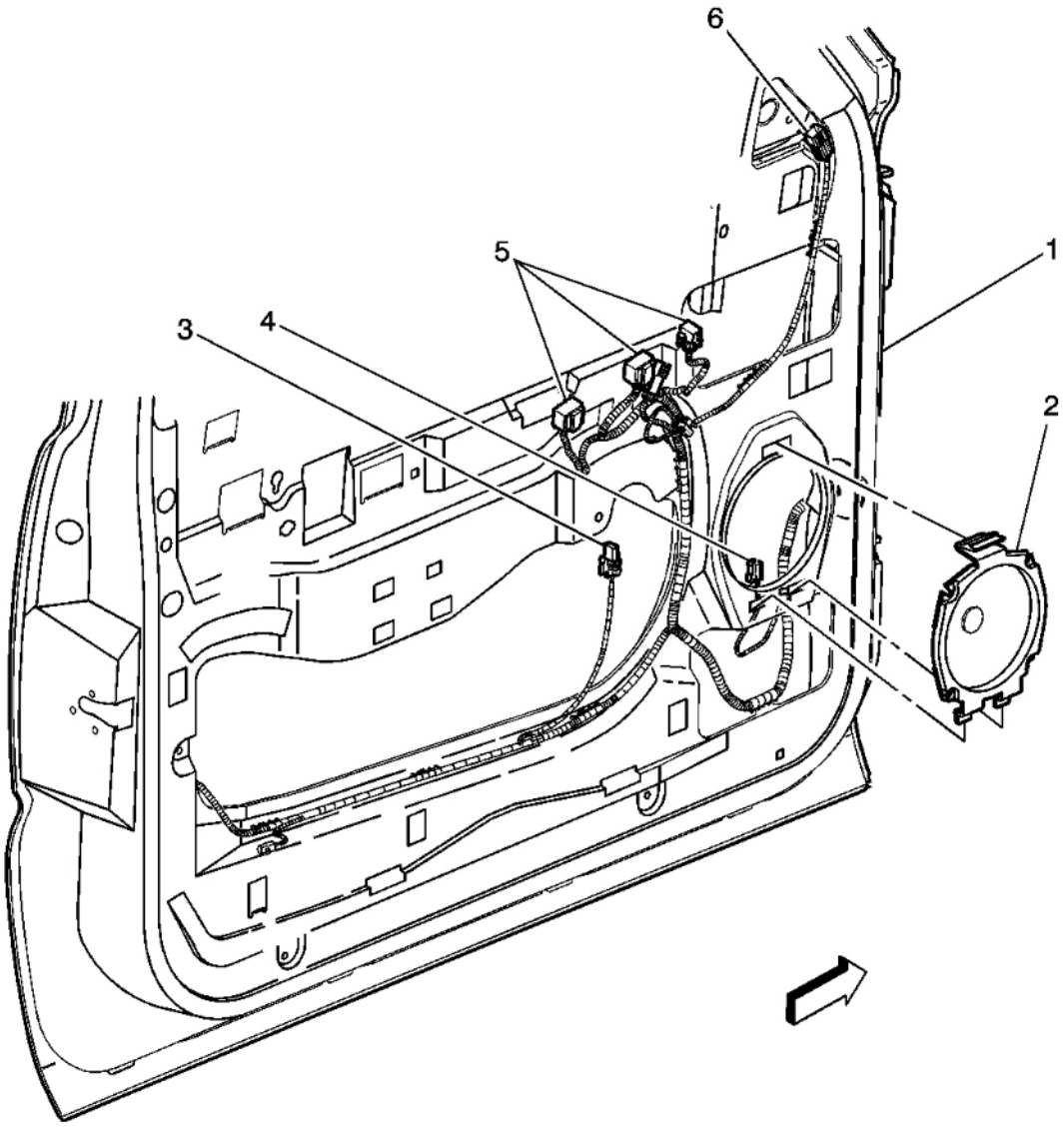


Fig. 2: Speaker - LF Door Component View
Courtesy of GENERAL MOTORS CORP.

Callouts For Fig. 2

Callout	Component Name
1	Door-LF
2	Speaker-LF Door
3	Window Motor-Driver Connector
4	Speaker-LF Door Connector
5	Driver Door Module (DDM) Connectors

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6	Outside Rearview Mirror-Left Connector

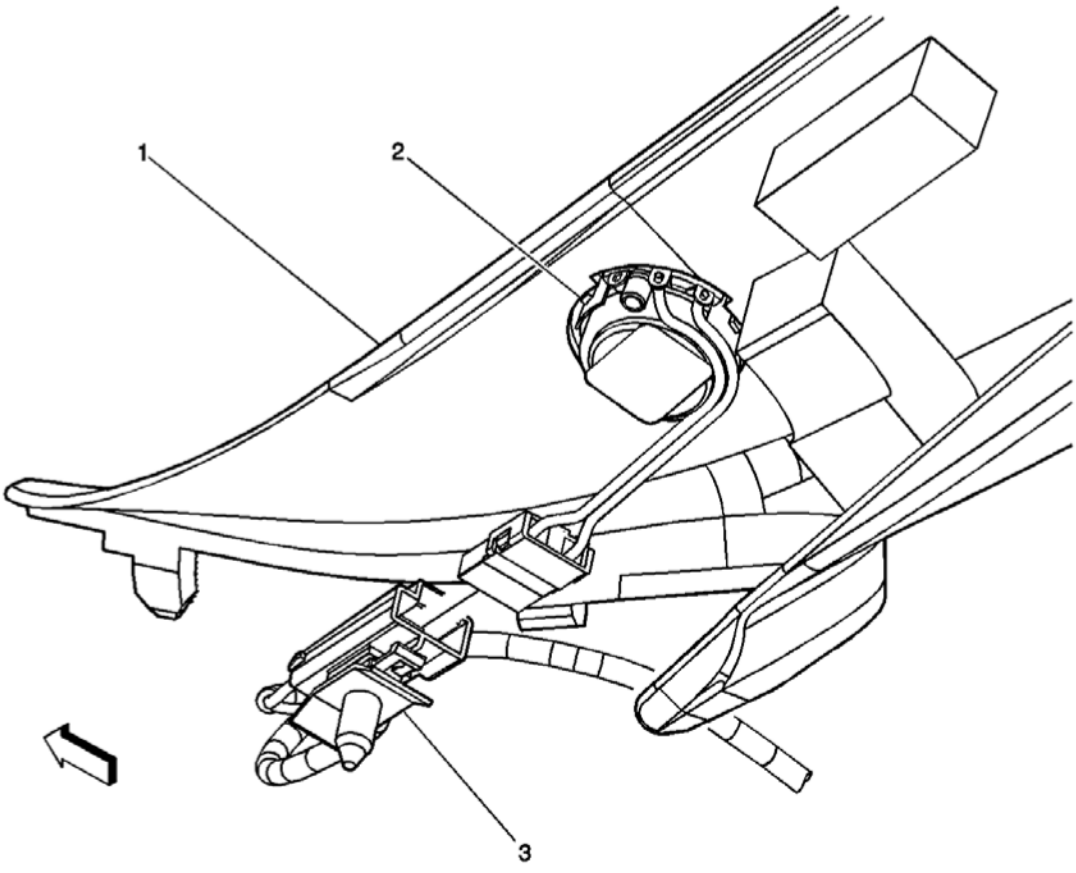


Fig. 3: Speaker - LF Tweeter (RF Similar) Component View
Courtesy of GENERAL MOTORS CORP.

Callouts For Fig. 3

Callout	Component Name
1	Left A-Pillar Trim Panel
2	Speaker-LF Tweeter
3	Speaker-LF Tweeter Connector

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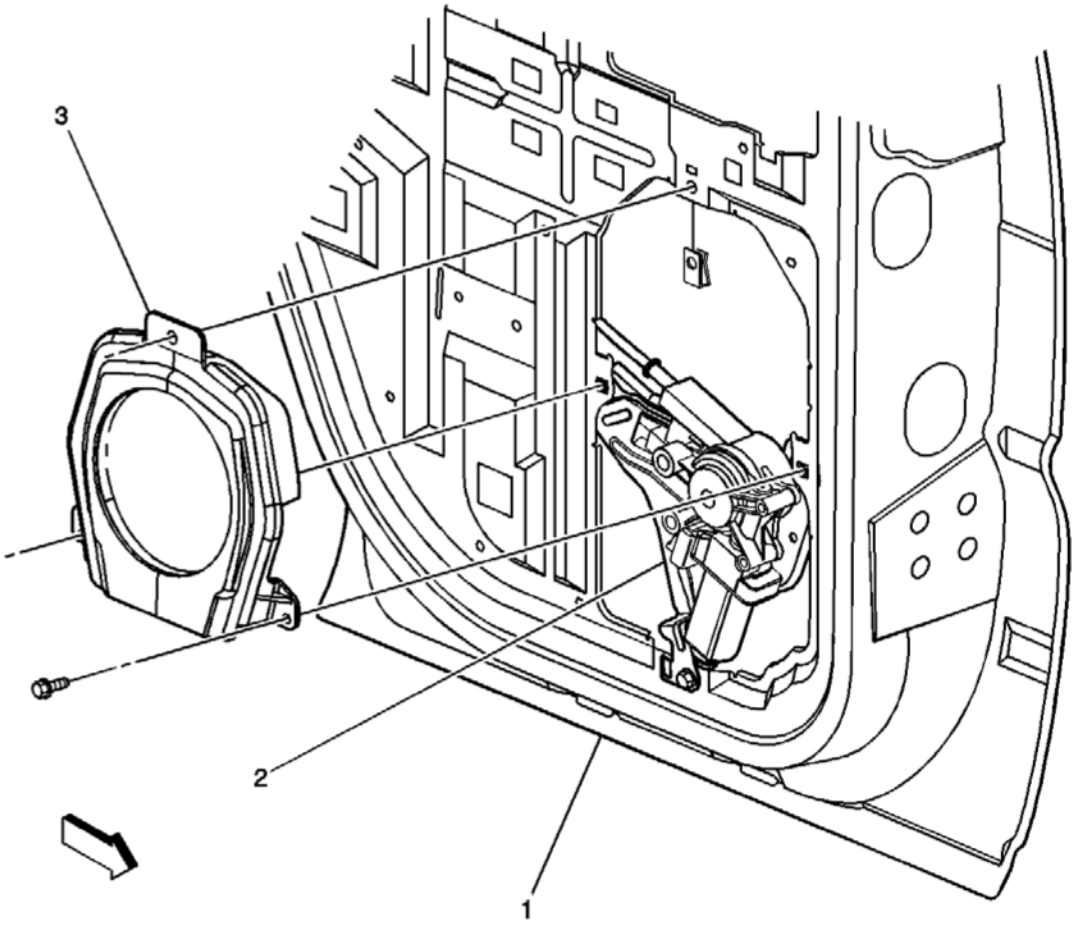


Fig. 4: Speaker - LR Door (RR Similar) Component View
Courtesy of GENERAL MOTORS CORP.

Callouts For Fig. 4

Callout	Component Name
1	Door-LR
2	Window Motor-LR
3	Speaker-LR

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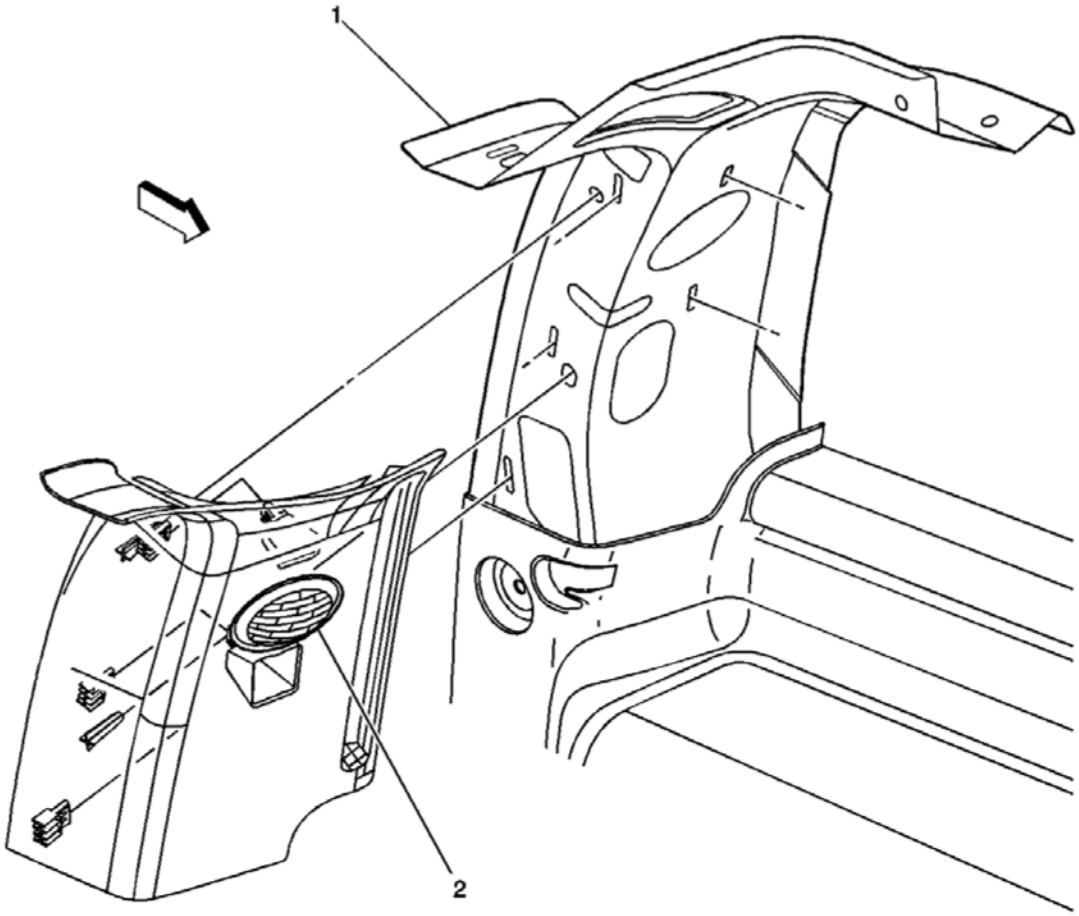


Fig. 5: Speaker - Left D-Pillar (Right Similar) Component View
Courtesy of GENERAL MOTORS CORP.

Callouts For Fig. 5

Callout	Component Name
1	Left D-Pillar
2	Speaker-Left D-Pillar

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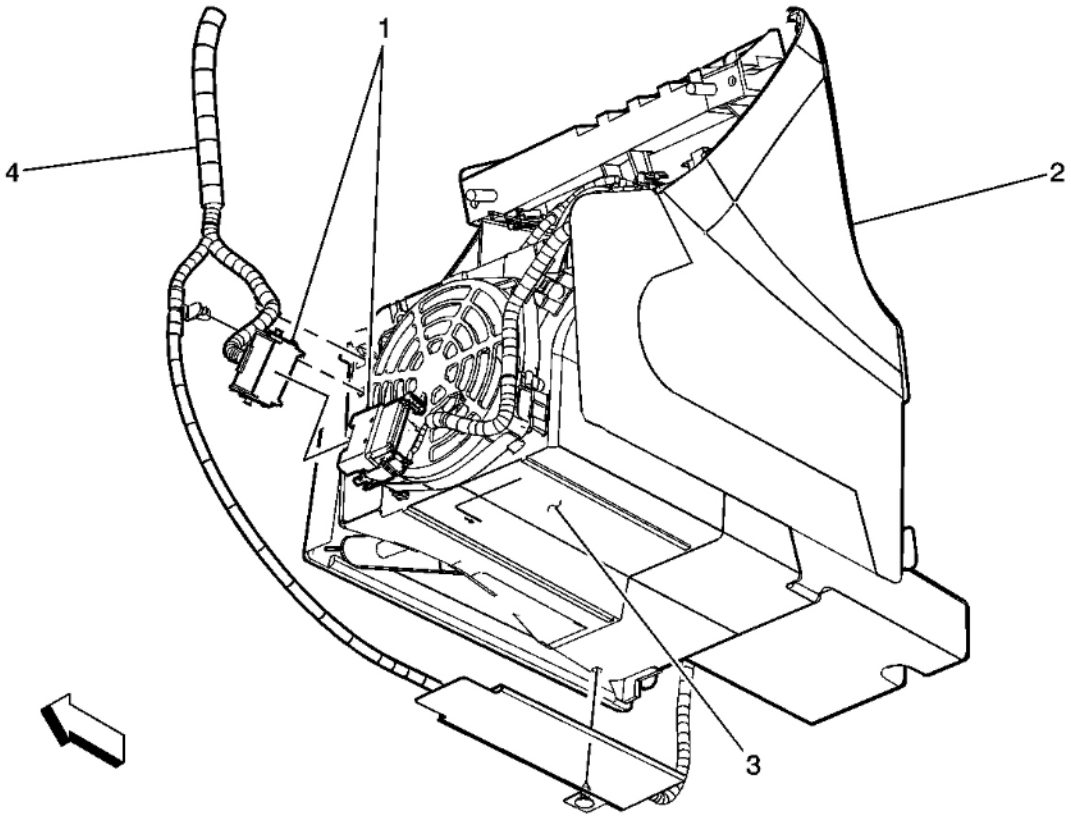


Fig. 6: Speaker - Subwoofer Component View
Courtesy of GENERAL MOTORS CORP.

Callouts For Fig. 6

Callout	Component Name
1	C306
2	Front Floor Console Extension
3	Speaker - Subwoofer
4	I/P Harness

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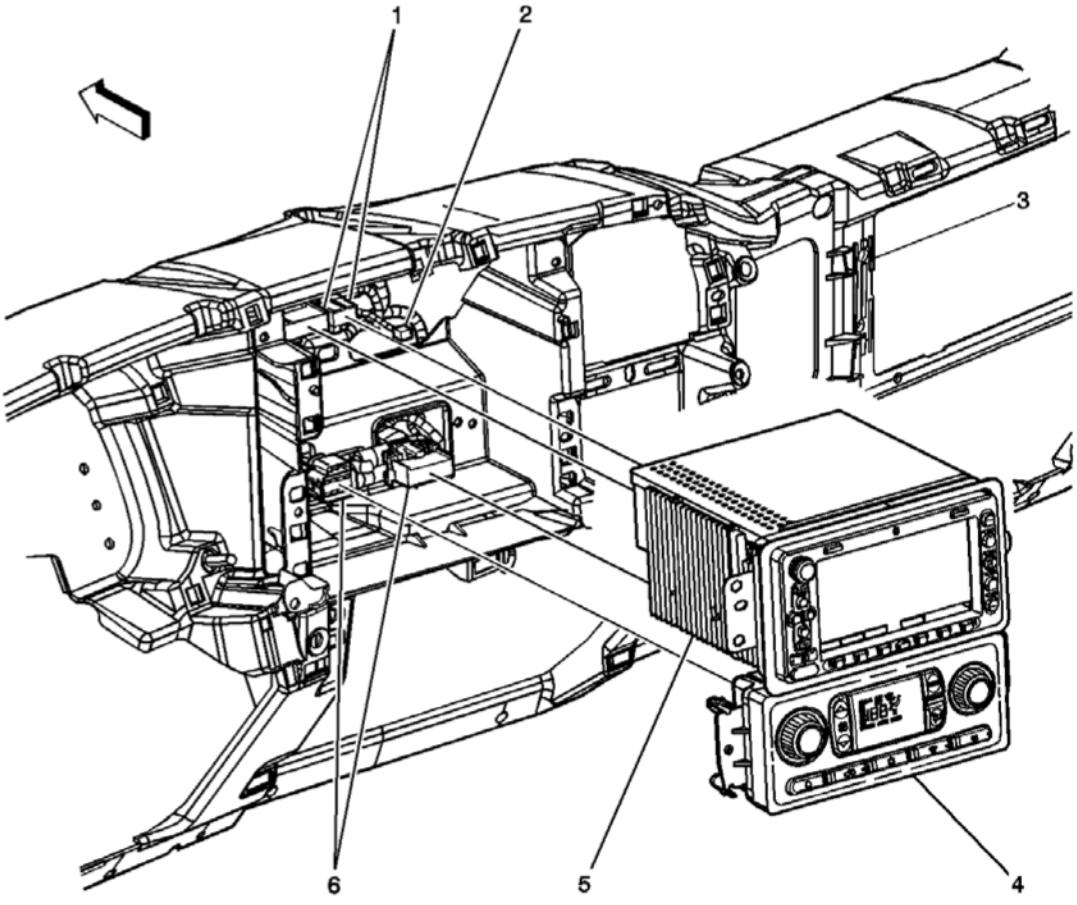


Fig. 7: Radio (UB7 w/Y91 Shown, Others Similar) Component View
Courtesy of GENERAL MOTORS CORP.

Callouts For Fig. 7

Callout	Component Name
1	Radio Connectors
2	Radio Antenna
3	Instrument Panel
4	HVAC Control Module
5	Radio
6	HVAC Control Module Connectors

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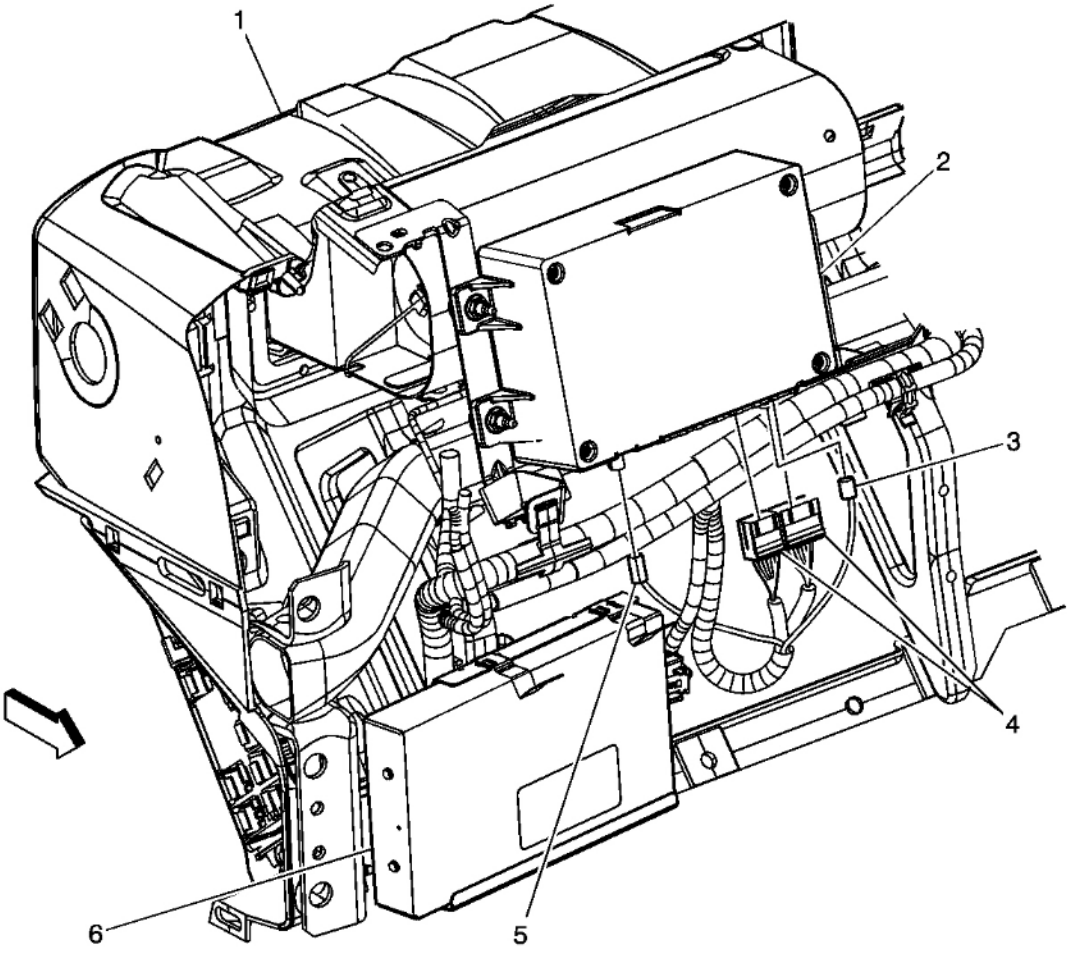


Fig. 8: Instrument Panel (I/P) - Right Rear Component View
Courtesy of GENERAL MOTORS CORP.

Callouts For Fig. 8

Callout	Component Name
1	Instrument Panel (I/P)
2	Vehicle Communication Interface Module (VCIM)
3	Cellular Antenna Coax
4	VCIM Connectors
5	Navigation Antenna Coax
6	Digital Radio Receiver (U2K/U2L)

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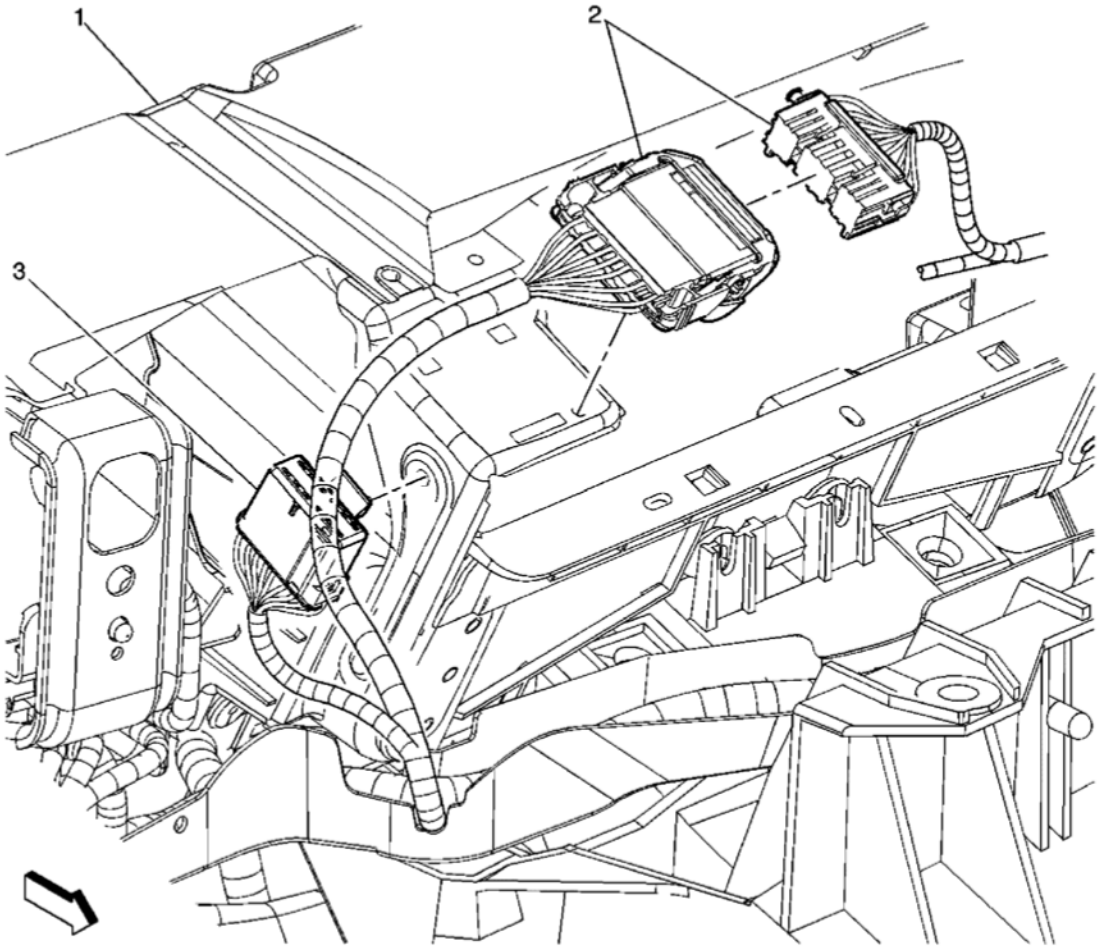


Fig. 9: Splice Pack SP250 (UQ7) Component View
Courtesy of GENERAL MOTORS CORP.

Callouts For Fig. 9

Callout	Component Name
1	Instrument Panel
2	C202
3	SP250

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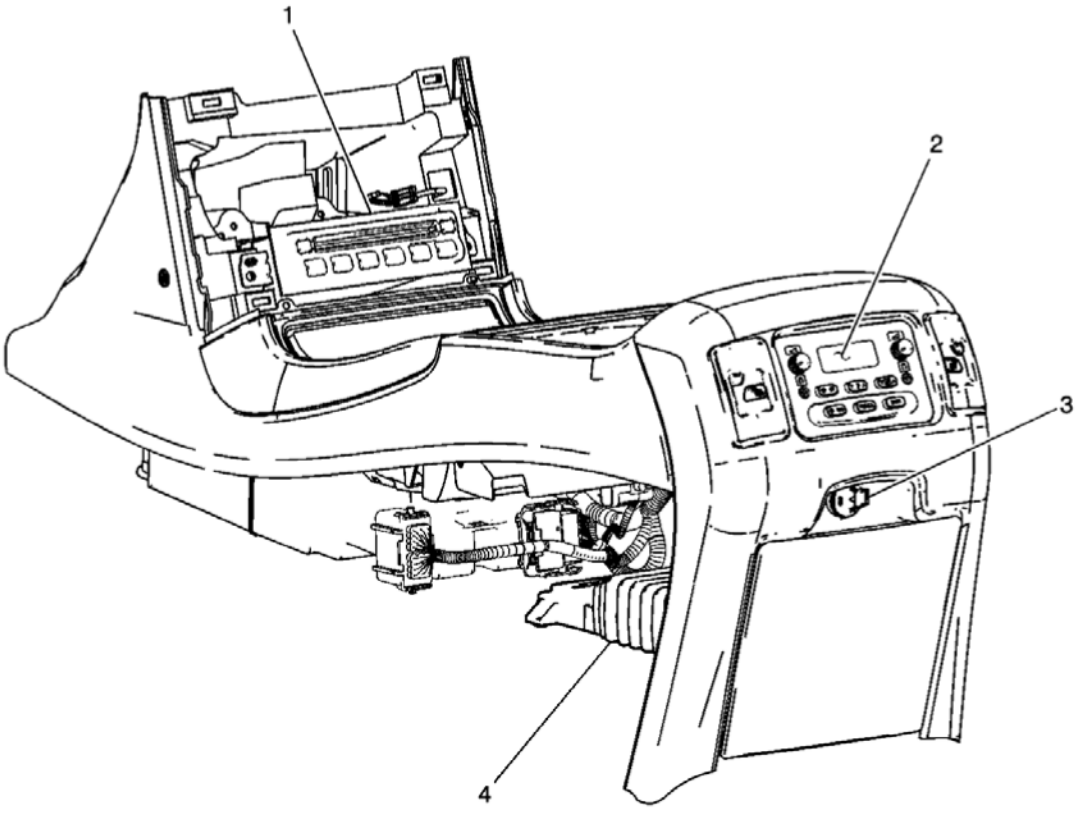


Fig. 10: Floor Console Components View
Courtesy of GENERAL MOTORS CORP.

Callouts For Fig. 10

Callout	Component Name
1	Remote Playback Device - CD Player
2	Rear Seat Audio (RSA)/Rear HVAC Control Module
3	Auxiliary Power Outlet - Console
4	Audio Amplifier

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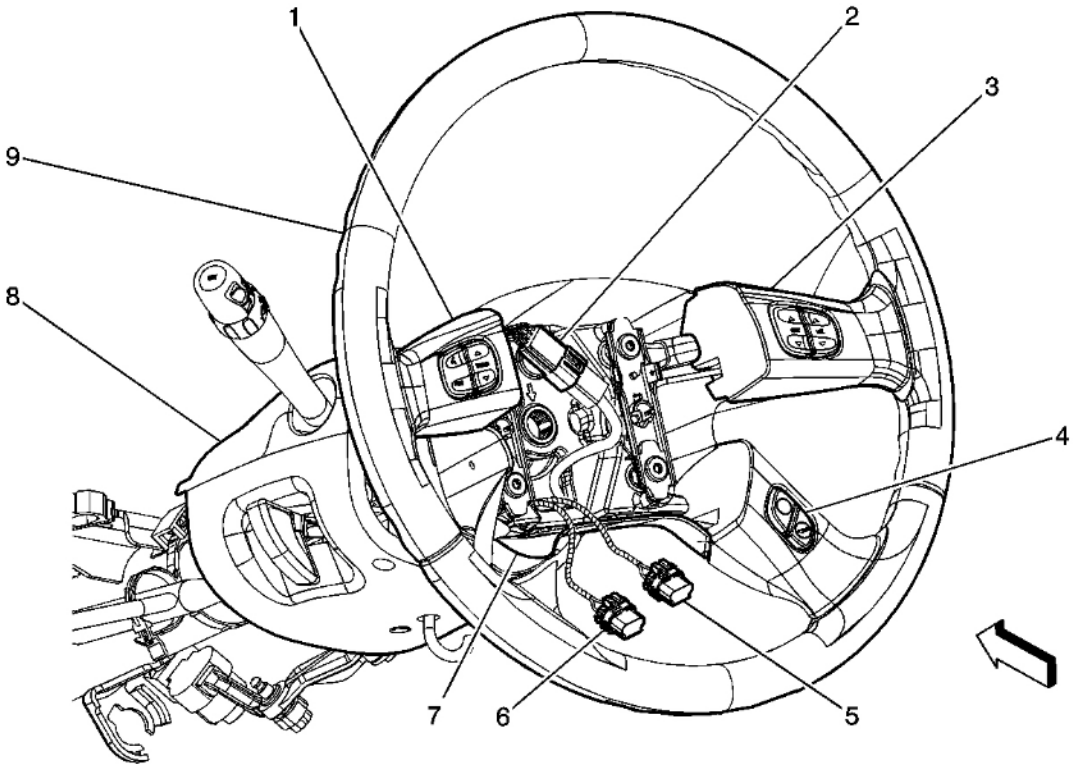


Fig. 11: Steering Wheel Component View
Courtesy of GENERAL MOTORS CORP.

Callouts For Fig. 11

Callout	Component Name
1	Steering Wheel Audio Controls-Left
2	Inflatable Restraint Steering Wheel Module - C4
3	Steering Wheel Audio Controls-Right
4	Steering Wheel Driver Information Center (DIC) Controls-Right
5	Inflatable Restraint Steering Wheel Module - C3
6	Inflatable Restraint Steering Wheel Module - C2
7	Steering Wheel Driver Information Center (DIC) Controls-Left
8	Steering Column
9	Steering Wheel

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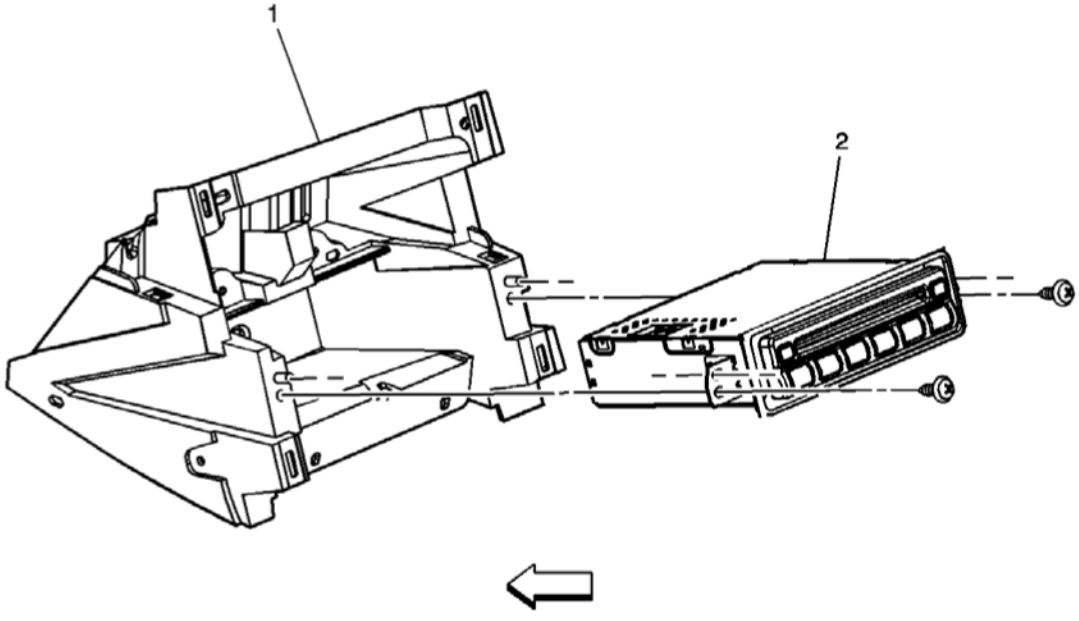


Fig. 12: Remote Playback Device - CD Player Component View
Courtesy of GENERAL MOTORS CORP.

Callouts For Fig. 12

Callout	Component Name
1	Lower I/P Bezel
2	Remote Playback Device-CD Player

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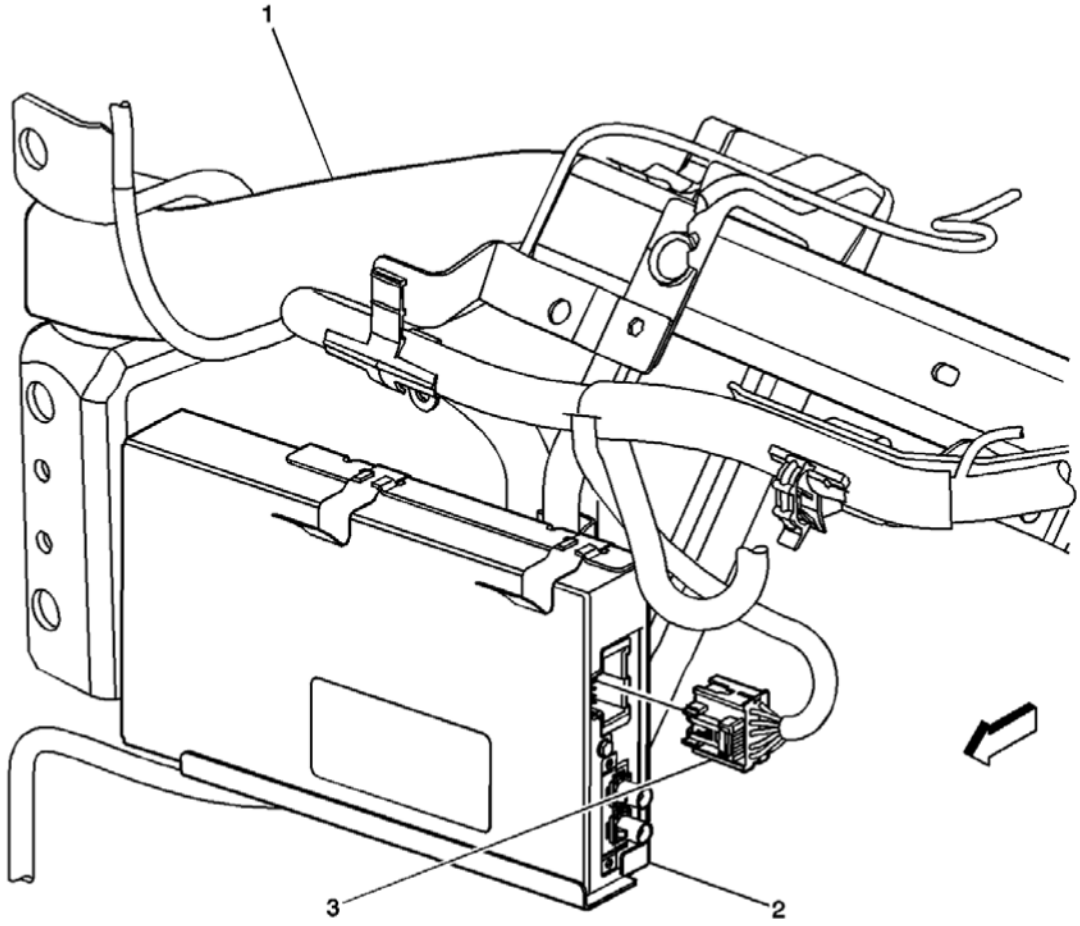


Fig. 13: Digital Radio Receiver Component View
Courtesy of GENERAL MOTORS CORP.

Callouts For Fig. 13

Callout	Component Name
1	Right Side of Instrument Panel
2	Digital Radio Receiver
3	Digital Radio Receiver Connector

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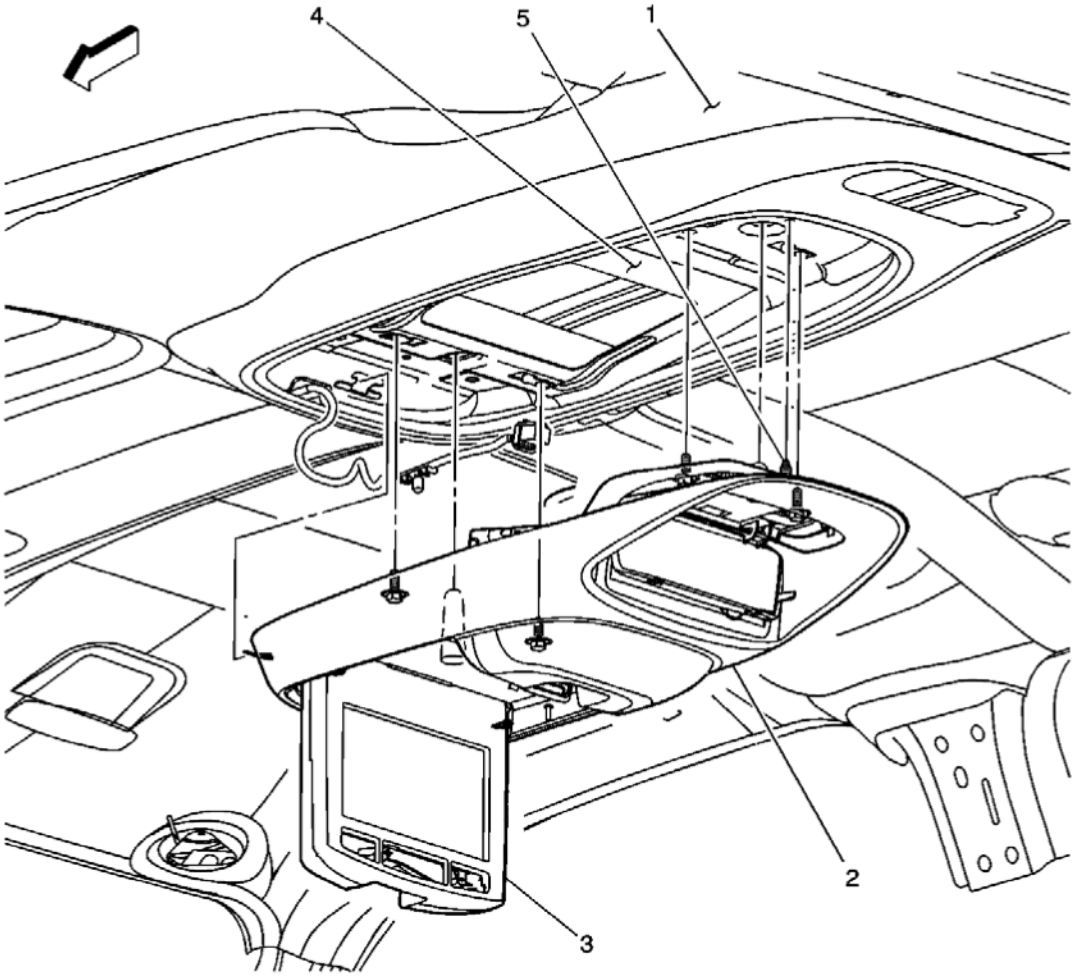


Fig. 14: Rear Seat Entertainment (RSE) Assembly Component View
Courtesy of GENERAL MOTORS CORP.

Callouts For Fig. 14

Callout	Component Name
1	Headliner
2	Rear Seat Entertainment (RSE) Assembly
3	Rear Seat Entertainment (RSE) Display
4	Intermediate Bracket
5	Fir Tree Retainer

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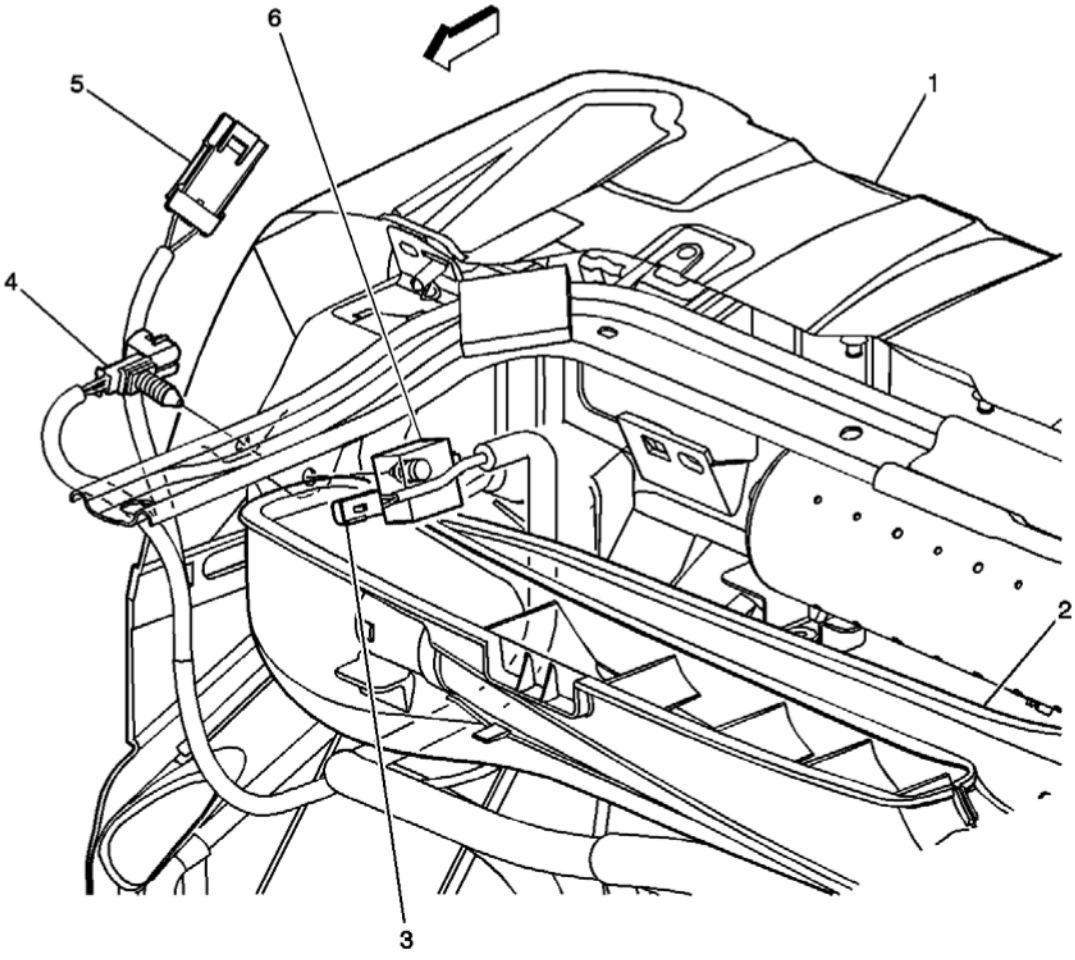


Fig. 15: Instrument Panel - RH Rear Component View
Courtesy of GENERAL MOTORS CORP.

Callouts For Fig. 15

Callout	Component Name
1	Right Top of Instrument Panel
2	Windshield Defogger Duct
3	C230
4	Radio Antenna Module Connector
5	Speaker-RF Tweeter Connector
6	Antenna Coax Connector

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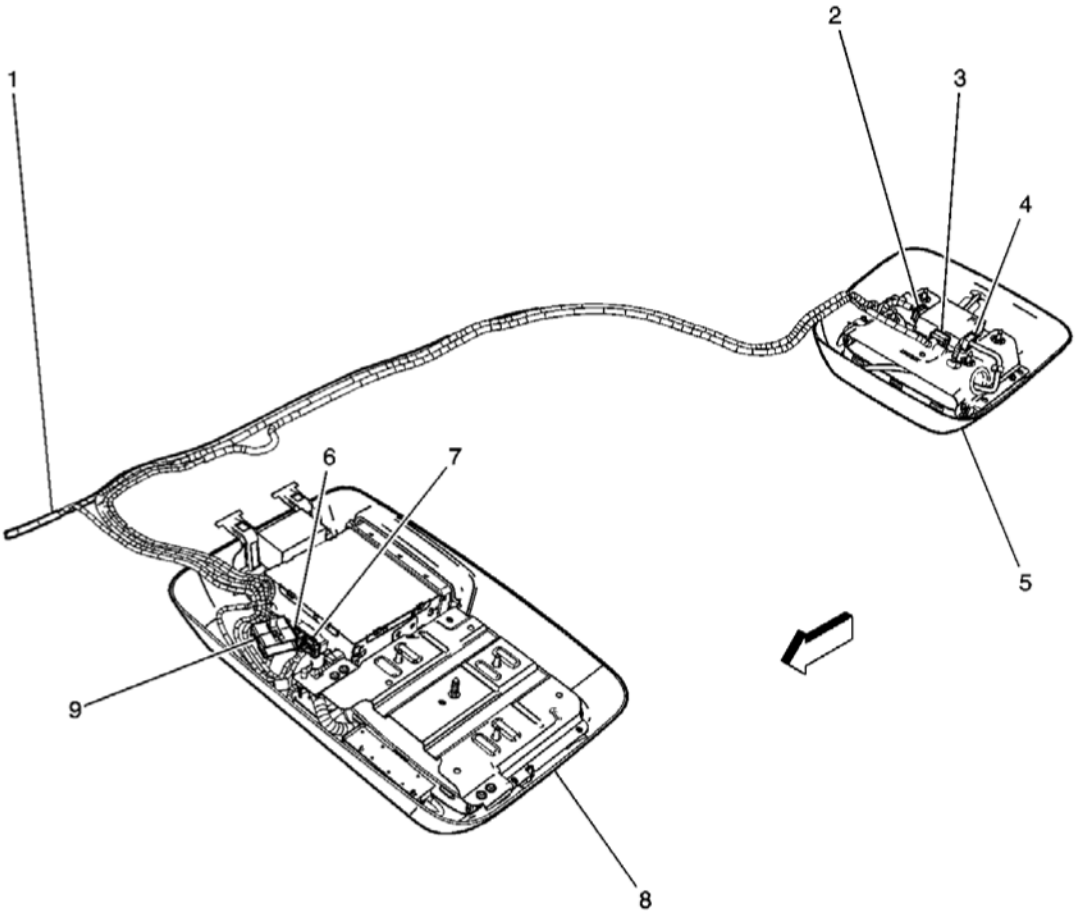


Fig. 16: Front & Rear Video Displays - ULT Component View
Courtesy of GENERAL MOTORS CORP.

Callouts For Fig. 16

Callout	Component Name
1	Headliner Harness
2	Splitter C2
3	Splitter C1
4	Splitter C3
5	Rear Display
6	DVD Player C1
7	DVD Player C2
8	Disk Player and Video Display
9	C375

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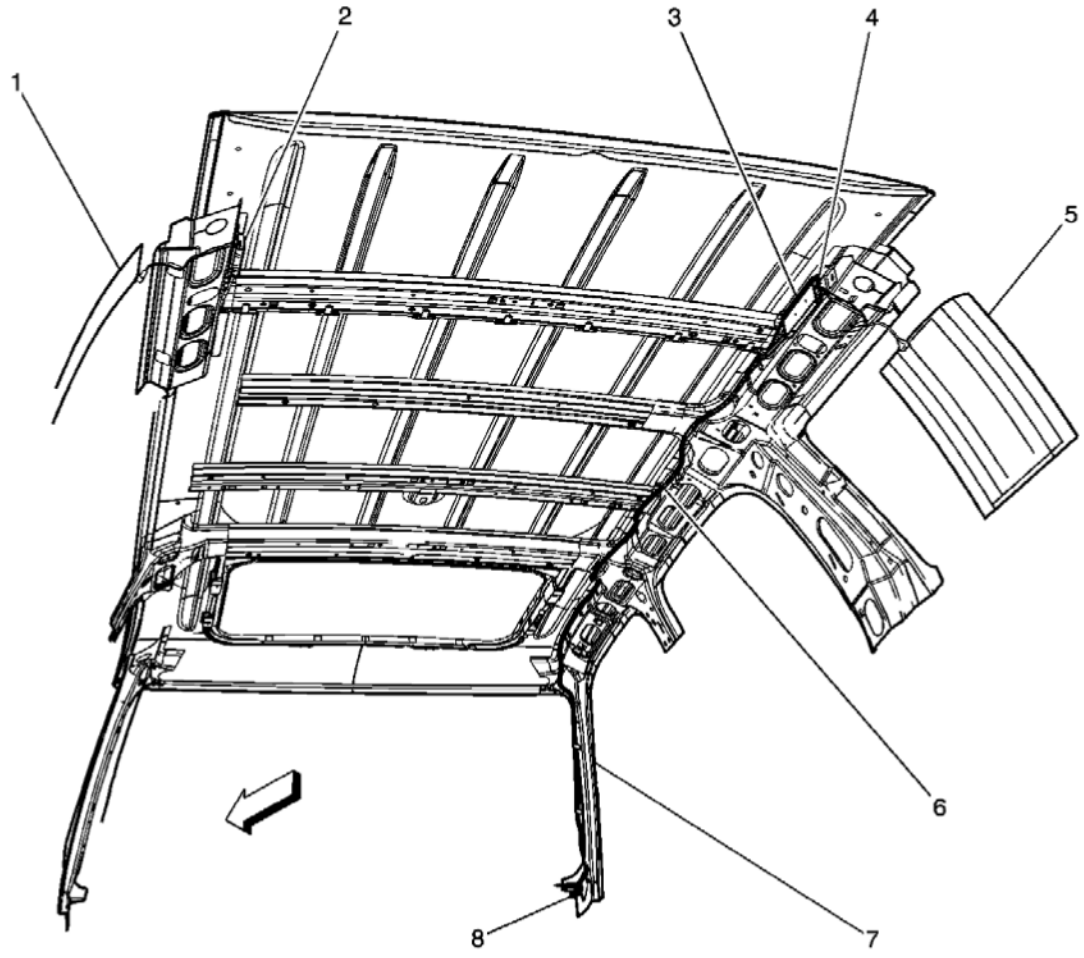


Fig. 17: AM-FM Diversity Antenna System Component View
Courtesy of GENERAL MOTORS CORP.

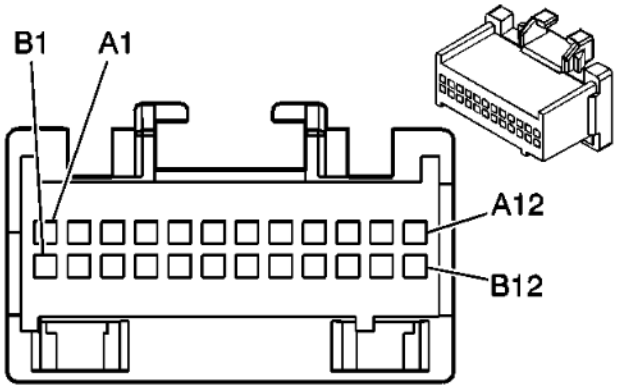
Callouts For Fig. 17

Callout	Component Name
1	FM Antenna
2	FM Impedance Matching Module
3	Radio Antenna Module
4	Module C1
5	AM-FM Antenna
6	Radio Antenna Module Cable
7	Right A-Pillar
8	C231

ENTERTAINMENT CONNECTOR END VIEWS

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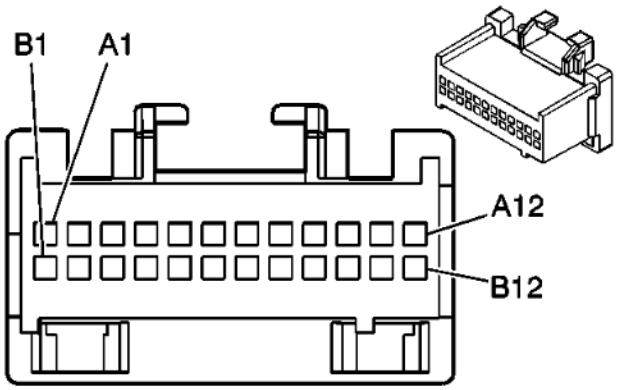
Audio Amplifier C1 Terminal Identification (UQ7 w/o Y91)



Connector Part Information		• 12110088 • 24-Way F Micro-Pack 100 Series (GRY)	
Pin	**Wire Color**	**Circuit No.**	**Function**
A1-A4	-	-	Not Used
A5	BRN	199	Left Rear Speaker Output (+)
A6	YEL	116	Left Rear Speaker Output (-)
A7	DK BLU	46	Right Rear Speaker Output (+)
A8	LT BLU	115	Right Rear Speaker Output (-)
A9	TAN	201	Left Front Speaker Output (+)
A10	GRY	118	Left Front Speaker Output (-)
A11	LT GRN	200	Right Front Speaker Output (+)
A12	DK GRN	117	Right Front Speaker Output (-)
B1	GRY/BLK	2334	Radio Mute
B2	PPL	493	Rear Seat Audio Enable Signal
B3	BLK	1946	Right Rear Low Level Audio Signal (-)
B4	DK BLU	546	Right Rear Low Level Audio Signal (+)
B5	DK GRN/ WHT	1547	Left Rear Low Level Audio Signal (-)
B6	BRN	599	Left Rear Low Level Audio Signal (+)
B7	ORN/BLK	1546	Right Front Low Level Audio Signal (-)
B8	LT GRN	512	Right Front Low Level Audio Signal (+)
B9	DK GRN	1947	Left Front Low Level Audio Signal (-)
B10	TAN	511	Left Front Low Level Audio Signal (+)
B11	PNK	314	Radio On Signal
B12	BARE	2099	Drain Wire

Audio Amplifier C1 Terminal Identification (UQ7 w/Y91)

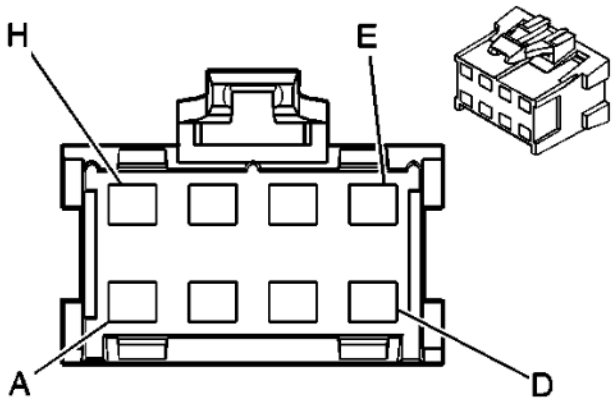
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Connector Part Information		• 12110088 • 24-Way F Micro-Pack 100 Series (GRY)	
Pin	**Wire Color**	**Circuit No.**	**Function**
A1	WHT	1854	Right Rear Twiddler Speaker Output (+)
A2	YEL	1949	Right Rear Twiddler Speaker Output (-)
A3	BRN	199	Left Rear Speaker Output (+)
A4	YEL	116	Left Rear Speaker Output (-)
A5	TAN	201	Left Front Speaker Output (+)
A6	GRY	118	Left Front Speaker Output (-)
A7	DK BLU	46	Right Rear Speaker Output (+)
A8	LT BLU	115	Right Rear Speaker Output (-)
A9	LT GRN	200	Right Front Speaker Output (+)
A10	DK GRN	117	Right Front Speaker Output (-)
A11-A12	-	-	Not Used
B1	DK GRN	1488	Noise Reduction Microphone Supply Voltage
B2	LT GRN/BLK	1354	Drain Wire
B3	ORN/BLK	1546	Right Front Low Level Audio Signal (-)
B4	DK GRN	1947	Left Front Low Level Audio Signal (-)
B5	TAN	511	Left Front Low Level Audio Signal (+)
B6	LT GRN	512	Right Front Low Level Audio Signal (+)
B7	BARE	2011	Drain Wire
B8-B9	-	-	Not Used
B10	DK BLU	2272	Amplifier Class 2 Serial Data
B11-B12	-	-	Not Used

Audio Amplifier C2 Terminal Identification (UQ7 w/o Y91)

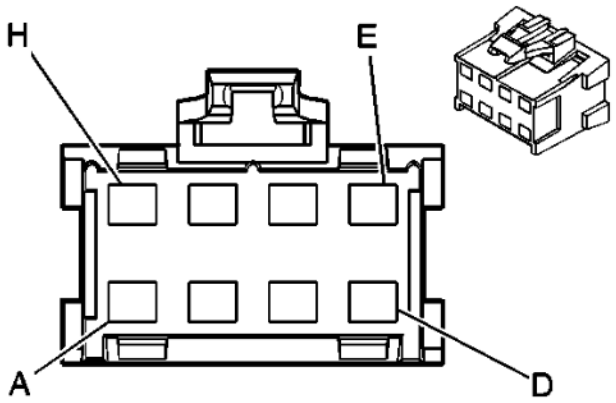
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Connector Part Information		• 12110626 • 8-Way F Metri-Pack 280 Series (GRY)	
Pin	**Wire Color**	**Circuit No.**	**Function**
A	BLK/WHT	1851	Ground
B	DK BLU/ WHT	346	Left Subwoofer Speaker Output (+)
C	DK GRN	1795	Right Subwoofer Speaker Output (+)
D	-	-	Not Used
E	BARE	2011	Drain Wire
F	LT BLU/BLK	315	Right Subwoofer Speaker Output (-)
G	LT GRN/BLK	1794	Left Subwoofer Speaker Output (-)
H	ORN	3740	Battery Positive Voltage

Audio Amplifier C2 Terminal Identification (UQ7 w/Y91)

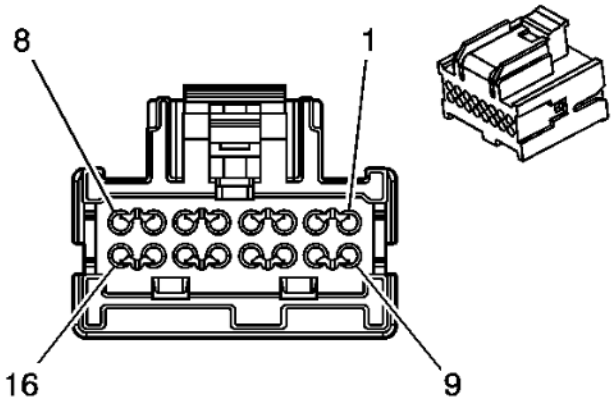
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Connector Part Information		• 15357040 • 8-Way F Metri-Pack 280 Series (GRY)	
Pin	**Wire Color**	**Circuit No.**	**Function**
A	BLK/WHT	1851	Ground
B	DK GRN	1795	Right Subwoofer Speaker Output (+)
C	RED	1858	Left Rear Twiddler Speaker Output (+)
D	LT GRN/BLK	1794	Left Subwoofer Speaker Output (-)
E	DK BLU/ WHT	346	Left Subwoofer Speaker Output (+)
F	PPL	1958	Left Rear Twiddler Speaker Output (-)
G	LT BLU/BLK	315	Right Subwoofer Speaker Output (-)
H	ORN	3740	Battery Positive Voltage

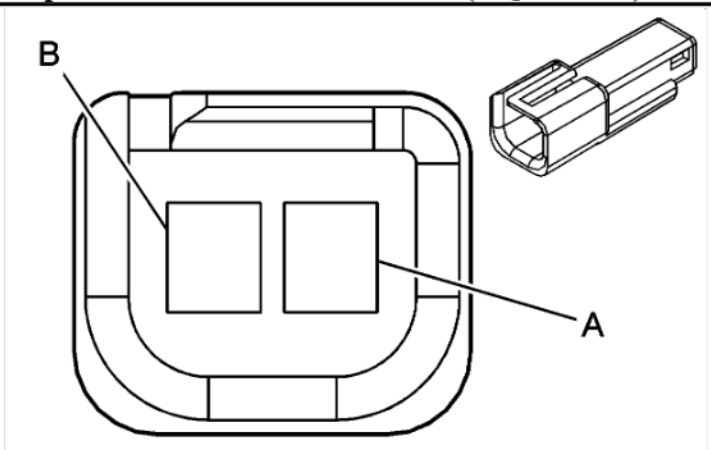
Digital Radio Receiver Terminal Identification - w/ U2K/U2L

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Connector Part Information		• 15394150 • 16-Way F ASM Series (BLK)	
Pin	**Wire Color**	**Circuit No.**	**Function**
1	-	-	Not Used
2	BRN/WHT	367	Remote Playback Device Left Audio Signal
3	DK GRN/WHT	368	Remote Playback Device Right Audio Signal
4-6	-	-	Not Used
7	LT GRN	2271	ADG Class 2 Serial Data
8	-	-	Not Used
9	BLK/WHT	1851	Ground
10	BLK/WHT	372	Remote Playback Device Common Audio Signal
11-15	-	-	Not Used
16	ORN	340	Battery Positive Voltage

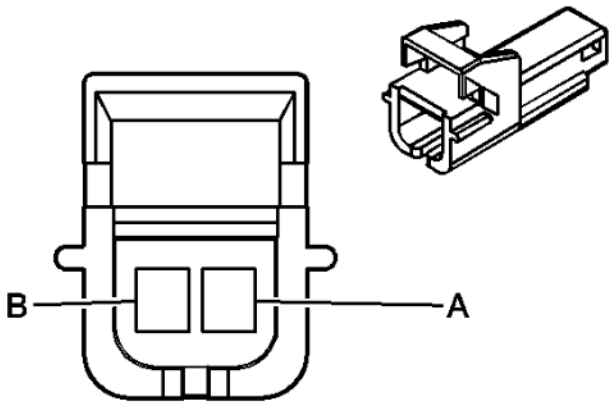
Noise Compensation Microphone Terminal Identification (UQ7 w/Y91)



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Connector Part Information		• 12047663 • 2-Way M Metri-Pack 150 Series (BLK)	
Pin	**Wire Color**	**Circuit No.**	**Function**
A	LT GRN/BLK	1354	Drain Wire
B	DK GRN	1488	Noise Reduction Microphone Supply Voltage

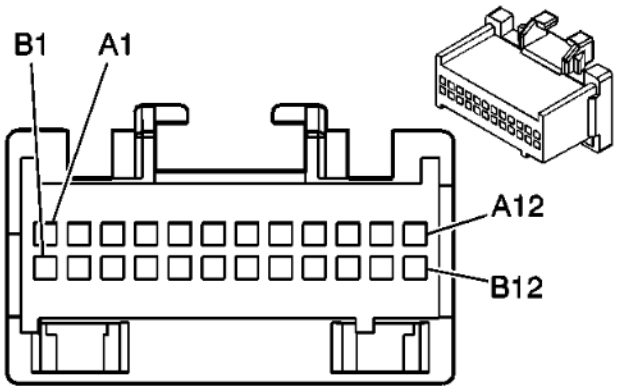
Radio Antenna Module Terminal Identification



Connector Part Information		• 12052833 • 2-Way M ASM Series (BLK)	
Pin	**Wire Color**	**Circuit No.**	**Function**
A	RED	1486	FM Composite Signal
B	DK GRN	145	Antenna Enable Signal

Radio C1 Terminal Identification

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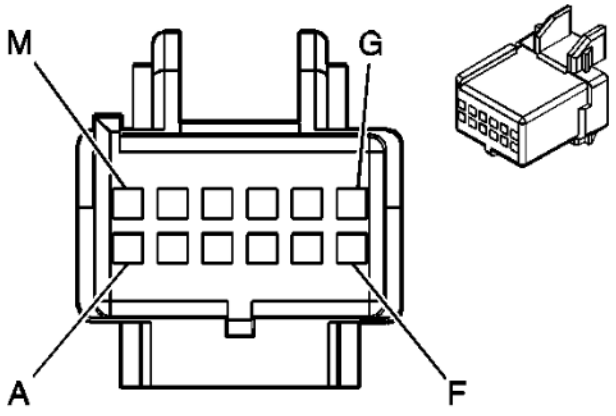


Connector Part Information		• 12110088 (Except UQ7 w/o Y91) • 15428074 (UQ7 w/o Y91) • 24-Way F Micro-Pack 100 Series (GRN) (UQ7 w/o Y91) • 24-Way F Micro-Pack 100 Series (GRY) (Except UQ7 w/o Y91)	
Pin	**Wire Color**	**Circuit No.**	**Function**
A1	ORN	1044	Radio Class 2 Serial Data
A2	-	-	Not Used
A3	PPL	493	Rear Seat Audio Enable Signal (UQ7 w/o Y91)
A4	RED	1486	FM Composite Signal (UQ7 w/ Y91)
A5-A7	-	-	Not Used
A8	TAN	201	Left Front Speaker Output (+) (UQ3/UQ5)
A8	TAN	511	Left Front Low Level Audio Signal (+) (UQ7)
A9	GRY	118	Left Front Speaker Output (-) (UQ3/UQ5)
A9	DK GRN	1947	Left Front Low Level Audio Signal (-) (UQ7)
A10	LT BLU	115	Right Rear Speaker Output (-) (UQ3/UQ5)
A10	BLK	1946	Right Rear Low Level Audio Signal (-) (UQ7)
A11	DK BLU	46	Right Rear Speaker Output (+) (UQ3/UQ5)
A11	DK BLU	546	Right Rear Low Level Audio Signal (+) (UQ7)
A12	BLK/WHT	1851	Ground
B1	ORN	340	Battery Positive Voltage
B2	-	-	Not Used

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B3	PNK	314	Radio On Signal (UQ7 w/o Y91)
B3	DK GRN	145	Antenna Enable Signal (UQ7 w/ Y91)
B4	BRN/WHT	230	Instrument Panel Lamps Dimming Control (w Y91)
B5	BLK	1851	Ground (w/ Y91)
B6	GRY/BLK	2334	Radio Mute (UQ7 w/o Y91)
B7	-	-	Not Used
B8	BRN	199	Left Rear Speaker Output (+) (UQ3/UQ5)
B8	BRN	599	Left Rear Low Level Audio Signal (+) (UQ7)
B9	YEL	116	Left Rear Speaker Output (-) (UQ3/UQ5)
B9	DK GRN/ WHT	1547	Left Rear Low Level Audio Signal (-) (UQ7)
B10	DK GRN	200	Right Front Speaker Output (+) (UQ3/UQ5)
B10	ORN/BLK	1546	Right Front Low Level Audio Signal (-) (UQ7)
B11	LT GRN	117	Right Front Speaker Output (-) (UQ3/UQ5)
B11	LT GRN	512	Right Front Low Level Audio Signal (+) (UQ7)
B12	-	-	Not Used

Radio C2 Terminal Identification

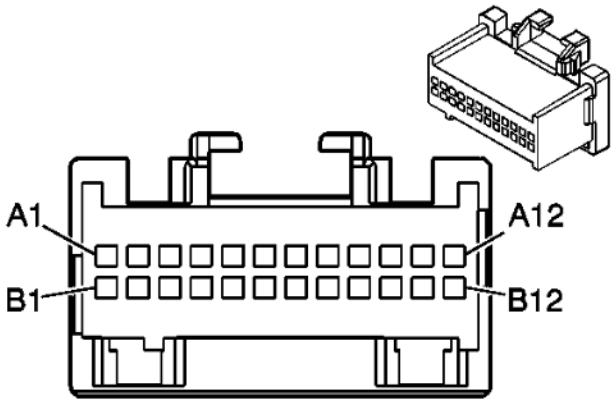


Connector Part Information		• **12064799** • **12-Way F Micro-Pack 100 Series (BLK)**	
Pin	**Wire Color**	**Circuit No.**	**Function**
A-B	-	-	Not Used
C	BARE	1573	Drain Wire (w/ U2K/U2L)
D	-	-	Not Used

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E	DK GRN/WHT	817	Vehicle Speed Signal (w/ Y91)
F-G	-	-	Not Used
H	DK GRN/ WHT	368	Remote Playback Device Right Audio Signal (w/ U2K/U2L)
J	BRN/WHT	367	Remote Playback Device Left Audio Signal (w/ U2K/U2L)
K	BLK/WHT	372	Remote Playback Device Common Audio Signal (w/ U2K/U2L)
L	ORN/BLK	2061	Cellular Telephone Voice Low Reference
M	PNK/BLK	2062	Cellular Telephone Voice Signal

Rear Seat Audio (RSA) Controller Terminal Identification

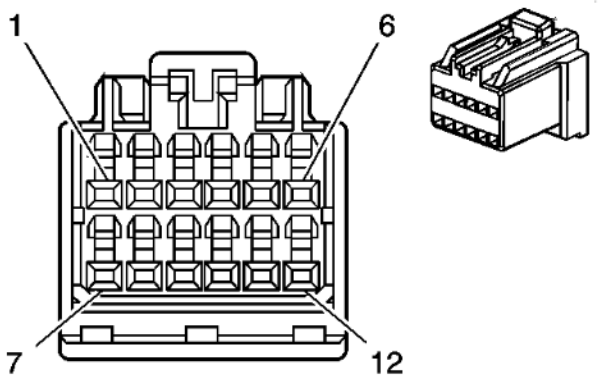


Connector Part Information		• **12110206** • **24-Way F Micro-Pack 100 Series (LT BLU)**	
Pin	**Wire Color**	**Circuit No.**	**Function**
A1	LT BLU	2288	RSA Class 2 Serial Data
A2	ORN	340	Battery Positive Voltage
A3	-	-	Not Used
A4	BLK/WHT	1851	Ground
A5	BARE	2099	Drain Wire (Except Y91)
A6	DK GRN/WHT	1547	Left Rear Low Level Audio Signal (-)
A7	BLK	1946	Right Rear Low Level Audio Signal (-)
A8	DK GRN/WHT	1547	Left Rear Low Level Audio Signal (-) (Except Y91)
A9	BLK	1946	Right Rear Low Level Audio Signal (-) (Except Y91)
A10-A12	-	-	Not Used
B1-B4	-	-	Not Used

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B5	BARE	2099	Drain Wire (Except Y91)
B6	BRN	599	Left Rear Low Level Audio Signal (+)
B7	DK BLU	546	Right Rear Low Level Audio Signal (+)
B8	BRN	599	Left Rear Low Level Audio Signal (+) (Except Y91)
B9	DK BLU	546	Right Rear Low Level Audio Signal (+) (Except Y91)
B10-B12	-	-	Not Used

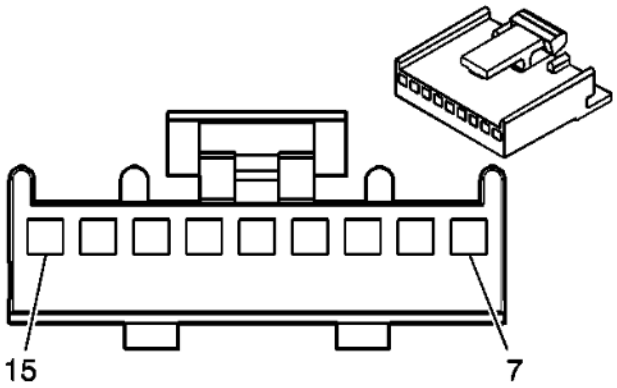
Rear Seat Entertainment (RSE) Assembly DVD Terminal Identification



Connector Part Information		• 15341086 • 12-Way F Multi-Lock Series (BLK)	
Pin	**Wire Color**	**Circuit No.**	**Function**
1	-	-	Not Used
2	LT GRN/BLK	1098	VCM Class 2 Serial Data
3-4	-	-	Not Used
5	DK GRN/WHT	368	Remote Playback Device Right Audio Signal
6	BRN/WHT	367	Remote Playback Device Left Audio Signal
7	BLK/WHT	1851	Ground
8	-	-	Not Used
9	ORN	3240	Battery Positive Voltage
10-11	-	-	Not Used
12	BLK/WHT	372	Remote Playback Device Common Audio Signal

Remote Playback Device - CD Player Terminal Identification

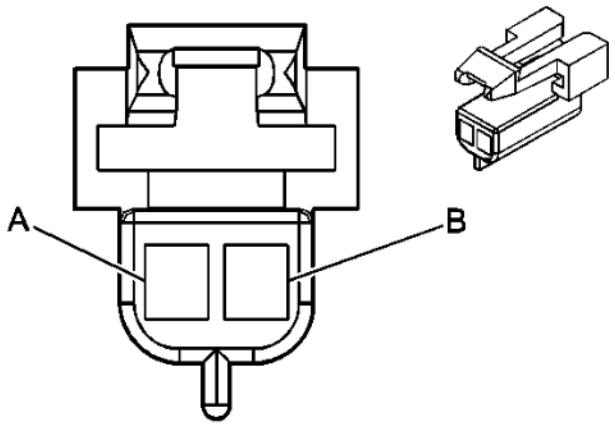
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Connector Part Information		• 12064980 • 9-Way F Micro-Pack 100 Series (BLK)	
Pin	**Wire Color**	**Circuit No.**	**Function**
7	-	-	Not Used
8	BRN/WHT	230	Instrument Panel Lamps Dimming Control
9	-	-	Not Used
10	DK GRN/ WHT	368	Remote Playback Device Right Audio Signal
11	BRN/WHT	367	Remote Playback Device Left Audio Signal
12	BLK/WHT	372	Remote Playback Device Common Audio Signal
13	BLK/WHT	1851	Ground
14	TAN	5072	Remote Playback Device Class 2 Serial Data
15	ORN	3240	Battery Positive Voltage

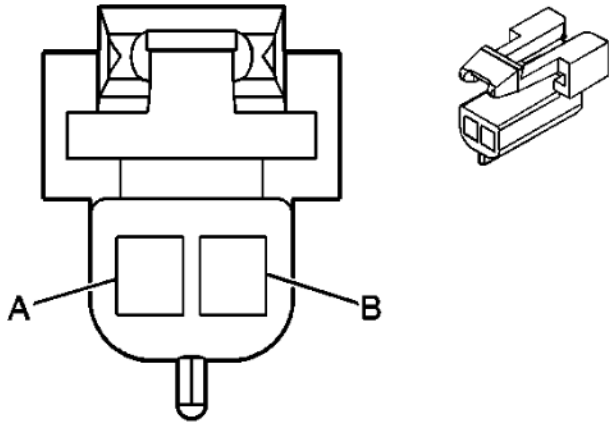
Speaker - LF Door Terminal Identification (UQ5)

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Connector Part Information		• 12186847 • 2-Way F Metri-Pack 150 Series (LT GRY)	
Pin	**Wire Color**	**Circuit No.**	**Function**
A	GRY	118	Left Front Speaker Output (-)
B	TAN	201	Left Front Speaker Output (+)

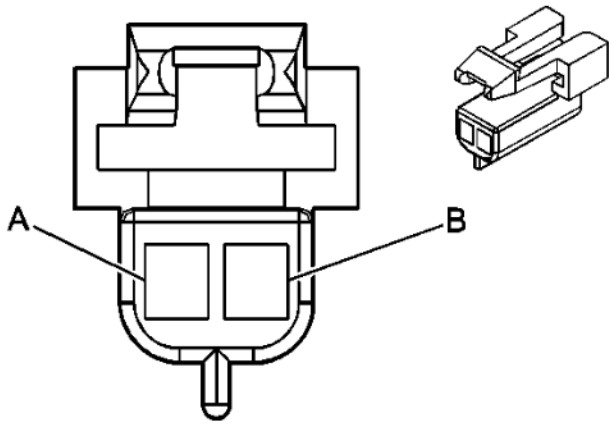
Speaker - LF Door Terminal Identification (UQ3/UQ7)



Connector Part Information		• 15433787 • 2-Way F Metri-Pack 150 Series (LT GRY)	
Pin	**Wire Color**	**Circuit No.**	**Function**
A	GRY	118	Left Front Speaker Output (-)
B	TAN	201	Left Front Speaker Output (+)

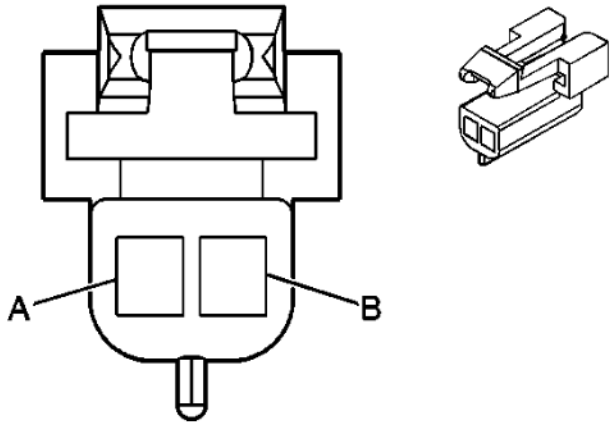
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Speaker - RF Door Terminal Identification (UQ5)



Connector Part Information		• 12186847 • 2-Way F Metri-Pack 150 Series (LT GRY)	
Pin	**Wire Color**	**Circuit No.**	**Function**
A	DK GRN	117	Right Front Speaker Output (-)
B	LT GRN	200	Right Front Speaker Output (+)

Speaker - RF Door Terminal Identification (UQ3/UQ7)

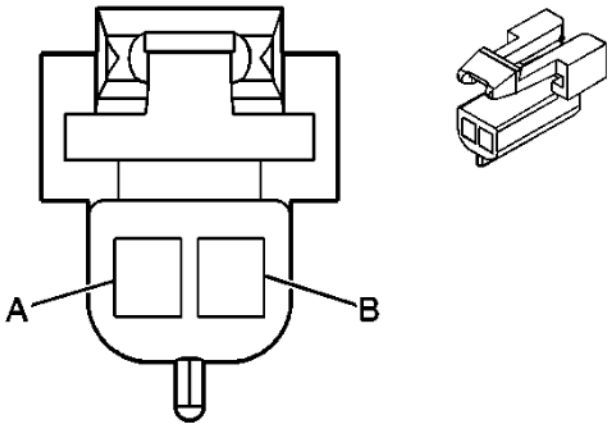


Connector Part Information		• 15433787 • 2-Way F Metri-Pack 150 Series (NAT)	
Pin	**Wire Color**	**Circuit No.**	**Function**
A	DK GRN	117	Right Front Speaker Output (-)

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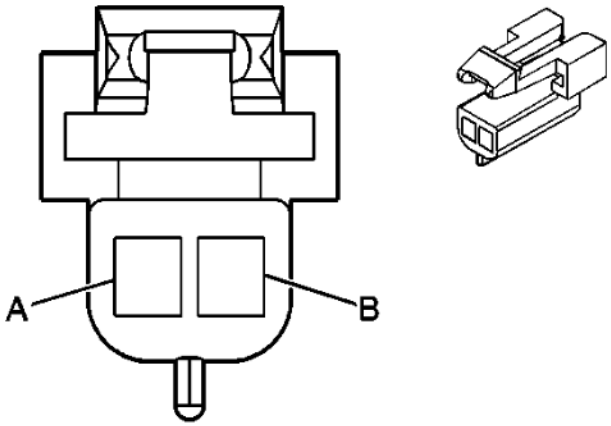
B	LT GRN	200	Right Front Speaker Output (+)

Speaker - LR Door Terminal Identification



Connector Part Information		• 12052832 • 2-Way F Metri-Pack 150 Series (BLK)	
Pin	**Wire Color**	**Circuit No.**	**Function**
A	YEL	116	Left Rear Speaker Output (-)
B	BRN	199	Left Rear Speaker Output (+)

Speaker - RR Door Terminal Identification

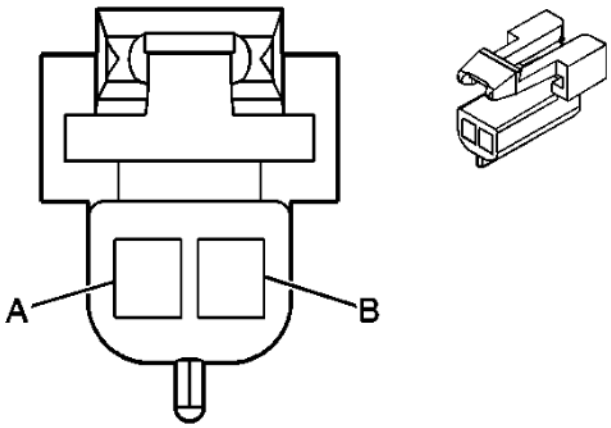


Connector Part Information		• 12052832 • 2-Way F Metri-Pack 150 Series (BLK)	

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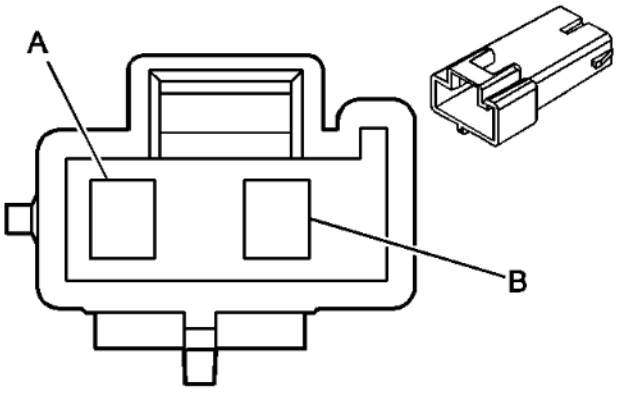
Pin	Wire Color	Circuit No.	Function
A	YEL	115	Right Rear Speaker Output (-)
B	BRN	46	Right Rear Speaker Output (+)

Speaker - LF Tweeter Terminal Identification (UQ3)



Connector Part Information		• 12052832 • 2-Way F Metri-Pack 150 Series (BLK)	
Pin	**Wire Color**	**Circuit No.**	**Function**
A	GRY	118	Left Front Speaker Output (-)
B	TAN	201	Left Front Speaker Output (+)

Speaker - LF Tweeter Terminal Identification (UQ7/Y91)

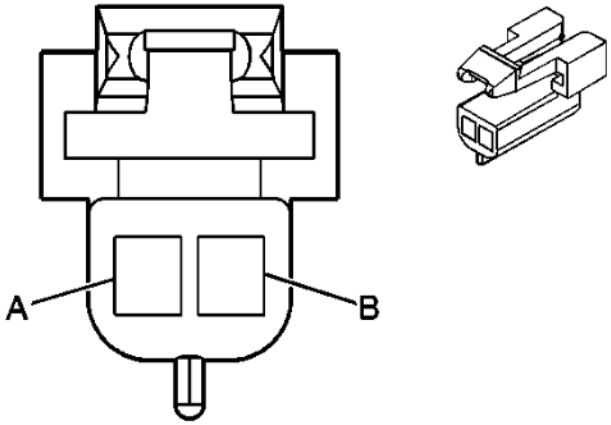


Connector Part Information	• 12110131

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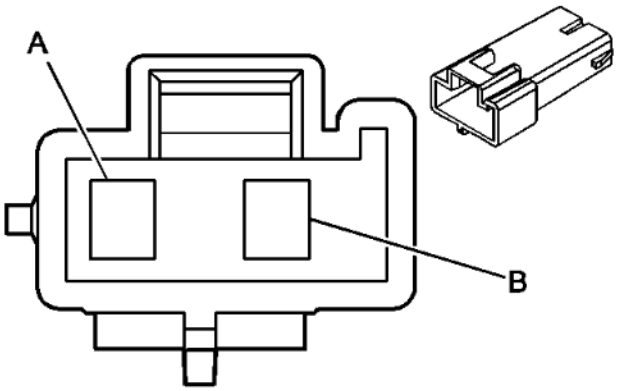
		• 2-Way F Metri-Pack 150 Series (WHT)	
Pin	**Wire Color**	**Circuit No.**	**Function**
A	GRY	118	Left Front Speaker Output (-)
B	TAN	201	Left Front Speaker Output (+)

Speaker - RF Tweeter Terminal Identification (UQ3)



Connector Part Information		• 12052832 • 2-Way F Metri-Pack 150 Series (BLK)	
Pin	**Wire Color**	**Circuit No.**	**Function**
A	DK GRN	117	Right Front Speaker Output (-)
B	LT GRN	200	Right Front Speaker Output (+)

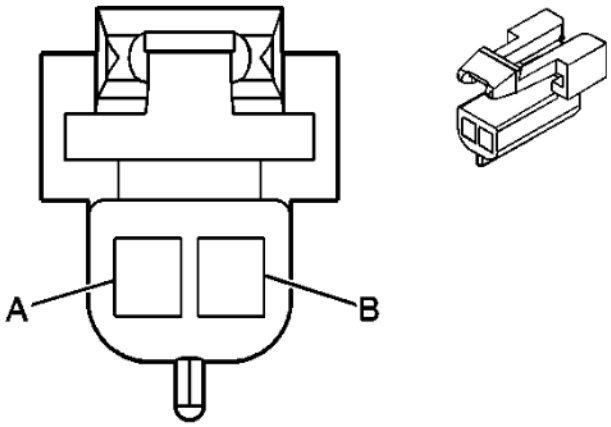
Speaker - RF Tweeter Terminal Identification (UQ7/Y91)



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Connector Part Information		• 12110131 • 2-Way F Metri-Pack 150 Series (WHT)	
Pin	**Wire Color**	**Circuit No.**	**Function**
A	DK GRN	117	Right Front Speaker Output (-)
B	LT GRN	200	Right Front Speaker Output (+)

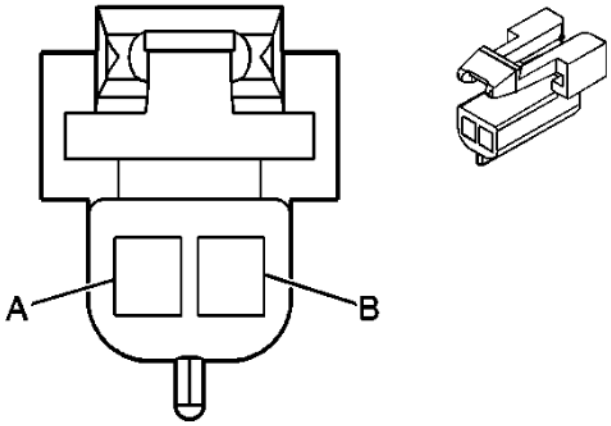
Speaker - Left D-Pillar Terminal Identification (UQ7 w/o Y91)



Connector Part Information		• 12052832 • 2-Way F Metri-Pack 150 Series (BLK)	
Pin	**Wire Color**	**Circuit No.**	**Function**
A	YEL	116	Left Rear Speaker Output (-)
B	BRN	199	Left Rear Speaker Output (+)

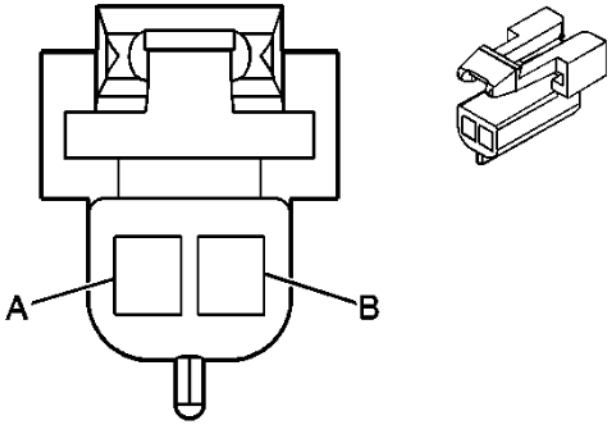
Speaker - Left D-Pillar Terminal Identification (w/ Y91)

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Connector Part Information		• 15434358 • 2-Way F Metri-Pack 150 Series (BLU)	
Pin	**Wire Color**	**Circuit No.**	**Function**
A	PPL	1958	Left Rear Twiddler Speaker Output (-)
B	RED	1858	Left Rear Twiddler Speaker Output (+)

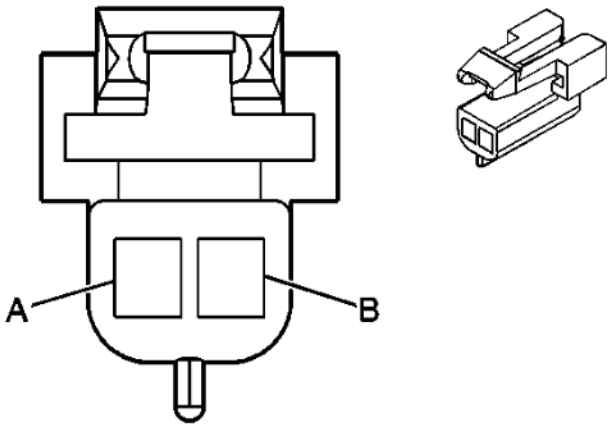
Speaker - Right D-Pillar Terminal Identification (UQ7 w/o Y91)



Connector Part Information		• 12052832 • 2-Way F Metri-Pack 150 Series (BLK)	
Pin	**Wire Color**	**Circuit No.**	**Function**
A	LT BLU	116	Right Rear Speaker Output (-)
B	DK BLU	199	Right Rear Speaker Output (+)

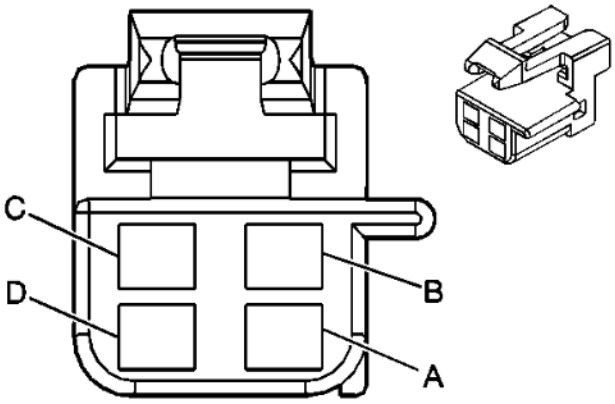
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Speaker - Right D-Pillar Terminal Identification (w/ Y91)



Connector Part Information		• 15434358 • 2-Way F Metri-Pack 150 Series (BLU)	
Pin	**Wire Color**	**Circuit No.**	**Function**
A	YEL	1949	Right Rear Twiddler Speaker Output (-)
B	WHT	1854	Right Rear Twiddler Speaker Output (+)

Speaker - Subwoofer Terminal Identification

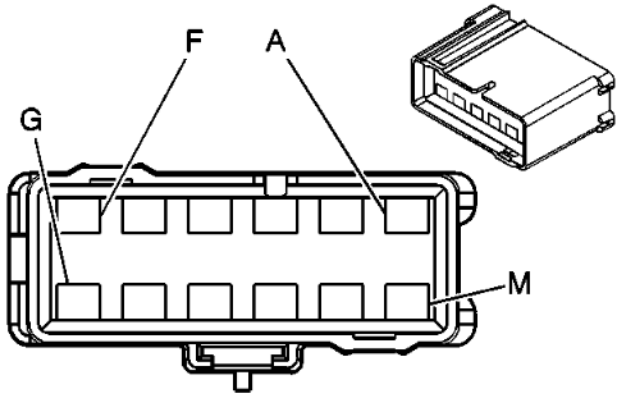


Connector Part Information		• 12064760 • 4-Way F Metri-Pack 150 Series (BLK)	
Pin	**Wire Color**	**Circuit No.**	**Function**
A	LT GRN/BLK	1794	Left Subwoofer Speaker Output (-)

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B	DK BLU/ WHT	346	Left Subwoofer Speaker Output (+)
C	DK GRN	1795	Right Subwoofer Speaker Output (+)
D	LT BLU/BLK	315	Right Subwoofer Speaker Output (-)

Splice Pack SP250 Terminal Identification (w/ UQ7)



Connector Part Information		• 12176473 • 12-Way F Metri-Pack 280 Series Splice Saver (BLK)	
Pin	**Wire Color**	**Circuit No.**	**Function**
A	BRN/WHT	367	Remote Playback Device Left Audio Signal
B	BRN/WHT	367	Remote Playback Device Left Audio Signal
C	BRN/WHT	367	Remote Playback Device Left Audio Signal
D	BLK/WHT	372	Remote Playback Device Common Audio Signal
E	BLK/WHT	372	Remote Playback Device Common Audio Signal
F	BLK/WHT	372	Remote Playback Device Common Audio Signal
G	DK GRN/WHT	368	Remote Playback Device Right Audio Signal
H	DK GRN/WHT	368	Remote Playback Device Right Audio Signal
J	DK GRN/WHT	368	Remote Playback Device Right Audio Signal
K	BARE	1573	Drain Wire
L	BARE	1573	Drain Wire
M	BARE	1573	Drain Wire

DIAGNOSTIC INFORMATION AND PROCEDURES

DIAGNOSTIC STARTING POINT - ENTERTAINMENT

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Begin the system diagnosis with the **Diagnostic System Check - Entertainment System**. The Entertainment System Diagnostic System Check will provide the following information:

- The identification of the control modules which command the system
- The ability of the control modules to communicate through the serial data circuit
- The identification of any stored diagnostic trouble codes (DTCs) and their status

The use of the Entertainment System Diagnostic System Check will identify the correct procedure for diagnosing the system and where the procedure is located.

DIAGNOSTIC SYSTEM CHECK - ENTERTAINMENT SYSTEM

Test Description

The numbers below refer to the step numbers on the diagnostic table.

2: Lack of communication may be due to a partial malfunction of the class 2 serial data circuit or due to a total malfunction of the class 2 serial data circuit. The specified procedure will determine the particular condition. First design uses a class 2 amplifier, 2nd design uses a non-class 2 amplifier.

5: The presence of DTCs which begin with "U" indicate some other module is not communicating. The specified procedure will compile all the available information before tests are performed.

Diagnostic System Check - Entertainment System

Step	Action	Yes	No
1	1. Install a scan tool. 2. Turn ON the ignition, with the engine OFF. Does the scan tool power up?	Go to **Step 2**	Go to **Scan Tool Does Not Power Up** in Data Link Communications
2	Attempt to establish communication with the following: • Radio • Amplifier (1st design only), refer to **Radio/Audio System Description and Operation** for explanation of designs. • Body control module (BCM) • Auxiliary HVAC control module • Digital Radio Receiver (DRR) Does the scan tool communicate with the radio, amplifier, BCM, auxiliary HVAC control module, and DRR?	Go to **Step 3**	Go to **Scan Tool Does Not Communicate with Class 2 Device** in Data Link Communications
	IMPORTANT: **The engine may start during the following step. Turn**		

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3	**OFF the engine as soon as you have observed the Crank power mode.** 1. Access the Class 2 Power Mode in the Diagnostic Circuit Check on the scan tool. 2. Rotate the ignition switch through all positions while observing the ignition switch power mode parameter. Does the ignition switch parameter reading match the ignition switch position for all switch positions?	Go to **Step 4**	Go to **Power Mode Mismatch** in Body Control System
4	Select the following display DTCs function on the scan tool: • Radio • Amplifier (1st design only) • Body control module (BCM) • Auxiliary HVAC control module • Digital Radio Receiver (DRR) Does the scan tool display any DTCs?	Go to **Step 5**	Go to **Symptoms - Entertainment**
5	Does the scan tool display any DTCs which begin with a "U"?	Go to **Scan Tool Does Not Communicate with Class 2 Device** in Data Link Communications	Go to **Step 6**
6	Does the scan tool display DTC B1000?	Go to **Diagnostic Trouble Code (DTC) List** in Body Control System	Go to **Step 7**
7	Does the scan tool display DTC B1327?	Go to **Diagnostic Trouble Code (DTC) List** in Engine Electrical	Go to **Diagnostic Trouble Code (DTC) List**

SCAN TOOL DATA LIST

Audio Amplifier Scan Tool Data List

Scan Tool Parameter	Data List	Units Displayed	Typical Data Value
Operating Conditions: Ignition in RUN, Radio ON			

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Audio Device	Data	Null/Tuner/CD Player	Varies
Balance	Data	Value	-50 to +50
Bass	Data	Percent	0-100%
Battery Voltage	Data	Volts	0-18V
Chime Speaker	Data	Front Left, Front Right, LF Woofer, Back Left, Back Right, RF Woofer	Varies
Chime Volume	Data	Percent	0-100%
External Audio Device	Data	Connected/Not Connected	Varies
Fade	Data	Value	-50 to +50
Ignition Since Current DTC	Data	Cycles	0-225
Microphone Level	Data	Percent	0-100%
Noise Compensation	Data	On/Off	Varies
Treble	Data	Percent	0-100%
Volume	Data	Percent	0-100%

Radio Scan Tool Data List

Scan Tool Parameter	Data List	Units Displayed	Typical Data Value
Operating Conditions: Ignition in RUN, Radio ON			
Amp Type	Inputs	Bose/Non-Bose	Bose
Antenna Enable	Inputs	Active/Inactive	Active
Balance	Data	-50 to +50	0
Bass	Data	0-100%	50.2%
Battery Voltage	Data	Volts	12.2 Volts
Cal. Module 1 Part No.	ID Information	Numeric	XXXXXXXX
Cal. Module 1 Suffix	ID Information	Alphanumeric	XX
CD Changer	Inputs	Connected/Not Connected	Not Connected
CD Inserted	Inputs	Yes/No	No
Chime Type	Outputs	Varies	Fast
Fade	Data	-50 to +50	0
Ignition Since Current DTC	Data	0-225	0
Midrange	Data	0-100%	50.2%
Operational S/W Part No.	ID Information	Numeric	XXXXXXXX
Operational S/W Suffix	ID Information	Alphanumeric	XX
Personalization	Inputs	Driver 1/Driver 2	Driver 1
Phone	Inputs	Present/Not Present	Present
RSA	Inputs	Present/Not Present	Present
Signal Strength	Data	0-225	38dB

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Speed Compensated Volume	Outputs	Off/Low/Medium/High	Off
Source	Inputs	Tuner/ICDX/Tape/CD	Tuner
Theft Armed	Inputs	Learned VIN/ No VIN	Learned VIN
Theft Locked	Inputs	Locked/Unlocked	Unlocked
Treble	Data	0-100%	50.2%
Volume	Data	0-100%	18%

Digital Radio Receiver Scan Tool Data List

Scan Tool Parameter	Data List	Units Displayed	Typical Data Value
Operating Conditions: Ignition ON/Engine OFF/Radio ON			
8-Digit GM Part Number	ID Information/Module Information	Numeric	Varies
Battery Voltage	Data	Volts	Varies
Component Serial Number	ID Information/Module Information	Numeric	Varies
Day	ID Information/DSP Software Version ID	Numeric	Varies
Day	ID Information/XM Software Version ID	Numeric	Varies
Digital Radio Antenna	Data	Millivolts or Milliamps	Varies
Ignition Counter	Data	Numeric	Varies
Month	ID Information/DSP Software Version ID	Numeric	Varies
Month	ID Information/XM Software Version ID	Numeric	Varies
Power Mode	Data	Alphanumeric	Run
Radio ID	ID Information/Module Information	Numeric	Varies
Software Version	ID Information/DSP Software Version ID	Numeric	Varies
Software Version	ID Information/XM Software Version ID	Numeric	Varies
Year	ID Information/DSP Software Version ID	Numeric	Varies
Year	ID Information/XM Software Version ID	Numeric	Varies

Rear Seat Audio (RSA) Controller Scan Tool Data List

Scan Tool Parameter	Data List	Units Displayed	Typical Data Value

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Operating Conditions: Ignition in RUN, Radio ON			
Battery Voltage	Data	Volts	0-18V
CD Changer Disc Number	Data	Varies	1
CD Changer Track Number	Data	Varies	1
Ignition Since Current DTC	Data	Cycles	0-225

SCAN TOOL DATA DEFINITIONS

8-Digit GM Part Number

The scan tool displays an 8 digit alphanumeric number. The part number of the module.

Amp Type

The scan tool displays the type of amplifier installed in the vehicle, Bose/Non-Bose.

Antenna Enable

The scan tool displays Active/Inactive.

Audio Device

The scan tool displays Null/Tuner/CD Player. The radio detects the presence of the device that is operating.

Balance

The scan tool displays -50 to +50. The Balance between the right and left audio output.

Bass

The scan tool displays 0-100%. The percentage of bass selected at the radio.

Battery Voltage

The scan tool displays 0-18 Volts. The Voltage measured from the radio or amplifier's ignition positive voltage circuit to ground.

Cal. Module 1 Part No.

The scan tool displays the 8 digit part number of the module.

Cal. Module 1 Suffix

The scan tool displays the 2 position suffix of the module.

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CD Changer

The scan tool displays Connected if a CD changer is detected or Not Connected if no CD changer is present.

CD Changer Disc Number

The scan tool displays which CD the changer is currently playing.

CD Changer Track Number

The scan tool displays the track number of the disc that is currently playing.

CD Inserted

The scan tool displays Yes or No. Whether a CD is loaded or not.

Chime Type

The scan tool displays the type of chime select such as fast.

Chime Speaker

The scan tool displays Front Left, Front Right, LF Woofer, Back Left, Back Right, RF Woofer. The selected chime speaker is displayed

Chime Volume

The scan tool displays 0-100%. The percentage at which the chime volume has been calibrated to.

Component Serial Number

The scan tool displays the serial number of the module.

Day

The scan tool displays the day the software was created.

Digital Radio Antenna

This parameter indicates the amount of current being used by the digital radio antenna by measuring the voltage drop across an internal resistor. Early design modules support the mV reading while later design modules support a mA reading.

External Audio Device

The scan tool displays Connected/Not Connected. The radio senses the presence of an external audio

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device.

Fade

The scan tool displays -50 to +50. The Fade between the front and rear audio output.

Ignition Counter

The scan tool displays the number of ignition cycles.

Ignition Since Current DTC

The scan tool displays 0-225 Cycles. The number of ignition cycles since a current DTC was set.

Microphone Level

The scan tool displays 0-100%. The percentage of microphone selected at the radio.

Midrange

The scan tool displays 0-100%. The percentage of midrange selected at the radio.

Month

The scan tool displays the month the software was created. Mute

Noise Compensation

The scan tool displays On/Off. The selected switch position of the noise compensation system.

Operational S/W Part No.

The scan tool displays the 8 digit software part number of the module.

Operational S/W Suffix

The scan tool displays the 2 position software suffix of the module.

Personalization

The scan tool displays Driver 1/ Driver 2.

Phone

The scan tool displays whether or not a phone is present or not present.

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Power Mode

The scan tool displays what power mode the module is on.

Radio ID

The scan tool displays the radio ID of the digital radio receiver.

RSA

The scan tool displays Present/ Not Present. Present is displayed if rear seat entertainment control is installed in the vehicle.

Signal Strength

The scan tool displays 0-225 dB. The signal strength of the radio frequency.

Software Version

The scan tool displays the version of software.

Speed Compensated Volume

The scan tool displays Off/Low/Medium/High according to what the auto volume is set on the module.

Source

The scan tool displays Off/Tuner/ICDX/CD/Cassette.This data parameter indicates the source that is operating.

Theft Armed

The scan tool displays Learned VIN/No VIN. The Scan tool displays Learned VIN when the theft mode has been turned ON by recognizing a valid VIN #.

Theft Locked

The scan tool displays Locked/Unlocked. The scan tool displays locked when the radio receives the incorrect VIN number across Class 2 lines.

Treble

The scan tool displays 0-100%. The percentage of treble selected at the radio.

Volume

The scan tool displays 0-100%. The percentage of volume selected at the radio.

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Year

The scan tool displays the year the software was created.

DIAGNOSTIC TROUBLE CODE (DTC) LIST

Diagnostic Trouble Code (DTC) List

DTC	Description	Module
B1025, B1035, B1045, or B1055	**DTC B1025, B1035, B1045, or B1055**	Radio
B1235	**DTC B1235**	Radio
B1259	**DTC B1259**	Digital Radio
B2815	**DTC B2815**	BCM

DTC B1001

Circuit Description

This DTC is generated by the module when an error occurs between the VIN as received over the class 2 communication circuit and the VIN as stored in the module memory. The only circuit required is the class 2 communications line.

Conditions for Running the DTC

The DTC is run when the module changes from OFF to ON. This may be in response to the radio switch or the ignition ON signal.

Conditions for Setting the DTC

This DTC is generated by the module when an error occurs between the VIN as received over the class 2 communication circuit and the VIN as stored in the module memory. This happens when the radio changes from OFF to ON.

Action Taken When the DTC Sets

The module does not function.

Conditions for Clearing the DTC

Re-calibration with the correct calibrations for the vehicle and cycling the module to OFF then to ON will clear the DTC if there is no damage to the module.

DTC B1001

Step	Action	Yes	No
Schematic Reference: Radio/Audio System Schematics (Base/Uplevel Radio - UQ3/UQ5), Radio/Audio System Schematics (Radio - UQ7 w/o Y91 - non Class 2 Amp) or Radio/Audio System			

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Schematics (Lux Radio - UQ7 w/ Y91 - Class 2 Amp) Connector End View Reference: Entertainment Connector End Views			
1	Did you perform the Diagnostic System Check - Entertainment System?	Go to **Step 2**	Go to **Diagnostic System Check - Entertainment System**
2	1. Install a scan tool. 2. Turn ON the ignition, with the engine OFF. 3. With a scan tool, configure the module to the vehicle. Does the DTC reset?	Go to **Step 3**	System OK
3	Replace the module. Refer to **Receiver Replacement - Digital Radio**. Did you complete the replacement?	System OK	-

DTC B1025, B1035, B1045, OR B1055

Circuit Description

When the radio is powered up, the radio supplies low level audio signals to the speakers. If the vehicle is equipped with an audio amplifier, the amplifier will boost the signal sent to the speakers.

Conditions for Running the DTC

The test is performed when the radio switches from OFF to ON. The radio will continue to test for the fault once every 0.5 seconds.

Conditions for Setting the DTC

The radio sets a current status for this DTC when a short to ground or voltage is detected on any of the speaker channels for 1.5 seconds.

Action Taken When the DTC Sets

No sound is present from one or more of the speakers.

Conditions for Clearing the DTC

The fault condition is not present for 5 seconds.

Test Description

The numbers below refer to the step numbers on the diagnostic table.

2: This step verifies that the DTC is still present.

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3: This step isolates the fault condition.

DTC B1025, B1035, B1045, or B1055

Step	Action	Yes	No
Schematic Reference: Radio/Audio System Schematics (Base/Uplevel Radio - UQ3/UQ5), Radio/Audio System Schematics (Radio - UQ7 w/o Y91 - non Class 2 Amp) or Radio/Audio System Schematics (Lux Radio - UQ7 w/ Y91 - Class 2 Amp)			
1	Did you perform the Diagnostic System Check - Entertainment System?	Go to **Step 2**	Go to **Diagnostic System Check - Entertainment System**
2	1. Install a scan tool. 2. Turn ON the ignition, with the engine OFF. 3. With the scan tool, monitor the DTC Information for DTC B1025, B1035, B1045 OR B1055. Does the scan tool indicate that DTC B1025, B1035, B1045 OR B1055 is current?	Go to **Step 3**	Go to **Testing for Intermittent Conditions and Poor Connections** in Wiring Systems
3	Test the speaker outputs from the radio for short to ground or voltage. Refer to **Circuit Testing** and **Wiring Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 6**	Go to **Step 4**
4	Inspect for poor connections at the harness connector of the radio. Refer to **Testing for Intermittent Conditions and Poor Connections** and **Connector Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 6**	Go to **Step 5**
5	**IMPORTANT:** **Reprogram the radio. Refer to Service Programming System (SPS) in Programming.** Replace the radio. Refer to **Radio Replacement**.Did you complete the replacement?	Go to **Step 6**	-
6	Operate the system in order to verify the repair. Did you correct the condition?	System OK	Go to **Step 2**

DTC B1235

Circuit Description

The Antenna Enable/Amplifier On Signal is a class 2 signal sent from the radio through the RSA module, when equipped. The amplifier will reach full output capabilities 900 milliseconds after receiving this signal. The amplifier will then be capable of class 2 functions 60 milliseconds after being turned ON. This DTC will be set if the circuit is shorted to ground or battery.

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Conditions for Running the DTC

This test is run at least every 50 milliseconds.

Conditions for Setting the DTC

The failure must occur for at least 3 seconds.

Action taken when the DTC Sets

The Antenna Enable/Amplifier On Signal Circuit becomes disabled, causing the controlled module to become inoperative.

Conditions for Clearing the DTC

The failure criteria is no longer detected for 50 milliseconds.

Test Description

The numbers below refer to the step numbers on the diagnostic table.

2: This step helps to determine if the Diversity Antenna System is operating.

3: This step helps to determine if Radio Antenna Module is receiving the proper signal from the radio.

DTC B1235

Step	Action	Yes	No
Schematic Reference: Radio/Audio System Schematics (Base/Uplevel Radio - UQ3/UQ5), Radio/Audio System Schematics (Radio - UQ7 w/o Y91 - non Class 2 Amp) or Radio/Audio System Schematics (Lux Radio - UQ7 w/ Y91 - Class 2 Amp)			
1	Did you perform the Diagnostic System Check - Entertainment System?	Go to **Step 2**	Go to **Diagnostic System Check - Entertainment System**
2	1. Turn ON the ignition, with the engine OFF. 2. Turn ON the radio. 3. Press the scan button. Do the local AM/FM stations come in clearly?	Go to **Testing for Intermittent Conditions and Poor Connections** in Wiring Systems	Go to **Step 3**
3	1. Remove the radio. 2. Test the Antenna Enable/Amplifier On Signal Circuit for a short or open.		Go to **Testing for Intermittent Conditions and Poor**

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	Did you locate and correct the condition?	Go to **Step 4**	**Connections** in Wiring Systems
4	Operate the system in order to verify the repair. Did you complete the repair?	System OK	-

DTC B1259

Circuit Description

The digital radio antenna is connected to the digital radio receiver by 1 coax cable. This cable carries the satellite and the terrestrial signal. The antenna cable also provides a path for D.C. current for powering the antenna.

Conditions for Running the DTC

This test is run every 300 milliseconds.

Conditions for Setting the DTC

The digital radio receiver detects an antenna fault.

Action Taken When the DTC Sets

The radio displays "No XM Signal."

Conditions for Clearing the DTC

The condition must be corrected.

DTC B1259

Step	Action	Values	Yes	No
Schematic Reference: Radio/Audio System Schematics (Base/Uplevel Radio - UQ3/UQ5), Radio/Audio System Schematics (Radio - UQ7 w/o Y91 - non Class 2 Amp) or Radio/Audio System Schematics (Lux Radio - UQ7 w/ Y91 - Class 2 Amp)				
1	Did you perform the Diagnostic System Check - Entertainment System?	-	Go to **Step 2**	Go to **Diagnostic System Check - Entertainment System**
2	With a scan tool, observe the digital radio antenna in the digital radio receiver data list. Does the scan tool indicate that the digital radio antenna is within the specified range?	17-63 mA	Go to **Step 6**	Go to **Step 3**
	1. Disconnect the antenna cable from the digital radio receiver. 2. Measure the voltage from the center			

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3	conductor of the antenna connector on the digital radio receiver to one of the case screws. Does the voltage measure within the specified range?	4.5-5.5 V	Go to **Step 4**	Go to **Step 6**
4	Test the antenna cable for an open, short, or high resistance. Refer to **Circuit Testing** in Wiring Systems. Did you find the condition?	-	Go to **Step 5**	Go to **Step 8**
5	Replace the antenna cable. Refer to **Coaxial Cable Replacement - Digital Radio (Primary)** or **Coaxial Cable Replacement - Digital Radio (Extension)**. Did you complete the replacement?	-	Go to **Step 10**	-
6	Inspect for poor connections at the digital radio receiver. Refer to **Testing for Intermittent Conditions and Poor Connections** and **Connector Repairs** in Wiring Systems. Did you find and correct the condition?	-	Go to **Step 10**	Go to **Step 7**
7	**IMPORTANT:** **Always perform the setup procedure for the digital radio receiver. Refer to Digital Radio Receiver Setup** Replace the digital radio receiver. Refer to **Receiver Replacement - Digital Radio**.Did you complete the replacement?	-	Go to **Step 10**	-
8	Inspect for poor connections at the digital radio antenna. Refer to **Testing for Intermittent Conditions and Poor Connections** and **Connector Repairs** in Wiring Systems. Did you find and correct the condition?	-	Go to **Step 10**	Go to **Step 9**
9	Replace the digital radio antenna. Refer to **Antenna Replacement - Digital Radio**. Did you complete the replacement?	-	Go to **Step 10**	-
10	1. Use the scan tool in order to clear the DTCs. 2. Operate the vehicle within the Conditions for Running the DTC as specified in the supporting text. Does the DTC reset?	-	Go to **Step 2**	System OK

DTC B1271

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Circuit Description

This DTC is generated by the module when the Theft Lock is activated. This occurs when the VIN as received over the class 2 communication circuit and the VIN as stored in the module memory do not match. This also occurs when no VIN is received over the class 2 circuit. The only circuit required is the class 2 communications line.

Conditions for Running the DTC

This test is run every 300 milliseconds.

Conditions for Setting the DTC

This DTC is generated by the module when the VIN as received over the class 2 communication circuit and the VIN as stored in the module memory do not match. This also occurs if no VIN is received over the class 2 circuit. This DTC test runs when the Radio changes from OFF to ON.

Action Taken When the DTC Sets

The Radio does not function. The Radio will display Locked - THEFTLOCK Active.

Conditions for Clearing the MIL/DTC

Re-calibration with the correct calibrations for the vehicle and cycling the Radio to OFF then to ON will clear the DTC if there is no damage to the Radio.

DTC B1271

Step	Action	Yes	No
1	Did you perform the Diagnostic System Check - Entertainment System?	Go to **Step 2**	Go to **Diagnostic System Check - Entertainment System**
2	1. Install a scan tool. 2. Turn ON the ignition, with the engine OFF. 3. With a scan tool clear the radio theft information. Does the DTC Reset?	Go to **Step 3**	System OK
3	**IMPORTANT:** **Perform the radio setup procedure. Refer to Radio Setup (With RPO UM8)** Replace the radio. Refer to **Radio Replacement**.Did you complete the replacement?	System OK	-

DTC B2815

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Circuit Description

The steering wheel controls are momentary contact switches that connect a series of resistors so that each switch selection corresponds to a fixed resistance value. The body control module (BCM) determines which switch has been pressed by the voltage drop across the corresponding resistance value. The BCM supplies voltage to the steering wheel controls through the rear wiper/washer switch supply voltage circuit. The BCM monitors the switch voltage on the remote radio control signal circuit.

Conditions for Running the DTC

This test is run every 125 milliseconds.

Conditions for Setting the DTC

The BCM detects a switch voltage that is higher than normal.

Action Taken When the DTC Sets

The BCM will ignore the switch command.

Conditions for Clearing the MIL/DTC

- The DTC will become history if the BCM no longer detects a circuit malfunction.
- The history DTC will clear after 100 fault free ignition cycles.
- The DTC can be cleared with a scan tool.

Test Description

The number below refers to the step number on the diagnostic table.

3: Tests for the proper operation of the circuit in the low voltage range.

DTC B2815

Step	Action	Value(s)	Yes	No
Schematic Reference: Radio/Audio System Schematics (Base/Uplevel Radio - UQ3/UQ5), Radio/Audio System Schematics (Radio - UQ7 w/o Y91 - non Class 2 Amp) or Radio/Audio System Schematics (Lux Radio - UQ7 w/ Y91 - Class 2 Amp) **Connector End View Reference: Entertainment Connector End Views**				
1	Did you perform the Diagnostic System Check - Entertainment System?	-	Go to **Step 2**	Go to **Diagnostic System Check - Entertainment System**
	1. Install a scan tool. 2. Turn ON the ignition, with the engine OFF.			

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2	3. With a scan tool, observe the SWC Switch Voltage parameter in the Body Control Module data list. Does the scan tool indicate that the SWC Switch Voltage parameter is near the specified value?	0 V	Go to **Testing for Intermittent Conditions and Poor Connections** in Wiring Systems	Go to **Step 3**
3	**CAUTION:** **Refer to SIR Caution in Cautions and Notices.** 1. Disable the SIR system. Refer to **SIR Disabling and Enabling Zone 1** and **SIR Disabling and Enabling Zone 3** in SIR. 2. Turn OFF the ignition. 3. Disconnect the left steering wheel controls. 4. Turn ON the ignition, with the engine OFF. 5. With a scan tool, observe the SWC Switch Voltage parameter. Does the scan tool indicate that the SWC Switch Voltage parameter is near the specified value?	0 V	Go to **Step 6**	Go to **Step 4**
4	1. Turn OFF the ignition. 2. Disconnect the right steering wheel controls. 3. Turn ON the ignition, with the engine OFF. 4. With a scan tool, observe the SWC Switch Voltage parameter. Does the scan tool indicate that the SWC Switch Voltage parameter is near the specified value?	0 V	Go to **Step 7**	Go to **Step 5**
5	Test the remote radio control signal circuit for a short to voltage. Refer to **Circuit Testing** and **Wiring Repairs** in Wiring Systems. Did you find and correct the condition?	-	Go to **Step 12**	Go to **Step 8**
6	Inspect for poor connections at the harness connector of the left steering wheel control switch. Refer to **Testing for Intermittent Conditions and Poor Connections** and **Connector Repairs** in Wiring Systems. Did you find and correct the condition?	-	Go to **Step 12**	Go to **Step 9**

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7	Inspect for poor connections at the harness connector of the right steering wheel control switch. Refer to **Testing for Intermittent Conditions and Poor Connections** and **Connector Repairs** in Wiring Systems. Did you find and correct the condition?	-	Go to **Step 12**	Go to **Step 10**
8	Inspect for poor connections at the harness connector of the body control module. Refer to **Testing for Intermittent Conditions and Poor Connections** and **Connector Repairs** in Wiring Systems. Did you find and correct the condition?	-	Go to **Step 12**	Go to **Step 11**
9	Replace the left steering wheel control switch. Refer to **Steering Wheel Control Switch Assembly Replacement** in Steering Wheel and Column. Did you complete the replacement?	-	Go to **Step 12**	-
10	Replace the right steering wheel control switch. Refer to **Steering Wheel Control Switch Assembly Replacement** in Steering Wheel and Column. Did you complete the replacement?	-	Go to **Step 12**	-
11	**IMPORTANT:** **Perform the set up procedure for the body control module.** Replace the body control module. Refer to **Body Control Module Replacement** in Body Control System.Did you complete the replacement?	-	Go to **Step 12**	-
12	1. Enable the SIR system. Refer to **SIR Disabling and Enabling Zone 1** and **SIR Disabling and Enabling Zone 3** in SIR. 2. Use the scan tool in order to clear the DTCs. 3. Operate the vehicle within the Conditions for Running the DTC as specified in the supporting text. Does the DTC reset?	-	Go to **Step 2**	System OK

SYMPTOMS - ENTERTAINMENT

IMPORTANT: Review the system operation in order to familiarize yourself with the system functions. Refer to Radio/Audio System Description and Operation.

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Visual/Physical Inspection

- Inspect for aftermarket devices which could affect the operation of the Radio/Audio system. Refer to **Checking Aftermarket Accessories** in Wiring Systems.
- Inspect the easily accessible or visible system components for obvious damage or conditions which could cause the symptom.

Intermittent

Faulty electrical connections or wiring may be the cause of intermittent conditions. Refer to **Testing for Intermittent Conditions and Poor Connections** in Wiring Systems.

Symptom List

Refer to a symptom diagnostic procedure from the following list in order to diagnose the symptom:

- **Radio Poor Reception**
- **Digital Radio Poor or No Reception**
- **Audio Distortion - One or More Speakers**
- **Remote Playback Device Inoperative**
- **Remote Playback Device - Audio Noise**
- **Remote Playback Device Left or Right Channel Inoperative**
- **Radio Displays LOC, LOCKED, or CODE**
- **Radio Displays CLN or CLEAN (W/O UM8)** or **Radio Displays CLN or CLEAN (W/ UM8)**
- **Radio Displays CAL or CAL ERR (W/O UM8)** or **Radio Displays CAL or CAL ERR (W/ UM8)**
- **Tape Player Weak, Slow, or Garbled Output**
- **Steering Wheel Controls Inoperative**
- **Reduced Volume - One or More Speakers (W/O UM8)** or **Reduced Volume - One or More Speakers (W/ UM8)**
- **Speakers Inoperative - One or More**
- **Video Entertainment System Inoperative**
- **Radio Audio Inoperative at Rear Seat Audio (RSA) Control**

AUDIO SYSTEM TROUBLESHOOTING HINTS

Many conditions that affect radio operation may be corrected without removing the radio from the car. Verify the condition, and follow the diagnostic procedures in order to isolate and correct the condition. In order to properly diagnose any audio system problems, ensure that you have a fully charged battery.

Preliminary Inspections

IMPORTANT: When testing the audio system for poor reception or noise, the vehicle should be outside away from metal buildings and utility lines, with the

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hood and rear compartment closed.

- Check for any aftermarket equipment that may have been installed on the vehicle. If aftermarket equipment is found disconnect it and check if the audio noise is still present.

  Inspect that the antenna connector and the antenna coaxial cable are clean and tight.

- For reception concerns, first determine if the customer is within the listening area of the stations they are attempting to receive.
- Stations at the lower end of the FM band are more susceptible to audio noises than stations at the higher end.
- If the noise is only from one speaker check for the following before speaker replacement:
  - Isolate the noise using the **J 39916-A** CD and Cassette Diagnostic Audio Kit. See **Special Tools and Equipment**.
  - Inspect the speaker connections to ensure they are clean and tight. Refer to **Testing for Intermittent Conditions and Poor Connections** in Wiring Systems.
  - Inspect for a loose or incorrectly installed speaker or surrounding trim. Loose trim can cause a buzz or flutter which sounds like a malfunctioning speaker.
- Ignition noise on the FM band may be an indication of an ignition system problem.
- Inspect that all vehicle grounds are clean, tight and free of corrosion.
- Inspect the rear defogger grid lines for large breaks or dark spots.
- Inspect the connections at the radio antenna module if equipped, to ensure that they are clean and tight.
- Compare the customers vehicle to another of similar model and audio system to determine if the condition is abnormal.

Identifying Concerns

1. In order to isolate the source of the noise/poor reception, identify the ignition switch position that the concern is most noticeable:
   1. Turn the ignition switch to the accessory position.
   2. Turn ON the radio.
   3. Seek up 88-108 FM then 550-1600 AM.
   4. Record the number of valid radio stations where the tuner stops.
   5. Repeat these steps with the ignition ON, and the engine OFF then again with the engine running.
2. Return the ignition switch to the position that the concern was most noticeable.
3. Remove fuses or circuit breakers one at a time until the noise has been eliminated.
4. Identify what systems or components are powered by the fuse.
5. Reinstall all fuses and circuit breakers.
6. Disconnect the components powered by the fuse one at a time until the concern has been eliminated.

Corrective Action

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- Inspect the ground integrity of the component or system causing the noise.
- Malfunctioning and marginal components such as relays and solenoids may cause noise and/or poor reception.
- Always use a braided ground strap when applying additional grounds and keep the ground strap as short as possible.
- If the noise source is found to be coming from the vehicle harness:
  - Route the antenna cable separately from the wire harness that is emitting the noise.
  - Use aluminum or nickel tape in order to shield the antenna cable. Try variations of the following repairs:
    - Try adding only aluminum or nickel tape before adding a ground strap to the tape.
    - Wrap a ground strap 360 degrees around the tape, securing the other end of the strap to chassis ground.

IMPORTANT: When installing suppression devices, signal wires such as sensor and communication circuits should not be suppressed. Battery and ignition voltage circuits are the best choices for suppressing.

- Capacitors work best on switch pops and low frequency noise.
- Filters work best on high frequency whines and static.
- After adding any suppression device, inspect all of the vehicle systems including those not related to the audio system, for proper operation and function.
- Whenever possible, make a test harness that includes filters or capacitors. Always inspect the effectiveness and operation before permanent installation.
- If an audible pop is caused due to operating a switch, perform the following repairs as necessary:
  - Add a capacitor across the contacts of the switch.
  - Add a capacitor from the battery positive voltage (B+) side of the switch to chassis ground.
  - Add a capacitor from the ground side of the switch to chassis ground.
- Use the following available noise suppression devices:
  - 220 micro farad (50 V) capacitor GM P/N 1227895 - Works well for ignition system related noise.
  - 0.47 micro farad capacitor GM P/N 1227894 - Works well for switches and relays.
  - Feed through capacitor GM P/N 477371 - Works well for high current situations.
  - Filter package GM P/N 1224205 - Works well for low current situations.
  - Fuel pump suppressor GM P/N 25027405
  - 21 inch braided ground strap GM P/N 8910791
  - 19 inch braided ground strap GM P/N 6286800
  - 10.5 inch braided ground strap GM P/N 6287160
  - 8.5 inch braided ground strap GM P/N 12091511

Generator Whine Concerns

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1. Inspect the ground terminal and cable for high resistance.
2. Inspect the generator and brackets for loose or coated mounting bolts.
3. Inspect that the ground straps between the engine and the frame are clean and tight.
4. If the noise is still present, inspect the charging system for proper operation. Refer to **Diagnostic Starting Point - Engine Electrical** in Engine Electrical.
5. Install a filter GM P/N 1224205 in the battery voltage feed circuit to the radio.
6. If the noise is not eliminated, install the filter in each following variation:
   - Install the filter with the single wire side toward the radio and the ground wire attached to chassis ground.
   - Remove the ground to the filter.
   - Reverse the filter so the 2-wire side is toward the radio with the ground wire attached to chassis ground.
   - Remove the ground from the filter.
7. If the filter GM P/N 1224205 causes a delay when turning the radio ON or OFF, or other problems, remove the filter and install a 0.47 micro farad capacitor to chassis ground.
8. Before reassembling the vehicle, remove any unneeded filters.
9. Test the functionality all of the vehicle systems including those not related to the audio system, for proper operation and function.

RADIO POOR RECEPTION

Schematic Reference: Radio/Audio System Schematics (Base/Uplevel Radio - UQ3/UQ5), Radio/Audio System Schematics (Radio - UQ7 w/o Y91 - non Class 2 Amp) or Radio/Audio System Schematics (Lux Radio - UQ7 w/ Y91 - Class 2 Amp)

Diagnostic System Check - Entertainment System

Always perform the Radio/Audio System Diagnostic System Check before proceeding with these diagnostic procedures. Refer to **Diagnostic System Check - Entertainment System**.

Antenna System Test

IMPORTANT: Always zero out the DMM before taking a resistance measurement in order to ensure an accurate reading.

1. Disconnect the negative battery cable.
2. Disconnect the antenna lead-in connector from the radio receiver.
3. Measure the resistance from the negative battery cable to the coax outer conductor connector.
4. The resistance measured should be 0.20 ohms or less.
5. Test the following when the resistance is greater than 0.20 ohms.
   - Base of the antenna for a poor connection to body ground.
   - The coaxial cable interconnects for a poor connection or corrosion.

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- Test for an open or high resistance from the battery negative cable to the body. Refer to **Circuit Testing** and **Wiring Repairs** in Wiring Systems.

6. After finding and correcting the condition, operate the system in order to verify the repair.

Perform the Antenna Checking Procedures after confirming the integrity of the antenna ground.

Antenna Checking Procedures

Perform the following tests for the type of antenna on the vehicle.

Mast Antennas

Unplug antenna lead-in connector from radio receiver and plug a test antenna into radio. Make sure antenna base is grounded to the vehicle chassis and keep hands off the mast.

Check radio reception in an area away from electrical interferences. Tune to several weak and strong AM and FM stations. If the radio reception improved, the problem exists with the antenna and/or lead-in cable. If the reception is still poor, refer to **Audio System Troubleshooting Hints**.

IMPORTANT: Always zero out the DMM before taking a resistance measurement in order to ensure an accurate reading.

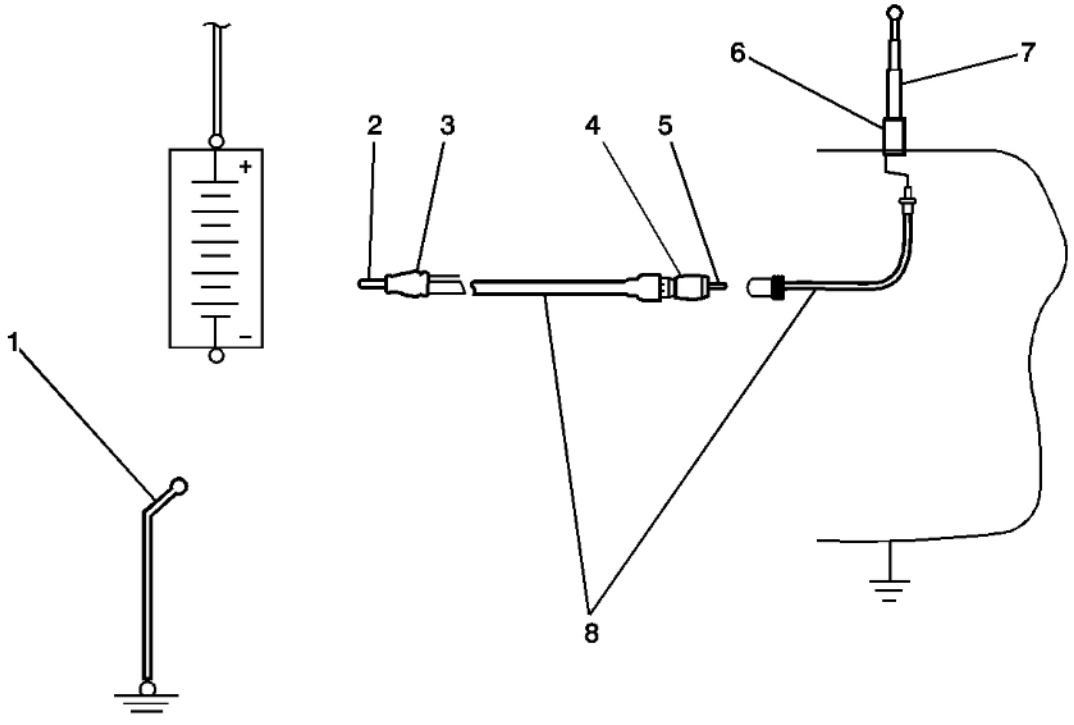


Fig. 18: Identifying Mast Antenna System Components

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Callouts For Fig. 18

Callout	Component Name
1	Negative Battery Cable
2	Coaxial Cable Conductor - Radio End
3	Coaxial Cable Metal Outer Shield - Radio End
4	Coaxial Cable Metal Outer Shield - Antenna End
5	Coaxial Cable Conductor - Antenna End
6	Antenna Base
7	Antenna Mast
8	Antenna Coaxial Cable

Antenna And/Or Lead-In Cable Resistance

Ohmmeter Probes At Points	Resistance Measured In Ohms
1 and 3	Less than 0.2
1 and 4	Less than 0.2
1 and 6	Less than 0.2
1 and 2	Infinite
1 and 5	Infinite
1 and 7	Infinite
2 and 3	Infinite
2 and 4	Infinite
2 and 6	Infinite
3 and 4	Less than 0.2
3 and 6	Less than 0.2
3 and 5	Infinite
3 and 7	Infinite

Refer to the table when testing the antenna and/or lead-in cable.

1. Measure the resistance from the coax center conductor to antenna mast.
2. Total resistance from end to end of center conductor:
   - RG-58/RG-59 type cable - less than 0.20 ohms
   - RG-62/RG-62M type cable - less than 3.5 ohms
3. When checking the resistance, cautiously wiggle the lead-in tip and cable. Refer to **Testing for Intermittent Conditions and Poor Connections** in Wiring Systems.
4. Measure the resistance from the cable center conductor to metal case.
5. Replace the antenna and/or lead-in cable when the above readings are not obtained.

Diversity Antenna System

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IMPORTANT: This diversity antenna system is comprised of 3 glass mounted antennas, a radio antenna module, and an FM impedance matching module. The primary AM and FM antennas are an integral part of the right rear quarter glass and are connected to the radio antenna module. The secondary FM antenna is an integral part of the left rear quarter glass and is connected to the FM impedance matching module. The radio antenna module processes the antenna reception signals and phase aligns them to create one strong signal. The FM impedance matching module boosts the secondary antenna signal and transmits it to the radio antenna module.

The following information lists the most probable cause of the concern to the least probable cause followed by the appropriate test for that condition. If the test leads to the replacement of a component, always inspect for a poor connection before proceeding with the replacement. If the test leads to the replacement of a component, always inspect for a poor connection before proceeding with the replacement. Refer to Testing for Intermittent Conditions and Poor Connections and Connector Repairs in Wiring Systems.

Perform the Antenna System Test and test the antenna coax cable prior to performing any of the following tests.

Poor Reception on Both AM and FM Bands

- The radio antenna module is not grounded properly. The module grounding screws should be clean and tight. The antenna module ground is either a chassis ground or a ground strap. Measure the resistance from the antenna module base plate to a good ground. Resistance should be 0.20 ohms or less. Find and correct the condition if the resistance is out of specification.
- The antenna enable signal is not present at the radio antenna module. This could be caused by an output failure of the radio or an open/shorted antenna enable signal circuit. In order to test the antenna enable signal circuit, the radio must be ON and tuned to the FM band. Disconnect the radio antenna module. Measure the voltage from the antenna enable signal circuit of the radio antenna module to a good ground. Voltage measured should be near 12 V. If the specified voltage is measured, test the antenna enable signal circuit for an open or short to ground. Refer to **Circuit Testing** and **Wiring Repairs** in Wiring Systems. If no failures were found, replace the radio. Refer to **Radio Replacement** for service procedure.
- The FM composite signal circuit to the radio antenna module is open or shorted to ground. Test the FM composite signal circuit for an open or short to ground. Refer to **Circuit Testing** and **Wiring Repairs** in Wiring Systems.
- The feed coax at the radio antenna module has been inadvertently swapped with the FM impedance matching module crossover coax. Ensure that the feed coax, marked with a yellow band, is in the correct socket on the radio antenna.
- Improper retention of the antenna cable in the floating retainer. Poor or no connection with the radio will result when the radio is installed if the antenna cable is not properly attached in the floating retainer. Inspect the antenna cable for movement in the floating retainer. Replace the antenna cable if movement is found.
- Defective Radio Control Module. Replace Radio Control Module. Refer to **Module Replacement - Radio Antenna Diversity** for service procedure.

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Poor Reception on AM Band Only

- Defective AM antenna.
- Defective Radio Control module. Replace Radio Control Module. Refer to **Module Replacement - Radio Antenna Diversity** for service procedure.

Poor Reception on FM Band Only

- Defective primary or secondary FM antenna
- Defective Radio Control Module. Replace Radio Control Module. Refer to **Module Replacement - Radio Antenna Diversity** for service procedure.
- Defective Radio Antenna Module. Replace Radio Antenna Module. Refer to **Module Replacement - Radio Antenna Diversity** for service procedure.

DIGITAL RADIO POOR OR NO RECEPTION

Digital Radio Poor or No Reception

Step	Action	Values	Yes	No
1	Did you perform the Diagnostic System Check - Entertainment System?	-	Go to **Step 2**	Go to **Diagnostic System Check - Entertainment System**
2	1. Make sure the vehicle is outside in an area with an unobstructed view of the southern sky. 2. Turn ON the ignition, with the engine OFF. 3. Turn ON the radio. 4. Tune the radio to satellite channel 1. Is the reception clear?	-	Go to **Step 3**	Go to **Step 5**
3	Tune the radio to several other satellite channels. Is the reception clear?	-	Go to **Audio System Troubleshooting Hints**	Go to **Step 4**
4	Contact XM at 1-800-556-3600 to verify customer account status or possible network problems. Did you find and correct the condition?	-	Go to **Step 14**	Go to **Step 10**
5	Contact XM at 1-800-556-3600 to verify possible network problems. Did you find and correct the condition?	-	Go to **Step 14**	Go to **Step 6**
	With a scan tool, observe the digital radio			

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6	antenna in the digital radio receiver data list. Does the scan tool indicate that the digital radio antenna is within the specified range?	17-63 mA	Go to **Step 10**	Go to **Step 7**
7	1. Disconnect the antenna cable from the digital radio receiver. 2. Measure the voltage from the center conductor of the antenna connector on the digital radio receiver to one of the case screws. Does the voltage measure within the specified range?	4.5-5.5 V	Go to **Step 8**	Go to **Step 10**
8	Test the antenna cable for an open, short, or high resistance. Refer to **Testing for Intermittent Conditions and Poor Connections** in Wiring Systems. Did you find the condition?	-	Go to **Step 9**	Go to **Step 11**
9	Replace the antenna cable. Did you complete the replacement?	-	Go to **Step 14**	-
10	Inspect for poor connections at the digital radio receiver. Refer to **Testing for Intermittent Conditions and Poor Connections** in Wiring Systems. Did you find and correct the condition?	-	Go to **Step 14**	Go to **Step 12**
11	Inspect for poor connections at the digital radio antenna. Refer to **Testing for Intermittent Conditions and Poor Connections** in Wiring Systems. Did you find and correct the condition?	-	Go to **Step 14**	Go to **Step 13**
12	**IMPORTANT:** **Always perform the setup procedure for the digital radio receiver. Refer to Digital Radio Receiver Setup.** Replace the digital radio receiver. Refer to **Receiver Replacement - Digital Radio**.Did you complete the replacement?	-	Go to **Step 14**	-
13	Replace the digital radio antenna. Refer to **Antenna Replacement - Digital Radio**. Did you complete the replacement?	-	Go to **Step 14**	-
14	Operate the system in order to verify the repair. Did you correct the condition?	-	System OK	Go to **Step 2**

AUDIO DISTORTION - ONE OR MORE SPEAKERS

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Audio Distortion - One or More Speakers

Step	Action	Yes	No
Schematic Reference: Radio/Audio System Schematics (Base/Uplevel Radio - UQ3/UQ5), Radio/Audio System Schematics (Radio - UQ7 w/o Y91 - non Class 2 Amp), Radio/Audio System Schematics (Lux Radio - UQ7 w/ Y91 - Class 2 Amp) or **Video System Schematics** **Connector End View Reference: Entertainment Connector End Views** DEFINITION: This table is used for vehicles equipped with an audio amplifier.			
1	Did you perform the Radio/Audio System Diagnostic System Check?	Go to **Step 2**	Go to **Diagnostic System Check - Entertainment System**
2	1. Turn ON the ignition, with the engine OFF. 2. Turn ON the radio. 3. Adjust the fade and balance controls to mid range. 4. Insert the tape or CD from the **J 39916-A** CD and Cassette Diagnostic Audio Kit. See **Special Tools and Equipment**. Can audio distortion be heard from any speaker?	Go to **Step 3**	Go to **Testing for Intermittent Conditions and Poor Connections**
3	Test the appropriate speaker output circuits between the radio and the audio amplifier for an open or high resistance. Refer to **Circuit Testing** and **Wiring Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 8**	Go to **Step 4**
4	Is the vehicle equipped with Rear Seat Entertainment (U32)?	Go to **Step 5**	Go to **Step 6**
5	Test the video entertainment circuits: remote playback device left and right audio circuits and the remote playback device common audio circuit for an open, short to ground or a short to B+. Refer to **Circuit Testing** and **Wiring Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 8**	Go to **Step 6**
6	Inspect for poor connections at the harness connector of the speaker. Refer to **Testing for Intermittent Conditions and Poor Connections** and **Connector Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 8**	Go to **Step 7**
7	Replace the speaker. Refer to **Speaker Replacement Reference** Did you complete the replacement?	Go to **Step 8**	-
8	Operate the system in order to verify the repair. Did you correct the condition?	System OK	-

REMOTE PLAYBACK DEVICE INOPERATIVE

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Remote Playback Device Inoperative

Step	Action	Yes	No
Schematic Reference: Radio/Audio System Schematics (Base/Uplevel Radio - UQ3/UQ5), Radio/Audio System Schematics (Radio - UQ7 w/o Y91 - non Class 2 Amp) or Radio/Audio System Schematics (Lux Radio - UQ7 w/ Y91 - Class 2 Amp)			
1	Did you perform the Diagnostic System Check-Entertainment System?	Go to **Step 2**	Go to **Diagnostic System Check - Entertainment System**
2	1. Turn ON the ignition, with the engine OFF. 2. Turn ON the radio. 3. Insert a tape, CD, or CD magazine with at least 1 audio CD inside, into the remote playback device. 4. Turn ON the remote playback device. Does the remote playback device operate normally?	Go to **Testing for Intermittent Conditions and Poor Connections** in Wiring Systems	Go to **Step 3**
3	1. Turn OFF the ignition. 2. Disconnect the remote playback device. 3. Test the battery positive voltage circuit of the remote playback device for a short to ground or an open. Refer to **Circuit Testing** and **Wiring Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 9**	Go to **Step 4**
4	Test the ground circuit of the remote playback device for high resistance or an open. Refer to **Circuit Testing** and **Wiring Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 9**	Go to **Step 5**
5	Test the radio on signal circuit of the remote playback device for a short to ground or an open. Refer to **Circuit Testing** and **Wiring Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 9**	Go to **Step 6**
6	Inspect for poor connections at the harness connector of the remote playback device. Refer to **Testing for Intermittent Conditions and Poor Connections** and **Connector Repairs** in Wiring Systems. Did you find and correct the condition.	Go to **Step 9**	Go to **Step 7**
7	Inspect for poor connections at the harness connector of the radio. Refer to **Testing for Intermittent Conditions and Poor Connections**		

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	and **Connector Repairs** in Wiring Systems. Did you find and correct the condition.	Go to **Step 9**	Go to **Step 8**
8	Replace the remote playback device. Refer to **Remote CD Player Replacement**. Did you complete the replacement?	Go to **Step 9**	-
9	Operate the system in order to verify the repair. Did you correct the condition?	System OK	Go to **Step 2**

REMOTE PLAYBACK DEVICE - AUDIO NOISE

Remote Playback Device - Audio Noise

Step	Action	Yes	No
Schematic Reference: Radio/Audio System Schematics (Base/Uplevel Radio - UQ3/UQ5), Radio/Audio System Schematics (Radio - UQ7 w/o Y91 - non Class 2 Amp) or Radio/Audio System Schematics (Lux Radio - UQ7 w/ Y91 - Class 2 Amp)			
1	Did you perform the Diagnostic System Check-Entertainment System?	Go to **Step 2**	Go to **Diagnostic System Check - Entertainment System**
2	1. Turn ON the ignition, with the engine OFF. 2. Turn ON the radio. 3. Insert a tape, CD, or CD magazine with at least 1 audio CD inside, into the remote playback device. 4. Turn ON the remote playback device. Does the remote playback device operate without audio noise?	Go to **Testing for Intermittent Conditions and Poor Connections** in Wiring Systems	Go to **Step 3**
3	1. Turn OFF the ignition. 2. Disconnect the remote playback device. 3. Test the drain wire circuit of the remote playback device for high resistance or an open. Refer to **Circuit Testing** and **Wiring Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 9**	Go to **Step 4**
4	Test the remote playback device audio common signal circuit of the remote playback device for a short, high resistance, or an open. Refer to **Circuit Testing** and **Wiring Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 9**	Go to **Step 5**
5	Inspect the audio harness shield of the remote playback device for damage. Refer to **Circuit Testing** and **Wiring Repairs** in Wiring Systems.		

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	Did you find and correct the condition?	Go to **Step 9**	Go to **Step 6**
6	Inspect for poor connections at the harness connector of the remote playback device. Refer to **Testing for Intermittent Conditions and Poor Connections** and **Connector Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 9**	Go to **Step 7**
7	Inspect for poor connections at the harness connector of the radio. Refer to **Testing for Intermittent Conditions and Poor Connections** and **Connector Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 9**	Go to **Step 8**
8	Replace the remote playback device. Refer to **Remote CD Player Replacement**. Did you complete the replacement?	Go to **Step 9**	-
9	Operate the system in order to verify the repair. Did you correct the condition?	System OK	Go to **Step 2**

REMOTE PLAYBACK DEVICE LEFT OR RIGHT CHANNEL INOPERATIVE

Remote Playback Device Left or Right Channel Inoperative

Step	Action	Yes	No
Schematic Reference: Radio/Audio System Schematics (Base/Uplevel Radio - UQ3/UQ5), Radio/Audio System Schematics (Radio - UQ7 w/o Y91 - non Class 2 Amp) or Radio/Audio System Schematics (Lux Radio - UQ7 w/ Y91 - Class 2 Amp)			
1	Did you perform the Diagnostic System Check - Entertainment System?	Go to **Step 2**	Go to **Diagnostic System Check - Entertainment System**
2	1. Turn ON the ignition, with the engine OFF. 2. Turn ON the radio. 3. Adjust the fade and balance knobs to the middle detent. 4. Insert a tape, CD or CD magazine with at least 1 audio CD inside, into the remote playback device. 5. Turn ON the remote playback device. Does the remote playback device play on the right and left audio channels?	Go to **Testing for Intermittent Conditions and Poor Connections** in Wiring Systems	Go to **Step 3**
3	1. Turn OFF the ignition. 2. Disconnect the remote playback device. 3. Test the appropriate output remote playback device audio signal circuits of the remote		

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	playback device for a short, high resistance or an open. Refer to **Circuit Testing** and **Wiring Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 9**	Go to **Step 4**
4	Inspect for poor connections at the harness connector of the remote playback device. Refer to **Testing for Intermittent Conditions and Poor Connections** and **Connector Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 9**	Go to **Step 5**
5	1. Disconnect the radio. 2. Test the right and left audio signals and audio common signal for short or open. Did you find and correct the condition?	Go to **Step 9**	Go to **Step 6**
6	1. Turn ON the ignition, with the engine OFF. 2. Turn ON the radio. 3. Turn up volume. 4. Test the right and left audio channel for A/C voltage fluctuation. 5. Does the A/C voltage signal fluctuate with the audio output?	Go to **Step 7**	Go to **Step 8**
7	Replace the remote playback device. Refer to **Remote CD Player Replacement**. Did you complete the replacement?	Go to **Step 9**	-
8	**IMPORTANT:** **Reprogram the radio. Refer to Service Programming System (SPS) in Programming.** Replace the Radio. Refer to **Radio Replacement**.Did you complete the replacement?	Go to **Step 9**	-
9	Operate the system in order to verify the repair. Did you correct the condition?	System OK	Go to **Step 2**

RADIO DISPLAYS LOC, LOCKED, OR CODE

Radio Displays LOC, LOCKED, or CODE

Step	Action	Yes	No
Schematic Reference: Radio/Audio System Schematics (Base/Uplevel Radio - UQ3/UQ5), Radio/Audio System Schematics (Radio - UQ7 w/o Y91 - non Class 2 Amp) or **Radio/Audio System Schematics (Lux Radio - UQ7 w/ Y91 - Class 2 Amp)**			
1	Did you perform the Diagnostics System Check-Entertainment System?		Go to **Diagnostic System Check -**

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		Go to **Step 2**	**Entertainment System**
2	1. Turn ON the ignition, with the engine OFF. 2. Turn ON the radio. Does the radio operate normally?	Go to **Testing for Intermittent Conditions and Poor Connections** in Wiring Systems	Go to **Step 3**
3	1. Program the radio. Refer to **Service Programming System (SPS)** in Programming. 2. Turn OFF the ignition. 3. Turn ON the ignition, with the engine OFF. 4. Turn ON the radio. Does the radio display Locked?	Go to **Step 4**	Go to **Step 5**
4	**IMPORTANT:** **Reprogram the radio. Refer to Service Programming System (SPS) in Programming.** Replace the radio. Refer to **Radio Replacement**.Did you complete the replacement?	Go to **Step 5**	-
5	Operate the system in order to verify the repair. Did you correct the condition?	System OK	Go to **Step 2**

RADIO DISPLAYS CLN OR CLEAN (W/O UM8)

Radio Displays CLN or CLEAN (W/O UM8)

Step	Action	Yes	No
Schematic Reference: Radio/Audio System Schematics (Base/Uplevel Radio - UQ3/UQ5), Radio/Audio System Schematics (Radio - UQ7 w/o Y91 - non Class 2 Amp) or Radio/Audio System Schematics (Lux Radio - UQ7 w/ Y91 - Class 2 Amp)			
1	Did you perform the Diagnostic System Check - Entertainment System?	Go to **Step 2**	Go to **Diagnostic System Check - Entertainment System**
2	1. Turn ON the ignition, with the engine OFF. 2. Turn ON the radio. Does the radio operate normally?	Go to **Testing for Intermittent Conditions and Poor Connections** in Wiring Systems	Go to **Step 3**
3	1. Clean the tape head path using**J 39916-A** CD and Cassette Diagnostic Audio Kit. See **Special Tools and Equipment**. 2. Reset the display by pushing and holding the eject button for 5 seconds.		

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	Does the radio display CLN or CLEAN?	Go to **Step 4**	Go to **Step 5**
4	**IMPORTANT:** **Reprogram the radio. Refer to Service Programming System (SPS) in Programming.** Replace the radio. Refer to **Radio Replacement**.Did you complete the replacement?	Go to **Step 5**	-
5	Operate the system in order to verify the repair. Did you correct the condition?	System OK	Go to **Step 3**

RADIO DISPLAYS CLN OR CLEAN (W/ UM8)

Radio Displays CLN or CLEAN (W/ UM8)

Step	Action	Yes	No
Schematic Reference: Radio/Audio System Schematics (Base/Uplevel Radio - UQ3/UQ5), Radio/Audio System Schematics (Radio - UQ7 w/o Y91 - non Class 2 Amp) or Radio/Audio System Schematics (Lux Radio - UQ7 w/ Y91 - Class 2 Amp)			
1	Did you perform the Diagnostic System Check - Entertainment System?	Go to **Step 2**	Go to **Diagnostic System Check - Entertainment System**
2	1. Turn ON the ignition, with the engine OFF. 2. Turn ON the radio. Does the radio operate normally?	Go to **Testing for Intermittent Conditions and Poor Connections** in Wiring Systems	Go to **Step 3**
3	1. Clean the tape head path using**J 39916-A** CD and Cassette Diagnostic Audio Kit. See **Special Tools and Equipment**. 2. Reset the display by pushing and holding the eject button for 5 seconds. Does the radio display CLN or CLEAN?	Go to **Step 4**	Go to **Step 5**
4	Replace the radio. Refer to **Radio Replacement**. Did you complete the replacement?	Go to **Step 5**	-
5	Operate the system in order to verify the repair. Did you correct the condition?	System OK	Go to **Step 3**

RADIO DISPLAYS CAL OR CAL ERR (W/O UM8)

Radio Displays CAL or CAL ERR (W/O UM8)

Step	Action	Yes	No
Schematic Reference: Radio/Audio System Schematics (Base/Uplevel Radio - UQ3/UQ5),			

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Radio/Audio System Schematics (Radio - UQ7 w/o Y91 - non Class 2 Amp) or **Radio/Audio System Schematics (Lux Radio - UQ7 w/ Y91 - Class 2 Amp)**			
1	Did you perform the Diagnostic System Check-Entertainment System?	Go to **Step 2**	Go to **Diagnostic System Check - Entertainment System**
2	1. Turn ON the ignition, with the engine OFF. 2. Turn ON the radio. Does the radio operate normally?	Go to **Testing for Intermittent Conditions and Poor Connections** in Wiring Systems	Go to **Step 3**
3	1. Program the radio. Refer to **Service Programming System (SPS)** . 2. Turn OFF the ignition. 3. Turn ON the ignition, with the engine OFF. 4. Turn ON the radio. Does the radio display CAL ERR?	Go to **Step 4**	Go to **Step 5**
4	**IMPORTANT:** **Reprogram the radio. Refer to Service Programming System (SPS) in Programming.** Replace the radio. Refer to **Radio Replacement**.Did you complete the replacement?	Go to **Step 5**	-
5	Operate the system in order to verify the repair. Did you correct the condition?	System OK	Go to **Step 2**

RADIO DISPLAYS CAL OR CAL ERR (W/ UM8)

Radio Displays CAL or CAL ERR (W/ UM8)

Step	Action	Yes	No
Schematic Reference: Radio/Audio System Schematics (Base/Uplevel Radio - UQ3/UQ5), Radio/Audio System Schematics (Radio - UQ7 w/o Y91 - non Class 2 Amp) or **Radio/Audio System Schematics (Lux Radio - UQ7 w/ Y91 - Class 2 Amp)**			
1	Did you perform the Diagnostic System Check - Entertainment System?	Go to **Step 2**	Go to **Diagnostic System Check - Entertainment System**
2	1. Turn ON the ignition, with the engine OFF. 2. Turn ON the radio. Does the radio operate normally?	Go to **Testing for Intermittent Conditions and Poor Connections** in Wiring Systems	Go to **Step 3**
	1. Program the radio. Refer to **Service**		

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3	**Programming System (SPS)** in Programming. 2. Turn OFF the ignition. 3. Turn ON the ignition, with the engine OFF. 4. Turn ON the radio. Does the radio display CAL ERR?	Go to **Step 4**	Go to **Step 5**
4	Replace the radio. Refer to **Radio Replacement**. Did you complete the replacement?	Go to **Step 5**	-
5	Operate the system in order to verify the repair. Did you correct the condition?	System OK	Go to **Step 2**

NOISE COMPENSATED VOLUME INOPERATIVE

Noise Compensated Volume Inoperative

Step	Action	Value	Yes	No
Schematic Reference: Radio/Audio System Schematics (Base/Uplevel Radio - UQ3/UQ5), Radio/Audio System Schematics (Radio - UQ7 w/o Y91 - non Class 2 Amp) or Radio/Audio System Schematics (Lux Radio - UQ7 w/ Y91 - Class 2 Amp)				
1	Did you perform the Diagnostic System Check - Entertainment System?	-	Go to **Step 2**	Go to **Diagnostic System Check - Entertainment System**
2	1. Turn ON the ignition, with the engine ON. 2. Turn ON the blower motor on the maximum speed. 3. Cycle the auto volume control ON and then OFF. Is a difference in volume heard?	-	Go to **Testing for Intermittent Conditions and Poor Connections** in Wiring Systems	Go to **Step 3**
3	1. Turn ON the ignition, with the engine OFF. 2. Disconnect the noise compensation microphone. 3. Measure the voltage from the noise compensation microphone supply voltage circuit to the drain wire. Does the voltage measure near the specified value?	8 V	Go to **Step 4**	Go to **Step 5**
4	Replace the noise compensation microphone. Refer to **Microphone Replacement - Radio**	-		-

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	Volume Compensator Interior. Did you complete the replacement?		Go to **Step 9**	
5	Test the noise compensation microphone supply voltage circuit for an open or short. Refer to **Circuit Testing** and **Wiring Repairs** in Wiring Systems. Did you find and correct the condition?	-	Go to **Step 9**	Go to **Step 6**
6	Test the drain wire circuit for an open or short. Refer to **Circuit Testing** and **Wiring Repairs** in Wiring Systems. Did you find and correct the condition?	-	Go to **Step 9**	Go to **Step 7**
7	Inspect for poor connections at the amplifier. Refer to **Testing for Intermittent Conditions and Poor Connections** and **Connector Repairs** in Wiring Systems. Did you find and correct the condition?	-	Go to **Step 9**	Go to **Step 8**
8	Replace the amplifier. Refer to **Amplifier Replacement**. Did you complete the repair?	-	Go to **Step 9**	-
9	Operate the system in order to verify the repair. Did you correct the condition?	-	System OK	Go to **Step 3**

TAPE PLAYER WEAK, SLOW, OR GARBLED OUTPUT

Tape Player Weak, Slow, or Garbled Output

Step	Action	Yes	No
Schematic Reference: Radio/Audio System Schematics (Base/Uplevel Radio - UQ3/UQ5), Radio/Audio System Schematics (Radio - UQ7 w/o Y91 - non Class 2 Amp) or Radio/Audio System Schematics (Lux Radio - UQ7 w/ Y91 - Class 2 Amp)			
1	Did you perform the Diagnostic System Check-Entertainment System	Go to **Step 2**	Go to **Diagnostic System Check - Entertainment System**
2	Use the **J 39916-A** CD and Cassette Diagnostic Audio Kit in order to perform the motor speed test. See **Special Tools and Equipment**. Is the cassette motor speed correct?	Go to **Step 3**	Go to **Step 4**
3	Use the **J 39916-A** CD in order to clean the cassette player. See **Special Tools and Equipment**. Did you complete the repair?	Go to **Step 5**	-
4	**IMPORTANT:** **Reprogram the radio. Refer to Service Programming System (SPS) in Programming.** Replace the radio. Refer to **Radio Replacement**.Did		-

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	you complete the repair?	Go to **Step 5**	
5	Operate the system in order to verify the repair. Did you correct the condition?	System OK	Go to **Step 2**

STEERING WHEEL CONTROLS INOPERATIVE

Steering Wheel Controls Inoperative

Step	Action	Value(s)	Yes	No
Schematic Reference: Radio/Audio System Schematics (Base/Uplevel Radio - UQ3/UQ5), Radio/Audio System Schematics (Radio - UQ7 w/o Y91 - non Class 2 Amp) or Radio/Audio System Schematics (Lux Radio - UQ7 w/ Y91 - Class 2 Amp)				
1	Did you perform the Diagnostic System Check - Entertainment System?	-	Go to **Step 2**	Go to **Diagnostic System Check - Entertainment System**
2	1. Turn ON the ignition, with the engine OFF. 2. Operate the radio using the steering wheel controls (SWC). Does the radio operate normally with the steering wheel controls?	-	Go to **Testing for Intermittent Conditions and Poor Connections** in Wiring Systems	Go to **Step 3**
3	**CAUTION:** **Refer to SIR Caution in Cautions and Notices.** 1. Disable the SIR. Refer to **SIR Disabling and Enabling Zone 3** in SIR. 2. Remove the SIR assembly to expose the SWC connector. 3. Turn ON the ignition, with the engine OFF. 4. Test the steering wheel controls voltage supply circuit of the SWC connector for an open. Did you find and correct the condition?	-	Go to **Step 10**	Go to **Step 4**
	1. Turn OFF the ignition. 2. Measure the resistance between the steering wheel controls voltage supply circuit and the remote radio control signal circuit of the SWC connector attached to the SWC switches.			

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4	3. Depress the following steering controls and record the resistance values. • Volume Up • Volume Down • Mute • Seek Up • Seek Down • Preset Do the recorded values measure near the specified values?	1270 ohms 294 ohms 823 ohms 715 ohms 1180 ohms 9350 ohms	Go to **Step 5**	Go to **Step 7**
5	1. Turn OFF the ignition. 2. Disconnect the Body Control Module connector with the Steering Wheel Controls circuit. 3. Test the remote radio control signal circuit for a short, high resistance or an open. Did you find and correct the condition?	-	Go to **Step 10**	Go to **Step 6**
6	Inspect for poor connections at the harness connector of the BCM. Refer to **Testing for Intermittent Conditions and Poor Connections** and **Wiring Repairs** in Wiring Systems. Did you find and correct the condition?	-	Go to **Step 10**	Go to **Step 9**
7	Inspect for poor connections at the harness connector of the steering wheel radio controls. Refer to **Testing for Intermittent Conditions and Poor Connections** and **Wiring Repairs** in Wiring Systems. Did you find and correct the condition?	-	Go to **Step 10**	Go to **Step 8**
8	Replace the appropriate SWC switch. Refer to **Steering Wheel Control Switch Assembly Replacement** in Steering Wheel and Column. Did you complete the replacement?	-	Go to **Step 10**	-
9	Replace the BCM. Refer to **Body Control Module Replacement** in Body Control System. Did you complete the replacement?	-	Go to **Step 10**	-
10	Operate the system in order to verify the repair. Did you correct the condition?	-	System OK	Go to **Step 2**

REDUCED VOLUME - ONE OR MORE SPEAKERS (W/O UM8)

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Reduced Volume - One or More Speakers (W/O UM8)

Step	Action	Yes	No
Schematic Reference: Radio/Audio System Schematics (Base/Uplevel Radio - UQ3/UQ5), Radio/Audio System Schematics (Radio - UQ7 w/o Y91 - non Class 2 Amp) or Radio/Audio System Schematics (Lux Radio - UQ7 w/ Y91 - Class 2 Amp)			
1	Did you perform the Diagnostic System Check-Entertainment System?	Go to **Step 2**	Go to **Diagnostic System Check - Entertainment System**
2	1. Turn ON the ignition, with the engine OFF. 2. Turn ON the radio. 3. Adjust the radio balance and fade controls to each speaker. Do all of the speakers operate properly?	Go to **Testing for Intermittent Conditions and Poor Connections** in Wiring Systems	Go to **Step 3**
3	1. Turn the ignition ON, with the engine OFF. 2. Adjust the volume level. 3. Test the appropriate speaker output circuits of the radio for A/C voltage. Refer to **Circuit Testing** and **Wiring Repairs** in Wiring Systems. Did the A/C voltage fluctuate with the audio output?	Go to **Step 4**	Go to **Step 8**
4	1. Turn OFF the ignition 2. Disconnect the radio. 3. Test the appropriate speaker output circuits of the radio for high resistance or an open. Refer to **Circuit Testing** and **Wiring Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 9**	Go to **Step 5**
5	Inspect for poor connections at the harness connector of the radio. Refer to **Testing for Intermittent Conditions and Poor Connections** in Wiring Systems. Did you find and correct the condition?	Go to **Step 9**	Go to **Step 6**
6	Inspect for poor connections at the harness connector of the appropriate speaker. Refer to **Testing for Intermittent Conditions and Poor Connections** and **Connector Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 9**	Go to **Step 7**
7	Replace the speaker. Refer to **Speaker Replacement Reference**.		

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	Did you complete the replacement?	Go to **Step 9**	-
8	**IMPORTANT:** **Reprogram the radio. Refer to Service Programming System (SPS) in Programming.** Replace the radio. Refer to **Radio Replacement**.Did you complete the replacement?	Go to **Step 9**	-
9	Operate the system in order to verify the repair. Did you correct the condition?	System OK	Go to **Step 2**

REDUCED VOLUME - ONE OR MORE SPEAKERS (W/ UM8)

Reduced Volume - One or More Speakers (W/ UM8)

Step	Action	Yes	No
Schematic Reference: Radio/Audio System Schematics (Base/Uplevel Radio - UQ3/UQ5), Radio/Audio System Schematics (Radio - UQ7 w/o Y91 - non Class 2 Amp) or Radio/Audio System Schematics (Lux Radio - UQ7 w/ Y91 - Class 2 Amp)			
1	Did you perform the Diagnostic System Check-Entertainment System?	Go to **Step 2**	Go to **Diagnostic System Check - Entertainment System**
2	1. Turn ON the ignition, with the engine OFF. 2. Turn ON the radio. 3. Adjust the radio balance and fade controls to each speaker. Do all of the speakers operate properly?	Go to **Testing for Intermittent Conditions and Poor Connections** in Wiring Systems	Go to **Step 3**
3	1. Turn the ignition ON, with the engine OFF. 2. Adjust the volume level. 3. Test the appropriate speaker output circuits of the radio for A/C voltage. Refer to **Circuit Testing** and **Wiring Repairs** in Wiring Systems. Did the A/C voltage fluctuate with the audio output?	Go to **Step 4**	Go to **Step 8**
4	1. Turn OFF the ignition 2. Disconnect the radio. 3. Test the appropriate speaker output circuits of the radio for high resistance or an open. Refer to **Circuit Testing** and **Wiring Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 9**	Go to **Step 5**

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5	Inspect for poor connections at the harness connector of the radio. Refer to **Testing for Intermittent Conditions and Poor Connections** in Wiring Systems. Did you find and correct the condition?	Go to **Step 9**	Go to **Step 6**
6	Inspect for poor connections at the harness connector of the appropriate speaker. Refer to **Testing for Intermittent Conditions and Poor Connections** and **Connector Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 9**	Go to **Step 7**
7	Replace the speaker. Refer to **Speaker Replacement Reference**. Did you complete the replacement?	Go to **Step 9**	-
8	Replace the radio. Refer to **Radio Replacement**. Did you complete the replacement?	Go to **Step 9**	-
9	Operate the system in order to verify the repair. Did you correct the condition?	System OK	Go to **Step 2**

SPEAKERS INOPERATIVE - ONE OR MORE

Schematic Reference: Radio/Audio System Schematics (Base/Uplevel Radio - UQ3/UQ5), Radio/Audio System Schematics (Radio - UQ7 w/o Y91 - non Class 2 Amp) or Radio/Audio System Schematics (Lux Radio - UQ7 w/ Y91 - Class 2 Amp).

Preliminary Information

Perform the **Diagnostic System Check - Entertainment System**.

IMPORTANT: The following information lists the most probable cause of the concern to the least probable cause. If the list leads to the replacement of a component, always inspect for a poor connection before proceeding with replacement. Refer to Testing for Intermittent Conditions and Poor Connections and to Connector Repairs in Wiring Systems.

All Speakers Inoperative

IMPORTANT: The following information lists the most probable cause of the concern to the least probable cause followed by the appropriate test for that condition. If the list leads to the replacement of a component, always inspect for a poor connection before proceeding with the replacement. Refer to Circuit Testing and Wiring Repairs in Wiring Systems.

With RPO UM8

1. Battery positive voltage circuit to the amplifier open. Test the battery positive voltage circuit to the amplifier for an open. Refer to **Circuit Testing** and **Wiring Repairs** in Wiring Systems.

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2. Ground circuit to the amplifier open. Test the ground circuit to the amplifier for an open. Refer to **Circuit Testing** and **Wiring Repairs** in Wiring Systems.
3. Speaker output from the radio shorted. Test each speaker output of the radio for a short to ground or short to voltage. Refer to **Circuit Testing** and **Wiring Repairs** in Wiring Systems.
4. No audio output from the amplifier. Replace the amplifier. Refer to **Amplifier Replacement**.

One Speaker Inoperative

IMPORTANT: The following information lists the most probable cause of the concern to the least probable cause. If the list leads to the replacement of a component, always inspect for a poor connection before proceeding with replacement. Refer to Circuit Testing and Wiring Repairs in Wiring Systems.

Without RPO UQ7

1. Speaker output open. Test the appropriate speaker output circuits for an open. Refer to **Circuit Testing** and **Wiring Repairs** in Wiring Systems.

   IMPORTANT: The radio must be programmed after replacement. Refer to Service Programming System (SPS) in Programming. With RPO UM8 perform the Radio Setup (With RPO UM8).

2. No audio output from the radio. Test for any AC voltage between the appropriate speaker output circuits at the speaker harness connector, disconnected with the radio volume adjusted to 50 percent. If AC voltage is present, replace the speaker. Refer to **Speaker Replacement Reference**. If no AC voltage is present, replace the radio. Refer to **Radio Replacement**.

With RPO UQ7

1. Speaker output circuit from amplifier open. Test the appropriate speaker output circuits for an open. Refer to **Circuit Testing** and **Wiring Repairs** in Wiring Systems.

   IMPORTANT: With RPO Y91, Bose amplifier, perform the setup procedure for the amplifier. Refer to Audio Amplifier Setup.

2. No audio output from the amplifier. Test for any AC voltage between the appropriate speaker output circuits at the speaker harness connector, disconnected with the radio volume adjusted to 50 percent. If AC voltage is present, replace the speaker. Refer to **Speaker Replacement Reference**. If no AC voltage is present, replace the amplifier. Refer to **Amplifier Replacement**.

Speakers - One Channel Inoperative

IMPORTANT: The following information lists the most probable cause of the concern to the least probable cause. If the list leads to the replacement of a component, always inspect for a poor connection before proceeding with replacement.

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Refer to Circuit Testing and Wiring Repairs in Wiring Systems.

With RPO UQ7

IMPORTANT: With RPO Y91, Bose amplifier, perform the setup procedure for the amplifier. Refer to Audio Amplifier Setup.

1. Speaker output circuit from amplifier shorted. Test the appropriate speaker output circuits for a short to ground or short to voltage. Refer to **Circuit Testing** and **Wiring Repairs** in Wiring Systems.
2. Replace the amplifier. Refer to **Amplifier Replacement**.

Without RPO UQ7

Front Speakers Inoperative

1. Speaker output circuit from amplifier shorted. Test the appropriate speaker output circuits for a short to ground or short to voltage. Refer to **Circuit Testing** and **Wiring Repairs** in Wiring Systems.
2. Replace the amplifier. Refer to **Amplifier Replacement**.

Rear Speakers Inoperative

1. Speaker output circuit from amplifier shorted. Test the appropriate speaker output circuits for a short to ground or short to voltage. Refer to **Circuit Testing** and **Wiring Repairs** in Wiring Systems.
2. Replace the amplifier. Refer to **Amplifier Replacement**.

IMPORTANT: The following procedure assumes all speakers are operative for all modes of operation except digital radio.

With RPO U2K

1. **Audio signal circuit open. Test the appropriate audio signal for an open. Refer to Circuit Testing and Wiring Repairs in Wiring Systems.**
2. **No audio output from the digital radio receiver. Replace the digital radio receiver. Refer to Receiver Replacement - Digital Radio and Digital Radio Receiver Setup.**
3. **No digital output from the radio. Replace the radio. Refer to Radio Replacement.**

VIDEO ENTERTAINMENT SYSTEM TROUBLESHOOTING HINTS

Schematic Reference: Video System Schematics

- Many conditions that affect video system operation may be corrected without removing the radio, the digital video disc (DVD) player or the video entertainment overhead console from the vehicle. Make sure to understand all features of system operation before beginning the diagnosis of the system. Verify the

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condition and follow the diagnostic procedures in order to isolate and correct the condition.

- Be sure the vehicle battery is fully charged before beginning video entertainment system diagnosis.

Video or Audio Distortion

The manufacturing process for producing DVD's does not have the same quality control processes in place that compact disk manufacturing does. If there are video or audio quality problems with an individual DVD, try playing that disk in another DVD player. If the quality is poor for both players, return the disk to the place of purchase and request an exchange. If the quality problem is only seen in one of the players, examine the disk for scratches dirt or smudges and attempt to clean the disk with one of the disk cleaning systems that are commercially available.

Video or audio distortion during auxiliary playback can often be attributed to the DC to AC inverter that is used to power the auxiliary device. The power inverters tend to introduce noisy signals into the vehicle electrical system.

Video Entertainment System Wireless Headphone Inoperative

IMPORTANT: The following information lists the most probable cause of the concern to the least probable cause followed by the appropriate test for that condition.

1. Volume control on the wireless headphone set is turned all the way down. Adjust the volume control on the headphones.
2. Dead batteries in the wireless headphone set. Turn on power to the headphone set. If the headset indicator does not turn on, replace the batteries in the headset as needed.
3. Faulty headphone set. Test the operation of the system using a known good headphone set. If operation is OK, replace the vehicle headphone set.

Video Entertainment System Remote Control Inoperative

The buttons on the video remote control do not operate the video disc player but the buttons on the video disc player operate normally.

IMPORTANT: The following information lists the most probable cause of the concern to the least probable cause followed by the appropriate test for that condition.

1. Dead batteries in the video remote control. Replace the dead batteries.
2. Faulty remote control. Test the operation of the system using a known good remote control. If operation is OK, replace the remote control.

VIDEO ENTERTAINMENT SYSTEM INOPERATIVE

Video Entertainment System Inoperative

Step	Action	Yes	No
Schematic Reference: Video System Schematics			

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Connector End View Reference: Entertainment Connector End Views			
1	Did you review the video entertainment system description and operation and perform the necessary inspection?	Go to **Step 2**	Go to **Video Entertainment System Description and Operation**
2	1. Turn ON the ignition. 2. Lower the screen of the video display. 3. Press the power button on the DVD player. Insert a DVD and press the play button. Does the system operate normally?	Go to **Testing for Intermittent Conditions and Poor Connections** in Wiring Systems	Go to **Step 3**
3	1. Disconnect the rear seat entertainment system connector. 2. Test the ground circuit of the rear seat entertainment system for an open. Refer to **Circuit Testing** and **Wiring Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 7**	Go to **Step 4**
4	Test the battery positive voltage circuit of the rear seat entertainment system for an open or short to ground. Refer to **Circuit Testing** and **Wiring Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 7**	Go to **Step 5**
5	Inspect for poor connections at the harness connector of the rear video entertainment system. Refer to **Testing for Intermittent Conditions and Poor Connections** and **Connector Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 7**	Go to **Step 6**
6	Replace the rear seat entertainment system. Refer to **DVD Player Replacement (2nd Row)** or **DVD Player Replacement (3rd Row)**. Did you complete the replacement?	Go to **Step 7**	-
7	Operate the system in order to verify the repair. Did you correct the condition?	System OK	Go to **Step 3**

VIDEO ENTERTAINMENT SYSTEM WIRELESS HEADPHONE INOPERATIVE

Diagnostic System Check - Entertainment System

Always perform the Entertainment System Diagnostic System Check before proceeding with these diagnostic

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procedures. Refer to **Diagnostic System Check - Entertainment System**.

IMPORTANT: The following information lists the most probable cause of the concern to the least probable cause followed by the appropriate test for that condition. If the list leads to the replacement of a component, always inspect for a poor connection before proceeding with the replacement. Refer to Testing for Intermittent Conditions and Poor Connections and Connector Repairs in Wiring Systems.

IMPORTANT: The following conditions assume that both left and right audio channels in the wireless headphones are inoperative in all rear seat entertainment modes.

1. Discharged batteries in the wireless headphones. Check for poor battery condition even if the power indicator light is illuminated on the earpiece.
2. Inoperative infra-red receiver in the headphones. Test the system with a known good set of headphones. Replace the headphones if necessary.
3. Inoperative infra-red transmitter in the DVD player. Replace the DVD player. Refer to **DVD Player Replacement (2nd Row)** or **DVD Player Replacement (3rd Row)**.

IMPORTANT: The following symptoms apply only to the dual screen Platinum ULT Video Entertainment System.

Audio Distortion in the wireless headphones

1. Right or left audio signal (+) open or shorted to battery positive voltage. Test the appropriate right or left audio signal (+) for an open, short to ground or a short to battery positive voltage. Refer to **Circuit Testing** and **Wiring Repairs** in Wiring Systems.
2. Inoperative speaker in the headphones. Test the system with a known good set of headphones. Replace the headphones if necessary.

No sound from wireless headphones

1. If neither headphone speaker has sound the audio common circuit may be open. Test the audio common circuit for an open. Refer to **Circuit Testing** and **Wiring Repairs** in Wiring Systems.
2. If only one headphone channel has no sound, the right or left audio signal (+) may be shorted to ground. Test the appropriate right or left audio signal (+) circuit for a short to ground. Refer to **Circuit Testing** and **Wiring Repairs** in Wiring Systems.

RADIO AUDIO INOPERATIVE AT REAR SEAT AUDIO (RSA) CONTROL

Radio Audio Inoperative at Rear Seat Audio (RSA) Control

Step	Action	Yes	No
Schematic Reference: Radio/Audio System Schematics (Base/Uplevel Radio - UQ3/UQ5), Radio/Audio System Schematics (Radio - UQ7 w/o Y91 - non Class 2 Amp) or Radio/Audio System Schematics (Lux Radio - UQ7 w/ Y91 - Class 2 Amp)			

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1	Did you perform the Diagnostic System Check - Entertainment System?	Go to **Step 2**	Go to **Diagnostic System Check - Entertainment System**
2	1. Turn ON the ignition, with the engine OFF. 2. Turn ON the radio. 3. Turn ON the rear seat audio (RSA) controller. 4. Select the AM/FM push button on the rear seat audio controller. 5. Connect headphones. Does the rear seat audio operate normally?	Go to **Testing for Intermittent Conditions and Poor Connections** in Wiring Systems	Go to **Step 3**
3	Are both left and right audio channels inoperative at the RSA?	Go to **Step 5**	Go to **Step 4**
4	Test the appropriate speaker input circuits of the rear seat audio controller for a short, high resistance, or an open. Refer to**Circuit Testing** and**Wiring Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 7**	Go to **Step 5**
5	Inspect for poor connections at the harness connector of the rear seat audio controller and the radio. Refer to**Testing for Intermittent Conditions and Poor Connections** and**Connector Repairs** in Wiring Systems. Did you find and correct the condition?	Go to **Step 7**	Go to **Step 6**
6	Replace the rear seat audio controller. Refer to **Audio Control Replacement - Rear Seat** Did you complete the replacement?	Go to **Step 7**	-
7	Operate the system in order to verify the repair. Did you complete the repair?	System OK	Go to **Step 2**

VIDEO DISPLAY IS POOR OR BLANK

Video Display is Poor or Blank

Refer to **Video System Schematics**.

Refer to **Entertainment Connector End Views**.

IMPORTANT: This diagnostic applies to the dual screen Platinum ULT Video Entertainment System only. For this symptom on the regular production C/K 800 Vehicle. Replace the DVD Player. Refer to DVD Player Replacement (2nd Row) or DVD Player Replacement (3rd Row)

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Diagnostic System Check - Entertainment System

Always Perform The Diagnostic System Check- Entertainment System before proceeding with these diagnostic procedures. Refer to **Diagnostic System Check - Entertainment System**.

IMPORTANT:

- **The following information lists the most probable cause of the concern to the least probable cause followed by the appropriate test for that condition. If the list leads to the replacement of a component, always inspect for a poor connection before proceeding with the replacement. Refer to Testing for Intermittent Conditions and Poor Connections and Connector Repairs in Wiring Systems.**
- **The causes of a poor display can be further isolated by knowing the operation of the wireless headphones and whether the screen display controls attempt to work. Meaning that if you try to change a display characteristic of the screen, does the user get visual feed back that a change was attempted. If the screen gives a visual feedback that a change was attempted, this is called screen controls work.**

Both displays are blank, Screen controls work, Headphone audio works

1. Ground circuit between the splitter box and the DVD player shorted to battery positive voltage. Test the ground circuit for a short to voltage. Refer to**Circuit Testing** and **Wiring Repairs** in Wiring Systems.
2. DVD Video Signal (+) between the splitter box and the DVD player open or shorted to ground or shorted to battery positive. Test the DVD Video Signal (+) for an open or short to ground or short to battery positive. Refer to **Circuit Testing** and **Wiring Repairs** in Wiring Systems.
3. DVD Video Signal (-) between the splitter box and the DVD player open. Test the DVD Video Signal (-) for an open. Refer to **Circuit Testing** and **Wiring Repairs** in Wiring Systems.
4. Inoperative Splitter Box. Replace the Splitter Box.

Both displays are blank, Screen controls inoperative, Headphone audio inoperative

1. Accessory voltage circuit between the splitter box and the DVD player open or shorted to ground. Test the accessory voltage circuit for an open or short to ground. Refer to **Circuit Testing** and **Wiring Repairs** in Wiring Systems.
2. Battery Positive voltage circuit between the splitter box and the DVD player open. Test the Battery Positive voltage circuit for an open. Refer to **Circuit Testing** and **Wiring Repairs** in Wiring Systems.
3. Audio Common circuit between the splitter box and the DVD player shorted to battery positive. Test the audio common circuit for a short or battery positive. Refer to **Circuit Testing** and **Wiring Repairs** in Wiring Systems.
4. DVD Video Signal (-) between the splitter box and the DVD player shorted to ground or shorted to battery positive. Test the DVD Video Signal (-) for a short to ground or a short to battery positive. Refer to **Circuit Testing** and **Wiring Repairs** in Wiring Systems.
5. Video Screen Backlight Supply Voltage circuit between the splitter box and the DVD player shorted to ground. Test the video screen backlight supply voltage circuit for a short to ground. Refer to **Circuit Testing** and **Wiring Repairs** in Wiring Systems.

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6. Inoperative Splitter Box. Replace the Splitter Box.

Both displays are blank, Screen controls inoperative, Headphone audio works

1. Video Screen Backlight Ground circuit between the splitter box and the DVD player open or shorted to battery positive. Test the video screen backlight ground circuit for an open or short to battery positive. Refer to **Circuit Testing** and **Wiring Repairs** in Wiring Systems.
2. DVD Serial Data circuit between the splitter box and the DVD player open. Test the DVD Serial Data circuit for an open. Refer to **Circuit Testing** and **Wiring Repairs** in Wiring Systems.
3. Video Screen Backlight Supply Voltage circuit between the splitter box and the DVD player open. Test the video screen backlight supply voltage circuit for an open. Refer to **Circuit Testing** and **Wiring Repairs** in Wiring Systems.
4. Inoperative Splitter Box. Replace the Splitter Box.

Front display blank, Screen controls inoperative

1. Video Screen Backlight Ground circuit between the splitter box and the front display open. Test the video screen backlight ground circuit for an open. Refer to **Circuit Testing** and **Wiring Repairs** in Wiring Systems
2. Inoperative Splitter Box. Replace the Splitter Box.

Front display blank, Screen controls work, Headphone audio inoperative

1. Battery Positive Voltage circuit between the splitter box and the front display open. Test the battery positive voltage circuit for an open. Refer to **Circuit Testing** and **Wiring Repairs** in Wiring Systems
2. Inoperative Splitter Box. Replace the Splitter Box.

Front display blank, Screen controls work, Headphone audio works

1. DVD Signal (+) circuit between the splitter box and the front display open. Test the DVD Signal (+) circuit for an open. Refer to **Circuit Testing** and **Wiring Repairs** in Wiring Systems
2. DVD Serial Data circuit between the splitter box and the front display open. Test the DVD Serial Data circuit for an open. Refer to **Circuit Testing** and **Wiring Repairs** in Wiring Systems.
3. Video Screen Backlight Supply Voltage circuit between the splitter box and the front display open. Test the video screen backlight supply voltage circuit for an open. Refer to **Circuit Testing** and**Wiring Repairs** in Wiring Systems.
4. Inoperative Splitter Box. Replace the Splitter Box.

AUDIO AMPLIFIER SETUP

To setup the audio amplifier, select the Recalibration feature under the Special Functions menu of the scan tool and complete the setup procedure. Cycle the ignition when the calibration ends. Setup is complete.

RADIO SETUP (WITH RPO UM8)

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The following service procedure requires programming or setup procedures to be performed on the radio.

Radio Replacement

IMPORTANT: The radio theft will learn the VIN. Without learning the VIN, the radio will display a locked message (LOC or LOCKED).

If the radio is replaced, perform a VIN Relearn, located in the Special Functions section on the scan tool. Cycle the ignition when complete.

DIGITAL RADIO RECEIVER SETUP

IMPORTANT: The digital radio receiver setup option does not contain a submenu. Digital radio receiver setup will configure the following systems:

- **DTCs**
- **GMLAN and class 2 radio messages**

To setup the digital radio receiver, complete the setup procedure under the Special Functions menu of the scan tool, then cycle ignition.

XM Activation

IMPORTANT: After replacement of an XM receiver, call XM radio to deactivate the receiver that has been removed from the vehicle and activate the new XM radio receiver. The vehicle must be parked in view of a satellite within 24 hours after an activation call.

1. Turn the radio ON, tune to the XM channel 0, and record the radio ID. The radio ID will be needed for activation of the new receiver.
2. Call XM radio at 1-800-556-3600 to deactivate the faulty receiver and activate the new receiver.
3. Park the vehicle outside in an area with an unobstructed view of the southern sky.
4. Leave the vehicle outside with the ignition switch in the ACC position and the radio on for 30 minutes to activate XM service.
5. Once activated, the radio will receive the remaining XM channels.

SPEAKER REPLACEMENT REFERENCE

Speaker Replacement Reference

Component	Repair Instruction
Front Floor Console Speaker	Refer to **Speaker Replacement - Front Floor Console (Subwoofer Speaker)**
Front Speakers	Refer to **Speaker Replacement - Front (Windshield Pillar Speaker)**

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Front Door Speakers	Refer to **Speaker Replacement - Front Door**
Rear Pillar Speakers	Refer to **Speaker Replacement - Rear Pillar (Utility)**
Rear Door Speakers	Refer to **Speaker Replacement - Rear Door**

REPAIR INSTRUCTIONS

RADIO REPLACEMENT

Removal Procedure

1. Remove the cluster bezel. Refer to **Bezel Replacement - Instrument Panel (I/P) Cluster** in Instrument Panel, Gages and Console.
2. Remove the screws (1).
3. Pull out the radio assembly slightly in other to gain access to the connectors.
4. Disconnect the wire connectors.
5. Disconnect the coaxial cable from the radio.
6. Remove the radio assembly from the I/P.

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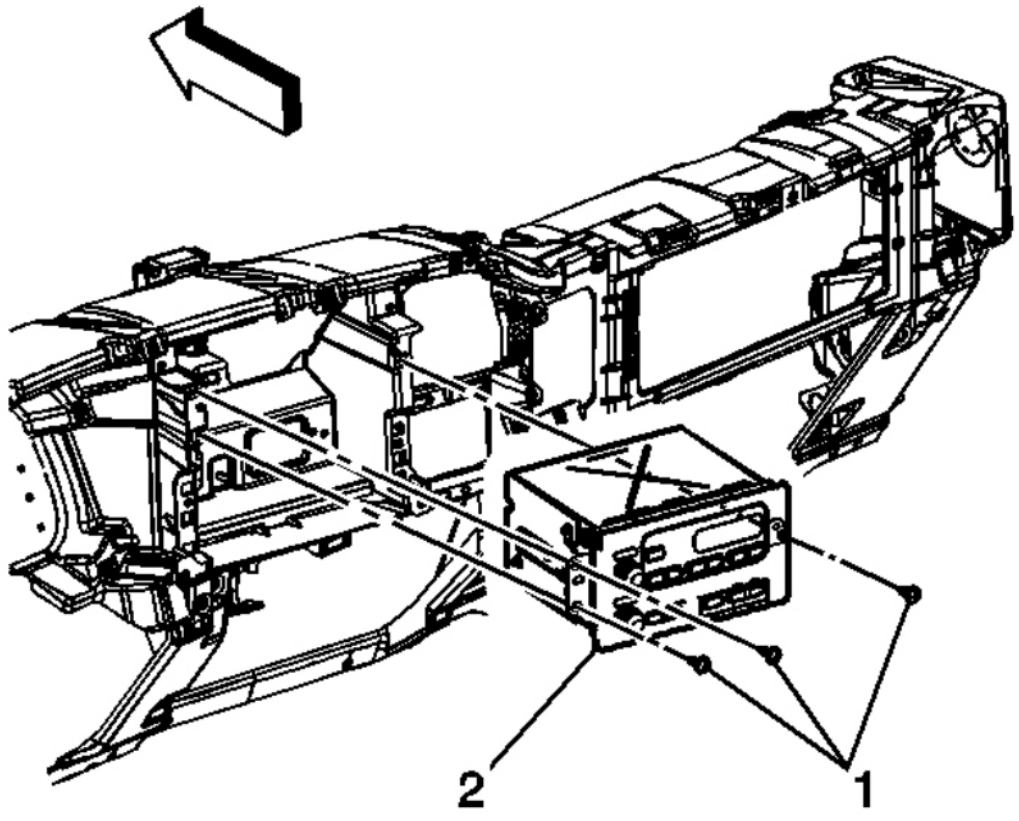


Fig. 19: Removing Screws & Radio Assembly
Courtesy of GENERAL MOTORS CORP.

Installation Procedure

1. Connect the coaxial cable to the radio.
2. Connect the wire connectors.
3. Push in the radio assembly in the opening in order to install the screws.

NOTE: Refer to Fastener Notice in Cautions and Notices.

4. Install the screws (1).

Tighten: Tighten the screws to 1.6 N.m (14 lb in).

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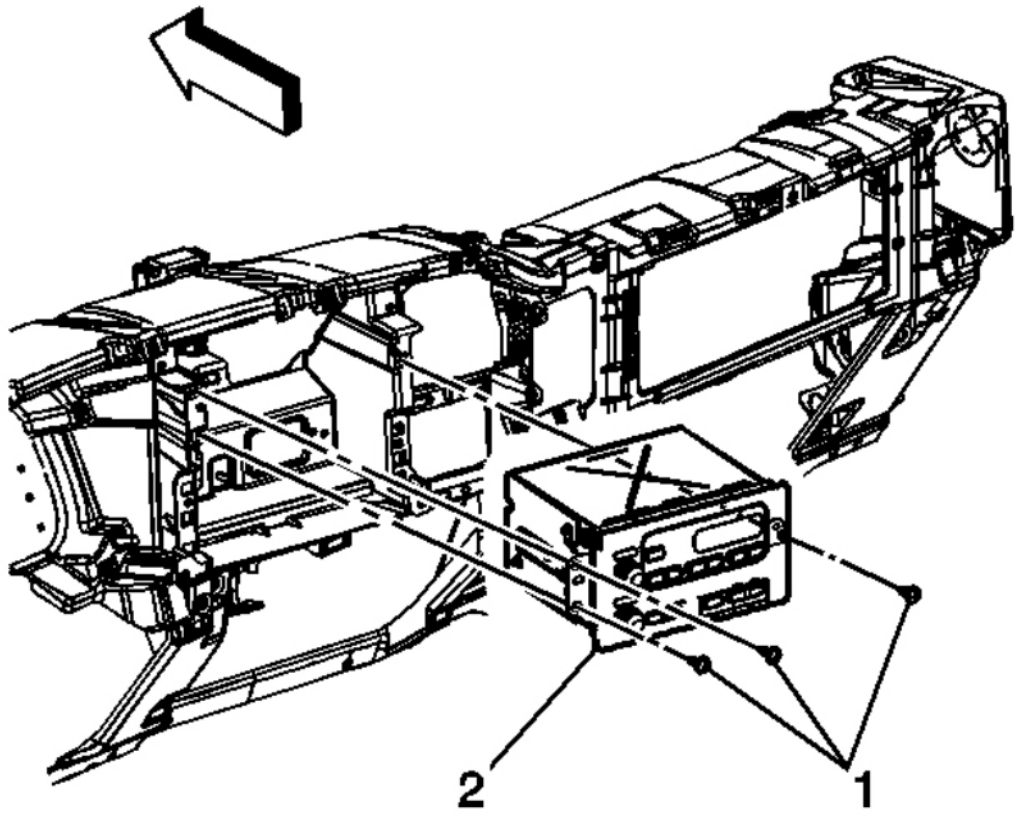


Fig. 20: Installing Radio Assembly & Screws
Courtesy of GENERAL MOTORS CORP.

5. Install the cluster bezel. Refer to **Bezel Replacement - Instrument Panel (I/P) Cluster** in Instrument Panel, Gages and Console.
6. Perform the radio setup, if equipped with UM8. Refer to **Radio Setup (With RPO UM8)**.

   Refer to **Service Programming System (SPS)** in Programming for all other audio system configurations for setup.

RECEIVER REPLACEMENT - DIGITAL RADIO

Removal Procedure

IMPORTANT: Do NOT swap digital radio receivers between vehicles. Swapping digital receivers between vehicles will activate the digital radio Theftlock®, and "XM Theftlock®" will display.

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1. Remove the right side junction block from the instrument panel (I/P). Refer to **Instrument Panel Electrical Center or Junction Block Replacement - Right** in Wiring Systems.

   Do not disconnect the electrical connectors.

2. Lower the I/P compartment door to the full open position.
3. From the junction block opening, remove the 2 retaining screws (1).
4. Pull the receiver and bracket assembly from the I/P compartment opening.
5. Disconnect the wire connector.
6. Disconnect the coaxial cables from the receiver.
7. Remove the receiver and bracket assembly from the I/P.

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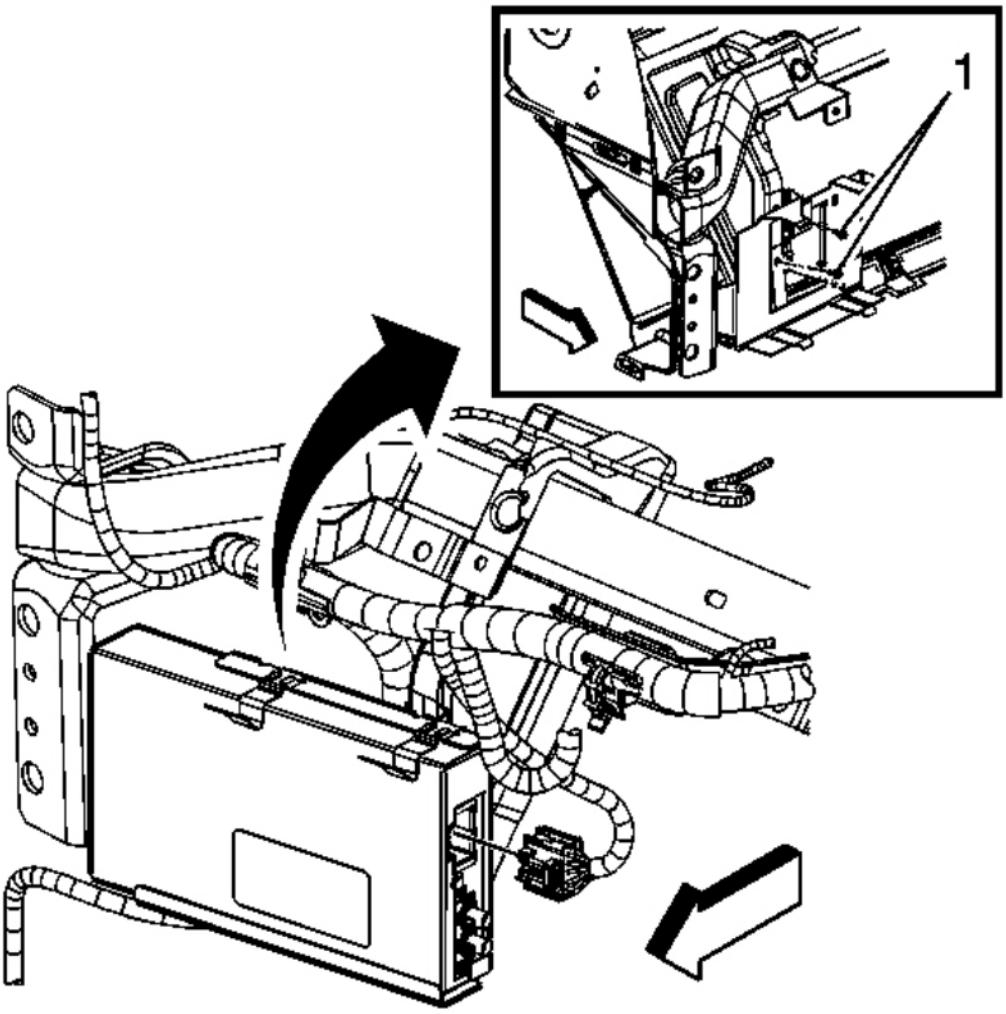


Fig. 21: Removing Receiver/Bracket Assembly Screws & Wire Connector
Courtesy of GENERAL MOTORS CORP.

Installation Procedure

1. Connect the coaxial cables.
2. Connect the wire connector.
3. Install the receiver and bracket assembly to the I/P.

NOTE: Refer to Fastener Notice in Cautions and Notices.

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4. Install the 2 retaining screws (1).

   Tighten: Tighten the screws to 1.6 N.m (14 lb in).

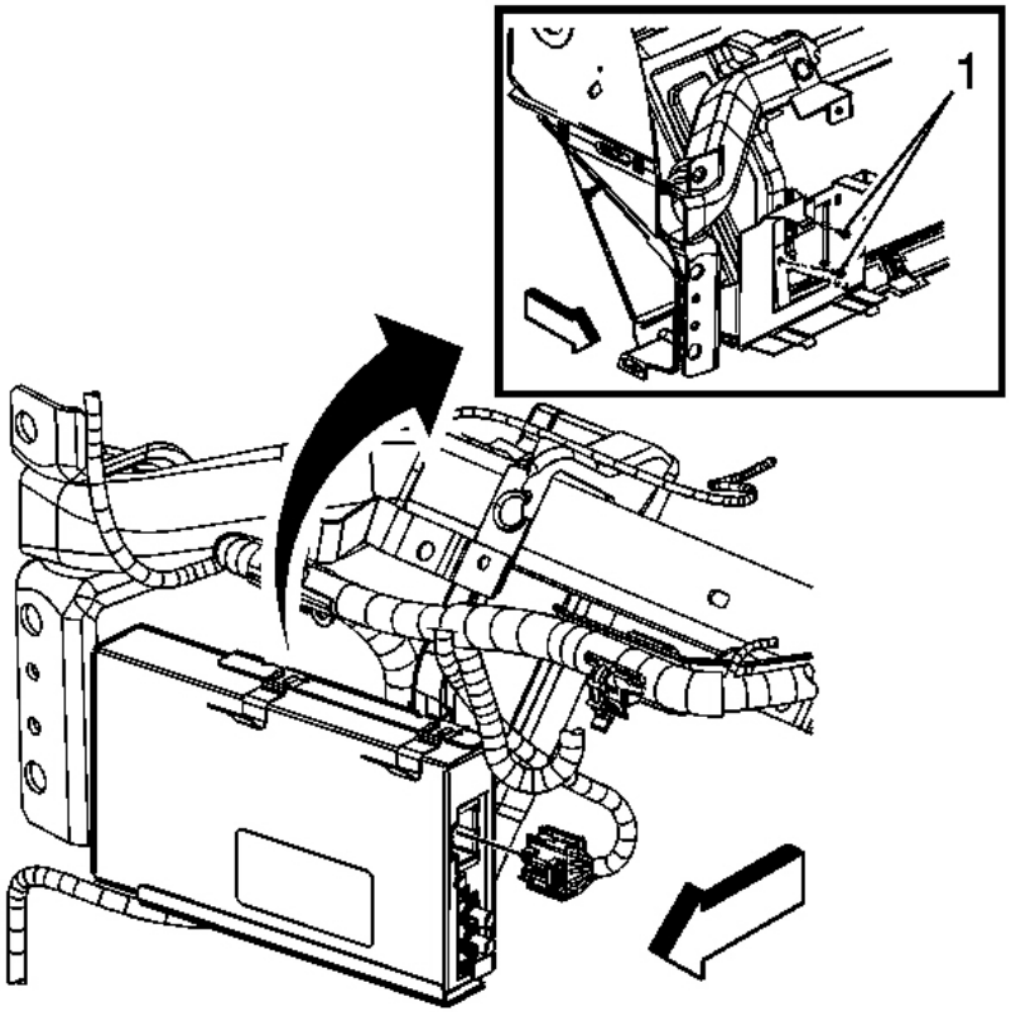


Fig. 22: Connecting Wire Connector & Installing Receiver/Bracket Assembly Screws
Courtesy of GENERAL MOTORS CORP.

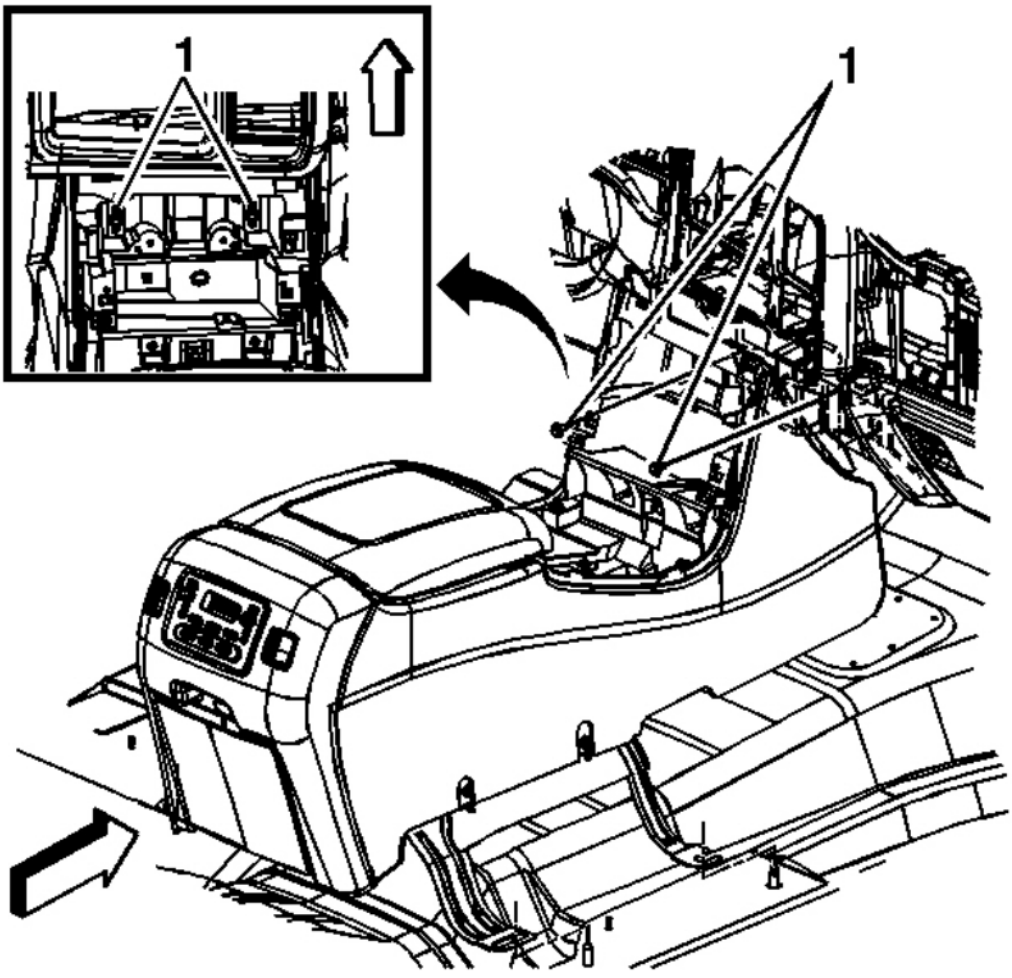
5. Install the right side junction block to the I/P. Refer to **Instrument Panel Electrical Center or Junction Block Replacement - Right** in Wiring Systems.
6. Close the I/P compartment door.
7. Perform the setup procedure for the digital radio receiver. Refer to **Digital Radio Receiver Setup**.

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AMPLIFIER REPLACEMENT

Removal Procedure

1. If equipped with a Bose™ amplifier, remove the radio amp fuse located under the hood electrical center. Refer to **Electrical Center Identification Views** in Wiring Systems.
2. Remove the floor console bezel. Refer to **Bezel Replacement - Floor Console (Non-Luxury Upper)** or **Bezel Replacement - Floor Console (Luxury Upper)** in Instrument Panel, Gages and Console.
3. Remove the cupholder. Refer to **Cupholder Replacement (Non-Luxury)** , **Cupholder Replacement (Luxury)** , **Cupholder Replacement (Rear)** or **Cupholder Replacement (Platinum)** in Instrument Panel, Gages and Console.
4. Remove the bolts (1) retaining the console to the instrument panel (I/P).



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Fig. 23: Identifying Bolts Retaining Console To Instrument Panel
Courtesy of GENERAL MOTORS CORP.

5. Remove the console storage bin. Refer to **Console Storage Bin Replacement (Expect Pro)** in Instrument Panel, Gages and Console.
6. Remove the center console end panel. Refer to **Center Console End Panel Replacement** in Instrument Panel, Gages and Console.
7. Disconnect the audio amplifier electrical connectors.
8. Remove the 4 screws retaining the upper console bracket to the lower console bracket.

   The front 2 screws (1) are shown in the graphic.

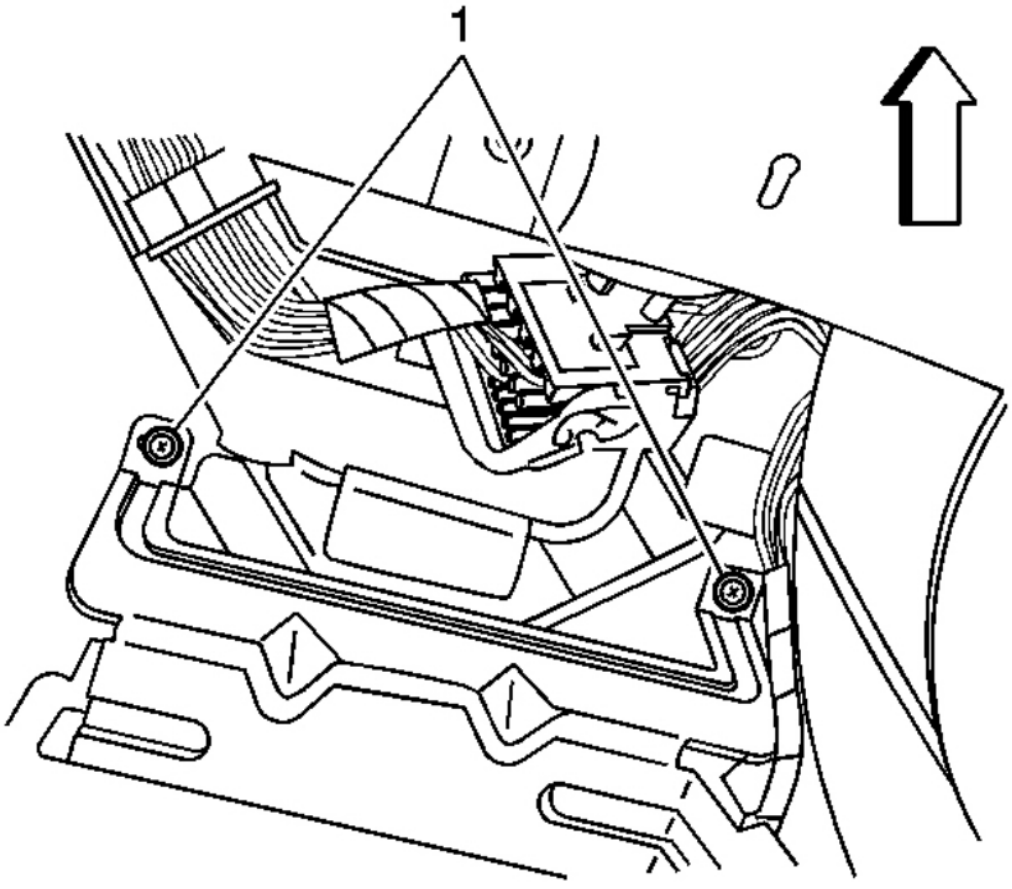


Fig. 24: Removing Front Screws Retaining Upper Console Bracket
Courtesy of GENERAL MOTORS CORP.

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9. Move both front seats to the fully forward.
10. Reposition the inboard seat track trim (1) in order to gain access to the rear console side panel screw (2).
11. Remove both rear console side panel screws.

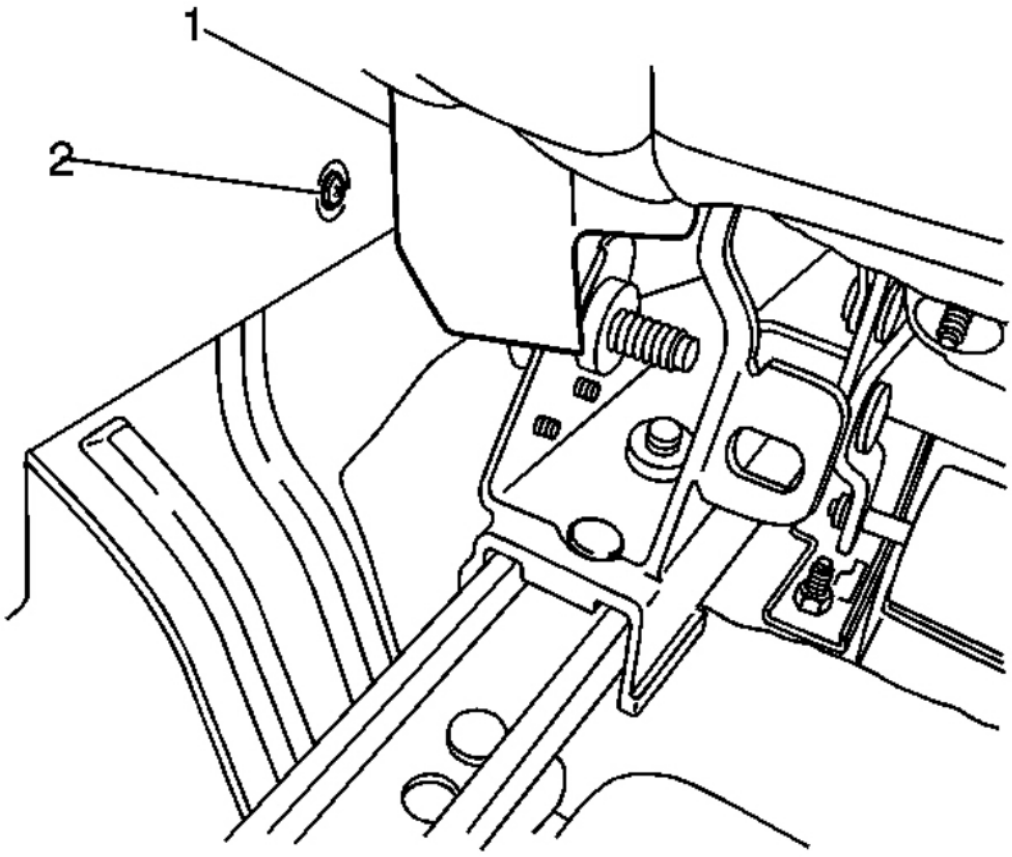


Fig. 25: View Of Seat Track Trim & Rear Console Side Panel Screw
Courtesy of GENERAL MOTORS CORP.

12. Move both front seats to the fully rearward.
13. Remove both front console side panel screws (1).

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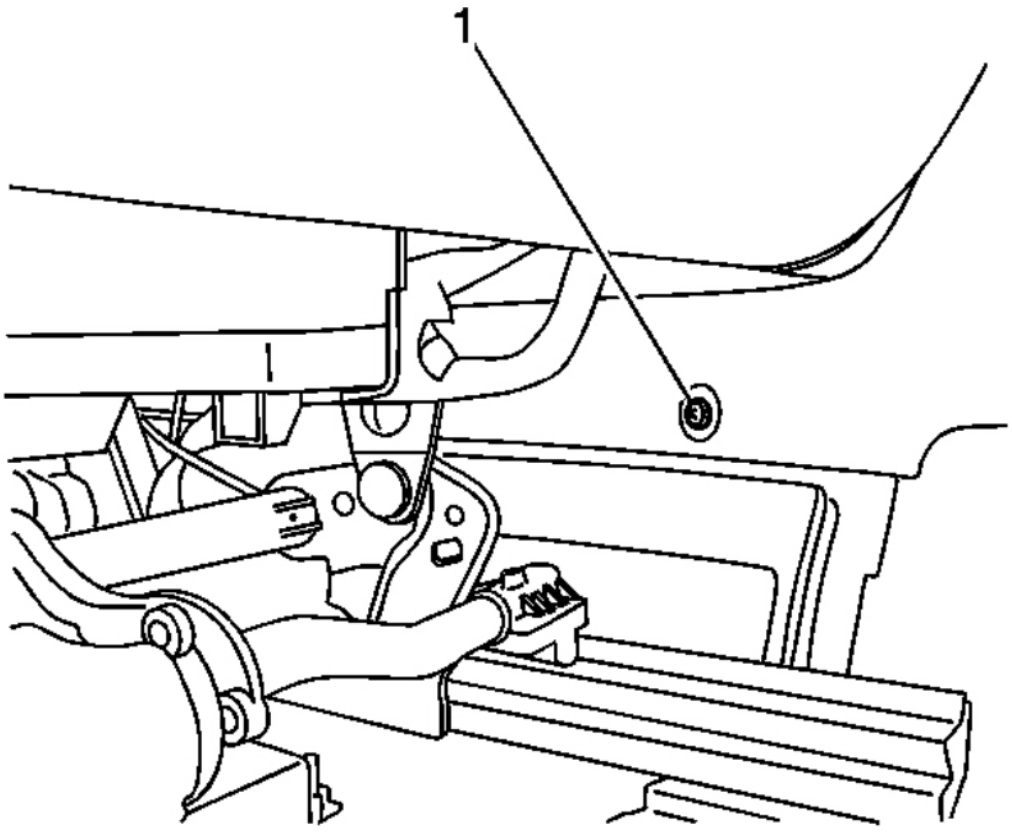


Fig. 26: Locating Console Side Panel Screw
Courtesy of GENERAL MOTORS CORP.

14. Disconnect the floor console electrical connector.
15. Remove the console assembly from the vehicle.
16. Remove the audio amplifier screws (1).
17. Remove the audio amplifier from the vehicle.

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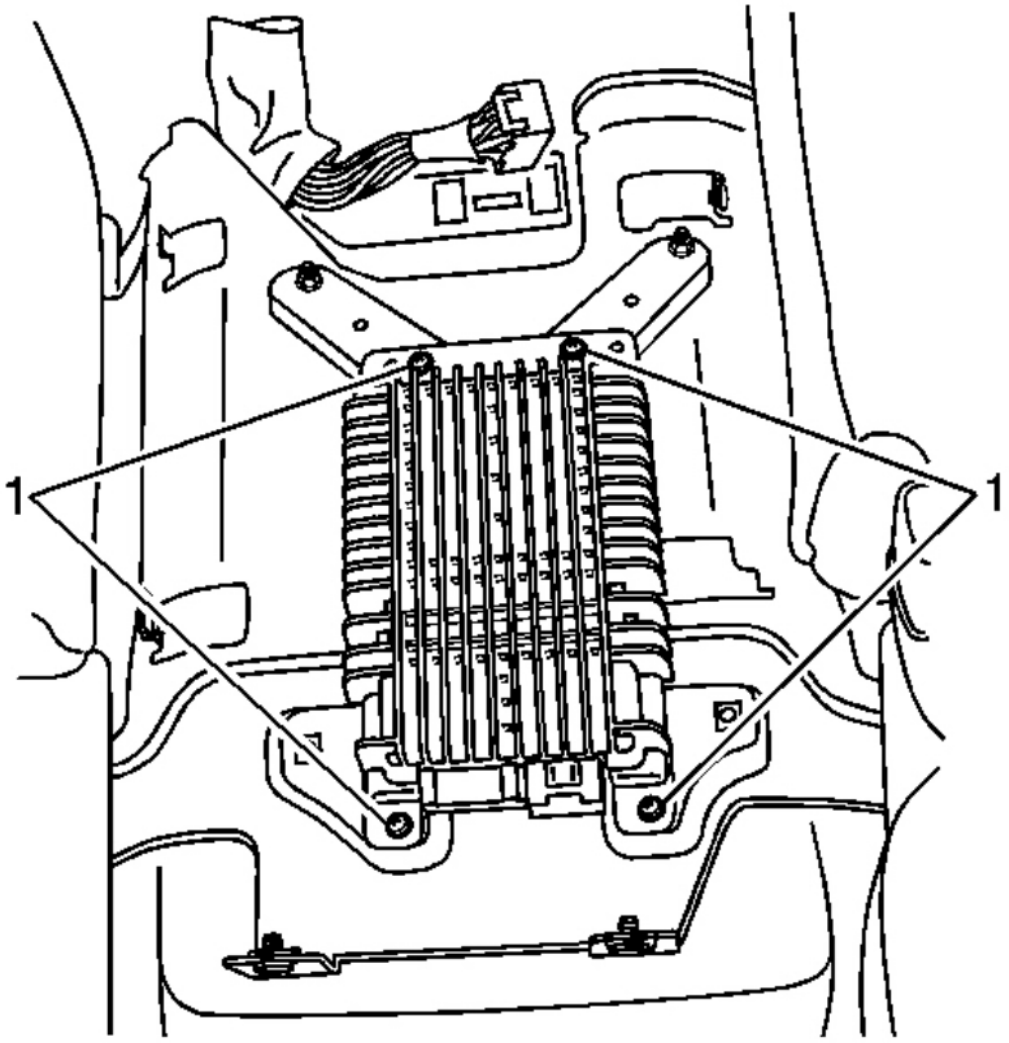


Fig. 27: Removing Audio Amplifier Screws
Courtesy of GENERAL MOTORS CORP.

Installation Procedure

NOTE: Refer to Fastener Notice in Cautions and Notices.

1. Install the audio amplifier to the floor console lower bracket.
2. Install the amplifier screws.

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Tighten: Tighten the screws to 3.4 N.m (30 lb in).

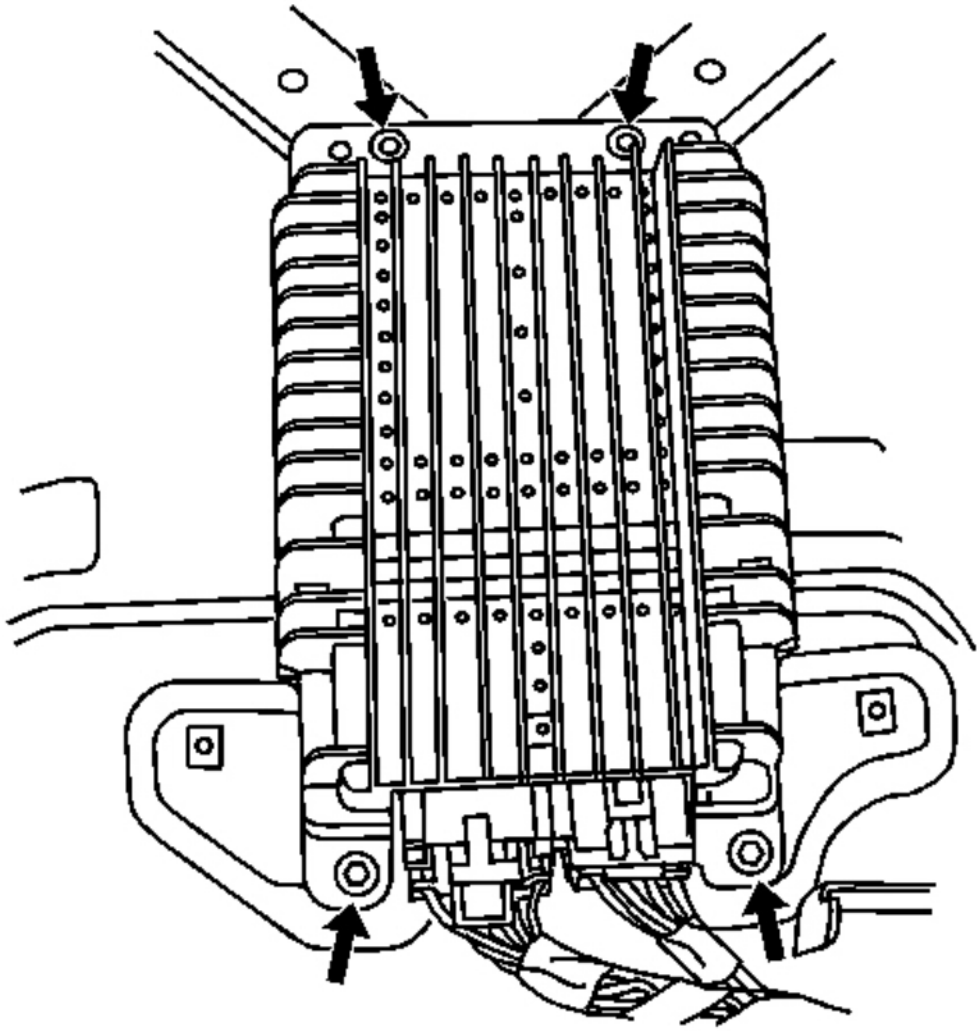


Fig. 28: Installing Audio Amplifier Screws
Courtesy of GENERAL MOTORS CORP.

3. Install the floor console.
4. Connect the floor console electrical connector.
5. Install the screws (1) that retaining the upper console bracket to the lower console bracket.

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Tighten: Tighten the retaining screws to 2 N.m (18 lb in).

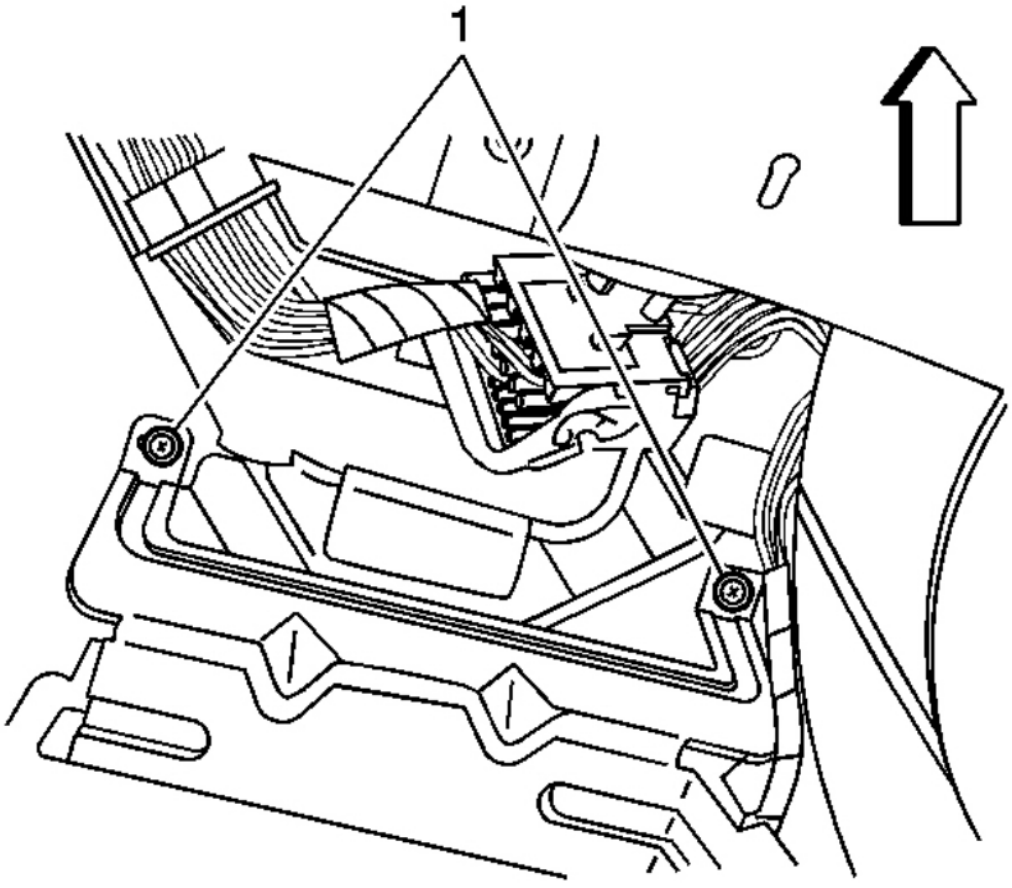


Fig. 29: Installing Screws Retaining Upper Console Bracket
Courtesy of GENERAL MOTORS CORP.

6. Install the bolts (1) retaining the console to the I/P.

   Tighten: Tighten the bolts to 4 N.m (35 lb in).

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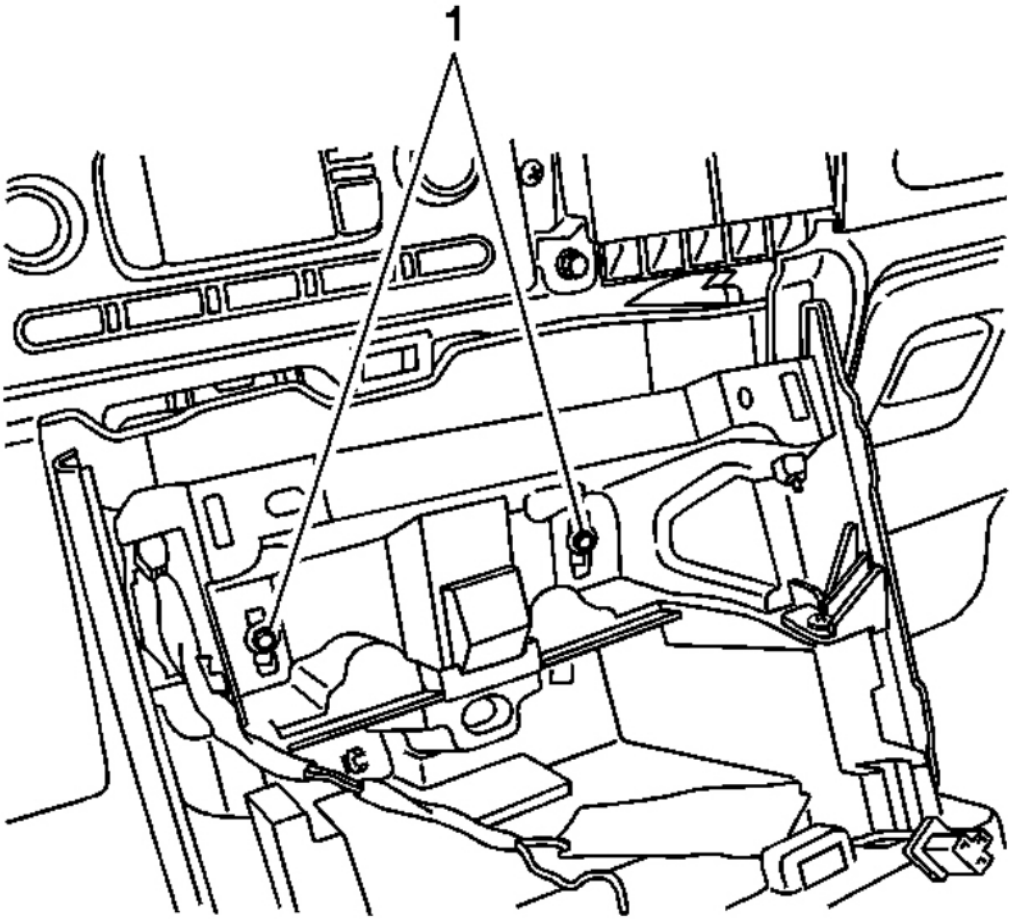


Fig. 30: Installing Bolts Retaining Console To I/P
Courtesy of GENERAL MOTORS CORP.

7. Install both front console side panel screws (1).

   Tighten: Tighten the screws to 2 N.m (18 lb in).

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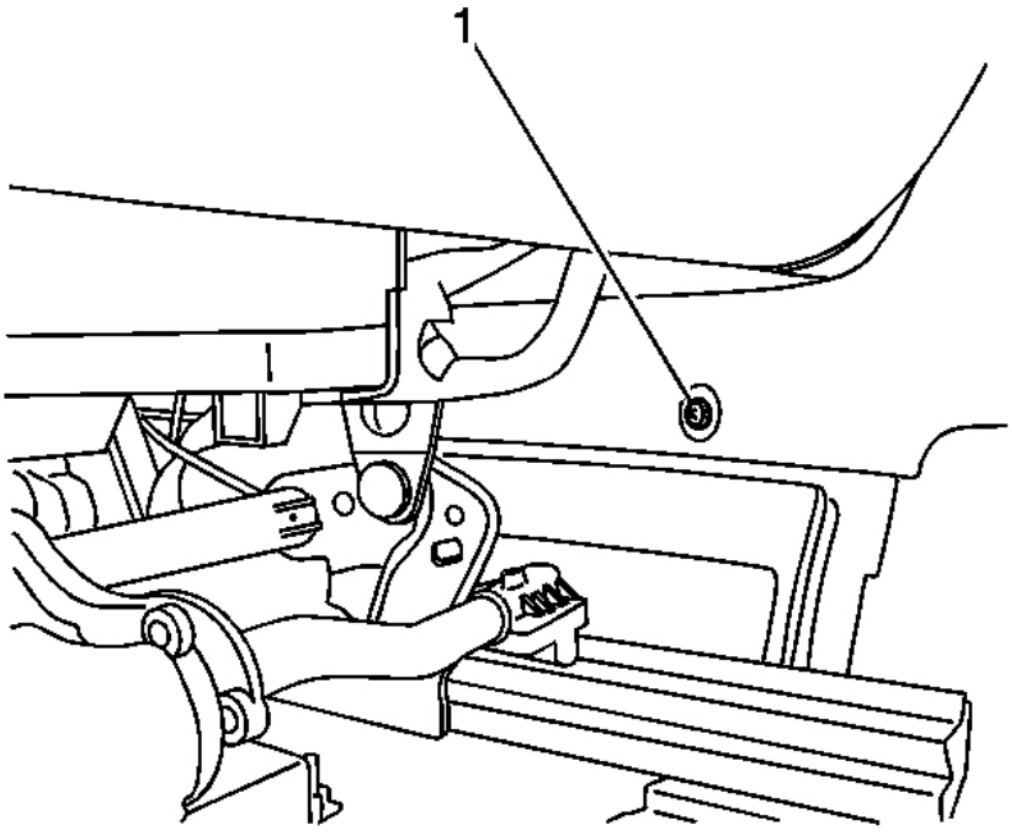


Fig. 31: Locating Console Side Panel Screw
Courtesy of GENERAL MOTORS CORP.

8. Move both front seats to the fully forward.
9. Install both rear console side panel screws (2).

   Tighten: Tighten the retaining screws to 2 N.m (18 lb in).

10. Reposition the inboard seat track trim (1).

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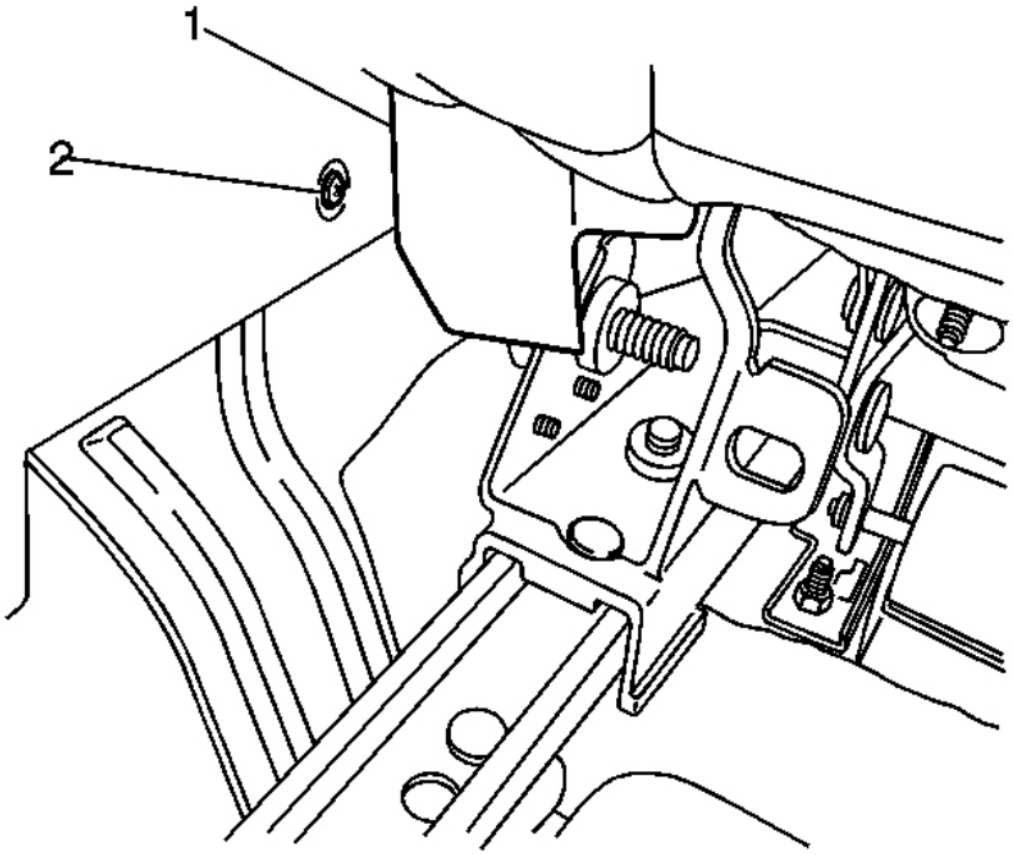


Fig. 32: View Of Seat Track Trim & Rear Console Side Panel Screw
Courtesy of GENERAL MOTORS CORP.

11. Connect the audio amplifier electrical connectors.
12. Connect the floor console electrical connector.
13. Install the center console end panel. Refer to **Center Console End Panel Replacement** in Instrument Panel, Gages and Console.
14. Install the console storage bin. Refer to **Console Storage Bin Replacement (Expect Pro)** in Instrument Panel, Gages and Console.
15. Install the cupholder to the console. Refer to **Cupholder Replacement (Non-Luxury)** , **Cupholder Replacement (Luxury)** , **Cupholder Replacement (Rear)** or **Cupholder Replacement (Platinum)** in Instrument Panel, Gages and Console.
16. Install the upper console bezel. Refer to **Bezel Replacement - Floor Console (Non-Luxury Upper)** or **Bezel Replacement - Floor Console (Luxury Upper)** in Instrument Panel, Gages and Console.
17. Install the radio amp fuse. Refer to **Electrical Center Identification Views** in Wiring Systems.

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18. If the amplifier has been replaced, perform the audio amplifier set up procedure for the BOSE™ amplifier with UQ7 and Y91. Refer to **Audio Amplifier Setup**.

AUDIO CONTROL REPLACEMENT - REAR SEAT

Removal Procedure

1. Insert a flat bladed tool between the audio control and the console end panel in order to pry gently the audio control from the panel.

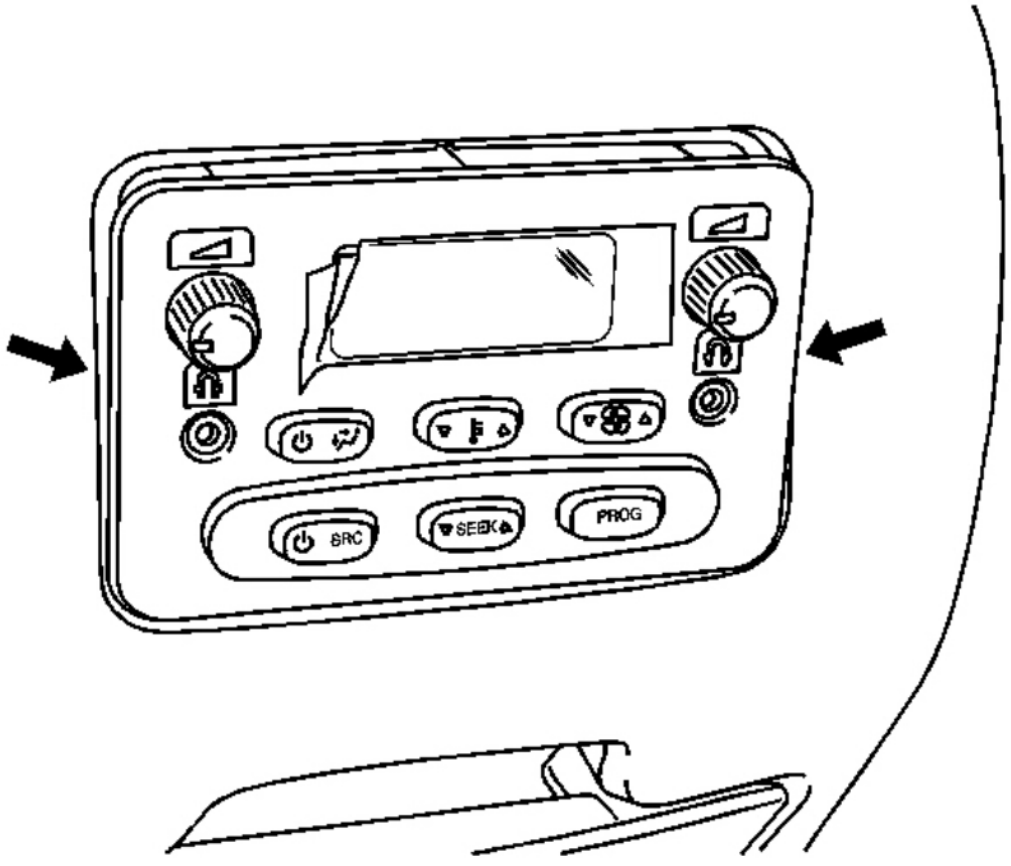


Fig. 33: Removing Audio Control From Console End Panel
Courtesy of GENERAL MOTORS CORP.

2. Disconnect the electrical connectors from the rear seat audio control.

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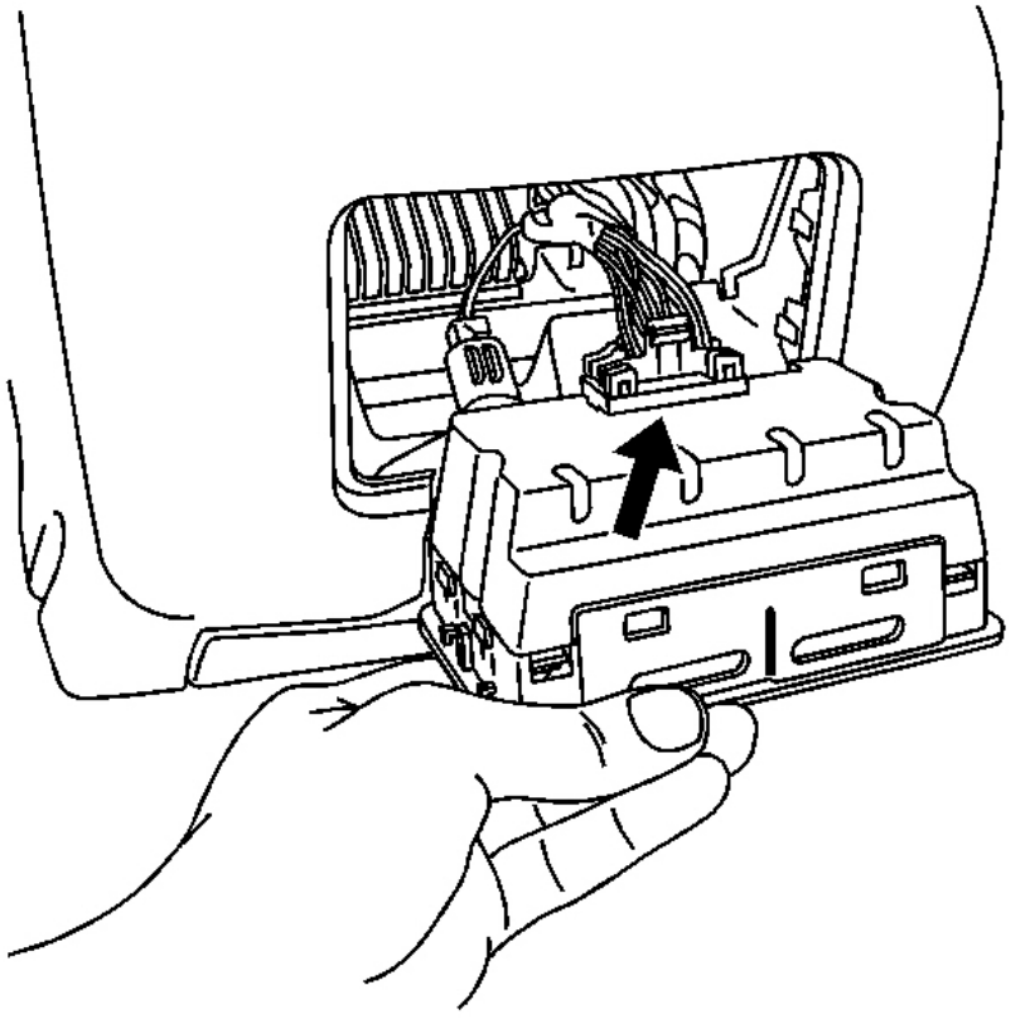


Fig. 34: Disconnecting Electrical Connectors From Rear Seat Audio Control
Courtesy of GENERAL MOTORS CORP.

Installation Procedure

1. Connect the wire connector.

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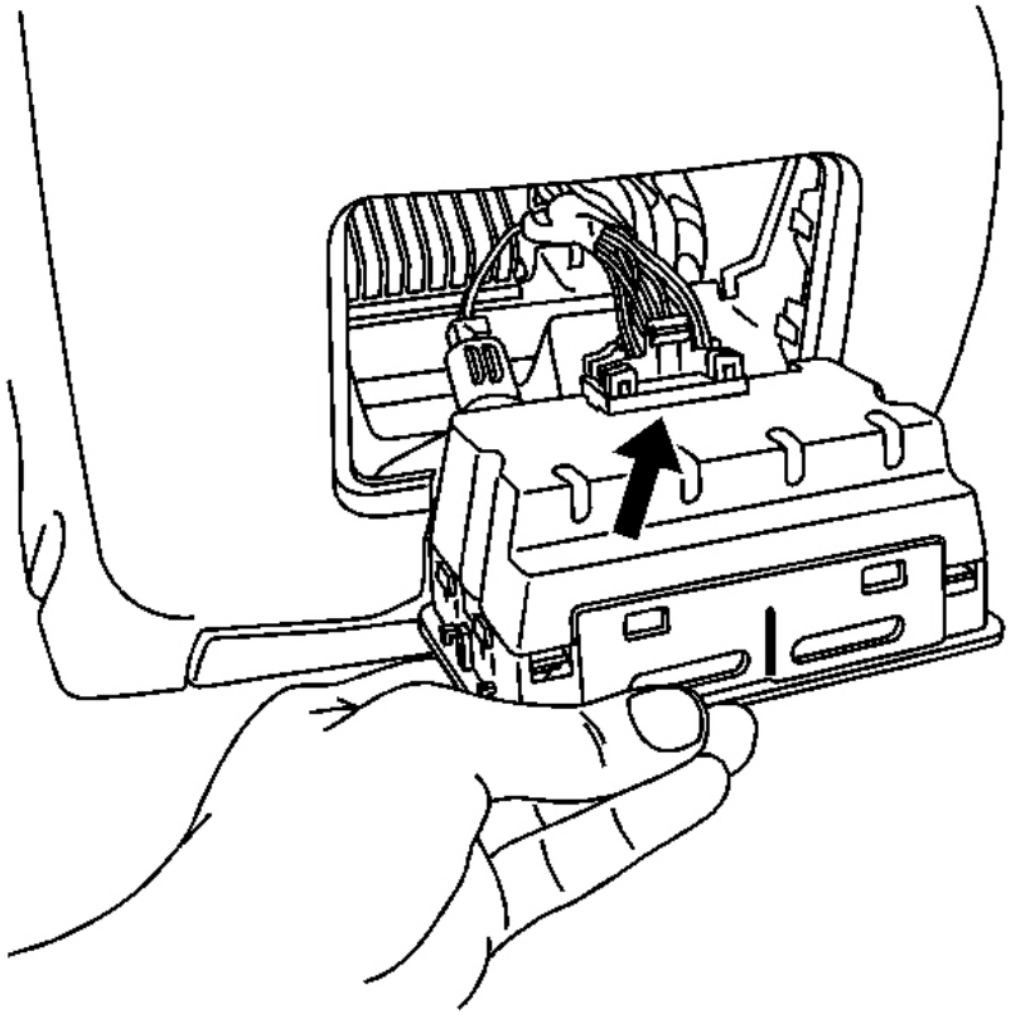


Fig. 35: Connecting Rear Seat Audio Control Wire Connector
Courtesy of GENERAL MOTORS CORP.

2. Install the rear seat audio control to the console end panel till it clicks in place.

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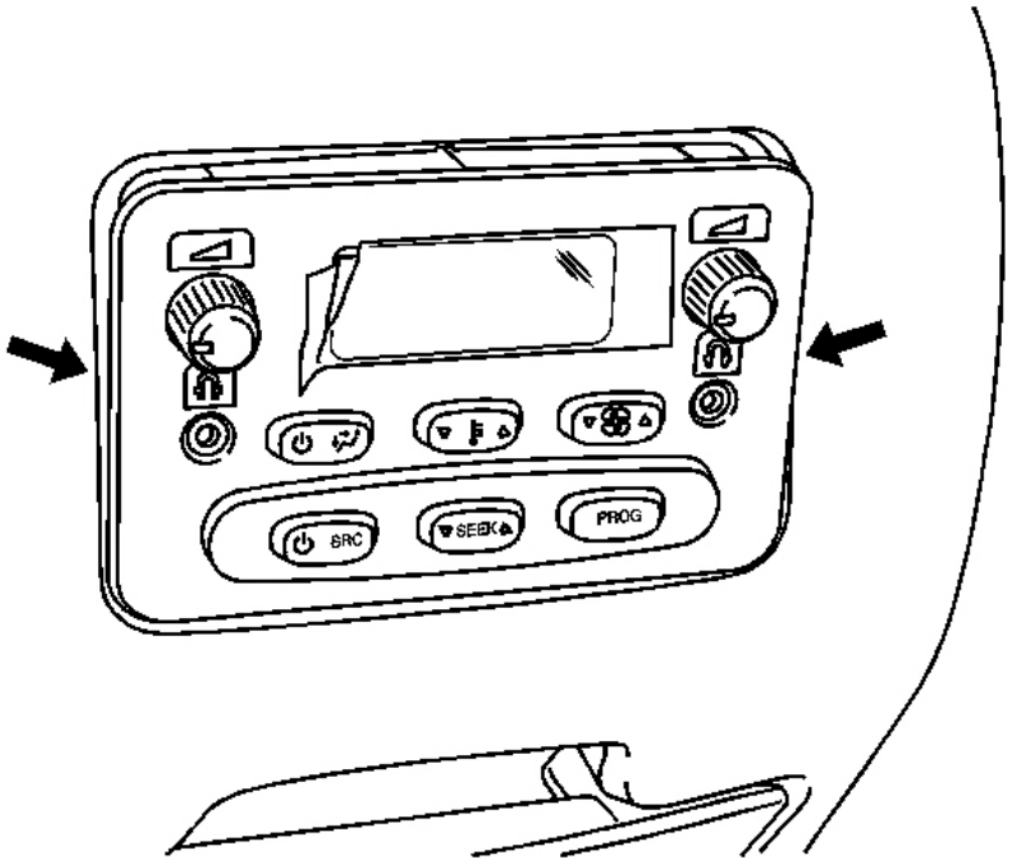


Fig. 36: Installing Rear Seat Audio Control To Console End Panel
Courtesy of GENERAL MOTORS CORP.

3. Inspect the operation of the rear audio controls.

REMOTE CD PLAYER REPLACEMENT

Removal Procedure

1. Remove the I/P cluster bezel. Refer to **Bezel Replacement - Instrument Panel (I/P) Cluster** in Instrument Panel, Gages and Console.
2. Insert a flat bladed tool between the Bezel assembly and the console.
3. Pry the bezel from the console outwards partially in order to gain access to the connectors.
4. Disconnect the electrical connectors.
5. Remove the bezel from the console.

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6. Remove the CD player from the console

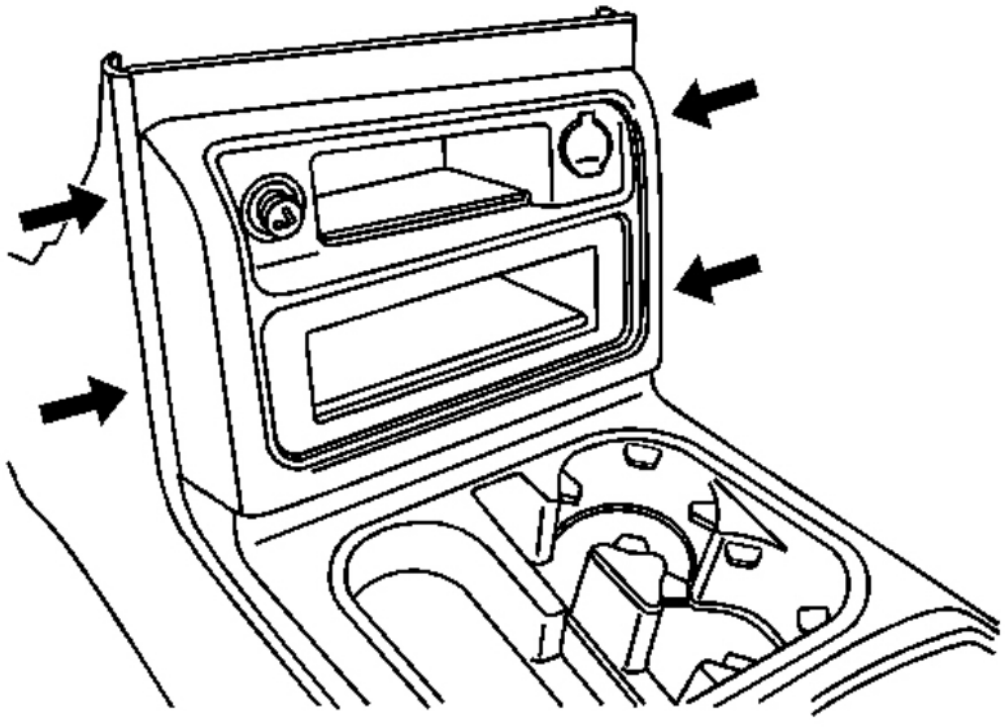


Fig. 37: Removing Remote CD Player Bezel From Console
Courtesy of GENERAL MOTORS CORP.

Installation Procedure

1. Install the CD player to the console till the tabs locks in place.
2. Place the bezel to the console.
3. Connect the electrical connectors.
4. Install the bezel to the console by pushing on the corners till the retainers clicks in place.

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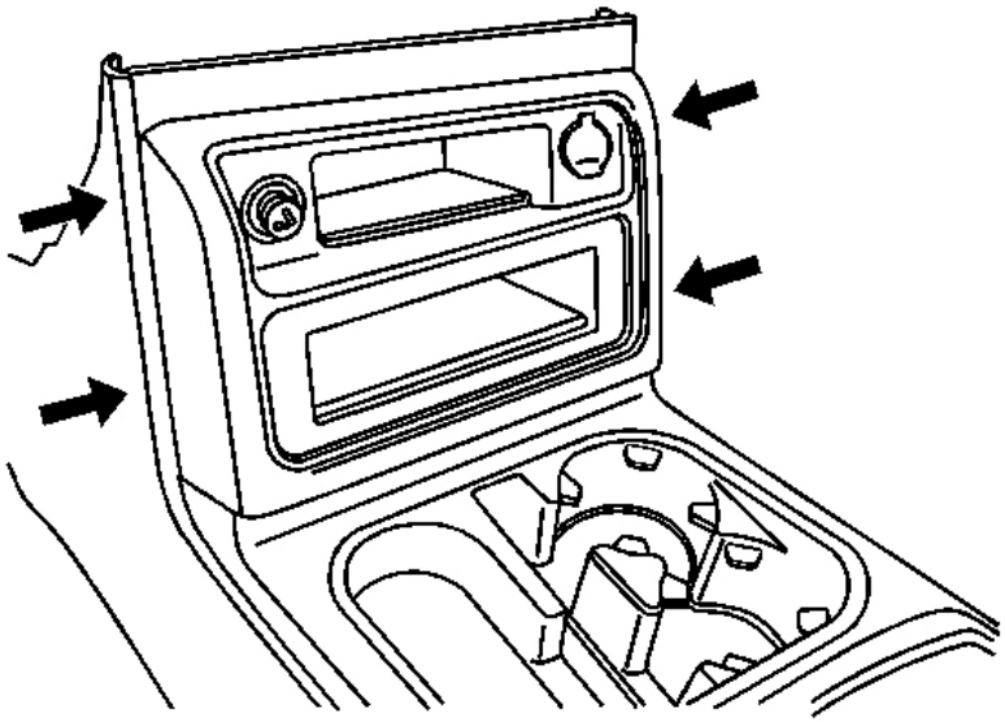


Fig. 38: Installing Remote CD Player Bezel To Console
Courtesy of GENERAL MOTORS CORP.

5. Install the I/P cluster bezel. Refer to **Bezel Replacement - Instrument Panel (I/P) Cluster** in Instrument Panel, Gages and Console.

MICROPHONE REPLACEMENT - RADIO VOLUME COMPENSATOR INTERIOR

Removal Procedure

1. Remove the floor console bezel. Refer to **Bezel Replacement - Floor Console (Non-Luxury Upper)** or **Bezel Replacement - Floor Console (Luxury Upper)** in Instrument Panel, Gages and Console.
2. Remove the floor console cupholder. Refer to **Cupholder Replacement (Non-Luxury)** , **Cupholder Replacement (Luxury)** , **Cupholder Replacement (Rear)** or **Cupholder Replacement (Platinum)** in Instrument Panel, Gages and Console.
3. Remove the floor console storage bin. Refer to **Console Storage Bin Replacement (Expect Pro)** in Instrument Panel, Gages and Console.
4. Remove the floor console end panel. Refer to **Center Console End Panel Replacement** in Instrument Panel, Gages and Console.

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5. Move the drivers seat fully forward.
6. Reposition the inboard seat track trim (1) in order to gain access to the rear console side panel screw (2).
7. Remove the rear console side panel screw.

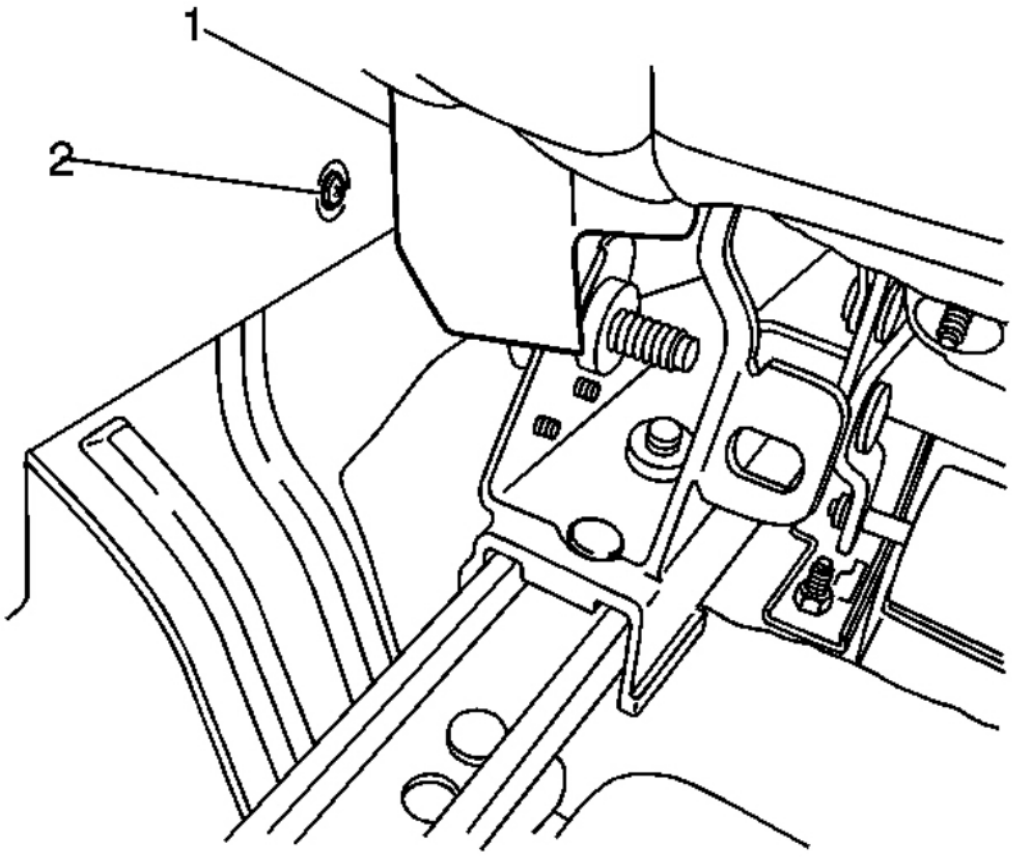


Fig. 39: View Of Seat Track Trim & Rear Console Side Panel Screw
Courtesy of GENERAL MOTORS CORP.

8. Move the drivers seat to the fully rearward.
9. Remove the front console side panel screw (1).

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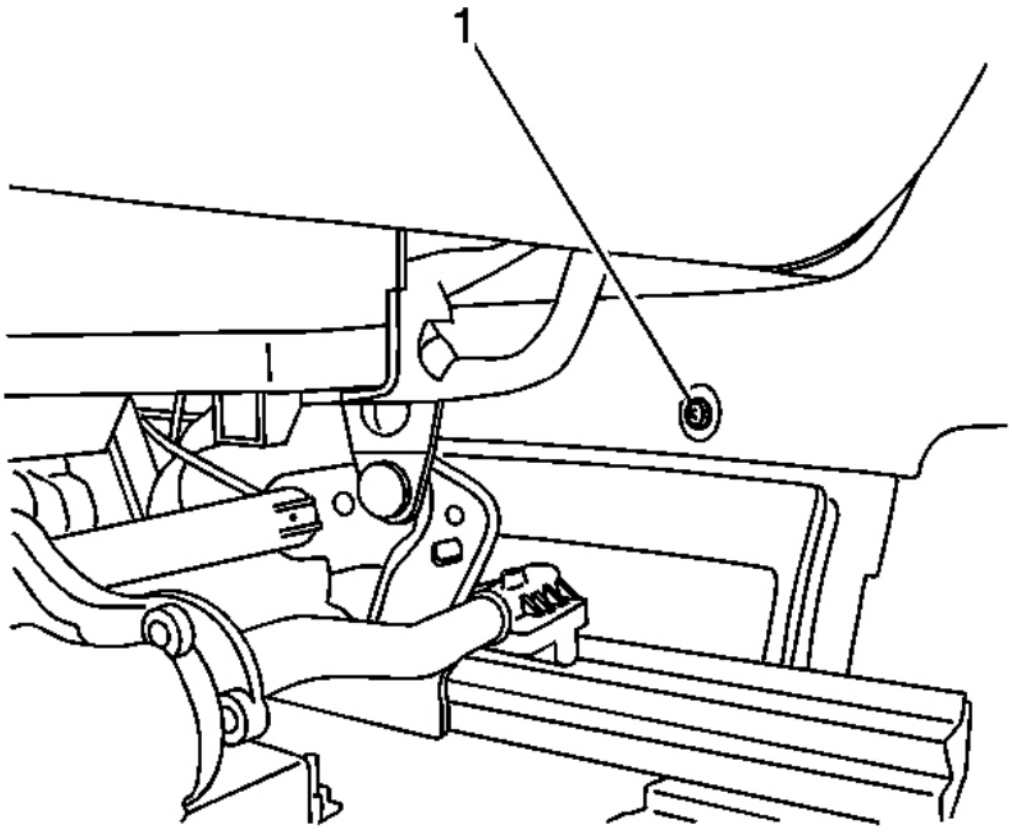


Fig. 40: Locating Console Side Panel Screw
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: The floor console drivers side trim panel can not be removed until the noise compensation microphone electrical connector hold down clip is released from the console.

10. Carefully pull outward on the trim panel to release the trim panel clips.
11. Release the microphone electrical connector clip from the console.
12. Disconnect the radio volume compensator microphone (2) electrical connector.
13. Remove the screws (1) that retaining the radio volume compensator microphone (2) to the floor console trim panel.
14. Remove the radio volume compensator microphone (2) from the floor console side trim panel.

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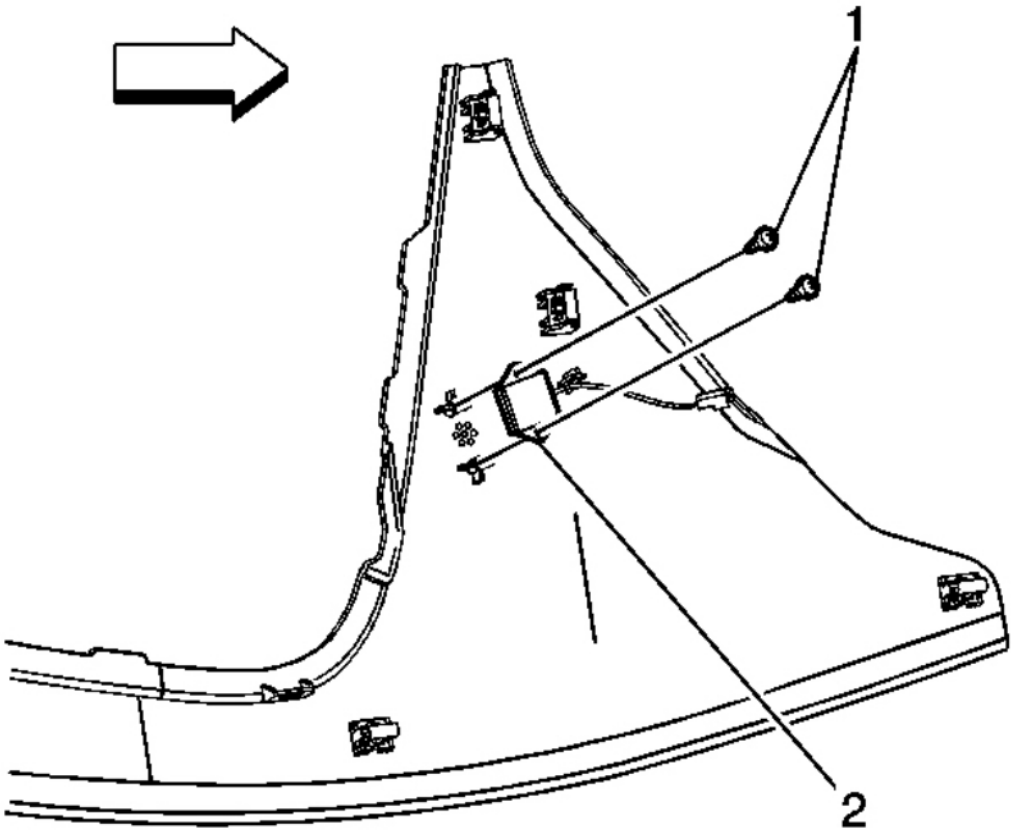


Fig. 41: Removing Screws & Radio Volume Compensator Microphone
Courtesy of GENERAL MOTORS CORP.

Installation Procedure

1. Install the radio volume compensator microphone (2) to the floor console side trim panel.

   NOTE: Refer to Fastener Notice in Cautions and Notices.

2. Install the radio volume compensator microphone screws (1).

   Tighten: Tighten the screws to 2 N.m (18 lb in).

3. Align the side trim panel to the floor console and connect the radio volume compensator microphone (2) electrical connector.

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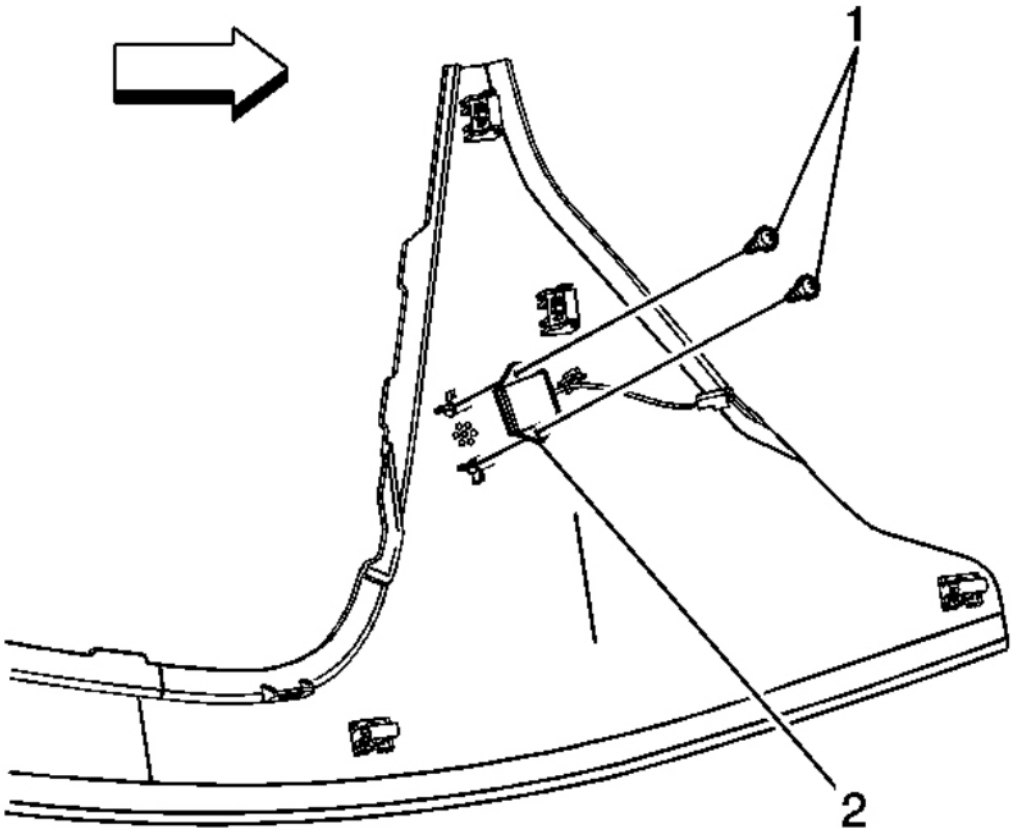


Fig. 42: Installing Radio Volume Compensator Microphone & Screws
Courtesy of GENERAL MOTORS CORP.

4. Install the electrical connector hold down clip to the floor console.
5. Align the trim panel to the floor console, push the panel towards the floor console to engage the panel clips.
6. Install the front console side panel screw (1).

Tighten: Tighten the screws to 2 N.m (18 lb in).

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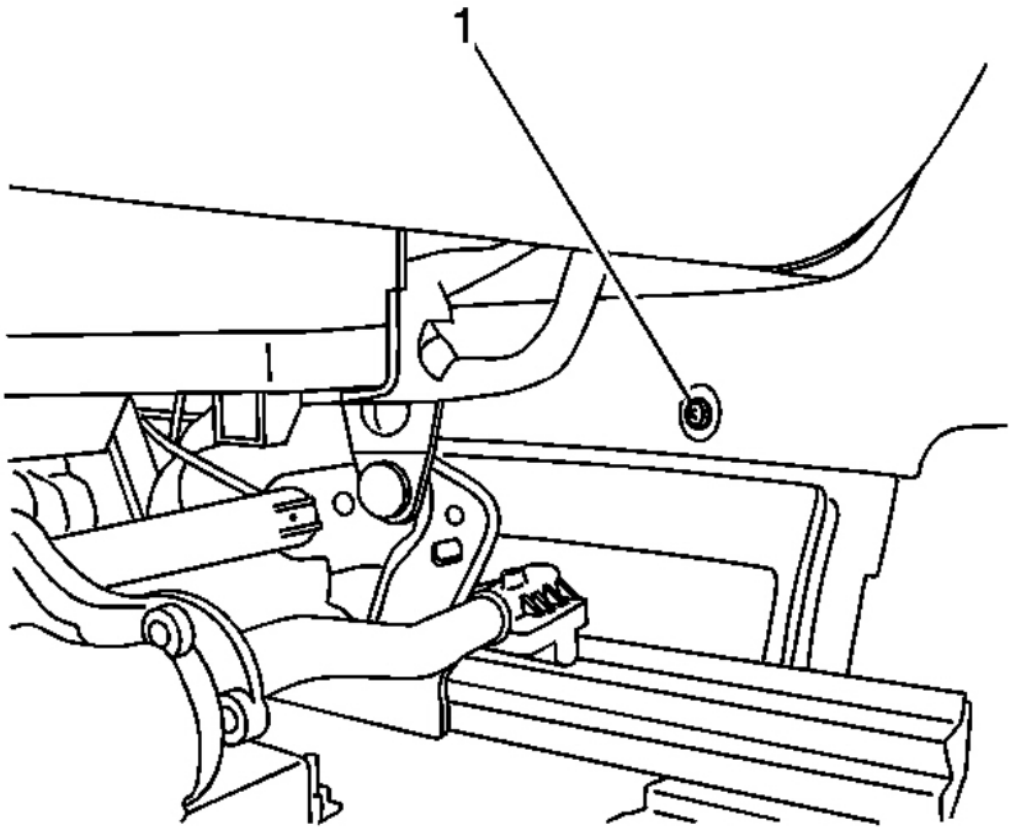


Fig. 43: Locating Console Side Panel Screw
Courtesy of GENERAL MOTORS CORP.

7. Move the front seat fully forward.
8. Install the rear console side panel screw (2).

   Tighten: Tighten the retaining screw to 2 N.m (18 lb in).

9. Reposition the inboard seat track trim (1).

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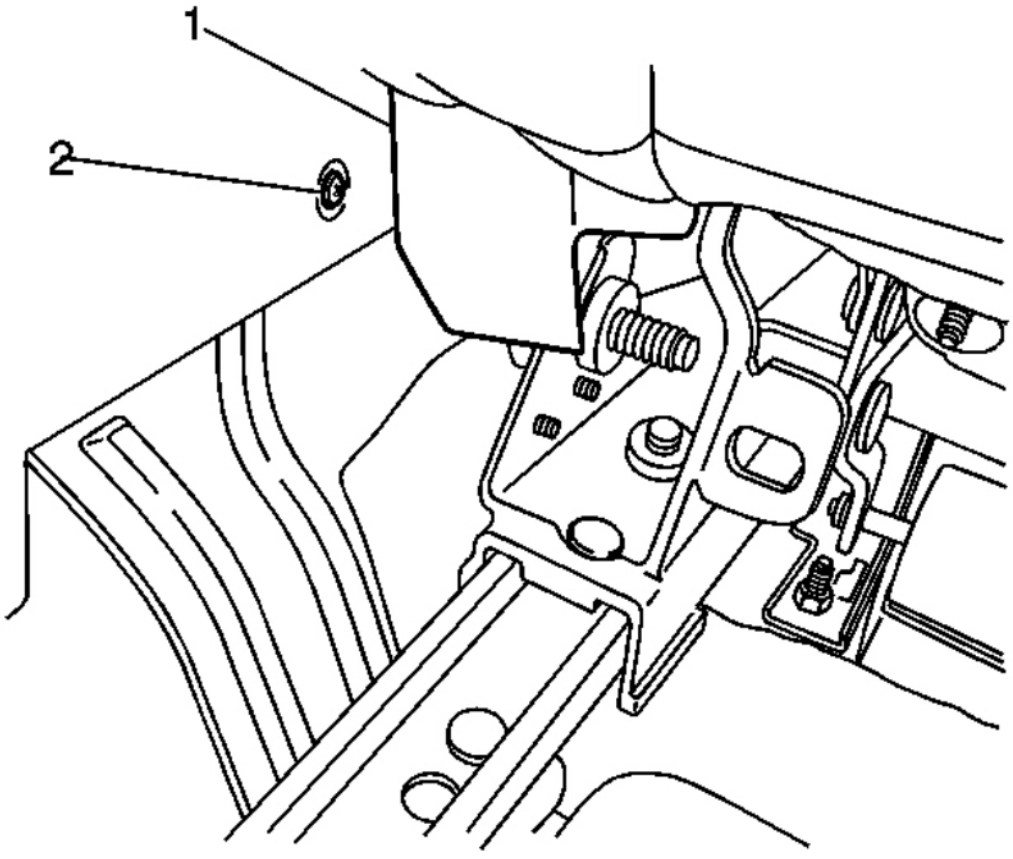


Fig. 44: View Of Seat Track Trim & Rear Console Side Panel Screw
Courtesy of GENERAL MOTORS CORP.

10. Install the floor console storage bin. Refer to **Console Storage Bin Replacement (Expect Pro)** in Instrument Panel, Gages and Console.
11. Install the floor console end panel. Refer to **Center Console End Panel Replacement** in Instrument Panel, Gages and Console.
12. Install the floor console cupholder. Refer to **Cupholder Replacement (Non-Luxury)** , **Cupholder Replacement (Luxury)** , **Cupholder Replacement (Rear)** or **Cupholder Replacement (Platinum)** in Instrument Panel, Gages and Console.
13. Install the floor console bezel. Refer to **Bezel Replacement - Floor Console (Non-Luxury Upper)** or **Bezel Replacement - Floor Console (Luxury Upper)** in Instrument Panel, Gages and Console.

MODULE REPLACEMENT - RADIO ANTENNA DIVERSITY

Removal Procedure

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The radio control module and the radio antenna module cannot be replaced individually.

1. Lower the rear of the headliner. Refer to **Headliner Replacement** in Interior Trim.
2. Disconnect the electrical connector (2) attached to the rear quarter glass panel.
3. Remove the module (1) bolt.
4. Remove the control module (1) from the roof.

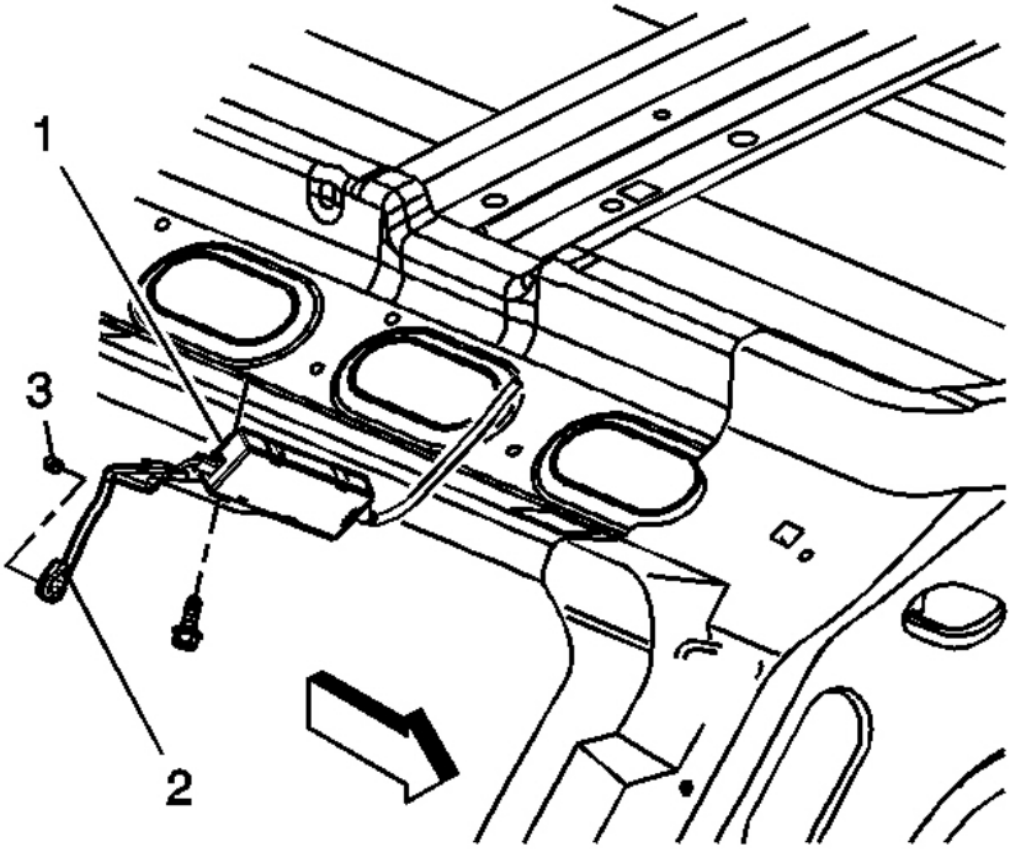


Fig. 45: Removing Radio Control Module & Electrical Connector
Courtesy of GENERAL MOTORS CORP.

5. Remove the cable (2, 3) from the roof cross member by removing the cable clips (1).

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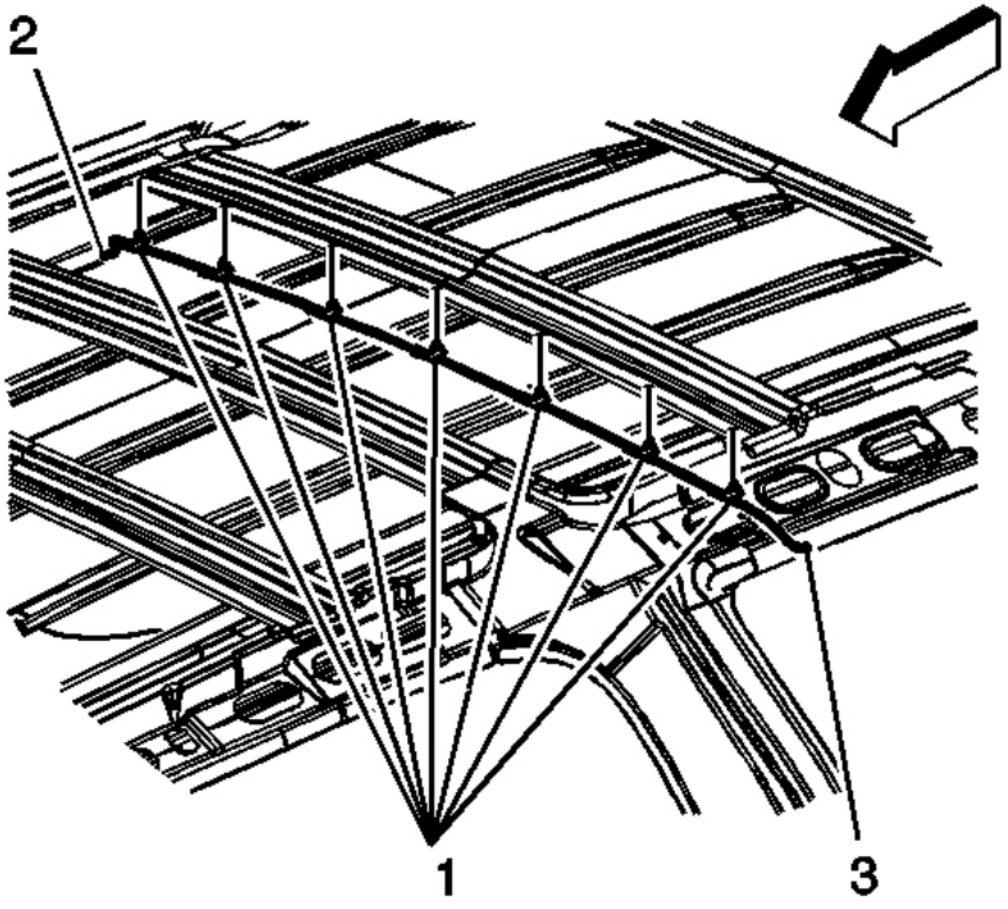


Fig. 46: Removing Cable Clips & Cable From Roof Cross Member
Courtesy of GENERAL MOTORS CORP.

6. Disconnect the electrical connector (2) attached to the rear quarter glass panel (1).
7. Remove the module (3) bolt.
8. Remove the antenna module from the roof.
9. Remove the radio control modules and cable from the vehicle.

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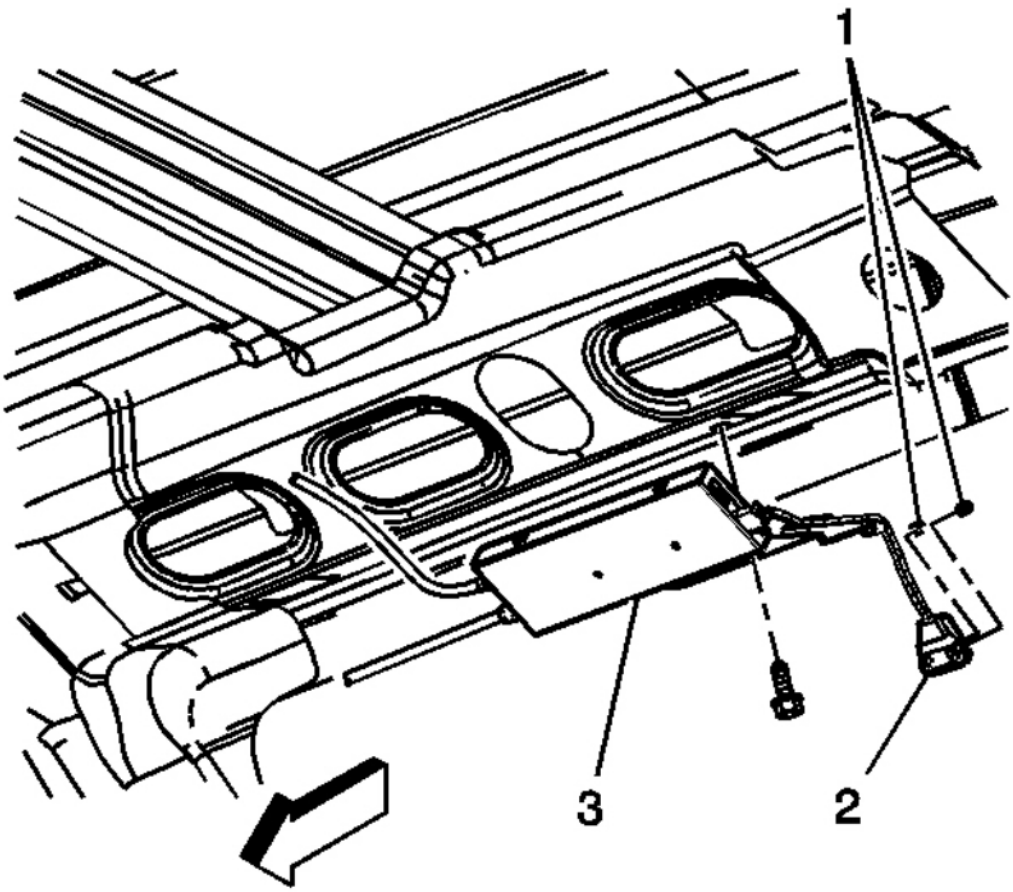


Fig. 47: Removing Antenna Module & Electrical Connector
Courtesy of GENERAL MOTORS CORP.

Installation Procedure

1. Install the antenna module (3) to the roof.

   NOTE: Refer to Fastener Notice in Cautions and Notices.

2. Install the module bolt.

   Tighten: Tighten the bolt to 9 N.m (80 lb in).

3. Connect the antenna cable to the module (3), if disconnected.
4. Connect the connector (2) to the rear quarter glass panel (1).

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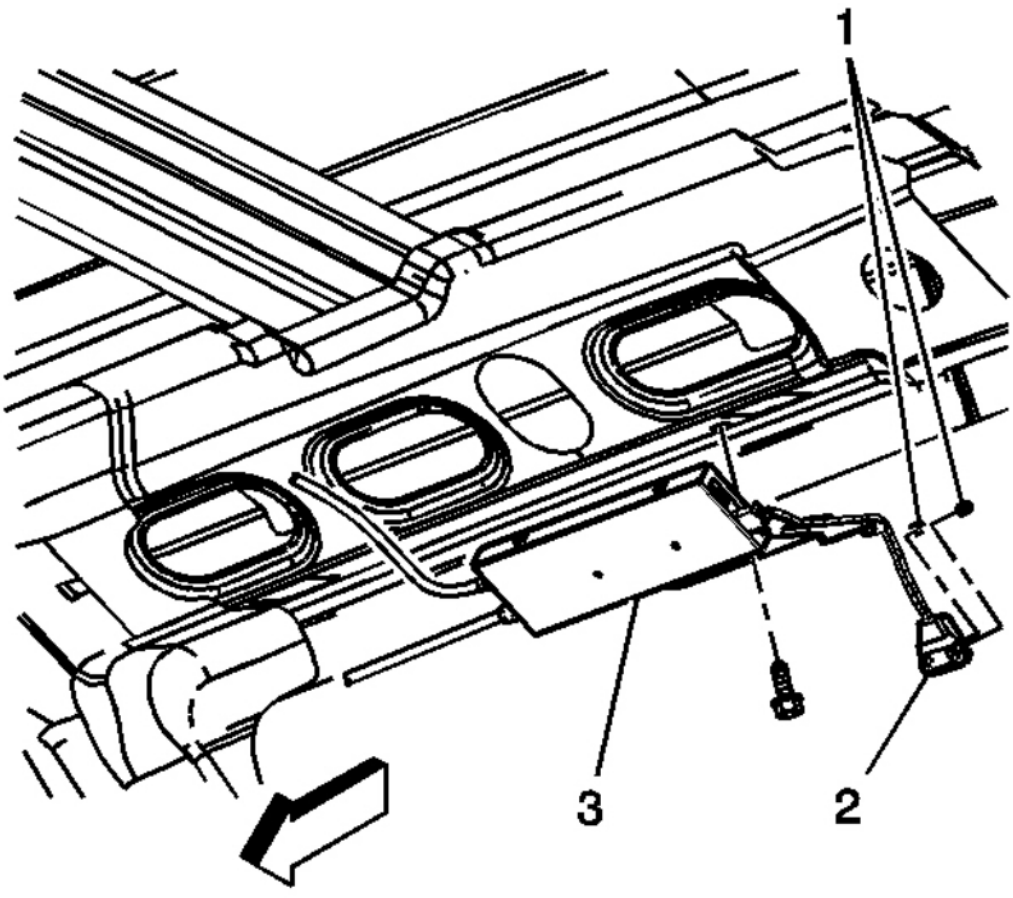


Fig. 48: Installing Antenna Module & Electrical Connector
Courtesy of GENERAL MOTORS CORP.

5. Install the cable (2, 3) to the roof cross member by pushing in the retainer clips (1).

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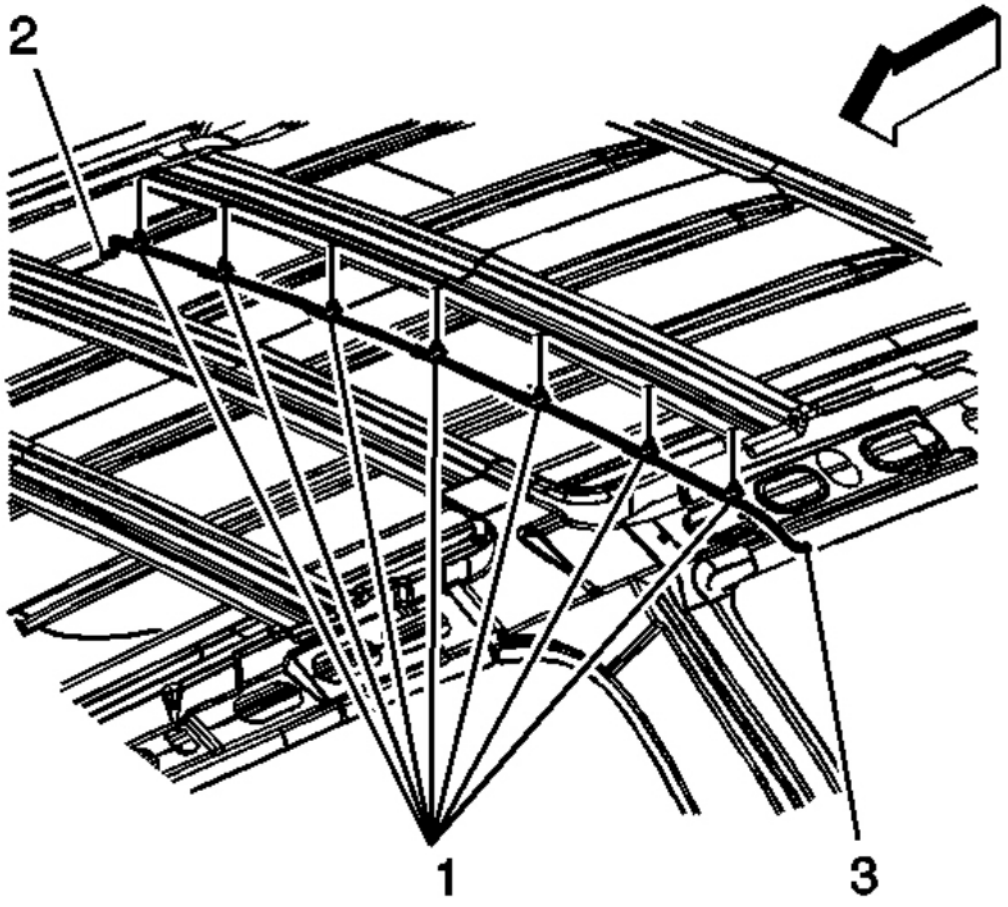


Fig. 49: Installing Cable To Roof Cross Member
Courtesy of GENERAL MOTORS CORP.

6. Install the module bolt.

   Tighten: Tighten the bolt to 9 N.m (80 lb in).

7. Connect the antenna cable to the module (1).
8. Connect the connector (2) to the rear quarter glass panel (3).

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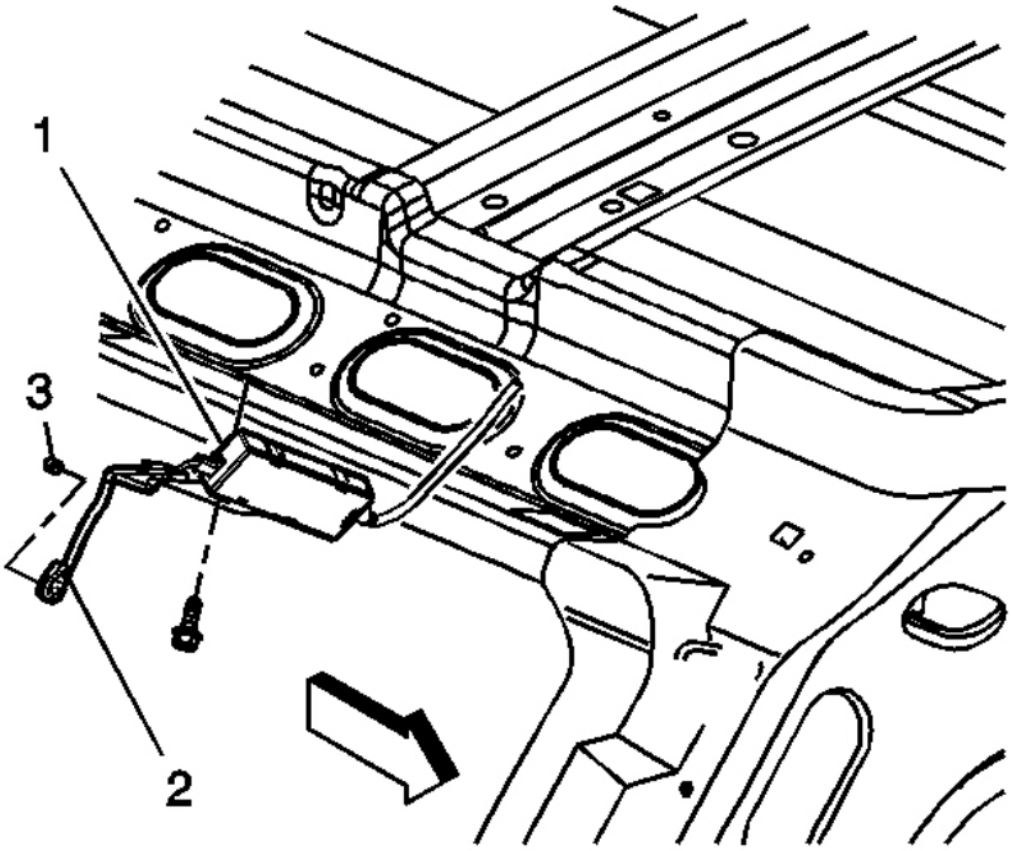


Fig. 50: Installing Radio Control Module & Electrical Connector
Courtesy of GENERAL MOTORS CORP.

9. Install the headliner. Refer to **Headliner Replacement** in Interior Trim.

FIXED ANTENNA REPLACEMENT

Removal Procedure

1. Remove the I/P trim panel. Refer to **Trim Panel Replacement - Instrument Panel (I/P) Upper** in Instrument Panel, Gages and Console.
2. Remove the antenna mast.
3. Remove the outboard section of the cowl vent grille panel.
4. Remove the 3 bolts.
5. Remove the cable grommet from the body.

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6. Disconnect the antenna cable from the extension cable.
7. Tie a long wire to the antenna cable.
8. From outside of the vehicle, pull the antenna base and cable assembly until the wire can be easily accessible.

   Ensure part of the wire is still in the vehicle

9. Remove the wire from the antenna cable.

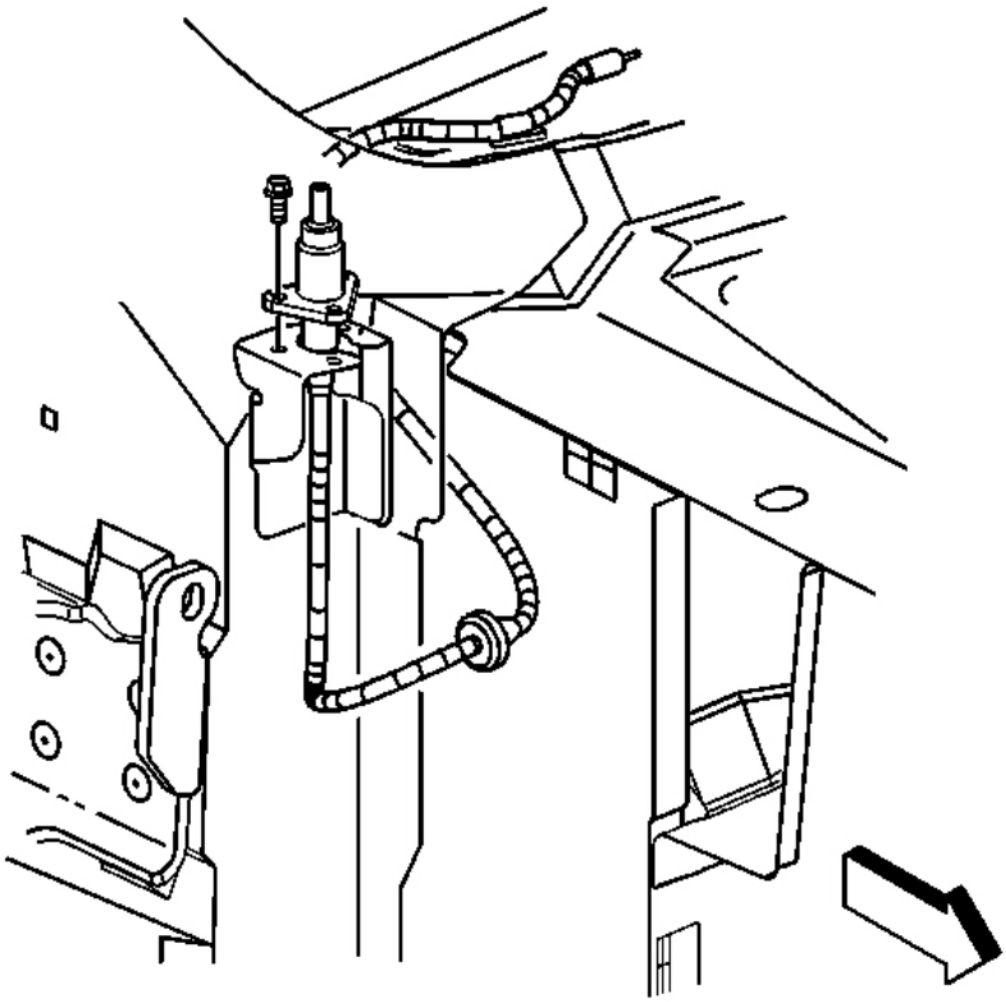


Fig. 51: Removing Fixed Antenna
Courtesy of GENERAL MOTORS CORP.

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Installation Procedure

1. From outside the vehicle, tie the wire to the new antenna cable and base assembly.
2. From inside the vehicle, pull on the long wire until the cable can be connected and grommet seated.
3. Install the cable grommet to the body.
4. Remove the wire and connect the antenna cable to the cable extension.

NOTE: Refer to Fastener Notice in Cautions and Notices.

5. Install the 3 bolts.

   Tighten: Tighten the bolts to 5 N.m (44 lb in).

NOTE: Use tape on the tool surface so that you do not damage the paint on the antenna mast.

6. Install the antenna mast.

   Tighten: Tighten the mast to 6 N.m (53 lb in).

7. Install the outboard section of the cowl vent grille panel.

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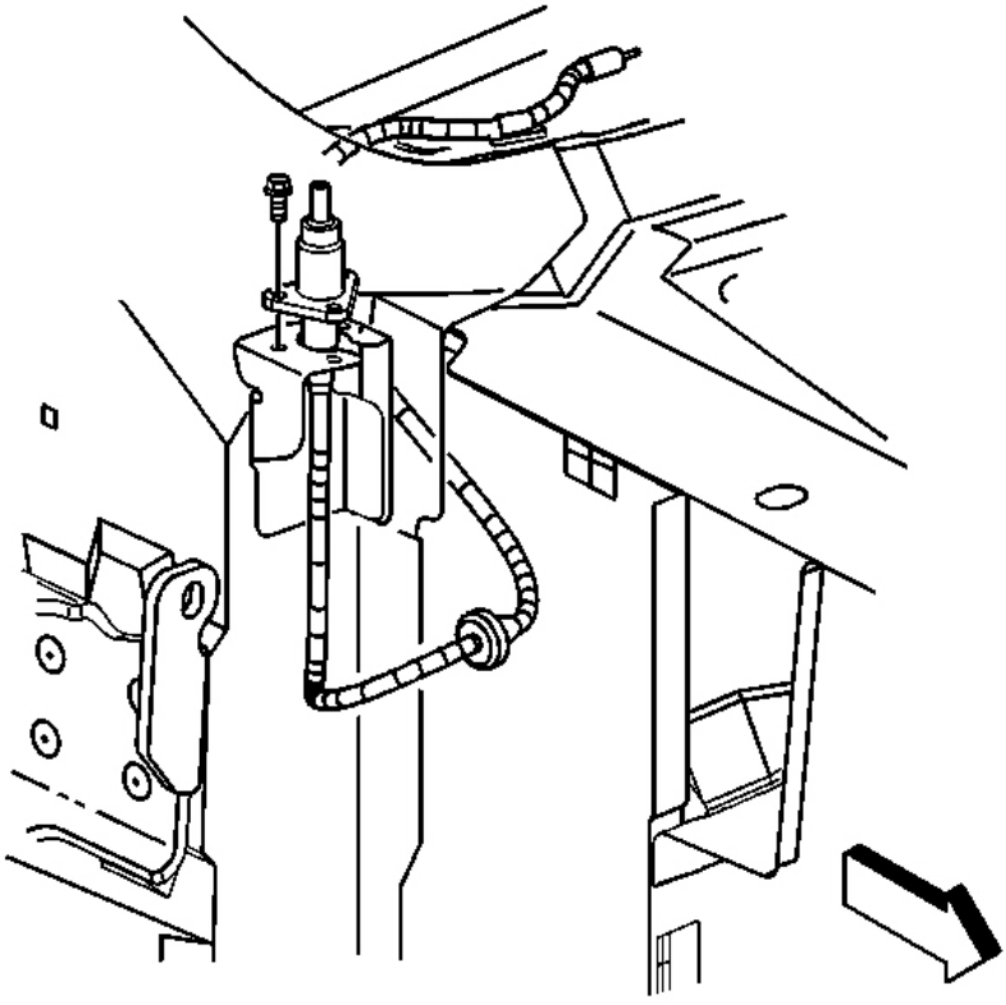


Fig. 52: Installing Fixed Antenna
Courtesy of GENERAL MOTORS CORP.

8. Install the I/P trim panel. Refer to **Trim Panel Replacement - Instrument Panel (I/P) Upper** in Instrument Panel, Gages and Console.

ANTENNA REPLACEMENT - DIGITAL RADIO

NOTE: **DO NOT apply paint or clear coat to the antenna. This will damage the function of the antenna, causing poor reception or loss of signal reception.**

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NOTE: **Use care when removing or installing the headliner. Excessive bending will damage the headliner.**

Removal Procedure

1. Lower the front part of the headliner. Refer to **Headliner Replacement** in Interior Trim.
2. Disconnect the cables (4) from the antenna base (1).
3. Remove the bolt (3) and expansion sleeve (2).
4. Remove the antenna base (1) from the roof.

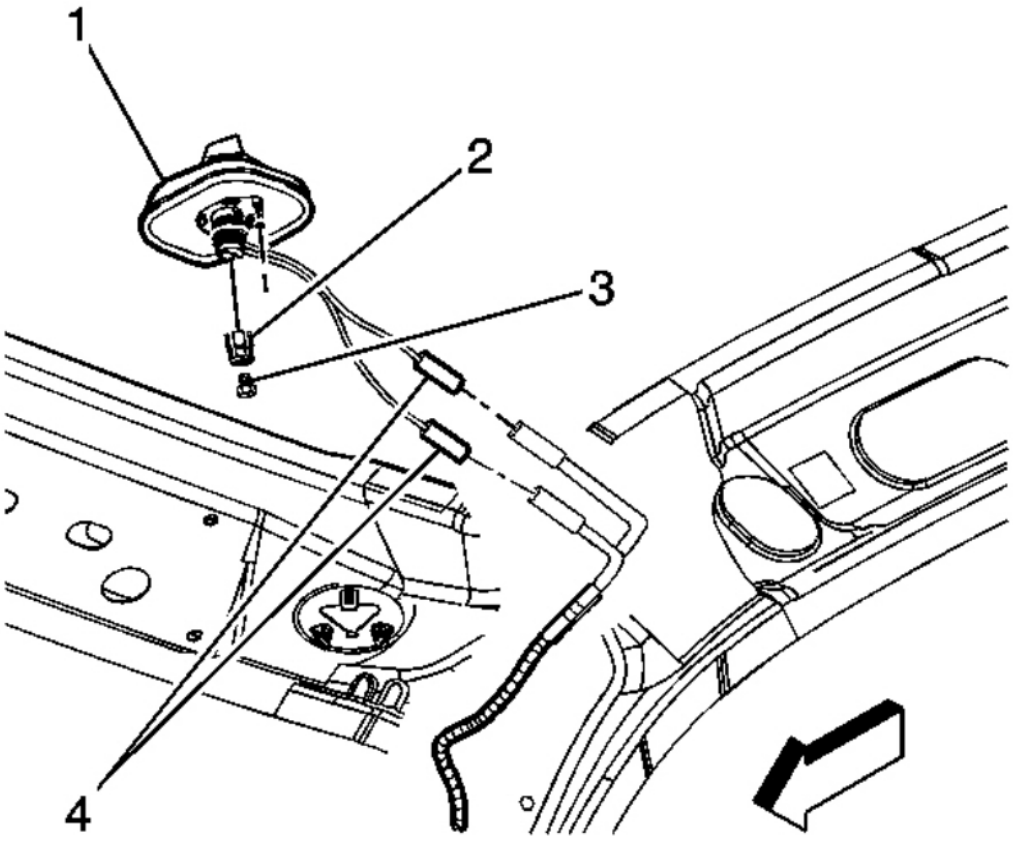


Fig. 53: Removing Digital Radio Antenna
Courtesy of GENERAL MOTORS CORP.

Installation Procedure

1. Place the antenna base to the roof opening.

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NOTE: **Refer to Fastener Notice in Cautions and Notices.**

2. Install the expansion sleeve (2) and the bolt (3).

   Tighten: Tighten the nut to 6 N.m (53 lb in).

3. Connect the antenna cables (4).

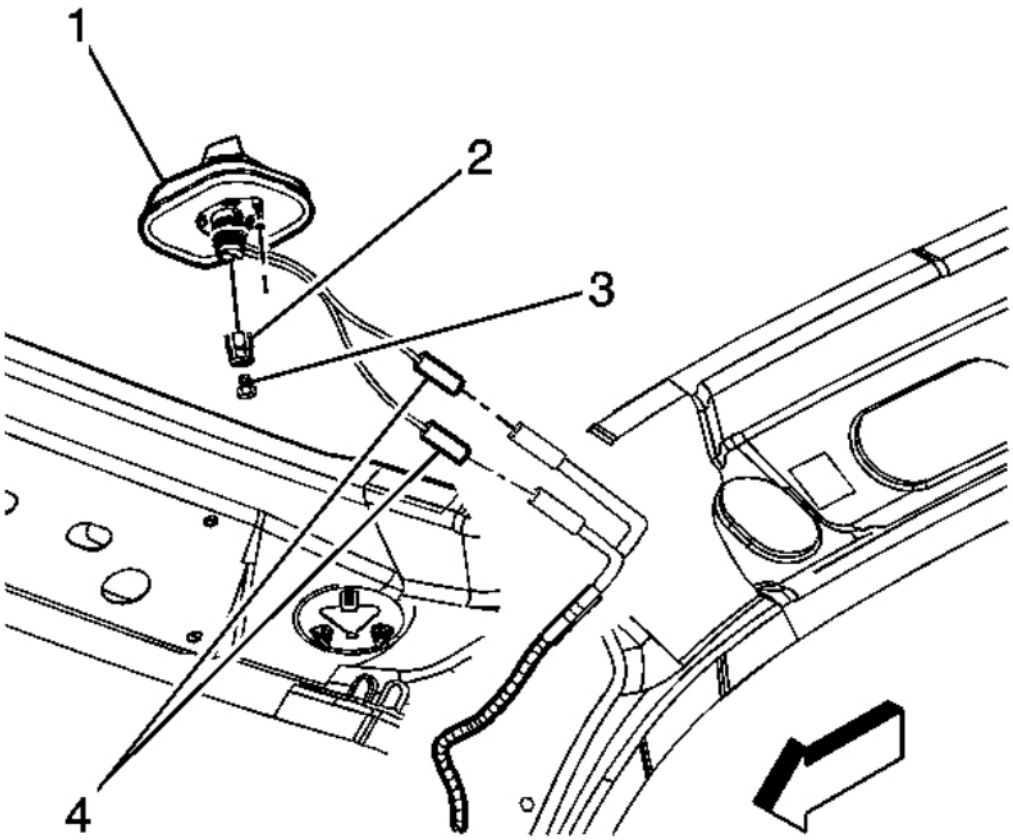


Fig. 54: Installing Digital Radio Antenna
Courtesy of GENERAL MOTORS CORP.

4. Install the headliner. Refer to **Headliner Replacement** in Interior Trim.

ANTENNA EXTENSION CABLE REPLACEMENT

Removal Procedure

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1. Remove the instrument panel trim panel. Refer to **Trim Panel Replacement - Instrument Panel (I/P) Upper** in Instrument Panel, Gages and Console.
2. Disconnect the extension cable from the radio.

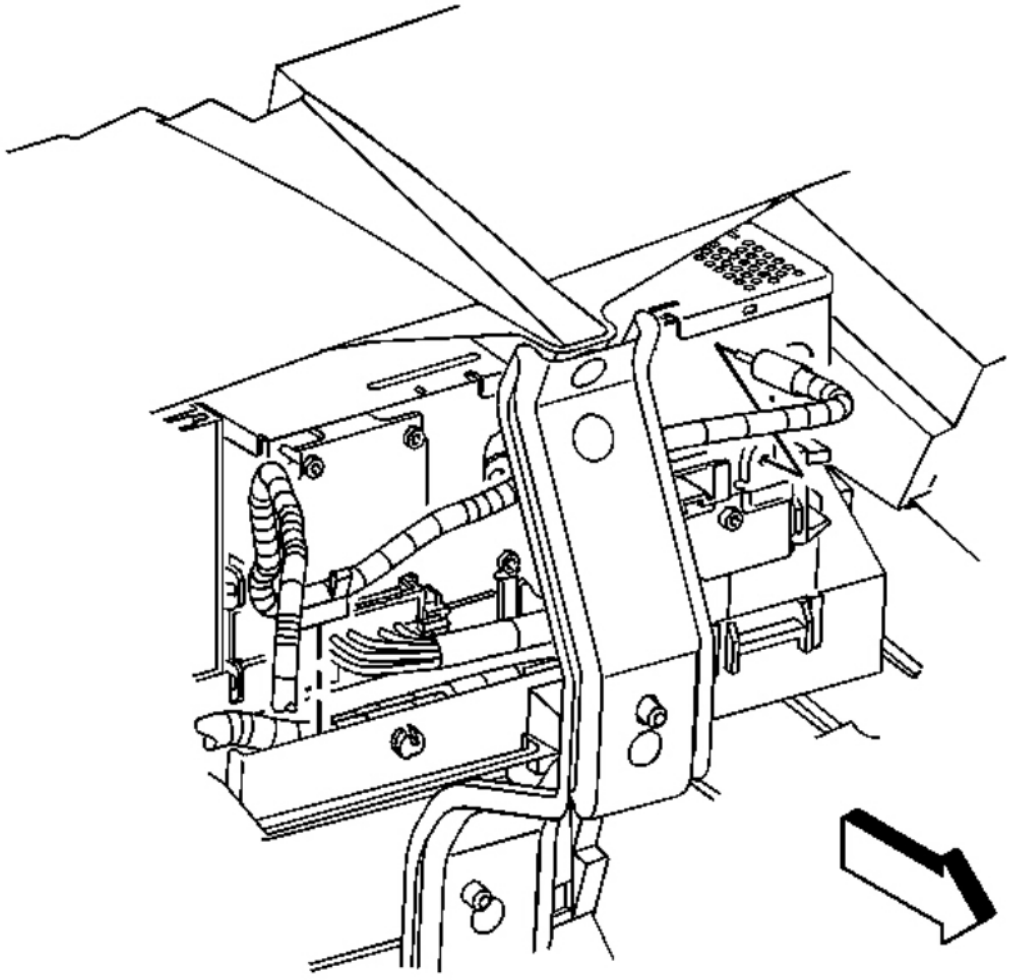


Fig. 55: Disconnecting Extension Cable From Radio
Courtesy of GENERAL MOTORS CORP.

3. Disconnect the extension cable from the HVAC duct.

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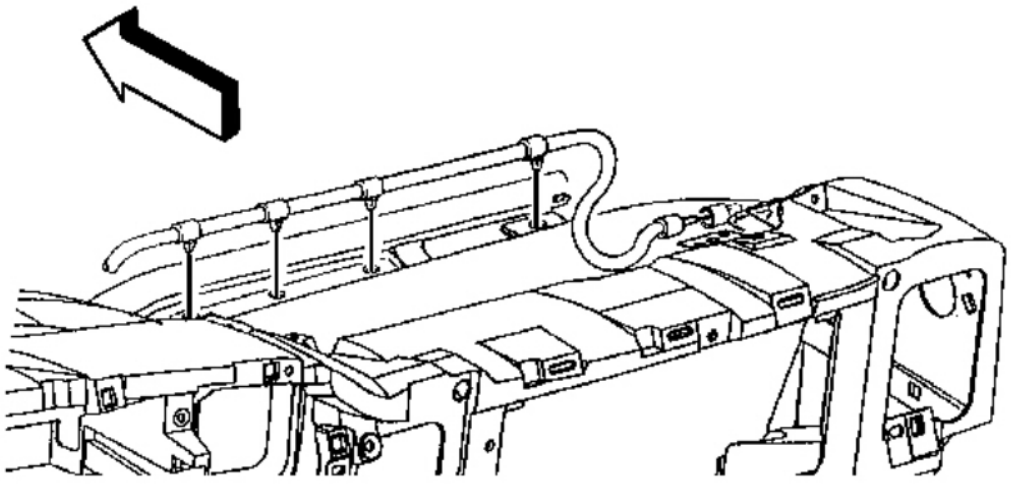


Fig. 56: Disconnecting Extension Cable From HVAC Duct
Courtesy of GENERAL MOTORS CORP.

4. Disconnect the extension cable from the antenna.

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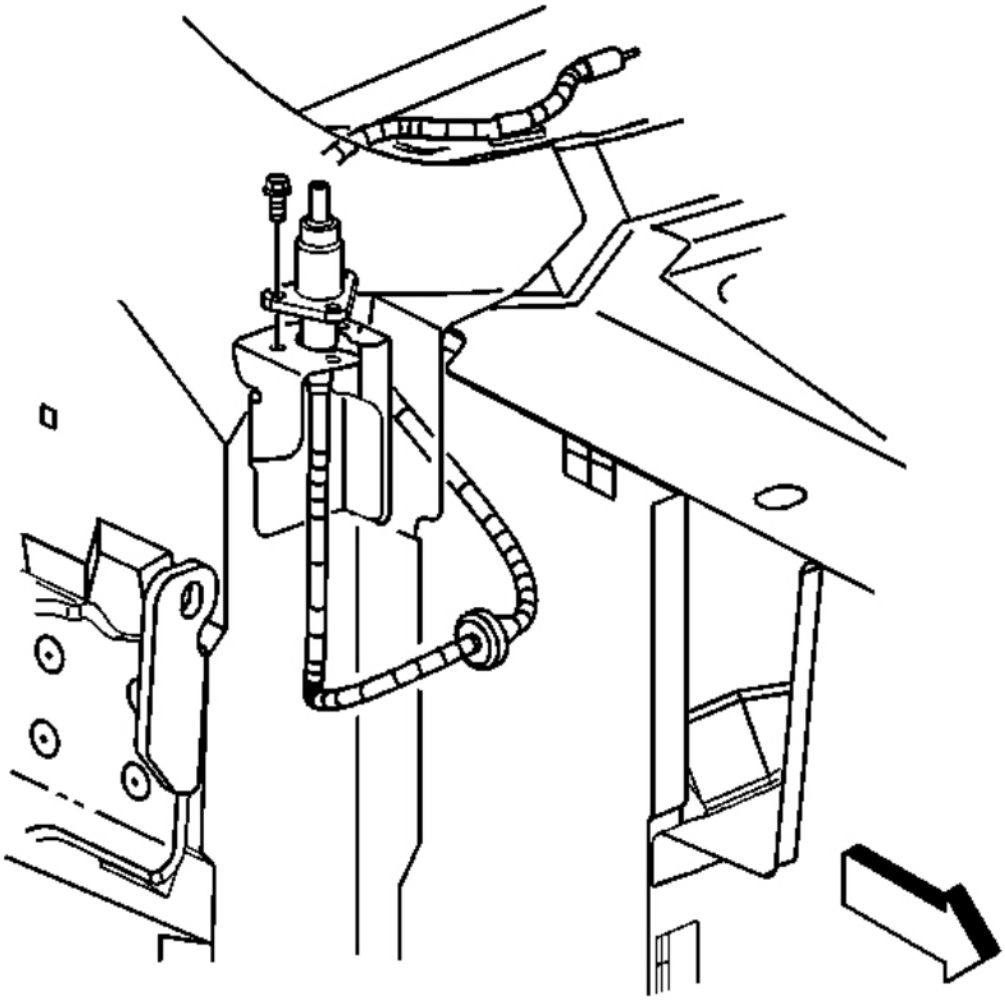


Fig. 57: Disconnecting Extension Cable From Antenna
Courtesy of GENERAL MOTORS CORP.

Installation Procedure

1. Connect the extension cable to the radio.

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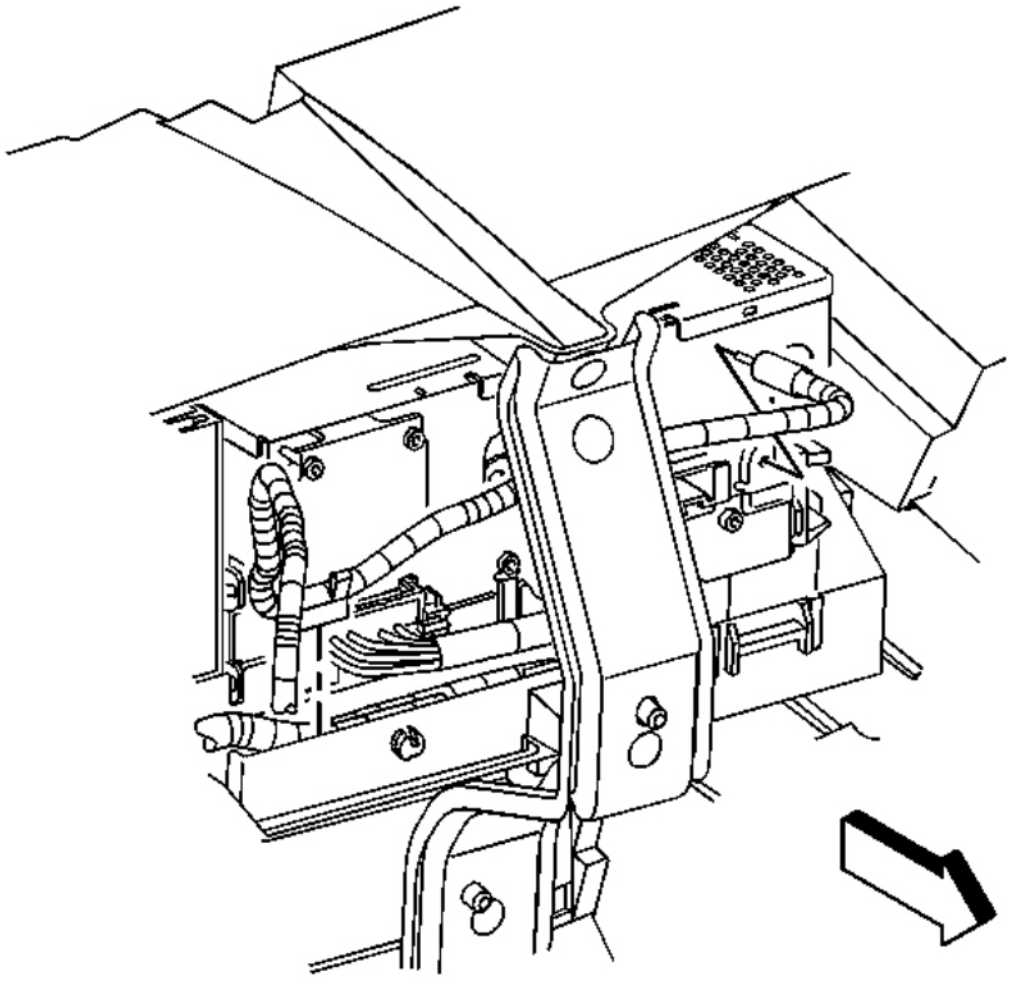


Fig. 58: Connecting Extension Cable To Radio
Courtesy of GENERAL MOTORS CORP.

2. Connect the extension cable to the HVAC duct.

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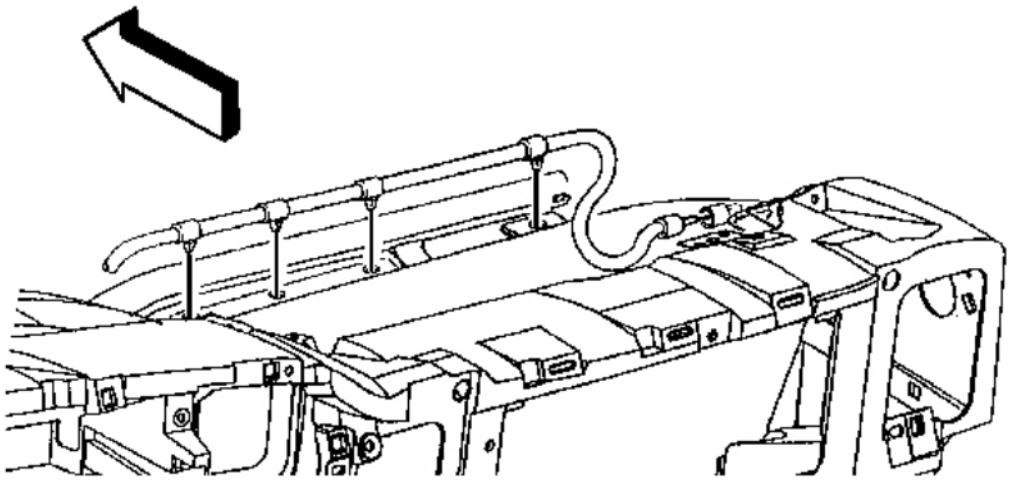


Fig. 59: Connecting Extension Cable To HVAC Duct
Courtesy of GENERAL MOTORS CORP.

3. Connect the extension cable to the antenna.

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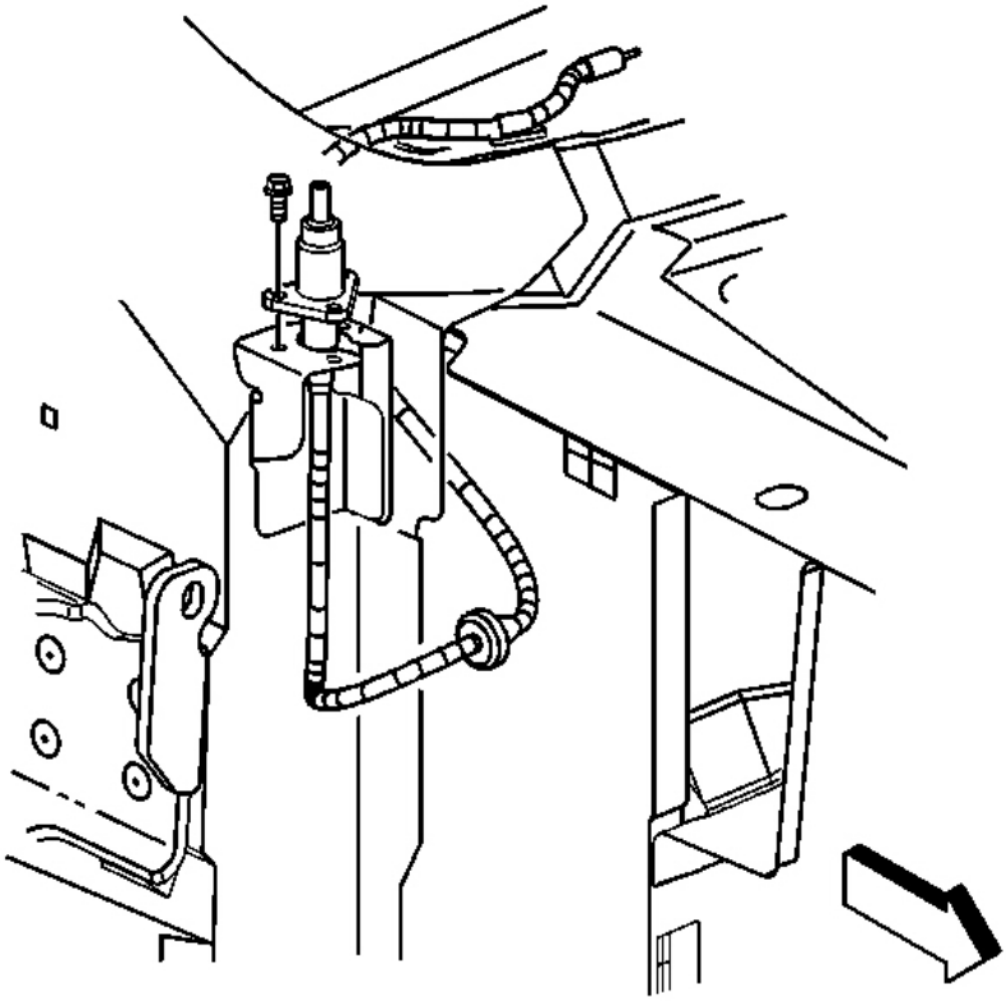


Fig. 60: Connecting Extension Cable To Antenna
Courtesy of GENERAL MOTORS CORP.

4. Install the instrument panel trim panel. Refer to **Trim Panel Replacement - Instrument Panel (I/P) Upper** in Instrument Panel, Gages and Console

RADIO ANTENNA MODULE CABLE REPLACEMENT (FROM RADIO TO MODULE)

Removal Procedure

1. Remove the I/P trim panel. Refer to **Trim Panel Replacement - Instrument Panel (I/P) Upper** in Instrument Panel, Gages and Console.

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2. Lower the headliner. Refer to **Headliner Replacement** in Interior Trim.
3. Loosen the bolt retaining the radio antenna module in order to disconnect the electrical connector.
4. Disconnect the cable (2) from the radio antenna module.
5. Remove the cable clips (1) from the roof.

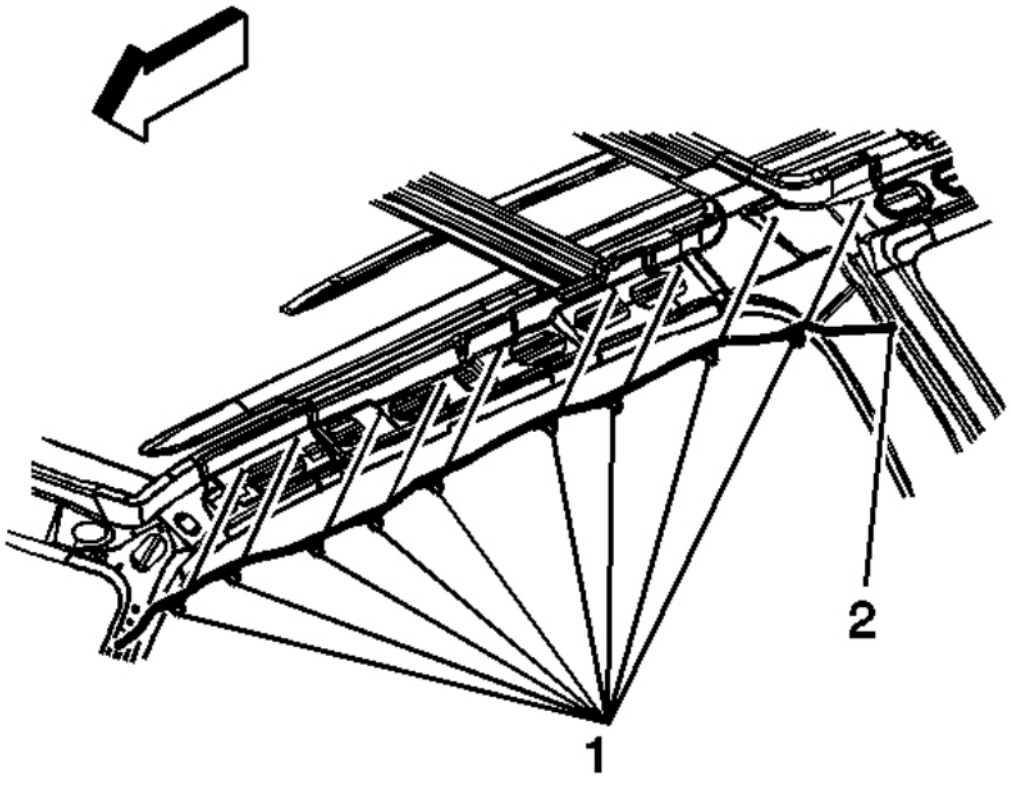


Fig. 61: Removing Cable From Radio Antenna Module & Cable Clips From Roof
Courtesy of GENERAL MOTORS CORP.

6. Remove the cable clips (1) from the A-pillar.
7. Disconnect the cable (3) from the radio.
8. Disconnect the electrical wire connector (4).

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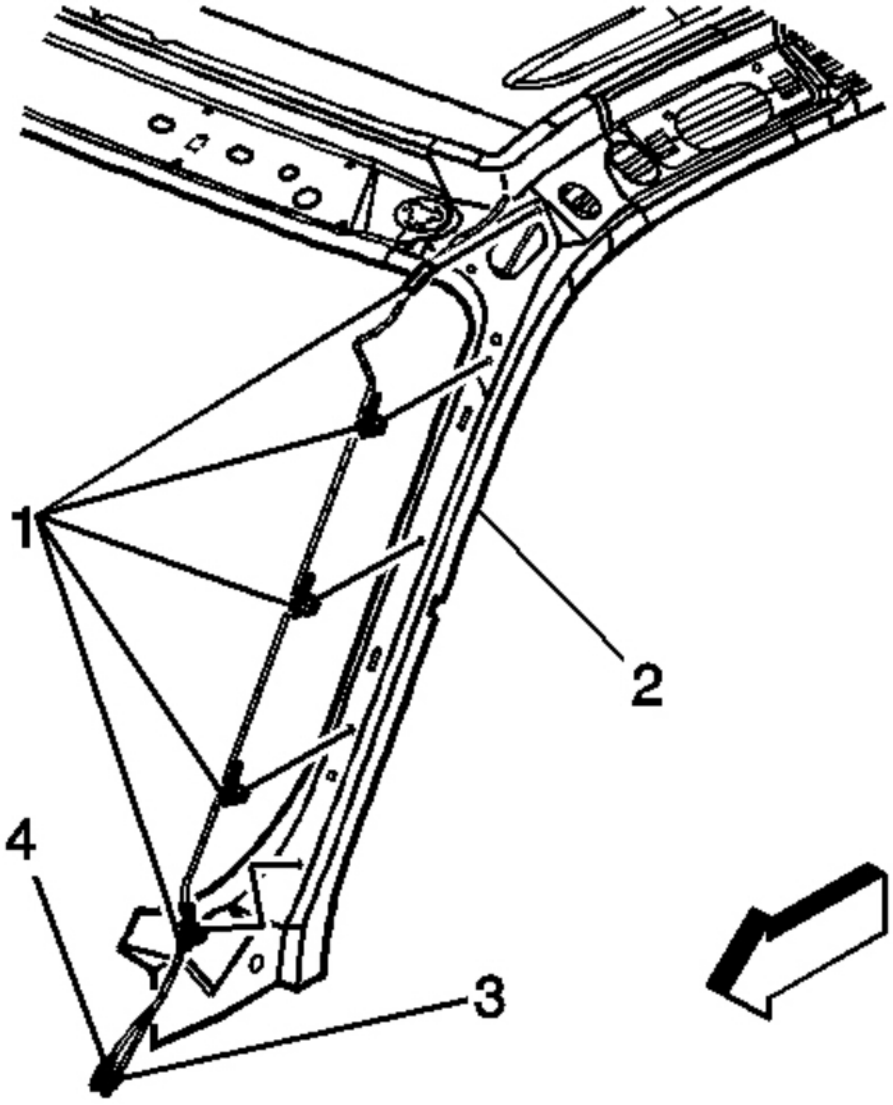


Fig. 62: Removing Cable Clips From A-Pillar & Cable From Radio
Courtesy of GENERAL MOTORS CORP.

9. Remove the radio cable from the vehicle.

Installation Procedure

1. Install the cable clips (1) to the A-pillar.

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2. Connect the electrical wire connector (4).
3. Connect the cable (3) to the radio.

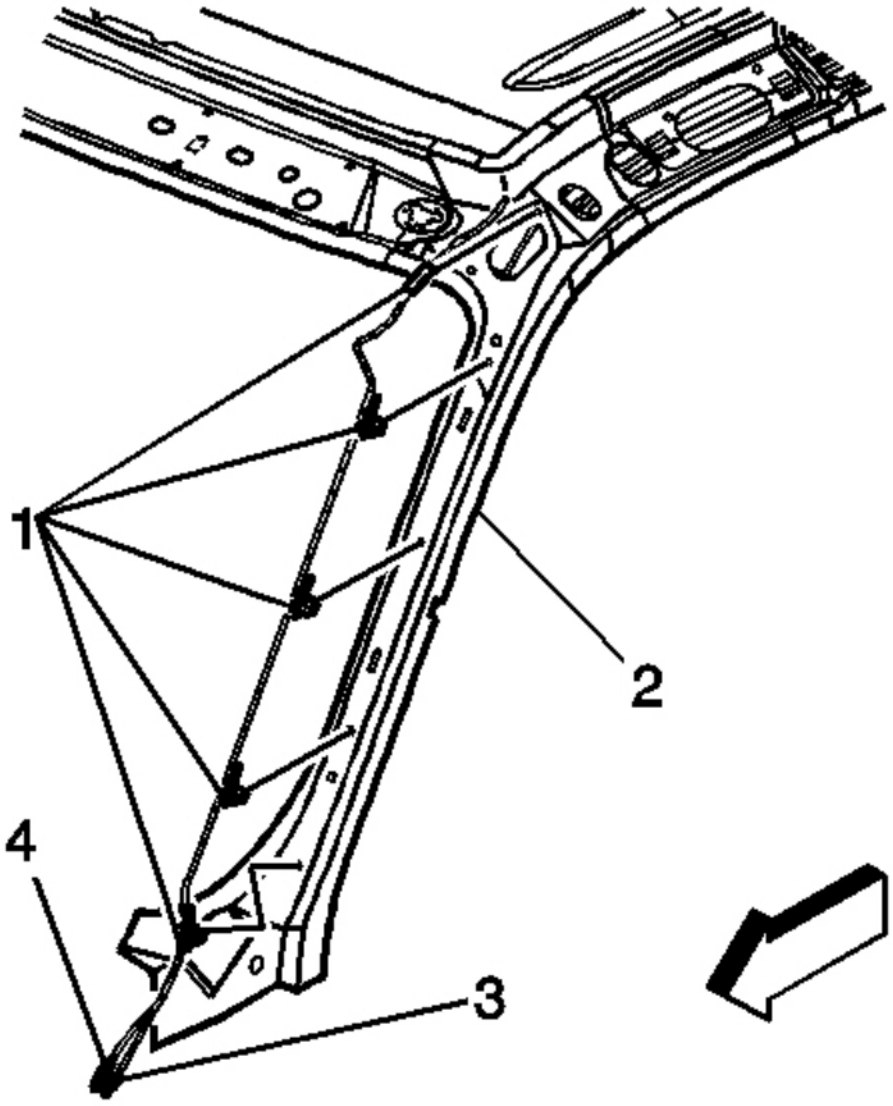


Fig. 63: Installing Cable Clips To A-Pillar & Cable To Radio
Courtesy of GENERAL MOTORS CORP.

4. Install the cable clips (1) to the roof.

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5. Connect the cable (2) to the radio antenna module.
6. Connect the wire connector to the radio antenna module.

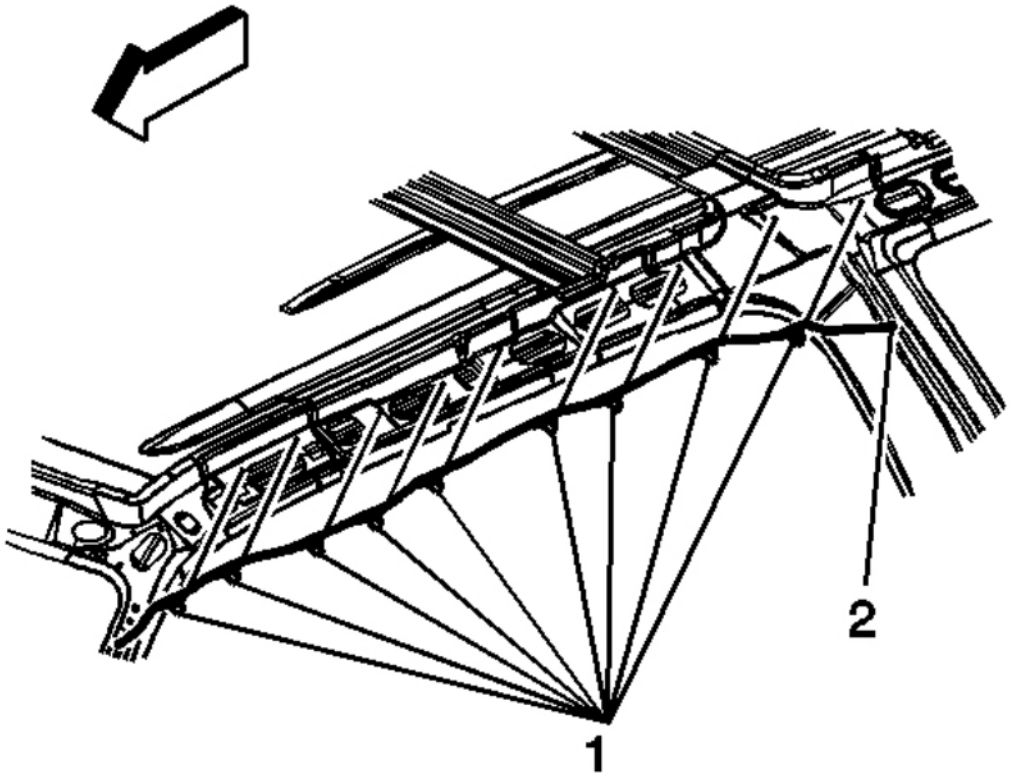


Fig. 64: Installing Cable Clips To Roof & Cable To Radio Antenna Module
Courtesy of GENERAL MOTORS CORP.

NOTE: Refer to Fastener Notice in Cautions and Notices.

7. Install the bolt retaining the radio antenna module to the roof.

   Tighten: Tighten the retaining bolt to 9 N.m (80 lb in).

8. Install the headliner. Refer to **Headliner Replacement** in Interior Trim.
9. Install the I/P trim panel. Refer to **Trim Panel Replacement - Instrument Panel (I/P) Upper** in Instrument Panel, Gages and Console.

COAXIAL CABLE REPLACEMENT - DIGITAL RADIO (PRIMARY)

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Removal Procedure

1. Remove the windshield pillar garnish molding. Refer to **Garnish Molding Replacement - Windshield Pillar** in Interior Trim.
2. Disconnect the XM radio antenna cable (1).

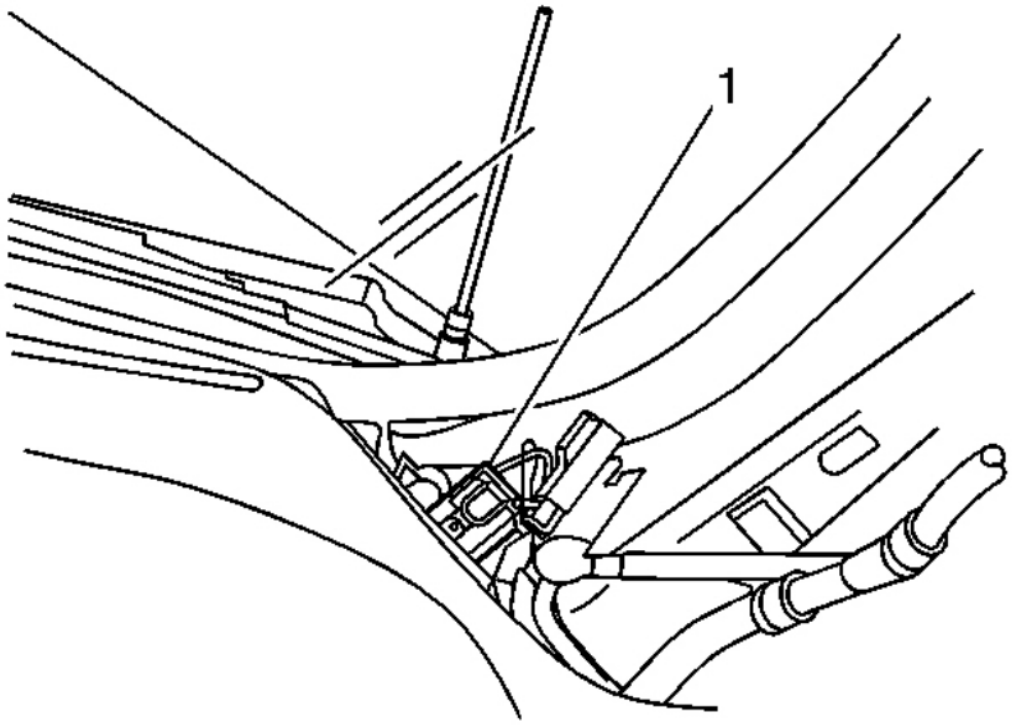


Fig. 65: Disconnecting XM Radio Antenna Cable
Courtesy of GENERAL MOTORS CORP.

NOTE: Use care when removing or installing the headliner. Excessive bending will damage the headliner.

3. Lower the front of the headliner. Refer to **Headliner Replacement** in Interior Trim.
4. Disconnect the XM antenna cable from the antenna connection above the headliner.
5. Remove the cable clips from the windshield pillar and remove the antenna cable from the vehicle.

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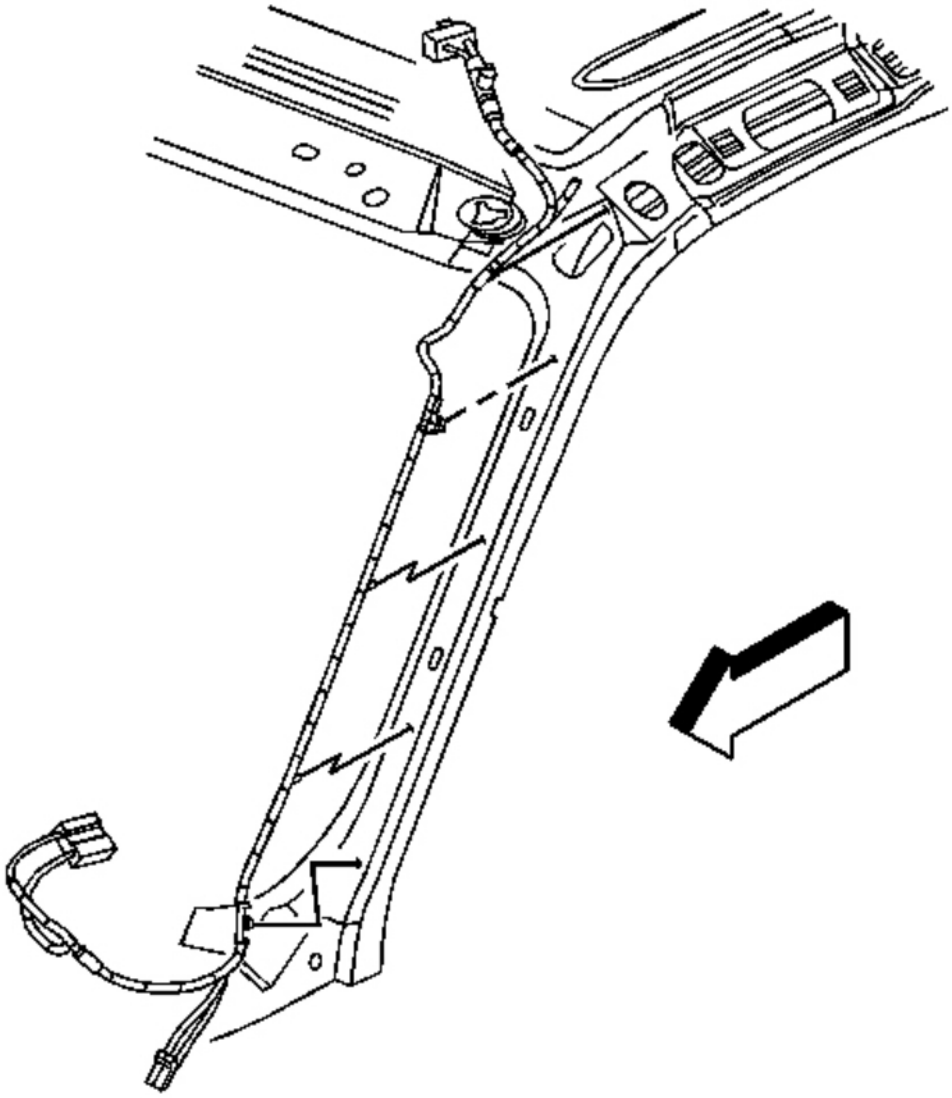


Fig. 66: Removing XM Antenna Cable
Courtesy of GENERAL MOTORS CORP.

Installation Procedure

1. Install the XM antenna cable and clips to the windshield pillar.
2. Connect the cable to the antenna connection above the headliner.

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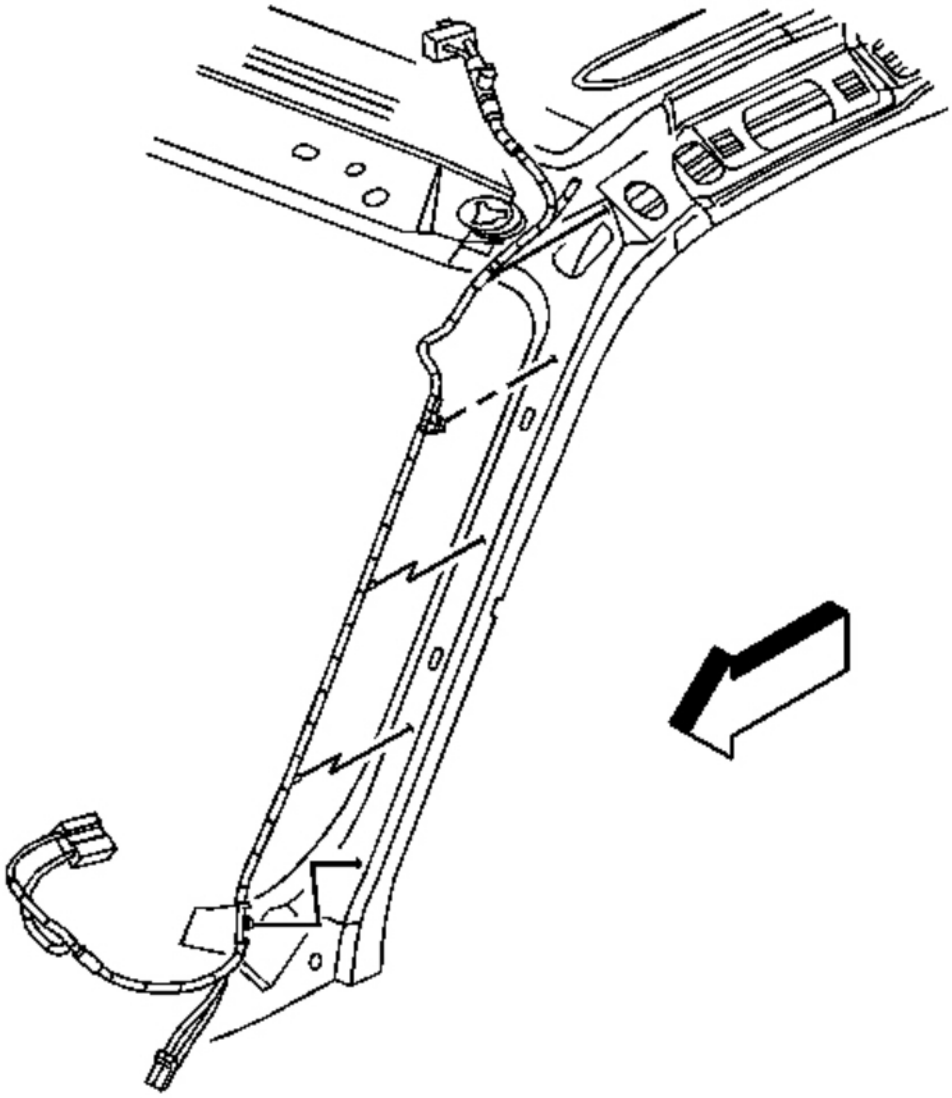


Fig. 67: Installing XM Antenna Cable
Courtesy of GENERAL MOTORS CORP.

3. Install the headliner. Refer to **Headliner Replacement** in Interior Trim.
4. Connect the XM radio antenna cable (1) at the IP.

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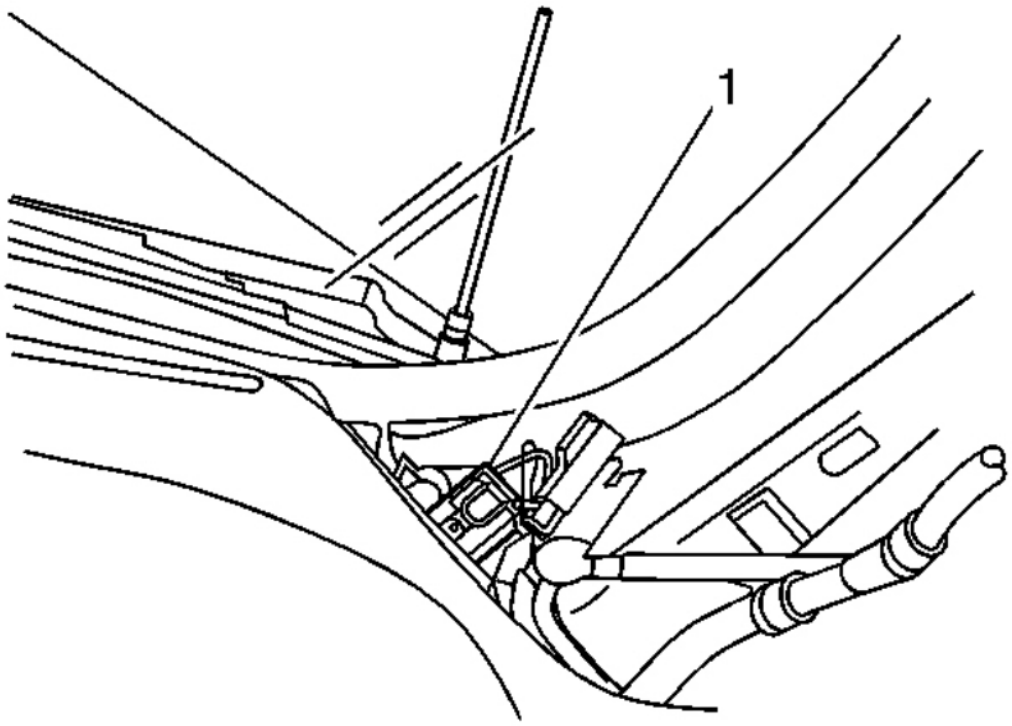


Fig. 68: Connecting XM Radio Antenna Cable
Courtesy of GENERAL MOTORS CORP.

5. Install the windshield pillar garnish molding. Refer to **Garnish Molding Replacement - Windshield Pillar** in Interior Trim.

COAXIAL CABLE REPLACEMENT - DIGITAL RADIO (EXTENSION)

Removal Procedure

1. Remove the upper trim panel from the instrument panel (I/P). Refer to **Trim Panel Replacement - Instrument Panel (I/P) Upper** in Instrument Panel, Gages and Console.
2. Disconnect the digital radio antenna cable (1).

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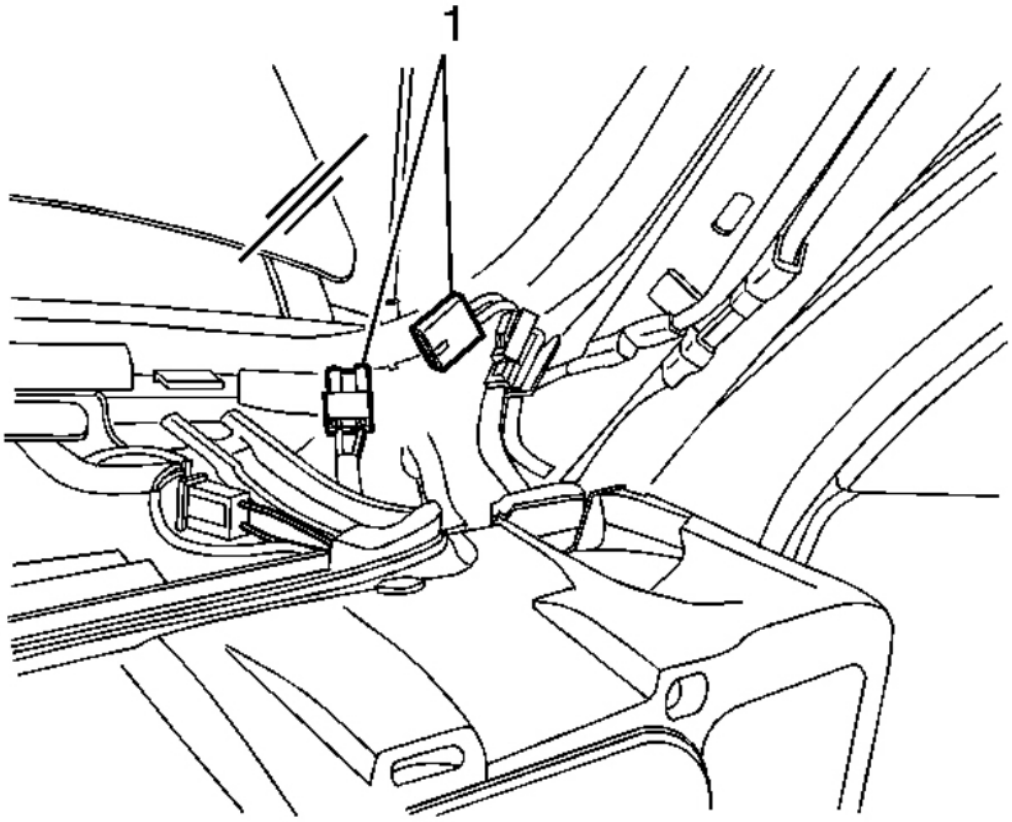


Fig. 69: Disconnecting Digital Radio Antenna Cable
Courtesy of GENERAL MOTORS CORP.

3. Fully open the I/P storage compartment in order to access the digital receiver (3).
4. Disconnect the antenna cable (2) from the digital receiver (3).
5. Disengage the antenna cable clips (4, 6) from the I/P.
6. Remove the digital radio antenna extension cable (5).

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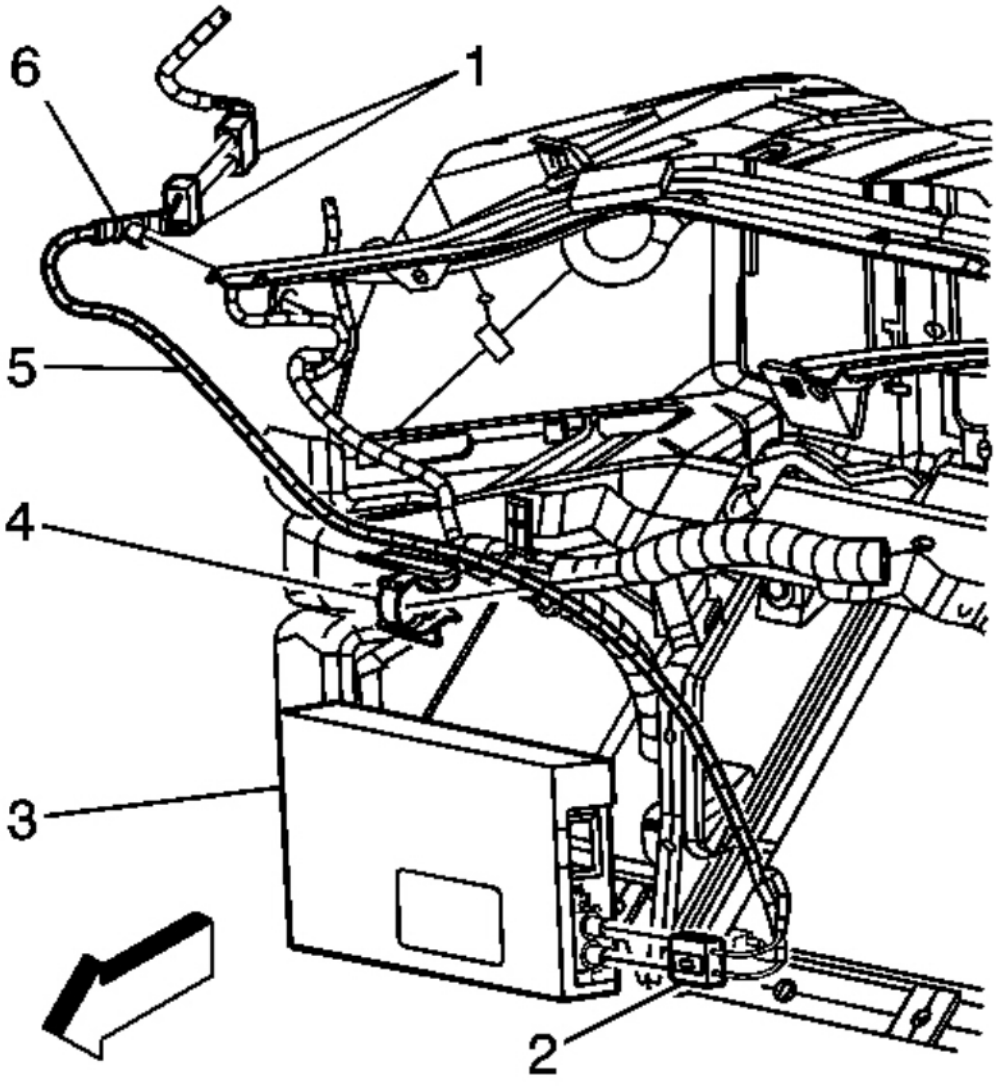


Fig. 70: Removing Digital Radio Antenna Extension Cable Clips & Cable
Courtesy of GENERAL MOTORS CORP.

Installation Procedure

1. Install the digital radio extension cable (5) to the I/P.
2. Engage the antenna cable clips (4, 6) to the I/P.
3. Connect the antenna cable (2) to the digital receiver (3).

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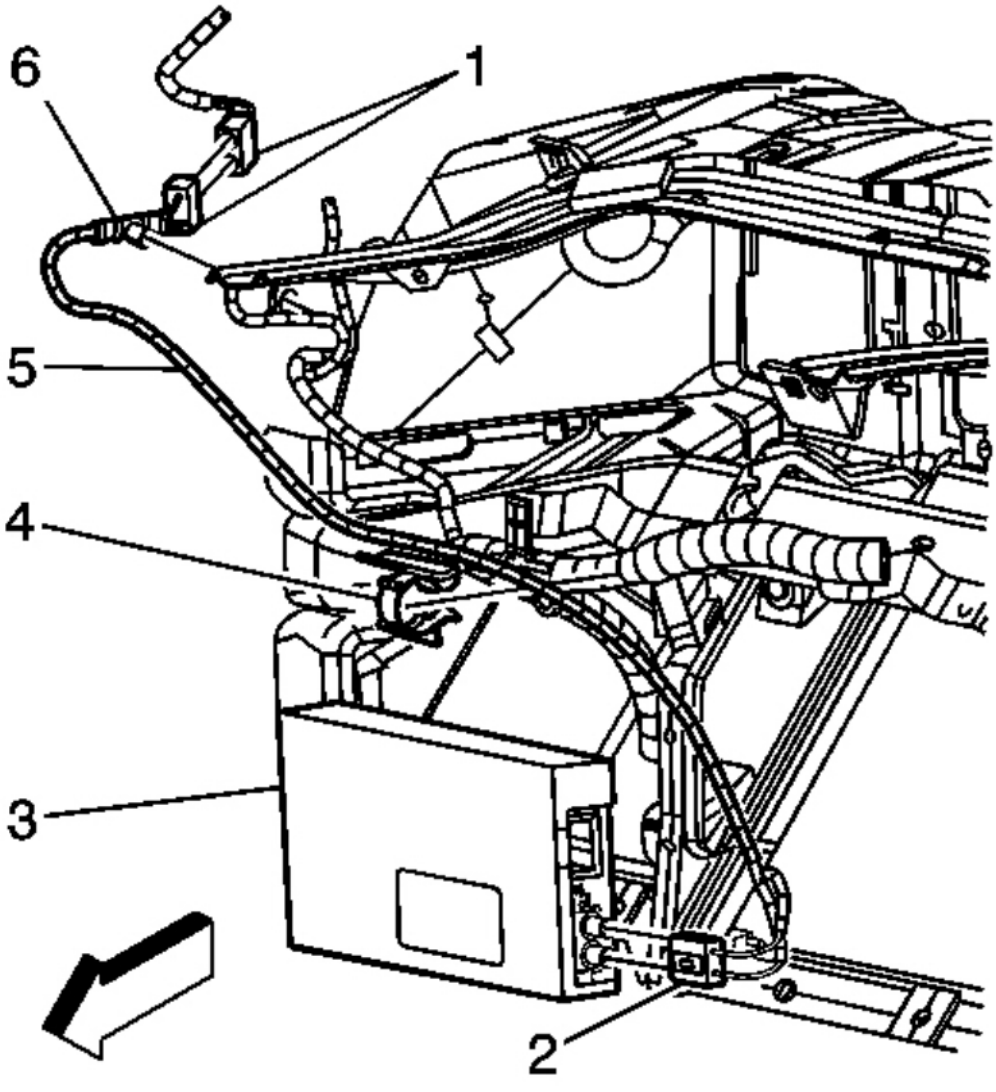


Fig. 71: Installing Digital Radio Extension Cable & Clips
Courtesy of GENERAL MOTORS CORP.

4. Connect the digital radio antenna extension cable to the digital radio antenna cable (1).

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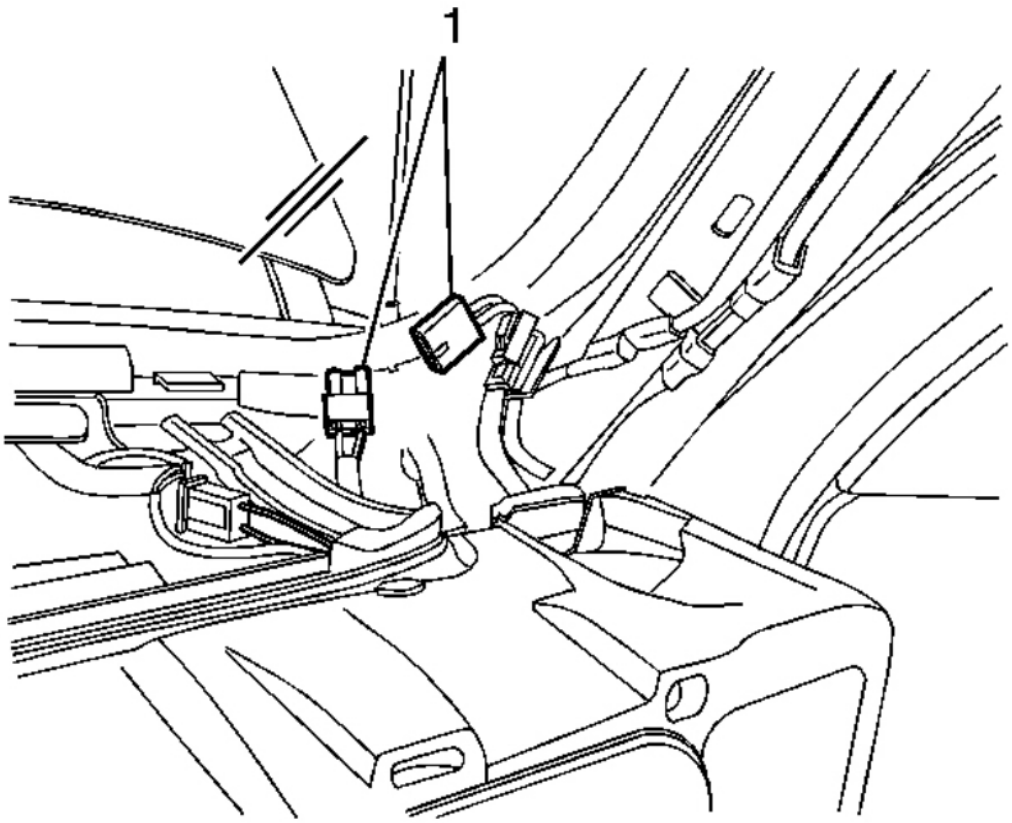


Fig. 72: Connecting Digital Radio Antenna Extension Cable
Courtesy of GENERAL MOTORS CORP.

5. Install the I/P upper trim panel. Refer to **Trim Panel Replacement - Instrument Panel (I/P) Upper** in Instrument Panel, Gages and Console.
6. Close the I/P storage compartment.

SPEAKER REPLACEMENT - FRONT FLOOR CONSOLE (SUBWOOFER SPEAKER)

Removal Procedure

1. Remove the 2 front seats. Refer to **Seat Replacement - Front Bucket** in Seats.
2. Move the center console rearward slightly in order to disconnect the wire connector.
3. Move the console rearward to gain access to the subwoofer speaker.
4. Remove the 4 retaining bolts from the speaker.
5. Disconnect the wire connector.

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6. Remove the speaker from the subwoofer assembly.

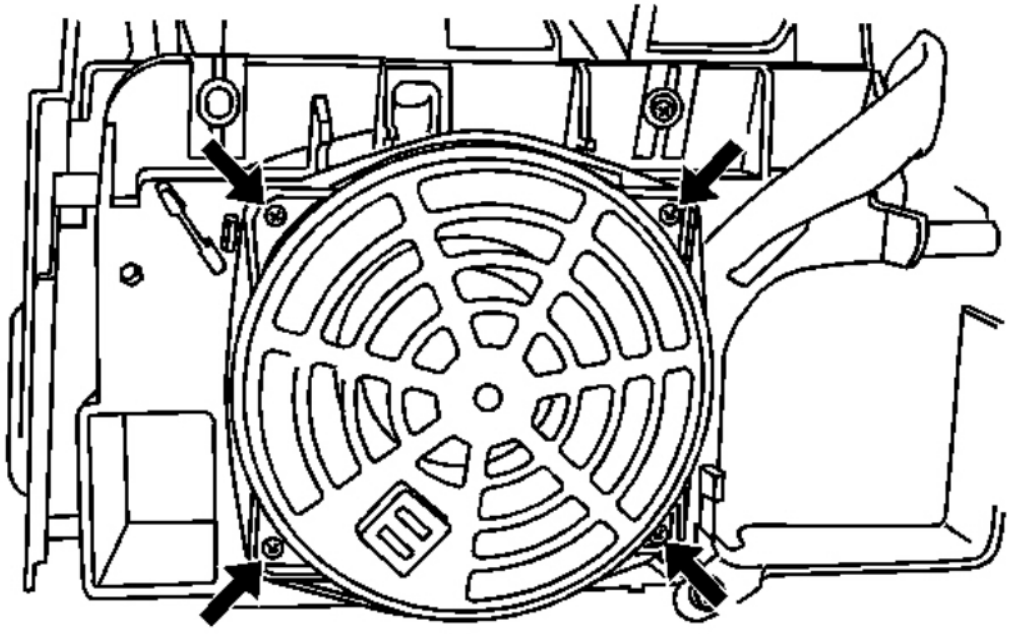


Fig. 73: Removing Subwoofer Speaker Bolts
Courtesy of GENERAL MOTORS CORP.

Installation Procedure

1. Install the speaker into the subwoofer assembly.
2. Connect the wire connector.

NOTE: Refer to Fastener Notice in Cautions and Notices.

3. Install the 4 retaining screws.

   Ensure the screw follows the same thread in the screw boss so that a new thread is not formed.

   Tighten: Tighten the screws to 6 N.m (53 lb in).

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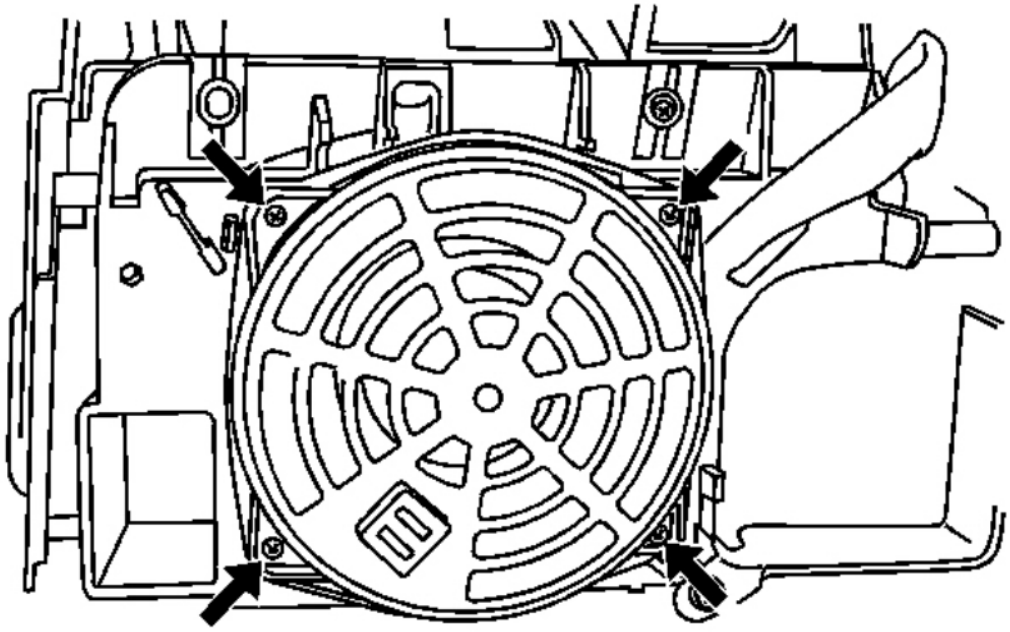


Fig. 74: Installing Subwoofer Speaker Screws
Courtesy of GENERAL MOTORS CORP.

4. Move the console forward in order to connect the wire connector.
5. Install the console to the I/P. Refer to **Console Replacement (w/Console Mounting Bracket)** or **Console Replacement (w/o Console Mounting Bracket)** in Instrument Panel, Gages and Console.
6. Install the 2 front seats. Refer to **Seat Replacement - Front Bucket** in Seats.

SPEAKER REPLACEMENT - FRONT (WINDSHIELD PILLAR SPEAKER)

Removal Procedure

1. Remove the windshield garnish molding (2). Refer to **Garnish Molding Replacement - Windshield Pillar** .
2. Disconnect the electrical connector (3) to the speaker.
3. Remove the speaker (1) by press until it is out of the molding.

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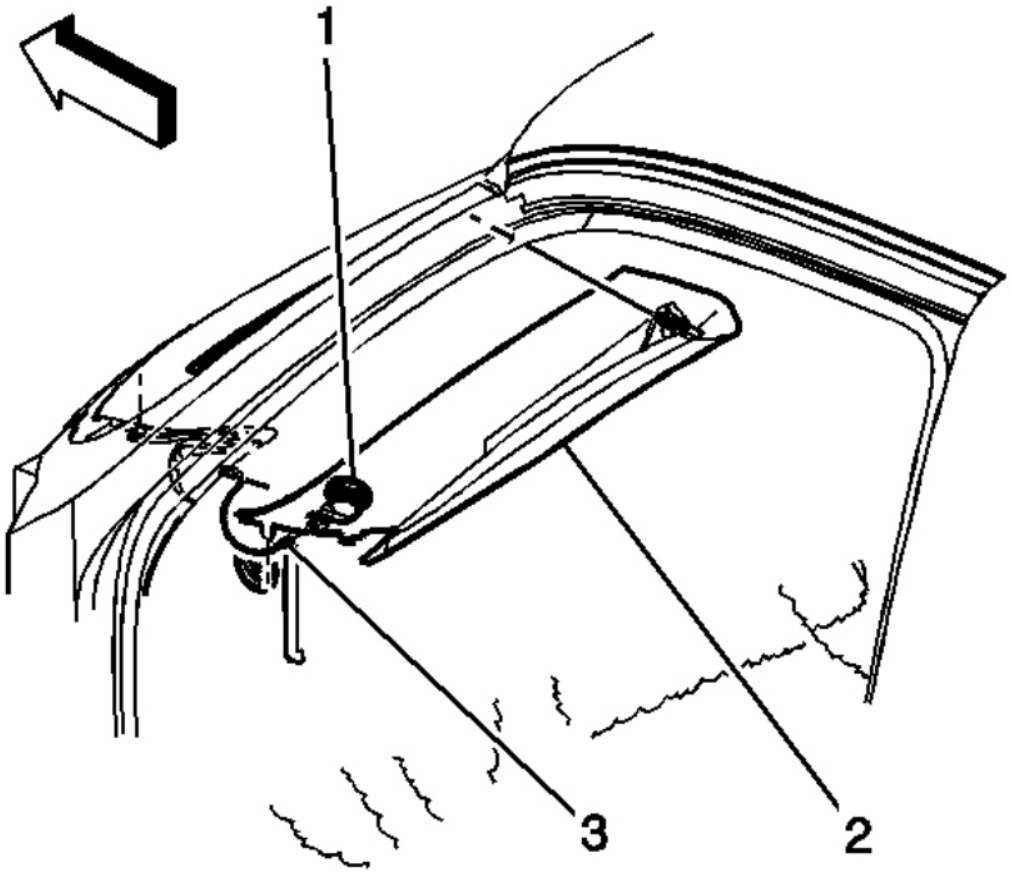


Fig. 75: Removing Front Windshield Pillar Speaker
Courtesy of GENERAL MOTORS CORP.

Installation Procedure

1. Press in the speaker (1) until it is fully seated.
2. Connect the electrical connector (3).
3. Install the windshield garnish molding (2). Refer to **Garnish Molding Replacement - Windshield Pillar** .

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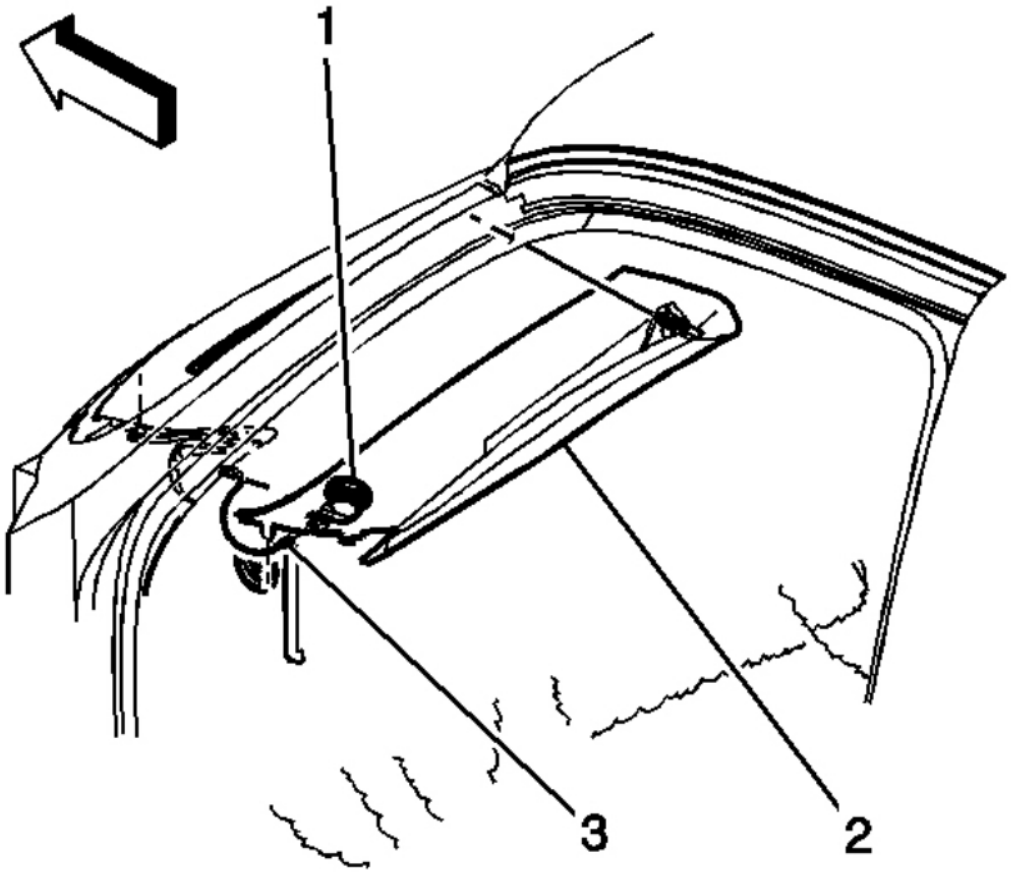


Fig. 76: Installing Front Windshield Pillar Speaker
Courtesy of GENERAL MOTORS CORP.

SPEAKER REPLACEMENT - FRONT DOOR

Removal Procedure

1. Remove the trim panel. Refer to **Trim Panel Replacement - Side Front Door (With YE9 Early Production)** or **Trim Panel Replacement - Side Front Door (With YE9 Late Production)** in Doors.
2. Remove the speaker by pushing down on the top retainer.
3. Disconnect the electrical connector.

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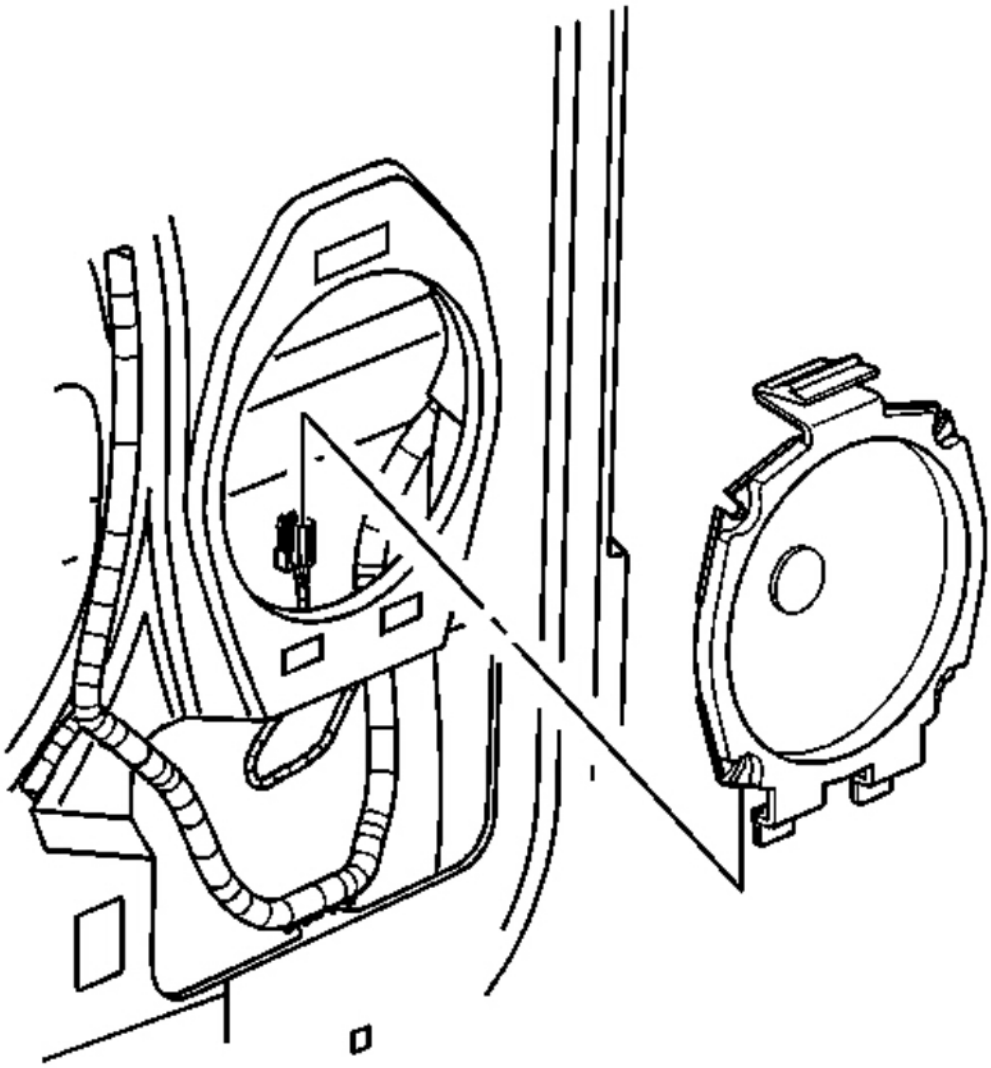


Fig. 77: Removing Front Door Speaker
Courtesy of GENERAL MOTORS CORP.

Installation Procedure

1. Connect the electrical connector.
2. Install the speaker.

Push the speaker into place. Ensure that the speaker is completely seated.

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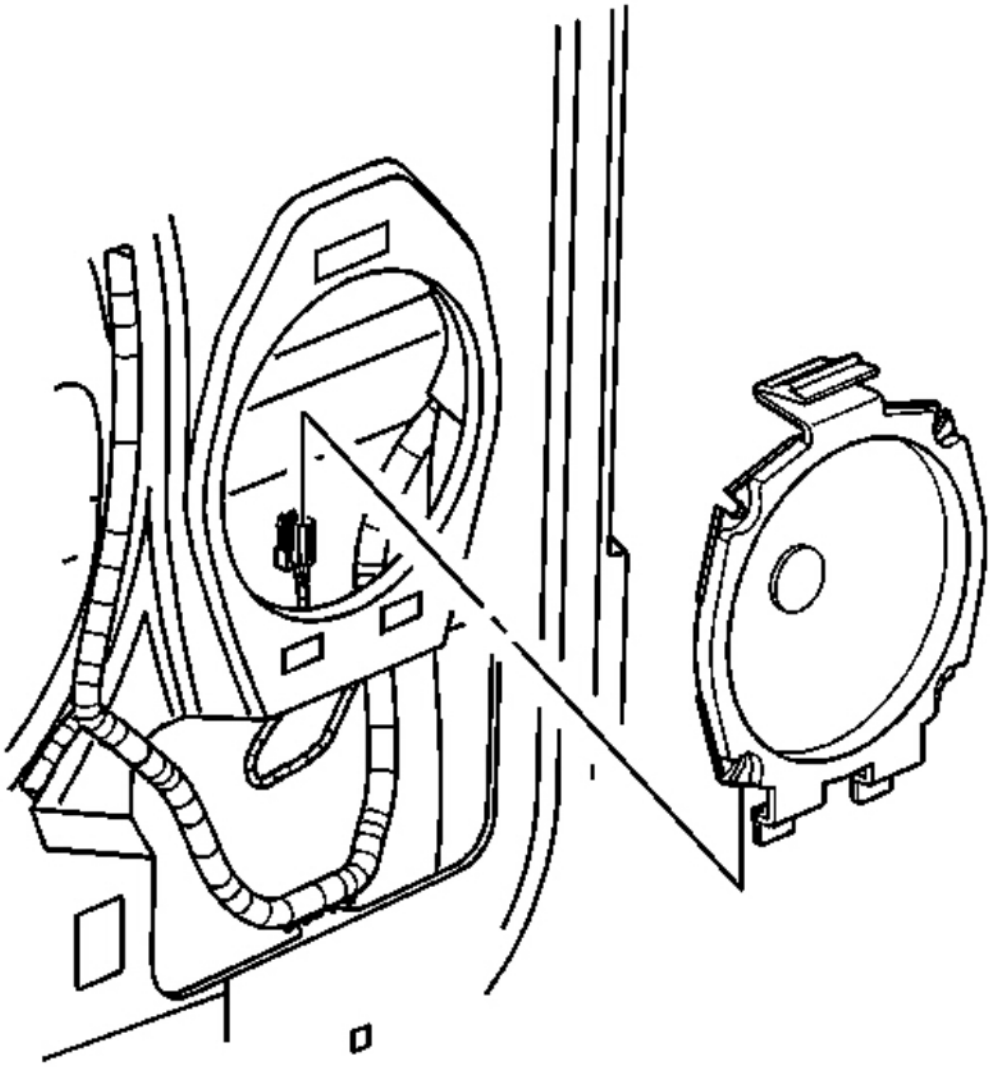


Fig. 78: Installing Front Door Speaker
Courtesy of GENERAL MOTORS CORP.

3. Install the trim panel. Refer to **Trim Panel Replacement - Side Front Door (With YE9 Early Production)** or **Trim Panel Replacement - Side Front Door (With YE9 Late Production)** in Doors.
4. Inspect the component operation.

SPEAKER REPLACEMENT - REAR PILLAR (UTILITY)

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Removal Procedure

1. Remove the garnish molding. Refer to **Garnish Molding Replacement - Rear Upper (Avalanche/Escalade EXT)** or **Garnish Molding Replacement - Rear Upper (Tahoe/Yukon/Escalade/Suburban)** in Interior Trim.
2. Remove the garnish molding. Refer to **Garnish Molding Replacement - Rear Corner** in Interior Trim.
3. Remove the speaker.
4. Disconnect the electrical connectors, as necessary.

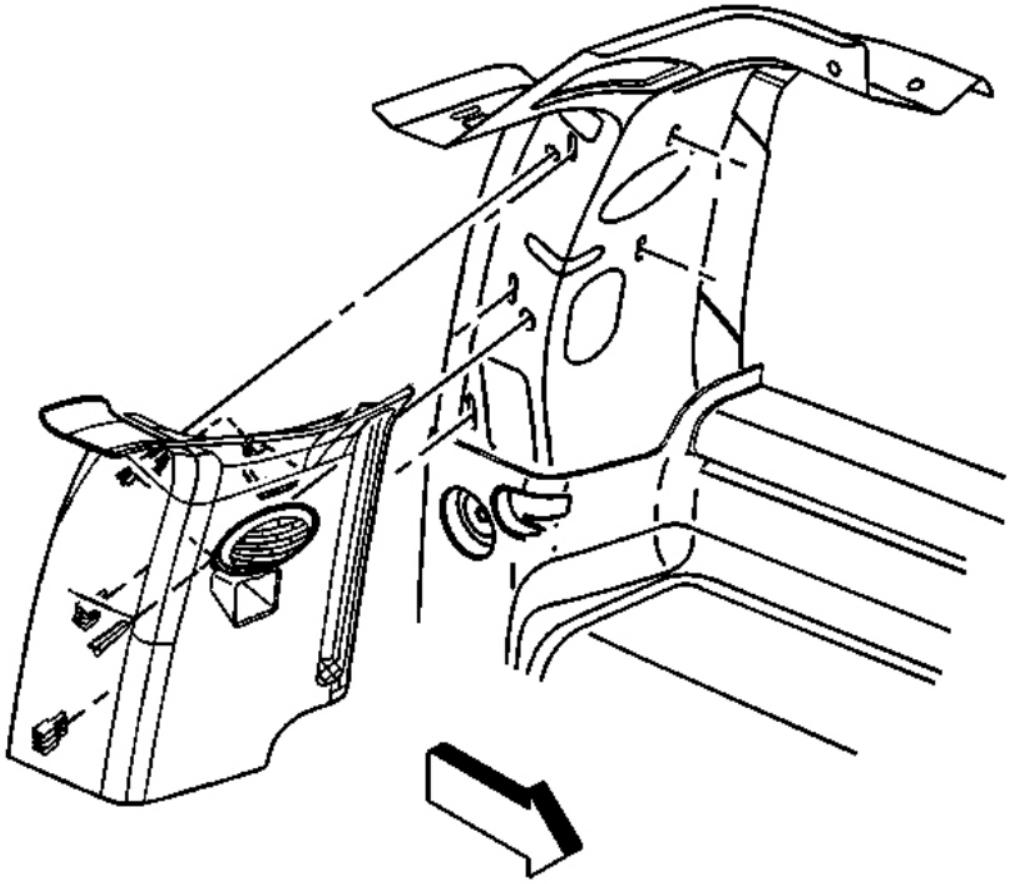


Fig. 79: Removing Rear Pillar Speaker
Courtesy of GENERAL MOTORS CORP.

Installation Procedure

1. Connect the electrical connectors, as necessary.

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2. Install the speaker.

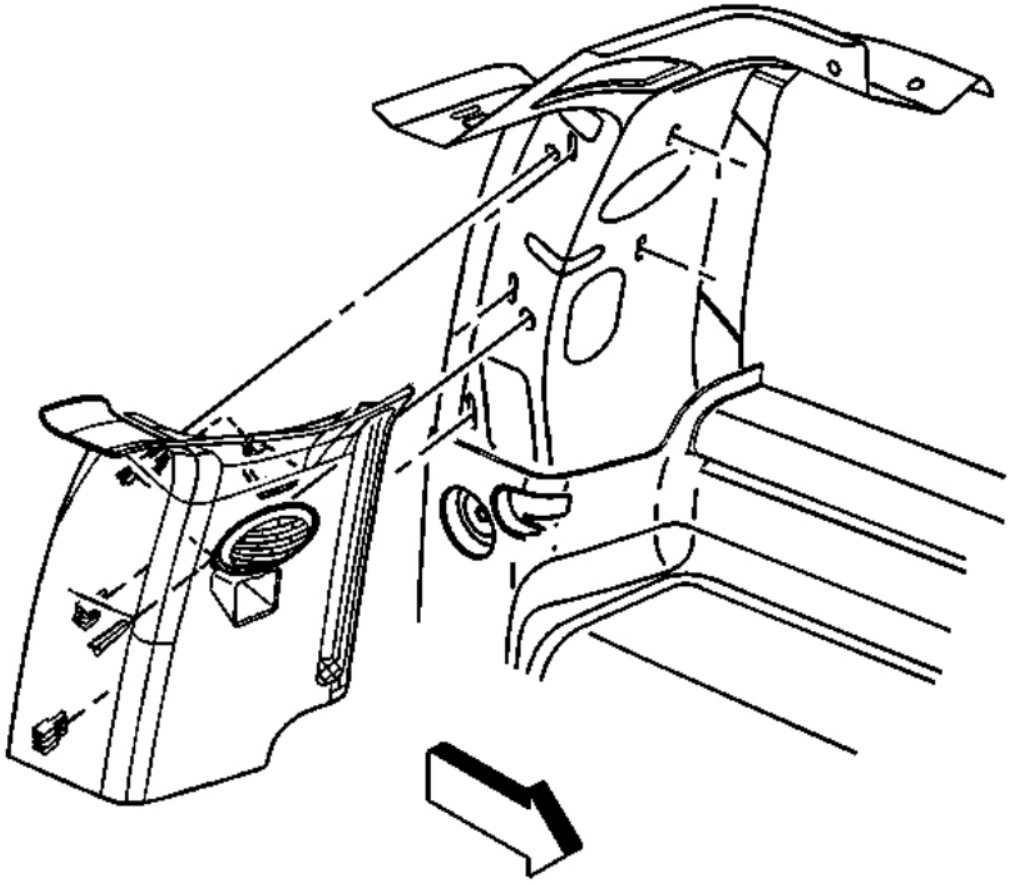


Fig. 80: Installing Rear Pillar Speaker
Courtesy of GENERAL MOTORS CORP.

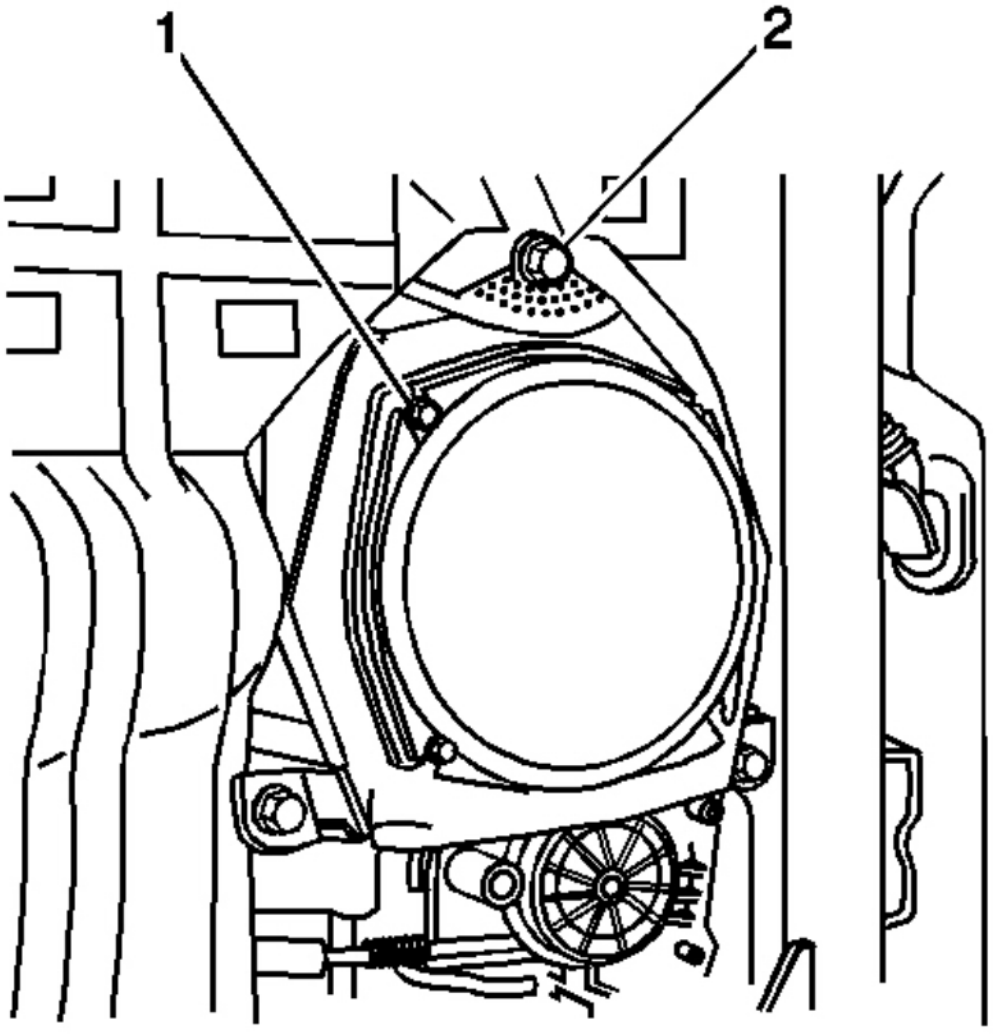
3. Install the garnish molding. Refer to **Garnish Molding Replacement - Rear Corner** in Interior Trim.
4. Install the garnish molding. Refer to **Garnish Molding Replacement - Rear Upper (Avalanche/Escalade EXT)** or **Garnish Molding Replacement - Rear Upper (Tahoe/Yukon/Escalade/Suburban)** in Interior Trim.
5. Verify the component's operation.

SPEAKER REPLACEMENT - REAR DOOR

Removal Procedure

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1. Remove the door trim panel. Refer to **Trim Panel Replacement - Side Rear Door (Tahoe/Yukon/Escalade)** or **Trim Panel Replacement - Side Rear Door (Suburban/Yukon XL/Avalanche/Escld EXT)** in Doors.
2. Remove the screws (1) retaining the speaker to the mounting bracket.
3. Disconnect the electrical connector from the speaker.
4. Remove the speaker from the mounting bracket.
5. Remove the bolts (2) retaining the speaker mounting bracket to the door, if required.
6. Remove the speaker mounting bracket.



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Fig. 81: Removing Rear Door Speaker Screws & Mounting Bracket Bolts
Courtesy of GENERAL MOTORS CORP.

Installation Procedure

1. Install the speaker mounting bracket.

   NOTE: Refer to Fastener Notice in Cautions and Notices.

2. Install the bolts (2) retaining the speaker mounting bracket to the door, if removed.

   Tighten: Tighten the bolts to 6 N.m (53 lb in).

3. Install the speaker to the mounting bracket.
4. Connect the electrical connector to the speaker.
5. Install the screws (1) that retain the speaker to the mounting bracket.

   Tighten: Tighten the screws to 2 N.m (53 lb in).

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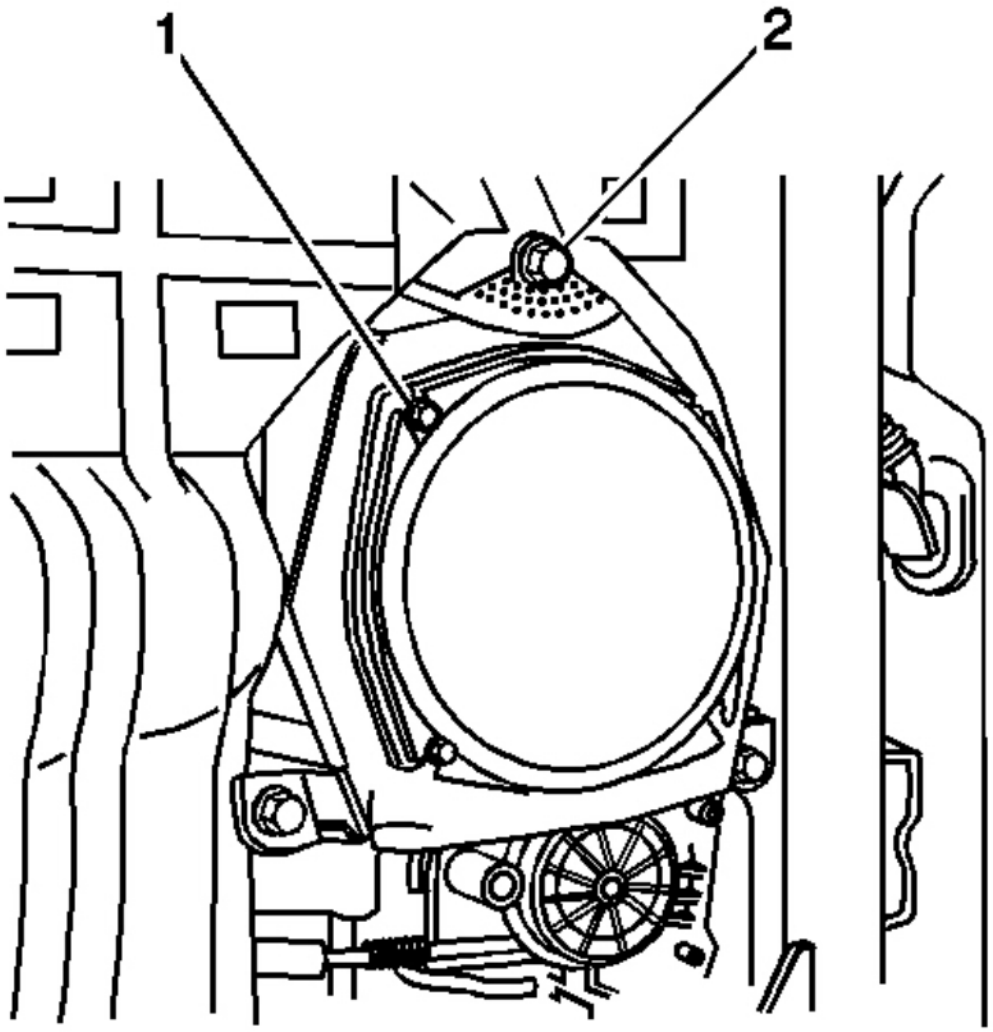


Fig. 82: Installing Speaker Mounting Bracket Bolts & Rear Door Speaker Screws
Courtesy of GENERAL MOTORS CORP.

6. Install the door trim panel. Refer to **Trim Panel Replacement - Side Rear Door (Tahoe/Yukon/Escalade)** or **Trim Panel Replacement - Side Rear Door (Suburban/Yukon XL/Avalanche/Escld EXT)** in Doors.
7. Verify the component operation.

DVD PLAYER REPLACEMENT (2ND ROW)

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Tools Required

J 38778 Door Trim Pad Clip Remover. See **Special Tools and Equipment**.

Removal Procedure

IMPORTANT: Components of the DVD player cannot be serviced separately. Replace as an assembly.

1. Move the screen to the open position.
2. Remove the rear screw cover using a flat bladed tool.
3. Remove the four retaining bolts (2).
4. Insert the **J 38778** between the headliner and the DVD player assembly. See **Special Tools and Equipment**.
5. With 1 hand holding the DVD player assembly, pry the retainer from the bracket.

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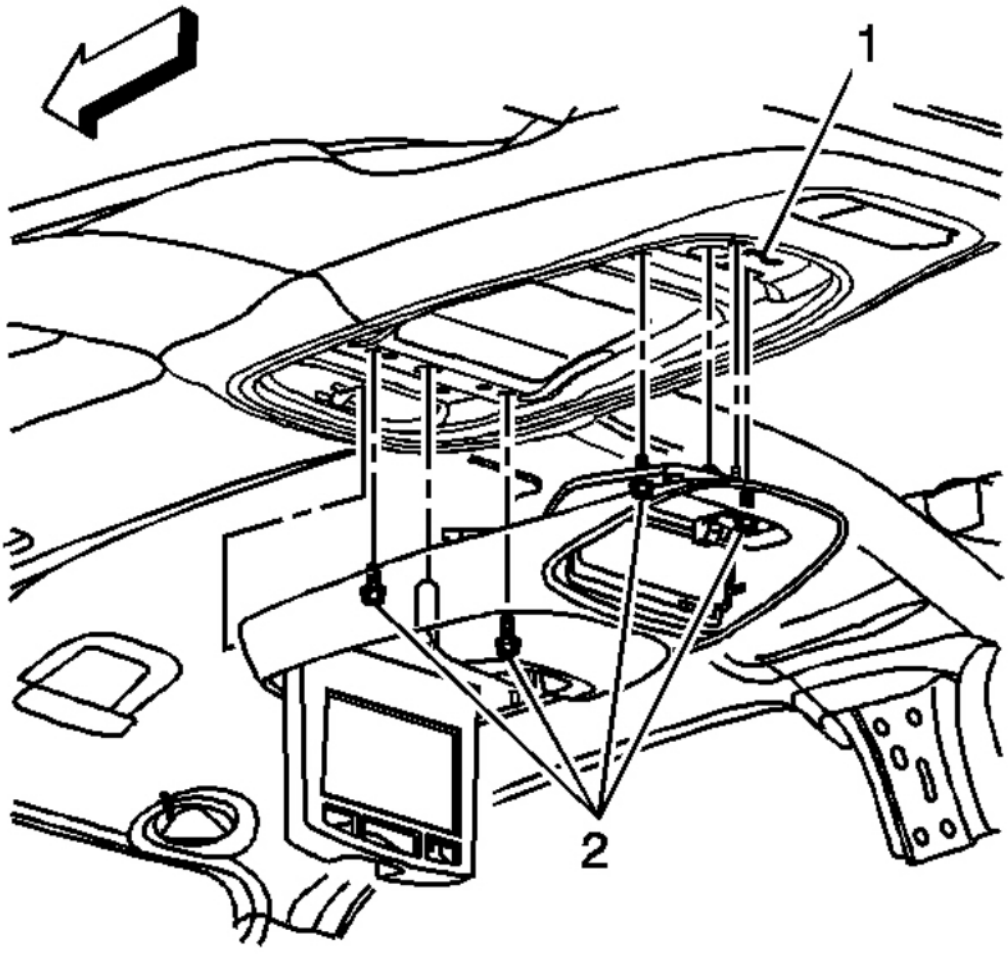


Fig. 83: Removing DVD Player Assembly Retaining Bolts (2nd Row)
Courtesy of GENERAL MOTORS CORP.

6. Allow the DVD player assembly to come to rest on the hook.

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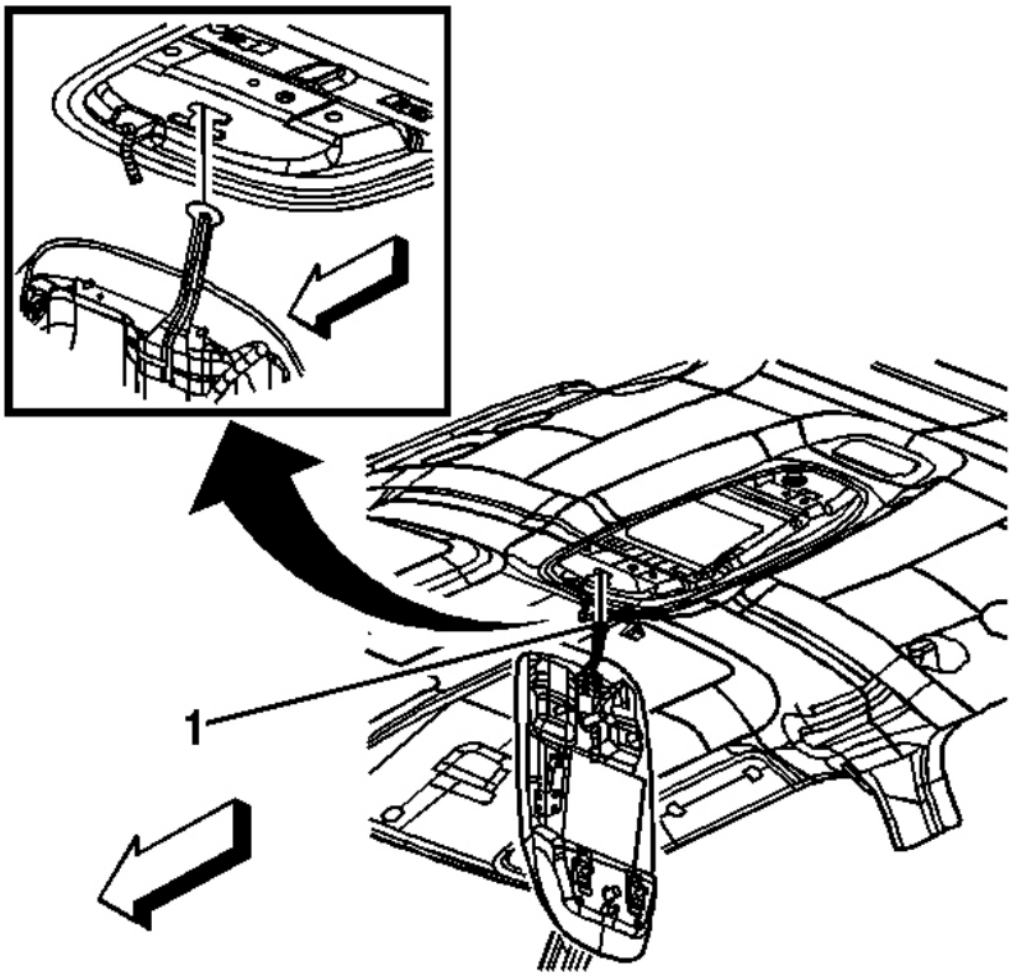


Fig. 84: Allowing DVD Player Assembly To Rest On Hook (2nd Row)
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: Observe the routing of the wiring harness (2).

7. Disconnect the wire connector (1).
8. Slightly lift up the DVD player assembly so that the hook can be removed from its resting position.
9. Remove the DVD player from the vehicle.

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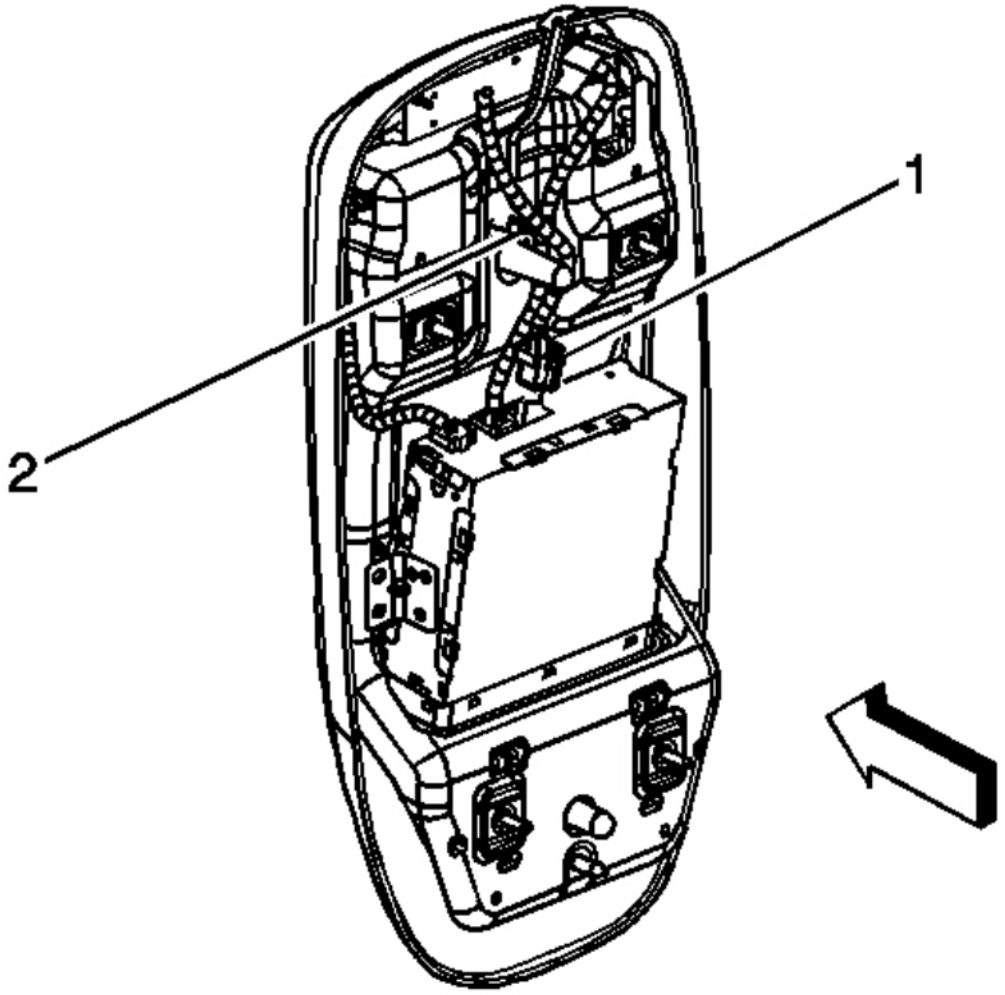


Fig. 85: Disconnecting DVD Player Wire Connector (2nd Row)
Courtesy of GENERAL MOTORS CORP.

Installation Procedure

1. Install the DVD player hook (1) into the hook opening.

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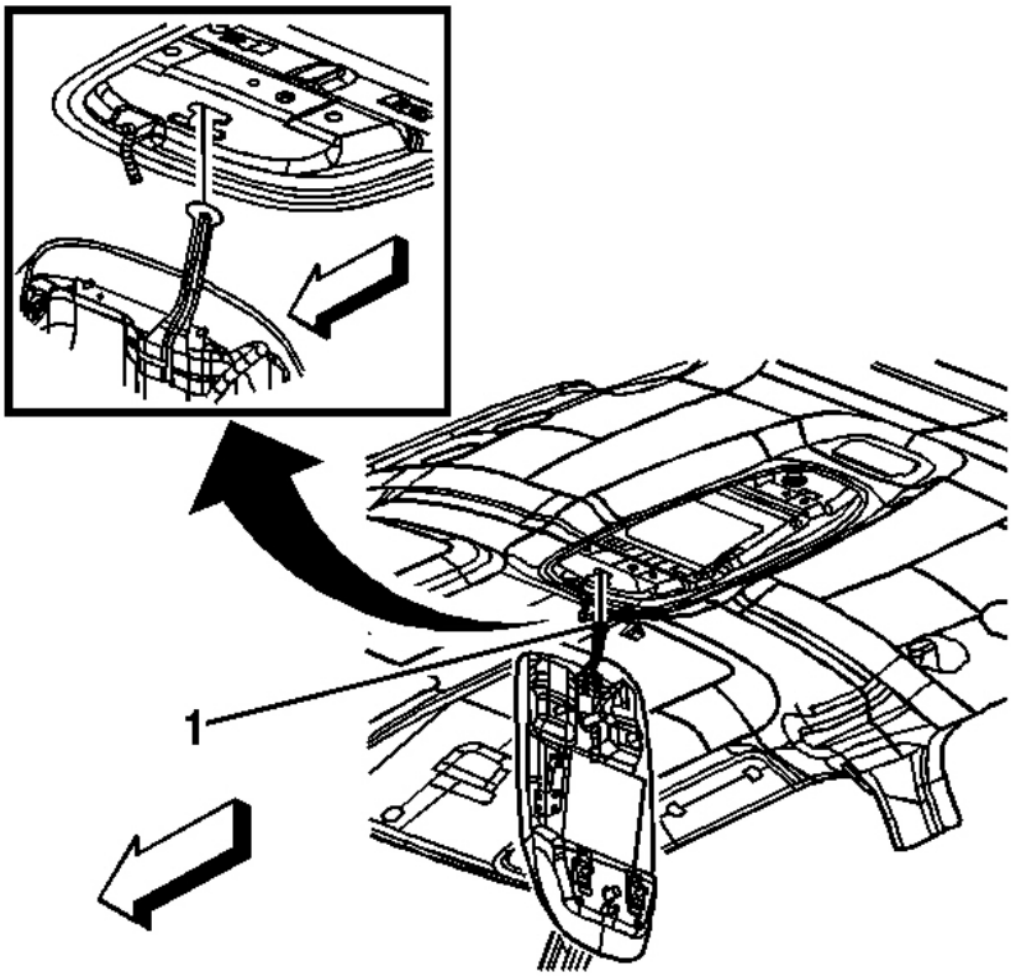


Fig. 86: Installing DVD Player Hook (2nd Row)
Courtesy of GENERAL MOTORS CORP.

2. Connect the wire connector (1) to the DVD player assembly.

IMPORTANT: Ensure the harness is routed to the right side of the large plastic pin as shown (2).

3. Install the harness retainer to the panel.

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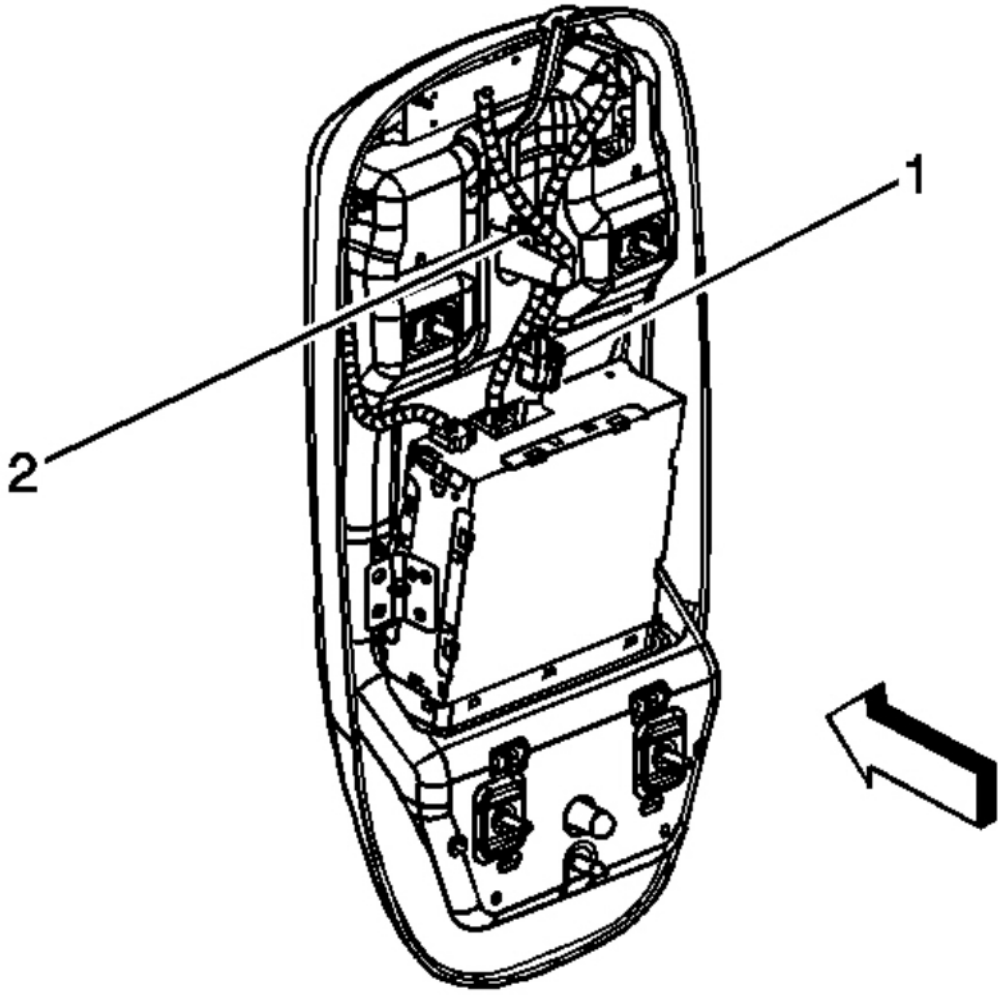


Fig. 87: Connecting DVD Player Wire Connector (2nd Row)
Courtesy of GENERAL MOTORS CORP.

4. Swing the rear part of the assembly to the headliner so that the retainer is seated.

NOTE: **Refer to Fastener Notice in Cautions and Notices.**

5. Install the two rear retaining bolts.

Tighten: Tighten the 2 rear retaining bolts to 9 N.m (80 lb in).

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6. Move the screen to the open position.
7. Install the 2 front retaining bolts (2).

   Tighten: Tighten the 2 front retaining bolts to 9 N.m (80 lb in).

8. Install the rear screw cover.

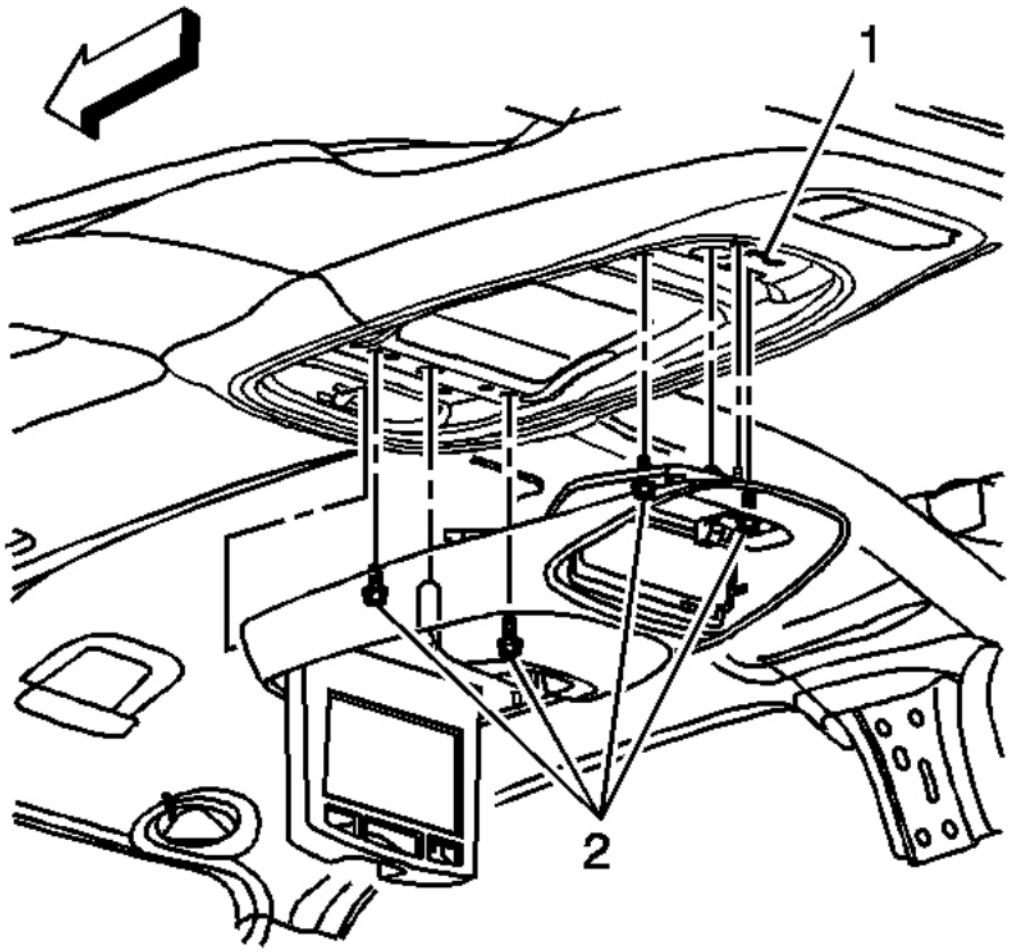


Fig. 88: Installing DVD Player Assembly Retaining Bolts (2nd Row)
Courtesy of GENERAL MOTORS CORP.

DVD PLAYER REPLACEMENT (3RD ROW)

Removal Procedure

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1. Open the screen and remove the 4 retaining screws (1).
2. From the rear, pry the assembly from the headliner.

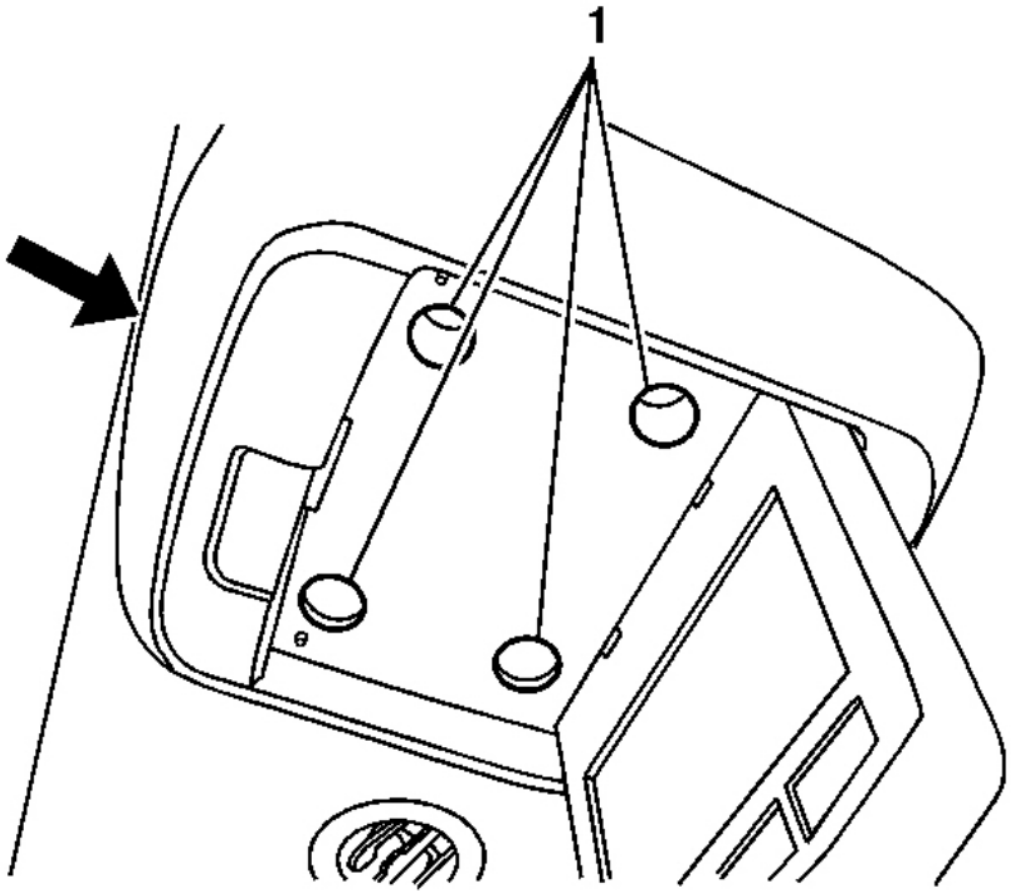


Fig. 89: Removing DVD Player Retaining Screws (3rd Row)
Courtesy of GENERAL MOTORS CORP.

3. Remove the 2 retaining screws (2) from the module.
4. Disconnect the wire connectors (1).
5. Remove the module.
6. Remove the DVD screen assembly.

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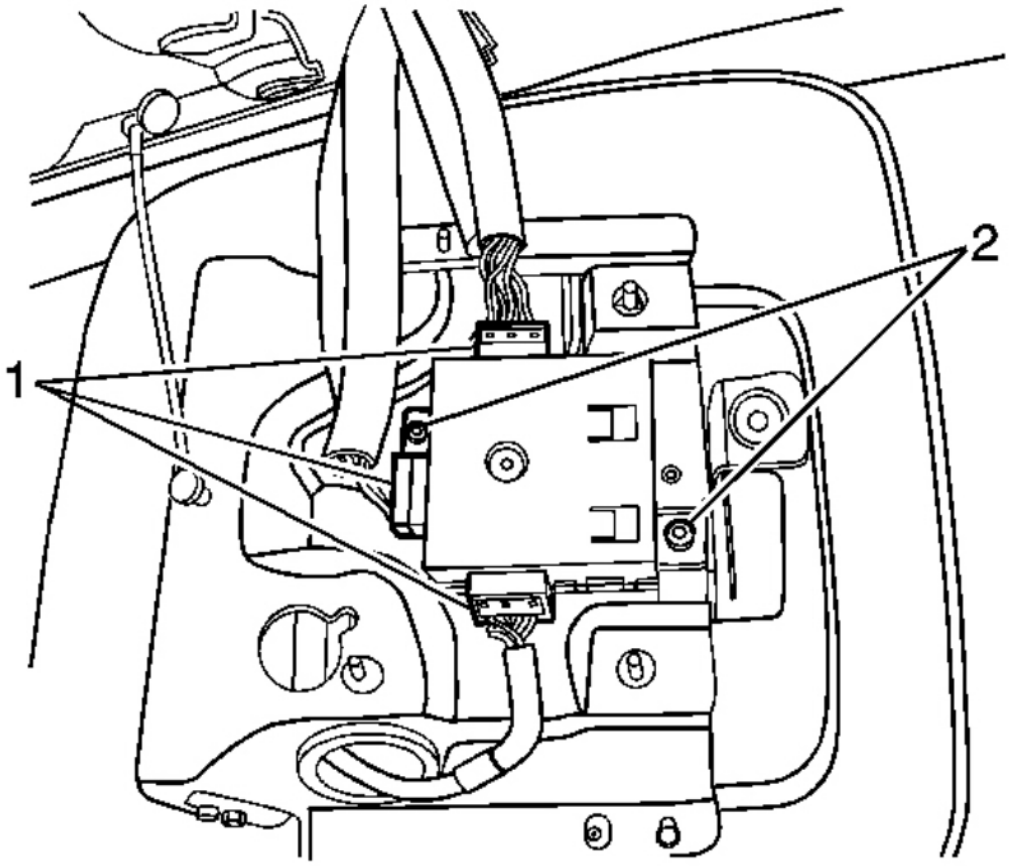


Fig. 90: Removing Module Retaining Screws & Wire Connectors (3rd Row)
Courtesy of GENERAL MOTORS CORP.

Installation Procedure

1. Allow the DVD screen to hang.
2. Connect the wire harness to the module.

NOTE: Refer to Fastener Notice in Cautions and Notices.

3. Install the 2 module retaining screws (2).

Tighten: Tighten the screws to 2 N.m (18 lb in).

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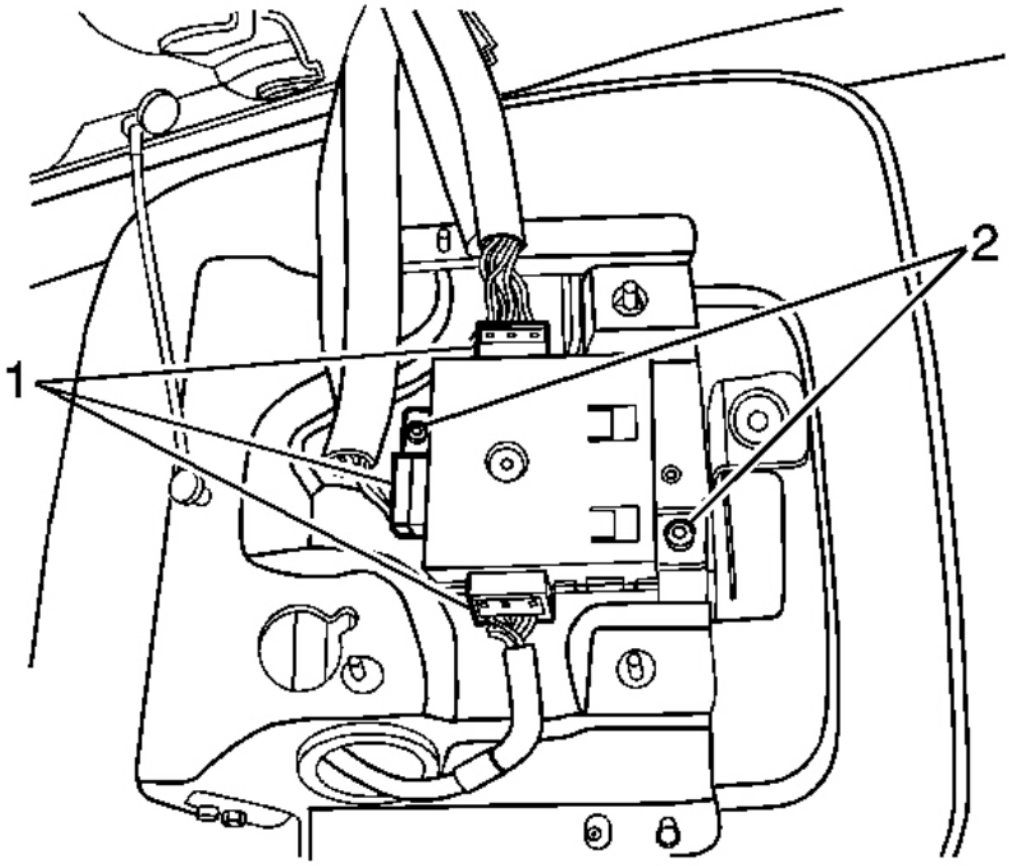


Fig. 91: Installing Module Retaining Screws (3rd Row)
Courtesy of GENERAL MOTORS CORP.

4. Install the DVD player until the assembly retainer clicks in place.
5. Install the 4 retaining screws (1).

Tighten: Tighten the screws to 9 N.m (80 lb in).

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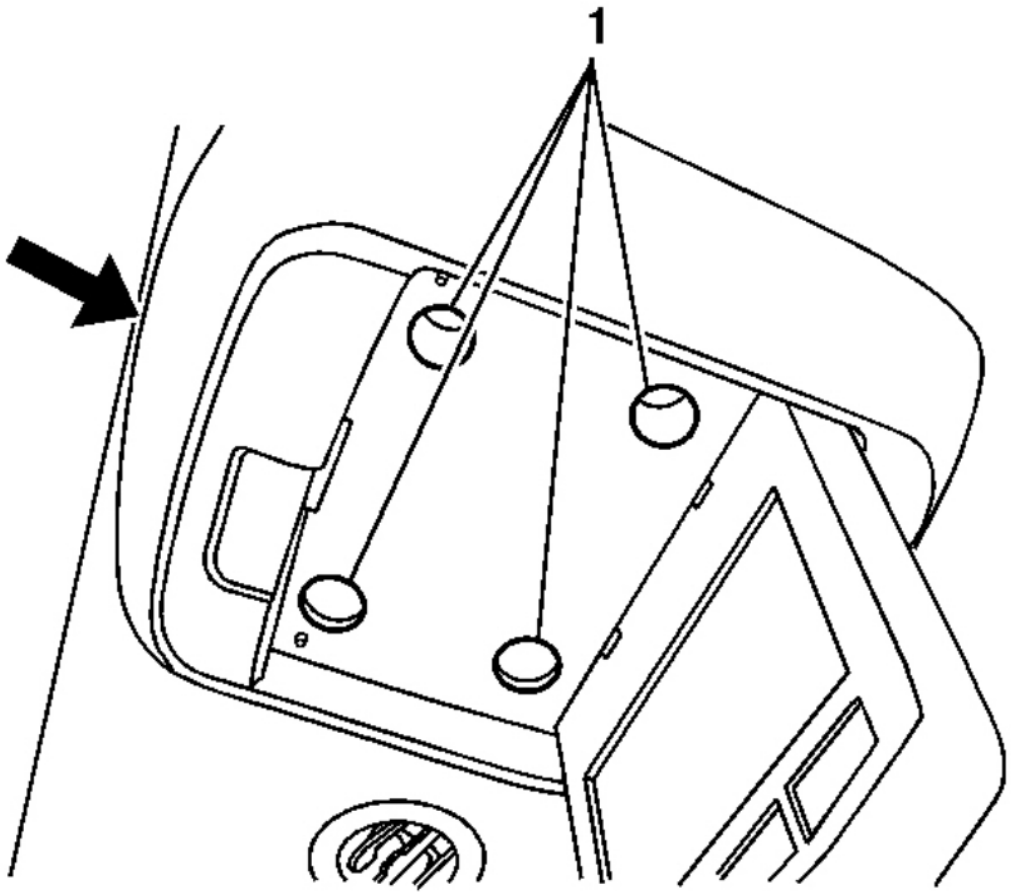


Fig. 92: Installing DVD Player Retaining Screws (3rd Row)
Courtesy of GENERAL MOTORS CORP.

DESCRIPTION AND OPERATION

RADIO/AUDIO SYSTEM DESCRIPTION AND OPERATION

The Entertainment System on this vehicle is configured with a radio, antenna, and speakers.

The following list shows the radios available for this vehicle:

- Radio (UM7) - AM/FM with Cassette
- Radio (UB0) - AM/FM with CD
- Radio (UB1) - AM/FM, Cassette and CD

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- Radio (UC6) - AM/FM, Integral Multi Disc CD Changer
- Navigation Radio (UM8) - RADIO - AM/FM Stereo, Seek/Scan, CD, ETR, Navigation, Clock

Radio Features (All Radios, except UM8)

Controls	All Radios, except UM8
Power	Push PWR/PUSH/VOL knob to turn the radio on.
Volume	The volume is adjusted by rotating the PWR/PUSH/VOL knob.
Automatic Volume Control	Press the AUTOVOL Button
Tune	Turn the TUNE/SELECT/PUSH RCL knob
Seek	Momentarily press SEEK/SCAN button
Scan	Hold SEEK/SCAN button at least 4 seconds
Presets	Six AM, Six FM1 and Six FM2
Preset Saving	Press and hold desired button until an audible beep is heard
Set Clock	Press and hold the HR or MN button until an audible beep indicates the time set mode has been entered. Once the beep is heard, the time can be set by tapping each button to incrementally adjust the time. Holding down each button will rapidly change the time.
Recall	Push the TUNE/SELECT/PUSH RCL knob
Fade or Balance	Press BAL/FADE button to select and adjust w/SELECT knob
Bass, Treble or Midrange	Press TONE button to select and adjust w/SELECT knob
Automatic Tone	Press AUTO TONE Button

Radio Features (UM8 Navigation)

Navigation Display Head, UM8	
Controls	**Function**
Power	Push PWR/VOL knob to turn the radio on.
NAV	Displays the map guidance screen.
NAV RPT	Repeats the last voice guidance message.
SETUP	Displays the setup function for the Navigation Radio.
Scroll/Select knob	Push to display menu/Move up/down and left/right to highlight selection/Push to select.
Soft Key Buttons	Push to select the options listed on the navigation screen.

Cassette Features

Controls	UM7 Radio	UB1 Radio
Eject	EJECT button	

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Fast Forward	Preset button 1
Reverse	Preset button 4
Auto Reverse	Yes
Side	Preset button 5
Previous	Preset button 1
Next	Preset button 2
Dolby	Preset button 6
Repeat	NA

Compact Disc Features

Controls	UB1 Radio	UB0 Radio	UC6 Radio
Eject	EJECT button		
Fast Forward	Preset button 1		
Reverse	Preset button 4		
Disc	Preset button 5		
Previous	Preset button 1		
Next	Preset button 2		
Dolby	Preset button 6		
Repeat	NA		
Random	Preset button 6		

Each item in the list below represents topics covered in detail below.

- AM/FM Reception
- Diversity Antenna System
- Audio Amplifier
- Theft Deterrent
- Integral Multi Disc CD Changer (IMDX)
- Remote Playback Device
- Radio Data System (RDS)
- Tape/CD Player Error Messages
- Rear Seat Audio (RSA)
- XM Satellite Radio

AM/FM Reception

Radio Signal

The radio signal is sent from a broadcast station and is then received by an antenna. The strength of the signal received depends on the following:

- The power output (wattage) of the broadcasting station

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- The location of the vehicle (or receiver) relative to the broadcast tower.
- Obstacles between the tower and the receiver
- Atmospheric conditions
- What band (AM or FM) the station is broadcasting
- Type of antenna and the ground plane

AM Reception

The AM band has a lower frequency range than the FM band. These longer wavelengths:

- Bend around Obstacles
- Follow the curvature of the earth
- May reflect off the ionosphere (skip)

The AM frequencies have longer range due to the ground wave. The ground wave follows the curvature of the earth and is effected by its conductivity. Greater conductivity equates to less signal loss thus transmission over water is better than over land. The AM band has a range of 80-320 km (50-200 mi).

FM Reception

The shorter wavelengths of the higher frequency FM band:

- Reflect off obstacles
- Are absorbed by the ground
- Penetrate the ionosphere

Broadcasts in the FM band are limited to line of sight reception which is typically 40 km (25 mi). Even when out of a direct line of sight, the signal may be reflected into areas that would be in a shadow otherwise. Factors which affect the line of sight include:

- Height of the broadcast antenna
- Height of the receiving antenna
- Terrain and buildings in the broadcast path

Diversity Antenna System

IMPORTANT: This diversity antenna system is comprised of 3 glass mounted antennas, a radio antenna module, and an FM impedance matching module. The primary AM and FM antennas are an integral part of the left rear quarter glass and are connected to the radio antenna module. The secondary FM antenna is an integral part of the right rear quarter glass and is connected to the FM impedance matching module. The radio antenna module processes the antenna reception signals and phase aligns them to create one strong signal. The FM impedance matching module boosts the secondary antenna signal and

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transmits it to the radio antenna module.

The following information lists the most probable cause of the concern to the least probable cause followed by the appropriate test for that condition. If the test leads to the replacement of a component, always inspect for a poor connection before proceeding with the replacement. If the test leads to the replacement of a component, always inspect for a poor connection before proceeding with the replacement. Refer to Testing for Intermittent Conditions and Poor Connections and Connector Repairs in Wiring Systems.

Perform the Antenna System Test and test the antenna coax cable prior to performing any of the following tests.

Poor Reception on Both AM and FM Bands

- The radio antenna module is not grounded properly. The module grounding screws should be clean and tight. The antenna module ground is either a chassis ground or a ground strap. Measure the resistance from the antenna module base plate to a good ground. Resistance should be 0.20 ohms or less. Find and correct the condition if the resistance is out of specification.
- The antenna enable signal is not present at the radio antenna module. This could be caused by an output failure of the radio or an open/shorted antenna enable signal circuit. In order to test the antenna enable signal circuit, the radio must be ON and tuned to the FM band. Disconnect the radio antenna module. Measure the voltage from the antenna enable signal circuit of the radio antenna module to a good ground. Voltage measured should be near 12 volts. If the specified voltage is measured, test the antenna enable signal circuit for an open or short to ground. Refer to **Circuit Testing** and **Wiring Repairs** in Wiring Systems. If no failures were found, replace the radio. Refer to **Radio Replacement** for service procedure.
- The FM composite signal circuit to the radio antenna module is open or shorted to ground. Test the FM composite signal circuit for an open or short to ground. Refer to **Circuit Testing** and **Wiring Repairs** in Wiring Systems.
- The feed coax at the radio antenna module has been inadvertently swapped with the FM impedance matching module crossover coax. Ensure that the feed coax, marked with a yellow band, is in the correct socket on the radio antenna.
- Improper retention of the antenna cable in the floating retainer. Poor or no connection with the radio will result when the radio is installed if the antenna cable is not properly attached in the floating retainer. Inspect the antenna cable for movement in the floating retainer. Replace the antenna cable if movement is found.
- Defective radio antenna module-Replace radio antenna module. Refer to **Module Replacement - Radio Antenna Diversity** for service procedure.

Poor Reception on AM Band Only

- Defective AM antenna
- Defective radio antenna module-Replace radio antenna module. Refer to **Module Replacement - Radio Antenna Diversity** for service procedure.

Poor Reception on FM Band Only

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- Defective primary or secondary FM antenna
- Defective radio antenna module-Replace radio antenna module. Refer to **Module Replacement - Radio Antenna Diversity** for service procedure.
- Defective FM impedance matching module-Replace FM impedance matching module. Refer to **Module Replacement - Radio Antenna Diversity** for service procedure.

Audio Amplifier

The audio amplifier is standard on some vehicle lines but is optional on most. The radio supplies low level audio signals to the audio amplifier in order to boost the signal sent to the speakers. The class 2 signal circuit allows the radio to recognize that an amplifier is present. Once the radio detects an audio amplifier, it will output low level audio signals. The audio amplifier is turned on when it receives a message via the class 2 serial data circuit indicating that the radio is on.

Theft Deterrent

The theft deterrent system is a feature on all base and uplevel radios. There is no need to program a security code into the radio as in past model years. The theft deterrent system now utilizes class 2 serial data to determine if the radio is in the appropriate vehicle. Each time the radio receives the run power mode message, it compares the VIN information it has stored to the VIN information received from a module on the class 2 serial data circuit responsible for transmitting that information. If a mis-match occurs, the radio display will indicate to the user the radio is locked. Once this takes place, a DTC will set, the radio will not respond to any button presses and become inoperative. The 2 scenarios able to cause this condition are:

- A radio is installed from another vehicle.
- A module which communicates on the class 2 serial data circuit which supplies VIN information to the radio is replaced and not properly setup with the correct VIN information for that vehicle.

The only way to unlock the radio is by using a scan tool. Always refer to the table in this section to diagnose the Theftlock DTC for further information.

The digital radio receiver utilizes class 2 serial data to determine if it is in the appropriate vehicle. Each time the digital radio receiver receives the run power mode message, it compares the VIN information received from the body control module (BCM) on the class 2 serial data circuit. If a mis-match occurs, the radio display will indicate to the user the digital radio receiver is locked. The digital radio receiver cannot be unlocked, it must be replaced. The 2 scenarios able to cause this condition are:

- A digital radio receiver is installed from another vehicle
- The BCM is replaced and not properly setup with the correct VIN information for that vehicle

Integral Multi Disc CD Changer (IMDX)

The Integral Multi Disc CD Changer has the capability of storing and playing up to 6 compact discs. The Integral Multi Disc CD Changer has a shock-absorbing system. Only under extreme operating temperatures or severe shock or vibration should the compact disc player skip or mute. If the customer travels an abnormally rough road, a skip condition may be normal. Test drive the vehicle on a normal road with a known good CD. If

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the condition is still present, replace the radio.

The use of CD lens cleaner discs is not advised, due to the risk of contaminating the lens of the CD optics with lubricants internal to the CD mechanism.

To operate the Integral Multi Disc CD Changer in the single play mode, depress the LOAD button for less than 2 seconds, an audible beep can then be heard. When the disc door opens the LED to the right of the disc door will first turn red then green to indicate the CD can be loaded. The radio will also display the message INSERT CD 1 and the changer will pull the disc into the play position. To operate the changer in the multi disc mode, depress the MODE button for more than 2 seconds and the LED to the right of the disc door will first turn red then green to indicate CDs can be loaded. The radio will also display the message MULTI LOAD to indicate the multi load mode has been initiated and the changer will begin accepting a disc for however many empty slots there may be. If 8 seconds elapse before the next disc is loaded, the multi load mode is cancelled and can be re-intiated if desired by depressing the load button again for more than 2 seconds. If the changer is full, six discs are loaded, the single play and multi load modes cannot be executed. When this occurs, 3 audible beeps are heard and the message CHANGER FULL is displayed.

Remote Playback Device

The remote playback device is either installed at the factory or in some instances it is dealer installed. There are 3 types of remote playback devices, a multi disc remote CD changer, a single disc CD player, and a cassette player. All 3 devices have a wiring harness which plugs into the back of the radio. The radio controls and communicates with the remote playback device through a Entertainment and Comfort (E&C) or Class 2 communication circuit.

Remote CD Changer (CDX)

The remote CD changer allows for multiple compact disks to be played continuously without having to manually change compact discs. Normal size discs may be played using the slots supplied in the magazine. The magazine must first be loaded with discs before it can played. To load CDs, insert the CDs from bottom to top, placing the discs in the magazine label side up. If a disc is loaded label side down, the disc will not play and an error will occur. Care should be used to align and insert the disc into one disc tray only. Repeat this procedure for loading all of the discs in the magazine. Once the discs are loaded into the magazine, push the magazine into the changer in the direction of the arrow marked on the magazine. When the CD magazine is loaded, the changer will begin checking for discs in the magazine.

This will continue for up to one and a half minutes, depending on the number of discs loaded. To eject the magazine from the player, push the CD changer door. The door will open. Then press the eject button. If the CD magazine fails to eject after the EJECT button has been pressed, do not attempt to pry the magazine from the CD changer. Whenever a CD magazine with discs is loaded in the changer, the CD changer symbol will appear on the radio display. If the CD changer is checking the magazine for CDs, the CD symbol will flash on the display until the changer is ready to play.

Radio Data System (RDS)

All uplevel audio systems are equipped with technology known as the Radio Data System (RDS). RDS is a system that sends data along with the audio of the FM station you are currently tuned to. RDS is a standard that defines how a FM broadcast station may send digital data along with the audio program. Think of it as a one

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way wireless modem, allowing the broadcaster to send information about his program to your receiver.

RDS data is carried in what is known as a sub-carrier. A sub-carrier is a frequency that the FM broadcaster is authorized to use to send data or other audio programs that are not audible in the main audio program. RDS information can be used to display program information and to control the radio.

To receive the RDS signal, all that is needed is an FM receiver with a RDS circuit. A special integrated circuit capable of dealing with the RDS signal is in the RDS circuit and passes it along to the receiver's microprocessor where it is decoded and acted upon.

RDS Basic Information

RDS basic information:

- RDS functions are provided in the FM broadcast band only.
- RDS functions will only work with FM broadcast stations that are broadcasting RDS data.
- Not all FM Broadcast stations broadcast RDS data or offer all of the RDS services.
- RDS functions may not work properly when reception is weak, reception is of poor quality, or RDS is not implemented properly by the FM Broadcaster.

In some cases, a radio station broadcasting incorrect information may cause the RDS features of the radio to appear to work improperly.

Broadcast RDS information can be used in a variety of ways by the receiver and listener, but basically falls into 2 categories: Display and Control.

Displaying Program Information

RDS displays textual information such as:

- The name of the station
- The type of program
- General information such as artist and song title, call in phone numbers, etc.

RDS is always on. When tuned to a non-RDS station, your radio will display frequency information as you would normally expect. When tuned to a RDS station, your radio will change from displaying the frequency of the FM station to displaying the call letters of the station or display the nickname of the station. This feature is known as the Program Service Name.

Controlling the Radio

RDS can control the radio when data the receiver can use responds to timely information performing the following:

- Interrupt the playback of your cassette or CD for traffic or emergency bulletins
- Search for stations by type of program

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- Automatically follow network programming from transmitter to transmitter as you travel from one listening area to another
- Set your clock to the time that the RDS Broadcast station broadcasts

Viewing and Selecting RDS Information for Display

Press the TUNE SELECT PUSH RCL knob once for less then 2 seconds when the radio displays the program service name and the frequency of the station will be displayed. Press the knob again, and the program type (P-Type) will be displayed. Pressed again, and the program type name will be displayed, if the broadcaster is broadcasting one. The program type name is an 8-character name that the broadcaster may use to further identify the type of programming currently being broadcast. Should you decide that Frequency, P-Type or program type name is more desirable to display when tuned to an RDS station than the Program Service Name, press the TUNE SELECT PUSH RCL knob until the desired information is displayed, then press and hold for more than 2 seconds. A beep should be heard and the radio will now display the selected information whenever tuned to an RDS broadcaster. The radio will display frequency for all non-RDS broadcast stations.

Using the RDS Traffic Feature

Some RDS broadcasters may carry traffic information programming to inform you of current traffic conditions in your listening area and is indicated by the icon in the radio display. RDS enables the broadcaster to get this information to you even when you are listening to a tape or compact disc. This feature can be enabled or disabled by the listener. Press the TRAF button to find a station that claims to carry traffic information. You may do this even when playing a cassette tape or compact disc. This action will operate in the background without interrupting the current playback. If the radio is not currently tuned to an RDS traffic station, the radio will immediately SEEK an RDS traffic station. If the radio finds an RDS traffic station, the TRAF icon will appear in the radio display as will brackets around the TRAF icon. If the radio cannot find an RDS traffic station after searching through the entire FM band, the radio will display NO TRAFFIC.

Alternate Frequency (AF) Switching

RDS permits broadcasters to send information to the radio that allows the radio to automatically switch frequency to the best quality station in that broadcaster's network.

Since the radio is displaying the broadcaster call letters or nickname, the listener will not see the frequency during an AF switch unless you have changed the default display to be frequency instead of Program Service name.

To enable or disable AF switching perform the following:

- Press and hold the AM/FM button for 2 seconds or more.
- The radio will display AF ON or AF OFF depending on the current condition of AF and a confirmation beep will be heard.

When AF is enabled and you recall a RDS station stored on preset, the radio determines if the station stored is of acceptable quality. If not, the radio checks all available AFs for your station. If the radio fails to locate your program, AF SEARCH will be displayed as the radio scans across the band looking for your program or an affiliated network. If the radio cannot find the original station or an acceptable alternate frequency NOT

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FOUND will be displayed and the radio returns to the original frequency for the preset.

RDS Clock Time

Broadcasters can choose to send clock time information in the RDS data. This information can be used to update the clock time on the radio. RDS clock time is broadcast once a minute. To set the clock using RDS clock data perform the following:

- Press and hold the HR and MIN buttons together for two or more seconds to update the time.
- The display will show UPDATED after receiving the broadcast time data.
- If the broadcaster is not broadcasting the time data, the radio will display NO UPDATE and the time remains unchanged.

Radio Error Messages

The radio displays the following error messages:

CDX ERR

Displays if communication is lost with the remote CD changer, If equipped.

CHECK CD

Displays when the player encounters a focus or tracking error.

CHK CDXX

Displays when the CD changer encounters a focus or tracking error, If equipped.

CHK TAPE

Displays if a tape has been inserted but is unable to be played due to an error.

DOOR OPEN

Displays when the CD changer door has been left open, If equipped.

NO DISC

Displays when the radio expected a disc to be inserted.

NONE

Displays when the radio is unable to detect the vehicle speed data information via the class 2 serial data circuit.

Voice Recorder

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To record a message, press the button with the circle on it and begin speaking. Press the button with the circle on it again to stop recording. System allows you to record up to 4 minutes of messaging.

You may also press and hold the button with the circle on it while you are speaking and then let it go when you are finished.

To play back messages, press the button with the right arrow on it. Pressing the right arrow button more than once will return you to previously recorded messages. If you press and hold this button for more than one second, all of the recorded messages will be played back.

To delete messages, press the button with the square on it while the message is playing. If you press and hold the right arrow button and the circle button at the same time for a half of a second, all of the messages will be deleted.

Rear Seat Audio (RSA)

The audio portion of the rear seat audio controller provides dual audio source capability from the vehicle audio system.

When in use, the audio portion of the controller enables rear seat occupants to listen to a different music source than the front seat occupants. The audio volume at each headphone is independently controlled by the rear passengers. A VF display in the center of the controller provides graphic communication to the rear seat operator the state of various rear audio functions. The dual source mode functionality is an embedded feature of the compatible radio receiver. Primary radio controls always have control of the front speaker outputs. Primary radio mode control is not affected by the operation of the rear audio control and always has priority over the rear audio control.

The front seat occupants have the capability to override and disable the rear audio controller operation through the primary radio controls. An ignition cycle also causes the rear audio to default to the OFF state.

Even when the primary radio is powered OFF, shutting off all speakers in the vehicle, the RSA controller functions are available. The rear passengers can still listen to any available audio source through the headphones.

The controller shall have 2 stereo volume controls to vary the audio volume to the headphones. For each headphone, one element will provide the variable load to the left audio output and the other element will provide the variable load to the right audio output.

XM Satellite Radio

XM satellite radio provides digital radio reception. The XM signal is broadcast from 2 satellites and, where necessary, terrestrial repeaters. The high power satellite allow the antenna to receive the XM signal even when foliage and other partial obstructions block the antennas view of the satellite. Terrestrial repeaters are used in dense urban areas. These repeaters will receive the satellite signal and rebroadcast them at much higher power levels in order to ensure reception in areas with densely packed tall buildings. Xm is a national satellite radio service that offers up to 100 coast-to-coast channels including music, news, sports, talk, and children programming. XM provides digital quality audio and text information, including song title and artist name. A

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service fee is required in order to receive the XM service. For more information contact XM at www.xmradio.com or call 1-800-852-9696.

XM Advisory Messages

Radio Display Message	Condition
XM Updating	Updating encryption code
No XM Signal	Loss of signal
Loading XM	Acquiring channel audio (after 4 second delay)
Channel Off Air	Channel not in service
Channel Unavail	Channel no longer available
No Artist Info	Artist Name/Feature not available
No Title Info	Song/Program Title not available
No CAT Info	Category name not available
Not Found	No channel available for the chosen category
No Information	No text/informational message available
XM Theftlocked	Theft Lock active
XM Radio ID	Electronic serial number (ESN) channel 0
Unknown	Radio ID not known (should only be if hardware failure)
Check XM Receiver	Hardware failure

Digital Radio Receiver

The radio communicates with the digital radio receiver via the class 2 communications circuit. The digital radio receiver sends low level audio signals to the audio amplifier.

Steering Wheel Controls

Some audio functions are available using the steering wheel controls. The steering wheel controls consist of multiple momentary contact switches that connect a series of resistors. When a steering wheel control button is pressed, a specific resistance value is noted by the BCM. This results in a generated voltage, unique to the particular button. The BCM alerts the radio that the button has been pressed, and the radio responds, just as if the corresponding radio front panel button had been pressed.

Amplifier

The amplifier in early build vehicles is a class 2 device that communicates with the scan tool on the Class 2 bus. The Class 2 amplifier will set a U100 in the radio if there is a communication problem. The late build vehicles have a NON-Class 2 amplifier that does not communicate over the Class 2 bus and therefore the NON-Class 2 amplifier will not set codes. Both amplifiers have similar operating characteristics, therefore, there are not separate diagnostics for the NON-Class 2 amplifier.

VIDEO ENTERTAINMENT SYSTEM DESCRIPTION AND OPERATION

Rear Seat Entertainment System

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The rear seat entertainment (RSE) system augments the vehicle's in-dash audio system with:

- A Digital Versatile Disc (DVD) player
- A video display screen
- Two sets of wireless infrared headphones
- A remote control and
- Stereo audio and video inputs in the overhead console for playing an auxiliary device

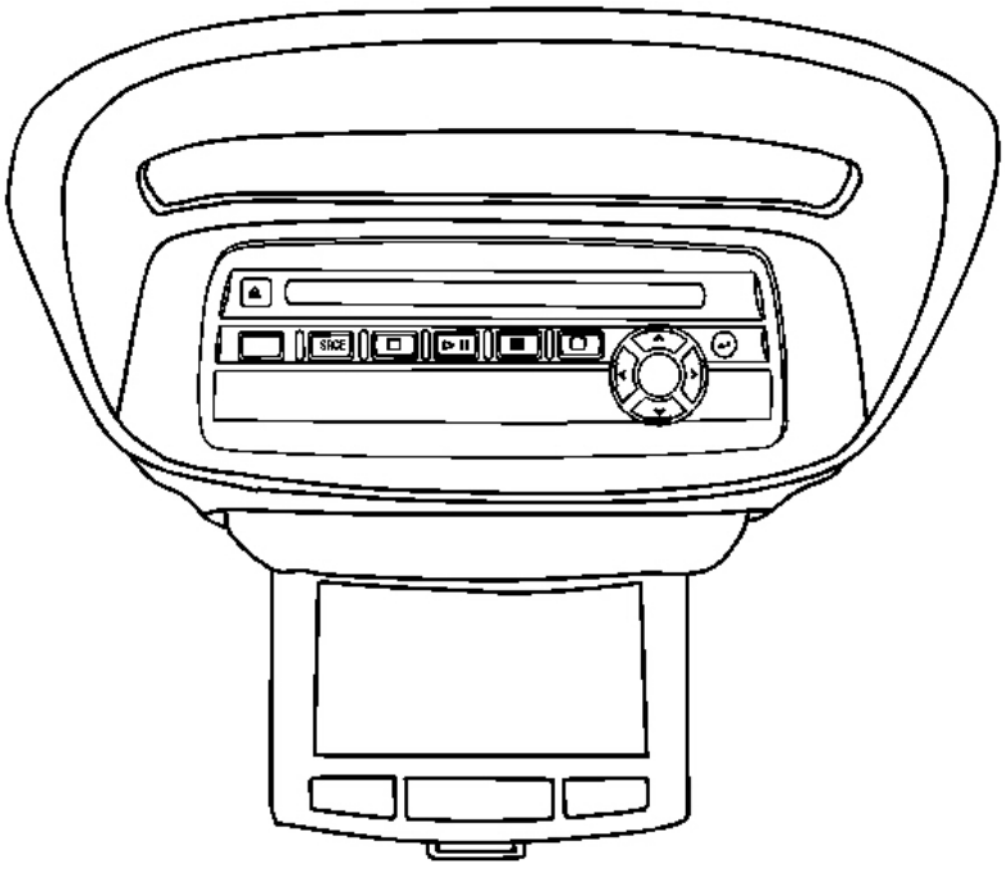


Fig. 93: Rear Seat Entertainment System
Courtesy of GENERAL MOTORS CORP.

DVD Player

The DVD player and the video display screen are located in the overhead console. The DVD player can be controlled by both the buttons on the DVD player and by the buttons on the remote control. The DVD player

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power may be turned on when the ignition is in the run, accessory, or retained accessory power (RAP) power modes. DVDs are manufactured with different region codes based on the country in which they are sold. Therefore, the RSE system DVD player is only compatible with the region code where the vehicle is sold. The DVD region code is printed on the jacket of most DVDs. The DVD player will also play audio CDs. Home recorded CDs, CD-R or CD-RW formats, will not play in this DVD player.

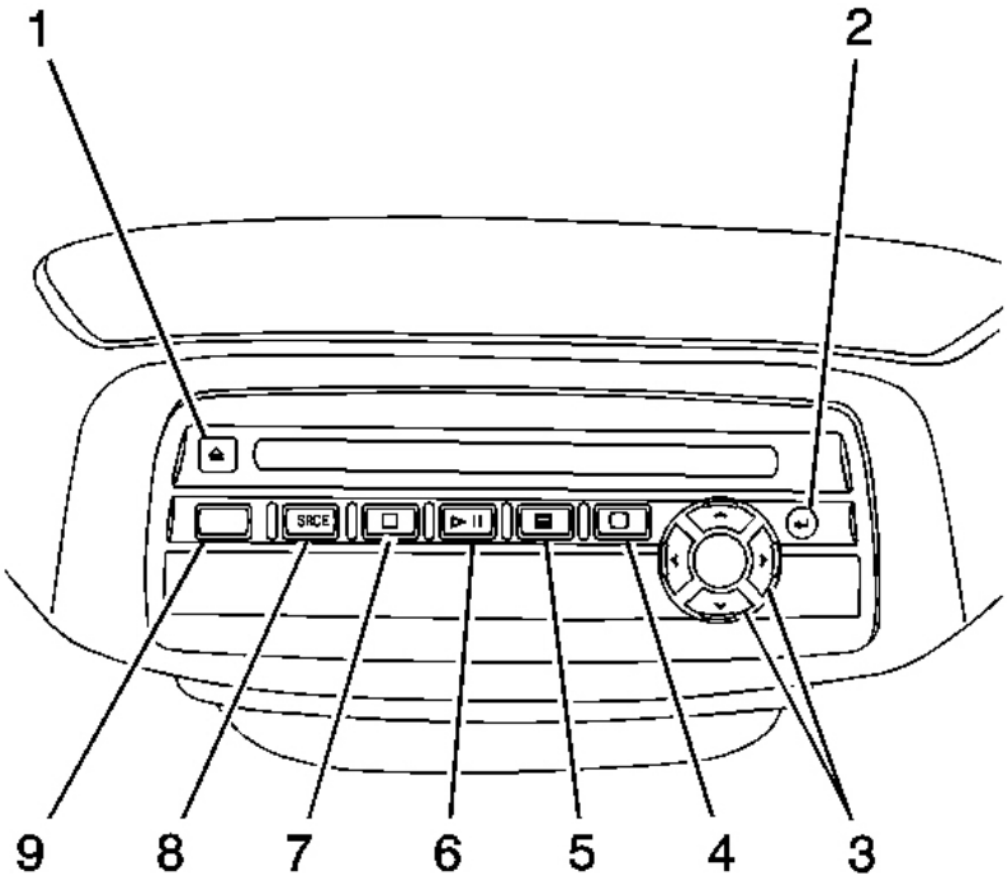


Fig. 94: DVD Player
Courtesy of GENERAL MOTORS CORP.

Callouts For Fig. 94

Callout	Component Name
1	Eject Button
2	Enter Button
3	Menu Navigation Buttons
4	DVD Menu Button

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5	Video Screen Display Menu Button
6	Play / Pause Button
7	Stop Button
8	Source Button
9	Power Button

DVD Player Buttons

The following buttons operate the DVD player.

Eject

Press this button to eject the DVD or CD media.

Enter

Press this button to select items within a menu.

Menu Navigation

Use the arrow keys to navigate through a menu. The up arrow will skip to the next chapter or track; the down arrow acts as a previous chapter or track access key; the right arrow acts as fast forward, and the left arrow acts as rewind.

Menu

Press this button to access the DVD menu. This button does not operate with media other than DVD.

Display Menu

Press this button to modify the video screen display characteristics.

Play / Pause

Press this button to turn the DVD player on to play media, pause media, and to toggle between play and pause of media.

Stop

Press this button to stop play of media in the DVD player.

Source

Press this button to toggle between DVD player and auxiliary source.

Power

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Press this button to turn the RSE system power On or Off.

Playing a Disc

To play a disc, gently insert the disc with the label side up, into the loading slot. The DVD player will continue to load the disc and the player will automatically start if the vehicle ignition is in an enabled power mode. If a disc is already in the player, press the play/pause button on the face of the DVD player or on the remote control. Some DVDs will not allow the user to fast forward or skip the copyright or previews. Some DVDs will automatically begin to play after the previews have finished. If the DVD does not begin to play the main title, refer to the on-screen instructions, and press play on the DVD player buttons or on the remote control.

Stopping and Resuming Play

To stop a disc, press and release the stop/eject button on the DVD player or the remote control. To resume playback, press the play/pause button on the DVD player or the remote control. The movie should resume play from where it was stopped. If the disc has been ejected, or if the stop button has been pressed 2 times, the disc will resume play at the beginning of the main title.

Ejecting the Disc

Press the eject button on the DVD player to eject the disc.

If a disc is ejected from the DVD player but is not removed, the DVD player will reload the disc within 25 to 30 seconds. The disc will then be stored in the DVD player. The DVD player will not resume play of this disc automatically upon its reload.

DVD Messages

The following errors may be displayed on the video screen monitor.

Disc Format Error

This message will be displayed if a disc is inserted upside down, the disc is not able to be read, or if the disc format is not compatible with the DVD player.

Load / Eject Error

This message will be displayed if the disc is not able to properly load or eject.

Disc Play Error

This message will be displayed if the DVD player cannot play the disc. Severely damaged discs will cause this error.

Region Code Error

This message will be displayed if the region code of the DVD media is not compatible with the DVD player.

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No Disc

This message will be displayed if the play button is pressed and there is no disc in the DVD player.

Parental Control Button

This button is located on the forward part of the DVD console, near the driver of the vehicle. Press this button while media is playing in the DVD player to freeze the video and mute the audio. The video screen will display the message Parental Control ON and the power indicator light on the DVD player will flash at one-second intervals. While in this mode, all other button operations from the remote control and the DVD player, with the exception of the eject function, will be disabled. The driver will then be able to gain the attention of the rear seat passengers. Press this button again to restore normal operation of the DVD player. This button may also be used to turn the DVD power on and automatically resume play of the media within the DVD player if the vehicle is in an enabled power mode.

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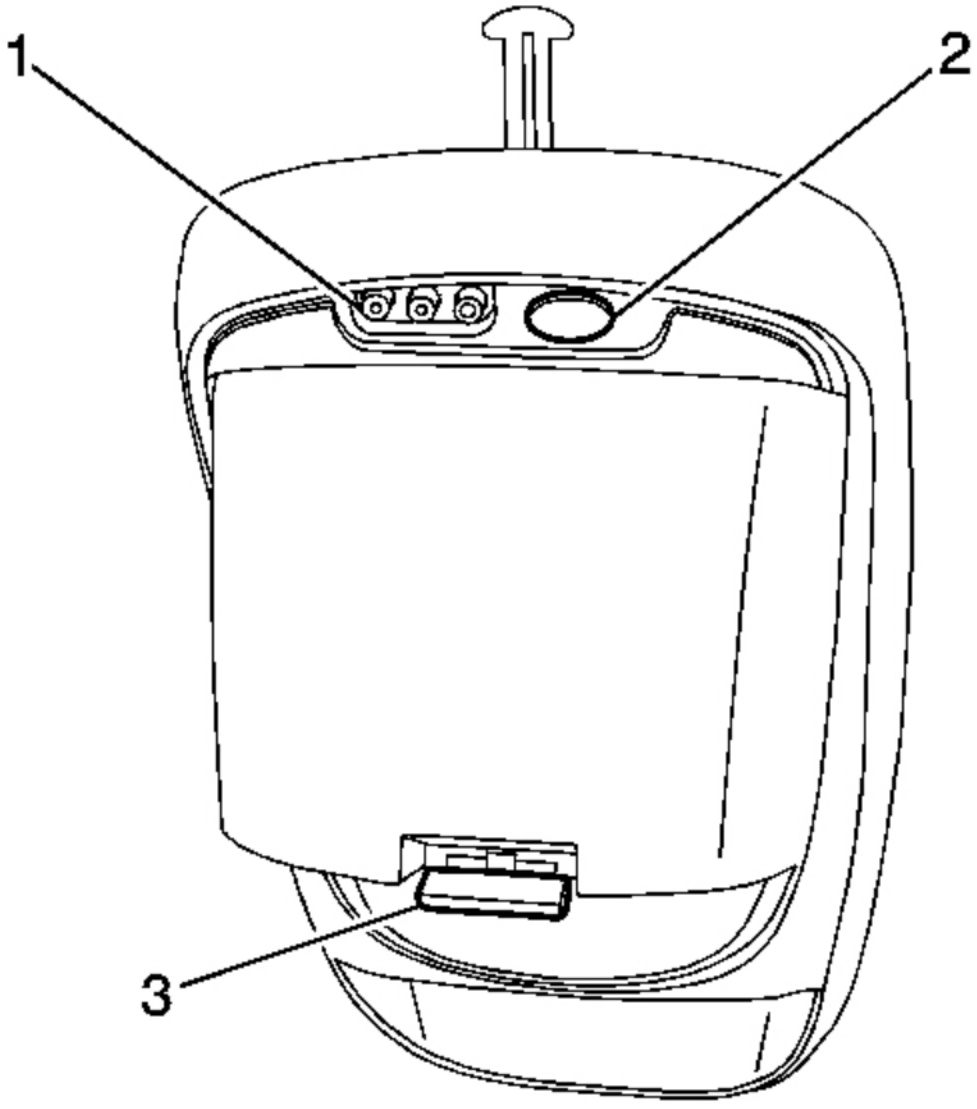


Fig. 95: Parental Control
Courtesy of GENERAL MOTORS CORP.

Callouts For Fig. 95

Callout	Component Name
1	Auxiliary Inputs
2	Parental Control Button

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3	DVD Screen Latch

Video Screen

To use the video screen, push forward on the release latch and the screen will be free to rotate down. Adjust the screen's position as desired. The display menu button will allow different screen display modes, such as normal, full screen, zoom or cinema. When the video screen is not in use, push it up into its latched position.

The DVD player and video screen will continue to operate when the screen is in either the up (closed) or down (viewing) position. The video screen contains the infrared transmitters for the wireless headphones as well as the infrared receiver for the remote control. Therefore, if the screen is in the closed position the infrared signals will not be available for the operation of the headphones and the remote control.

Avoid directly touching the video screen, as damage may occur.

Remote Control

To use the remote control, aim it at the infrared window below the video screen and press the desired remote control button. Direct sunlight or very bright light may affect the ability of the entertainment system to receive signals from the remote control. If the remote control does not seem to be working, the batteries may need to be replaced. Objects blocking the line of sight may affect the function of the remote control.

Remote Control Buttons

DVD Player Power On / Off

Press this button to turn the RSE system power On or Off.

RSERC Illumination

Press this button to turn the remote control backlight ON.

Title

Press this button to return the DVD media to the root menu of the DVD.

Menu

Press this button to access the DVD menu. This button does not operate with media other than DVD.

Display Menu

Press this button to modify the video screen display characteristics.

Return

The return button shall operate only when a DVD is being played and a menu is active. The return

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function allows the user to exit the current active menu and return to the previous superior menu.

Enter

Press this button to select items within a menu.

Audio

Pressing this button shall call-up a menu that shall operate only when a DVD is being played. The format and content of this function is defined by the disc and is dependent on the disc.

Angle

Pressing this button shall call-up a menu that shall operate only when a DVD is being played. The format and content of this function is defined by the disc and is dependent on the disc.

Subtitle

Pressing this button shall call-up a menu that shall operate only when a DVD is being played. The format and content of this function is defined by the disc and is dependent on the disc.

Source

Press this button to toggle between DVD player and auxiliary source.

Fast Forward

Press this button to fast forward the DVD in 5x speed. To stop fast forwarding, press this button again. This button may not work when the DVD is playing the copyright or the preview.

Fast Reverse

Press this button to fast rewind the DVD in 5x speed. To stop fast rewinding, press this button again. This button may not work when the DVD is playing the copyright or the preview.

Previous Track/Chapter

Press this button to return to the start of the current track/chapter. Press this button again to backup to the previous track/chapter. This button may not work when the DVD is playing the copyright material.

Next Track/Chapter

Press this button to advance to the beginning of the next track/chapter. The button may not work when the DVD is playing copyright material.

Stop

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Press this button to stop play of media in the DVD player

Play / Pause

Press this button to turn the DVD player on, to play media, to pause media, and to toggle between play and pause of media.

Cancel

Pressing this button within 3 seconds of inputting a numeric selection shall clear all numeric inputs.

Numeric Keypad

The RSERC numeric keypad shall provide the operator with the capability of direct chapter / title / track number selection.

Menu Navigation

Use the arrow keys to navigate through a menu. The up arrow will skip to the next chapter or track; the down arrow acts as a previous chapter or track access key; the right arrow acts as fast forward, and the left arrow acts as rewind.

Battery Replacement

To change the batteries, do the following:

1. Remove the battery compartment door located on the bottom of the remote control.
2. Remove the batteries from the compartment.
3. Replace the 2 AA-size batteries in the proper orientation.

If the remote control is to be stored for a long period of time, remove the batteries and keep them in a cool, dry place. Do not store the remote control in heat or direct sunlight. This could damage the remote control and would not be covered by your vehicle warranty. Keep the remote control stored in a cool, dry place.

Wireless Headphones

The RSE system includes 2 sets of wireless infrared headphones.

Each set of headphones has an ON/OFF control. To use the headphones activate the ON/OFF control. A red indicator light will illuminate on the headphones. If the light does not illuminate, the batteries may need to be replaced. See Battery Replacement in this section for more information. To turn the headphones OFF activate the ON/OFF control once again.

Each set of headphones has a rotary volume control. To adjust the volume, adjust this control. The headphones will automatically turn OFF if they lose the infrared signal from the system for approximately 4 minutes in order to preserve their battery power. The signal may be lost if the system is turned off or if the headphones are out of range of the infrared signal transmitters that are located below the video display screen.

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Battery Replacement

To change the batteries, do the following:

1. Loosen the screw on the battery compartment door located on the LEFT headphone earpiece.
2. Remove the batteries from the compartment.
3. Replace the 2 AAA-size batteries in the proper orientation.

If the headphones are to be stored for a long period of time, remove the batteries and keep them in a cool, dry place. Do not store the headphones in heat or direct sunlight. This could damage the headphones and would not be covered by your vehicle warranty. Keep the headphones stored in a cool, dry place.

Stereo RCA Jacks

The RCA jacks are located on the forward portion of the overhead console next to the parental control button. The RCA jacks allow you to connect audio and video from an auxiliary device such as a camcorder or a video game player to your RSE system just as you would to a standard television. Standard RCA cables are needed to connect the auxiliary device to the RCA jacks. The yellow connector transmits video while the red and white connectors transmit right and left stereo audio respectively. Please refer to the manufacturer's instructions for proper connection of your auxiliary device.

To use the auxiliary inputs on the RSE system, connect an external auxiliary device to the color-coded RCA jacks and turn both the auxiliary device and the RSE system power on. If the RSE system had been previously in the DVD player mode, the user will need to press the SRCE button on the faceplate or remote control to change to the auxiliary mode. Successive actuations of the SRCE button will toggle the RSE system between the auxiliary and DVD player modes.

Audio Output

Audio from the RSE system DVD player or auxiliary inputs may be heard through the following possible sources:

- Wireless infrared headphones
- Vehicle speakers
- Vehicle wired headphone jacks on rear seat audio controller (if equipped)

The RSE system will always transmit the audio signal by infrared to the wireless headphones, if there is audio available. The RSE system is capable of outputting audio to the vehicle speakers by pressing the CD button on the vehicle's radio. The RSE system may be selected as an audio source on the radio if the RSE system power is on. Once the RSE system is selected as an audio source on the radio you may adjust the speaker volume on the radio to control the volume of the audio to the speakers. If the RSE system power is not on, the RSE system will not be an available source on the radio head unit. Please refer to the operating instructions for the vehicle radio for more information on its operation.

The RSE system is capable of outputting audio to the wired headphone jacks on the rear seat audio controller if the vehicle is so equipped. The RSE system may be selected as an audio source on the Rear Seat Audio controller if the RSE system power is on. Please refer to the operating instructions for the Rear Seat Audio

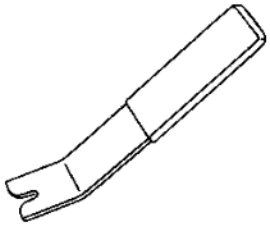
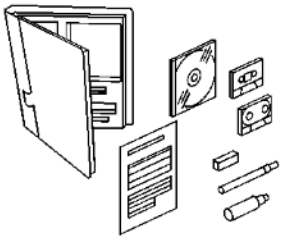
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Controller for more information on its operation.

SPECIAL TOOLS AND EQUIPMENT

SPECIAL TOOLS

Special Tools

Illustration	Tool Number/ Description
	J 38778 Door Trim Pad Clip Remover
	J 39916-A CD and Cassette Diagnostic Audio Kit

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