

2007 Hummer H3

2007 ACCESSORIES AND EQUIPMENT Cellular, Entertainment and Navigation - H3

2007 ACCESSORIES AND EQUIPMENT

Cellular, Entertainment and Navigation - H3

SPECIFICATIONS

FASTENER TIGHTENING SPECIFICATIONS

Fastener Tightening Specifications

Application	Specification	
	Metric	English
Antenna Module to HVAC Duct	2 N.m	18 lb in
Cellular and Navigation Antenna Retaining Bolt	9 N.m	80 lb in
Communication Interface Module Bracket Bolts	9 N.m	80 lb in
Digital Radio Receiver Nuts	3 N.m	26 lb in
Digital Radio Receiver Screws	3 N.m	26 lb in
Door Speaker Screw - Front	2.5 N.m	22 lb in
Door Speaker Screw - Rear	2.5 N.m	22 lb in
Mast Antenna Base Nut	18 N.m	13 lb ft
Radio Screws	2 N.m	18 lb in
Radio Speaker Amplifier to Bass Box Screws	2 N.m	18 lb in
Sub Woofer Bass Box Bolts	8 N.m	71 lb in

SCHEMATIC AND ROUTING DIAGRAMS

ENTERTAINMENT/COMMUNICATION SCHEMATIC ICONS

Entertainment/Communication Schematic Icons

Icon	Icon Definition
	<p>IMPORTANT:</p> <p>Twisted-pair wires provide an effective "shield" that helps protect sensitive electronic components from electrical interference. If the wires were covered with shielding, install new shielding.</p> <p>In order to prevent electrical interference from degrading the performance of the connected components, you must maintain the proper specification when making any repairs to the twisted-pair wires shown :</p> <ul style="list-style-type: none">• The wires must be twisted a minimum of 9 turns per

2007 Hummer H3

2007 ACCESSORIES AND EQUIPMENT Cellular, Entertainment and Navigation - H3



31 cm (12 in) as measured anywhere along the length of the wires.

- The outside diameter of the twisted wires must not exceed 6.0 mm (0.2 in).

RADIO/NAVIGATION SYSTEM SCHEMATICS

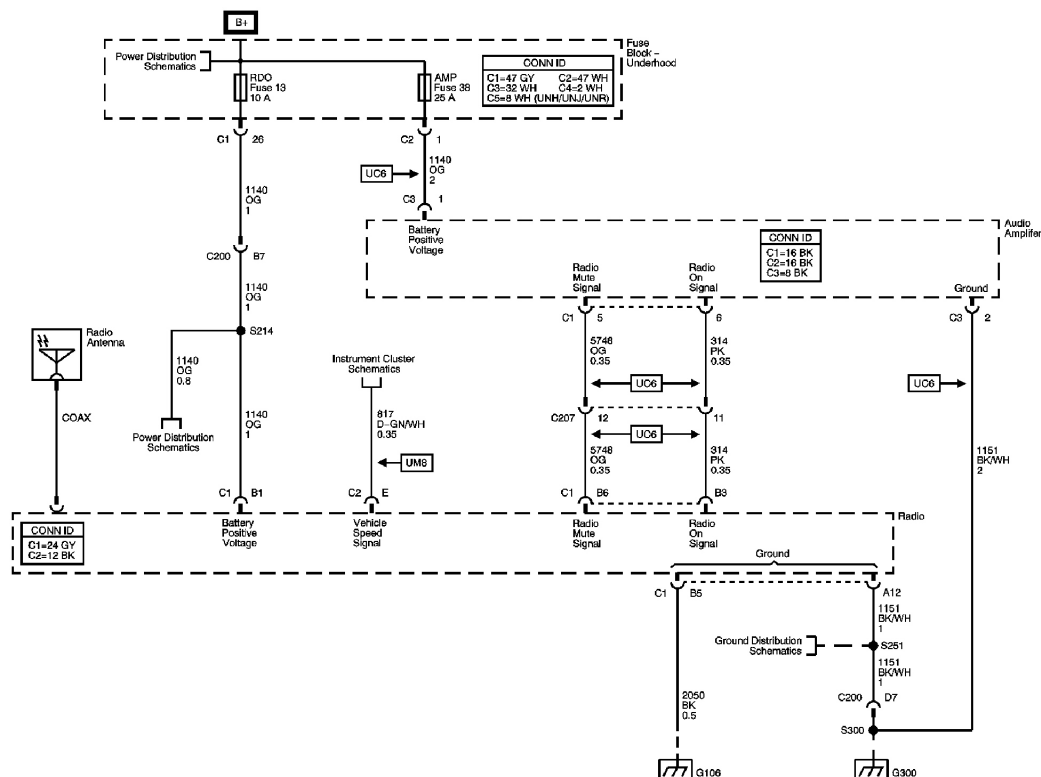


Fig. 1: Audio Amplifier and Radio, Power, Ground and Serial Data Schematic

2007 Hummer H3

2007 ACCESSORIES AND EQUIPMENT Cellular, Entertainment and Navigation - H3

Courtesy of GENERAL MOTORS CORP.

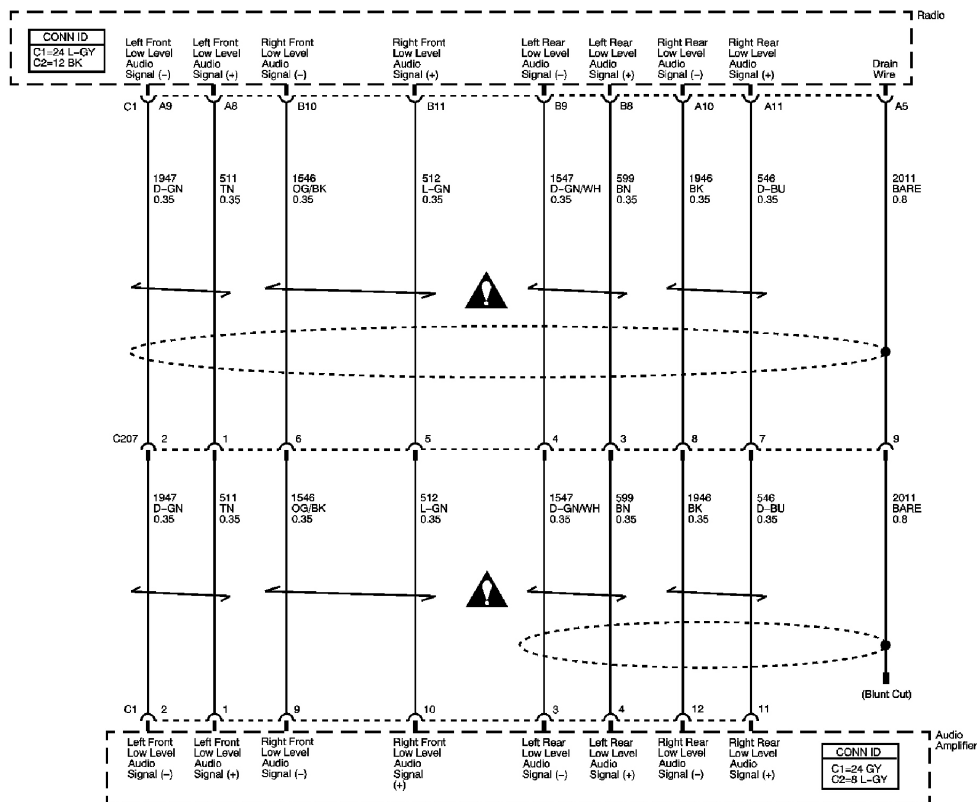


Fig. 2: Audio Amplifier and Premium Radio Low Level Audio Outputs Schematic
Courtesy of GENERAL MOTORS CORP.

2007 Hummer H3

2007 ACCESSORIES AND EQUIPMENT Cellular, Entertainment and Navigation - H3

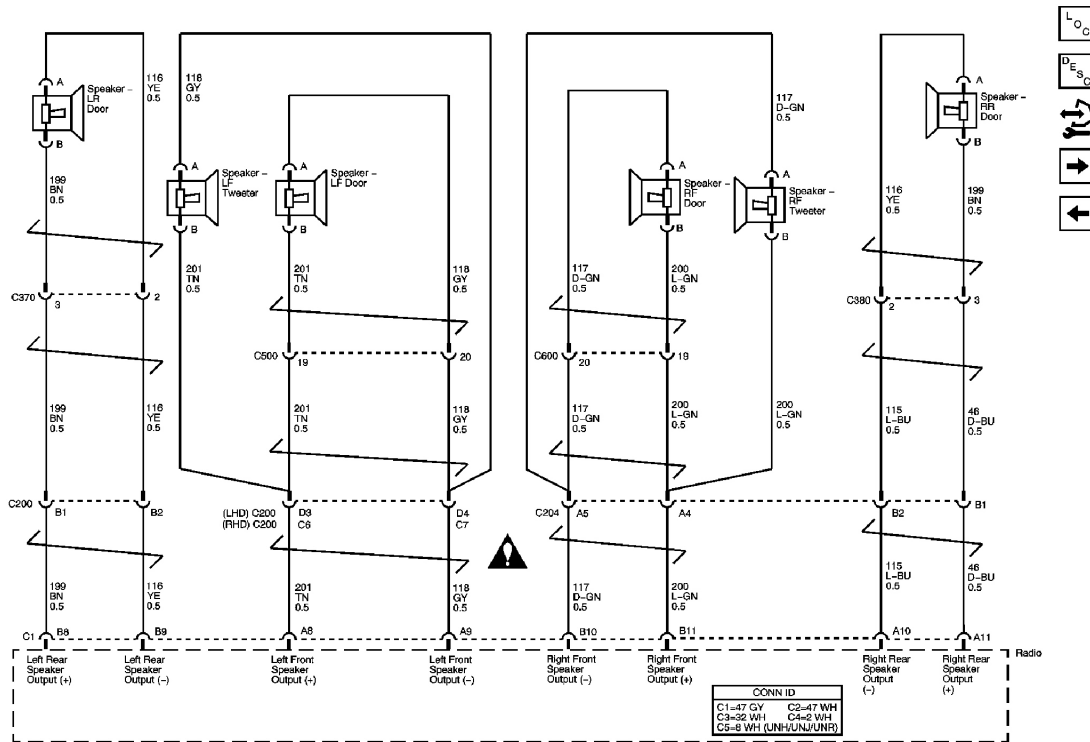


Fig. 3: Base Radio Speakers Schematic
Courtesy of GENERAL MOTORS CORP.

2007 Hummer H3

2007 ACCESSORIES AND EQUIPMENT Cellular, Entertainment and Navigation - H3

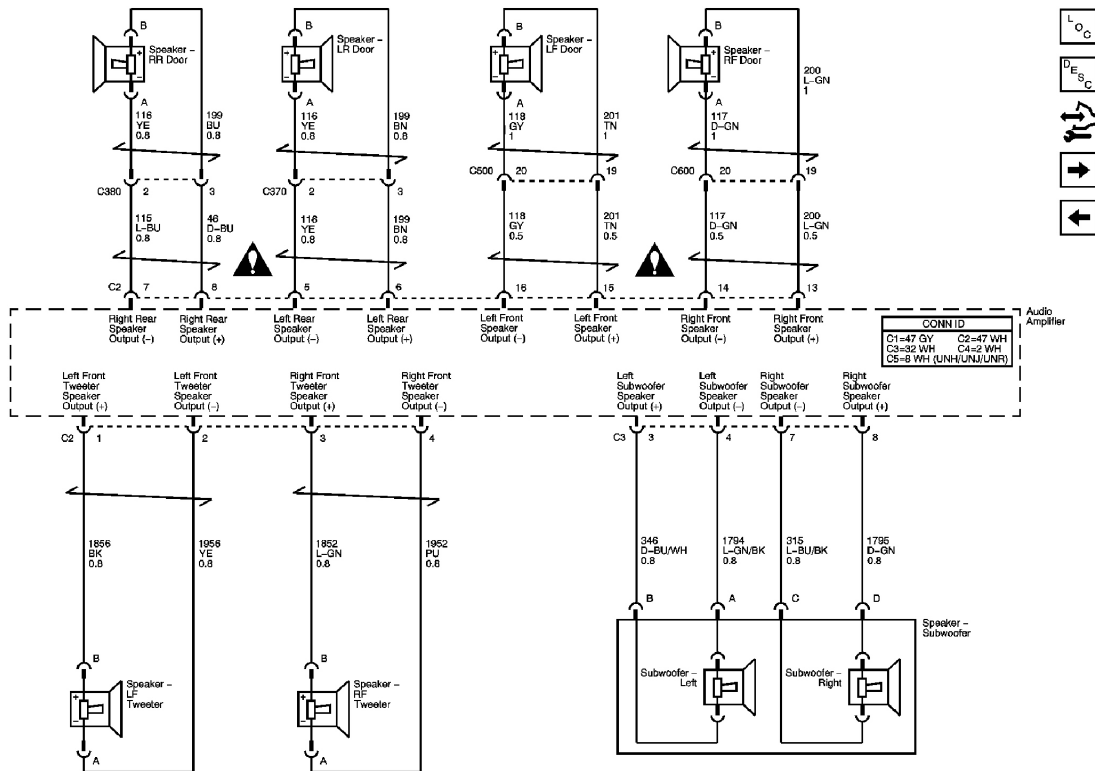


Fig. 4: Premium Radio Speakers Schematic
Courtesy of GENERAL MOTORS CORP.

2007 Hummer H3

2007 ACCESSORIES AND EQUIPMENT Cellular, Entertainment and Navigation - H3

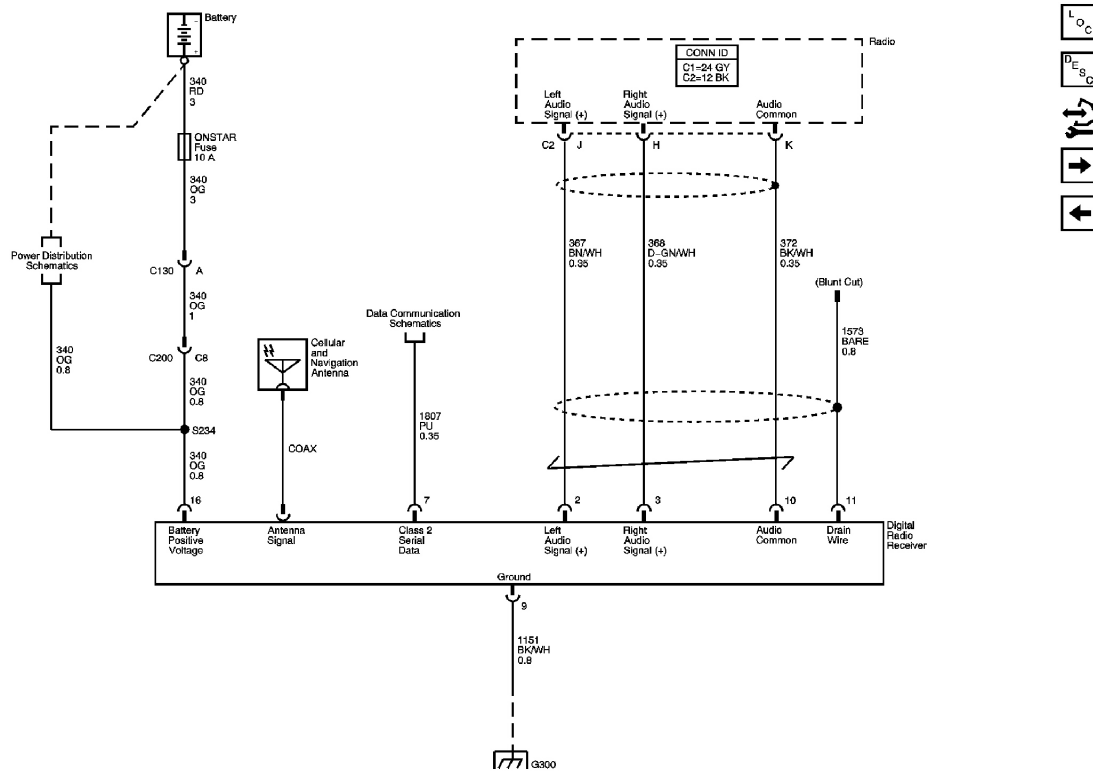


Fig. 5: Digital Radio Receiver (U2K) Schematic
 Courtesy of GENERAL MOTORS CORP.

2007 Hummer H3

2007 ACCESSORIES AND EQUIPMENT Cellular, Entertainment and Navigation - H3

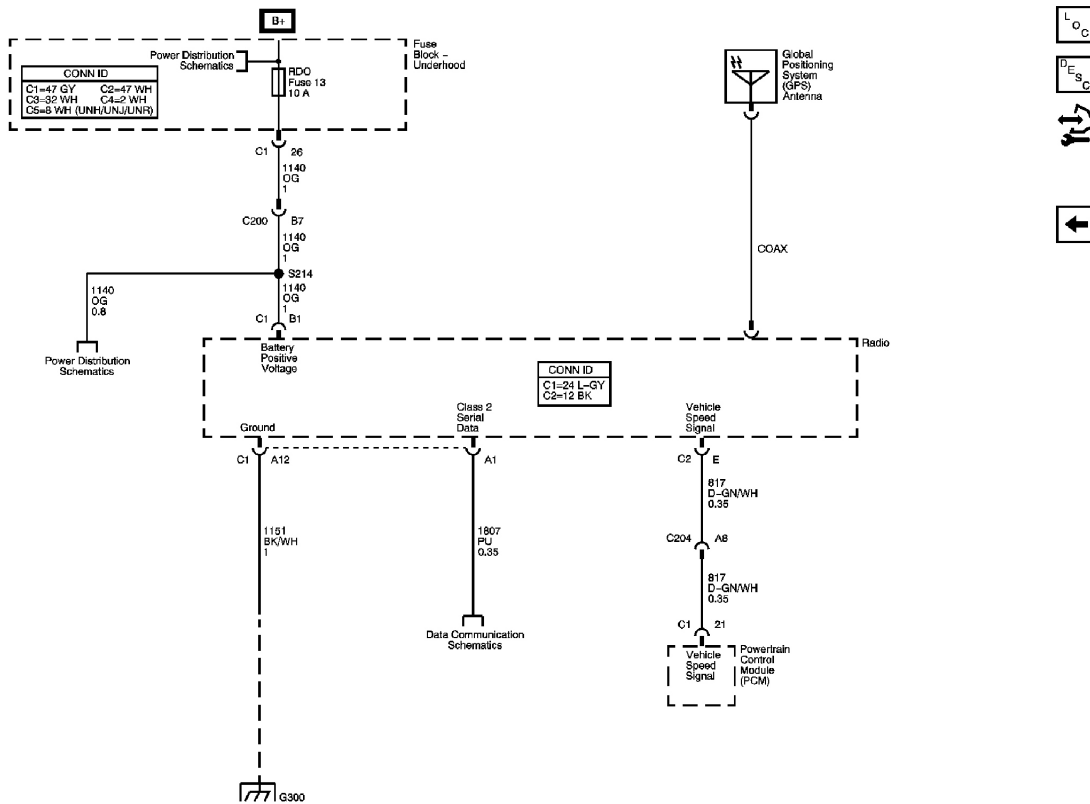


Fig. 6: Navigation System Schematic
 Courtesy of GENERAL MOTORS CORP.

ONSTAR SCHEMATICS

2007 Hummer H3
2007 ACCESSORIES AND EQUIPMENT Cellular, Entertainment and Navigation - H3

2007 Hummer H3
2007 ACCESSORIES AND EQUIPMENT Cellular, Entertainment and Navigation - H3

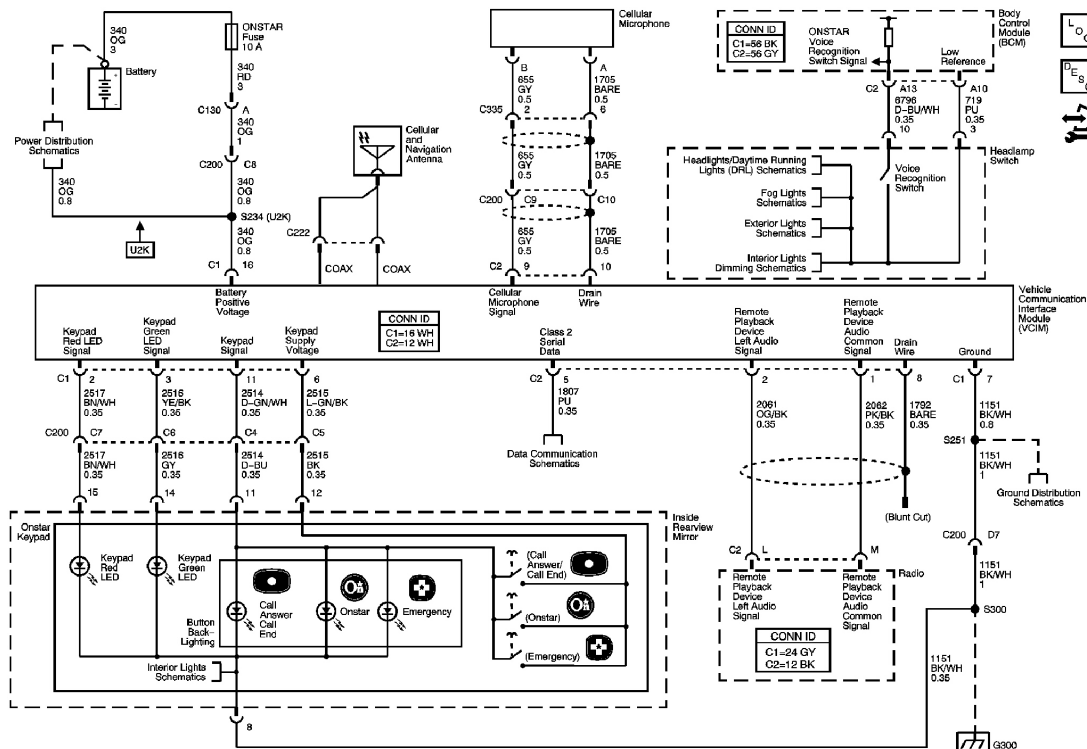


Fig. 7: OnStar Circuit Schematic
Courtesy of GENERAL MOTORS CORP.

COMPONENT LOCATOR

ENTERTAINMENT/COMMUNICATION COMPONENT VIEWS

2007 Hummer H3

2007 ACCESSORIES AND EQUIPMENT Cellular, Entertainment and Navigation - H3

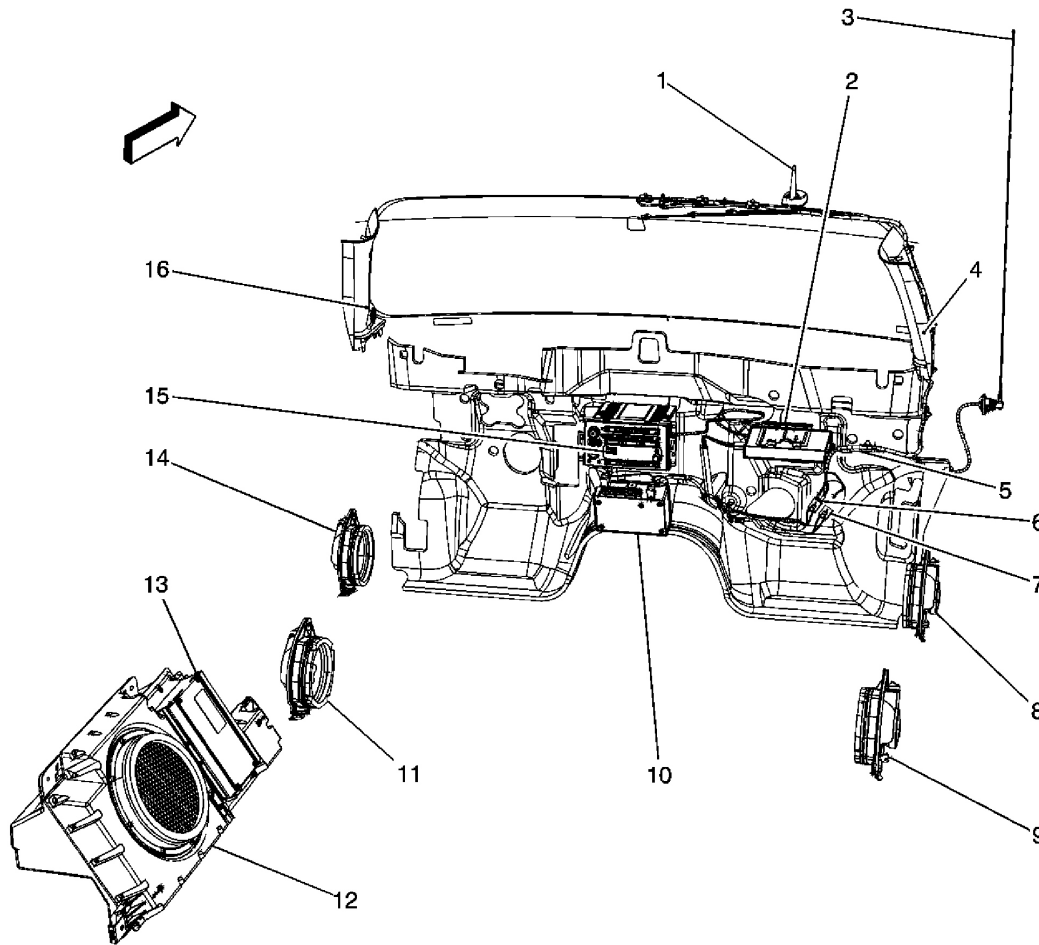


Fig. 8: View Of Entertainment Components
Courtesy of GENERAL MOTORS CORP.

Callouts For Fig. 8

Callout	Component Name
1	Cellular, Navigation and Digital Radio Antenna
2	Digital Radio Receiver
3	Radio Antenna
4	Speaker - RF Tweeter
5	C220 - Base Radio Coax
6	C221 - Digital Radio Coax
7	C222 - Vehicle Communication Interface Module (VCIM) Coax
8	Speaker-RF Door
9	Speaker-RR Door

2007 Hummer H3
2007 ACCESSORIES AND EQUIPMENT Cellular, Entertainment and Navigation - H3

2007 ACCESSORIES AND EQUIPMENT Cellular, Entertainment and Navigation - H3

10	Vehicle Communication Interface Module (VCIM)
11	Speaker-LR Door
12	Speaker-Subwoofer
13	Audio Amplifier
14	Speaker-RF Door
15	Radio
16	Speaker - LF Tweeter

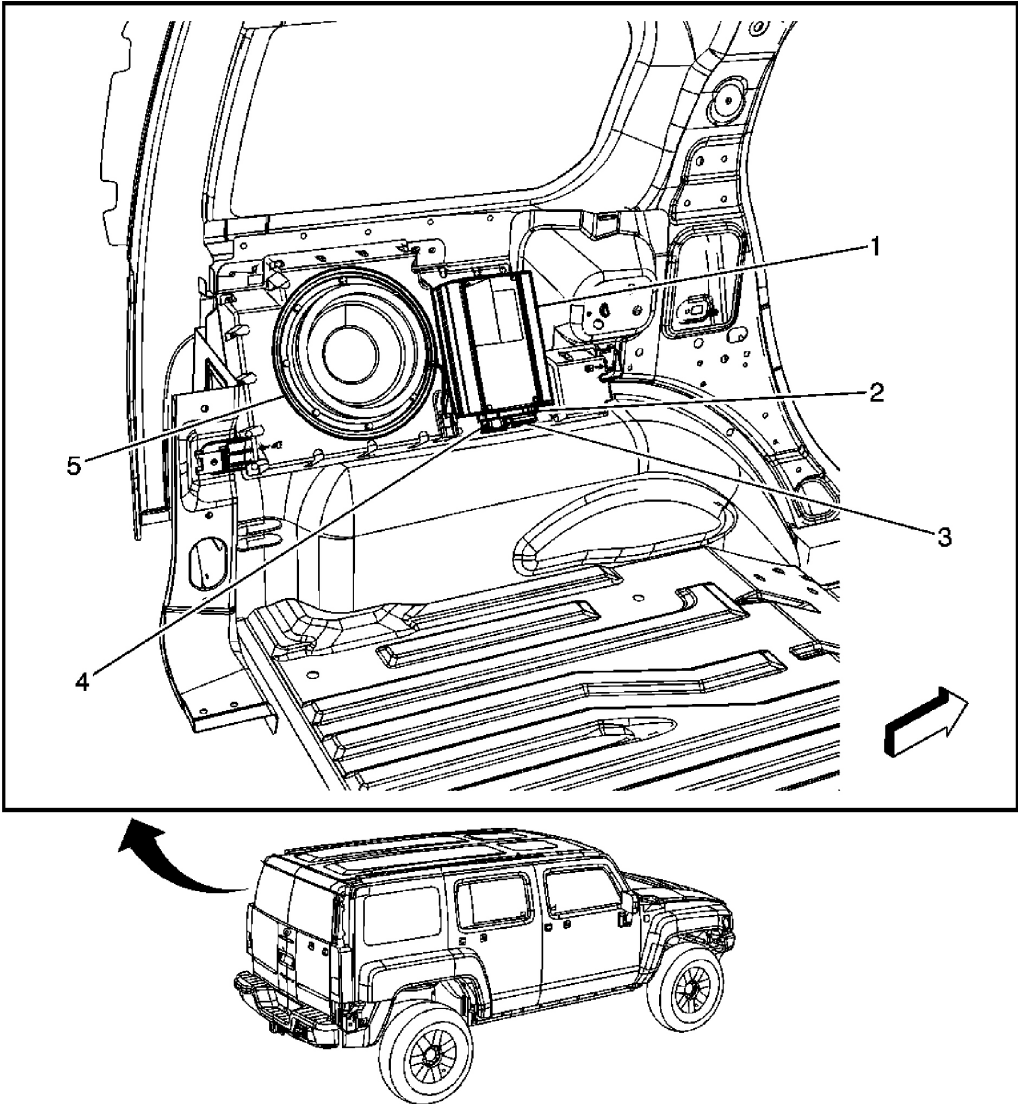


Fig. 9: View Of Left Rear of Cargo Area Components
Courtesy of GENERAL MOTORS CORP.

Callouts For Fig. 9

Callout	Component Name
1	Audio Amplifier
2	Audio Amplifier - C1
3	Audio Amplifier - C2
4	Audio Amplifier - C3
5	Speaker - Subwoofer

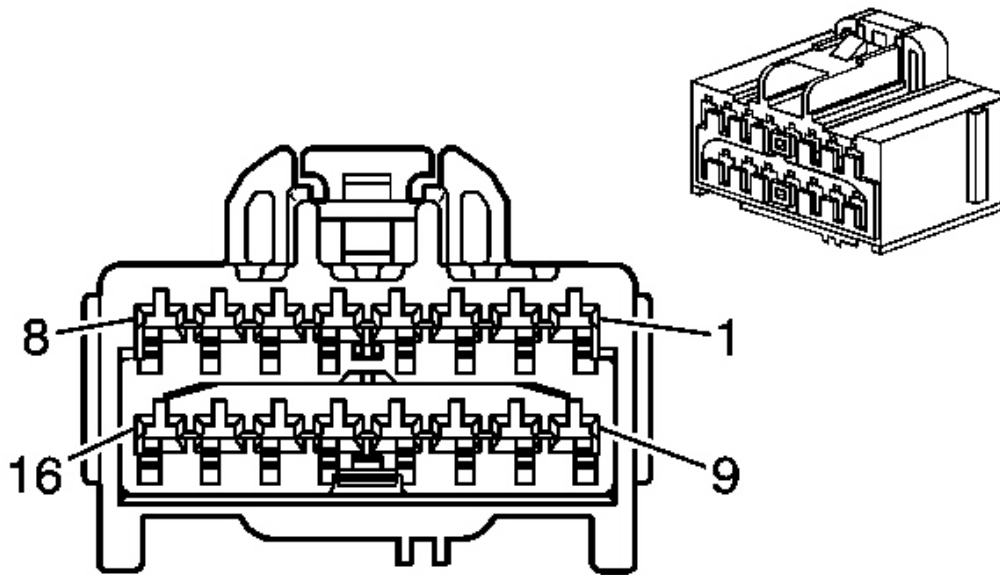
ENTERTAINMENT/COMMUNICATION CONNECTOR END VIEWS**Audio Amplifier C1 (UQA)**

Fig. 10: Audio Amplifier C1 (UQA) Connector End View
Courtesy of GENERAL MOTORS CORP.

Audio Amplifier C1 (UQA) Connector Parts Information**Connector Part Information**

- OEM: 7283-9076-30
- Service: 15136073

2007 Hummer H3

2007 ACCESSORIES AND EQUIPMENT Cellular, Entertainment and Navigation - H3

- Description: 16-Way F 064 USCAR (BK)

Terminal Part Information

- Terminal/Tray: 7116-4618-02/14
- Core/Insulation Crimp: J/J
- Release Tool/Test Probe: 15315247/J-35616-64A (L-BU)

Audio Amplifier C1 (UQA) Connector Terminal Identification

Pin	Wire Color	Circuit No.	Function
1	TN	511	Left Front Low Level Audio Signal (+)
2	D-GN	1947	Left Front Low Level Audio Signal (-)
3	D-GN/WH	1547	Left Rear Low Level Audio Signal (-)
4	BN	599	Left Rear Low Level Audio Signal (+)
5	OG	5748	Radio Mute Signal
6	PK	314	Radio On Signal
7	-	-	Not Used
8	GY/BK	2334	Remote Amplifier Sense Line Signal
9	OG/BK	1546	Right Front Low Level Audio Signal (-)
	D-BU	1546	Right Front Low Level Audio Signal (-), Early Production Only
10	L-GN	512	Right Front Low Level Audio Signal (+)
11	D-BU	546	Right Rear Low Level Audio Signal (+)
	OG/BK	546	Right Rear Low Level Audio Signal (+), Early Production Only
12	BK	1946	Right Rear Low Level Audio Signal (-)
13-16	-	-	Not Used

Audio Amplifier C2 (UQA)

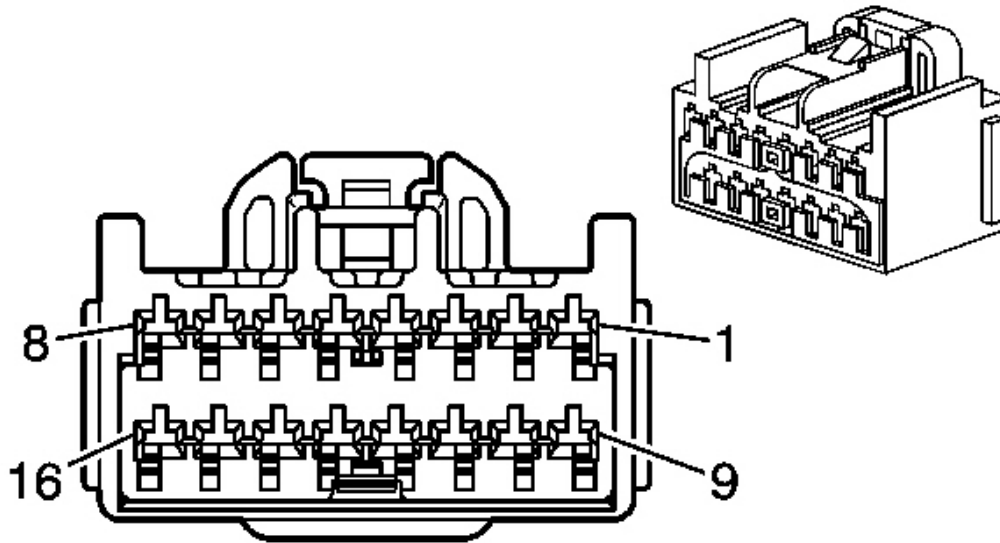


Fig. 11: Audio Amplifier C2 (UQA) Connector End View
Courtesy of GENERAL MOTORS CORP.

Audio Amplifier C2 (UQA) Connector Parts Information

Connector Part Information

- OEM: 6098-4611
- Service: 15134091
- Description: 16-Way F (BK)

Terminal Part Information

- Terminal/Tray: 8240-0128/22
- Core/Insulation Crimp: Pins 1-8: E/C
- Core/Insulation Crimp: Pins 13-16: C/A
- Release Tool/Test Probe: 15315247/J-35616-2A (GY)

Audio Amplifier C2 (UQA) Connector Terminal Identification

Pin	Wire Color	Circuit No.	Function
1	BK	1856	Left Front Tweeter Speaker Output (+)

2007 Hummer H3

2007 ACCESSORIES AND EQUIPMENT Cellular, Entertainment and Navigation - H3

2	YE	1956	Left Front Tweeter Speaker Output (-)
3	L-GN	1852	Right Front Tweeter Speaker Output (+)
4	PU	1952	Right Front Tweeter Speaker Output (-)
5	YE	116	Left Rear Speaker Output (-)
6	BN	199	Left Rear Speaker Output (+)
7	L-BU	115	Right Rear Speaker Output (-)
8	D-BU	46	Right Rear Speaker Output (+)
9-12	-	-	Not Used
13	L-GN	200	Right Front Speaker Output (+)
14	D-GN	117	Right Front Speaker Output (-)
15	TN	201	Left Front Speaker Output (+)
16	GY	118	Left Front Speaker Output (-)

Audio Amplifier C3 (UQA)

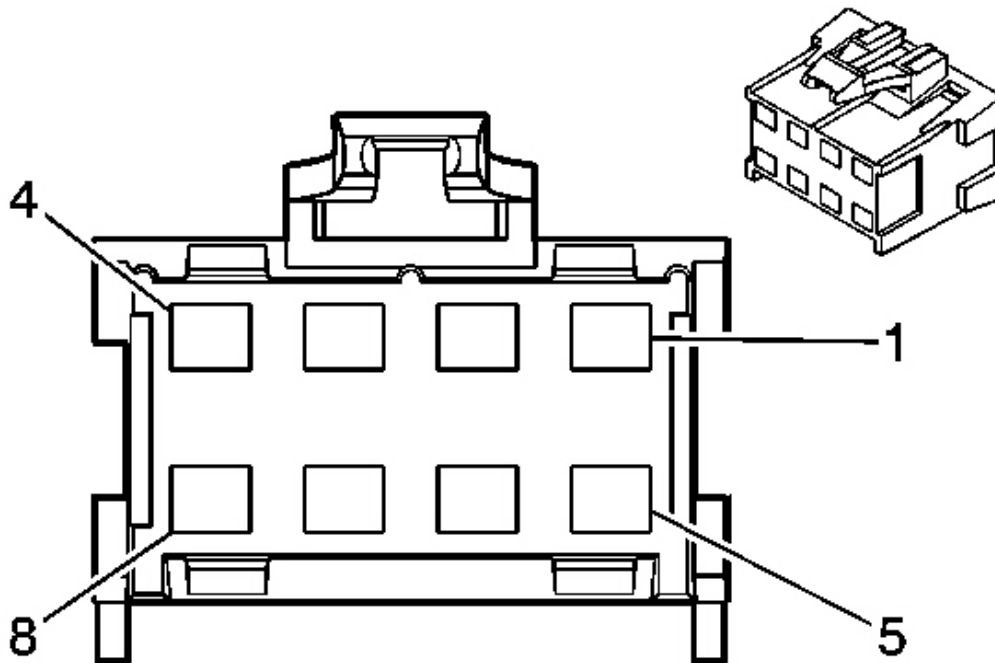


Fig. 12: Audio Amplifier C3 (UQA) Connector End View
Courtesy of GENERAL MOTORS CORP.

Audio Amplifier C3 (UQA) Connector Parts Information

Connector Part Information

- OEM: 6098-4713
- Service: 88988652
- Description: 8-Way F (BK)

Terminal Part Information

- Pins: 1-2
- Terminal/Tray: 8100-4445/22
- Core/Insulation Crimp: 4/4
- Release Tool/Test Probe: 15315247/J-35616-3 (GY)
- Pins: 3-8
- Terminal/Tray: 8100-4444/22
- Core/Insulation Crimp: 2/A
- Release Tool/Test Probe: 15315247/J-35616-3 (GY)

Audio Amplifier C3 (UQA) Connector Terminal Identification

Pin	Wire Color	Circuit No.	Function
1	OG	1140	Battery Positive Voltage
2	BK/WH	1151	Ground
3	D-BU/WH	346	Left Subwoofer Speaker Output (+)
4	L-GN/BK	1794	Left Subwoofer Speaker Output (-)
5-6	-	-	Not Used
7	L-BU/BK	315	Right Subwoofer Speaker Output (-)
8	D-GN	1795	Right Subwoofer Speaker Output (+)

Cellular Microphone

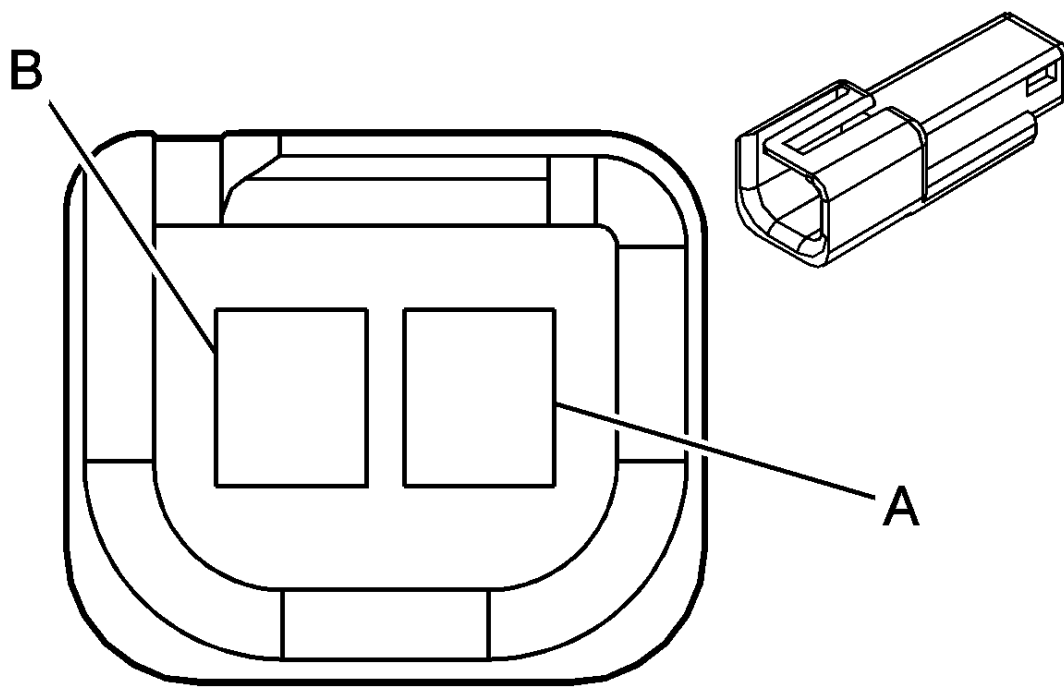


Fig. 13: Cellular Microphone Connector End View
 Courtesy of GENERAL MOTORS CORP.

Cellular Microphone Connector Parts Information

Connector Part Information

- OEM: 12047663
- Service: 12085481
- Description: 2-Way M Metri-Pack 150 Series (BK)

Terminal Part Information

- Terminal/Tray: 12047581/2
- Core/Insulation Crimp: E/C
- Release Tool/Test Probe: 12094429/J-35616-3 (GY)

Cellular Microphone Connector Terminal Identification

Pin	Wire Color	Circuit No.	Function
A	BARE	1705	Drain Wire
B	GY	655	Cellular Microphone Signal

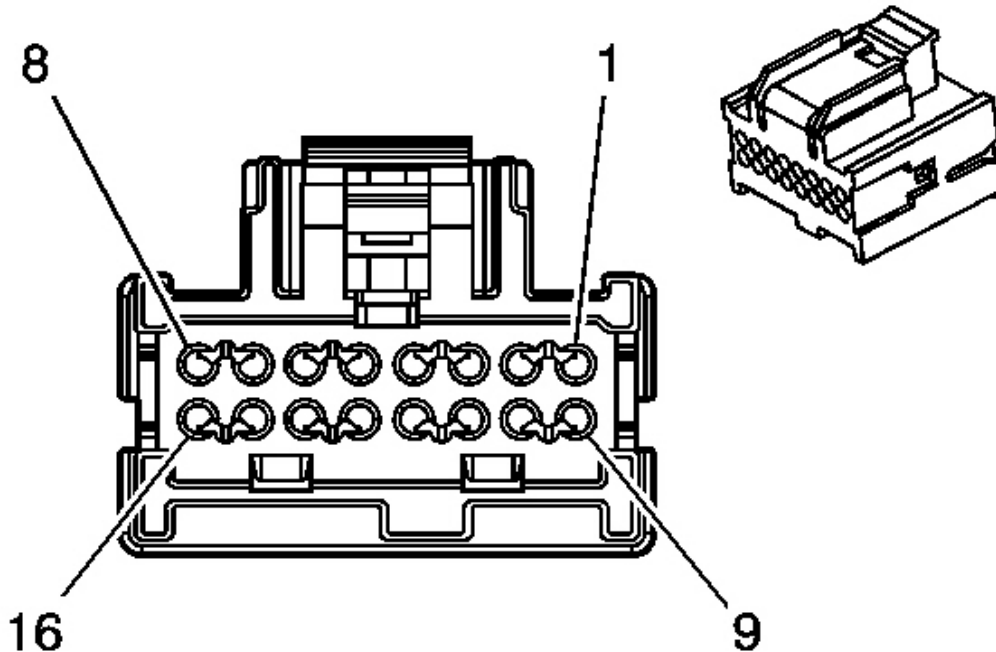


Fig. 14: Digital Radio Receiver (U2K) Connector End View
 Courtesy of GENERAL MOTORS CORP.

Digital Radio Receiver (U2K) Connector Parts Information

Connector Part Information

- OEM: 15394150
- Service: See Catalog
- Description: 16-Way F Micro 64 Series (BK)

Terminal Part Information

- Pins: 2-7, 10
- Terminal/Tray: 15394147/4
- Core/Insulation Crimp: M/M
- Release Tool/Test Probe: 15381651-2/J-35616-64A (L-BU)
- Pins: 9, 11, 16

2007 Hummer H3

2007 ACCESSORIES AND EQUIPMENT Cellular, Entertainment and Navigation - H3

- Terminal/Tray: 15359541/4
- Core/Insulation Crimp: M/M
- Release Tool/Test Probe: 15381651-2/J-35616-64A (L-BU)

Digital Radio Receiver (U2K) Connector Terminal Identification

Pin	Wire Color	Circuit No.	Function
1	-	-	Not Used
2	BN/WH	367	Left Audio Signal (+)
3	D-GN/WH	368	Right Audio Signal (+)
4-6	-	-	Not Used
7	PU	1807	Class 2 Serial Data
8	-	-	Not Used
9	BK/WH	1151	Ground
10	BK/WH	372	Audio Common
11	BARE	1573	Drain Wire
12-15	-	-	Not Used
16	OG	340	Battery Positive Voltage

Radio C1

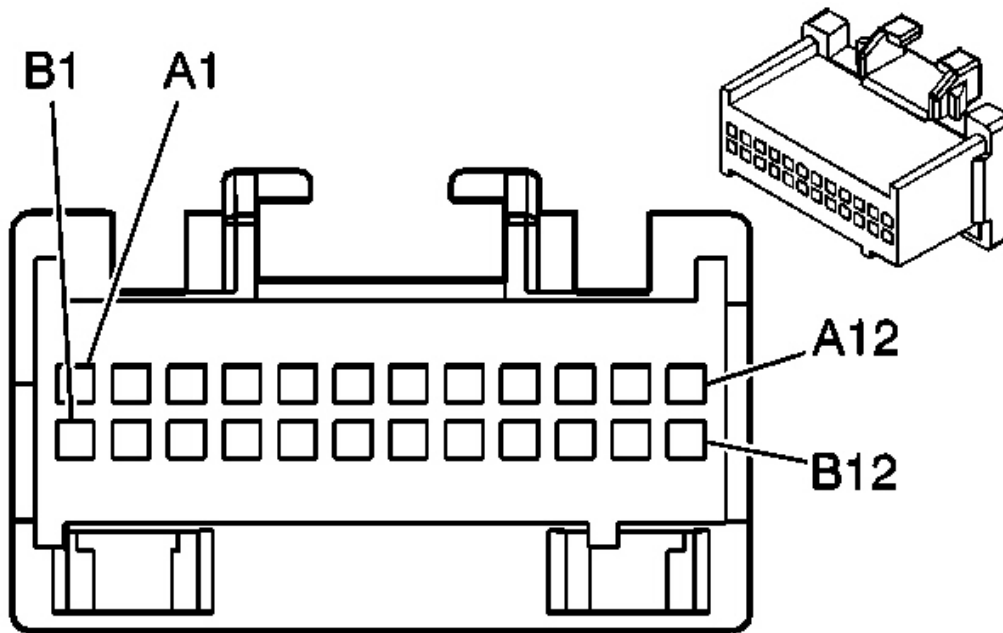


Fig. 15: Radio C1 Connector End View
 Courtesy of GENERAL MOTORS CORP.

Radio C1 Connector Parts Information

Connector Part Information

- OEM: 12110088
- Service: See Catalog
- Description: 24-Way F Micro-Pack 100 Series (L-GY)

Terminal Part Information

- Pins: A1-A2, A8-A11, B3-B11
- Terminal/Tray: 12146447/3
- Core/Insulation Crimp: E/C
- Release Tool/Test Probe: 12031876-1/J-35616-6 (BN)
- Pins: A5, A12, B1
- Terminal/Tray: 12146448/19

2007 Hummer H3

2007 ACCESSORIES AND EQUIPMENT Cellular, Entertainment and Navigation - H3

- Core/Insulation Crimp: Pin A5: E/C
- Core/Insulation Crimp: Pins A12, B1: E/A
- Release Tool/Test Probe: 12031876-1/J-35616-6 (BN)

Radio C1 Connector Terminal Identification

Pin	Wire Color	Circuit No.	Function
A1	PU	1807	Class 2 Serial Data (UE1)
A2	PU	1807	Class 2 Serial Data
A3-A4	-	-	Not Used
A5	BARE	2011	Drain Wire (UQA)
A6-A7	-	-	Not Used
A8	TN	201	Left Front Speaker Output (+) (UQ3)
	TN	511	Left Front Low Level Audio Signal (+) (UQA)
A9	GY	118	Left Front Speaker Output (-) (UQ3)
	D-GN	1947	Left Front Low Level Audio Signal (-) (UQA)
A10	L-BU	115	Right Rear Speaker Output (-) (UQ3)
	BK	1946	Right Rear Low Level Audio Signal (-) (UQA)
A11	D-BU	46	Right Rear Speaker Output (+) (UQ3)
	D-BU	546	Right Rear Low Level Audio Signal (+) (UQA)
A12	BK/WH	1151	Ground
B1	OG	1140	Battery Positive Voltage
B2	-	-	Not Used
B3	PK	314	Radio On Signal (UQA)
B4	GY	8	Instrument Panel Lamps Dimmer Switch Signal
B5	BK	2050	Ground
B6	OG	5748	Radio Mute Signal (UQA)
B7	-	-	Not Used
B8	BN	199	Left Rear Speaker Output (+) (UQ3)
	BN	599	Left Rear Low Level Audio Signal (+) (UQA)

2007 Hummer H3

2007 ACCESSORIES AND EQUIPMENT Cellular, Entertainment and Navigation - H3

B9	YE	116	Left Rear Speaker Output (-) (UQ3)
	D-GN/WH	1547	Left Rear Low Level Audio Signal (-) (UQA)
B10	D-GN	117	Right Front Speaker Output (-) (UQ3)
	OG/BK	1546	Right Front Low Level Audio Signal (-) (UQA)
B11	L-GN	200	Right Front Speaker Output (+) (UQ3)
	L-GN	512	Right Front Low Level Audio Signal (+) (UQA)
B12	-	-	Not Used

Radio C2

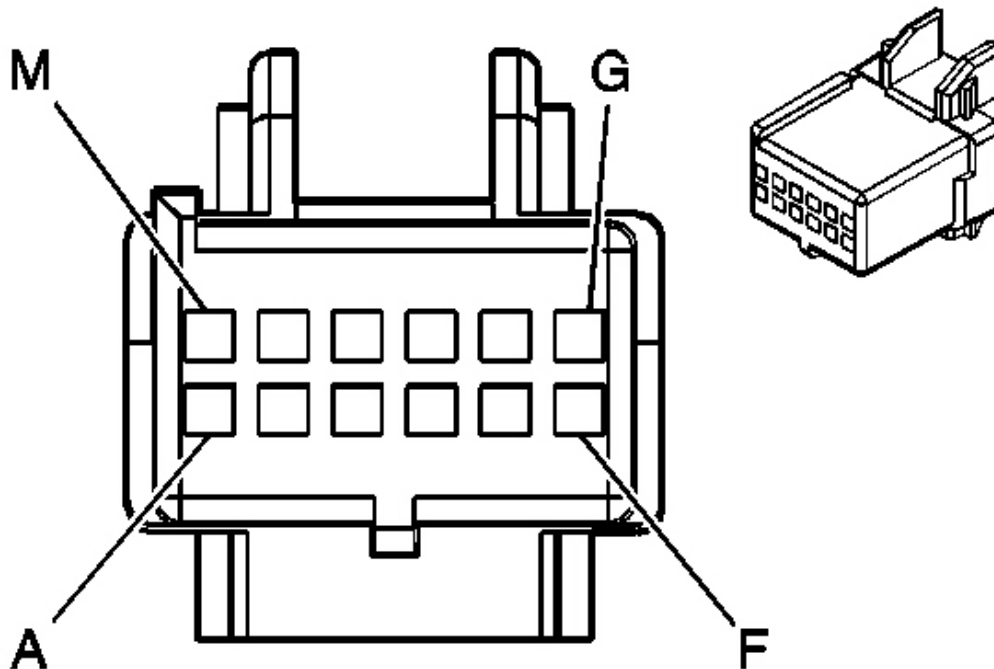


Fig. 16: Radio C2 Connector End View
Courtesy of GENERAL MOTORS CORP.

Radio C2 Connector Parts Information

2007 Hummer H3

2007 ACCESSORIES AND EQUIPMENT Cellular, Entertainment and Navigation - H3

Connector Part Information

- OEM: 12064799
- Service: 15305996
- Description: 12-Way F Micro-Pack 100 Series (BK)

Terminal Part Information

- Terminal/Tray: 12146447/3
- Core/Insulation Crimp: E/C
- Release Tool/Test Probe: 12031876-1/J-35616-6 (BN)

Radio C2 Connector Terminal Identification

Pin	Wire Color	Circuit No.	Function
A-D	-	-	Not Used
E	D-GN/WH	817	Vehicle Speed Signal (UM8)
F	-	-	Not Used
G	PU	1807	Class 2 Serial Data (U2K)
H	D-GN/WH	368	Radio Audio Signal (+) (U2K)
J	BN/WH	367	Left Audio Signal (+) (U2K)
K	BK/WH	372	Audio Common (U2K)
L	OG/BK	2061	Remote Playback Device Left Audio Signal (UE1)
M	PK/BK	2062	Remote Playback Device Audio Common Signal (UE1)

Speaker - Left Front Door (UQA)

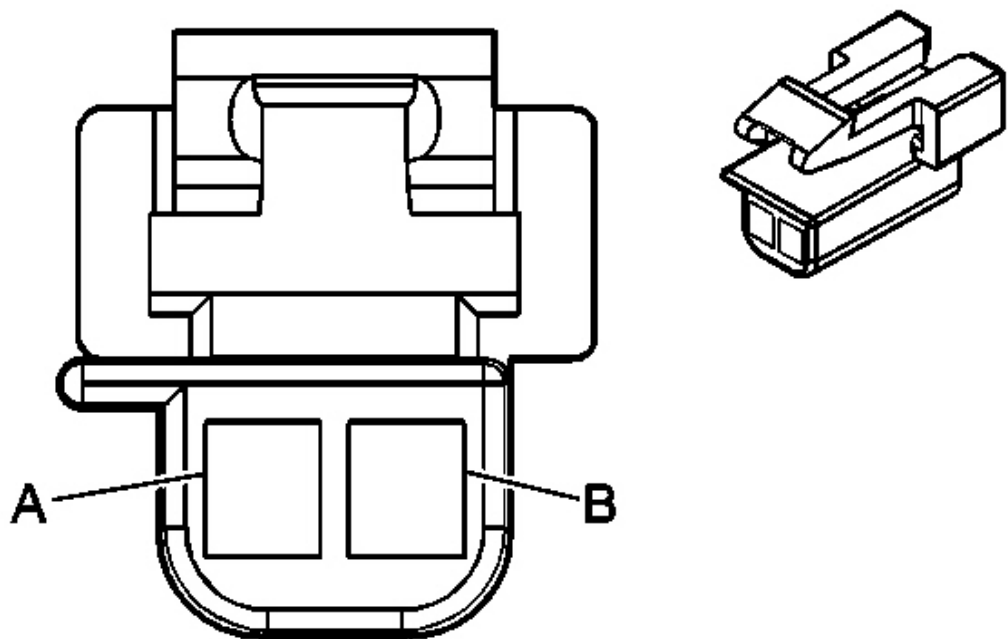


Fig. 17: Speaker - Left Front Door (UQA) Connector End View
Courtesy of GENERAL MOTORS CORP.

Speaker - Left Front Door (UQA) Connector Parts Information

Connector Part Information	
<ul style="list-style-type: none">• OEM: 12064869• Service: 12117323• Description: 2-Way F Metri-Pack 150 Series (BU)	
Terminal Part Information	
<ul style="list-style-type: none">• Terminal/Tray: 12047767/2• Core/Insulation Crimp: E/A• Release Tool/Test Probe: 12094429/J-35616-2A (GY)	

Speaker - Left Front Door (UQA) Connector Terminal Identification

Pin	Wire Color	Circuit No.	Function

A	GY	118	Left Front Speaker Output (-)
B	TN	201	Left Front Speaker Output (+)

Speaker - Left Front Door (UQ3)

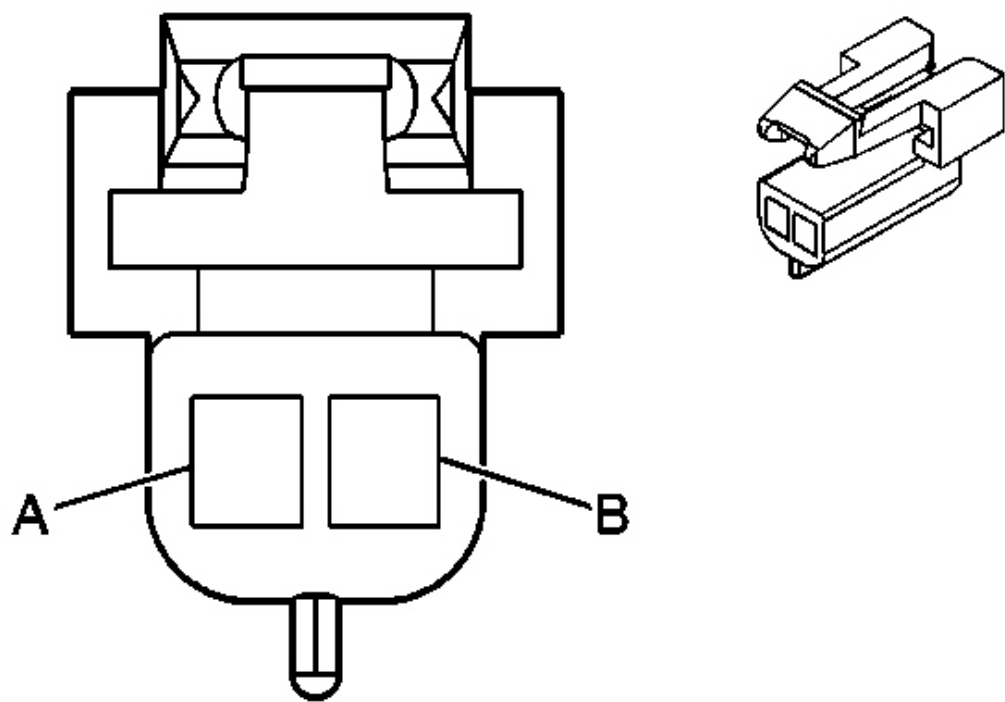


Fig. 18: Speaker - Left Front Door (UQ3) Connector End View
Courtesy of GENERAL MOTORS CORP.

Speaker - Left Front Door (UQ3) Connector Parts Information

Connector Part Information <ul style="list-style-type: none">• OEM: 12052832• Service: 12101825• Description: 2-Way F Metri-Pack 150 Series (BK)
Terminal Part Information

- Terminal/Tray: 12064971/5
- Core/Insulation Crimp: E/C
- Release Tool/Test Probe: 12094429/J-35616-2A (GY)

Speaker - Left Front Door (UQ3) Connector Terminal Identification

Pin	Wire Color	Circuit No.	Function
A	GY	118	Left Front Speaker Output (-)
B	TN	201	Left Front Speaker Output (+)

Speaker - Left Front Tweeter (UQA)

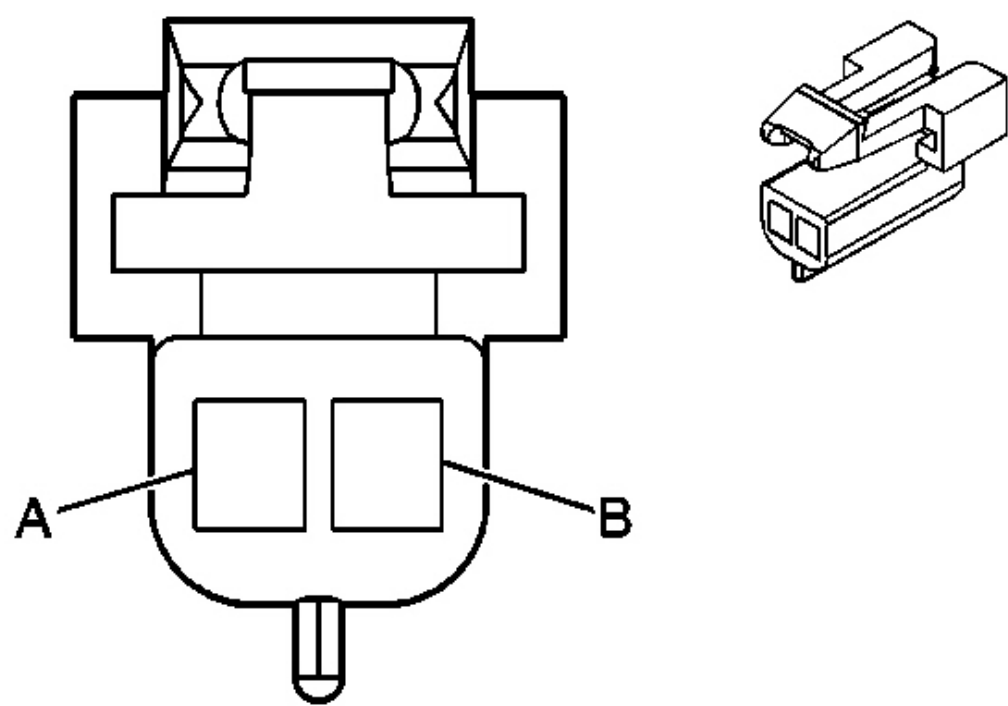


Fig. 19: Speaker - Left Front Tweeter (UQA) Connector End View
Courtesy of GENERAL MOTORS CORP.

Speaker - Left Front Tweeter (UQA) Connector Parts Information

Connector Part Information

- OEM: 12052832
- Service: 12101825
- Description: 2-Way F Metri-Pack 150 Series (BK)

Terminal Part Information

- Terminal/Tray: 12047767/2
- Core/Insulation Crimp: E/A
- Release Tool/Test Probe: 12094429/J-35616-2A (GY)

Speaker - Left Front Tweeter (UQA) Connector Terminal Identification

Pin	Wire Color	Circuit No.	Function
A	YE	1956	Left Front Tweeter Speaker Output (-)
B	BK	1856	Left Front Tweeter Speaker Output (+)

Speaker - Left Front Tweeter (UQ3)

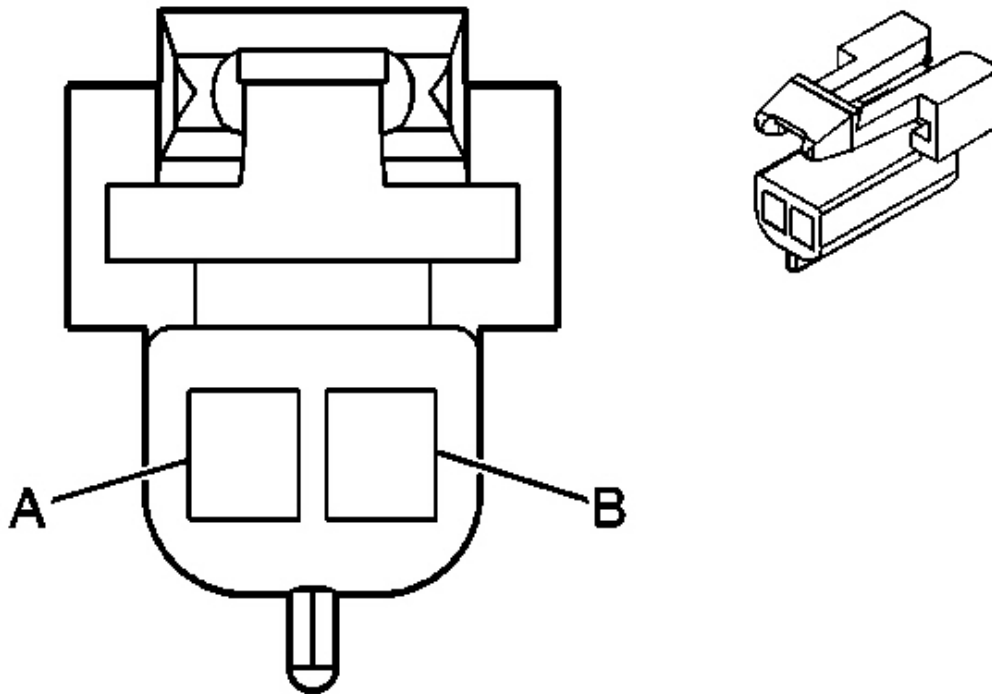


Fig. 20: Speaker - Left Front Tweeter (UQ3) Connector End View
Courtesy of GENERAL MOTORS CORP.

Speaker - Left Front Tweeter (UQ3) Connector Parts Information

Connector Part Information

- OEM: 12052832
- Service: 12101825
- Description: 2-Way F Metri-Pack 150 Series (BK)

Terminal Part Information

- Terminal/Tray: 12064971/5
- Core/Insulation Crimp: E/C
- Release Tool/Test Probe: 12094429/J-35616-2A (GY)

Speaker - Left Front Tweeter (UQ3) Connector Terminal Identification

Pin	Wire Color	Circuit No.	Function
A	GY	118	Left Front Speaker Output (-)
B	TN	201	Left Front Speaker Output (+)

Speaker - Left Rear Door (UQA)

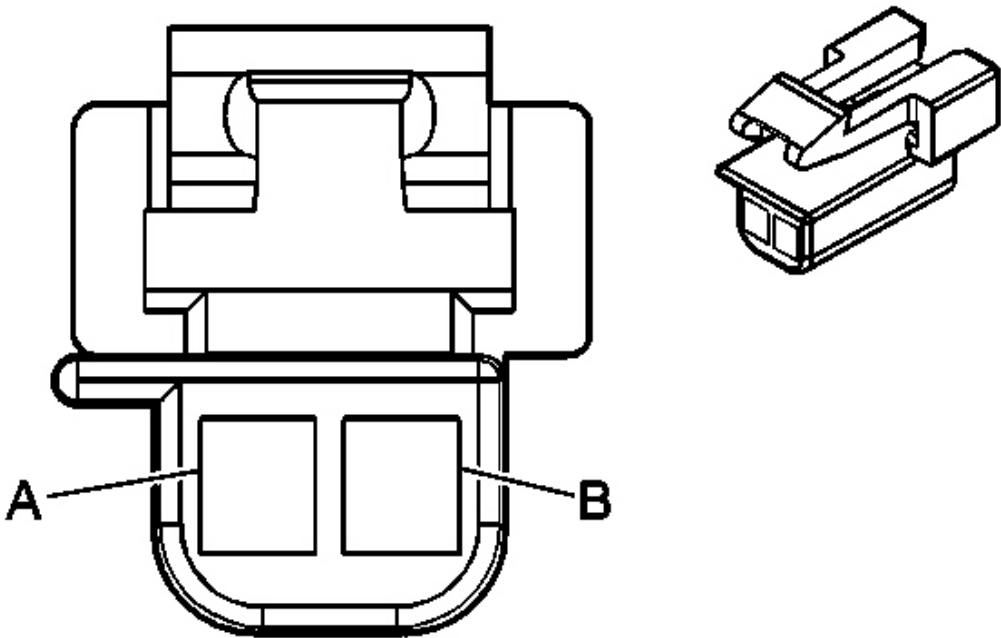


Fig. 21: Speaker - Left Rear Door (UQA) Connector End View
Courtesy of GENERAL MOTORS CORP.

Speaker - Left Rear Door (UQA) Connector Parts Information

Connector Part Information
<ul style="list-style-type: none">• OEM: 12064867• Service: 88987981• Description: 2-Way F Metri-Pack 150 Series (WH)
Terminal Part Information
<ul style="list-style-type: none">• Terminal/Tray: 12047767/2

- Core/Insulation Crimp: E/A
- Release Tool/Test Probe: 12094429/J-35616-2A (GY)

Speaker - Left Rear Door (UQA) Connector Terminal Identification

Pin	Wire Color	Circuit No.	Function
A	YE	116	Left Rear Speaker Output (-)
B	BN	199	Left Rear Speaker Output (+)

Speaker - Left Rear Door (UQ3)

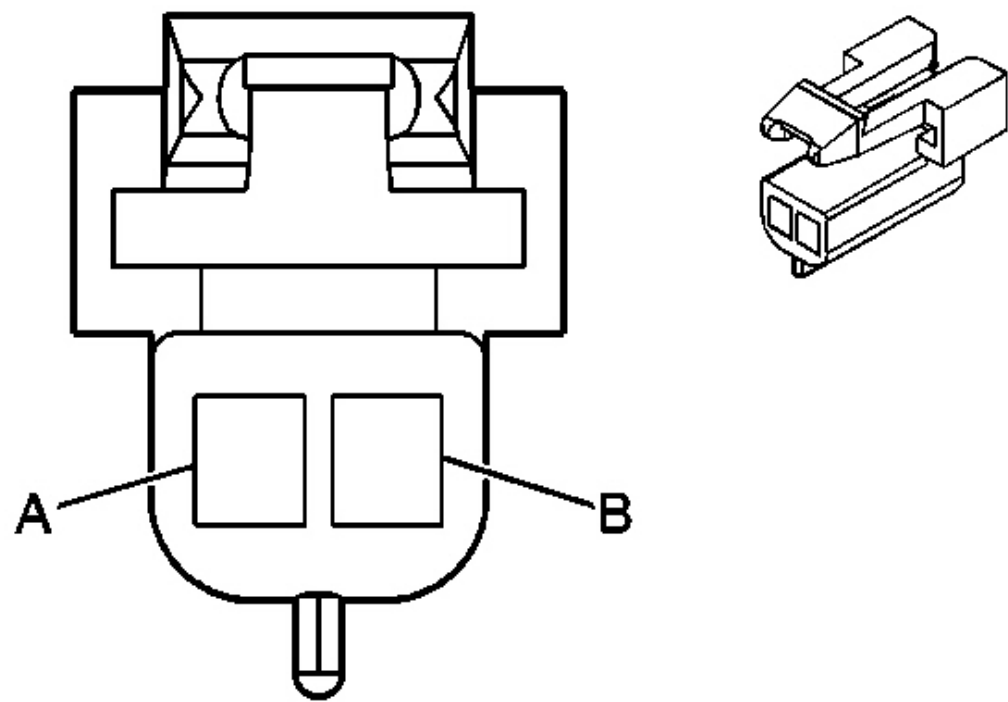


Fig. 22: Speaker - Left Rear Door (UQ3) Connector End View
Courtesy of GENERAL MOTORS CORP.

Speaker - Left Rear Door (UQ3) Connector Parts Information

Connector Part Information

2007 Hummer H3

2007 ACCESSORIES AND EQUIPMENT Cellular, Entertainment and Navigation - H3

- OEM: 15433787
- Service: 12101825
- Description: 2-Way F Metri-Pack 150 Series (L-GY)

Terminal Part Information

- Terminal/Tray: 12064971/5
- Core/Insulation Crimp: E/C
- Release Tool/Test Probe: 12094429/J-35616-2A (GY)

Speaker - Left Rear Door (UQ3) Connector Terminal Identification

Pin	Wire Color	Circuit No.	Function
A	YE	116	Left Rear Speaker Output (-)
B	BN	199	Left Rear Speaker Output (+)

Speaker - Right Front Door (UQA)

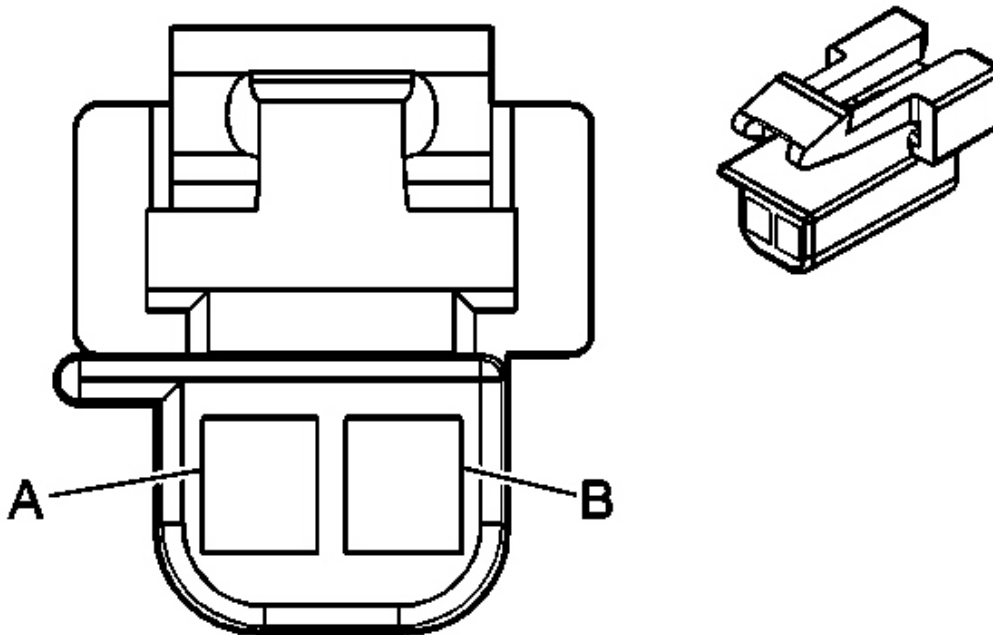


Fig. 23: Speaker - Right Front Door (UQA) Connector End View

2007 Hummer H3

2007 ACCESSORIES AND EQUIPMENT Cellular, Entertainment and Navigation - H3

Courtesy of **GENERAL MOTORS CORP.**

Speaker - Right Front Door (UQA) Connector Parts Information

Connector Part Information

- OEM: 12064869
- Service: 12117323
- Description: 2-Way F Metri-Pack 150 Series (BU)

Terminal Part Information

- Terminal/Tray: 12047767/2
- Core/Insulation Crimp: E/A
- Release Tool/Test Probe: 12094429/J-35616-2A (GY)

Speaker - Right Front Door (UQA) Connector Terminal Identification

Pin	Wire Color	Circuit No.	Function
A	D-GN	117	Right Front Speaker Output (-)
B	L-GN	200	Right Front Speaker Output (+)

Speaker - Right Front Door (UQ3)

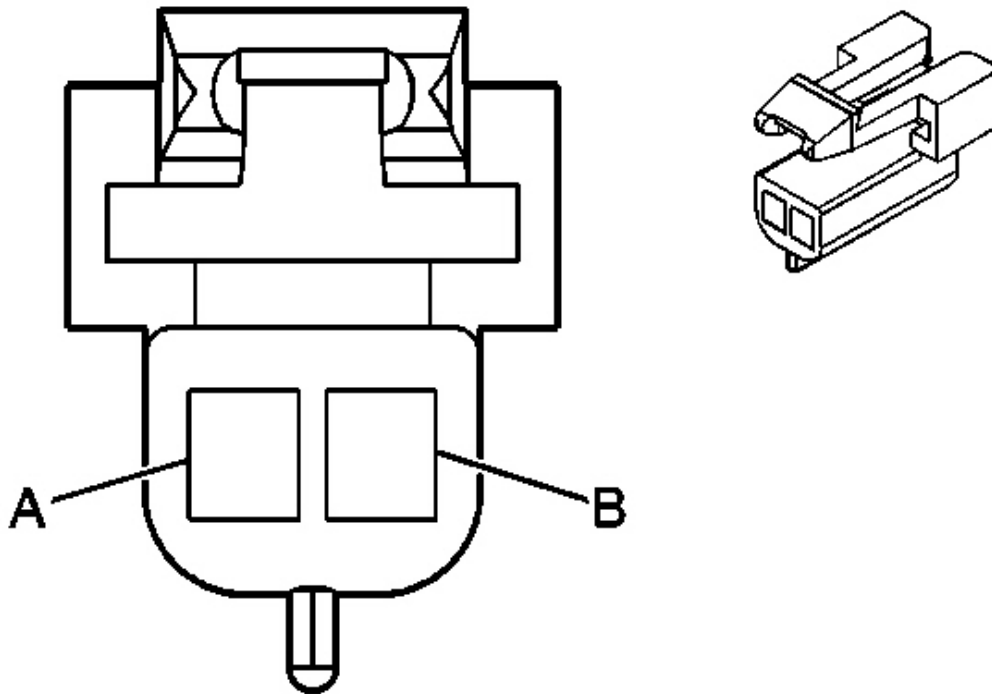


Fig. 24: Speaker - Right Front Door (UQ3) Connector End View
Courtesy of GENERAL MOTORS CORP.

Speaker - Right Front Door (UQ3) Connector Parts Information

Connector Part Information

- OEM: 12052832
- Service: 12101825
- Description: 2-Way F Metri-Pack 150 Series (BK)

Terminal Part Information

- Terminal/Tray: 12064971/5
- Core/Insulation Crimp: E/C
- Release Tool/Test Probe: 12094429/J-35616-2A (GY)

Speaker - Right Front Door (UQ3) Connector Terminal Identification

Pin	Wire Color	Circuit No.	Function
A	D-GN	117	Right Front Speaker Output (-)
B	L-GN	200	Right Front Speaker Output (+)

Speaker - Right Front Tweeter (UQA)

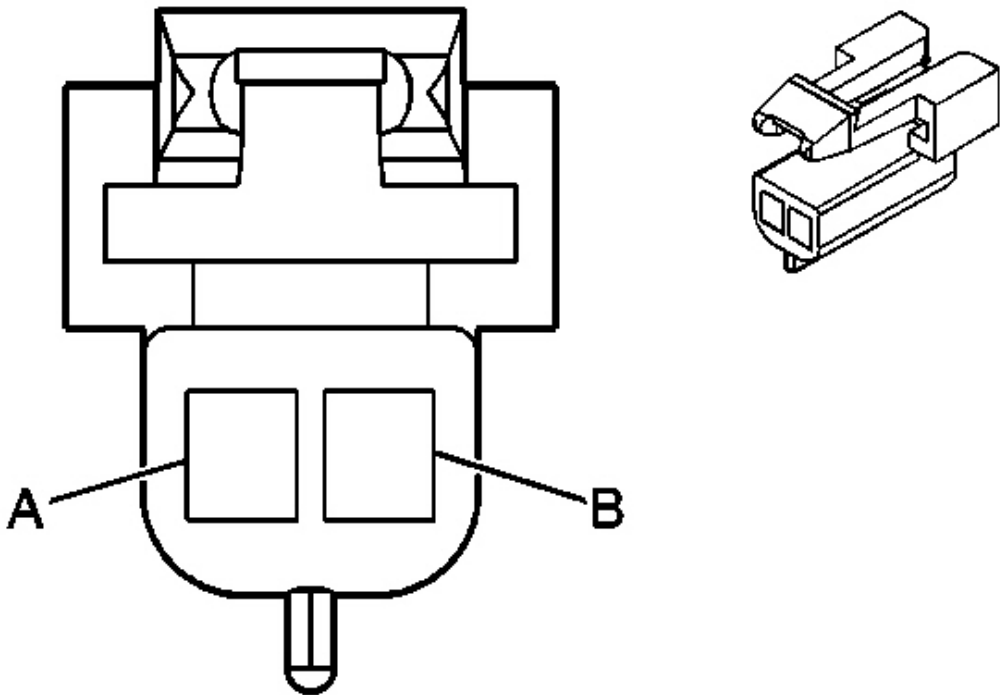


Fig. 25: Speaker - Right Front Tweeter (UQA) Connector End View
Courtesy of GENERAL MOTORS CORP.

Speaker - Right Front Tweeter (UQA) Connector Parts Information

Connector Part Information
<ul style="list-style-type: none">• OEM: 12052832• Service: 12101825• Description: 2-Way F Metri-Pack 150 Series (BK)
Terminal Part Information

2007 Hummer H3

2007 ACCESSORIES AND EQUIPMENT Cellular, Entertainment and Navigation - H3

- Terminal/Tray: 12047767/2
- Core/Insulation Crimp: E/A
- Release Tool/Test Probe: 12094429/J-35616-2A (GY)

Speaker - Right Front Tweeter (UQA) Connector Terminal Identification

Pin	Wire Color	Circuit No.	Function
A	PU	1952	Right Front Tweeter Speaker Output (-)
B	L-GN	1852	Right Front Tweeter Speaker Output (+)

Speaker - Right Front Tweeter (UQ3)

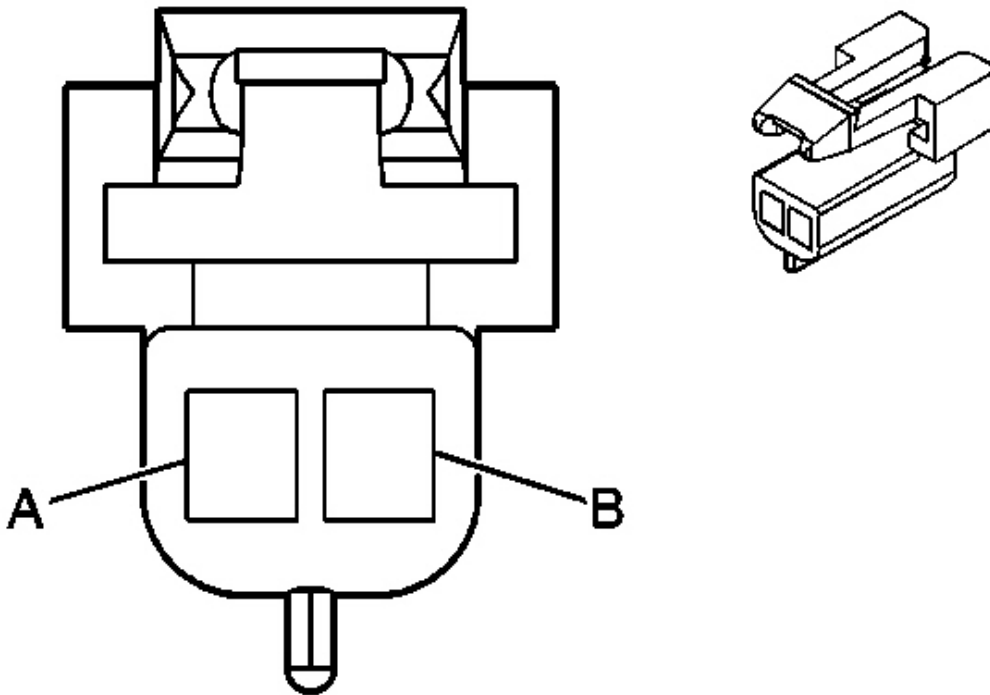


Fig. 26: Speaker - Right Front Tweeter (UQ3) Connector End View
Courtesy of GENERAL MOTORS CORP.

2007 Hummer H3

2007 ACCESSORIES AND EQUIPMENT Cellular, Entertainment and Navigation - H3

Speaker - Right Front Tweeter (UQ3) Connector Parts Information

Connector Part Information

- OEM: 12052832
- Service: 12101825
- Description: 2-Way F Metri-Pack 150 Series (BK)

Terminal Part Information

- Terminal/Tray: 12064971/5
- Core/Insulation Crimp: E/C
- Release Tool/Test Probe: 12094429/J-35616-2A (GY)

Speaker - Right Front Tweeter (UQ3) Connector Terminal Identification

Pin	Wire Color	Circuit No.	Function
A	D-GN	117	Right Front Speaker Output (-)
B	L-GN	200	Right Front Speaker Output (+)

Speaker - Right Rear Door (UQA)

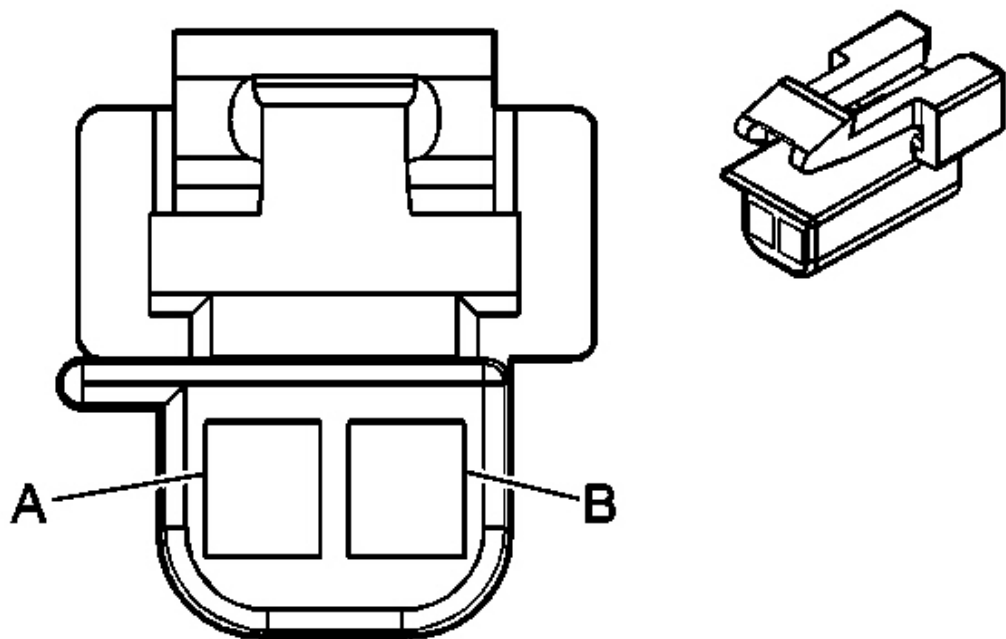


Fig. 27: Speaker - Right Rear Door (UQA) Connector End View
Courtesy of GENERAL MOTORS CORP.

Speaker - Right Rear Door (UQA) Connector Parts Information

Connector Part Information	
<ul style="list-style-type: none">• OEM: 12064867• Service: 88987981• Description: 2-Way F Metri-Pack 150 Series (WH)	
Terminal Part Information	
<ul style="list-style-type: none">• Terminal/Tray: 12047767/2• Core/Insulation Crimp: E/A• Release Tool/Test Probe: 12094429/J-35616-2A (GY)	

Speaker - Right Rear Door (UQA) Connector Terminal Identification

Pin	Wire Color	Circuit No.	Function

A	YE	116	Right Rear Speaker Output (-)
B	BN	199	Right Rear Speaker Output (+)

Speaker - Right Rear Door (UQ3)

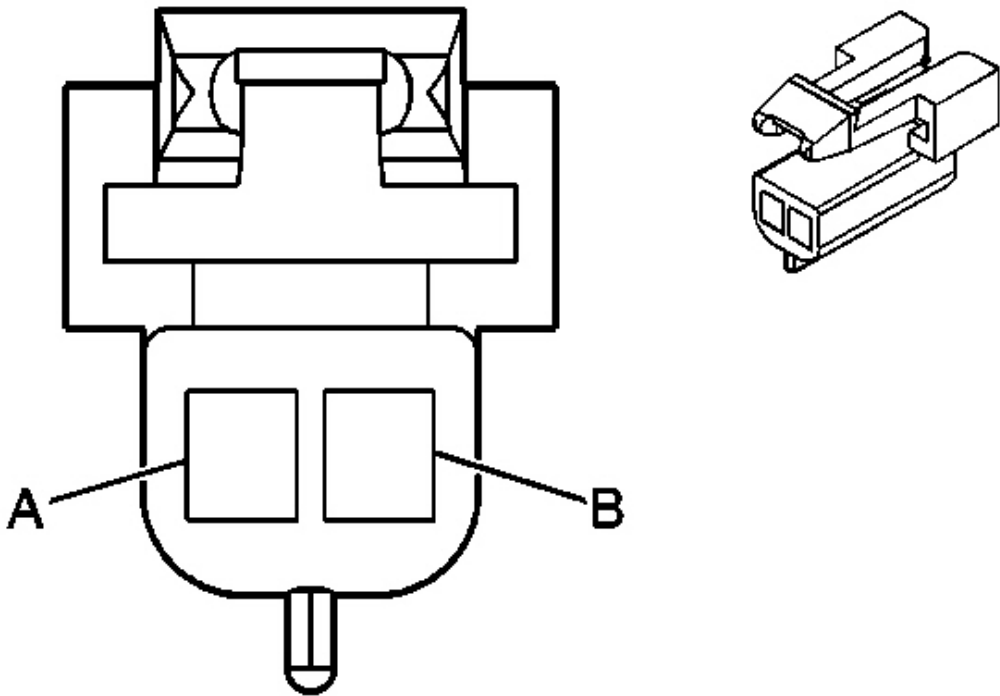


Fig. 28: Speaker - Right Rear Door (UQ3) Connector End View
Courtesy of GENERAL MOTORS CORP.

Speaker - Right Rear Door (UQ3) Connector Parts Information

Connector Part Information
<ul style="list-style-type: none">• OEM: 15433787• Service: 12101825• Description: 2-Way F Metri-Pack 150 Series (L-GY)
Terminal Part Information

- Terminal/Tray: 12064971/5
- Core/Insulation Crimp: E/C
- Release Tool/Test Probe: 12094429/J-35616-2A (GY)

Speaker - Right Rear Door (UQ3) Connector Terminal Identification

Pin	Wire Color	Circuit No.	Function
A	YE	116	Right Rear Speaker Output (-)
B	BN	199	Right Rear Speaker Output (+)

Speaker - Subwoofer (UQA) Connector

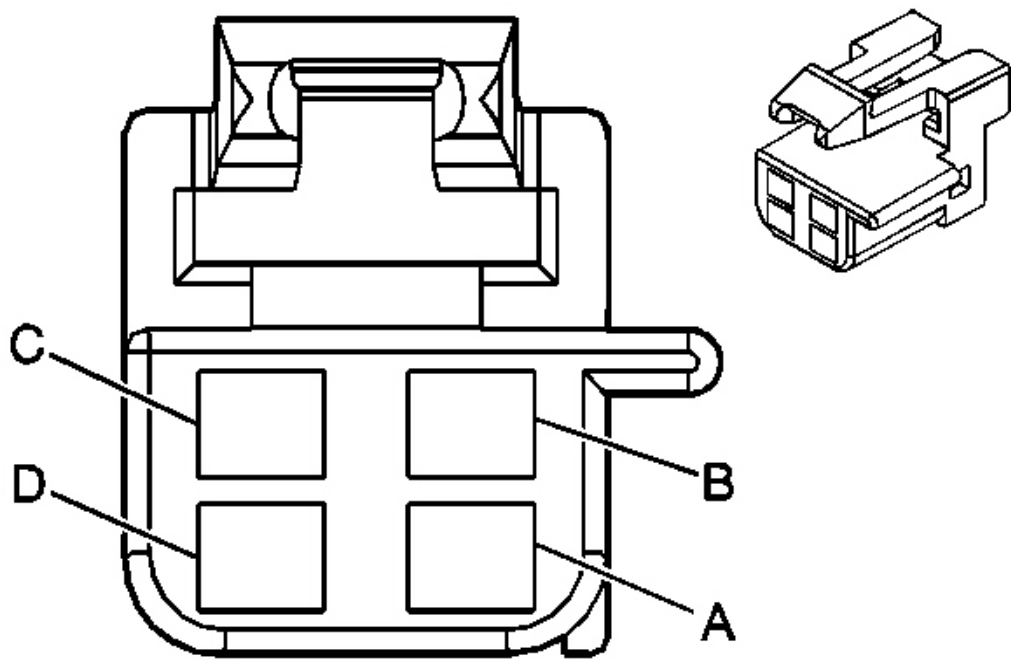


Fig. 29: Speaker - Subwoofer (UQA) Connector End View
Courtesy of GENERAL MOTORS CORP.

Speaker - Subwoofer (UQA) Connector Parts Information

Connector Part Information

2007 Hummer H3

2007 ACCESSORIES AND EQUIPMENT Cellular, Entertainment and Navigation - H3

- OEM: 12064760
- Service: 12085208
- Description: 4-Way F Metri-Pack 150 Series (BK)

Terminal Part Information

- Terminal/Tray: 12047767/2
- Core/Insulation Crimp: E/A
- Release Tool/Test Probe: 12094429/J-35616-2A (GY)

Speaker - Subwoofer (UQA) Connector Terminal Identification

Pin	Wire Color	Circuit No.	Function
A	L-GN/BK	1794	Left Subwoofer Speaker Output (-)
B	D-BU/WH	346	Left Subwoofer Speaker Output (+)
C	L-BU/BK	315	Right Subwoofer Speaker Output (-)
D	D-GN	1795	Right Subwoofer Speaker Output (+)

Vehicle Communication Interface Module (VCIM) C1

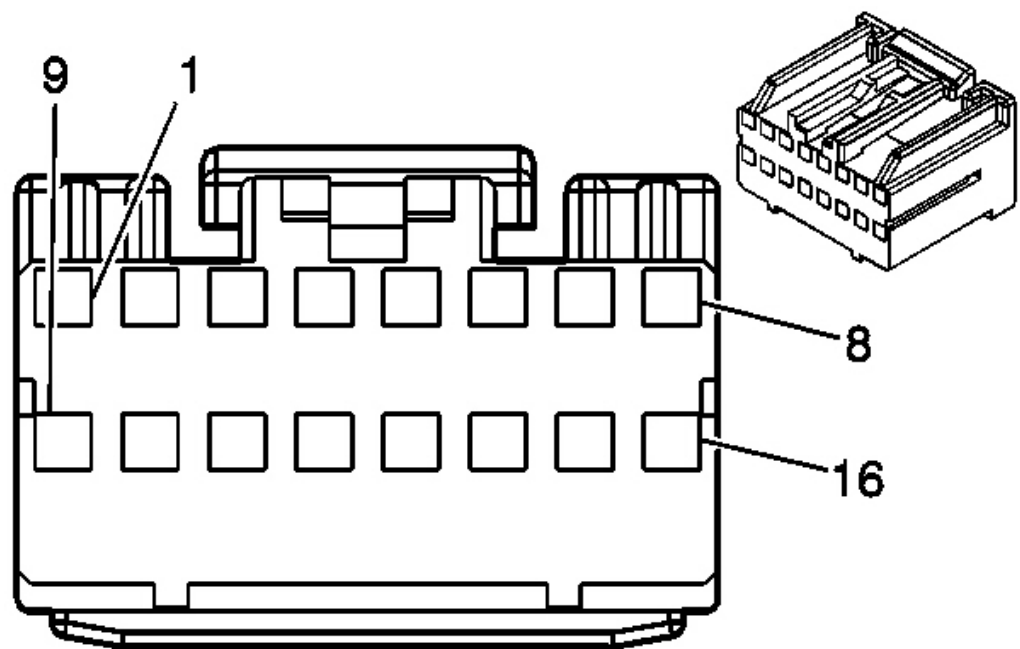


Fig. 30: Vehicle Communication Interface Module (VCIM) C1 Connector End View
Courtesy of GENERAL MOTORS CORP.

Vehicle Communication Interface Module (VCIM) C1 Connector Parts Information

Connector Part Information

- OEM: 917981-1
- Service: 15306351
- Description: 16-Way F 040/070 Hybrid (WH)

Terminal Part Information

- Terminal/Tray: 175265-1/15
- Core/Insulation Crimp: Pins 2-3, 6, 11: J/J, Pins 7, 16: K/K
- Release Tool/Test Probe: 15315247/J35616-16 (L-GN)

Vehicle Communication Interface Module (VCIM) C1 Connector Terminal Identification

Pin	Wire Color	Circuit No.	Function

2007 Hummer H3

2007 ACCESSORIES AND EQUIPMENT Cellular, Entertainment and Navigation - H3

1	-	-	Not Used
2	BN/WH	2517	Keypad Red LED Signal
3	YE/BK	2516	Keypad Green LED Signal
4-5	-	-	Not Used
6	L-GN/BK	2515	Keypad Supply Voltage
7	BK/WH	1151	Ground
8-10	-	-	Not Used
11	D-GN/WH	2514	Keypad Signal
12-15	-	-	Not Used
16	OG	340	Battery Positive Voltage

Vehicle Communication Interface Module (VCIM) C2

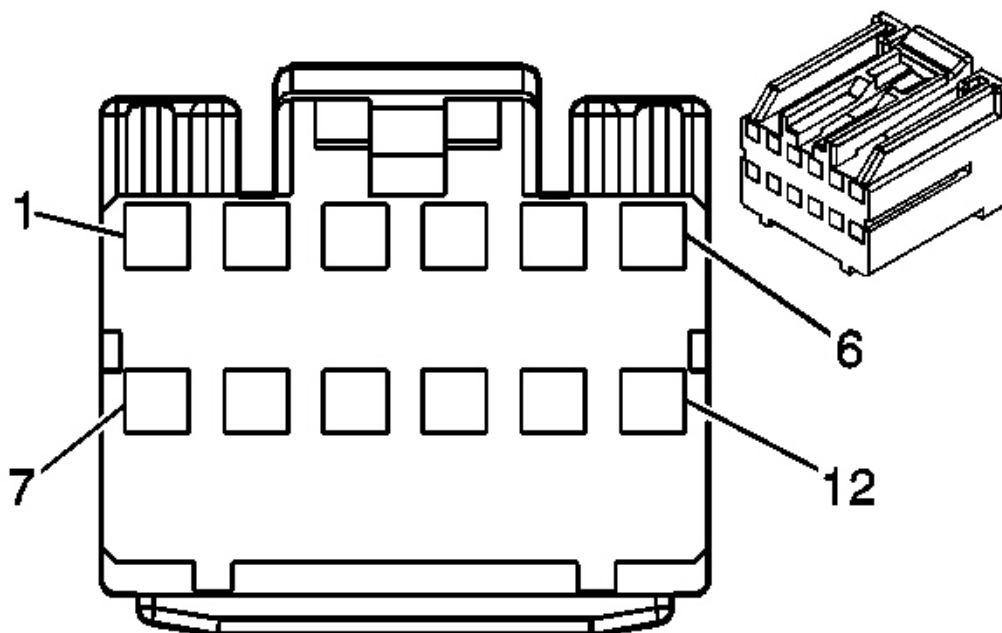


Fig. 31: Vehicle Communication Interface Module (VCIM) C2 Connector End View
 Courtesy of GENERAL MOTORS CORP.

Vehicle Communication Interface Module (VCIM) C2 Connector Parts Information

Connector Part Information

2007 Hummer H3

2007 ACCESSORIES AND EQUIPMENT Cellular, Entertainment and Navigation - H3

- OEM: 917975-1
- Service: 88952886
- Description: 12-Way F 040 Hybrid (WH)

Terminal Part Information

- Terminal/Tray: 175265-1/15
- Core/Insulation Crimp: Pins 1-2, 5, 8: J/J, Pins 9-10: K/K
- Release Tool/Test Probe: 15315247/J-35616-16 (L-GN)

Vehicle Communication Interface Module (VCIM) C2

Pin	Wire Color	Circuit No.	Function
1	PK/BK	2062	Remote Playback Device Audio Common Signal
2	OG/BK	2061	Remote Playback Device Left Audio Signal
3-4	-	-	Not Used
5	PU	1807	Class 2 Serial Data
6-7	-	-	Not Used
8	BARE	1792	Drain Wire
9	GY	655	Cellular Microphone Signal
10	BARE	1705	Drain Wire
11-12	-	-	Not Used

DIAGNOSTIC INFORMATION AND PROCEDURES

DIAGNOSTIC CODE INDEX

DIAGNOSTIC CODE INDEX

DTC	Description
<u>DTC B0004</u>	Vehicle Speed Information Circuit Open
<u>DTC B1001</u>	Option Configuration Error
<u>DTC B1025, B1035, B1045 or B1055</u>	Audio Output Circuit(s) Malfunction
<u>DTC B1259</u>	Antenna Ground Circuit Malfunction
<u>DTC B2455</u>	Cellular Phone Microphone Circuit Malfunction
<u>DTC B2462</u>	Global Positioning System (GPS) Signal Error

2007 Hummer H3

2007 ACCESSORIES AND EQUIPMENT Cellular, Entertainment and Navigation - H3

<u>DTC B2470</u>	Cellular Phone Antenna Circuit Malfunction
<u>DTC B2476</u>	Cellular Phone Select Service Switch Malfunction (3 button assembly)
<u>DTC B2482</u>	Cellular Phone Select Switch Range/Performance
<u>DTC B2483 or B2484</u>	Cellular Phone Select Switch Range/Performance
<u>DTC U1500</u>	Inter-Device Dedicated Bus Malfunction

SCAN TOOL DATA LIST**Audio Amplifier**

Scan Tool Parameter	Data List	Units Displayed	Typical Data Value
Operating Conditions: Ignition in RUN, Radio ON			
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 Parameter	Data List	Units Displayed	Typical Data Value
Operating Conditions: Ignition in RUN, Radio ON			
Amp Type	Inputs	Bose/Non-Bose	Bose

2007 Hummer H3

2007 ACCESSORIES AND EQUIPMENT Cellular, Entertainment and Navigation - H3

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	XXXXXXXXXX
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	XXXXXXXXXX
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
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 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	Numeric	Varies

2007 Hummer H3

2007 ACCESSORIES AND EQUIPMENT Cellular, Entertainment and Navigation - H3

	Information		
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

2007 Hummer H3

2007 ACCESSORIES AND EQUIPMENT Cellular, Entertainment and Navigation - H3

Scan Tool Parameter	Data List	Units Displayed	Typical Data Value
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

Vehicle Communications Interface Module

Scan Tool Parameter	Data List	Units Displayed	Typical Data Value
Ignition ON with Engine OFF			
8-Digit GM Part Number	Module 2	8 Digits	93807890
Component Serial Number 13-16	Module 1	4 Digits	0007
Date	GPS Data	Date	DD/MM/YY
Electronic Serial Number	Module 2	11 Digits	16832516749
GPS Signal	GPS Data	Yes/No	Yes
Julian Date of Build	Module 1	3 Digits	067
Module ID	Module 2	Alpha-numeric	Generation 6
Signal Strength	Signal Strength	0-100	68
Signal Type	Signal Strength	Analog/Digital	Digital
Software ID	Module 1	3 Digits	146
Time	GPS Data	Time	HH:MM:SS
Transceiver ID	Signal Strength	2-5 Digits	Varies
VCI Module Station ID	Module 2	10 Digits	0002086783
Year Module Built	Module 1	4 Digits	2001

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.

2007 Hummer H3

2007 ACCESSORIES AND EQUIPMENT Cellular, Entertainment and Navigation - H3

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.

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.

2007 Hummer H3

2007 ACCESSORIES AND EQUIPMENT Cellular, Entertainment and Navigation - H3

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 device.

Fade

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

Ignition Counter

2007 Hummer H3

2007 ACCESSORIES AND EQUIPMENT Cellular, Entertainment and Navigation - H3

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.

Power Mode

2007 Hummer H3

2007 ACCESSORIES AND EQUIPMENT Cellular, Entertainment and Navigation - H3

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.

2007 Hummer H3

2007 ACCESSORIES AND EQUIPMENT Cellular, Entertainment and Navigation - H3

Volume

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

Year

The scan tool displays the year the software was created.

Vehicle Communications Interface Module

8-Digit GM Part Number

This displays the part number for the vehicle communication interface mode (VCIM).

Component Serial Number 13-16

This is the third partition of the serial number.

Date

This is the date as synchronized with global positioning system (GPS) satellites.

Electronic Serial Number

This is the electronic serial number stored in the VCIM which is used by the OnStar® Call Center.

GPS Signal

This displays the status of a received GPS signal.

Julian Date of Build

This displays the day of the year the module was built.

Module ID

This displays the version of OnStar® which the vehicle is equipped with.

Signal Strength

This displays a calculated value for cellular reception signal strength. A higher number

indicates a stronger signal.

Signal Type

This displays whether the Generation 6 OnStar® VCIM is currently operating in a digital or analog market.

Software ID

This displays the 3-digit number of the software version used on the OnStar® VCIM.

Time

This displays the time as synchronized with GPS Satellites.

Transceiver ID

This displays the ID number of the cellular tower that the OnStar® VCIM is using for cellular signal.

VCI Module Station ID

This is the station identification number stored in the VCIM which is used by the OnStar® Call Center.

Year Module Build

This displays the year the module was built.

DTC B0004

Diagnostic Instructions

- Perform the **Diagnostic System Check - Vehicle** prior to using this diagnostic procedure.
- Review **Strategy Based Diagnosis** for an overview of the diagnostic approach.
- **Diagnostic Procedure Instructions** provide an overview of each diagnostic category.

DTC Descriptor

DTC B0004: Vehicle Speed Information Circuit Open

Circuit Description

2007 Hummer H3

2007 ACCESSORIES AND EQUIPMENT Cellular, Entertainment and Navigation - H3

The navigation radio receives the vehicle speed signal from through a dedicated circuit from the instrument panel cluster (IPC).

Conditions for Running the DTC

- The navigation radio detects a power mode transition to ON.
- DTC B1327 or B1328 is not set.
- The vehicle has driven for 4 km (2.5 mi) after receiving a global positioning system (GPS) signal.

Conditions for Setting the DTC

The GPS signal indicates that the vehicle has traveled 4 km (2.5 mi) with vehicle speed signal information received from the IPC.

Action Taken When the DTC Sets

The navigation radio uses the GPS signal when the vehicle speed signal from the IPC is unavailable.

The following symptoms may happen if the vehicle speed signal from the PCM is unavailable:

- The vehicle icon may jump to different positions on the map screen.
- The current position marker may not move on the map screen while the vehicle is being driven.
- The route guidance accuracy may be degraded.

Conditions for Clearing the DTC

- A current DTC clears when the navigation radio detects the vehicle speed signal from the IPC.
- A history DTC clears after 50 ignition cycles without a vehicle speed signal failure.

Reference Information

Schematic Reference

Radio/Navigation System Schematics

Connector End View Reference

Entertainment/Communication Connector End Views

Description and Operation**OnStar Description and Operation****Electrical Information Reference**

- **Circuit Testing**
- **Connector Repairs**
- **Testing for Intermittent Conditions and Poor Connections**
- **Wiring Repairs**

Scan Tool Reference

- **Scan Tool Data List**
- **Scan Tool Data Definitions**

Circuit/System Verification

Drive the vehicle. Verify the scan tool IPC Vehicle Speed parameter displays the actual vehicle speed.

If the parameter does not display actual vehicle speed, refer to **SPEEDOMETER AND/OR ODOMETER INACCURATE OR INOPERATIVE** .

Circuit/System Testing

1. Ignition OFF, disconnect the X2 harness connector at the radio and the X1 harness connector at the IPC.
2. Test for infinite resistance between the signal circuit terminal E at the radio harness connector and ground.
 - If greater than the specified range, test the signal circuit for a short to ground.
3. Ignition ON, test for less than 1 volt between the signal circuit terminal E at the radio harness connector and ground.
 - If greater than the specified range, test the signal circuit for a short to voltage.
4. Test for less than 5 ohms between the signal circuit terminal E at the radio harness connector and the signal circuit terminal 21 at the IPC harness connector.
5. If all circuits test normal, replace the IPC.

Repair Instructions

2007 Hummer H3

2007 ACCESSORIES AND EQUIPMENT Cellular, Entertainment and Navigation - H3

Perform the **Diagnostic Repair Verification** after completing the diagnostic procedure.

Control Module References for IPC replacement, setup and programming.

DTC B1001

Circuit Description

This DTC is generated by the module when an error occurs between the vehicle identification number (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.

DTC Descriptor

This diagnostic procedure supports the following DTC:

DTC B1001 Option Configuration Error

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: <u>Radio/Navigation System Schematics</u>			
Connector End View Reference: <u>Entertainment/Communication Connector End Views</u>			

2007 Hummer H3

2007 ACCESSORIES AND EQUIPMENT Cellular, Entertainment and Navigation - H3

1	Did you perform the Diagnostic System Check - Vehicle?	Go to Step 2	Go to <u>Diagnostic System Check - Vehicle</u>
2	<ol style="list-style-type: none">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. <p>Does the DTC reset?</p>	Go to Step 3	System OK
3	Replace the module. Refer to <u>Control Module References</u> for replacement, setup and programming. <p>Did you complete the replacement?</p>	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. The radio tests the speaker output circuits for a short to voltage or ground.

DTC Descriptors

This diagnostic procedure supports the following DTCs:

- DTC B1025 Audio Output 1 (Left Front) Circuit
- DTC B1035 Audio Output 2 (Right Front) Circuit
- DTC B1045 Audio Output 3 (Left Rear) Circuit
- DTC B1055 Audio Output 4 (Right Rear) Circuit

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

2007 Hummer H3

2007 ACCESSORIES AND EQUIPMENT Cellular, Entertainment and Navigation - H3

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 condition is no longer present for 5 seconds.

Test Description

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

2: The DTC descriptor indicates which speaker output circuit set the DTC.

DTC B1025, B1035, B1045 or B1055

Step	Action	Yes	No
Schematic Reference: <u>Radio/Navigation System Schematics</u> Connector End View Reference: <u>Entertainment/Communication Connector End Views</u>			
1	Did you perform the Diagnostic System Check - Vehicle?	Go to Step 2	Go to <u>Diagnostic System Check - Vehicle</u>
2	1. Disconnect the appropriate speaker. 2. Turn ON the radio. 3. Test the speaker output circuit for a short to ground or short to voltage. Refer to <u>Circuit Testing</u> and <u>Wiring Repairs</u> . Did you find and correct the condition?	Go to Step 6	Go to Step 3
3	Inspect for poor connections at the harness connector of the speaker. Refer to <u>Testing for Intermittent Conditions and Poor Connections</u> and <u>Connector Repairs</u> . Did you find and correct the condition?	Go to Step 6	Go to Step 4
	Inspect for poor connections at the harness		

2007 Hummer H3

2007 ACCESSORIES AND EQUIPMENT Cellular, Entertainment and Navigation - H3

4	connector of the radio. Refer to <u>Testing for Intermittent Conditions and Poor Connections</u> and <u>Connector Repairs</u> . Did you find and correct the condition?	Go to Step 6	Go to Step 5
5	Replace the radio. Refer to <u>Control Module References</u> for replacement, setup and programming. 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 B1259

Diagnostic Instructions

- Perform the **Diagnostic System Check - Vehicle** prior to using this diagnostic procedure.
- Review **Strategy Based Diagnosis** for an overview of the diagnostic approach.
- **Diagnostic Procedure Instructions** provide an overview of each diagnostic category.

DTC Descriptor

DTC B1259

Antenna Ground Circuit

Diagnostic Fault Information

DTC B1259

Circuit	Short to Ground	Open/High Resistance	Short to Voltage	Signal Performance
Antenna Signal	1	1	1	-
1. Sets code B1259				

Circuit/System Description

The antenna signal circuit is a coaxial cable that carries the radio signal information received by the antenna. The antenna cable also provides a path for DC current for powering the antenna.

Conditions for Running the DTC

2007 Hummer H3

2007 ACCESSORIES AND EQUIPMENT Cellular, Entertainment and Navigation - H3

This test is run every 300 milliseconds.

Conditions for Setting the DTC

The digital radio receiver (DRR) detects an antenna fault.

Action Taken When the DTC Sets

The radio displays "No XM Signal" or "Check Antenna".

Conditions for Clearing the DTC

- The condition must be corrected.
- The DTC clears after 100 malfunction-free ignition cycles.

Reference Information

Schematic Reference

Radio/Navigation System Schematics

Connector End View Reference

Entertainment/Communication Connector End Views

Description and Operation

Radio/Audio System Description and Operation

Electrical Information Reference

- Circuit Testing
- Connector Repairs
- Testing for Intermittent Conditions and Poor Connections
- Wiring Repairs

Special Tools Required

EL-48028 Digital Radio Test Antenna

Circuit/System Testing

1. Ignition OFF, disconnect the antenna coax from the digital radio receiver (DRR). Connect the test antenna to the DRR.

2007 Hummer H3

2007 ACCESSORIES AND EQUIPMENT Cellular, Entertainment and Navigation - H3

2. Turn the ignition ON, radio ON tuned to XM. Verify that DTC B1259 is not current.
 - If the DTC B1259 is still current, replace the DRR.
3. Ignition is OFF. Disconnect the DRR antenna from the coaxial cable. Test the resistance of the antenna coaxial cable center conductor from end to end. Verify the resistance is less than 5 ohms.
 - If the resistance is greater than 5 ohms, replace the antenna coaxial cable.
4. Test the resistance of the antenna coaxial cable outer shield from end to end. Verify the resistance is less than 5 ohms.
 - If the resistance is greater than 5 ohms, replace the antenna coaxial cable.
5. Test the resistance of the antenna coaxial cable between the center conductor and the outer conductor. Verify there is infinite resistance between both conductors.
 - If there is less than infinite resistance between the inner conductor and the outer conductor of the coaxial cable, replace the antenna coaxial cable. If the coaxial cable tests normal, replace the digital radio antenna.

Repair Procedures

Perform the **Diagnostic Repair Verification** after completing the diagnostic procedure.

- **Digital Radio Antenna Cable Replacement**
- **Cellular Communications/Digital Radio Antenna Replacement**
- **Digital Radio Receiver Replacement**

DTC B2455

Circuit Description

The vehicle communication interface module (VCIM) detects that the cellular microphone is connected through the cellular microphone signal circuit and the cellular microphone low reference circuit.

DTC Descriptor

This diagnostic procedure supports the following DTC:

DTC B2455 Cellular Phone Microphone Circuit Malfunction

Conditions for Running the DTC

- The ignition must be in the RUN or ACC position.

2007 Hummer H3

2007 ACCESSORIES AND EQUIPMENT Cellular, Entertainment and Navigation - H3

- The system voltage is at least 9.5 volts and no more than 15.5 volts.
- All the above conditions are present for greater than 10 seconds.

Conditions for Setting the DTC

- The VCIM detects an open in the cellular microphone low reference circuit or a short to voltage in the cellular microphone signal circuit.
- The above conditions are present for greater than 10 seconds.

Action Taken When the DTC Sets

- The VCIM will not receive any signal from the microphone.
- Calls can be placed but the caller cannot be heard.
- The OnStar® status LED turns RED.

Conditions for Clearing the DTC

- The VCIM detects the microphone connected for 5 consecutive 100 millisecond cycles.
- A history DTC clears after 50 malfunction-free ignition cycles.
- The VCIM receives the clear DTC command from the scan tool.

Test Description

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

2: This step checks that the VCIM is sending out the proper supply voltage.

DTC B2455

Step	Action	Value(s)	Yes	No
Schematic Reference: <u>OnStar Schematics</u> Connector End View Reference: <u>Entertainment/Communication Connector End Views</u>				
1	Did you perform the Diagnostic System Check - Vehicle?	-	Go to Step 2	Go to <u>Diagnostic System Check - Vehicle</u>
	1. Turn OFF the ignition. 2. Disconnect the cellular			

2007 Hummer H3

2007 ACCESSORIES AND EQUIPMENT Cellular, Entertainment and Navigation - H3

2	<p>microphone connector.</p> <p>3. Turn ON the ignition, with the engine OFF.</p> <p>4. Measure the voltage from the cellular microphone signal circuit to a good ground.</p> <p>Does the voltage measure greater than the specified value?</p>	9 V	Go to Step 4	Go to Step 3
3	<p>Test the cellular microphone signal circuit for a short to voltage. Refer to <u>Circuit Testing</u> and <u>Wiring Repairs</u> .</p> <p>Did you find and correct the condition?</p>	-	Go to Step 9	Go to Step 6
4	<p>Test the drain wire circuit for an open. Refer to <u>Circuit Testing</u> and <u>Wiring Repairs</u> .</p> <p>Did you find and correct the condition?</p>	-	Go to Step 9	Go to Step 5
5	<p>Inspect for poor connections at the harness connector of the cellular microphone and harness connector of the vehicle communication interface module (VCIM). Refer to <u>Testing for Intermittent Conditions and Poor Connections</u> and <u>Connector Repairs</u> .</p> <p>Did you find and correct the condition?</p>	-	Go to Step 9	Go to Step 7
6	<p>Inspect for poor connections at the harness connector of the VCIM. Refer to <u>Testing for Intermittent Conditions and Poor Connections</u> and <u>Connector Repairs</u> .</p> <p>Did you find and correct the condition?</p>	-	Go to Step 9	Go to Step 8

2007 Hummer H3

2007 ACCESSORIES AND EQUIPMENT Cellular, Entertainment and Navigation - H3

7	Replace the cellular microphone. Refer to <u>Mobile Telephone Microphone Replacement</u> . Did you complete the replacement?	-	Go to Step 9	-
8	Replace the VCIM. Refer to <u>Control Module References</u> for replacement, setup and programming. Did you complete the replacement?	-	Go to Step 9	-
9	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 B2462

Circuit Description

The Global Positioning System (GPS) antenna is connected to the navigation radio by a coaxial cable.

DTC Descriptor

This diagnostic procedure supports the following DTC:

DTC B2462 Global Positioning System (GPS) Signal Error

Conditions for Running the DTC

The radio must detect one of the following power modes:

- ACC
- ON
- RAP
- RAP UNLK

2007 Hummer H3

2007 ACCESSORIES AND EQUIPMENT Cellular, Entertainment and Navigation - H3

DTC B2462 does not set if DTC B1328 or B1327 is current.

Conditions for Setting the DTC

- The navigation radio test the GPS antenna every 0.3 second.
- The radio determines there is an open in the GPS antenna.
- DTC B2462 does not set if DTC B1328 or B1327 is current.

Action Taken When the DTC Sets

- Unable to get GPS location updated, the radio uses the last reported position and the vehicle speed signal to calculate the vehicle position.
- Route guidance may be inaccurate.
- This failure has no effect outside the Navigation System.

Conditions for Clearing the DTC

- A current DTC clears when the radio does not detect the failure for more than 10 seconds.
- A history DTC clears after 50 ignition cycles with no repeat of the failure.

Diagnostic Aids

An intermittent condition may be caused by the following:

- Mis-routed harness
- Rubbed through wire insulation
- Broken wire inside the insulation

Test Description

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

1: Determines if the malfunction is present.

3: Determines if the malfunction is due to an internal fault in the navigation radio or a GPS antenna failure.

DTC B2462

Step	Action	Values	Yes	No
Schematic Reference: <u>Radio/Navigation System Schematics</u> Connector End View Reference: <u>Entertainment/Communication Connector End</u>				

2007 Hummer H3

2007 ACCESSORIES AND EQUIPMENT Cellular, Entertainment and Navigation - H3

Views

1	Did you perform the Diagnostic System Check - Vehicle?	-	Go to Step 2	Go to <u>Diagnostic System Check - Vehicle</u>
2	<p>1. Turn OFF the ignition.</p> <p>2. Disconnect the Global Positioning System (GPS) coaxial cable connector.</p> <p>3. Measure the voltage between the center conductor and the shield of the coaxial cable still attached to the navigation radio.</p> <p>Is the voltage within the specified range?</p>	4.0-5.5 V	Go to Step 5	Go to Step 3
3	<p>Test the GPS cable for an open or short to ground. Refer to <u>Circuit Testing</u> and <u>Wiring Repairs</u> .</p> <p>Did you find and correct the condition?</p>	-	Go to Step 7	Go to Step 4
4	<p>Inspect for poor connections at the harness connector of the GPS cable. Refer to <u>Testing for Intermittent Conditions and Poor Connections</u> and <u>Connector Repairs</u> .</p> <p>Did you find and correct the condition?</p>	-	Go to Step 7	Go to Step 6
5	<p>Replace the GPS antenna. Refer to <u>Global Positioning System (GPS) Antenna Replacement</u>.</p> <p>Did you complete the replacement?</p>	-	Go to Step 7	-
6	<p>Replace the navigation radio. Refer to <u>Radio Replacement</u>.</p> <p>Did you complete the replacement?</p>	-	Go to Step 7	-
	1. Use the scan tool in order to			

2007 Hummer H3

2007 ACCESSORIES AND EQUIPMENT Cellular, Entertainment and Navigation - H3

7	clear the DTC. 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 B2470

Circuit Description

The cellular antenna is connected to the vehicle communication interface module (VCIM) with a RG-58 coax cable. The VCIM polls the data from the cellular antenna once every second.

DTC Descriptor

This diagnostic procedure supports the following DTC:

DTC B2470 Cellular Phone Antenna Circuit Malfunction

Conditions for Running the DTC

- The ignition must be in the RUN or ACC position.
- The system voltage is at least 9.5 volts and no more than 15.5 volts.
- All the above conditions are present for greater than 1 second.

Conditions for Setting the DTC

- The VCIM does not detect the presence of a cellular antenna.
- All the above conditions are present for greater than 1 second.

Action Taken When the DTC Sets

- The OnStar® status LED turns red.
- The vehicle is unable to connect to the OnStar® Call Center.

Conditions for Clearing the DTC

- The VCIM detects the presence of a cellular antenna.
- A history DTC clears after 50 malfunction-free ignition cycles.

2007 Hummer H3

2007 ACCESSORIES AND EQUIPMENT Cellular, Entertainment and Navigation - H3

- The VCIM receives the clear DTC command from the scan tool.

Test Description

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

2: This step tests the condition of the cellular antenna.

3: This step tests the condition of the cellular antenna coax and for proper ground of the cellular antenna.

DTC B2470

Step	Action	Value	Yes	No
Schematic Reference: <u>OnStar Schematics</u> Connector End View Reference: <u>Entertainment/Communication Connector End Views</u>				
1	Did you perform the Diagnostic System Check - Vehicle?	-	Go to Step 2	Go to <u>Diagnostic System Check - Vehicle</u>
2	Inspect the cellular antenna and cellular antenna coupling assembly for damage. Is the antenna assembly damaged?	-	Go to Step 7	Go to Step 3
3	IMPORTANT: The vehicle may be equipped with sectioned coax. Test each section and replace only the faulty section, not the entire length of coax. 1. Disconnect the cellular antenna coax from the vehicle communication interface module (VCIM). 2. Measure the resistance between the center conductor and the outer metal shield. Does the meter read out of limits?	-	Go to Step 4	Go to Step 5

2007 Hummer H3

2007 ACCESSORIES AND EQUIPMENT Cellular, Entertainment and Navigation - H3

4	<ol style="list-style-type: none"> 1. Disconnect the cellular antenna coax from the VCIM. 2. Measure the resistance of the cellular antenna coax connector from end to end. <p>Does the resistance measure greater than the specified value?</p>	1 ohms	Go to Step 8	Go to Step 6
5	<p>Inspect for poor connections at the harness connector of the VCIM. Refer to <u>Testing for Intermittent Conditions and Poor Connections</u> and <u>Connector Repairs</u> .</p> <p>Did you find and correct the condition?</p>	-	Go to Step 10	Go to Step 9
6	<p>Inspect for poor connections at the harness connector of the cellular antenna. Refer to <u>Testing for Intermittent Conditions and Poor Connections</u> and <u>Connector Repairs</u> .</p> <p>Did you find and correct the condition?</p>	-	Go to Step 10	Go to Step 7
7	<p>Replace the cellular antenna. Refer to <u>Cellular Communications/Digital Radio Antenna Replacement</u>.</p> <p>Did you complete the replacement?</p>	-	Go to Step 10	-
8	<p>Replace the cellular antenna coax.</p> <p>Did you complete the replacement?</p>	-	Go to Step 10	-
9	<p>Replace the VCIM. Refer to <u>Control Module References</u> for replacement, setup and programming.</p> <p>Did you complete the replacement?</p>	-	Go to Step 10	-
10	<ol style="list-style-type: none"> 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 	-		

2007 Hummer H3

2007 ACCESSORIES AND EQUIPMENT Cellular, Entertainment and Navigation - H3

	text.			
	Does the DTC reset?		Go to Step 2	System OK

DTC B2476

Circuit Description

The OnStar® button assembly consists of 3 buttons, Call/Answer, OnStar® Call Center and OnStar® Emergency. Ten volts are supplied to the button assembly on the keypad supply voltage circuit. Each of the buttons, when pressed, completes the circuit across a resistor allowing a specific voltage to be returned to the vehicle communication interface module (VCIM) on the keypad signal circuit. Depending upon the voltage range returned, the VCIM is able to identify which button has been pressed.

DTC Descriptor

This diagnostic procedure supports the following DTC:

DTC B2476 Cellular Phone Select Service Switch Malfunction (3 button assembly)

Conditions for Running the DTC

- The ignition must be in the RUN or ACC position.
- The system voltage is at least 9.5 volts and no more than 15.5 volts.
- All the above conditions are present for greater than 300 milliseconds.

Conditions for Setting the DTC

- The VCIM powers the button assembly through the keypad supply voltage circuit for 11.5 milliseconds, turns the power OFF, then waits for 50 milliseconds and sees a voltage value greater than 1.8 volts on this circuit.
- The above conditions are present for greater than 300 milliseconds.

Action Taken When the DTC Sets

- The VCIM will ignore all inputs from the OnStar® button assembly.
- No calls can be placed.
- The OnStar® status LED turns RED.

Conditions for Clearing the DTC

2007 Hummer H3

2007 ACCESSORIES AND EQUIPMENT Cellular, Entertainment and Navigation - H3

- The VCIM powers the button assembly through the keypad supply voltage circuit for 11.5 milliseconds, turns the power OFF, then waits for 50 milliseconds and sees a voltage value less than 1.8 volts on this circuit.
- A history DTC clears after 50 malfunction-free ignition cycles.
- The VCIM receives the clear DTC command from the scan tool.

Test Description

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

2: This step checks that the VCIM is sending out the proper supply voltage.

DTC B2476

Step	Action	Values	Yes	No
Schematic Reference: OnStar Schematics Connector End View Reference: <u>Entertainment/Communication Connector End Views</u>				
1	Did you perform the Diagnostic System Check - Vehicle?	-	Go to Step 2	Go to <u>Diagnostic System Check - Vehicle</u>
2	1. Turn OFF the ignition. 2. Disconnect the OnStar® button assembly connector. 3. Turn ON the ignition, with the engine OFF. 4. Measure the voltage from the keypad supply voltage circuit to a good ground. Does the voltage measure greater than the specified value?	9 V	Go to Step 4	Go to Step 3
3	Test the keypad supply voltage circuit for an open or short to ground. Refer to <u>Circuit Testing</u> and <u>Wiring Repairs</u> . Did you find and correct the	-	Go to Step	

2007 Hummer H3

2007 ACCESSORIES AND EQUIPMENT Cellular, Entertainment and Navigation - H3

	condition?		11	Go to Step 8
4	Test the keypad supply voltage circuit for a short to voltage. Refer to <u>Circuit Testing</u> and <u>Wiring Repairs</u> . Did you find and correct the condition?	-	Go to Step 11	Go to Step 5
5	Test the keypad ground circuit for an open. Refer to <u>Circuit Testing</u> and <u>Wiring Repairs</u> . Did you find and correct the condition?	-	Go to Step 11	Go to Step 6
6	Test the keypad signal circuit for a short to voltage. Refer to <u>Circuit Testing</u> and <u>Wiring Repairs</u> . Did you find and correct the condition?	-	Go to Step 11	Go to Step 7
7	Inspect for poor connections at the harness connector of the OnStar® button assembly. Refer to <u>Testing for Intermittent Conditions and Poor Connections</u> and <u>Connector Repairs</u> . Did you find and correct the condition?	-	Go to Step 11	Go to Step 9
8	Inspect for poor connections at the harness connector of the vehicle communication interface module (VCIM). Refer to <u>Testing for Intermittent Conditions and Poor Connections</u> and <u>Connector Repairs</u> . Did you find and correct the condition?	-	Go to Step 11	Go to Step 10
9	Replace the OnStar® button assembly. Refer to <u>OnStar Button Assembly Replacement</u> . Did you complete the replacement?	-	Go to Step 11	-

2007 Hummer H3

2007 ACCESSORIES AND EQUIPMENT Cellular, Entertainment and Navigation - H3

10	Replace the VCIM. Refer to <u>Control Module References</u> for replacement, setup and programming. Did you complete the replacement?	-	Go to Step 11	-
11	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 B2482

Circuit Description

The OnStar® button assembly consists of 3 buttons, Call/Answer, OnStar® Call Center and OnStar® Emergency. Ten volts are supplied to the button assembly on the keypad supply voltage circuit. Each of the buttons, when pressed, completes the circuit across a resistor allowing a specific voltage to be returned to the vehicle communication interface module (VCIM) on the keypad signal circuit. Depending upon the voltage range returned, the VCIM is able to identify which button has been pressed.

DTC Descriptor

This diagnostic procedure supports the following DTC:

DTC B2482 Cellular Phone Select Switch Range/Performance

Conditions for Running the DTC

- The ignition must be in the RUN or ACC position.
- The system voltage is at least 9.5 volts and no more than 15.5 volts.
- All the above conditions are present for greater than 15 seconds.

Conditions for Setting the DTC

- A button is depressed or stuck for more than 15 seconds.
- The above conditions are present for greater than 15 seconds.

2007 Hummer H3

2007 ACCESSORIES AND EQUIPMENT Cellular, Entertainment and Navigation - H3

Action Taken When the DTC Sets

- The VCIM will ignore all inputs from the OnStar® button assembly.
- No calls can be placed.
- The OnStar® status LED turns RED.

Conditions for Clearing the DTC

- The button will be declared unstuck after a 50-millisecond normal cycle.
- A history DTC clears after 50 malfunction-free ignition cycles.
- The VCIM receives the clear DTC command from the scan tool.

Test Description

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

2: This step tests the at rest state of the keypad signal circuit.

DTC B2482

Step	Action	Values	Yes	No
Schematic Reference: <u>OnStar Schematics</u> Connector End View Reference: <u>Entertainment/Communication Connector End Views</u>				
1	Did you perform the Diagnostic System Check - Vehicle?	-	Go to Step 2	Go to <u>Diagnostic System Check - Vehicle</u>
2	1. Turn ON the ignition, with the engine OFF. 2. Measure the voltage from the keypad signal circuit at the vehicle communication interface module (VCIM) connector to a good ground. Does the voltage measure greater than the specified value?	0 V	Go to Step 3	Go to Step 4
	Test the keypad signal circuit for a			

2007 Hummer H3

2007 ACCESSORIES AND EQUIPMENT Cellular, Entertainment and Navigation - H3

3	<p>short to voltage or high resistance. Refer to <u>Circuit Testing</u> and <u>Wiring Repairs</u> .</p> <p>Did you find and correct the condition?</p>	-	Go to Step 9	Go to Step 5
4	<p>Test the keypad supply voltage circuit for an open or short. Refer to <u>Circuit Testing</u> and <u>Wiring Repairs</u> .</p> <p>Did you find and correct the condition?</p>	-	Go to Step 9	Go to Step 6
5	<p>Inspect for poor connections at the harness connector of the OnStar® button assembly. Refer to <u>Testing for Intermittent Conditions and Poor Connections</u> and <u>Connector Repairs</u> .</p> <p>Did you find and correct the condition?</p>	-	Go to Step 9	Go to Step 7
6	<p>Inspect for poor connections at the harness connector of the VCIM. Refer to <u>Testing for Intermittent Conditions and Poor Connections</u> and <u>Connector Repairs</u> .</p> <p>Did you find and correct the condition?</p>	-	Go to Step 9	Go to Step 8
7	<p>Replace the OnStar® button assembly. Refer to <u>OnStar Button Assembly Replacement</u>.</p> <p>Did you complete the replacement?</p>	-	Go to Step 9	-
8	<p>Replace the VCIM. Refer to <u>Control Module References</u> for replacement, setup and programming.</p> <p>Did you complete the replacement?</p>	-	Go to Step 9	-
	<ol style="list-style-type: none"> 1. Use the scan tool in order to clear the DTCs. 2. Operate the vehicle within the 			

2007 Hummer H3

2007 ACCESSORIES AND EQUIPMENT Cellular, Entertainment and Navigation - H3

9	Conditions for Running the DTC as specified in the supporting text.	-		
	Does the DTC reset?		Go to Step 2	System OK

DTC B2483 OR B2484

Circuit Description

The navigation antenna is connected to the vehicle communication interface module (VCIM) with a RG-174 coax cable. The VCIM polls the data from the navigation antenna once every second.

DTC Descriptors

This diagnostic procedure supports the following DTCs:

- DTC B2483 GPS Sensor Circuit Low
- DTC B2484 GPS Sensor Circuit Open

Conditions for Running the DTC

- The ignition must be in the RUN or ACC position.
- The system voltage is at least 9.5 volts and no more than 15.5 volts.
- All the above conditions are present for greater than 1 second.

Conditions for Setting the DTC

- The VCIM does not detect a navigation signal.
- All the above conditions are present for greater than 1 second.

Action Taken When the DTC Sets

- The OnStar® status LED turns red.
- The OnStar® Call Center cannot locate the vehicle.

Conditions for Clearing the DTC

- The VCIM detects the presence of a navigation antenna.
- A history DTC clears after 50 malfunction-free ignition cycles.
- The VCIM receives the clear DTC command from the scan tool.

2007 Hummer H3

2007 ACCESSORIES AND EQUIPMENT Cellular, Entertainment and Navigation - H3

DTC B2483 or B2484

Step	Action	Values	Yes	No
Schematic Reference: <u>OnStar Schematics</u> Connector End View Reference: <u>Entertainment/Communication Connector End Views</u>				
1	Did you perform the Diagnostic System Check - Vehicle?	-	Go to Step 2	Go to <u>Diagnostic System Check - Vehicle</u>
2	<p>NOTE: Using a DMM to measure the resistance of the navigation antenna coax from the center conductor to the outer shield while the antenna is still connected will damage the navigation antenna.</p> <p>IMPORTANT: Vehicle may be equipped with sectioned coax. Test each section and replace only the faulty section, not the entire length of coax.</p> <ol style="list-style-type: none"> 1. Disconnect the navigation antenna coax connector from the navigation antenna. 2. Disconnect the navigation antenna from the vehicle communication interface module (VCIM). 3. Measure the resistance from the center conductor of the coax to the metal outer shield. <p>Does the meter read out of limits?</p>	-	Go to Step 3	Go to Step 4
3	<p>Measure the resistance of the navigation antenna coax center conductor from end to end.</p> <p>Does the resistance measure greater than the specified value?</p>	1 ohms	Go to Step 4	Go to Step 5

2007 Hummer H3

2007 ACCESSORIES AND EQUIPMENT Cellular, Entertainment and Navigation - H3

4	Replace the navigation antenna coax. Did you complete the replacement?	-	Go to Step 7	-
5	Inspect for poor connections at the navigation antenna and the harness connector of the VCIM. Refer to <u>Testing for Intermittent Conditions and Poor Connections</u> and <u>Connector Repairs</u> . Did you find and correct the condition?	-	Go to Step 7	Go to Step 6
6	Replace the navigation antenna. Refer to <u>Cellular Communications/Digital Radio Antenna Replacement</u> . Is the repair complete?	-	Go to Step 7	-
7	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 8	System OK
8	Replace the VCIM. Refer to <u>Control Module References</u> for replacement, setup and programming. Did you complete the replacement?	-	Go to Step 9	-
9	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	-

DTC U1500

Circuit Description

2007 Hummer H3

2007 ACCESSORIES AND EQUIPMENT Cellular, Entertainment and Navigation - H3

This DTC indicates an internal fault and is set within the vehicle communication interface module (VCIM). No external circuits are involved.

DTC Descriptor

This diagnostic procedure supports the following DTC:

DTC U1500 Inter-Device Dedicated Bus Malfunction

Conditions for Running the DTC

The microprocessor runs the program to detect an internal fault during module power up and every 10 seconds thereafter until the module re-enters the sleep mode.

Conditions for Setting the DTC

The VCIM detects an internal communication malfunction.

Action Taken When DTC Sets

- The OnStar® status LED turns RED.
- The vehicle is unable to connect to the OnStar® Call Center.

Conditions for Clearing the DTC

- A current DTC clears when the malfunction is no longer present.
- A history DTC clears after 50 malfunction-free ignition cycles.

Diagnostic Aids

- The diagnostic procedure used for DTC U1500 in OnStar® systems with single module generations of OnStar® differ greatly from previous generations with 2 modules. While these older generations denoted a failure of the 3-wire bus between the modules by setting a U1500, single module OnStar® systems use this DTC to denote an internal module failure. The determination of whether a one or 2-module generation of OnStar® is used should be confirmed. Refer to [OnStar Description and Operation](#).
- This DTC may be stored as a history DTC without affecting the operation of the module. If stored only as a history DTC and not retrieved as a current DTC, do not replace the VCIM.
- If this DTC is retrieved as both a current and history DTC, replace the VCIM.

DTC U1500

Step	Action	Yes	No

2007 Hummer H3

2007 ACCESSORIES AND EQUIPMENT Cellular, Entertainment and Navigation - H3

1	Did you perform the Diagnostic System Check - Vehicle?	Go to Step 2	Go to <u>Diagnostic System Check - Vehicle</u>
2	<ol style="list-style-type: none">1. Install a scan tool.2. Turn ON the ignition, with the engine OFF.3. Retrieve DTCs from the vehicle communication interface module (VCIM). <p>Is the DTC retrieved as a current DTC?</p>	Go to Step 3	Go to Diagnostic Aids
3	Replace the VCIM. Refer to <u>Control Module References</u> for replacement, setup and programming. <p>Did you complete the replacement?</p>	Go to Step 4	-
4	<ol style="list-style-type: none">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. <p>Does the DTC reset?</p>	Go to Step 2	System OK

SYMPTOMS - CELLULAR COMMUNICATION

IMPORTANT: The following steps must be completed before using the symptom tables.

1. Perform the **Diagnostic System Check - Vehicle** . Before using the Symptom Tables, verify that all of the following are true:
 - There are no DTCs set.
 - The control module can communicate via the serial data link.
2. Review the system operation in order to familiarize yourself with the system functions. Refer to **OnStar Description and Operation**.
3. Perform the **OnStar Symptom Diagnosis**. This symptom table will enable the user to verify the customer complaint and narrow it to its source.

Visual/Physical Inspection

- Inspect for aftermarket devices which could affect the operation of the system. Refer to **Checking Aftermarket Accessories** .
- 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** .

Symptom List

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

- **OnStar One or More Buttons Inoperative**
- **OnStar Call Center Remote Function Requests Inoperative**
- **Unable to Contact OnStar Call Center**
- **OnStar Microphone Inoperative - Caller Cannot Be Heard**
- **OnStar Voice Recognition Inoperative**
- **OnStar Button LED Inoperative**
- **No (or Noisy) OnStar Audio**
- **OnStar Global Positioning System (GPS) Data Not Current or Inaccurate**
- **OnStar Talk Button Inoperative**

SYMPTOMS - ENTERTAINMENT

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

Visual/Physical Inspection

- Inspect for aftermarket devices which could affect the operation of the Radio/Audio system. Refer to **Checking Aftermarket Accessories** .
- 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** .

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**
- **Reduced Volume - One or More Speakers (W UM8)** or **Reduced Volume - One or More Speakers (w/o UM8)**
- **Speakers Inoperative - One or More**

SYMPTOMS - NAVIGATION SYSTEMS

IMPORTANT: The following steps must be completed before using the symptom tables.

- Perform the **Diagnostic System Check - Vehicle** before using the symptom tables in order to verify that all of the following are true:
 - There are no DTCs set.
 - The control modules can communicate via the serial data link.
- Review **Navigation System Description and Operation** in order to familiarize yourself with the system functions.

Visual/Physical Inspection

- Inspect for aftermarket devices which could affect the operation of the navigation system components. Refer to **Checking Aftermarket Accessories** .
- 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** .

Symptom List

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

- **No Global Positioning System (GPS) Reception**
- For radio/audio related symptoms, refer to **Symptoms - Entertainment**.

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 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.
 - Inspect the speaker connections to ensure they are clean and tight. Refer to **Testing for Intermittent Conditions and Poor Connections**.
 - 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.

2007 Hummer H3

2007 ACCESSORIES AND EQUIPMENT Cellular, Entertainment and Navigation - H3

- 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

- 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

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.

2007 Hummer H3

2007 ACCESSORIES AND EQUIPMENT Cellular, Entertainment and Navigation - H3

4. If the noise is still present, inspect the charging system for proper operation. Refer to **Diagnostic Starting Point - 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.

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.

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 - Vehicle?	-	Go to Step 2	Go to <u>Diagnostic System Check - Vehicle</u>
2	<ol style="list-style-type: none">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.	-		

2007 Hummer H3

2007 ACCESSORIES AND EQUIPMENT Cellular, Entertainment and Navigation - H3

	<p>3. Turn ON the radio.</p> <p>4. Tune the radio to satellite channel 1.</p> <p>Is the reception clear?</p>		Go to Step 3	Go to Step 5
3	<p>Tune the radio to several other satellite channels.</p> <p>Is the reception clear?</p>	-	Go to <u>Audio System Troubleshooting Hints</u>	Go to Step 4
4	<p>Contact XM at 1-800-556-3600 to verify customer account status or possible network problems.</p> <p>Did you find and correct the condition?</p>	-	Go to Step 14	Go to Step 10
5	<p>Contact XM at 1-800-556-3600 to verify possible network problems.</p> <p>Did you find and correct the condition?</p>	-	Go to Step 14	Go to Step 6
6	<p>With a scan tool, observe the digital radio antenna in the digital radio receiver data list.</p> <p>Does the scan tool indicate that the digital radio antenna is within the specified range?</p>	17-63 mA	Go to Step 10	Go to Step 7
7	<p>1. Disconnect the antenna cable from the digital radio receiver.</p> <p>2. Measure the voltage from the center conductor of the antenna connector on the digital radio receiver to one of the case screws.</p> <p>Does the voltage measure within the specified range?</p>	4.5-5.5 V	Go to Step 8	Go to Step 10
8	<p>Test the antenna cable for an open, short or high resistance. Refer to <u>Testing for Intermittent</u></p>	-		

2007 Hummer H3

2007 ACCESSORIES AND EQUIPMENT Cellular, Entertainment and Navigation - H3

	<u>Conditions and Poor Connections .</u> 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 <u>Testing for Intermittent Conditions and Poor Connections .</u> 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 <u>Testing for Intermittent Conditions and Poor Connections .</u> Did you find and correct the condition?	-	Go to Step 14	Go to Step 13
12	Replace the digital radio receiver. Refer to <u>Control Module References</u> for replacement, setup and programming. Did you complete the replacement?	-	Go to Step 14	-
13	Replace the digital radio antenna. Refer to <u>Cellular Communications/Digital Radio Antenna Replacement.</u> 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

DIGITAL RADIO RECEIVER SETUP

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.

IMPORTANT: After replacement of an XM receiver, call XM radio to deactivate the receiver that has been removed from the vehicle.

XM Activation

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 receiver.
2. From the USA, Call XM radio at 1-800-556-3600 to activate the receiver. From Canada, call 1-877-438-9677.
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.

ONSTAR GLOBAL POSITIONING SYSTEM (GPS) DATA NOT CURRENT OR INACCURATE**Diagnostic Aids**

- The Global Positioning System (GPS) Signal title on the scan tool will display a Yes or No dependent upon whether or not the module sees an increment of the seconds transmitted by GPS signals to the vehicle communication interface module. Upon entering this screen, the GPS Signal title will automatically display Yes, regardless of the presence of time increment, for at least 2 seconds, while the algorithm in the scan tool determines the status of the clock. If increment is found, Yes is continually displayed. If the clock remains static, No is displayed. The scan tool looks for increment every second, regardless of current display.
- Inaccurate or aged GPS position concerns which are no longer present may have been due to the temporary loss of GPS signal reception by the vehicle. Conditions such as driving through tunnels or parking structures while making an OnStar® keypress will restrict the navigation antenna from a clear view of the satellites in the sky and may have caused this temporary data loss.

2007 Hummer H3

2007 ACCESSORIES AND EQUIPMENT Cellular, Entertainment and Navigation - H3

OnStar Global Positioning System (GPS) Data Not Current or Inaccurate

Step	Action	Values	Yes	No
Schematic Reference: <u>Radio/Navigation System Schematics</u> Connector End View Reference: <u>Entertainment/Communication Connector End Views</u>				
1	Did you perform the Diagnostic System Check - Vehicle?	-	Go to Step 2	Go to <u>Diagnostic System Check - Vehicle</u>
2	IMPORTANT: It is important to have the vehicle in an open outside area where a cellular call can be successfully placed and Global Positioning System (GPS) data can be received from satellites. It is also necessary to inform the OnStar® Call Center advisor that this call is for vehicle diagnostic purposes. With a scan tool, observe the GPS signal status indicator in the GPS Data Display menu, for at least 10 seconds. Does the indicator display Yes?	-	Go to Step 3	Go to Step 6
3	1. Press the OnStar® Call Center button. 2. Ask the OnStar® Call Center advisor if they have received GPS data. Has the advisor received GPS data?	-	Go to Step 4	Go to Step 5
4	Ask the OnStar® Call Center advisor to verify your position. Is the location provided by the OnStar® Call Center advisor within a reasonable distance from the actual location of the vehicle?	-	Go to Diagnostic Aids	Go to Step 10
	Ask the OnStar® Call Center advisor if this call was a fail to voice.		Contact the General	

2007 Hummer H3

2007 ACCESSORIES AND EQUIPMENT Cellular, Entertainment and Navigation - H3

5	Was the call a fail to voice?	-	Motors Technical Assistance Center	Go to Step 6
6	<p>IMPORTANT: Vehicle may be equipped with sectioned coax. Test each section and replace only the faulty section, not the entire length or coax.</p> <ol style="list-style-type: none"> 1. Disconnect the navigation antenna coax from the navigation antenna within the wiring harness. 2. Disconnect the navigation antenna from the vehicle communication interface module (VCIM). 3. Measure the resistance from the center conductor of the coax to the metal outer shield. <p>Does the meter read out of limits?</p>	-		
7	<p>Measure the resistance of the navigation antenna coax center conductor from end to end.</p> <p>Does the resistance measure greater than the specified value?</p>	1 ohms	Go to Step 7	Go to Step 8
8	Replace the navigation antenna coax. Did you complete the replacement?	-	Go to Step 11	-
9	<p>Replace the navigation antenna assembly. Refer to <u>Global Positioning System (GPS) Antenna Replacement</u>.</p> <p>Did you complete the replacement?</p>	-	Go to Step 11	-
10	<p>Replace the VCIM. Refer to <u>Control Module References</u> for replacement, setup and programming.</p> <p>Did you complete the replacement?</p>	-	Go to Step 11	-

2007 Hummer H3

2007 ACCESSORIES AND EQUIPMENT Cellular, Entertainment and Navigation - H3

11	Operate the system in order to verify the repair. Did you correct the condition?	-	Go to Step 2	-
----	---	---	---------------------	---

ONSTAR MICROPHONE INOPERATIVE - CALLER CANNOT BE HEARD

OnStar Microphone Inoperative - Caller Cannot Be Heard

Step	Action	Value(s)	Yes	No
Schematic Reference: OnStar Schematics Connector End View Reference: <u>Entertainment/Communication Connector End Views</u> DEFINITION: The OnStar® Call Center operator can clearly be heard but the operator is unable to hear the caller.				
1	Did you perform the Diagnostic System Check - Vehicle?	-	Go to Step 2	Go to <u>Diagnostic System Check - Vehicle</u>
2	1. Turn ON the ignition, with the engine OFF. 2. Press the OnStar® Call Center button. 3. Ask the OnStar® operator if your voice can clearly be heard. Does the OnStar® operator hear your voice?	-	Go to <u>Testing for Intermittent Conditions and Poor Connections</u>	Go to Step 3
3	1. Turn OFF the ignition. 2. Disconnect the cellular microphone connector. 3. Turn ON the ignition, with the engine OFF. 4. Measure the voltage from the cellular microphone signal circuit to a good ground. Does the voltage measure greater	9 V		

2007 Hummer H3

2007 ACCESSORIES AND EQUIPMENT Cellular, Entertainment and Navigation - H3

	than the specified value?		Go to Step 4	Go to Step 5
4	Measure the voltage from the cellular microphone signal circuit to the drain wire circuit. Does the voltage measure greater than the specified value?	9 V	Go to Step 7	Go to Step 6
5	Test the cellular microphone signal circuit for a short to ground. Refer to <u>Circuit Testing</u> and <u>Wiring Repairs</u> . Did you find and correct the condition?	-	Go to Step 13	Go to Step 8
6	Test the drain wire circuit for an open or short to ground. Refer to <u>Circuit Testing</u> and <u>Wiring Repairs</u> . Did you find and correct the condition?	-	Go to Step 13	Go to Step 9
7	Test the drain wire for a short to ground. Did you find and correct the condition?	-	Go to Step 13	Go to Step 10
8	1. Leave the microphone disconnected. 2. Disconnect the vehicle communication interface module (VCIM) connector C2. 3. Test the cellular microphone signal circuit and drain wire circuit for a short together. Did you find and correct the condition?	-	Go to Step 13	Go to Step 9
9	Inspect for poor connections at the harness connector of the cellular microphone. Refer to <u>Testing for Intermittent Conditions and Poor Connections</u> and <u>Connector</u>	-		

2007 Hummer H3

2007 ACCESSORIES AND EQUIPMENT Cellular, Entertainment and Navigation - H3

	Repairs . Did you find and correct the condition?		Go to Step 13	Go to Step 11
10	Inspect for poor connections at the harness connector of the VCIM. Refer to Testing for Intermittent Conditions and Poor Connections and Connector Repairs . Did you find and correct the condition?	-	Go to Step 13	Go to Step 12
11	Replace the cellular microphone. Refer to Mobile Telephone Microphone Replacement. Did you complete the replacement?	-	Go to Step 13	-
12	Replace the VCIM. Refer to Control Module References for replacement, setup and programming. Did you complete the replacement?	-	Go to Step 13	-
13	Operate the system in order to verify the repair. Did you correct the condition?	-	System OK	Go to Step 2

NO (OR NOISY) ONSTAR AUDIO

Test Description

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

8: If the cellular telephone voice low reference circuit is shorted to voltage the vehicle communication interface module (VCIM) has been damaged and requires replacement.

No (or Noisy) OnStar Audio

Step	Action	Yes	No
Schematic Reference: OnStar Schematics Connector End View Reference: <u>Entertainment/Communication Connector End Views</u> DEFINITION: This procedure is for diagnosing problems during OnStar® audio following a button press from the OnStar® button assembly.			

2007 Hummer H3

2007 ACCESSORIES AND EQUIPMENT Cellular, Entertainment and Navigation - H3

1	Did you perform the Diagnostic System Check - Vehicle?	Go to Step 2	Go to <u>Diagnostic System Check - Vehicle</u>
2	<ol style="list-style-type: none"> 1. Turn ON the ignition, with the engine OFF. 2. Turn ON the radio. 3. Set volume to a comfortable level. 4. Press the OnStar® Center Call button. <p>Can the Connecting to OnStar message be heard playing through the audio system at all?</p>	Go to Step 3	Go to Step 5
3	Tune the radio to a known good station. Can the audio be heard through all speaker channels?	Go to Step 4	Go to <u>Diagnostic System Check - Vehicle</u>
4	Test the cellular telephone voice low reference circuit for an open. Refer to <u>Circuit Testing</u> and <u>Wiring Repairs</u> . Did you find and correct the condition?	Go to Step 11	Go to Step 9
5	Is any distortion heard?	Go to Step 7	Go to Step 6
6	Test the cellular telephone voice signal circuit for a short to ground. Refer to <u>Circuit Testing</u> and <u>Wiring Repairs</u> . Did you find and correct the condition?	Go to Step 11	Go to Step 7
7	Test the cellular telephone voice signal circuit for an open or a short to voltage. Refer to <u>Circuit Testing</u> and <u>Wiring Repairs</u> . Did you find and correct the condition?	Go to Step 11	Go to Step 8
8	Test the cellular telephone voice low reference circuit for a short to voltage. Refer to <u>Circuit Testing</u> and <u>Wiring Repairs</u> . Did you find and correct the condition?	Go to Step 10	Go to Step 9
	Inspect for poor connections at the harness connector of the vehicle communication		

2007 Hummer H3

2007 ACCESSORIES AND EQUIPMENT Cellular, Entertainment and Navigation - H3

9	interface module (VCIM). Refer to <u>Testing for Intermittent Conditions and Poor Connections</u> and <u>Connector Repairs</u> . Did you find and correct the condition?	Go to Step 11	Go to Step 10
10	Replace the VCIM. Refer to <u>Control Module References</u> for replacement, setup and programming. Did you complete the repair?	Go to Step 11	-
11	Operate the system in order to verify the repair. Did you find and correct the condition?	System OK	Go to Step 2

NO GLOBAL POSITIONING SYSTEM (GPS) RECEPTION

No Global Positioning System (GPS) Reception

Step	Action	Values	Yes	No
Schematic Reference: <u>Radio/Navigation System Schematics</u> Connector End View Reference: <u>Entertainment/Communication Connector End Views</u> DEFINITION: When using the navigation system, the Global Positioning System (GPS) icon does not appear on the navigation radio.				
1	Did you perform the Diagnostic System Check - Vehicle?	-	Go to Step 2	Go to <u>Diagnostic System Check - Vehicle</u>
2	1. Move the vehicle to an open area outside of the building. 2. Turn ON the ignition. The Navigation screen appears on the navigation radio. 3. The display should show the current position of the vehicle. If the red GPS icon appears on the screen, this indicates that the vehicle does not have GPS reception.	-	Go to <u>Testing for Intermittent Conditions and Poor</u>	

2007 Hummer H3

2007 ACCESSORIES AND EQUIPMENT Cellular, Entertainment and Navigation - H3

	Does the system operate normally?		<u>Connections</u>	Go to Step 3
3	<p>1. Leave the vehicle outside with the ignition ON or set to adaptive cruise control (ACC) for 30 minutes.</p> <p>2. Examine the navigation display for the GPS icon, indicating that the vehicle does not have GPS reception.</p> <p>Does the system have GPS reception?</p>	-	Go to Step 9	Go to Step 4
4	<p>Inspect the front window glass for tinting or any other alterations or obstructions.</p> <p>Is the front window glass OK?</p>	-	Go to Step 6	Go to Step 5
5	<p>Remove the front window glass tinting or other alterations.</p> <p>Did you complete the repair?</p>	-	Go to Step 9	-
6	<p>Test the GPS antenna line for resistance between the center conductor and the outer shield.</p> <p>Does the resistance measure near the specified value?</p>	200 ohms	Go to Step 8	Go to Step 7
7	<p>Replace the GPS antenna. Refer to <u>Global Positioning System (GPS) Antenna Replacement</u>.</p> <p>Did you complete the replacement?</p>	-	Go to Step 9	Go to Step 7
8	<p>Replace the navigation radio. Refer to <u>Radio Replacement</u> in Entertainment.</p> <p>Did you complete the replacement?</p>	-	Go to Step 9	-
9	<p>Operate the system in order to verify the repair.</p> <p>Did you correct the condition?</p>	-	System OK	Go to Step 3

ONSTAR BUTTON LED INOPERATIVE

Test Description

2007 Hummer H3

2007 ACCESSORIES AND EQUIPMENT Cellular, Entertainment and Navigation - H3

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

3: This step determines if the OnStar® status LED has the necessary green LED signal circuit voltage.

5: If the green LED signal is shorted to voltage then the OnStar® 3-button assembly has been damaged and the OnStar® 3-button assembly must be replaced.

OnStar Button LED Inoperative

Step	Action	Values	Yes	No
Schematic Reference: <u>OnStar Schematics</u> Connector End View Reference: <u>Entertainment/Communication Connector End Views</u> DEFINITION: This procedure is for diagnosing problems with the OnStar® button assembly LED.				
1	Did you perform the Diagnostic System Check - Vehicle?	-	Go to Step 2	Go to <u>Diagnostic System Check - Vehicle</u>
2	1. Turn ON the ignition, with engine OFF. 2. Observe the OnStar® status LED. Did the OnStar® status LED turn GREEN?	-	Go to <u>Testing for Intermittent Conditions and Poor Connections and Connector Repairs</u>	Go to Step 3
3	Measure the voltage from the keypad green LED signal circuit to a good ground. Does the voltage measure near the specified value?	7 V	Go to Step 6	Go to Step 4
4	Test the keypad green LED signal circuit for an open, high resistance or a short to ground. Refer to <u>Circuit Testing</u> and <u>Wiring Repairs</u> . Did you find and correct the condition?	-	Go to Step 10	Go to Step 5
	Test the keypad green LED signal			

2007 Hummer H3

2007 ACCESSORIES AND EQUIPMENT Cellular, Entertainment and Navigation - H3

5	<p>circuit for a short to voltage. Refer to <u>Circuit Testing</u> and <u>Wiring Repairs</u> .</p> <p>Did you find and correct the condition?</p>	-	Go to Step 7	Go to Step 8
6	<p>Inspect for poor connections at the harness connector of the OnStar® button assembly. Refer to <u>Testing for Intermittent Conditions and Poor Connections</u> and <u>Connector Repairs</u> .</p> <p>Did you find and correct the condition?</p>	-	Go to Step 10	Go to Step 7
7	<p>Replace the OnStar® button assembly. Refer to <u>OnStar Button Assembly Replacement</u>.</p> <p>Did you complete the repair?</p>	-	Go to Step 10	-
8	<p>Inspect for poor connections at the harness connector of the vehicle communication interface module (VCIM). Refer to <u>Testing for Intermittent Conditions and Poor Connections</u> and <u>Connector Repairs</u> .</p> <p>Did you find and correct the condition?</p>	-	Go to Step 10	Go to Step 9
9	<p>Replace the VCIM. Refer to <u>Control Module References</u> for replacement, setup and programming.</p> <p>Did you complete the repair?</p>	-	Go to Step 10	-
10	<p>Operate the system in order to verify the repair.</p> <p>Did you correct the condition?</p>	-	System OK	Go to Step 2

ONSTAR CALL CENTER REMOTE FUNCTION REQUESTS INOPERATIVE

Diagnostic Aids

2007 Hummer H3

2007 ACCESSORIES AND EQUIPMENT Cellular, Entertainment and Navigation - H3

The customer concern may have been due to a lack of cellular service in a given area or a failure in the National Cellular Network infrastructure that has since been corrected.

OnStar Call Center Remote Function Requests Inoperative

Step	Action	Yes	No
Schematic Reference: <u>OnStar Schematics</u> Connector End View Reference: <u>Entertainment/Communication Connector End Views</u>			
1	Did you perform the Diagnostic System Check - Vehicle?	Go to Step 2	Go to <u>Diagnostic System Check - Vehicle</u>
2	Attempt to honk the horn, operate the lights and lock or unlock the doors on the vehicle. Does the applicable system operate properly?	Go to Step 3	<ul style="list-style-type: none">Go to <u>Diagnostic Starting Point - Horns</u>Go to <u>Diagnostic Starting Point - Lighting Systems</u>Go to <u>Diagnostic Starting Point - Vehicle Access</u>
3	IMPORTANT: It is necessary to inform the OnStar® Call Center advisor that this call is for vehicle diagnostic purposes. 1. Contact the OnStar® Call Center by pressing the blue OnStar® button. 2. Ask the OnStar® advisor to perform a remote function (door lock/unlock, light flash or horn honk).	Go to	Use the scan tool to access the STID and ESN and contact the General Motors Technical

2007 Hummer H3

2007 ACCESSORIES AND EQUIPMENT Cellular, Entertainment and Navigation - H3

Was the attempt successful?

Diagnostic Aids

Assistance Center

ONSTAR ONE OR MORE BUTTONS INOPERATIVE

OnStar One or More Buttons Inoperative

Step	Action	Value(s)	Yes	No
Schematic Reference: <u>OnStar Schematics</u> Connector End View Reference: <u>Entertainment/Communication Connector End Views</u>				
1	Did you perform the Diagnostic System Check - Vehicle?	-	Go to Step 2	Go to <u>Diagnostic System Check - Vehicle</u>
2	IMPORTANT: Contact the OnStar® Call Center first before pressing the emergency button in order to notify them of the test. 1. Turn ON the ignition, with the engine OFF. 2. Press each OnStar® button one at a time. Are all buttons inoperative?	-	Go to Step 4	Go to Step 3
3	Are any buttons intermittent or inoperative?	-	Go to Step 7	Go to <u>Testing for Intermittent Conditions and Poor Connections</u>
4	1. Turn OFF the ignition. 2. Disconnect the OnStar® button assembly. 3. Turn ON the ignition, with the engine OFF. 4. Measure the voltage from the keypad supply voltage circuit	9 V		

2007 Hummer H3

2007 ACCESSORIES AND EQUIPMENT Cellular, Entertainment and Navigation - H3

	to a good ground. Does the voltage measure greater than the specified value?		Go to Step 6	Go to Step 5
5	Test the keypad supply voltage circuit for an open or short. Refer to <u>Circuit Testing</u> and <u>Wiring Repairs</u> . Did you find and correct the condition?	-	Go to Step 11	Go to Step 8
6	Test the keypad signal circuit for an open or short. Refer to <u>Circuit Testing</u> and <u>Wiring Repairs</u> . Did you find and correct the condition?	-	Go to Step 11	Go to Step 9
7	Inspect for poor connections at the harness connector of the OnStar® button assembly. Refer to <u>Testing for Intermittent Conditions and Poor Connections</u> and <u>Connector Repairs</u> . Did you find and correct the condition?	-	Go to Step 11	Go to Step 9
8	Inspect for poor connections at the harness connector of the vehicle communication interface module (VCIM). Refer to <u>Testing for Intermittent Conditions and Poor Connections</u> and <u>Connector Repairs</u> . Did you find and correct the condition?	-	Go to Step 11	Go to Step 10
9	Replace the OnStar® button assembly. Refer to <u>OnStar Button Assembly Replacement</u> . Did you complete the replacement?	-	Go to Step 11	-
10	Replace the VCIM. Refer to <u>Control Module References</u> for replacement, setup and	-		

2007 Hummer H3

2007 ACCESSORIES AND EQUIPMENT Cellular, Entertainment and Navigation - H3

	programming. Did you complete the replacement?		Go to Step 11	-
11	Operate the system in order to verify the repair. Did you correct the condition?	-	System OK	Go to Step 2

ONSTAR RECONFIGURATION (WITHOUT TIS2WEB GEN 3 AND PRIOR)

IMPORTANT: The vehicle communication interface module (VCIM) has a specific set of unique numbers that tie the module to the vehicle it resides in. These numbers, the 10-digit station identification and 11-digit electronic serial number, are used by the National Cellular Network and OnStar® to identify the specific vehicle. Because these numbers are tied to the vehicle identification number of the vehicle, these parts should NOT be exchanged with those of another vehicle. After replacing the VCIM, it is essential to reconfigure the OnStar® system. Failure to reconfigure the system will result in an additional customer visit for repair. In addition, pressing and holding the white dot button on the keypad will not reset this version of the OnStar® system. This action will cause a DTC to set.

1. Install the scan tool. Use the special functions menu in order to perform the VCIM setup procedure for this vehicle.
2. Move the vehicle to an open area that is away from tall buildings with a clear view of unobstructed sky. Allow the vehicle to run for 10 minutes.
3. Use the ID information menu on the scan tool to access the new station ID (STID) and the electronic serial number (ESN) from the new VCIM.
4. Press the blue OnStar® button to connect to the OnStar® Call Center. Tell the advisor that this vehicle has received a new VCIM and ask the advisor to perform the following procedure:
 - Add the new STID and the ESN to update the customers account.
 - Follow any additional instructions from the OnStar® advisor.
 - Ask the advisor to activate the OnStar® Personal Calling feature, if available.
5. The default language for voice recognition in the generation 5 OnStar module is English. To change the language resident in the module, refer to **Service Programming System (SPS)**.

ONSTAR RECONFIGURATION (WITH TIS2WEB GEN 4 AND LATER)

IMPORTANT: The vehicle communication interface module (VCIM) has a specific set of unique numbers that tie the module to a specific vehicle. These numbers, the 10-digit station identification (STID) and 11-digit electronic serial number (ESN), are used by OnStar® and the cellular network to identify the specific vehicle. Because these numbers are exclusive to the vehicle identification number of the vehicle, these parts should NOT be exchanged with those of another vehicle. After replacing the VCIM, it is essential to reconfigure the OnStar® system. Failure to reconfigure the system will result in an additional customer visit for repair. DO NOT press and hold the white dot button on the keypad as it will not reset this version of the OnStar® system and may result in a DTC to be set, a red LED and limited or incomplete OnStar® services. Use of the TIS 2 Web SPS application and the Tech 2 are required in order to perform the VCIM configuration and setup procedure for this vehicle. The configuration and set-up procedure is now a two step process which enables an automated activation by the OnStar Center, without a button press by the technician to the center.

1. Connect the Tech 2 to the vehicle.
2. Connect the Techline Information System (TIS) terminal to the Tech 2.
3. Select the OnStar Activation programming option using the service programming system (SPS).
4. Upon completion of the OnStar Activation programming event, disconnect the TIS terminal from the Tech 2 and perform the VCIM/OnStar Set-up Procedure using the Tech 2. The set up procedure is located under the special function menu option.
5. The default language for the new VCIM is English. Changing the language capability to French or Spanish is supported by service programming system (SPS) and by Tech 2 special functions. Changing the language capability is also dependent on the generation of the replacement OnStar module.

Inform the customer that it may take up to 24 hours for the OnStar service to become fully activated after performing the TIS 2 Web and Tech 2 setup procedures.

ONSTAR SYMPTOM DIAGNOSIS

2007 Hummer H3

2007 ACCESSORIES AND EQUIPMENT Cellular, Entertainment and Navigation - H3

System Description

IMPORTANT: To successfully diagnose and repair the OnStar® system it is necessary to comprehend its operation. Technicians should read and understand the OnStar Description and Operation before attempting to repair an OnStar® system.

This symptom table will enable the user to verify the customer complaint and narrow it to its source. If there is a concern with voice recognition or OnStar® talk button inoperative, technicians should proceed directly to the applicable diagnostic.

Diagnostic Aids

- The customer concern may have been due to a lack of cellular service in a given area or a failure in the National Cellular Network infrastructure that has since been corrected.
- If the prompt OnStar Request Ended is heard without pressing the white dot button at the end of an OnStar® keypress, the OnStar® system at one time made a successful cellular connection, but was unable to complete the call. If repeated calls are placed with this result, contact the General Motors Technical Assistance Center.
- An inaccurate or aged global positioning system (GPS) position may have been due to the temporary loss of GPS signal reception by the vehicle in instances, such as driving through tunnels or parking structures which restrict the navigation antenna from a clear view of the satellites in the sky.

OnStar Symptom Diagnosis

Step	Action	Yes	No
1	Did you perform the Diagnostic System Check - Vehicle?	Go to Step 2	Go to <u>Diagnostic System Check - Vehicle</u>
2	1. Turn ON the ignition, with the engine OFF. 2. Observe the OnStar® status LED Does the LED turn green?	Go to Step 3	Go to <u>OnStar Button LED Inoperative</u>
	1. Turn the radio ON. 2. Set the volume to a comfortable level. 3. Press the OnStar® Call Center		

2007 Hummer H3

2007 ACCESSORIES AND EQUIPMENT Cellular, Entertainment and Navigation - H3

3	<p>button.</p> <p>4. Wait approximately 10 seconds then end the call by pressing the white dot button.</p> <p>Does both the OnStar® LED blink after the OnStar® keypress is made and the call ended after pressing the white dot button?</p>	Go to Step 4	Go to <u>OnStar One or More Buttons Inoperative</u>
4	<p>After the OnStar® keypress, does both the radio mute and is the Connecting to OnStar message heard playing through the audio system?</p>	Go to Step 5	Go to <u>No (or Noisy) OnStar Audio</u>
5	<p>IMPORTANT: It is important to have the vehicle in an open outside area where a cellular call can be successfully placed and global positioning system (GPS) data can be received from satellites.</p> <p>1. Press the OnStar® Call Center button.</p> <p>2. Wait for the system to either connect or end the call.</p> <p>Is a connection made with OnStar®?</p>	Go to Step 6	Go to Step 9
6	<p>IMPORTANT: It is necessary to inform the OnStar® Call Center advisor that this call is for vehicle diagnostic purposes.</p> <p>Ask the OnStar® Call Center advisor if your voice can clearly be heard. Does the advisor clearly hear your voice?</p>	Go to Step 7	Go to <u>OnStar Microphone Inoperative - Caller Cannot Be Heard</u>
7	<p>Ask the OnStar® Call Center advisor if they have received any data from the customer vehicle.</p> <p>Did data transfer of the OnStar® call occur?</p>	Go to Step 8	Go to Step 11
8	<p>Ask the OnStar® Call Center advisor if the vehicle has ever been configured.</p>		

2007 Hummer H3

2007 ACCESSORIES AND EQUIPMENT Cellular, Entertainment and Navigation - H3

	Has the vehicle been configured?	Go to Step 10	Go to Step 16
9	Is the audio prompt Unable to Contact OnStar® heard?	Go to <u>Unable to Contact OnStar Call Center</u>	Go to Step 12
10	Ask the OnStar® Call Center advisor to verify the vehicle identification number (VIN) which they have on record and ensure it matches the actual VIN. Does the VIN at the OnStar® Call Center match the VIN of the vehicle?	Go to Step 13	Go to Step 15
11	Ask the OnStar® Call Center advisor if this call was a fail to voice. Was this call a fail to voice?	Use the scan tool to access the STID and ESN and contact the General Motors Technical Assistance Center	-
12	Is the audio prompt OnStar® Request Ended heard?	Go to Diagnostic Aids	-
13	Ask the OnStar® Call Center advisor to verify your position. Is the location provided by the OnStar® Call Center advisor within a reasonable distance from the actual location of the vehicle?	Go to Step 14	Go to <u>OnStar Global Positioning System (GPS) Data Not Current or Inaccurate</u>
14	Ask the OnStar® Call Center advisor if the global positioning system (GPS) position is marked as Current. Is the GPS position current?	Go to Step 17	Go to <u>OnStar Global Positioning System (GPS) Data Not Current or Inaccurate</u>
15	Ask the OnStar® Call Center advisor to update the customer account with the correct information. Has the customer account been updated?	Go to Step 16	-

2007 Hummer H3

2007 ACCESSORIES AND EQUIPMENT Cellular, Entertainment and Navigation - H3

16	Ask the OnStar® Call Center advisor to perform a reconfiguration on the vehicle. Was the reconfiguration successful?	Go to Step 18	Ask the OnStar® Call Center advisor why the reconfiguration was not successful, use the scan tool to access the STID and ESN and contact the General Motors Technical Assistance Center
17	Is the customer concern with the inability of the OnStar® Call Center to perform remote functions?	Go to <u>OnStar Call Center Remote Function Requests Inoperative</u>	Go to Diagnostic Aids
18	Operate the system in order to verify the customer concern has been corrected. Has the customer concern been corrected?	System OK	Go to Step 2

ONSTAR TALK BUTTON INOPERATIVE

OnStar Talk Button Inoperative

Step	Action	Yes	No
Schematic Reference: <u>OnStar Schematics</u> Connector End View Reference: <u>Entertainment/Communication Connector End Views</u>			
1	Did you perform the Diagnostic System Check - Vehicle?	Go to Step 2	Go to <u>Diagnostic System Check - Vehicle</u>
2	Verify the talk button is inoperative. Does the talk button operate normally?	Go to <u>Testing for Intermittent Conditions and Poor Connections</u>	Go to Step 3

2007 Hummer H3

2007 ACCESSORIES AND EQUIPMENT Cellular, Entertainment and Navigation - H3

3	<ol style="list-style-type: none"> 1. Turn the ignition ON with the engine OFF. 2. With a scan tool, observe the Talk Button Switch data parameter in the body control module (BCM) data list. 3. Depress the Talk Button Switch <p>Does the scan tool display change from Inactive to Active?</p>	Go to Step 8	Go to Step 4
4	<ol style="list-style-type: none"> 1. Disconnect the headlamp and panel dimmer switch. Refer to <u>Headlamp Switch Replacement</u> . 2. Place a fused jumper between the headlamp switch headlamps on signal circuit and low reference circuit terminals. <p>Does the scan tool change from Inactive to Active?</p>	Go to Step 6	Go to Step 5
5	<p>Test for one of the following conditions in the headlamp and panel dimmer switch circuits. Refer to <u>Circuit Testing</u> and <u>Wiring Repairs</u> .</p> <ul style="list-style-type: none"> • An open or short to ground in the Voice Recognition Switch Signal circuit. • A open or short to ground in the low reference circuit. 	Go to Step 9	Go to Step 7
6	<p>Inspect for poor connections at the harness connector of the headlamp and panel dimmer switch. Refer to <u>Circuit Testing</u> and <u>Wiring Repairs</u> .</p> <p>Did you find and correct the condition?</p>	Go to Step 9	Go to Step 7
7	<p>Replace the headlamp and panel dimmer switch. Refer to <u>Headlamp Switch Replacement</u> .</p> <p>Did you complete the repair?</p>	Go to Step 9	-

2007 Hummer H3

2007 ACCESSORIES AND EQUIPMENT Cellular, Entertainment and Navigation - H3

8	Replace the BCM. Refer to <u>Control Module References</u> for replacement, setup and programming. Did you complete the replacement?	Go to Step 9	-
9	1. Use the scan tool in order to clear any induced DTCs. 2. Operate the system in order to verify the repair. Did you correct the condition?	System OK	Go to Step 2

RADIO POOR RECEPTION

Reference Information

Schematic Reference:

Radio/Navigation System Schematics

Connector End View Reference:

Entertainment/Communication Connector End Views

Diagnostic System Check - Entertainment System

Always perform the Diagnostic System Check before proceeding with these diagnostic procedures. Refer to **Diagnostic System Check - Vehicle** .

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 0.2 ohms or less.
5. Test the following when the resistance is greater than 0.2 ohms.
 - Base of the antenna for a poor connection to body ground

- The coaxial cable interconnects for a poor connection or corrosion.
- Test for an open or high resistance from the battery negative cable to the body. Refer to **Circuit Testing** and **Wiring Repairs** .

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

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

Check the 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**.

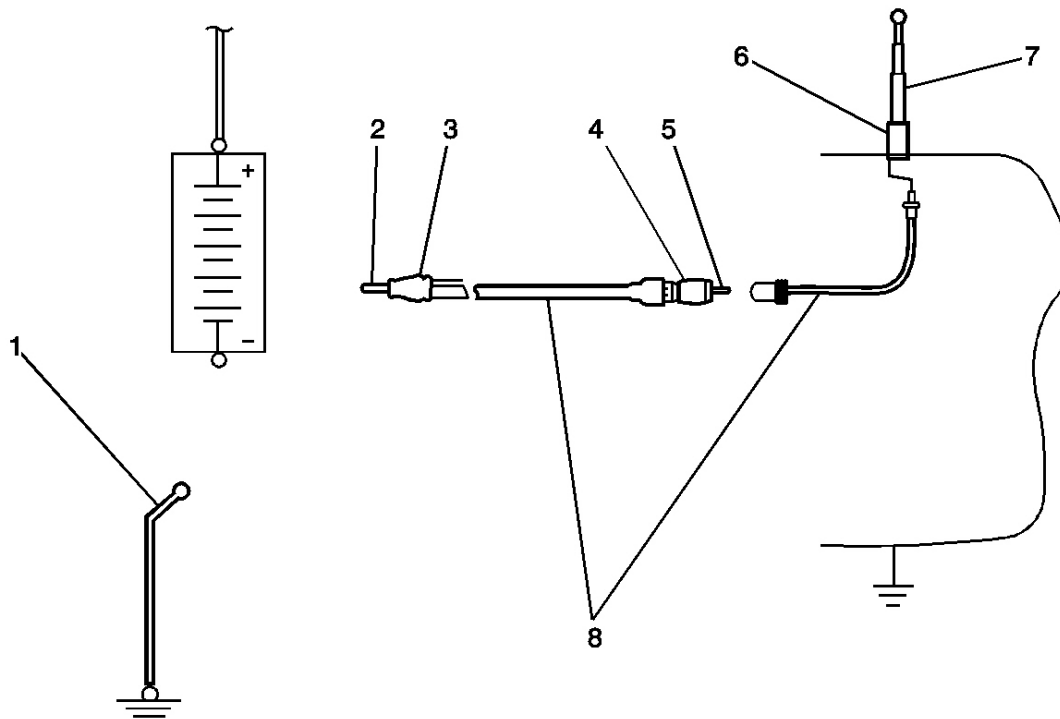


Fig. 32: Identifying Mast Antenna System Components
 Courtesy of GENERAL MOTORS CORP.

Callouts For Fig. 32

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

Radio Poor Reception

Ohmmeter Probes At Points	Resistance Measured In Ohms
1 and 3	Less than 0.2
1 and 4	Less than 0.2

2007 Hummer H3

2007 ACCESSORIES AND EQUIPMENT Cellular, Entertainment and Navigation - H3

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 0.2 ohm
 - 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** .
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

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 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 .

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 0.2 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 . If no failures were found, replace the radio. Refer to Control Module References for replacement, setup and programming.
- 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 .
- 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 the radio control module. Refer to Control

Module References for replacement, setup and programming.

Poor Reception on AM Band Only

- Defective AM antenna
- Defective radio control module-Replace the radio control module. Refer to **Control Module References** for replacement, setup and programming.

Poor Reception on FM Band Only

- Defective primary or secondary FM antenna
- Defective radio control module-Replace the radio control module. Refer to **Control Module References** for replacement, setup and programming.
- Defective radio antenna module-Replace the radio antenna module. Refer to **Control Module References** for replacement, setup and programming.

RADIO SETUP

Complete the following procedure, using a scan tool, in order to properly set up communication:

1. At the Main Menu screen, select: Diagnostics.
2. At the Vehicle Identification screens, build the vehicle.
3. At the System Selection Menu screen, select: Body and Accessories.
4. At the Body Screen, select: Entertainment.
5. At the Entertainment screen, select the appropriate radio.
6. At the Radio screen, select: Module Setup.
7. At the Module Replacement screen, select the appropriate module to setup.
8. Press EXIT on the scan tool and cycle the ignition.

REDUCED VOLUME - ONE OR MORE SPEAKERS (W UM8)

Reduced Volume - One or More Speakers (W UM8)

Step	Action	Yes	No
Schematic Reference: <u>Radio/Navigation System Schematics</u> Connector End View Reference: <u>Entertainment/Communication Connector End Views</u>			
1	Did you perform the Diagnostic System Check - Vehicle?		Go to Diagnostic

2007 Hummer H3

2007 ACCESSORIES AND EQUIPMENT Cellular, Entertainment and Navigation - H3

		Go to Step 2	<u>System Check - Vehicle</u>
2	<ol style="list-style-type: none"> 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. <p>Do all of the speakers operate properly?</p>	Go to <u>Testing for Intermittent Conditions and Poor Connections</u>	Go to Step 3
3	<ol style="list-style-type: none"> 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 <u>Circuit Testing</u> and <u>Wiring Repairs</u> . <p>Did the A/C voltage fluctuate with the audio output?</p>	Go to Step 4	Go to Step 8
4	<ol style="list-style-type: none"> 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 <u>Circuit Testing</u> and <u>Wiring Repairs</u> . <p>Did you find and correct the condition?</p>	Go to Step 9	Go to Step 5
5	<p>Inspect for poor connections at the harness connector of the radio. Refer to <u>Testing for Intermittent Conditions and Poor Connections</u> .</p> <p>Did you find and correct the condition?</p>	Go to Step 9	Go to Step 6
6	<p>Inspect for poor connections at the harness connector of the appropriate speaker. Refer to <u>Testing for Intermittent Conditions and Poor Connections</u> and <u>Connector Repairs</u> .</p>		

2007 Hummer H3

2007 ACCESSORIES AND EQUIPMENT Cellular, Entertainment and Navigation - H3

	Did you find and correct the condition?	Go to Step 9	Go to Step 7
7	Replace the speaker. Refer to <u>Speaker Replacement Reference</u> . Did you complete the replacement?	Go to Step 9	-
8	Replace the radio. Refer to <u>Control Module References</u> for replacement, setup and programming. 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/O UM8)

Reduced Volume - One or More Speakers (w/o UM8)

Step	Action	Yes	No
Schematic Reference: <u>Radio/Navigation System Schematics</u> Connector End View Reference: <u>Entertainment/Communication Connector End Views</u>			
1	Did you perform the Diagnostic System Check - Vehicle?	Go to Step 2	Go to <u>Diagnostic System Check - Vehicle</u>
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 <u>Testing for Intermittent Conditions and Poor Connections</u>	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 <u>Circuit Testing</u> and <u>Wiring Repairs</u> .		

2007 Hummer H3

2007 ACCESSORIES AND EQUIPMENT Cellular, Entertainment and Navigation - H3

	Did the A/C voltage fluctuate with the audio output?	Go to Step 4	Go to Step 8
4	<ol style="list-style-type: none"> 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 <u>Circuit Testing</u> and <u>Wiring Repairs</u> . 		
	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 <u>Testing for Intermittent Conditions and Poor Connections</u> .		
	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 <u>Testing for Intermittent Conditions and Poor Connections</u> and <u>Connector Repairs</u> .		
	Did you find and correct the condition?	Go to Step 9	Go to Step 7
7	Replace the speaker. Refer to <u>Speaker Replacement Reference</u> .		
	Did you complete the replacement?	Go to Step 9	-
8	Replace the radio. Refer to <u>Control Module References</u> for replacement, setup and programming.		
	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

SPEAKER REPLACEMENT REFERENCE

Speaker Replacement Reference

Component	Repair Instruction
Front Upper Speakers	Refer to <u>Front Upper Speaker Replacement</u> .

2007 Hummer H3

2007 ACCESSORIES AND EQUIPMENT Cellular, Entertainment and Navigation - H3

Front Door Speakers	Refer to <u>Radio Front Side Door Speaker Replacement</u> .
Rear Quarter Speakers	Refer to <u>Radio Rear Quarter Trim Panel Speaker Replacement</u> .
Rear Door Speakers	Refer to <u>Radio Rear Side Door Speaker Replacement</u> .

SPEAKERS INOPERATIVE - ONE OR MORE

Schematic Reference: **Radio/Navigation System Schematics**

Connector End View Reference: **Entertainment/Communication Connector End Views**

Preliminary Information

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

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** .

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** .
2. Ground circuit to the amplifier open-Test the ground circuit to the amplifier for an open. Refer to **Circuit Testing** and **Wiring Repairs** .
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** .
4. No audio output from the amplifier-Replace the amplifier. Refer to **Radio Speaker 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 .

Without RPO UQ7

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

IMPORTANT: The radio must be programmed after replacement. Refer to Radio Setup. With RPO UM8, perform the Radio Setup.

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 Control Module References for replacement, setup and programming.

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 .

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 Radio Speaker 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. Refer to Circuit Testing and Wiring Repairs .

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 .
2. Replace the amplifier. Refer to Radio Speaker 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 .
2. Replace the amplifier. Refer to Radio Speaker 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 .
2. Replace the amplifier. Refer to Radio Speaker 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 .
2. No audio output from the digital radio receiver-Replace the digital radio receiver. Refer to Digital Radio Receiver Replacement and Digital Radio Receiver Setup.
3. No digital output from the radio-Replace the radio. Refer to Control Module References for replacement, setup and programming.

UNABLE TO CONTACT ONSTAR CALL CENTER

Diagnostic Aids

- The customer concern may have been due to a lack of cellular service in a given area. A

2007 Hummer H3

2007 ACCESSORIES AND EQUIPMENT Cellular, Entertainment and Navigation - H3

failure in the National Cellular Network infrastructure at the time of the customer's failed connection that has since been repaired may also have been the cause.

- If an OnStar® emergency call is able to successfully connect the vehicle to the OnStar® Call Center when an OnStar® Call Center button press is not, there may be a failure in the ability of the OnStar® system in the vehicle to be recognized by the local cellular carrier.
- If the prompt "OnStar® request ended" is heard, without pressing the white dot button at the end of the OnStar® keypress, the OnStar® system at one time has made a successful cellular connection, but was unable to complete the call. If repeated calls are placed with this result, contact General Motors Technical Assistance Center.

Unable to Contact OnStar Call Center

Step	Action	Value	Yes	No
Schematic Reference: <u>OnStar Schematics</u> Connector End View Reference: <u>Entertainment/Communication Connector End Views</u> DEFINITION: When the OnStar® Call Center button is pressed, no connection is made to the OnStar® Call Center.				
1	Did you perform the Diagnostic System Check - Vehicle?	-	Go to Step 2	Go to <u>Diagnostic System Check - Vehicle</u>
2	IMPORTANT: It is important to have the vehicle in an open outside area where a cellular call can be successfully placed and global positioning system (GPS) data can be received from satellites. 1. Press the OnStar® Call Center button. 2. Wait for the system to either connect or end the call. Is a connection made with the OnStar® Call Center?	-	Go to Diagnostic Aids	Go to Step 3
3	Other than the normal progression tones of the system and the prompt Unable to Contact OnStar®, were	-		

2007 Hummer H3

2007 ACCESSORIES AND EQUIPMENT Cellular, Entertainment and Navigation - H3

	any other tones or cellular messages heard?		Go to Step 4	Go to Step 5
4	<p>IMPORTANT: Placing an emergency call to the OnStar® Call Center should only be made if the diagnosis of the system leads to this step. Immediately after an OnStar® advisor picks up the call, they should be told that this call is for diagnostic purposes only and there is no emergency.</p> <ol style="list-style-type: none"> Record all messages heard from the OnStar® Call Center button press. Press the OnStar® emergency button. <p>Does the emergency keypress call make a connection to the OnStar® Call Center within 10 minutes?</p>	-	Have all messages heard during the course of the tests available, use the scan tool to access the STID, ESN and Transceiver I.D. and contact the General Motors Technical Assistance Center	Go to Step 5
5	<p>Inspect the cellular antenna for exterior damage.</p> <p>Is the antenna assembly damaged?</p>	-	Go to Step 9	Go to Step 6
6	<p>IMPORTANT: Vehicle may be equipped with sectioned coax. Test each section and replace only the faulty section, not the entire length or coax.</p> <ol style="list-style-type: none"> Disconnect the cellular antenna coax from the vehicle communication interface module (VCIM). Disconnect the cellular antenna coax from the cellular antenna. Measure the resistance from the center conductor of the coax to the metal outer shield. <p>Does the meter read out of limits?</p>	-	Go to Step 7	Go to Step 8

2007 Hummer H3

2007 ACCESSORIES AND EQUIPMENT Cellular, Entertainment and Navigation - H3

7	Measure the resistance of the cellular antenna coax center conductor from end to end. Does the resistance measure greater than the specified value?	1 ohms	Go to Step 8	Use the scan tool to access the STID, ESN and Transceiver I.D. and contact the General Motors Technical Assistance Center
8	Replace the cellular antenna coax. Did you complete the replacement?	-	Go to Step 10	-
9	Replace the cellular antenna assembly. Refer to <u>Cellular Communications/Digital Radio Antenna Replacement</u> . 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

ONSTAR VOICE RECOGNITION INOPERATIVE

OnStar Voice Recognition Inoperative

Step	Action	Yes	No
Schematic Reference: <u>OnStar Schematics</u> Connector End View Reference: <u>Entertainment/Communication Connector End Views</u>			
1	Did you perform the Diagnostic System Check - Vehicle?	Go to Step 2	Go to <u>Diagnostic System Check - Vehicle</u>
	IMPORTANT: The vehicle must be located in a quiet area. 1. Turn ON the ignition, with the engine OFF.		

2007 Hummer H3

2007 ACCESSORIES AND EQUIPMENT Cellular, Entertainment and Navigation - H3

2	<ol style="list-style-type: none">2. Press the OnStar® Call Center button.3. Ask the OnStar® operator if your voice can clearly be heard. <p>Does the OnStar® operator hear your voice?</p>	Go to Step 3	Go to <u>OnStar Microphone Inoperative - Caller Cannot Be Heard</u>
3	<ol style="list-style-type: none">1. Press the Call Answer button.2. Pronounce all hands-free commands. Refer to <u>OnStar Description and Operation</u> for proper pronunciation. <p>Did the OnStar® system recognize any of the voice commands?</p>	Go to Step 5	Go to Step 4
4	<ol style="list-style-type: none">1. Press the Call Answer button.2. Have another person pronounce all hands-free commands. Refer to <u>OnStar Description and Operation</u> for proper pronunciation. <p>Did the OnStar® system recognize any of the voice commands?</p>	Go to Step 5	Go to <u>OnStar Description and Operation</u>
5	<p>The system is operational, but cannot identify certain word commands due to pronunciation. For tips on proper pronunciation refer to <u>OnStar Description and Operation</u>.</p> <p>Operate the system in order to verify the repair.</p> <p>Did you correct the condition?</p>	System OK	Go to Step 2

REPAIR INSTRUCTIONS

ONSTAR BUTTON ASSEMBLY REPLACEMENT

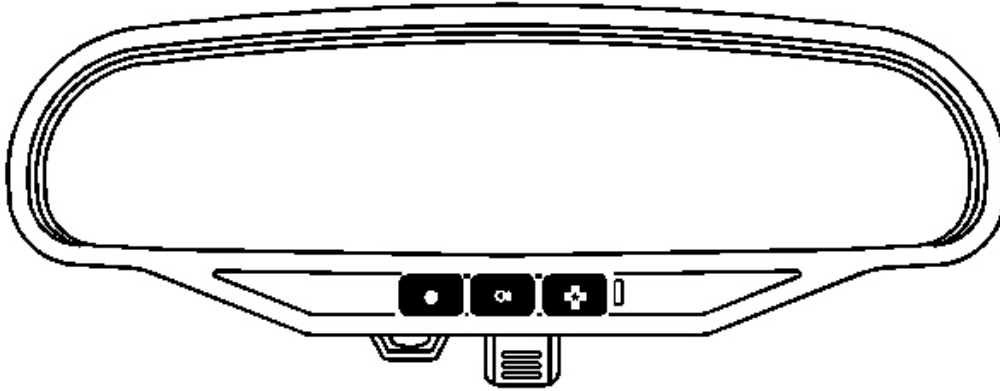


Fig. 33: View Of OnStar Button Assembly
Courtesy of GENERAL MOTORS CORP.

The OnStar® button assembly located on the inside rearview mirror can not be serviced separately. Should the button assembly need to be replaced, the entire inside rearview mirror assembly will need to be replaced. Refer to **Inside Rearview Mirror Replacement** .

MOBILE TELEPHONE MICROPHONE REPLACEMENT

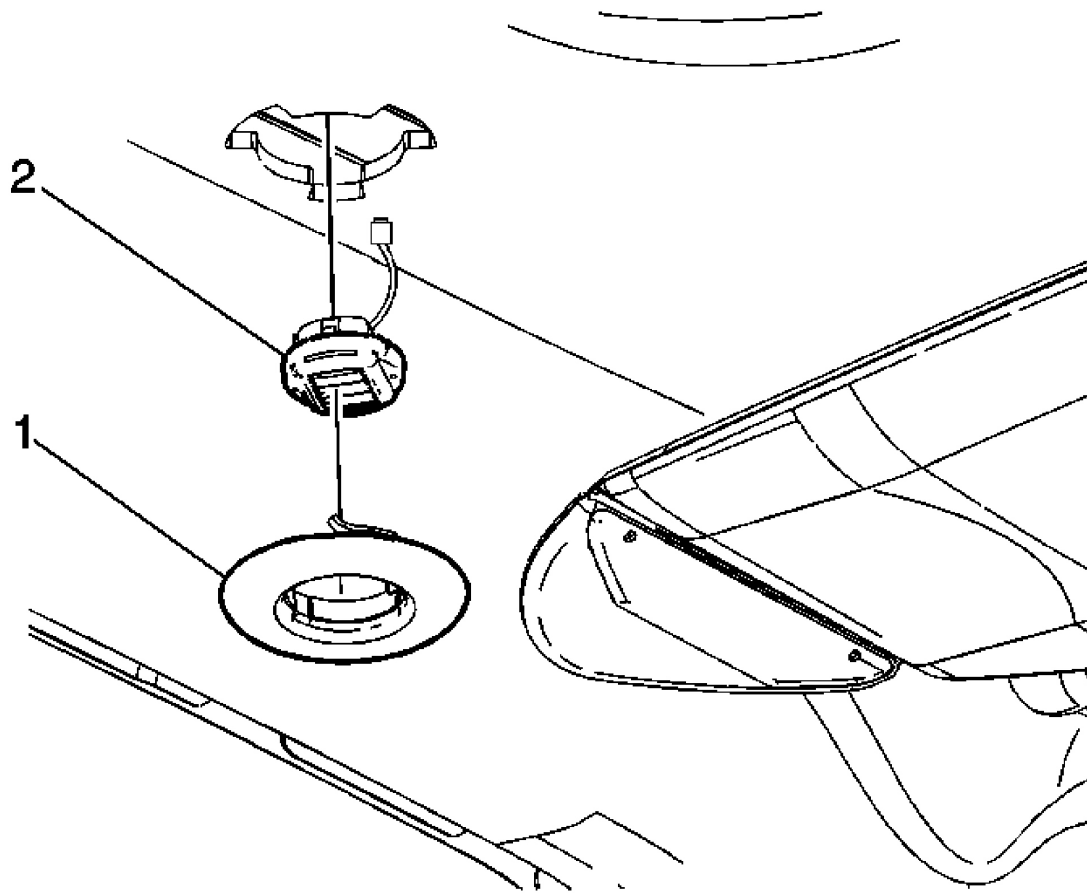


Fig. 34: Identifying OnStar Microphone
Courtesy of GENERAL MOTORS CORP.

Mobile Telephone Microphone Replacement

Callout	Component Name
Fastener Tightening Specifications: Refer to <u>Fastener Tightening Specifications</u> .	
1	Bezel, Mobile Telephone Microphone Tip: Partially lower headliner to access microphone electrical connector. Refer to <u>Headlining Trim Panel Replacement</u> .
2	Microphone Assembly, Mobile Telephone

COMMUNICATION INTERFACE MODULE REPLACEMENT

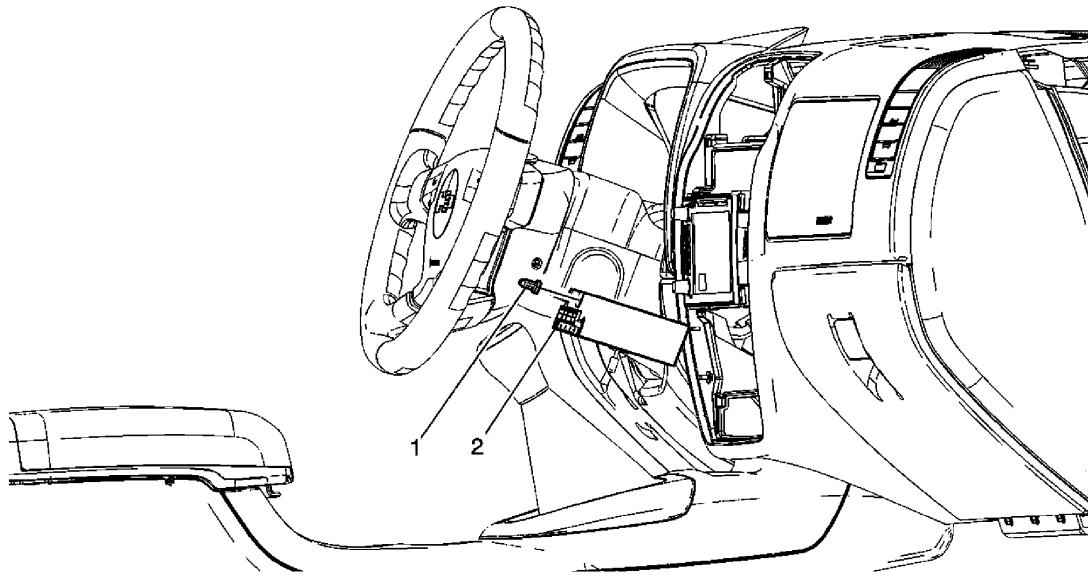


Fig. 35: Identifying Communication Interface Module
Courtesy of GENERAL MOTORS CORP.

Communication Interface Module Replacement

Callout	Component Name
Fastener Tightening Specifications: Refer to <u>Fastener Tightening Specifications</u> . Preliminary Procedure: Remove the instrument panel center trim panel. Refer to <u>Instrument Panel Center Trim Panel Replacement (Left Hand Drive)</u> or <u>Instrument Panel Center Trim Panel Replacement (Right Hand Drive)</u> .	
1	Communication Interface Module Guide Pin Tip: Turn counterclockwise to remove from the module in order to release the module from the bracket.
2	Communication Interface Module Tip: <ol style="list-style-type: none"> 1. Disconnect the electrical connectors. 2. Tip the module towards the opening in the instrument panel to remove. 3. Reprogram the communications interface module if replacing the unit. Refer to <u>Control Module References</u> .

COMPACT DISC CARE AND CLEANING

Care of CDs

2007 Hummer H3

2007 ACCESSORIES AND EQUIPMENT Cellular, Entertainment and Navigation - H3

Handle CDs carefully. Store them in their original cases or other protective cases and away from direct sunlight and dust. The CD player scans the bottom surface of the disc. If the surface of a CD is damaged, such as cracked, broken, scratched or wrinkled labeling, the CD will not play properly or not at all. If the surface of a CD is soiled, take a soft, lint free cloth or dampen a clean, soft cloth in a mild, neutral detergent solution mixed with water and clean it. Make sure the wiping process starts from the center to the edge. Do not touch the bottom side of a CD while handling it. This could damage the surface. Pick up CDs by grasping the outer edges or the edge of the hole and the outer edge.

Care of the CD Player

The use of CD lens cleaners for CD players is not advised, due to the risk of contaminating the internal lens of the CD optics with lubricants.

Stuck CDs

Interrupting the battery power by pulling the fuse will sometimes release a stuck CD. If a CD is stuck and removed, inspect it for warps, cracks, etc. If the CD is damaged, do not replace the radio.

Labeling CDs

Paper labels can eventually warp and wrinkle and this will cause the disc to jam inside the CD player. Try labeling the top of the discs with a soft magic marker instead.

RADIO REPLACEMENT

Removal Procedure

1. Remove the accessory trim plate. Refer to **Instrument Panel Center Trim Panel Replacement (Left Hand Drive)** or **Instrument Panel Center Trim Panel Replacement (Right Hand Drive)** .

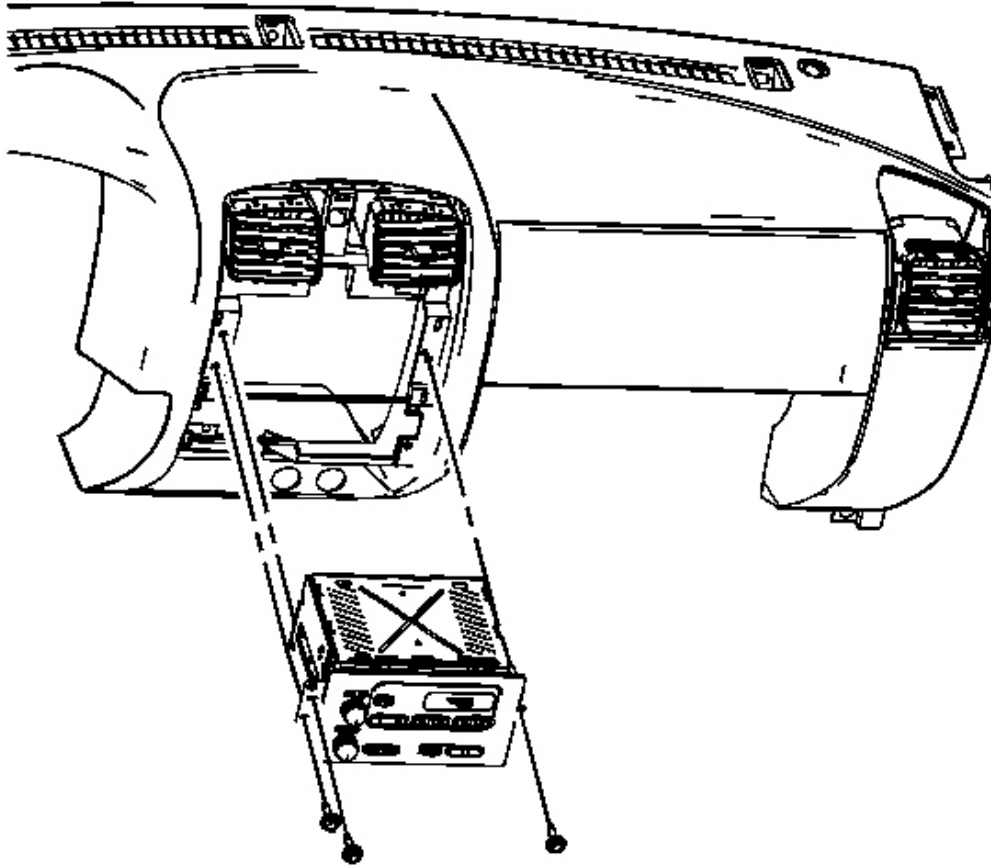


Fig. 36: View Of Radio & Screws
Courtesy of GENERAL MOTORS CORP.

2. Remove the 4 screws that retain the radio to the instrument panel (I/P).
3. Partially remove the radio disengaging the radio rear alignment locator to gain access to the electrical connectors.

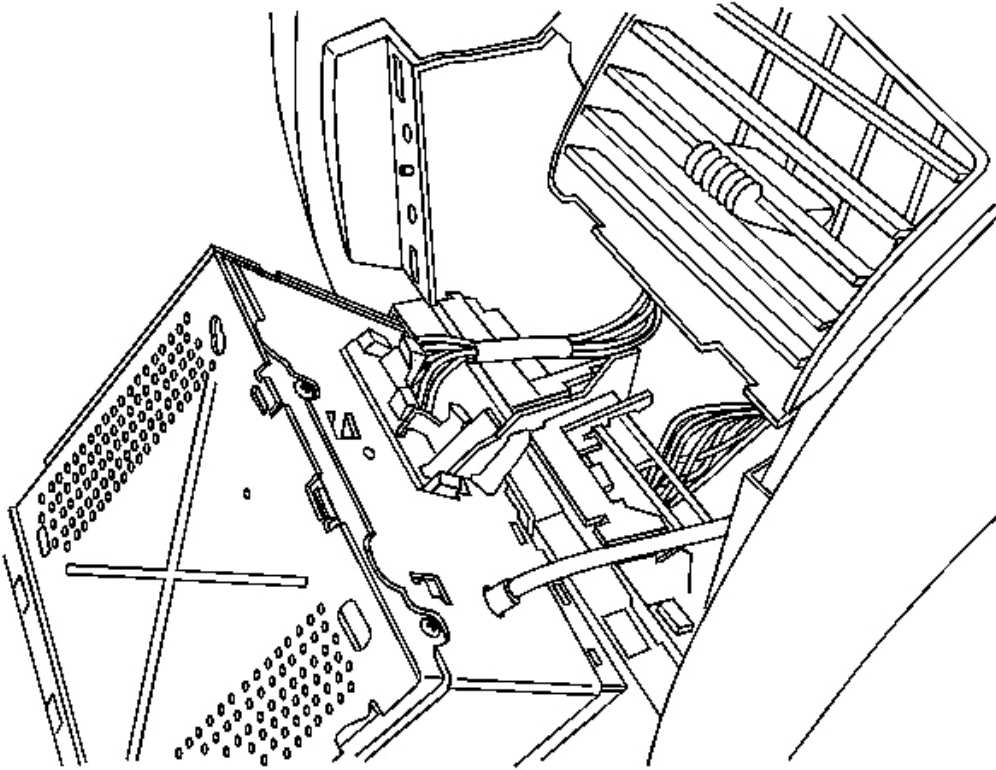


Fig. 37: View Of Radio Antenna Cable & Electrical Connectors
Courtesy of GENERAL MOTORS CORP.

4. Disconnect the radio antenna cable.
5. Disconnect the electrical connectors to the radio.
6. Remove the radio from the vehicle.

Installation Procedure

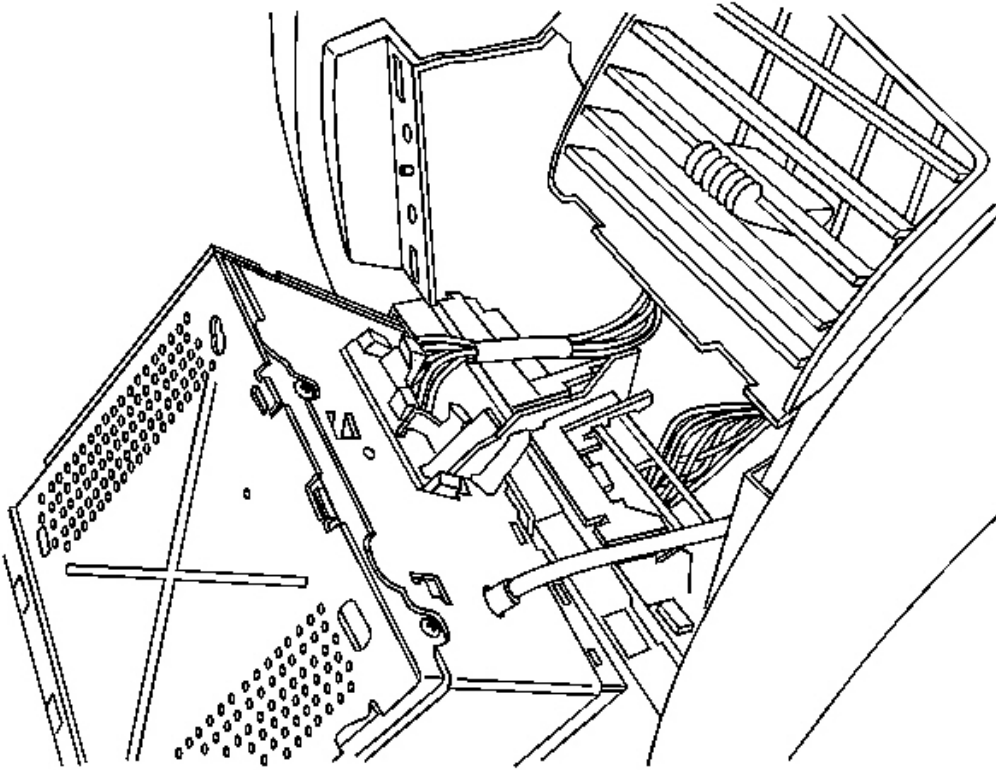


Fig. 38: View Of Radio Antenna Cable & Electrical Connectors
Courtesy of GENERAL MOTORS CORP.

1. Position the radio to the I/P.
2. Connect the electrical connectors to the radio.
3. Connect the radio antenna cable to the radio.
4. Position the radio rear alignment locator into the I/P substrate installing the radio to the I/P.

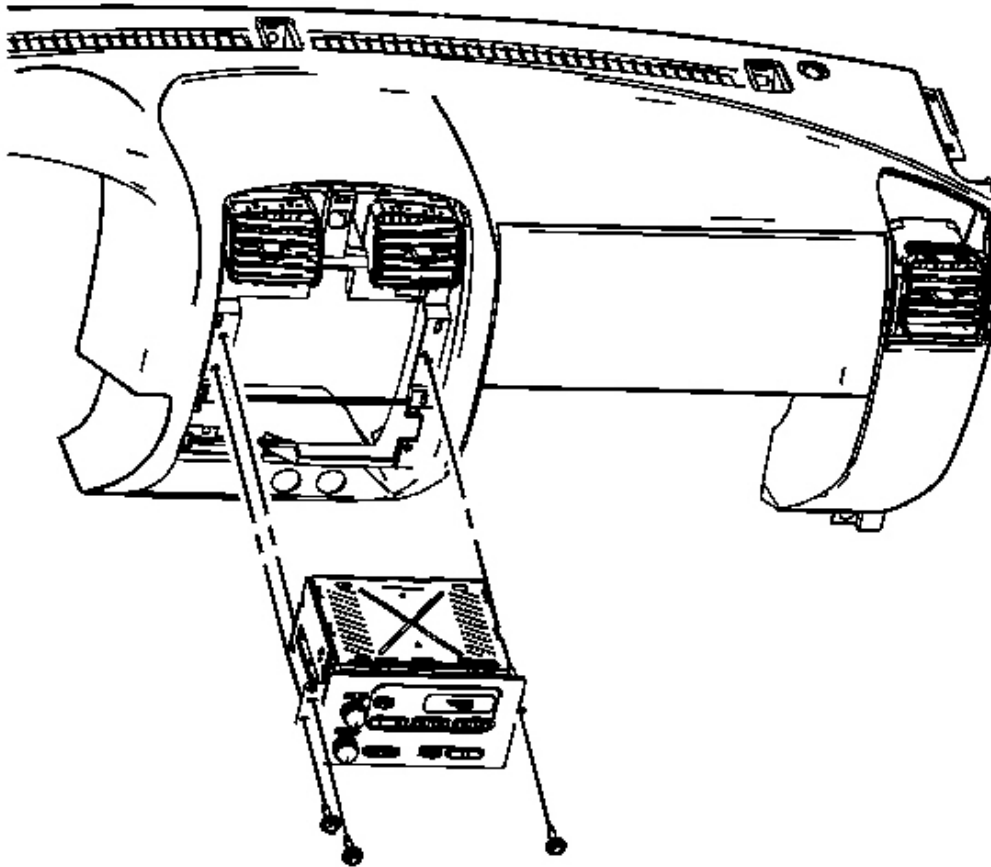


Fig. 39: View Of Radio & Screws
Courtesy of GENERAL MOTORS CORP.

NOTE: Refer to Fastener Notice .

5. Install the 4 screws that retain the radio to the I/P.

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

6. Install the accessory trim plate. Refer to Instrument Panel Center Trim Panel Replacement (Left Hand Drive) or Instrument Panel Center Trim Panel Replacement (Right Hand Drive) .
7. Program the radio after replacement. Refer to Control Module References .

DIGITAL RADIO RECEIVER REPLACEMENT

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.

1. Remove the instrument panel (I/P) compartment door. Refer to **Instrument Panel Compartment Door Replacement** .
2. Remove the right I/P outer trim cover. Refer to **Instrument Panel Outer Trim Cover Replacement - Right Side (Left Hand Drive)** or **Instrument Panel Outer Trim Cover Replacement - Right Side (Right Hand Drive)** .

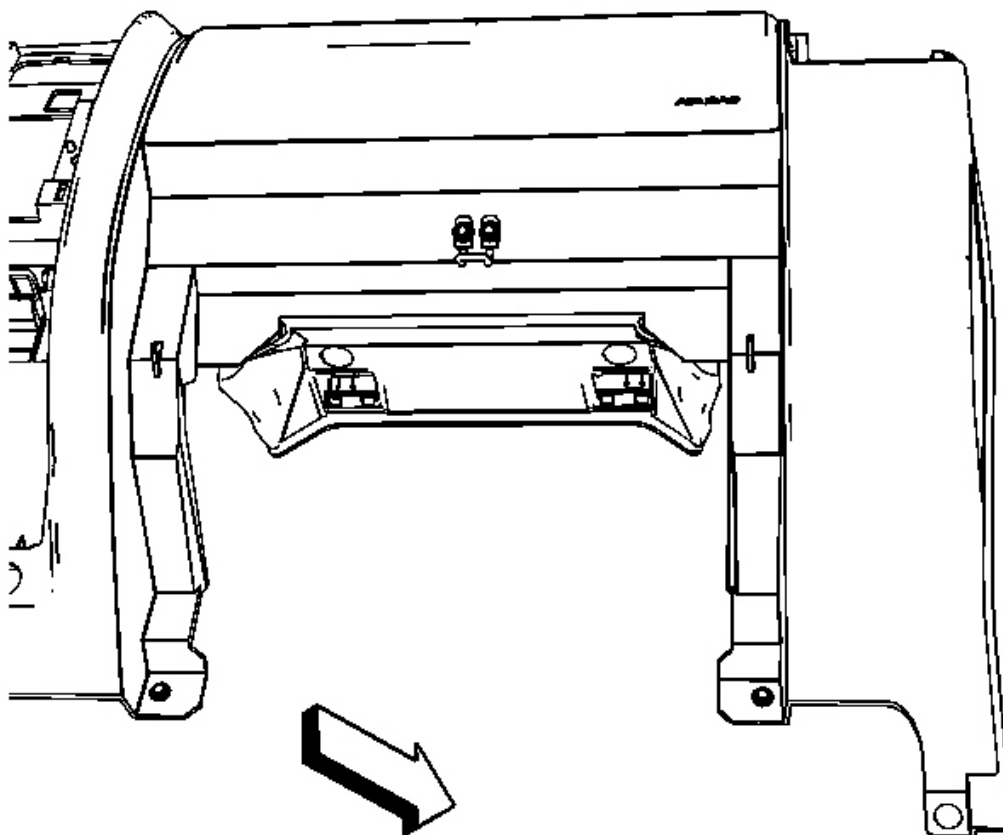


Fig. 40: View Of Service Panel
Courtesy of GENERAL MOTORS CORP.

3. Unfold the service panel located above the I/P compartment door.

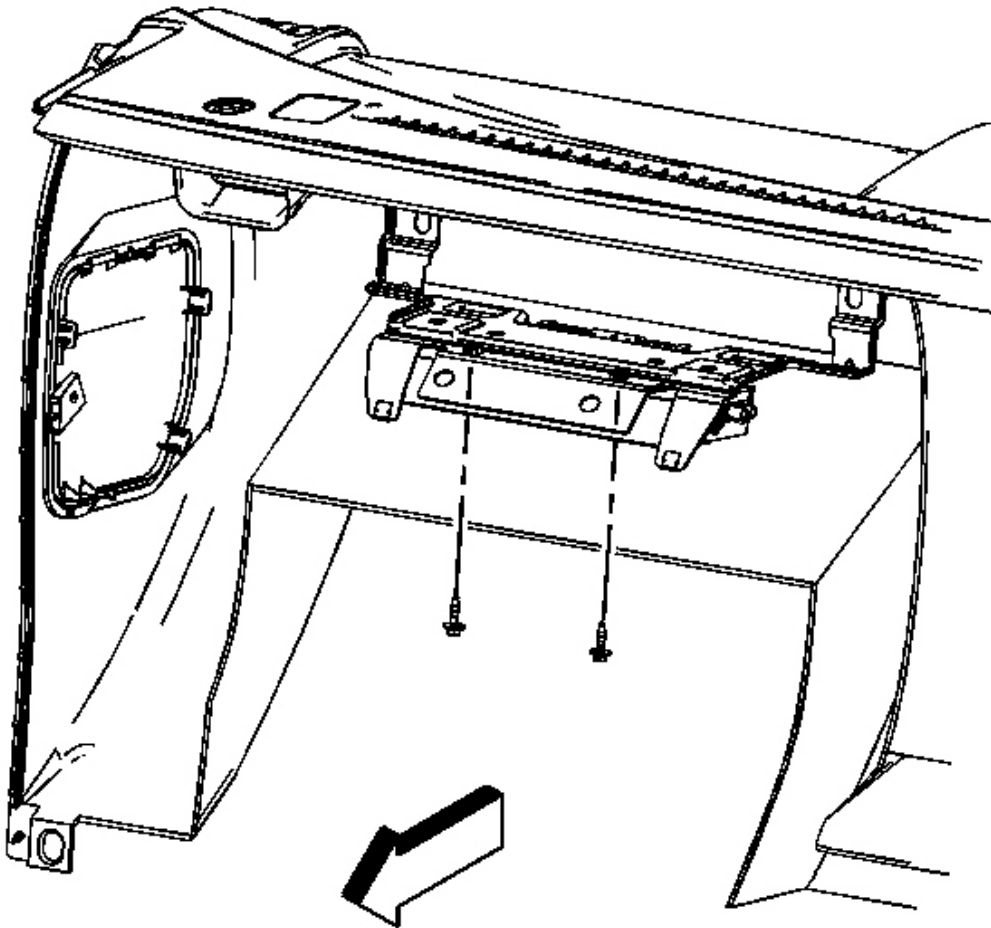


Fig. 41: View Of Digital Radio Receiver Retaining Screws
Courtesy of GENERAL MOTORS CORP.

4. Remove the screws retaining the digital radio receiver to the I/P structure.

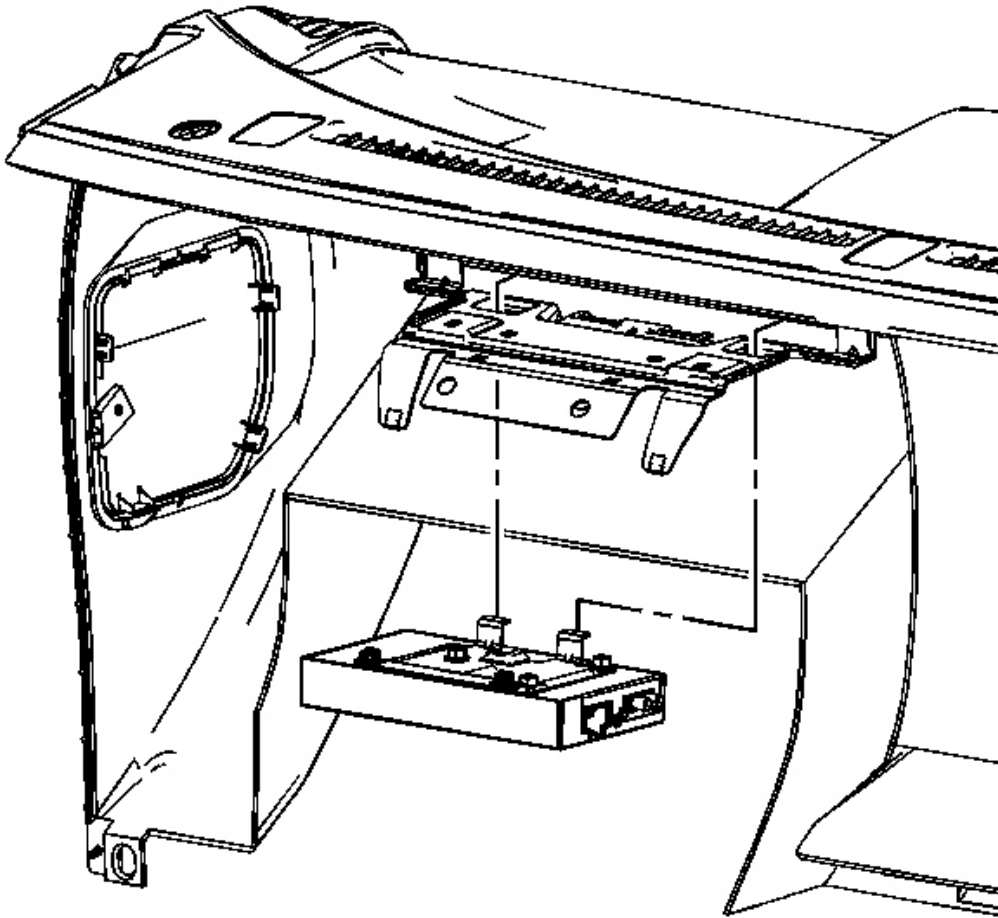


Fig. 42: View Of Digital Radio Receiver
Courtesy of GENERAL MOTORS CORP.

5. Lower the receiver from the I/P.

IMPORTANT: Do not attempt to pry or slide the electrical connector release lever (1).

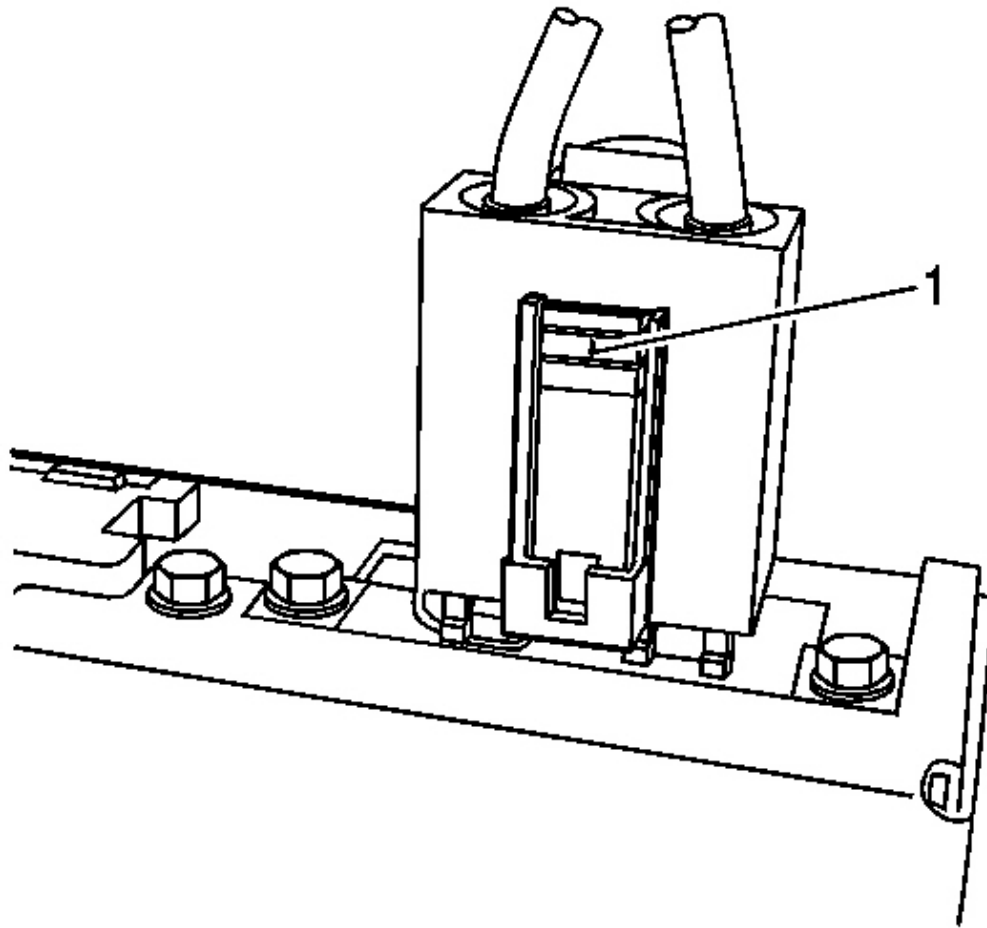


Fig. 43: View Of Electrical Connector Release Lever
Courtesy of GENERAL MOTORS CORP.

6. Disconnect the electrical connector by pushing on the release lever (1).

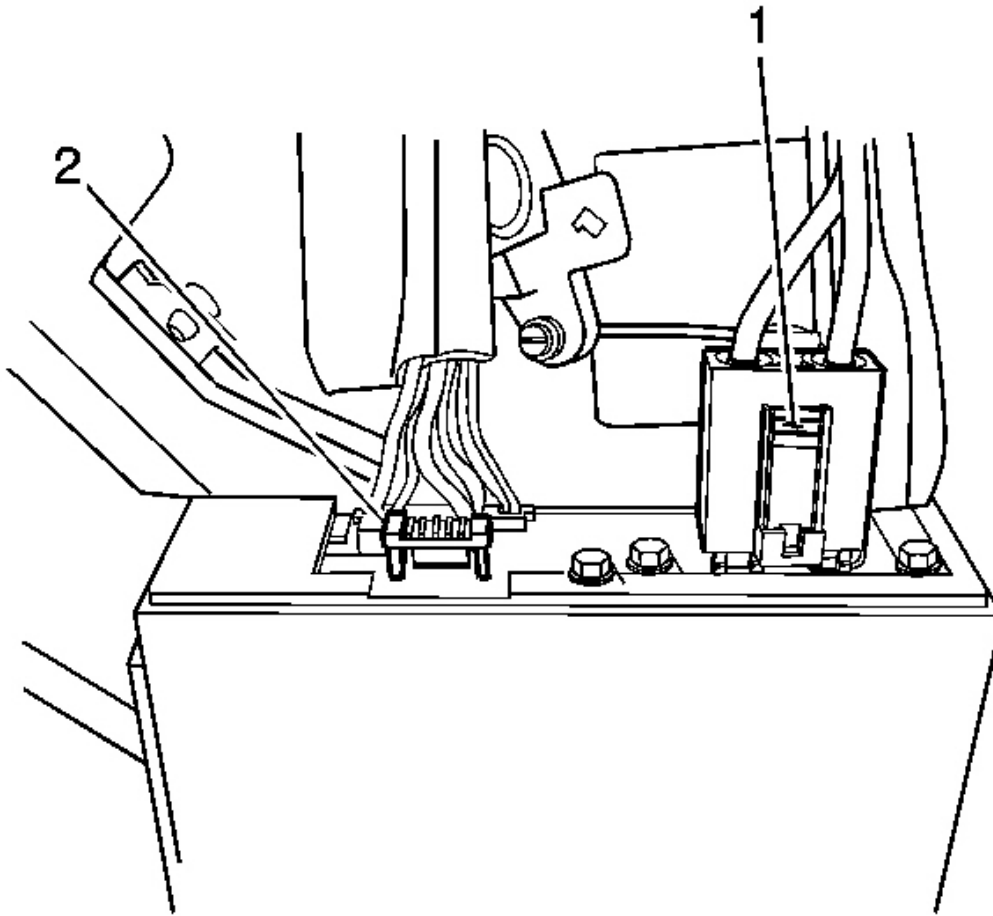


Fig. 44: View Of Electrical Connector Release Lever & CPA
Courtesy of GENERAL MOTORS CORP.

7. Remove the connector position assurance (CPA) (2) from the electrical connector.
8. Remove the connector from the receiver.
9. Remove the receiver from the vehicle.

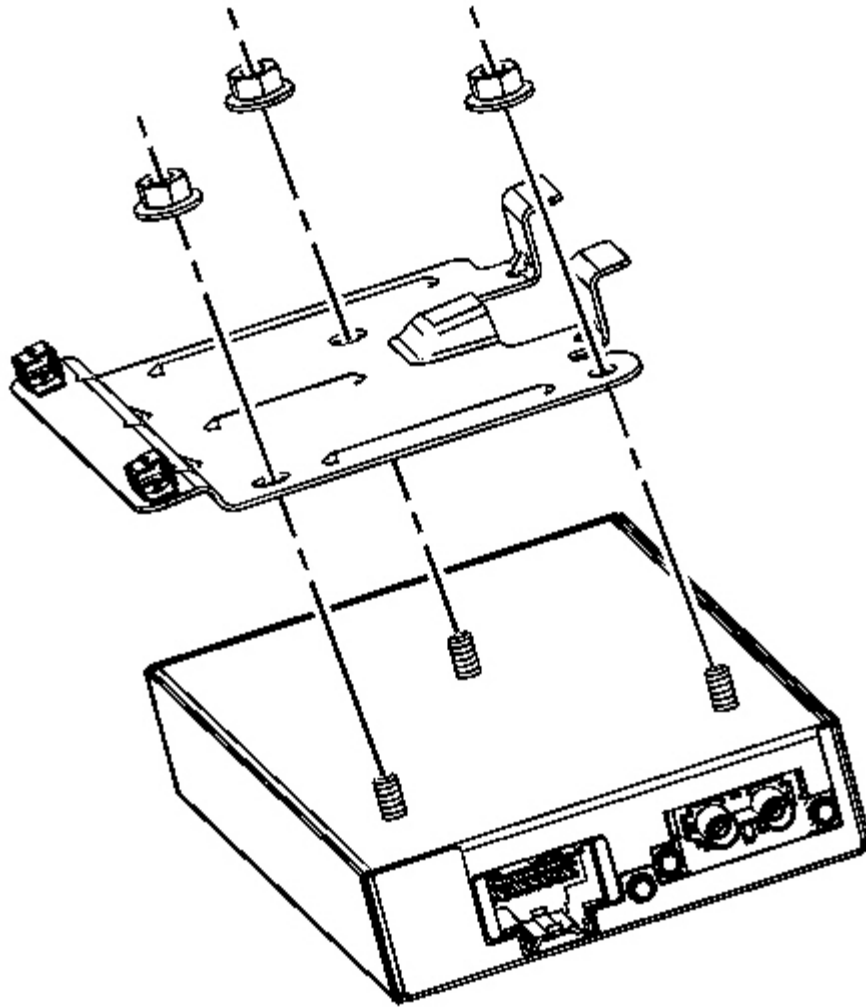


Fig. 45: View Of Receiver & Mounting Bracket
Courtesy of GENERAL MOTORS CORP.

10. If replacing the receiver, remove the nuts retaining the receiver to the mounting bracket.
11. Remove the receiver from the mounting bracket.

Installation Procedure

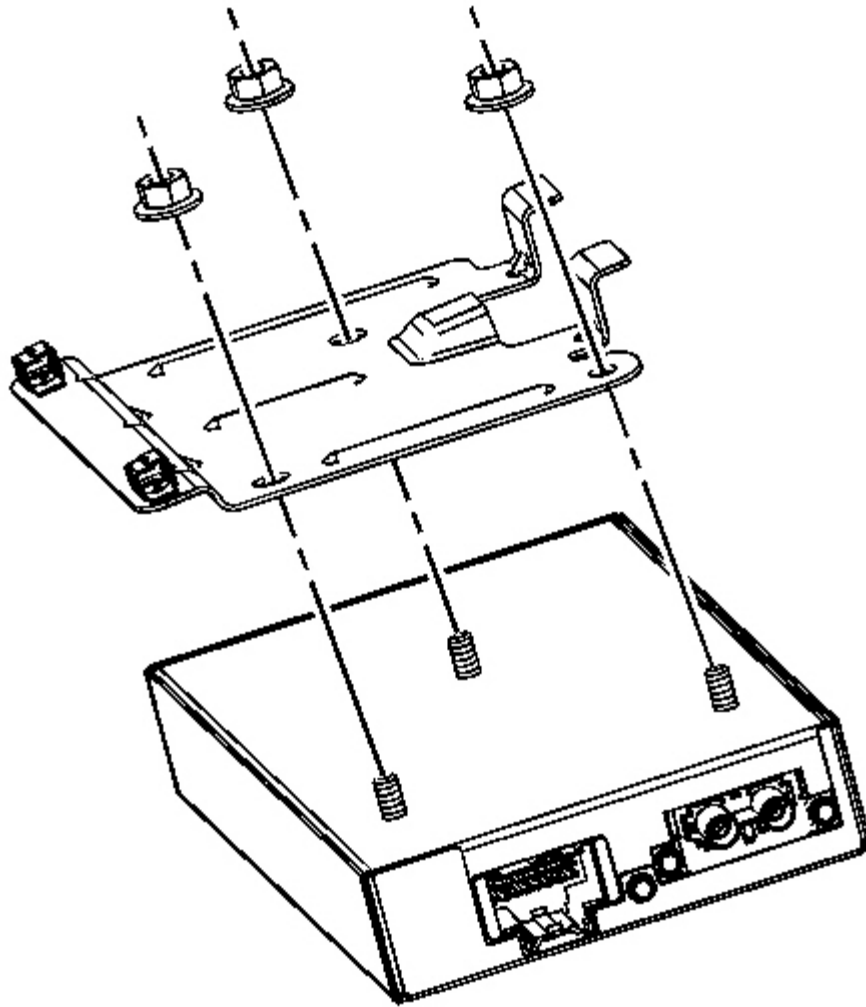


Fig. 46: View Of Receiver & Mounting Bracket
Courtesy of GENERAL MOTORS CORP.

NOTE: Refer to Fastener Notice .

1. If replacing the receiver, install the receiver to the mounting bracket and install the retaining nuts.

Tighten: Tighten the nuts to 3 N.m (26 lb in).

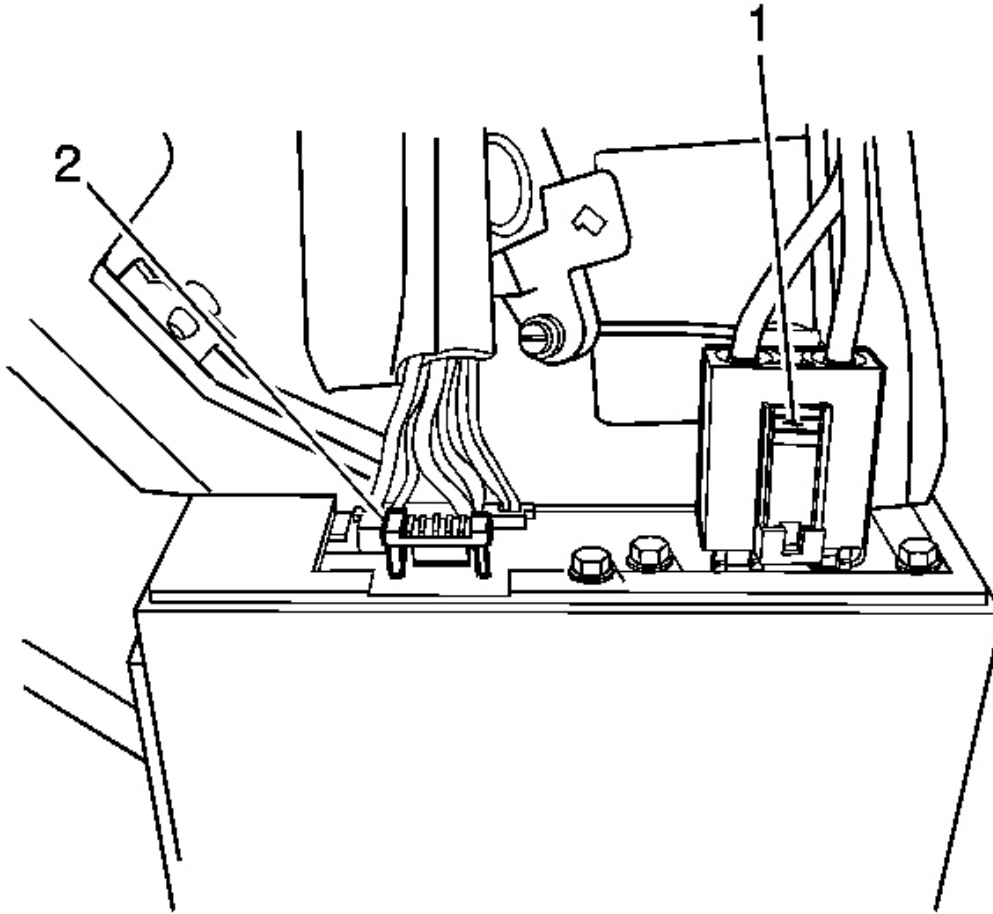


Fig. 47: View Of Electrical Connector Release Lever & CPA
Courtesy of GENERAL MOTORS CORP.

2. Position the receiver to the I/P.
3. Connect the receiver electrical connectors.
4. Install the CPA (2) to the electrical connector.

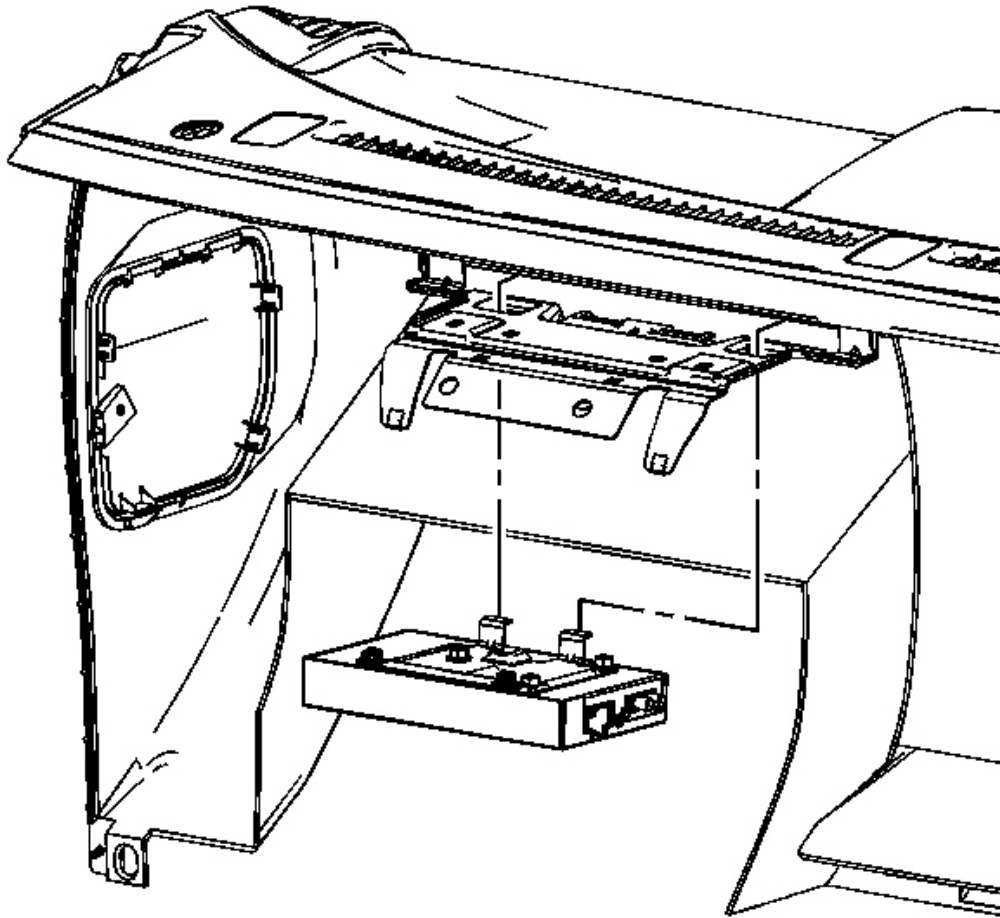


Fig. 48: View Of Digital Radio Receiver
Courtesy of GENERAL MOTORS CORP.

5. Install the receiver to the I/P.

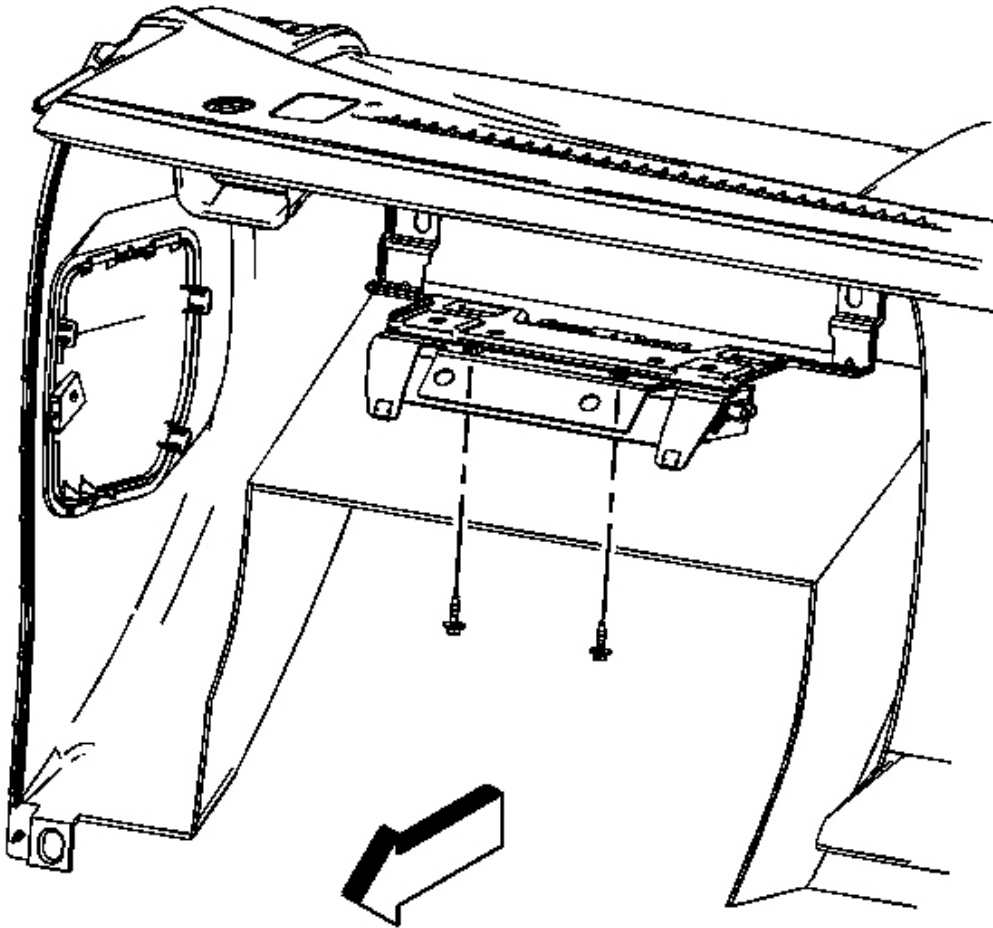


Fig. 49: View Of Digital Radio Receiver Retaining Screws
Courtesy of GENERAL MOTORS CORP.

6. Install the screws retaining the digital radio receiver to the I/P structure.

Tighten: Tighten the screws to 3 N.m (27 lb in).

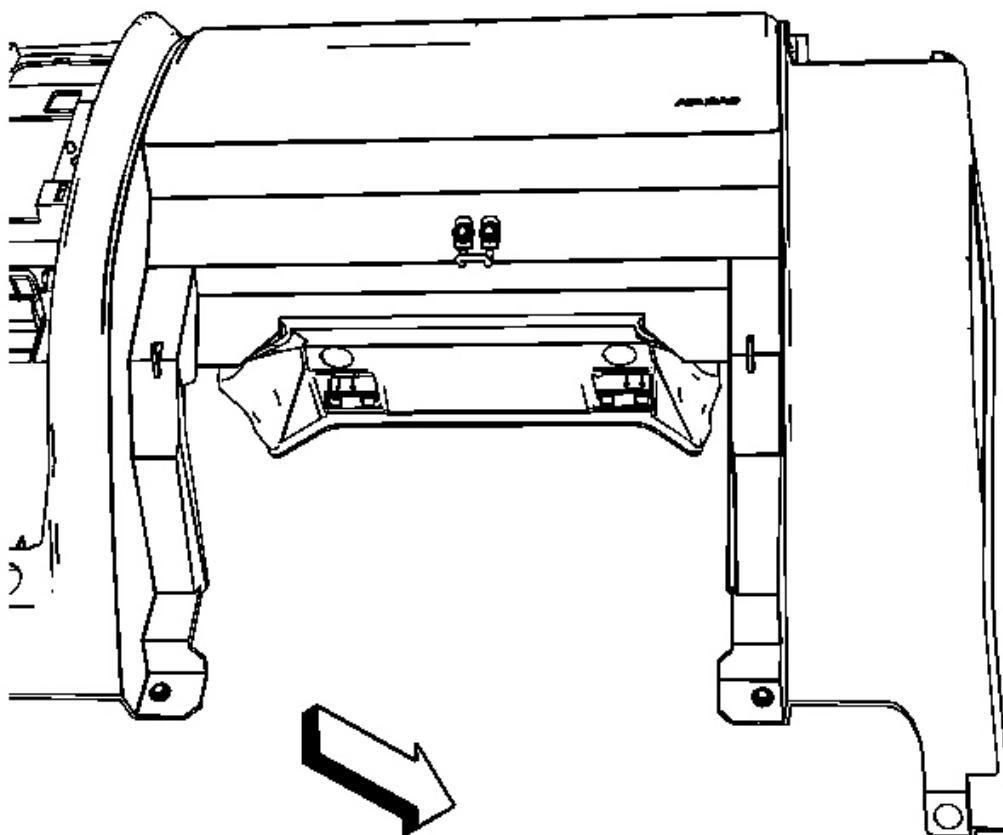


Fig. 50: View Of Service Panel
Courtesy of GENERAL MOTORS CORP.

7. Close the service panel located above the I/P compartment door.
8. Install the I/P compartment door. Refer to **Instrument Panel Compartment Door Replacement** .
9. Install the I/P outer trim cover. Refer to **Instrument Panel Outer Trim Cover Replacement - Right Side (Left Hand Drive)** or **Instrument Panel Outer Trim Cover Replacement - Right Side (Right Hand Drive)** .
10. Perform the setup procedure for the digital radio receiver. Refer to **Digital Radio Receiver Setup**.
11. Program the digital radio receiver after replacement. Refer to **Control Module References** .

RADIO SPEAKER AMPLIFIER REPLACEMENT

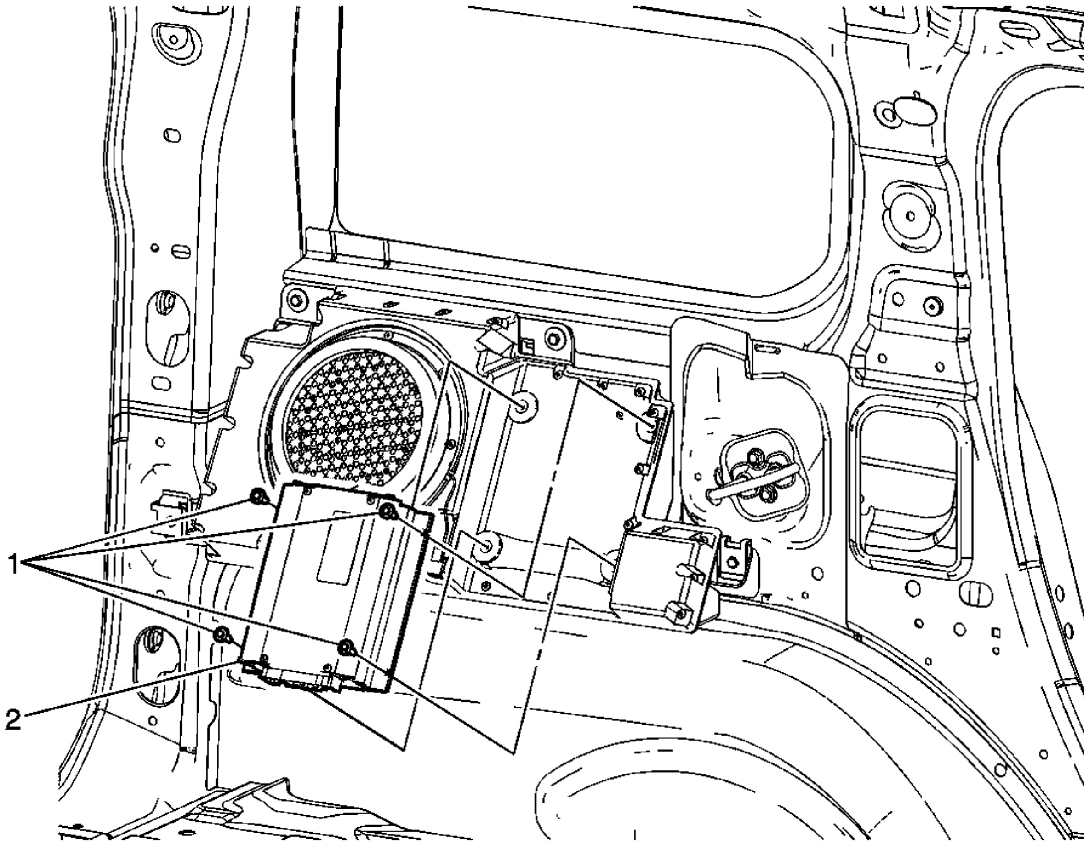


Fig. 51: Amplifier Replacement
Courtesy of GENERAL MOTORS CORP.

Radio Speaker Amplifier Replacement

Callout	Component Name
<p>NOTE: Refer to <u>Fastener Notice</u> .</p> <p>Fastener Tightening Specifications: Refer to <u>Fastener Tightening Specifications</u>.</p> <p>Preliminary Procedures</p> <ol style="list-style-type: none"> 1. Remove the left body side trim panel. Refer to <u>Body Side Trim Panel Replacement - Left Side</u> . 2. Program the audio amplifier after replacement. Refer to <u>Control Module References</u> . 	

1	Amplifier Screw (Qty: 4) Tip: A stud and nut service kit is available from SPO to mount the audio amplifier. Tighten: 2 N.m (18 lb in)
2	Radio Speaker Amplifier Tip: Disconnect the electrical connectors.

MOBILE TELEPHONE DIGITAL ANTENNA REPLACEMENT

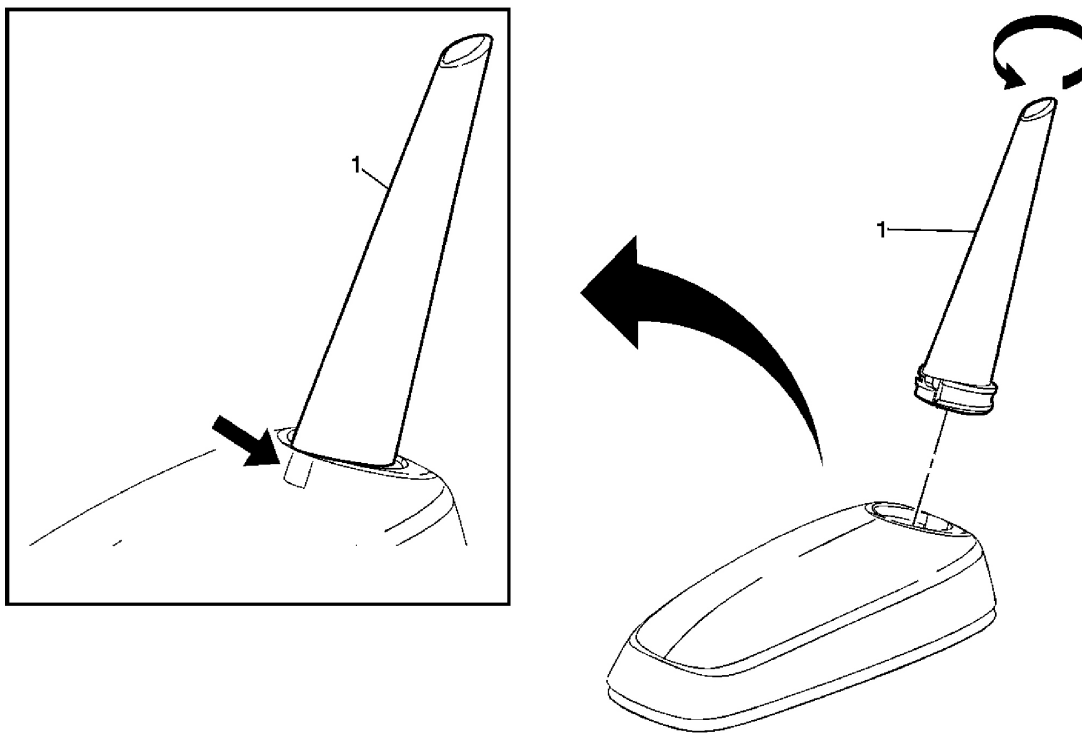


Fig. 52: View Of Mobile Telephone Digital Antenna
Courtesy of GENERAL MOTORS CORP.

Mobile Telephone Digital Antenna Replacement

Callout	Component Name
1	Mobile Telephone Digital Antenna Assembly Tip: <ul style="list-style-type: none">• The release tab is not visible with the mast assembled to the antenna base.

- Using a small flat-bladed tool, push in and hold the release tab, then rotate the mast counterclockwise in order to release the mast from the antenna base.

CELLULAR COMMUNICATIONS/DIGITAL RADIO ANTENNA REPLACEMENT

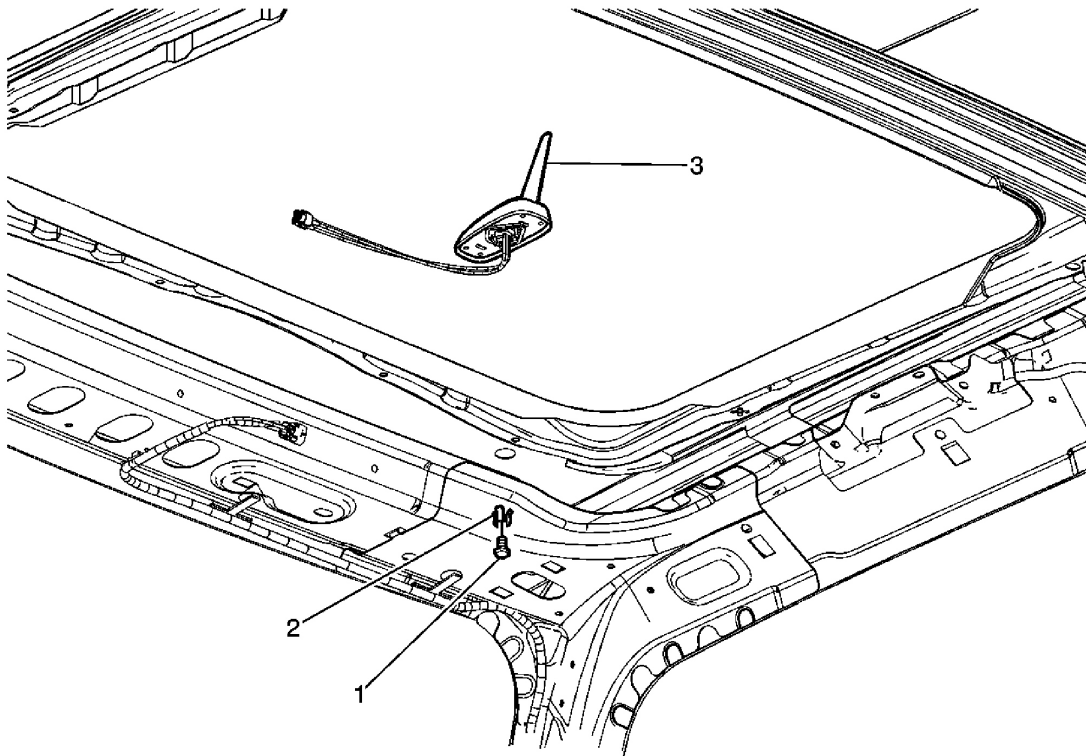


Fig. 53: Identifying Cellular Communications/Digital Radio Antenna
Courtesy of GENERAL MOTORS CORP.

Cellular Communications/Digital Radio Antenna Replacement

Callout	Component Name
NOTE: Refer to <u>Fastener Notice</u> .	
Fastener Tightening Specifications: Refer to <u>Fastener Tightening Specifications</u> . Preliminary Procedure: Lower the front of the headliner. Refer to <u>Headlining Trim Panel Replacement</u> .	
1	Bolt, Mobile Telephone and Vehicle Location Antenna Assembly Tighten: 9 N.m (80 lb in)

2007 Hummer H3

2007 ACCESSORIES AND EQUIPMENT Cellular, Entertainment and Navigation - H3

2	Expansion Sleeve, Mobile Telephone and Vehicle Location Antenna Assembly
3	Antenna Assembly, Mobile Telephone and Vehicle Location

FIXED ANTENNA MAST REPLACEMENT

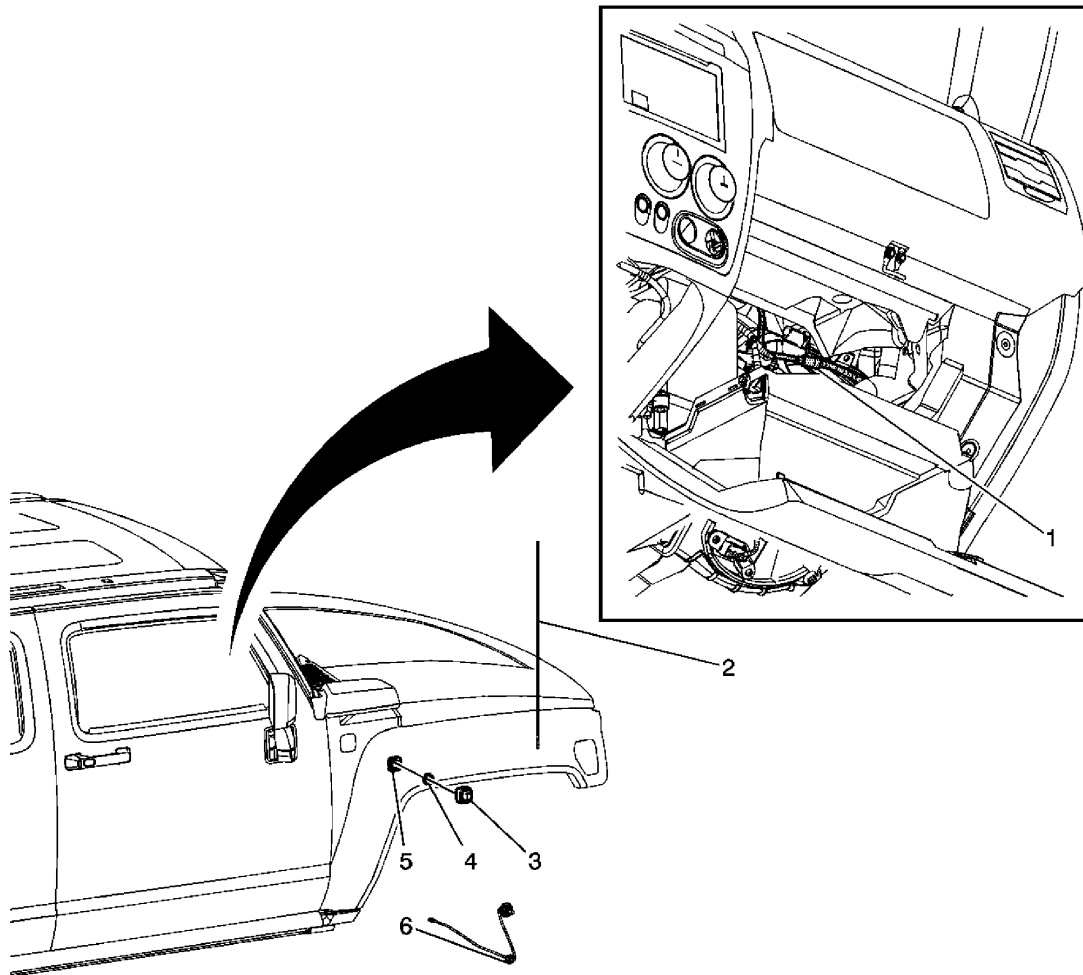


Fig. 54: Fixed Antenna Mast Replacement
Courtesy of GENERAL MOTORS CORP.

Fixed Antenna Mast Replacement

Callout	Component Name
NOTE: Refer to <u>Fastener Notice</u> .	
Fastener Tightening Specifications: Refer to <u>Fastener Tightening</u>	

2007 Hummer H3

2007 ACCESSORIES AND EQUIPMENT Cellular, Entertainment and Navigation - H3

Specifications.Preliminary Procedure: Remove the right front wheelhouse. Refer to **Wheelhouse Panel Replacement (Front)** or **Wheelhouse Panel Replacement (Rear)** .

1	Cable, Radio Antenna
2	Antenna Assembly, Radio
3	Cap, Radio Antenna Bracket Stud
4	Nut, Radio Antenna Base
	Tighten: 18 N.m (13 lb ft)
5	Spacer, Radio Antenna
6	Base Assembly, Radio Antenna

GLOBAL POSITIONING SYSTEM (GPS) ANTENNA REPLACEMENT

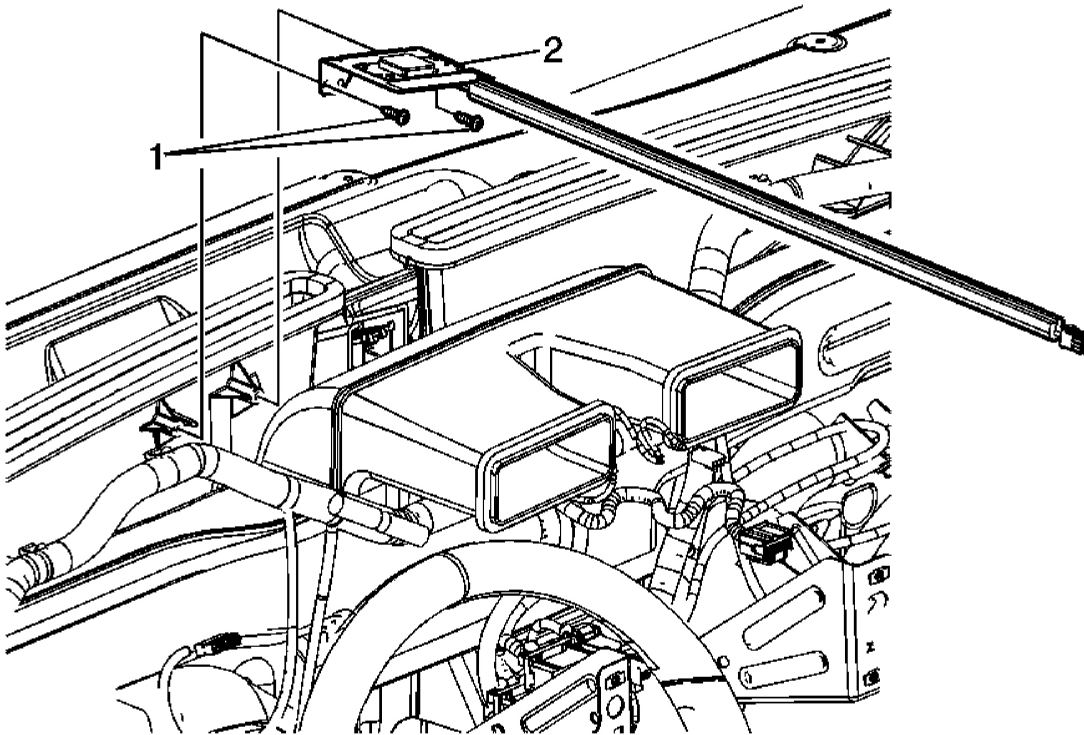


Fig. 55: Antenna Replacement - Global Positioning System (GPS)
Courtesy of GENERAL MOTORS CORP.

Global Positioning System (GPS) Antenna Replacement

Callout	Component Name
NOTE:	

2007 Hummer H3

2007 ACCESSORIES AND EQUIPMENT Cellular, Entertainment and Navigation - H3

Refer to **Fastener Notice** .

Fastener Tightening Specifications: Refer to **Fastener Tightening Specifications**. **Preliminary Procedure:** Remove the instrument panel assembly. Refer to **Instrument Panel Assembly Replacement (Left Hand Drive)** or **Instrument Panel Assembly Replacement (Right Hand Drive)** .

1	Screw, Radio Antenna Module Assembly (Qty: 2) Tighten: 2 N.m (18 lb in)
2	Module Assembly, Radio Antenna

DIGITAL RADIO ANTENNA CABLE REPLACEMENT

Removal Procedure

1. If the vehicle is equipped with OnStar® refer to **Mobile Telephone and Navigation Antenna Coaxial Cable Replacement (UE1)** or **Mobile Telephone and Navigation Antenna Coaxial Cable Replacement (UE1, U2K)**.
2. Lower the front portion of the headliner to reveal the digital radio antenna connectors. Refer to **Headlining Trim Panel Replacement** .

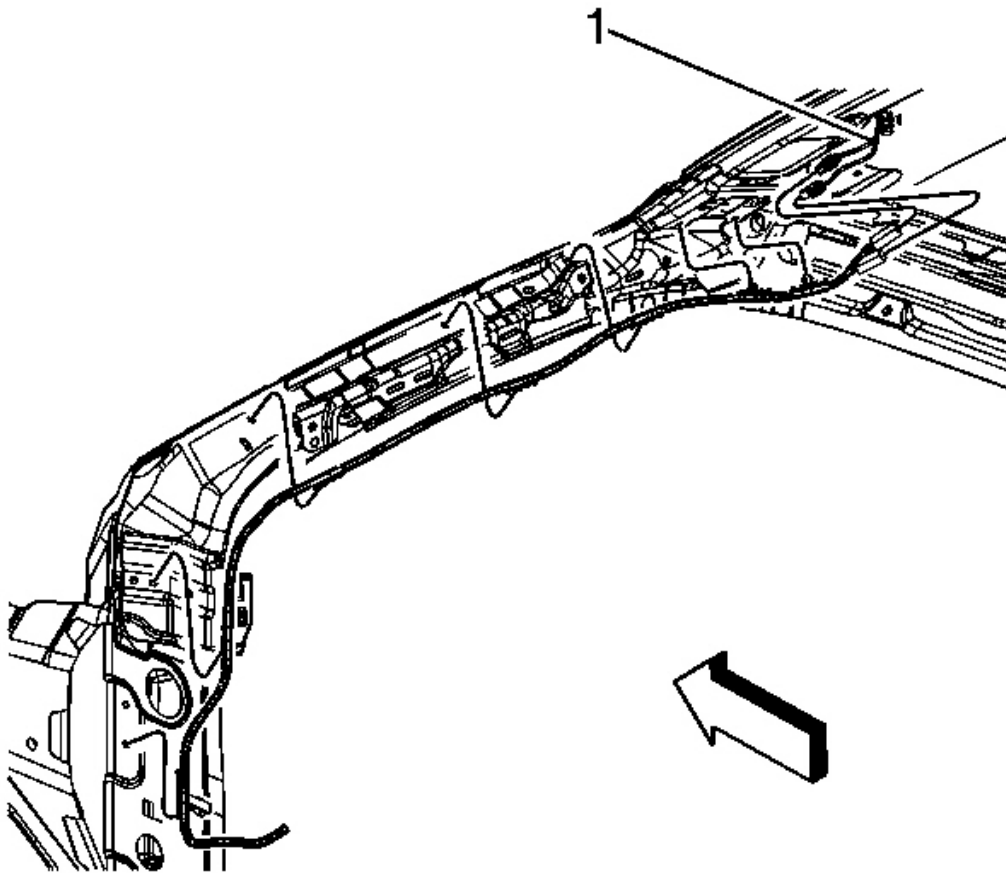


Fig. 56: View Of Digital Radio Antenna Connectors
Courtesy of GENERAL MOTORS CORP.

3. Disconnect the digital radio antenna connectors (1).
4. Detach the 2 upper coax cable retainers from the header panel.
5. Detach the 3 coax cable retainers from the windshield pillar.
6. Lower the instrument panel (I/P) compartment door to a full down position.

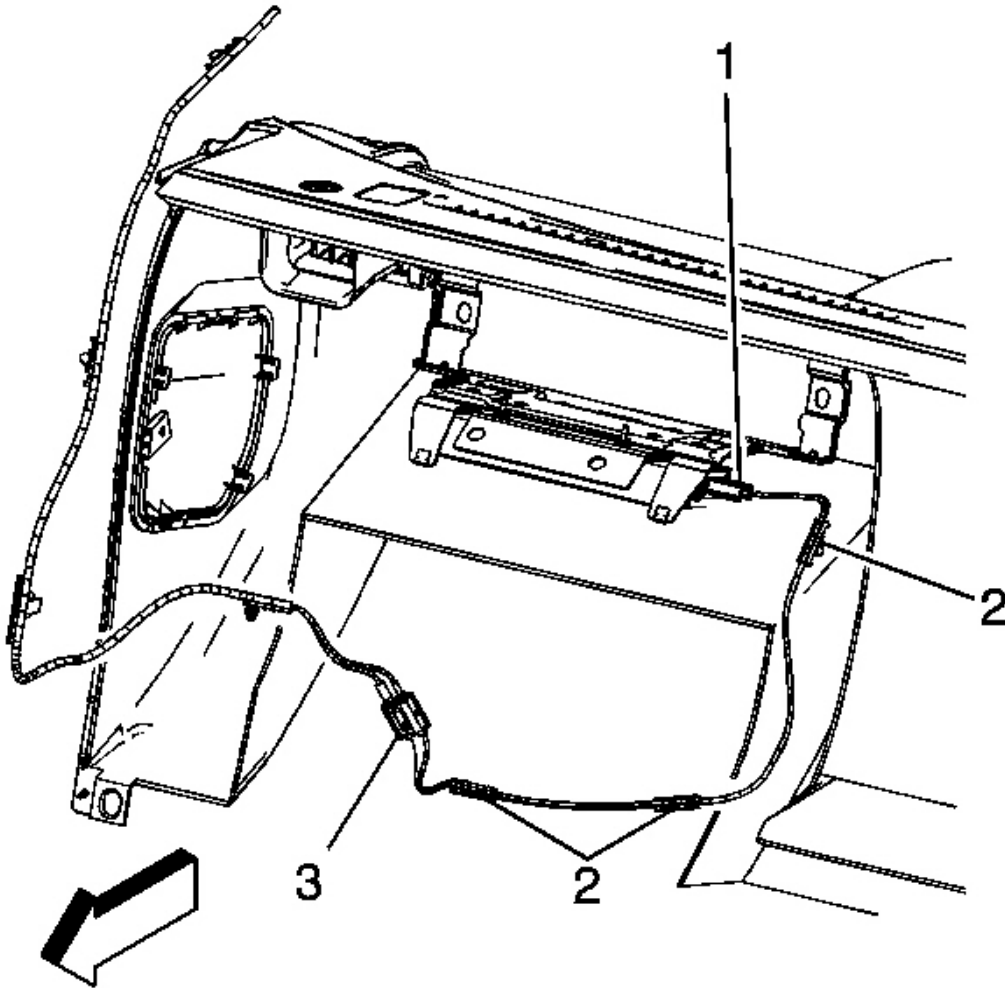


Fig. 57: View Of Digital Receiver Extension Cable, Retainers, & Electrical Connector

Courtesy of GENERAL MOTORS CORP.

7. Disconnect the digital receiver extension cable (1) from the receiver.
8. Remove the retainers (2) from the I/P.
9. Disconnect the electrical connector (3).
10. Remove the extension cable from the vehicle.

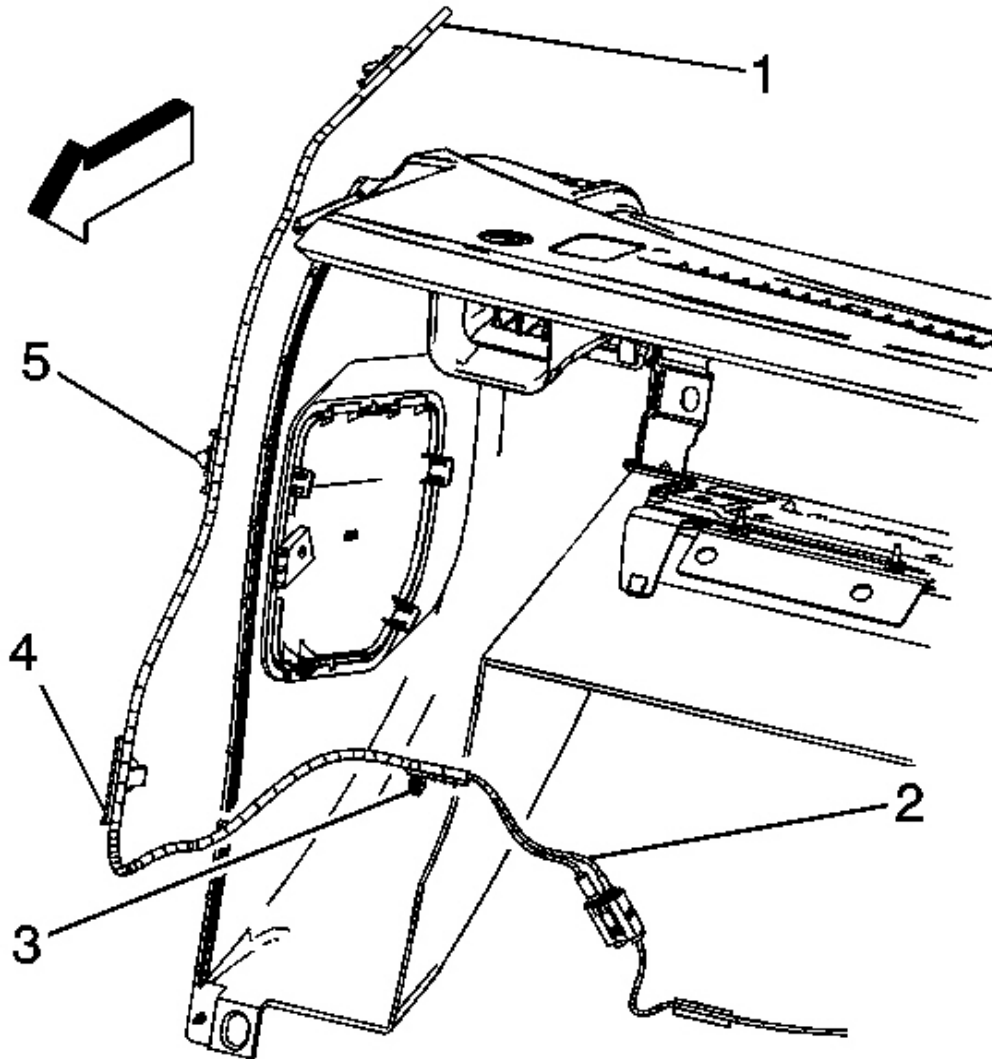


Fig. 58: View Of Coax Cable & Components
Courtesy of GENERAL MOTORS CORP.

11. Detach the coax cable retainer (3) from the I/P.
12. Attach a mechanics wire to the end of the coax cable (2).
13. Detach the coax cable retainer (4) from the hinge pillar.
14. Grasp the cable (1) and pull upward to release the retainer from the hinge pillar.

15. Pull upward to remove the cable from behind the I/P.
16. Remove the cable from the vehicle leaving the mechanics wire behind the I/P.

Installation Procedure

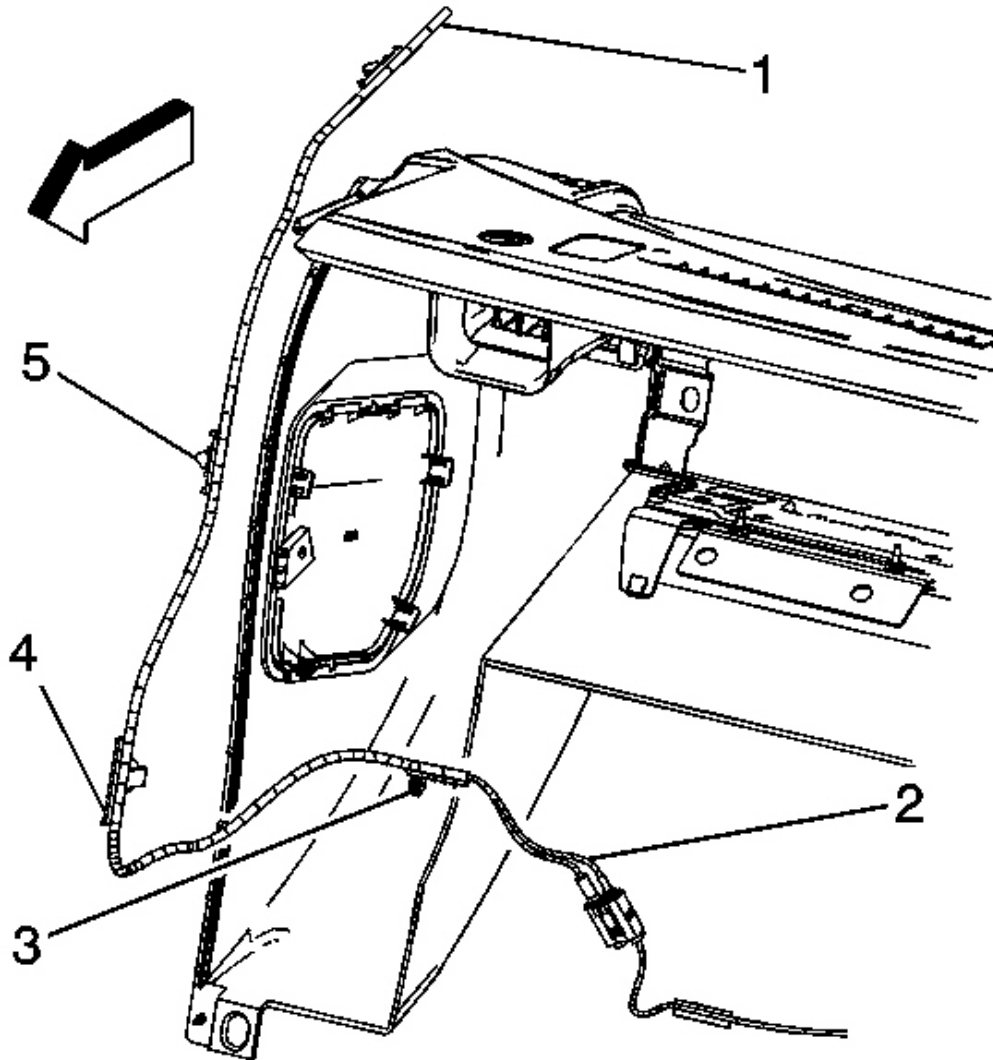


Fig. 59: View Of Coax Cable & Components
Courtesy of GENERAL MOTORS CORP.

1. Attach the existing mechanics wire to the end of the coax cable (2).
2. Pull downward on the mechanics wire to install the cable behind the I/P.
3. Attach the coax cable retainer (4) to the hinge pillar.
4. Attach the coax cable retainer (3) to the I/P.

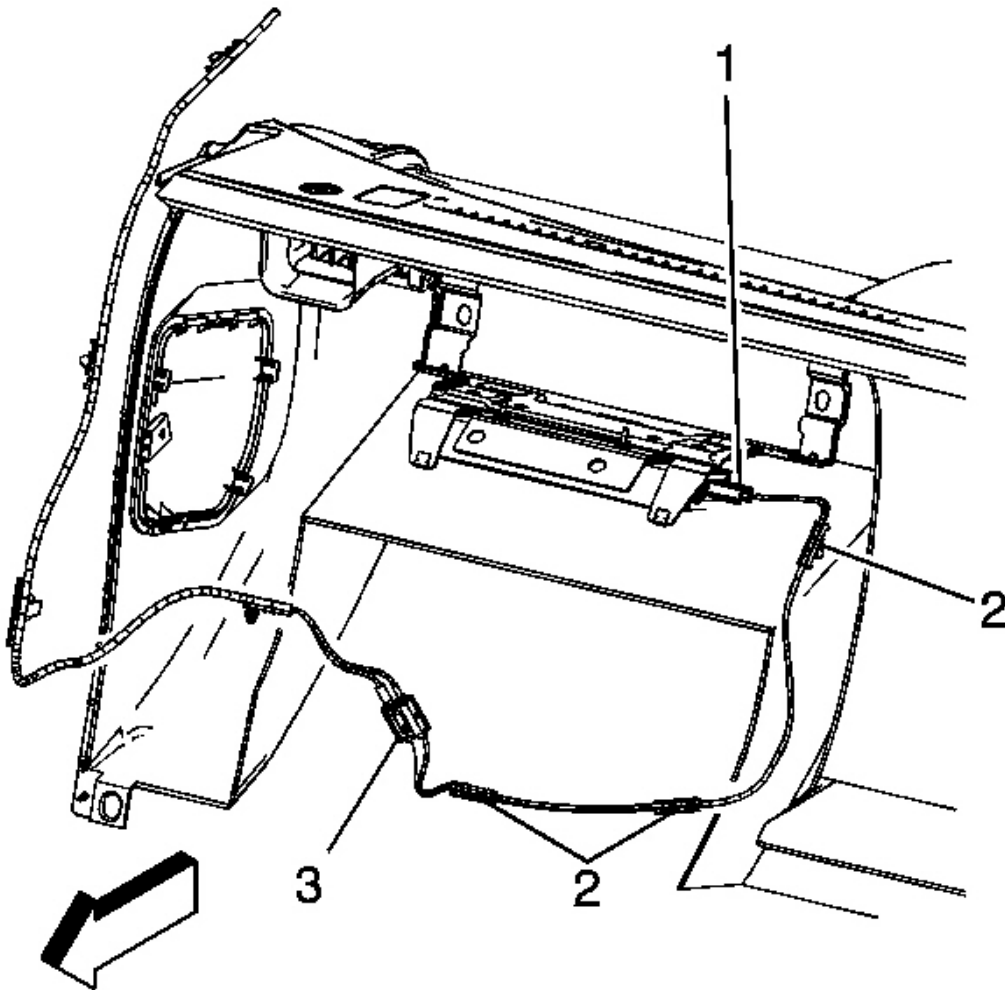


Fig. 60: View Of Digital Receiver Extension Cable, Retainers, & Electrical Connector
Courtesy of GENERAL MOTORS CORP.

5. Connect the digital receiver extension cable (1) to the receiver.

6. Attach the retainers (2) to the I/P.
7. Connect the electrical connector (3).
8. Close the (I/P) compartment door.
9. Attach the 3 coax cable retainers to the windshield pillar.

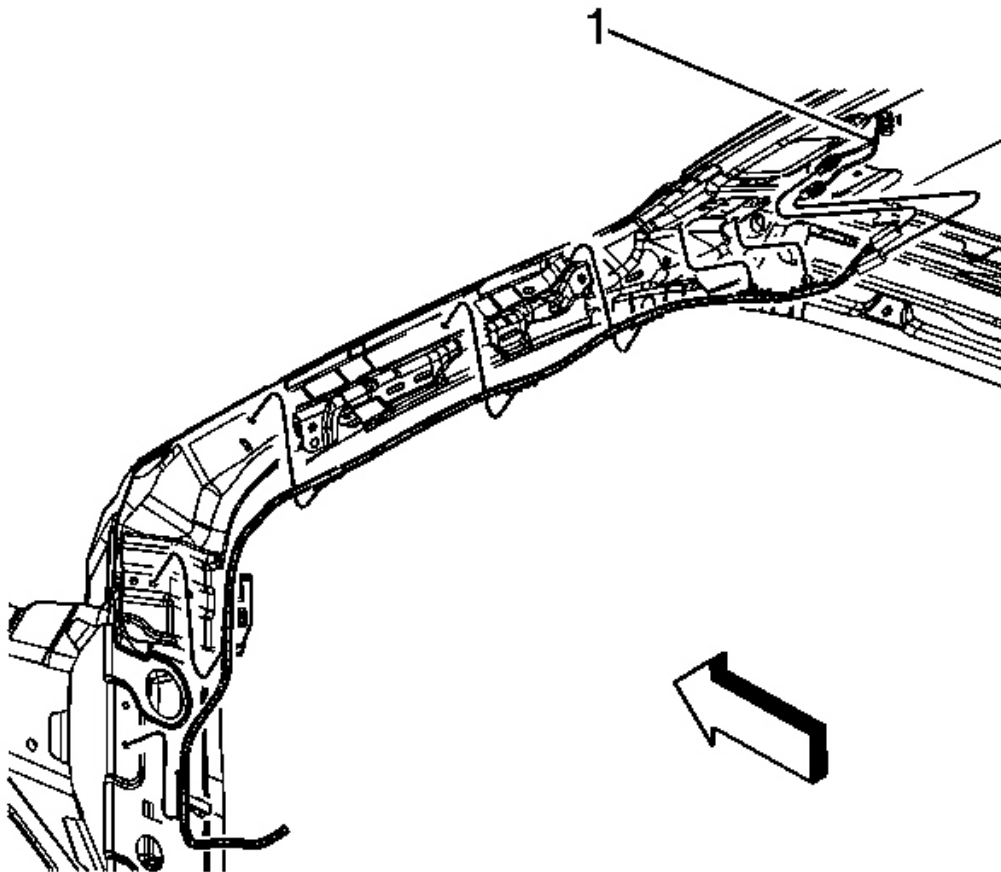


Fig. 61: View Of Digital Radio Antenna Connectors
Courtesy of GENERAL MOTORS CORP.

10. Connect the digital radio antenna connectors (1).
11. Attach the 2 upper coax cable retainers to the header panel.
12. Install the headliner. Refer to **Headlining Trim Panel Replacement** .

ANTENNA CABLE REPLACEMENT

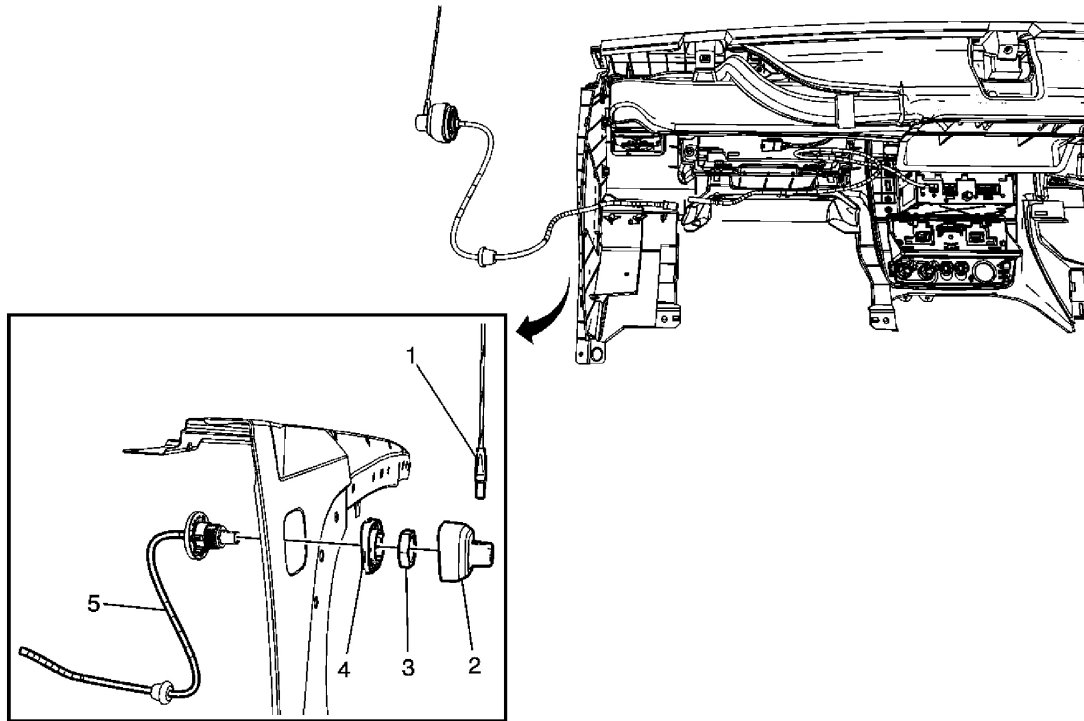


Fig. 62: View Of Antenna Cable
 Courtesy of GENERAL MOTORS CORP.

Antenna Cable Replacement

Callout	Component Name
NOTE: Refer to <u>Fastener Notice</u> .	
Fastener Tightening Specifications: Refer to <u>Fastener Tightening Specifications</u> . Preliminary Procedure: Remove the right front wheelhouse. Refer to <u>Wheelhouse Panel Replacement (Front)</u> or <u>Wheelhouse Panel Replacement (Rear)</u> .	
1	Radio Antenna Assembly
2	Radio Antenna Bracket Stud Cap
3	Radio Antenna Base Nut Tighten: 18 N.m (13 lb ft)
4	Radio Antenna Spacer
	Radio Antenna Base Cable Assembly

Tip:

5

1. Lower the instrument panel compartment door to access the antenna extension cable.
2. Disconnect the antenna extension cable from the antenna cable.
3. Pull the grommet out of the body structure to allow antenna cable to be removed.
4. Tie a long wire to the antenna cable to aid in installation of new antenna.
5. From outside of the vehicle, pull the antenna base and cable assembly until the wire can be easily accessible, ensuring part of the wire is still in the vehicle for installation purposes.

RADIO ANTENNA CABLE EXTENSION CABLE REPLACEMENT**Removal Procedure**

1. Remove the accessory trim panel. Refer to **Instrument Panel Center Trim Panel Replacement (Left Hand Drive)** or **Instrument Panel Center Trim Panel Replacement (Right Hand Drive)** .
2. Remove the radio. Refer to **Radio Replacement**.
3. Lower the instrument panel (I/P) compartment door to a full down position.

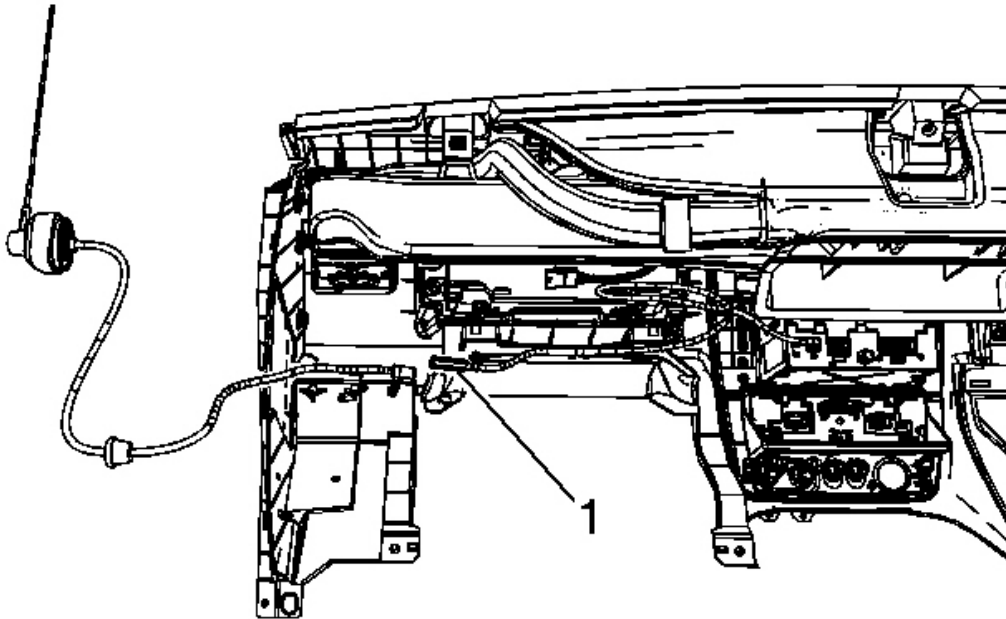


Fig. 63: Identifying radio extension antenna cable
Courtesy of GENERAL MOTORS CORP.

4. Disconnect the radio extension antenna cable (1).
5. Remove the clip retaining the extension cable.
6. Remove the cable from the vehicle.

Installation Procedure

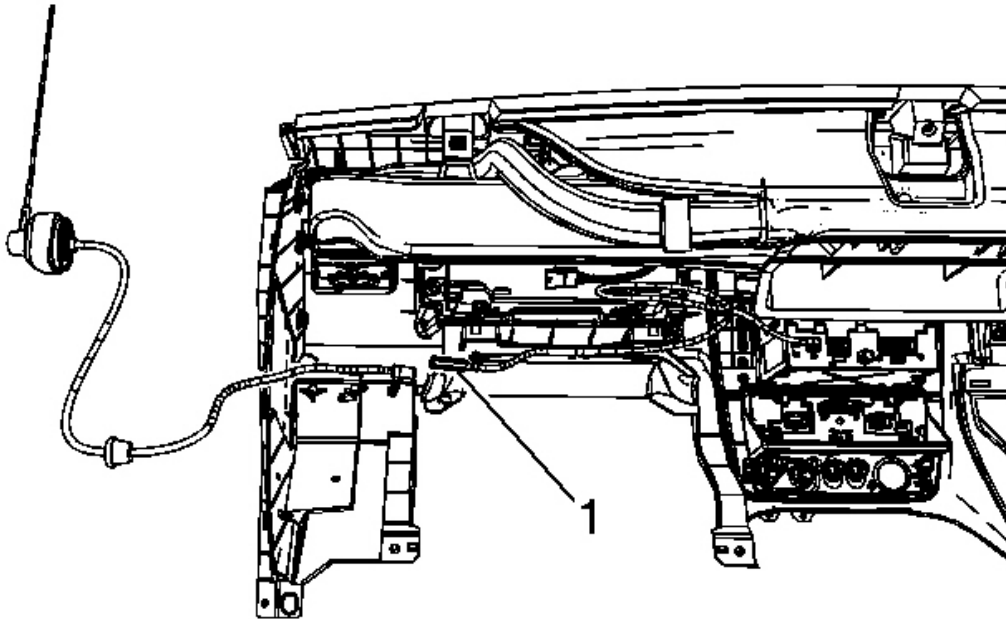


Fig. 64: Identifying radio extension antenna cable
Courtesy of GENERAL MOTORS CORP.

1. Install the cable to the vehicle.
2. Install the clip retaining the extension cable.
3. Connect the radio extension antenna cable (1).
4. Close the I/P compartment door.
5. Install the radio. Refer to **Radio Replacement**.
6. Install the accessory trim panel. Refer to **Instrument Panel Center Trim Panel Replacement (Left Hand Drive)** or **Instrument Panel Center Trim Panel Replacement (Right Hand Drive)** .

MOBILE TELEPHONE AND NAVIGATION ANTENNA COAXIAL CABLE REPLACEMENT (UE1)

Removal Procedure

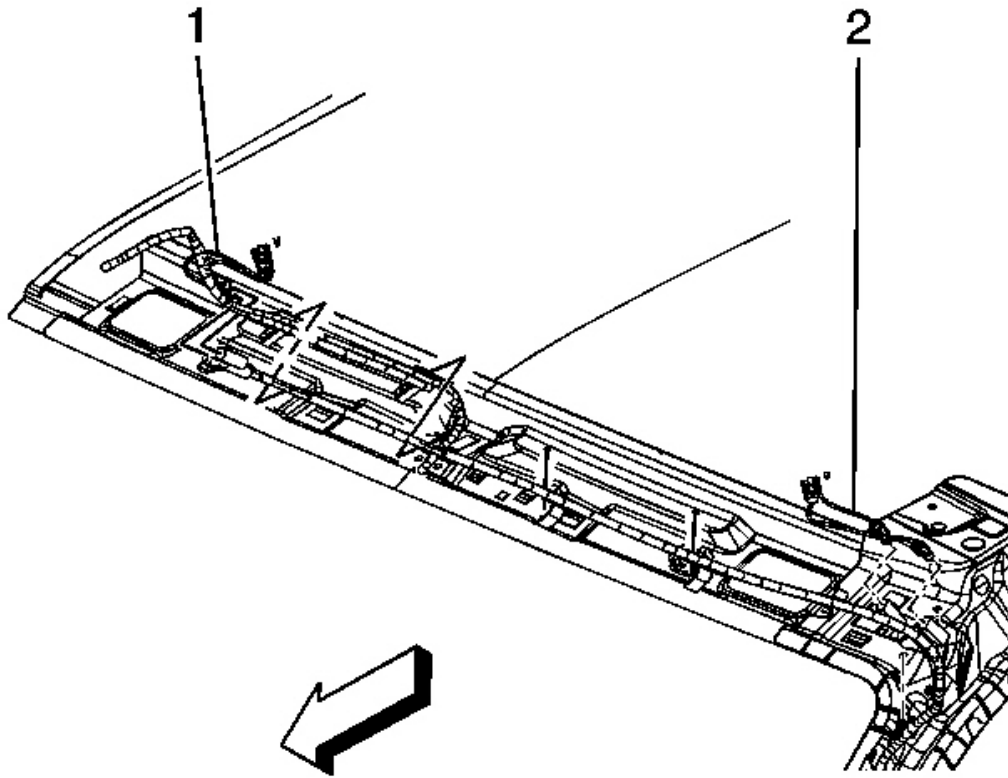


Fig. 65: View Of Coax Cable & Digital Radio Connectors (UE1, U2K)
Courtesy of GENERAL MOTORS CORP.

1. Lower the front portion of the headliner to reveal the coaxial cable leading to the navigation and cellular telephone antenna connectors (1). Refer to **Headlining Trim Panel Replacement** .
2. Disconnect the coaxial cable connectors (1).
3. Detach the fasteners retaining the coax cable to the header panel.

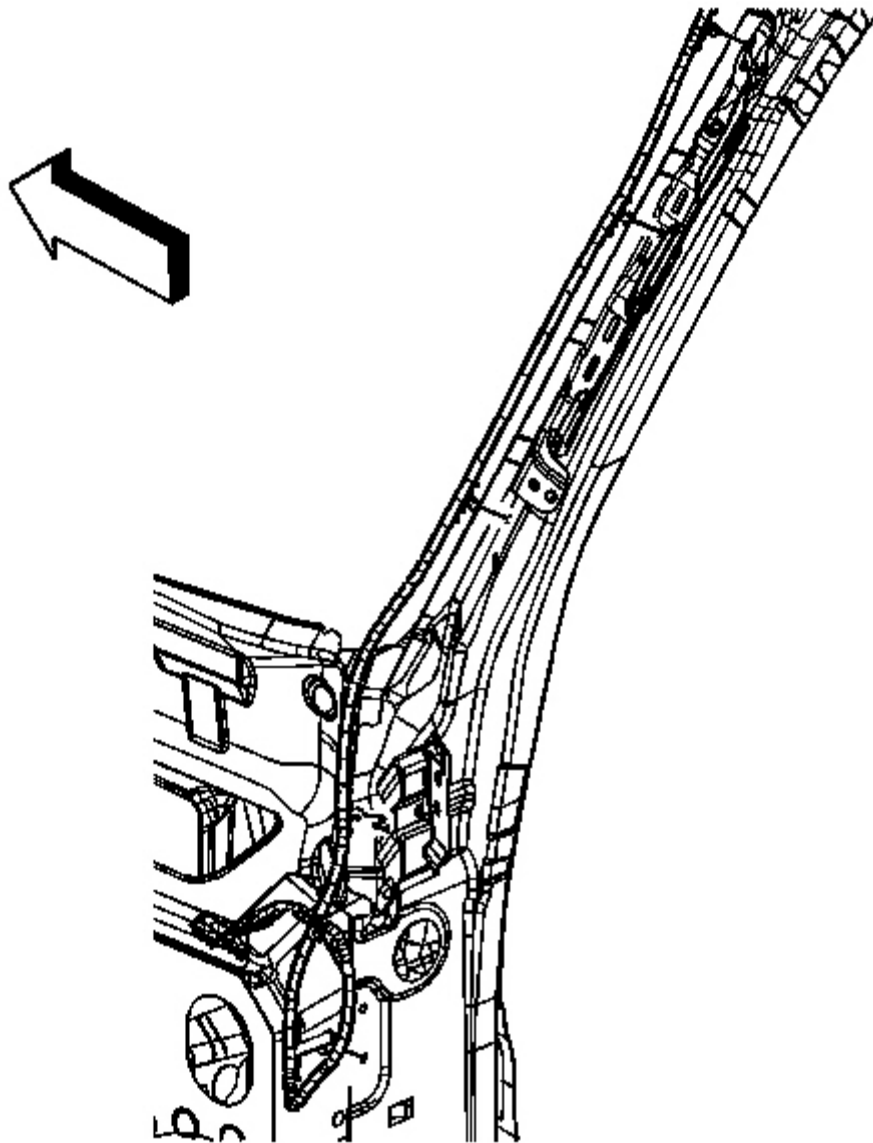


Fig. 66: View Of Coax Cable Retainers
Courtesy of GENERAL MOTORS CORP.

4. Detach the 3 coax cable retainers from the windshield pillar.

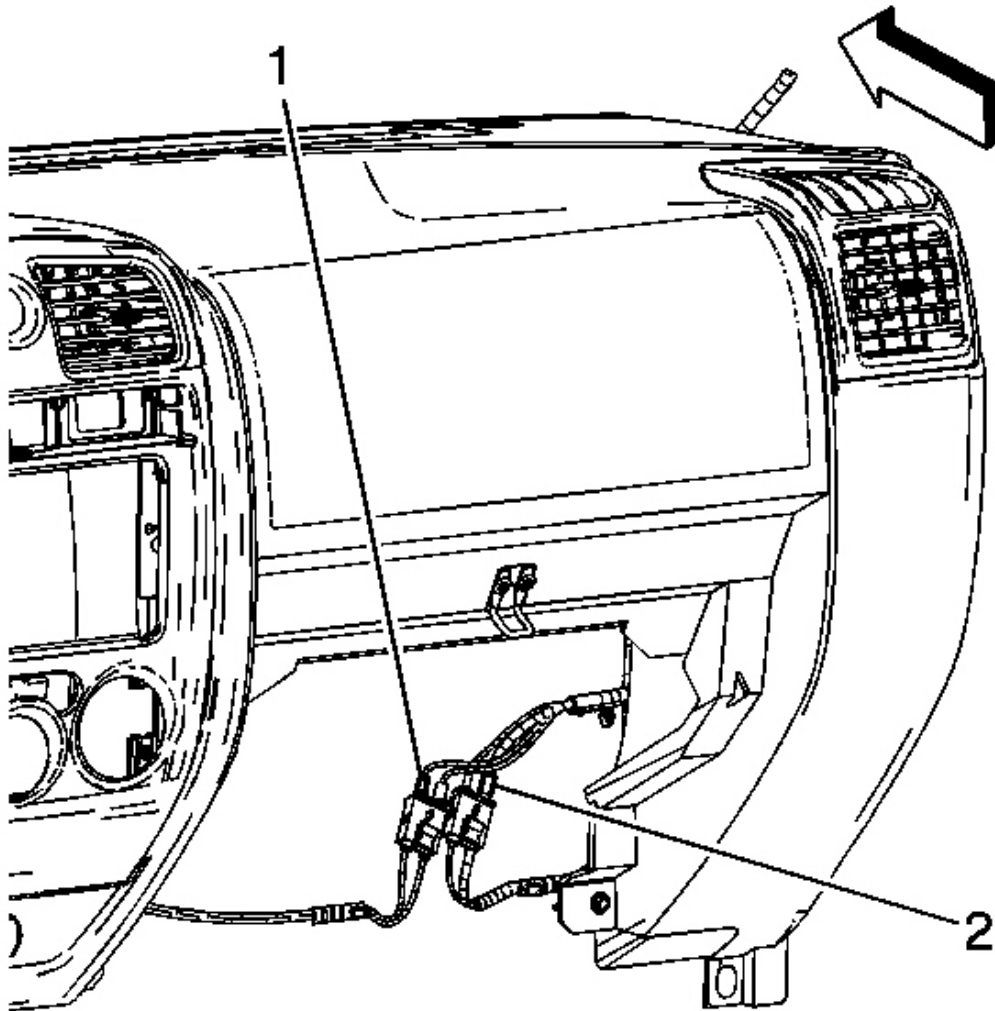


Fig. 67: View Of Digital Radio Receiver Jumper Harness & VCIM Connectors (UE1, U2K)

Courtesy of GENERAL MOTORS CORP.

5. Open the instrument panel (I/P) compartment door to a full down position.
6. Disconnect the antenna coax cable (2) from the vehicle communication interface module (VCIM) jumper harness.

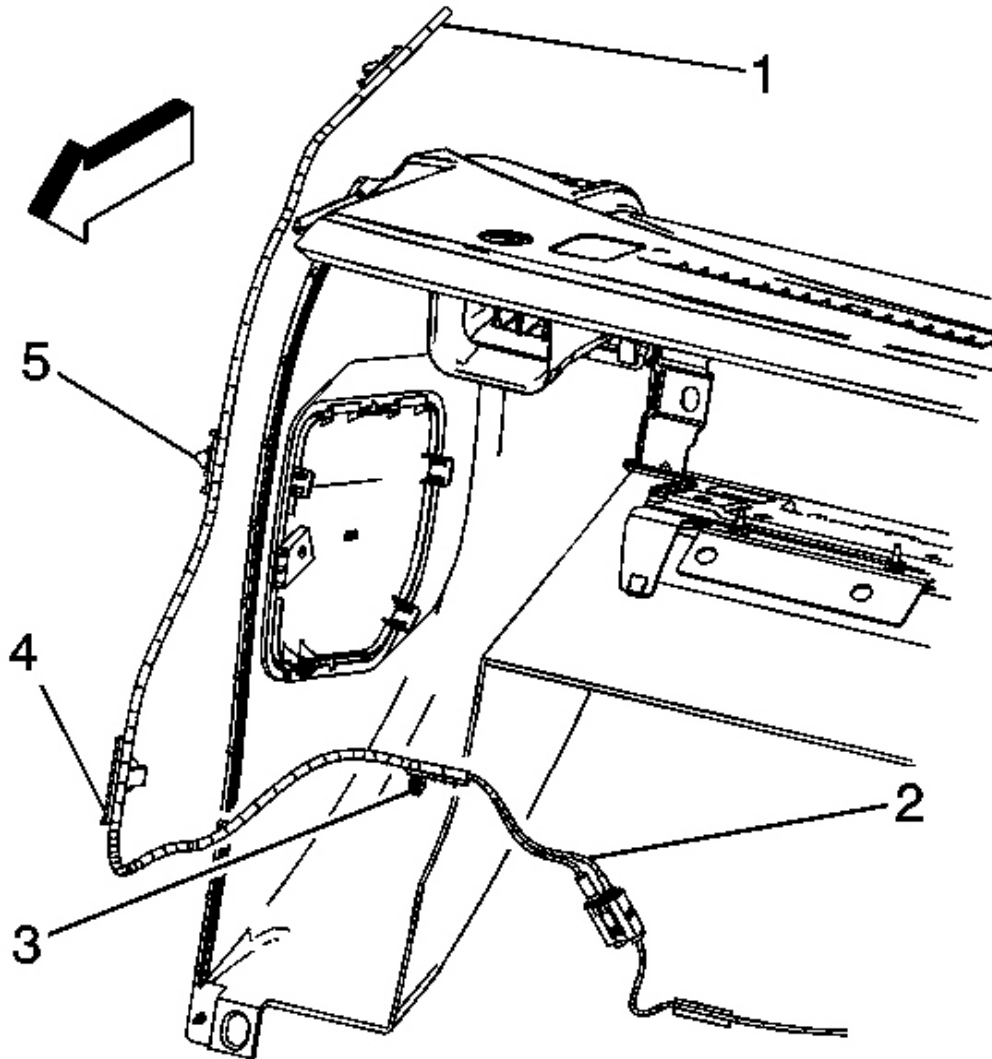


Fig. 68: View Of Coax Cable & Components
Courtesy of GENERAL MOTORS CORP.

7. Detach the retainers from the I/P structure.
8. Attach a mechanics wire to the end of the coax cable (2).
9. Detach the coax cable retainer (4) from the hinge pillar.
10. Grasp the cable (1) and gently pull upward to release the retainer (5) from the hinge pillar.

11. Continue pulling the cable upward to remove the cable from behind the I/P.
12. Remove the cable from the vehicle leaving the mechanics wire routed behind the I/P.

Installation Procedure

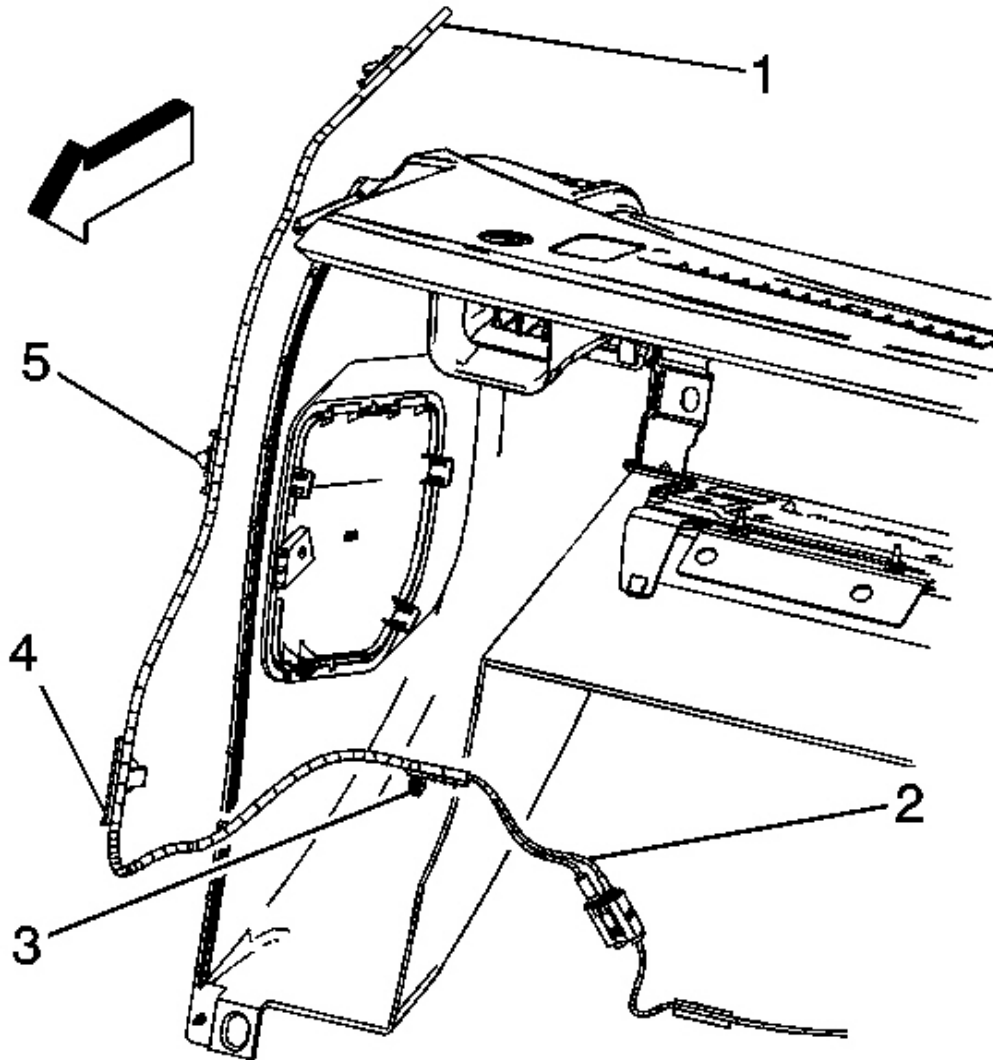


Fig. 69: View Of Coax Cable & Components
Courtesy of GENERAL MOTORS CORP.

1. Attach a mechanics wire to the end of the coax cable (1).
2. Carefully remove the coax cable retainer (4) from the cable.
3. Grasp the mechanics wire and gently pull downward to route the cable behind the I/P.
4. Attach the retainer (4) to the hinge pillar.
5. Attach the remaining lower retainers to the I/P structure.

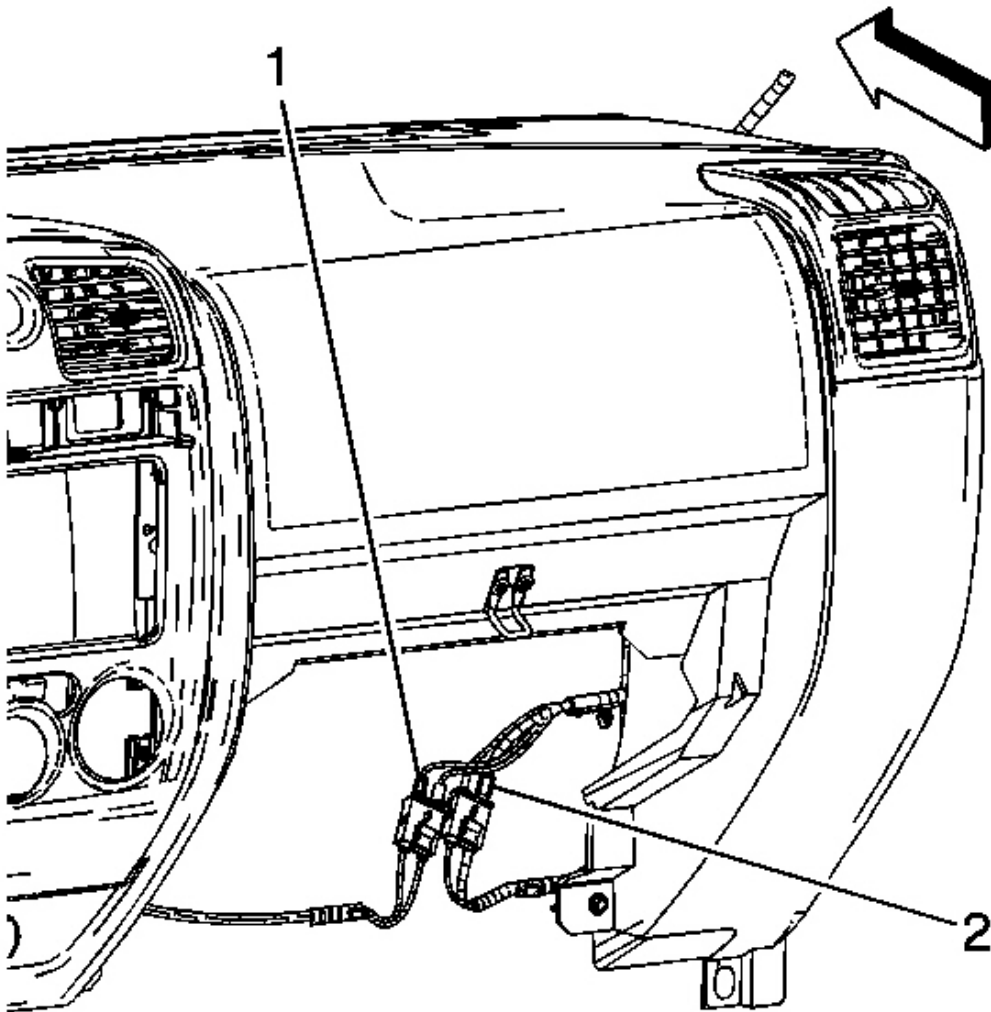


Fig. 70: View Of Digital Radio Receiver Jumper Harness & VCIM Connectors (UE1, U2K)

Courtesy of GENERAL MOTORS CORP.

6. Connect the antenna coax cable (2) to the VCIM jumper harness.
7. Close the I/P compartment door.

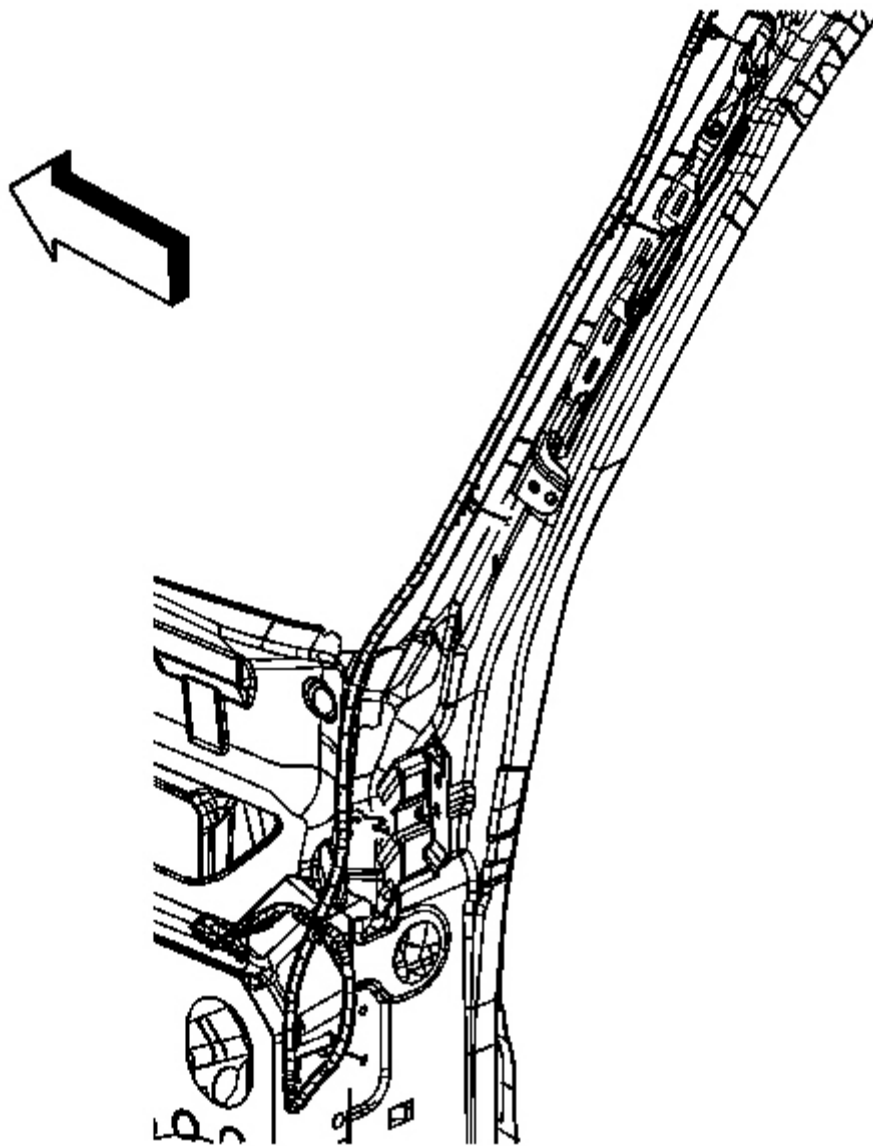


Fig. 71: View Of Coax Cable Retainers

Courtesy of GENERAL MOTORS CORP.

8. Attach the 3 coax cable retainers to the windshield pillar.

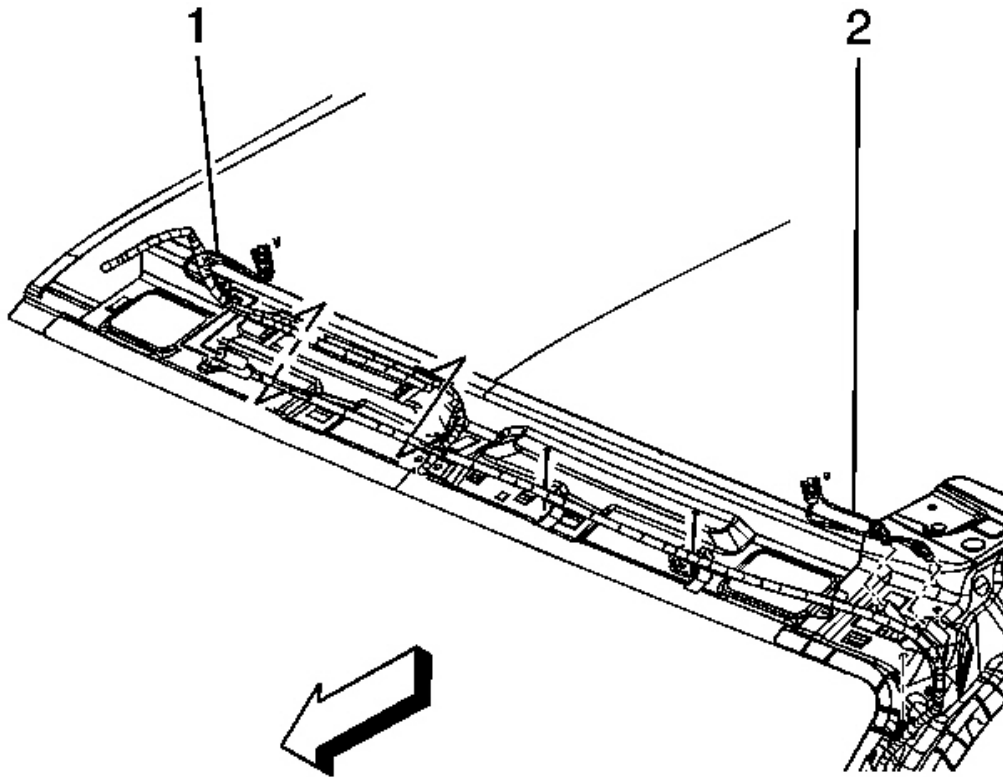


Fig. 72: View Of Coax Cable & Digital Radio Connectors (UE1, U2K)
Courtesy of GENERAL MOTORS CORP.

9. Attach the fasteners retaining the coaxial cable to the header panel.
10. Connect the coax cable connectors (1).
11. Install the headliner. Refer to **Headlining Trim Panel Replacement** .

MOBILE TELEPHONE AND NAVIGATION ANTENNA COAXIAL CABLE REPLACEMENT (UE1, U2K)

Removal Procedure

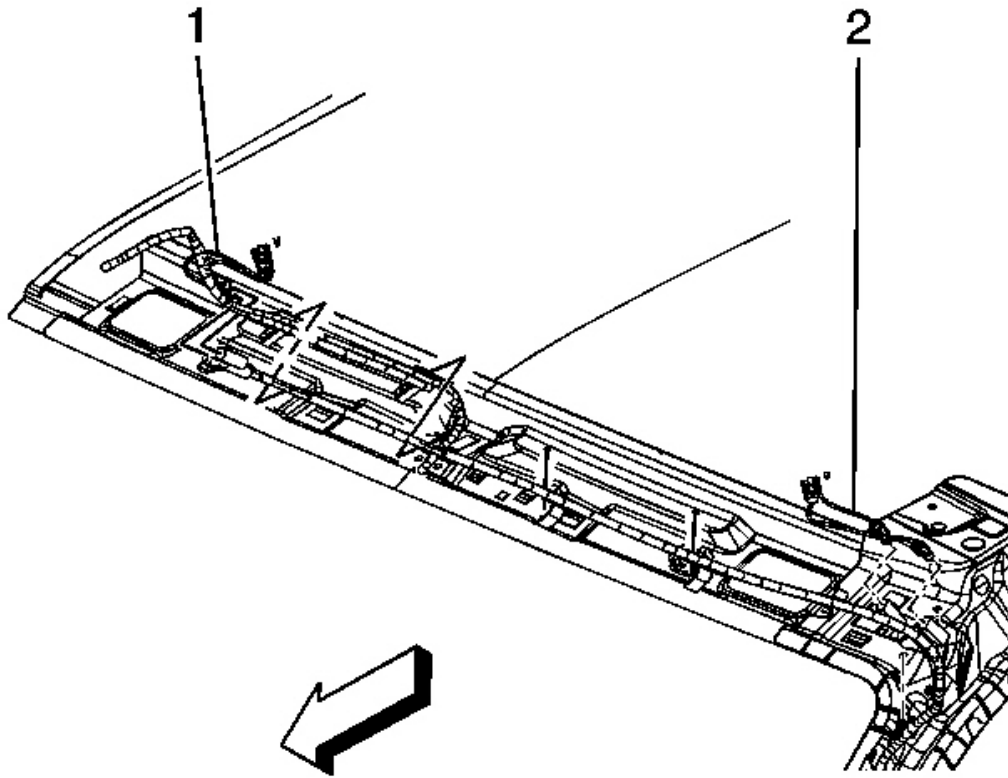


Fig. 73: View Of Coax Cable & Digital Radio Connectors (UE1, U2K)
Courtesy of GENERAL MOTORS CORP.

1. Lower the front portion of the headliner to reveal the coaxial cables and wiring harness assembly. Refer to **Headlining Trim Panel Replacement** .
2. Disconnect the connectors to the navigation cellular telephone antenna (1).
3. Detach the fasteners retaining the coaxial cable to the header panel.
4. Disconnect the connectors to the digital radio antenna (2).

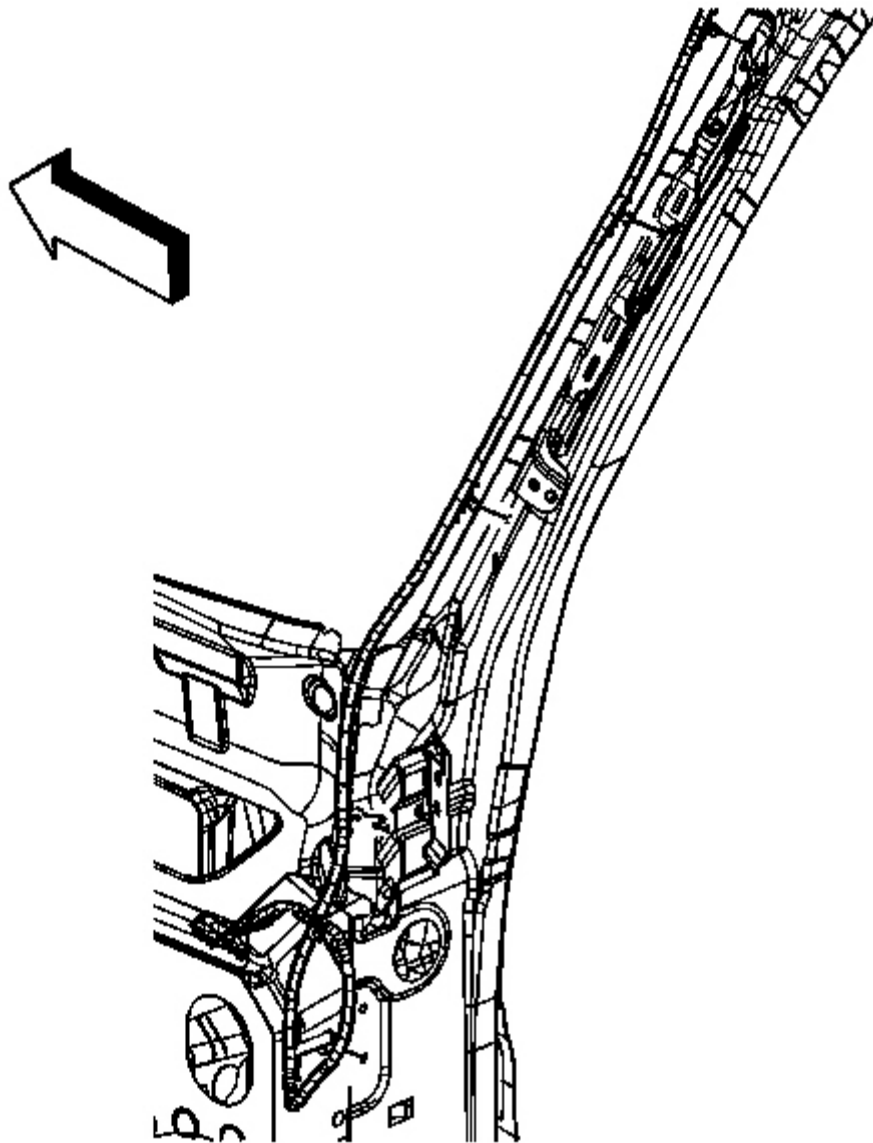


Fig. 74: View Of Coax Cable Retainers
Courtesy of GENERAL MOTORS CORP.

5. Detach the 3 coaxial cable retainers from the windshield pillar.

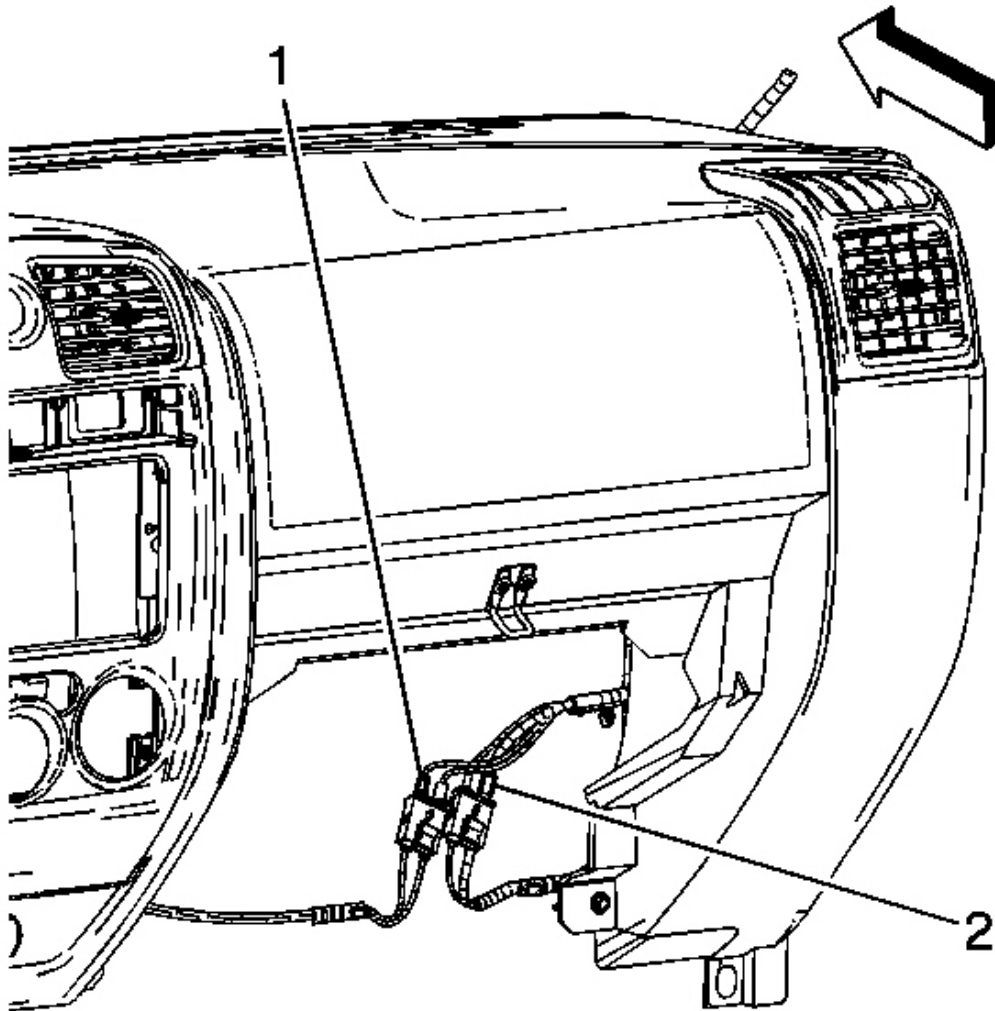


Fig. 75: View Of Digital Radio Receiver Jumper Harness & VCIM Connectors (UE1, U2K)

Courtesy of GENERAL MOTORS CORP.

6. Open the instrument panel (I/P) compartment door to a full down position.
7. Disconnect the connector (2) from the vehicle communication interface module (VCIM) jumper harness.
8. Disconnect the connector (1) from the digital radio receiver jumper harness.

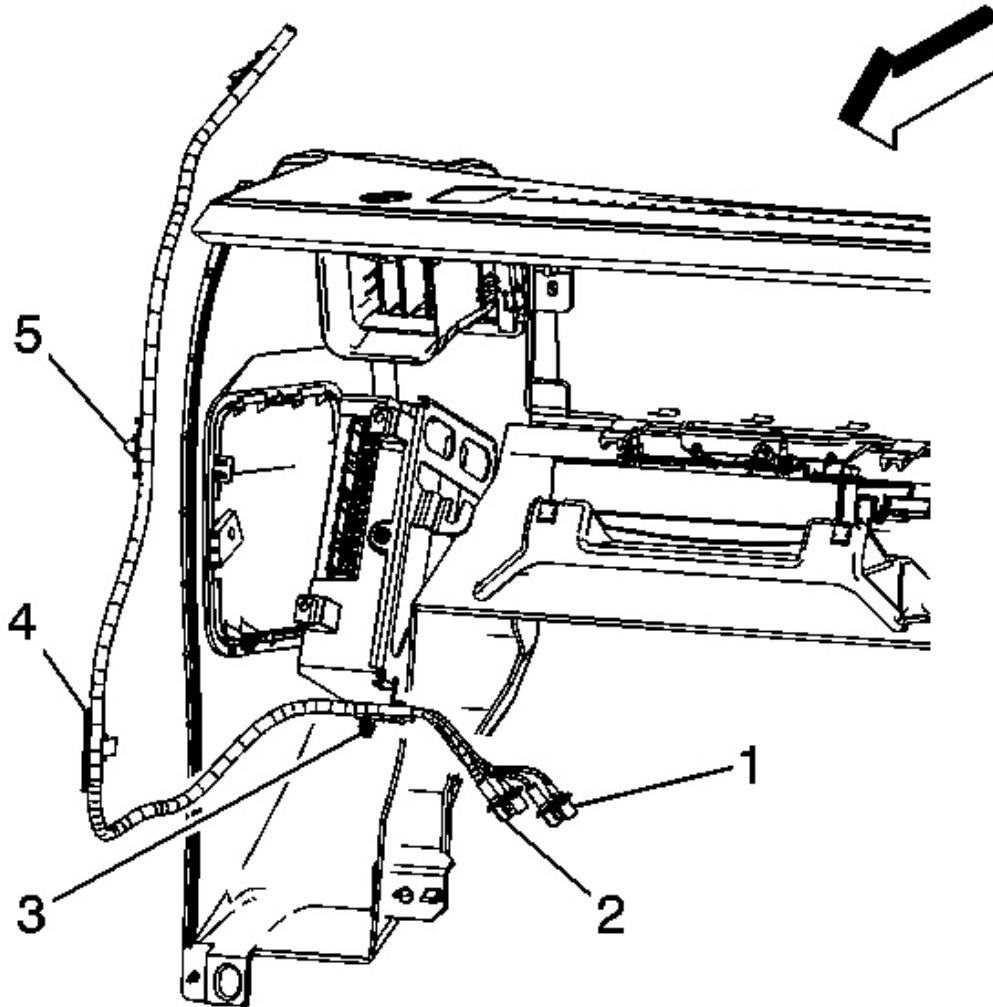


Fig. 76: View Of Coax Cable & Components (UE1, U2K)
Courtesy of GENERAL MOTORS CORP.

9. Detach the retainer (3) from the I/P structure.
10. Attach a mechanics wire to the end of the coax cable (1) and (2).
11. Detach the coax cable retainer (4) from the hinge pillar.
12. Grasp the cable above the I/P and gently pull upward to release the retainer (5) from the hinge pillar.
13. Continue pulling the cable upward to remove the cable from behind the I/P.

14. Remove the cable from the vehicle leaving the mechanics wire routed behind the I/P.

Installation Procedure

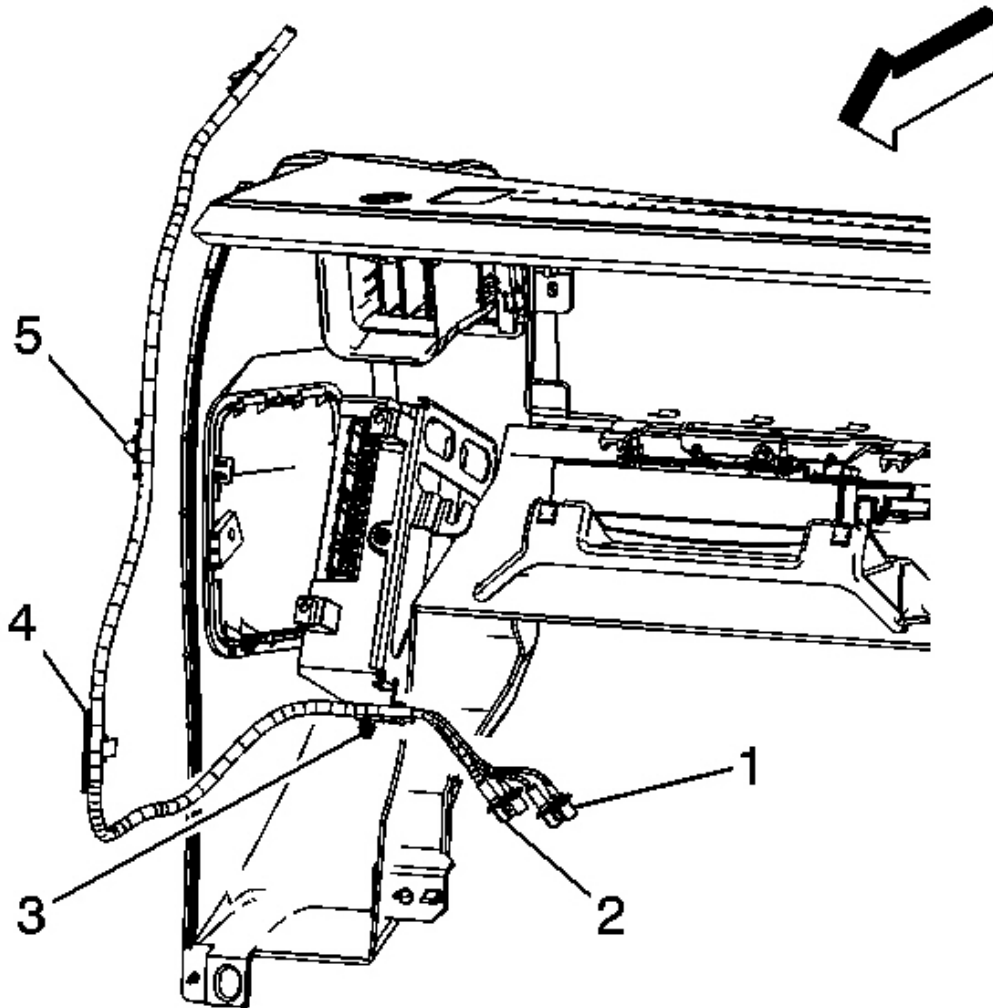


Fig. 77: View Of Coax Cable & Components (UE1, U2K)
Courtesy of GENERAL MOTORS CORP.

1. Attach a mechanics wire to the end of the coaxial cable (1) and (2).
2. Carefully remove the coaxial cable retainer (4) from the cable.

3. Grasp the mechanics wire and gently pull downward to route the cable behind the I/P.
4. Attach the retainer (4) to the hinge pillar.
5. Attach the remaining lower retainers to the I/P structure.

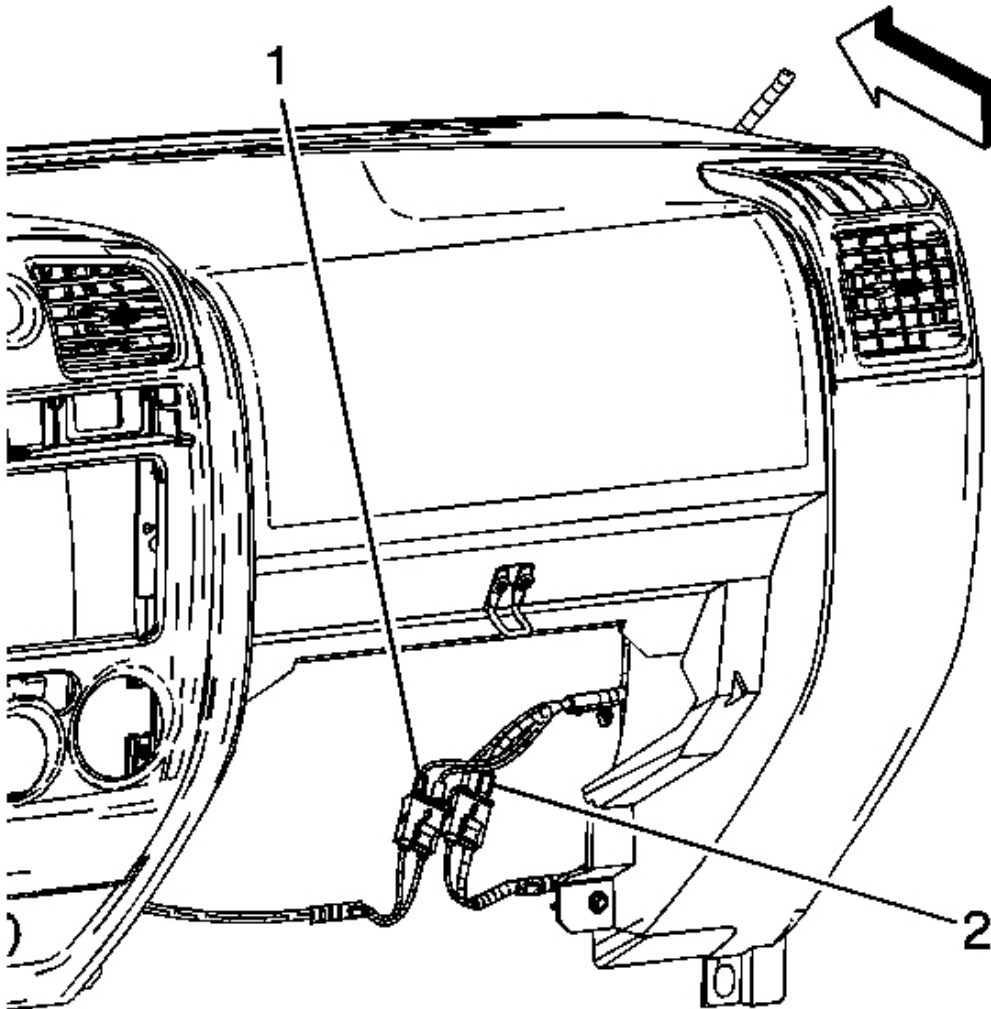


Fig. 78: View Of Digital Radio Receiver Jumper Harness & VCIM Connectors (UE1, U2K)
Courtesy of GENERAL MOTORS CORP.

6. Install the connectors (2) to the VCIM jumper harness.

7. Install the connectors (1) to the digital radio receiver jumper harness.
8. Close the I/P compartment door.

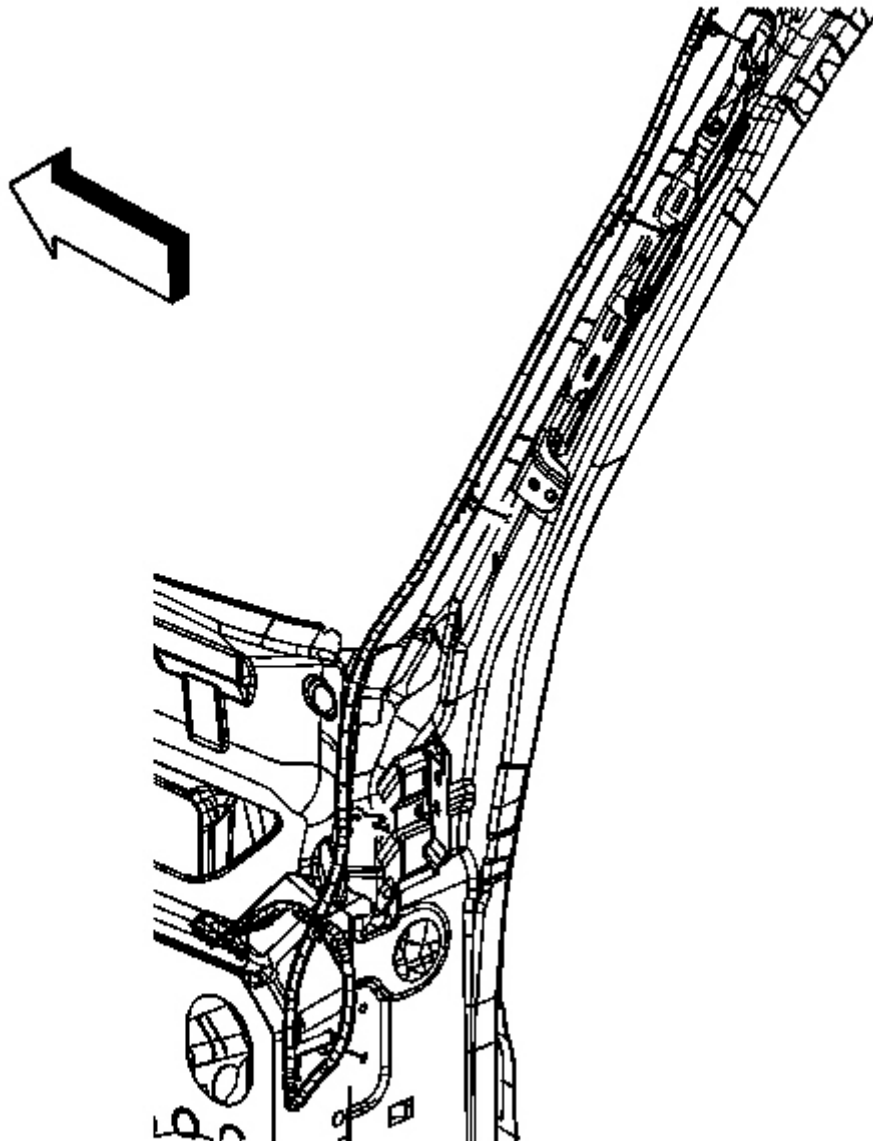


Fig. 79: View Of Coax Cable Retainers
Courtesy of GENERAL MOTORS CORP.

9. Attach the 3 coax cable retainers to the windshield pillar.

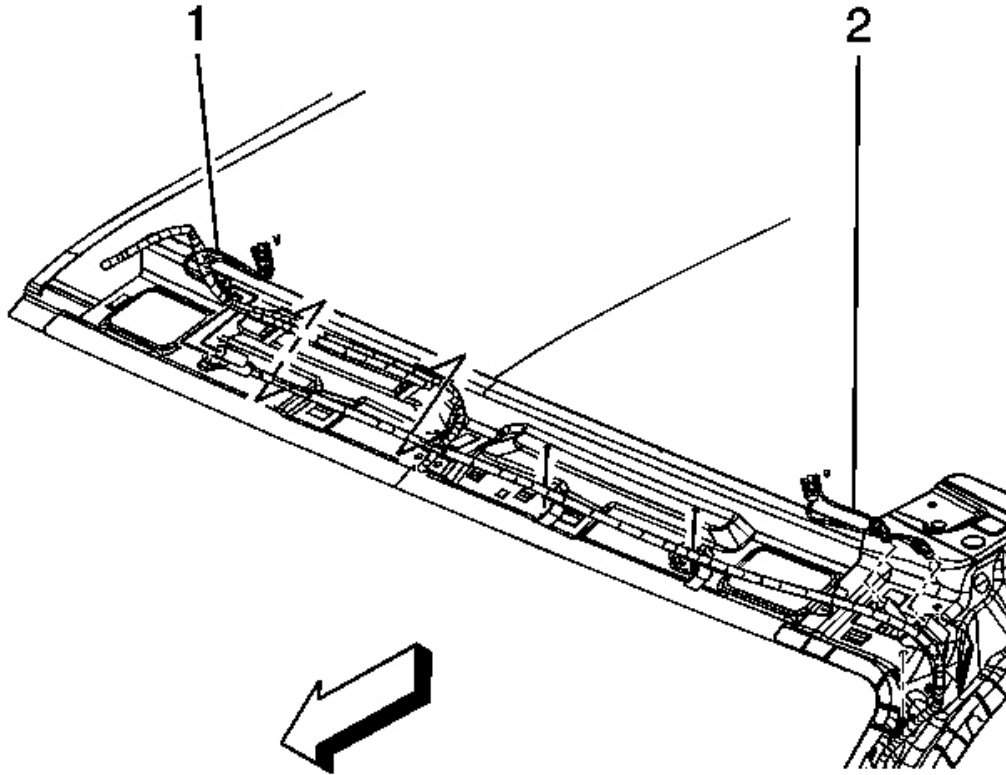


Fig. 80: View Of Coax Cable & Digital Radio Connectors (UE1, U2K)
Courtesy of GENERAL MOTORS CORP.

10. Install the connectors to the digital radio antenna (2).
11. Attach the fasteners retaining the coaxial cable to the header panel.
12. Install the coaxial cable connectors (1).
13. Install the headliner. Refer to **Headlining Trim Panel Replacement** .

RADIO FRONT SIDE DOOR SPEAKER REPLACEMENT

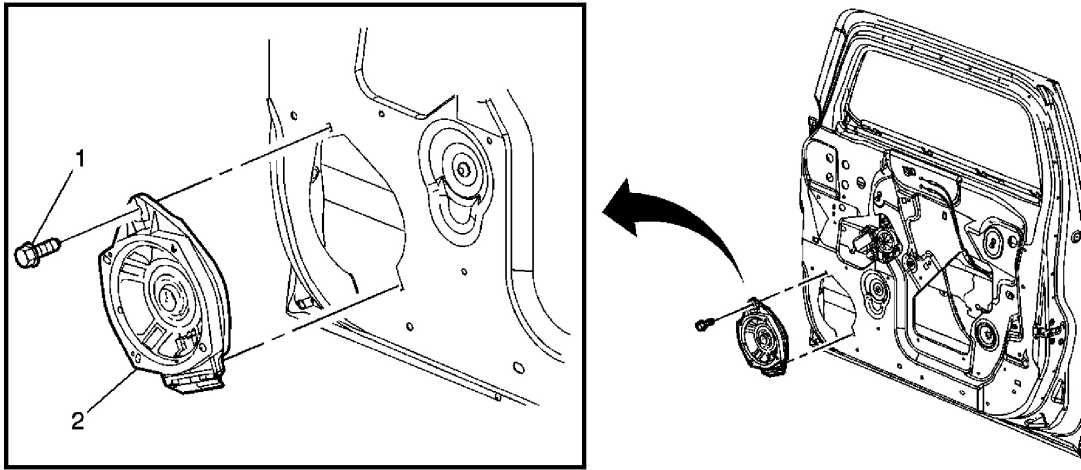


Fig. 81: Speaker Replacement - Front Door
Courtesy of GENERAL MOTORS CORP.

Radio Front Side Door Speaker Replacement

Callout	Component Name
NOTE: Refer to <u>Fastener Notice</u> .	
Fastener Tightening Specifications: Refer to <u>Fastener Tightening Specifications</u> . Preliminary Procedure: Remove the front door panel. Refer to <u>Front Side Door Trim Panel Replacement</u> .	
1	Screw, Speaker Assembly Tighten: 2 N.m (18 lb in)
2	Speaker Assembly, Radio Front Side Door

FRONT UPPER SPEAKER REPLACEMENT



Fig. 82: Speaker Replacement - Front Upper
Courtesy of GENERAL MOTORS CORP.

Front Upper Speaker Replacement

Callout	Component Name
Fastener Tightening Specifications: Refer to <u>Fastener Tightening Specifications</u> .	
Preliminary Procedure: Remove the windshield pillar garnish molding. Refer to <u>Windshield Pillar Garnish Molding Replacement</u> .	
1	Speaker Assembly, Windshield Side Garnish Molding

RADIO REAR SIDE DOOR SPEAKER REPLACEMENT

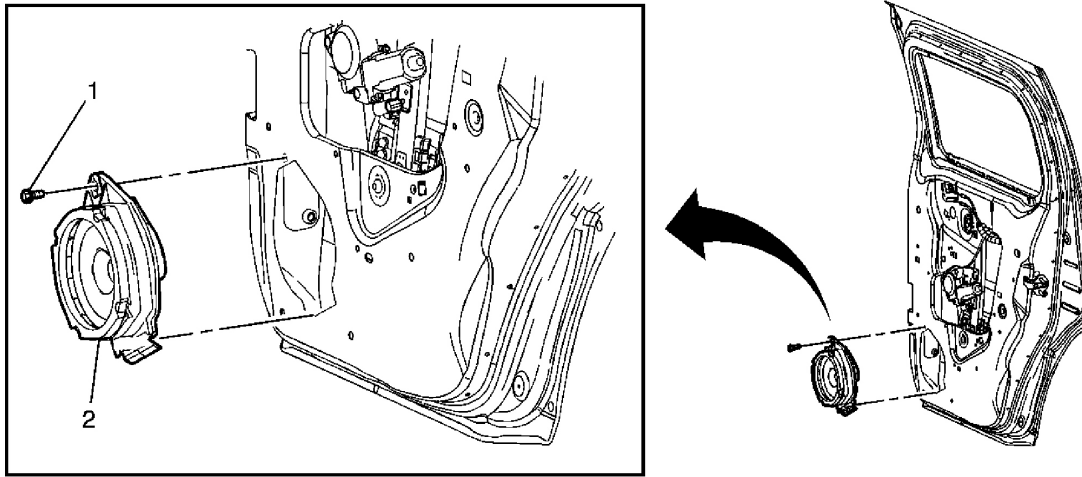


Fig. 83: Speaker Replacement - Rear Door
Courtesy of GENERAL MOTORS CORP.

Radio Rear Side Door Speaker Replacement

Callout	Component Name
NOTE: Refer to <u>Fastener Notice</u> .	
Fastener Tightening Specifications: Refer to <u>Fastener Tightening Specifications</u> . Preliminary Procedure: Remove the rear door panel. Refer to <u>Rear Side Door Trim Panel Replacement</u> .	
1	Screw, Speaker Assembly Tighten: 2 N.m (18 lb in)
2	Speaker Assembly, Radio Rear Side Door

RADIO REAR QUARTER TRIM PANEL SPEAKER REPLACEMENT

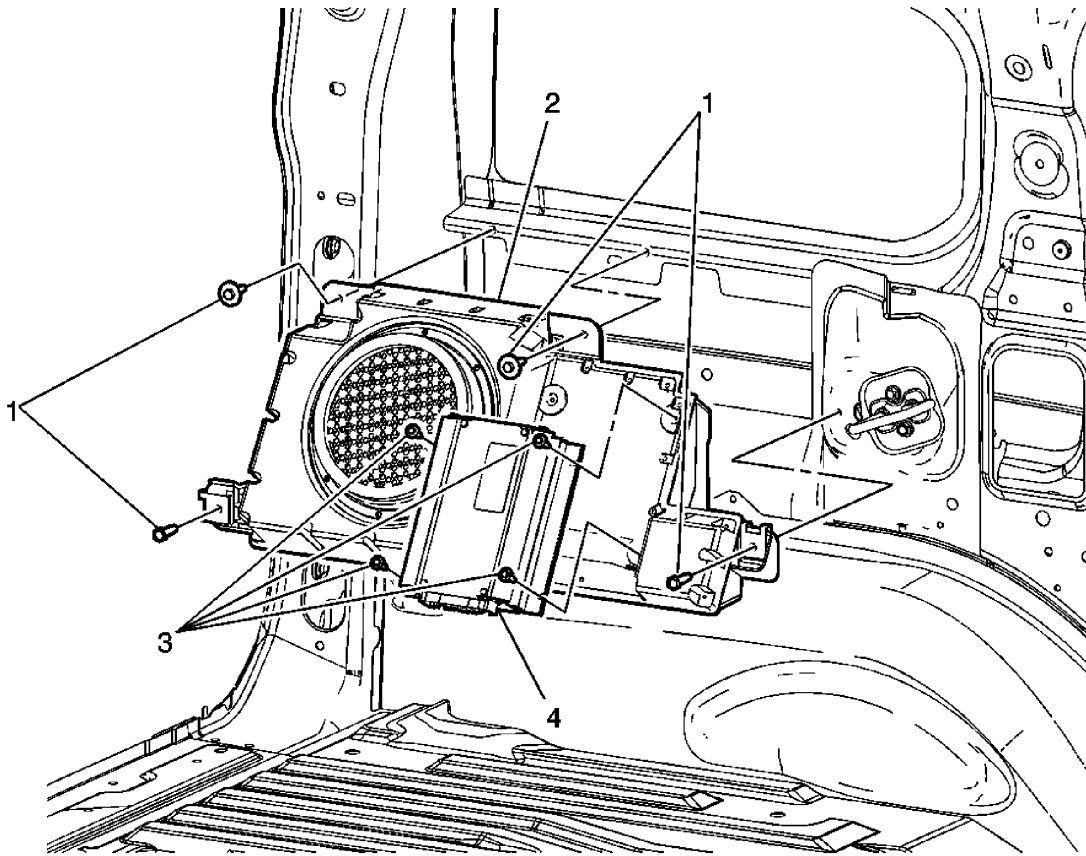


Fig. 84: Speaker Replacement - Rear Quarter
Courtesy of GENERAL MOTORS CORP.

Radio Rear Quarter Trim Panel Speaker Replacement

Callout	Component Name
NOTE: Refer to <u>Fastener Notice</u> .	
Fastener Tightening Specifications: Refer to <u>Fastener Tightening Specifications</u> . Preliminary Procedure: Remove the left body side trim panel. Refer to <u>Body Side Trim Panel Replacement - Left Side</u> .	
1	Sub Woofer Base Box Bolt (Qty: 4) Tighten: 8 N.m (71 lb in)
2	Sub Woofer Base Box Tip: Disconnect the electrical connector.
	Amplifier Screw (Qty: 4)

3	Tighten: 2 N.m (18 lb in)
4	Radio Speaker Amplifier Tip: Disconnect the electrical connector.

DESCRIPTION AND OPERATION

NAVIGATION SYSTEM DESCRIPTION AND OPERATION

Navigation System Description and Operation

Navigation Display Head	
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
Soft Key Buttons	Push to select the options listed on the navigation screen
EJECT	Push and hold the eject button to tilt open the radio face plate and expose the map DVD slot

Navigation System Components

The navigation system contains the following components:

- Navigation radio
- Global Positioning System (GPS) antenna

Navigation Radio

This component acts as the operator interface for the audio system, provides the data input from the operator to the navigation system and provides navigation information to the operator via the display screen. The navigation radio, located in the center of the instrument panel, provides the following:

- A display screen-All navigation and audio functions are displayed on this screen.
- The navigation system map with routing information displayed on the navigation radio screen
- Audio system options and controls, displayed on the navigation radio screen
- Provides verbal guidance to the operator

- The DVD provides the map data for navigation and map route guidance
- Connection to the global positioning system (GPS) antenna, which provides the vehicle position information

Global Positioning System (GPS) Antenna

The global positioning system (GPS) antenna is located at the top center of the dash pad. The GPS antenna is powered through the same coaxial cable used to send the signals to the navigation radio. The GPS antenna collects data from the GPS satellites and routes this information to the navigation radio to be formatted into current position.

GPS Reception

The global positioning system (GPS) shows the current position of the vehicle. Tall buildings, large trucks or a tunnel can obstruct GPS signals. Metallic objects on the dash can also cause interference. A GPS icon is located in the top left corner of the map display. If the GPS is valid, the icon will be green if not the icon will be gray. The GPS info screen will also show the condition of the GPS. If GPS reception is not received, it will show out of range. If the reception is received, the coordinates of your location will be shown.

Route Guidance

The map will display the route to the selected destination. Voice prompts alert the operator of upcoming events (turns) and arrivals at the destination. The navigation system will automatically recalculate if the route is not followed. The navigation radio uses data received from the global positioning system (GPS) satellites as well as the vehicle speed signal to accurately display the current position of the vehicle.

Points of Interest (POI)

Points of interest (POI) are locations that are frequently visited. Points of interest can be displayed on the map or set as a destination. The following is a few of the available POI:

- Gas station
- Restaurant
- Museum
- College
- Police

Map DVD

The map DVD slot is located behind the radio face. Press and hold the eject button for approximately 15 seconds and the radio face will tilt open and allow access to the map/DVD slot. Press the eject button again to close the radio face.

ONSTAR DESCRIPTION AND OPERATION

- **Dialing a Phone Number Hands-Free**
- **Dialing a Phone Number Using Digit Dial**
- **Dialing a Phone Number Using Stored Nametag**
- **Dialing A Phone Number Using "Redial" Command**
- **General Tips for Better Speech Recognition**
- **Personal Calling Commands**

This vehicle uses the Generation 6 version of the OnStar® system. This system consists of the following components:

- Vehicle communication interface module (VCIM)
- OnStar® button assembly
- Microphone
- Cellular antenna
- Navigation antenna

This system also interfaces with the factory installed vehicle audio system.

New Features

New Features for this version of OnStar® include Turn by Turn Navigation and the Advisor Record Feature. Turn by Turn Navigation allows the driver to contact OnStar® to obtain directions for driving from a current location to a desired location. The Turn by Turn Navigation system stores your planned route and continually checks your position along that route, when you deviate from the planned route, the system will recognize this and prompt the driver with verbal prompts for how to proceed. The driver then responds verbally to direct the system to continue the current routing or to recalculate the route because of a missed turn. Turn by Turn Navigation instructions are displayed to the driver by the radio display or the driver information center (DIC). The Advisor Record Feature allows the driver to store any information given to you during a call with an OnStar® Advisor.

Vehicle Communication Interface Module (VCIM)

The vehicle communication interface module (VCIM) is a 3-watt cellular device that allows the user to communicate data and voice signals over the National Cellular Network. It is powered by a fused, battery positive voltage circuit, connected through vehicle wiring to the 3-button assembly and the radio and attached by means of coax cables to the cellular and navigation antennas. Ground for the module is accomplished by means of dedicated circuits that are routed with body wiring systems to chassis ground points. The module houses 2 modems, one to process global positioning system (GPS) data and the other for cellular information. Satellites orbiting earth are constantly transmitting signals of their current location, from which the OnStar® system is able to pinpoint its own location. The navigation antenna receives these GPS signals and provides the data to the VCIM to be processed. The VCIM communicates with the rest of the vehicle over the class 2 serial data bus. Ignition state is determined by the VCIM through class 2 messaging. The module also has the capability of commanding the horn, door lock/unlock and operating the exterior lamps using the class 2 serial data circuit. When an OnStar® keypress is made, a class 2 message is sent to the audio system to mute all radio functions and transmit OnStar® originated audio. After the audio system is muted, the OnStar® signals are transmitted to the audio system on the cellular telephone voice signal circuit and returned to the module on the cellular telephone voice low reference circuit. The cellular modem connects the OnStar® system to the cellular carrier's communication system by interacting with the national cellular infrastructure. The module sends and receives all cellular communications over the cellular antenna and cellular antenna coax.

OnStar® Button Assembly

The OnStar® button assembly may be part of the rearview mirror on some vehicles or a separate unit on others. The button assembly is comprised of 3 buttons and a status LED. The buttons are defined as follows:

- The Answer/End Call button, which is black with a white dot, allows the user to answer and end calls or initiate the personal calling feature, if equipped.
- The blue OnStar® Call Center button, which displays the OnStar® logo, allows the user to connect to the OnStar® Call Center.
- The Emergency button, which will display either a red or white cross, sends a high priority emergency call to the OnStar® Call Center when pressed.

The vehicle communication interface module (VCIM) supplies 10 volts to the OnStar® button assembly, on the keypad supply voltage circuit. When pressed, each button completes a circuit across a resistor allowing a specific voltage to be returned to the vehicle communication interface module (VCIM) on the keypad signal circuit. Depending upon the voltage range returned, the VCIM is able to identify which button has been pressed.

The OnStar® status LED is located to the right of the emergency button on a mirror-mounted assembly and to the left of the Answer/End Call button when the assembly is mounted on the dash or overhead console. The LED is green when the system is ON and operating normally. When the status LED is green and flashing, it is an indication that a call is in progress. When the LED is red, this indicates a system malfunction is present. In the event there is a system malfunction and the OnStar® system is still able to make a call, the LED will flash red during the call. The OnStar® LED is controlled by the VCIM over the keypad red LED signal circuit and the keypad green LED signal circuit.

OnStar® Microphone

The OnStar® or cellular, microphone can be part of the rearview mirror assembly or on some vehicle lines, can be a separate, stand alone unit. In either case, the microphone is supplied voltage on the cellular microphone signal circuit, while voice data from the user is sent back to the vehicle communication interface module (VCIM) by means of either a cellular microphone low reference circuit or a drain wire.

Cellular and Navigation Antennas

This vehicle will be equipped with one of the following types of antennas:

- Separate, standalone cellular and navigation antennas
- A combination cellular and navigation antenna, which brings the functions of both into a single part
- A cellular, navigation and digital radio antenna, which also incorporates the functionality of the digital radio receiver satellite and terrestrial antennas (XM)

The cellular antenna is the component that allows the OnStar® system to send and receive data over airwaves by means of cellular technology. This antenna is connected at the base to a coax cable that plugs directly into the vehicle communication interface module (VCIM). The navigation antenna is used to collect the constant signals of the orbiting satellites. Within the antenna, is housed a low noise amplifier that allows for a more broad and precise reception of this data. The current global positioning system (GPS) location is collected by the module every time a keypress is made. The OnStar® Call Center also has the capability of pinging the vehicle during an OnStar® call, which commands the module to retrieve the latest GPS location and transmit it to the OnStar® Call Center. A history location of the last recorded position of the vehicle is stored in the module and marked as aged. In the event the VCP loses or is removed from power, this history location is used by the OnStar® Call Center as a default. Actual GPS location may take up to 10 minutes to register in the event of a loss of power. This antenna requires a clear and unobstructed path to the satellites in the sky. Window tinting on vehicles may interfere with the GPS sensor functions, depending upon the location of the GPS antenna and the amount of

darkening and/or metallic particles that are embedded in the film of the tinting material.

OnStar Sleep Cycle

The OnStar® system uses a unique sleep cycle to allow the system to receive cellular calls while the ignition is in the OFF position. This cycle enables the vehicle communication interface module (VCIM) to perform remote functions, such as door unlock, as commanded over the air by the OnStar® Call Center, when requested by the customer and to continue to maintain an acceptable level of battery electrical drain.

The Generation 6 version of OnStar® uses 4 states of readiness, depending upon the type of cellular market the vehicle is in when the ignition is put into the OFF state:

- High power
- Low power
- Sleep
- Digital Standby

When in an analog cellular market, the high power state is in effect whenever the ignition is in the ON or RUN position and enables the OnStar® system to send and receive cellular calls and perform all remote functions. The low power state is entered once the vehicle ignition is placed in the OFF position and the retained accessory power (RAP) function has been turned OFF or times out. This state will last for 1 minute and allows incoming cellular calls to be received. After the 1 minute window, the OnStar® system moves to the sleep state. This state will not recognize or receive incoming cellular calls. At a predetermined time recorded within the VCIM, up to 9 minutes, the system re-enters the low power state to listen for a call from the OnStar® Call Center for 1 minute. After this interval, the system will again return to the sleep state for 9 minutes. After these 9 minutes, the system will again enter the low state of power and listen for any incoming calls that the OnStar® Call Center may be sending. In the event a call is being sent, the OnStar® system will receive the call and immediately go into the high power mode to perform any requested functions. If no call is received during the 1 minute interval, the system will go back into the sleep mode for another 9 minutes. This process will continue for up to 48 hours, after which, the OnStar® system will permanently enter the sleep state until the ignition is once again turned to the ON or RUN position.

In a digital cellular service market the high power state is in effect whenever the ignition is in the ON or RUN position and also enables the OnStar® system to send and receive cellular calls and perform all remote functions. The digital standby power state is in effect after the vehicle has been shut off and the retained accessory power (RAP) has timed out. When in digital standby mode, the OnStar module is able to perform all remote functions as commanded by an OnStar

advisor at any time, for a continuous 8 hours. After 8 hours, the OnStar module will follow the standard sleep state as though in an analog cellular market (9 minutes off, 1 minute of digital standby, based on the time of the GPS signals).

In the event the OnStar® system loses or is temporarily removed from battery power, the system will remain in the sleep state while the key in the OFF position. It will not begin to cycle until the vehicle passes into an open outside area with the ignition ON, where a global positioning system (GPS) signal can be acquired, providing a reference for time. The OnStar® Call Center is able to maintain a record of exactly what time each vehicle will enter the one minute low power state by synchronizing their clocks with those of the vehicle, based on GPS signals.

Deactivated OnStar® Accounts

In the event a customer has not renewed their OnStar® account after expiration or the account was never activated, OnStar® will make a discrete cellular call to the vehicle to deactivate the OnStar® system. Before taking this action, customers are notified that the OnStar® system in their vehicle will be deactivated unless they elect to renew the account. After the vehicle has been successfully deactivated, customers will experience the following when attempting to contact OnStar from their vehicle:

- During an OnStar® Call Center button press, the customer will be connected to a dedicated sales team who can sell an OnStar® subscription and reactivate the vehicle. Depending on the type of OnStar® hardware in the vehicle, the customer may first hear a demonstration message stating there is no current OnStar® subscription for the vehicle and directing the customer what to do to activate services.
- During an Emergency button press, a demo message will be played indicating the service has been deactivated.
- OnStar® Personal Calling (OPC) will not be available, as this feature requires the customer to have a current OnStar® account. Attempts to use this feature may result in cellular connection failure messages and the inability to connect to the number dialed.

It is of particular note, that when an OnStar® system is successfully deactivated, it will NOT attempt to connect to the OnStar® Call Center in the event of a collision or if the vehicle front air bags deploy for any other reason.

Certain vehicles that have never had an active OnStar® account, that have been deactivated, may be unable to establish a connection with the OnStar® Call Center. When normal published diagnostic procedures do not indicate a possible cause for the no connect concern, the vehicle may have been deactivated. For deactivated vehicles, a no connect response should be considered normal operation. Further diagnosis and subsequent repair is only necessary should the customer

elect to become an active OnStar® subscriber.

OnStar® Reconfiguration Procedure

Within the vehicle communication interface module (VCIM) are a set of unique numbers that identify the OnStar® customer and the specific vehicle the module resides in. These numbers, the station identification number (STID) and the electronic serial number (ESN) are transmitted over the cellular network when an OnStar® keypress is made and are essential for proper identification and connection to the OnStar® Call Center. In the event the VCIM requires replacement, the OnStar® reconfiguration procedure must be performed. This procedure allows for the new STID and ESN within the replacement module to overwrite the old numbers and update customer and vehicle information at the OnStar® Call Center. The Reconfiguration process is explained within the VCIM replacement procedure or the OnStar® Reconfiguration Procedure found in the Cellular Communication diagnostic information and procedures section.

The default language for the VCIM is English. To change language, use the "Request Info for SPS" function on the scan tool and refer to the SPS terminal for language download.

OnStar® Cellular, GPS and Diagnostic Limitations

The proper operation of the OnStar® System is dependent on several elements outside the components integrated into the vehicle. These include the National Cellular Network Infrastructure, the cellular telephone carriers within the network and the global positioning system (GPS).

The cellular operation of the OnStar® system may be inhibited by factors such as the user range from an analog cellular tower, the state of the cellular carrier equipment and the location where the call is placed. Making an OnStar® keypress in areas that lack sufficient cellular coverage or have a temporary equipment failure, will result in either the inability of a call to complete a data transfer or the complete inability to connect to the OnStar® Call Center. The OnStar® system may also experience connection issues if the identification numbers for the module, station identification (STID) and electronic serial number (ESN) numbers, are not recognized by the cellular carrier local signal receiving towers. OnStar® cellular connection issues such as these require the assistance of the General Motors Technical Assistance Center OnStar® Group, which coordinates with cellular carriers to resolve connection issues.

The satellites that orbit earth providing the OnStar system with GPS data have almost no failures associated with them. In the event of a no GPS concern, the failure will likely lie with the inability of the system to gain GPS signals because of its location, i.e. in a parking structure, hardware failure or being mistaken with an OnStar® call which has reached the Call Center without vehicle data.

During diagnostic testing of the OnStar® system, the technician should ensure the vehicle is located in an area that has a clear unobstructed view of the open sky and preferably, an area where analog cellular calls have been successfully placed. These areas can be found by successfully making an OnStar® keypress in a known good OnStar® equipped vehicle and confirming success with the OnStar® Call Center advisor. Such places can be used as a permanent reference for future OnStar® testing.

OnStar® Personal Calling

The hands-free, OnStar® Personal Calling (OPC) cellular phone feature is an additional option to the OnStar® system. This feature is already embedded within the vehicle communication interface module (VCIM); however, it must be activated by an OnStar® advisor. This is done most often during the initial OnStar® configuration, if the home location of the vehicle is in a geographic area where OPC is available. In the event this feature is not enabled, customers may connect to the OnStar® Call Center by pressing the blue OnStar® button and asking an advisor if OPC is available in their area. Users of the Generation 6 OnStar® system can verify the system has been configured for OPC by pressing the Answer/End Call button, waiting for the system to respond "OnStar Ready" then speaking "dial". If the system responds "phone unavailable" the system has not been configured for OPC. All other responses confirm that OPC has been enabled.

Operation of the Hands-Free Cellular Phone

OnStar® Personal Calling (OPC) operates similar to most hand-held cellular phones in that the availability for its usage is based on minutes or units. The customer must have a current OnStar® subscription, as this feature cannot be utilized without it. To use OPC, the customer must also purchase units as outlined in the owner's guide provided with the OnStar® system. When the customer purchases minutes, an OnStar® advisor loads these minutes into the vehicle communication interface module (VCIM) over the airwaves at the time of the request or through a discrete cellular call to the vehicle at a later time. Once loaded into the module, the units may be used for non-international, outbound cellular phone calls and connection with the OnStar® Virtual Advisor. Units begin to deplete (1 unit is equal to 1 minute) as the customer makes outbound phone calls, answers inbound phone calls or while connected to the OnStar® Virtual Advisor. In addition, units also have an expiration date, depending upon the type of units purchased. This date is established when the download is performed and any remaining units expire when the date within the VCIM, which is based on current date and time transmitted by global positioning system (GPS) satellites, has passed. At any time, the user can press the Answer/End Call button, say "Units" and verify the number of units remaining.

During a hands-free call, the microphone and audio system operate the same way as a standard OnStar® call. When the Answer/End Call button is pressed, the audio system will mute; the OnStar® system will then return the prompt "OnStar Ready". At this point there are specific

commands set to initiate a cellular call. If the vehicle receives a call when the radio is ON, the audio system will mute and an audible ring will be heard through the speakers. The call will be answered when the answer/end call button is pressed.

The VCIM interprets all of the voice-activated commands. A complete list of these commands is supplied in the information provided to the customer. If the information is not available to reference, at any command prompt the caller can say "Help" and the VCIM will return an audible list of available commands. If the customer concern is not being understood or not being heard by the OnStar® system, the user should place a call to the OnStar® Call Center to verify proper operation of the microphone. Following this description is an example of the commands and the OnStar® system responses. A complete list of commands is supplied in the information provided to the customer with the OnStar® system.

OnStar® Steering Wheel Controls

Some vehicles equipped with the OnStar® system have the capability of accessing voice mailboxes and other automated phone systems by means of the steering wheel controls, while the OnStar® Personal Calling (OPC) feature is in use. If the Talk or Mute button, depending upon the vehicle, on the steering wheel controls is depressed during an OPC call, the vehicle communication interface module (VCIM) receives the message on the class 2 serial data bus from either the radio, driver information module or body control module (BCM). This message is interpreted as a request to turn any spoken numbers into dual tone multi-frequency (DTMF) tones to be delivered over the airwaves to the phone system the user is communicating with. Complete instructions for operation of these features can be found in the information provided to the customer with the OnStar® system.

The steering wheel controls are a resistor network that consist of multiple momentary contact switches and a series of resistors. The switches and resistor network are arranged so that each switch has a different resistance value. When a switch is pressed, a voltage drop occurs in the resistor network, which produces a specific voltage value unique to the switch selected, to be interpreted by either the radio, driver information module or BCM.

OPC Features

The following is an abbreviated list of features that may have an impact for the technician when servicing or diagnosing an OnStar® system. For a full list of OnStar® Personal Calling (OPC) features, consult the owners guide provided to the customer with the OnStar® system.

Voice Feedback

The OnStar® Personal Calling (OPC) system has the capability of responding to the user with either an automated voice response or with a tone or beep. These 2 types of responses can be

2007 Hummer H3

2007 ACCESSORIES AND EQUIPMENT Cellular, Entertainment and Navigation - H3

switched back and forth by pressing the Answer/End Call button, waiting for the system to respond "OnStar Ready" and speaking the phrase "voice feedback". The system will then respond, "voice feedback is now ON/OFF".

OPC Security/System Lock

Customers have the capability to lock their OnStar® Personal Calling (OPC) system by pressing the Answer/End Call button, speaking "security" and entering a 4-digit code. Once this process is complete, the user must enter the code before OPC is available. In the event the customer cannot remember their code and is unable to use their system, they can press the blue OnStar® button and speak to an advisor to unlock the system by means of a discrete cellular call to the vehicle.

Nametags

Customers have the ability to store telephone numbers within the module, referenced by a "nametag" for the convenience of frequently dialed numbers. This process is initiated by pressing the Answer/End Call button, waiting for the system response, then speaking the response "store". The system will respond with "number please" at which time the user should enter the number desired to be stored. Once complete, saying the word "store" again lets the system know you are finished entering the number. At this time, the system will elicit the user to assign a "nametag" to that number. From this point forward, the user can dial this number by initiating the OnStar® Personal Calling (OPC) feature, speaking the word "call" and repeating the nametag assigned. To delete a nametag, the user should initiate OPC, say "delete" then speak the nametag to be removed. In the event a nametag cannot be deleted in spite of repeated attempts from several speakers, the OnStar® module will require replacement.

Mobile Identification Number and Mobile Directory Number

The Generation 6 vehicle communication interface module (VCIM) utilizes 2 numbers for cellular device identification, call routing and connection, a mobile identification number (MIN) and a mobile directory number (MDN). The MIN represents the number used by the cellular carrier for call routing purposes while the MDN represents the number dialed to reach the cellular device. Although technicians have the capability to change these numbers by means of the scan tool, this should ONLY be done at the direction of and with explicit instruction from the General Motors Technical Assistance Center (GM TAC).

Placing a Call

To Dial a Number

Dialing a Phone Number Hands-Free

What You Do	What You Hear

2007 Hummer H3

2007 ACCESSORIES AND EQUIPMENT Cellular, Entertainment and Navigation - H3

Press the white Dot button.	"OnStar Ready."
Dial	"Phone number to dial, please."
Say the entire phone number you wish to dial with no pauses.	OnStar® will repeat the number, then ask "Yes or No".
Say "Yes" if the phone number was correct or "No" to try again.	"Dialing," and your call will be connected.

After 3 unsuccessful tries or if you simply like it better, you can use the "Digit Dial" command to input digits one at a time. Digit Dial is set up to dial phone numbers like previous OnStar® Personal Calling Systems.

Dialing a Phone Number Using Digit Dial

Dialing a Phone Number Using Digit Dial

What You Do	What You Hear
Press White Dot button.	"OnStar® Ready"
Say "Digit Dial"	"First digit to dial, please"
Say the number to be dialed, one digit at a time.	OnStar® will confirm each digit by repeating it back to you.
When finished, say "Dial" again.	"Dialing," and your call will be connected.

Dialing a Phone Number Using s Stored Nametag

Dialing a Phone Number Using Stored Nametag

What You Do	What You Hear
Press White Dot button.	"OnStar® Ready"
Say "Call"	"Nametag please."
Say (stored name).	"Calling"

Dialing a Phone Number Using "Redial" Command

Dialing a Phone Number Using "Redial" Command

What You Do	What You Hear
Press White Dot button.	"OnStar® Ready"
Say "Redial".	"Redialing"

Operation of the OnStar® Speech Recognition Systems

OnStar® Generation 6 users communicate with 2 speech recognition systems. Speech recognition

allows the user to speak to one computer in the vehicle and one reached over a phone line. The computer tries to understand the user's command and responds by speaking back or by taking the appropriate action, e.g. dialing the phone.

- OnStar® Personal Calling (OPC) uses a speech recognition system that resides in the vehicle. When the user presses the dot button, the system states "Ready," and listens for the user command. The user can speak commands to control the hands-free phone.
- Virtual Advisor is a remote speech recognition system that the caller access by making a phone call. The user connects to Virtual Advisor by requesting it during personal calling use. The user is then transferred to the Virtual Advisor server and talks to it via a cellular connection.

The OnStar® speech recognition systems use speech technology that is designed to understand a wide range of American English speakers. Although there is no one right way to speak English, the system will work best when users try to modify their pronunciation should they encounter difficulty. Users who do not obtain good results are advised to try the tips and workarounds found in this section.

General Tips for Better Speech Recognition

Concern	Tip for Better Result
Noise	<p>Noise may confuse the speech recognition system. You usually get better performance from the system in quieter conditions:</p> <ul style="list-style-type: none"> • The HVAC fan creates noise. Turn it down or off for better speech system performance. • Driving at high speeds creates louder engine noise and wind noise. You may get better results at lower speeds. • An open window or an open sunroof allows more noise to enter the vehicle. Close all windows for better results. • Noisy rainstorms can also reduce performance. • If passengers are talking while you use the speech system, it may be confused by their speech. You will get better results if all occupants of the vehicle are quiet while the system is listening for commands.
When to Speak	<p>In Personal Calling, the system is only listening after it prompts you to speak.</p> <ul style="list-style-type: none"> • When the system prompts you to speak, you have about 5 seconds to respond. If the system does not hear a response, it

2007 Hummer H3

2007 ACCESSORIES AND EQUIPMENT Cellular, Entertainment and Navigation - H3

	<p>will prompt you again or cancel the transaction.</p> <ul style="list-style-type: none">• If you begin to speak too soon, it will tell you "Slower, please." Try pausing for a half second before speaking.• In Virtual Advisor, the system is always listening for commands, even while it is speaking.
How to Speak	<p>Speak forcefully and clearly.</p> <ul style="list-style-type: none">• The noisier the environment, the louder you need to speak. If you are in the driver seat, speak facing the front of the car. If you are a passenger, speak facing the rearview mirror.• Speak calmly and naturally. The system may sometimes fail your repeated attempts to give a command. If your speech is distorted by shouting or frustration, this may cause more errors.• People with high-pitched voices may have better results by speaking in a deeper, lower-pitched voice. However, do not lower the volume of the voice.• Avoid speaking with a rising intonation, like asking a question. Use a flat or falling intonation, like giving an answer.
What to Say	<p>Personal Calling: One-word commands</p> <ul style="list-style-type: none">• The Personal Calling system listens for only one word at a time. There are some exceptions, 2-word phrases that are spoken and understood as a single word, e.g. 'virtual advisor', 'voice feedback' and 'my number'. You can enter phone numbers only one digit at a time and the system repeats each digit as it hears it.• Say "Help" at the Ready prompt to hear the list of Personal Calling commands.• Virtual Advisor can understand sentences with more than one word. It also expects to hear a 4-digit number all at once when it asks for your personal identification number (PIN).• Say, "What are my choices?" to hear a list of commands that the Virtual Advisor understands.
Entering a phone number	

2007 Hummer H3

2007 ACCESSORIES AND EQUIPMENT Cellular, Entertainment and Navigation - H3

	<ul style="list-style-type: none">• If you have trouble getting numbers correctly into the system, store your frequently-called number in the directory, so the system will remember them. After you have stored a number with a nametag, then you simply say "call" and the nametag in order to call the number.• If the system cannot understand your numbers, ask another person to help you enter your frequently-called numbers. This person can speak the numbers, then you can speak the nametag.
Storing or dialing a number	When you have finished speaking your phone number, you do not need to say "store" or "dial" to indicate that you are done. If you pause and say nothing, the system will ask you if you want to store or dial. Say "yes."
Creating nametags	<ul style="list-style-type: none">• Short nametags that are similar may be easily confused by the system. You may get better recognition of your nametags if you make them longer, for example "George Washington" without pause, instead of "George" only.• If you want to use nametags while driving, it is best to store the nametag with some vehicle noise in the background. If you are in park while you are storing nametags, you can turn the fan on low or open windows in order to create some background noise.
Virtual Advisor 4-digit PIN	Say the 4 digits in a natural way, without pausing between digits.
Interrupting	<ul style="list-style-type: none">• When the Virtual Advisor is speaking, you can interrupt it with another command. The first word in your command helps to get its attention.• If the Virtual Advisor has trouble understanding your commands when you interrupt, try speaking the first word loudly and clearly, then pause for an instant, then continue with the rest of the command. For example: "Get .. my weather" or "Lookup... a quote for General Motors".

Personal Calling Commands

Command	Tip for Better Result
'add'	Emphasize the 'd' at the end of the word.
'call'	Emphasize the 'l' at the end of the word.

2007 Hummer H3

2007 ACCESSORIES AND EQUIPMENT Cellular, Entertainment and Navigation - H3

'cancel'	Emphasize the 'l' at the end of the word. If you are speaking the 'can' syllable very quickly, try to lengthen it a little.
'clear'	Emphasize the 'r' at the end of the word.
'delete'	Emphasize the 't' at the end of the word. Do not swallow the 'd' at the start of the word.
'dial'	Emphasize the 'l' at the end of the word.
'directory'	Speak all 4 syllables clearly. Do not swallow the last part of the word.
'help'	Emphasize the 'h' sound at the start of the word. Emphasize the 'p' sound at the end of the word
'my number'	Emphasize all 3 syllables.
'no'	Speak loudly and slowly. Emphasize the 'n' sound at the start of the word. Draw out the 'o' sound at the end of the word.
'redial'	Try to emphasize and lengthen the first syllable: reee-dial
'security'	Speak 4 syllables clearly. Do not swallow the 'i' sound in the middle of the word.
'store'	Emphasize the 'o' sound in the middle of the word in order to distinguish from 'star'. Emphasize the 'st' sound at the start of the word in order to distinguish from 'four'.
'units'	Speak loudly and clearly.
'verify'	Speak 3 syllables clearly. Do not swallow the 'i' sound in the middle of the word.
'Virtual Advisor'	Emphasize both words.
'voice feedback'	Emphasize both words.
'yes'	Emphasize the 'y' sound at the start of the word. Emphasize the 's' sound at the end of the word.
'zero', 'oh'	If the system does not understand 'oh', try 'zero' or vice versa.
'one'	Emphasize the 'n' at the end of the word.
'two'	Round your lips for the 'ooo' part of the word. If you are clipping the 'ooo' very short, try to lengthen it, but do not draw it out excessively. Speak in a low pitch. Do not use a rising tone like asking a question; a falling tone like giving an answer is better.
'three'	End the word 'three' in a smile, to draw back your lips. Lengthen the 'eee' sound if you are clipping it very short.
'four'	Emphasize the 'r' at the end of the word.
'five'	Emphasize the 'v' sound.
'six'	Emphasize the 'ks' sound at the end of the word.

'seven'	Emphasize the 'n' at the end of the word. Lengthen the 'sev' syllable.
'eight'	Emphasize the 't' at the end of the word. Lengthen the 'eee' sound at the start of the word.
'nine'	Emphasize the 'n' sounds to distinguish from 'five'.
'star'	Emphasize the 'r' at the end of the word. Emphasize the 'ah' sound in order to distinguish from 'store'.
'pound'	Emphasize the 'p' at the start of the word. Emphasize the 'd' at the end of the word.

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 (UB0) - AM/FM with CD
- Radio (US8) - AM/FM, Stereo CD/MP3
- Radio (UC6) - AM/FM, Integral Multi Disc CD Changer
- Navigation Radio (UM8) - Radio - AM/FM Stereo, Seek/Scan, CD, ETR, Navigation, Clock

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)
- 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
- 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 transmits it to the radio antenna module.

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 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-initiated 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.

Radio Error Messages

The radio displays the following error messages:

CHECK CD

Displays when the player encounters a focus or tracking error.

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.

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

2007 Hummer H3

2007 ACCESSORIES AND EQUIPMENT Cellular, Entertainment and Navigation - H3

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 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.

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

2007 Hummer H3

2007 ACCESSORIES AND EQUIPMENT Cellular, Entertainment and Navigation - H3

2 amplifier.