

Information and Entertainment System

DTC Charts

ACM DTC Chart

Diagnostics in this manual assume a certain skill level and knowledge of Ford-specific diagnostic practices.

REFER to: [Diagnostic Methods](#) (100-00 General Information, Description and Operation).

DTC	Description	Action
B1142:27	Ignition Status 1: Signal Rate of Change Above Threshold	NOTE: This code sets when the wired start signal was detected by the ACM, but the ignition mode message from the BCM does not correspond (RUN mode). DIAGNOSE all other symptoms and Diagnostic Trouble Codes (DTCs) first. If no other symptom or DTC is present, DISREGARD this DTC.
B1A01:01	Speaker #1: General Electrical Failure	GO to Pinpoint Test G
B1A01:11	Speaker #1: Circuit Short To Ground	GO to Pinpoint Test G
B1A01:12	Speaker #1: Circuit Short To Battery	GO to Pinpoint Test G
B1A01:13	Speaker #1: Circuit Open	GO to Pinpoint Test G
B1A02:01	Speaker #2: General Electrical Failure	GO to Pinpoint Test G
B1A02:11	Speaker #2: Circuit Short To Ground	GO to Pinpoint Test G
B1A02:12	Speaker #2: Circuit Short To Battery	GO to Pinpoint Test G
B1A02:13	Speaker #2: Circuit Open	GO to Pinpoint Test G
B1A03:01	Speaker #3: General Electrical Failure	GO to Pinpoint Test G
B1A03:11	Speaker #3: Circuit Short To Ground	GO to Pinpoint Test G
B1A03:12	Speaker #3: Circuit Short To Battery	GO to Pinpoint Test G
B1A03:13	Speaker #3: Circuit Open	GO to Pinpoint Test G

B1A04:01	Speaker #4: General Electrical Failure	GO to Pinpoint Test G
B1A04:11	Speaker #4: Circuit Short To Ground	GO to Pinpoint Test G
B1A04:12	Speaker #4: Circuit Short To Battery	GO to Pinpoint Test G
B1A04:13	Speaker #4: Circuit Open	GO to Pinpoint Test G
B1A05:02	Speaker #5: General Signal Failure	GO to Pinpoint Test H
B1A06:01	Speaker #6: General Electrical Failure	GO to Pinpoint Test G
B1A06:02	Speaker #6: General Signal Failure	GO to Pinpoint Test G
B1A56:21	Antenna: Signal Amplitude < Minimum	This test is used for end of line or repair bay testing at the Ford plant. The running and passing of this test depends on local radio stations. If no local station is broadcasting on the required frequency, this DTC sets.
B1A89:11	Satellite Antenna: Circuit Short To Ground	GO to Pinpoint Test B
B1A89:13	Satellite Antenna: Circuit Open	GO to Pinpoint Test B
B1D19:49	Compact Disc Unit: Internal Electronic Failure	GO to Pinpoint Test I
B1D19:4B	Compact Disc Unit: Over Temperature	GO to Pinpoint Test I
U0100:00	Lost Communication With ECM/PCM "A": No Sub Type Information	GO to Pinpoint Test S
U0140:00	Lost Communication With Body Control Module: No Sub Type Information	GO to Pinpoint Test U
U0155:00	Lost Communication With Instrument Panel Cluster (IPC) Control Module: No Sub Type Information	GO to Pinpoint Test W
U0253:00	Lost Communication With Accessory Protocol Interface Module: No Sub Type Information	GO to Pinpoint Test AA
U0256:00	Lost Communication With Front Controls Interface Module "A": No Sub Type Information	GO to Pinpoint Test AB
U201A:51	Control Module Main Calibration Data: Not Programmed	This DTC sets due to an incorrect or incomplete ACM configuration. Using a diagnostic scan tool, CARRY OUT the ACM programming procedure using as-built data.
U2100:00	Initial Configuration Not Complete: No Sub Type Information	This DTC sets due to an incorrect or incomplete ACM configuration. Using a diagnostic scan tool, CARRY OUT the ACM programming procedure using as-built data.
U2101:00	Control Module Configuration Incompatible: No Sub Type Information	This DTC sets due to an incorrect or incomplete ACM configuration. Using a diagnostic scan tool, CARRY OUT the ACM programming procedure using as-built data.

U3000:41	Control Module: General Checksum Failure	CLEAR the DTC. WAIT at least 10 seconds and REPEAT the self-test. If the DTC is retrieved again, INSTALL a new ACM. REFER to: Audio Front Control Module (ACM) (415-00B Information and Entertainment System - General Information - Vehicles With: SYNC Without Touchscreen, Removal and Installation).
U3000:42	Control Module: General Memory Failure	CLEAR the DTC. WAIT at least 10 seconds and REPEAT the self-test. If the DTC is retrieved again, INSTALL a new ACM. REFER to: Audio Front Control Module (ACM) (415-00B Information and Entertainment System - General Information - Vehicles With: SYNC Without Touchscreen, Removal and Installation).
U3000:96	Control Module: Component Internal Failure	CLEAR the DTC. WAIT at least 10 seconds and REPEAT the self-test. If the DTC is retrieved again, INSTALL a new ACM. REFER to: Audio Front Control Module (ACM) (415-00B Information and Entertainment System - General Information - Vehicles With: SYNC Without Touchscreen, Removal and Installation).
U3003:16	Battery Voltage: Circuit Voltage Below Threshold	GO to Pinpoint Test AC
U3003:17	Battery Voltage: Circuit Voltage Above Threshold	GO to Pinpoint Test AD

APIM DTC Chart

Diagnostics in this manual assume a certain skill level and knowledge of Ford-specific diagnostic practices.
REFER to: [Diagnostic Methods](#) (100-00 General Information, Description and Operation).

DTC	Description	Action
B108E:02	Display: General Signal Failure	GO to Pinpoint Test L
B108E:4A	Display: Incorrect Component Installed	An incorrect FCDIM is detected. REMOVE the incorrect FCDIM and INSTALL the correct FCDIM. REFER to: Front Control/Display Interface Module (FCDIM) (415-00B Information and Entertainment System - General Information - Vehicles With: SYNC Without Touchscreen, Removal and Installation).
B108E:4B	Display: Over Temperature	WAIT 10 minutes and allow the FCDIM to cool. CLEAR the DTC and REPEAT the self-test. If the DTC is retrieved again, INSTALL a new FCDIM. REFER to: Front Control/Display Interface Module (FCDIM) (415-00B Information and Entertainment System - General Information - Vehicles With: SYNC Without Touchscreen, Removal and Installation).
B108E:87	Display: Missing Message	GO to Pinpoint Test L
B119F:01	GPS Antenna: General Electrical Failure	GO to Pinpoint Test R
B119F:13	GPS Antenna: Circuit Open	GO to Pinpoint Test R
B1252:11	USB Port: Circuit Short To Ground	GO to Pinpoint Test O

B1252:13	USB Port: Circuit Open	GO to Pinpoint Test O
B12B8:11	USB Port #2: Circuit Short To Ground	DIAGNOSE any symptoms present. If no symptom is present, DISREGARD this DTC.
B14FD:11	External Media Control Connectivity: Circuit Short To Ground	GO to Pinpoint Test O
B1D79:11	Microphone Input: Circuit Short To Ground	GO to Pinpoint Test N
B1D79:12	Microphone Input: Circuit Short To Battery	GO to Pinpoint Test N
B1D79:13	Microphone Input: Circuit Open	GO to Pinpoint Test N
C1001:1	Vision System Camera: General Electrical Failure	REFER to: Parking Aid (413-13 Parking Aid - Vehicles With: Parking Aid Camera) .
U0121:00	Lost Communication With Anti-Lock Brake System (ABS) Control Module: No Sub Type Information	GO to Pinpoint Test T
U0140:00	Lost Communication With Body Control Module: No Sub Type Information	GO to Pinpoint Test U
U0151:00	Lost Communication With Restraints Control Module: No Sub Type Information	GO to Pinpoint Test V
U0155:00	Lost Communication With Instrument Panel Cluster (IPC) Control Module: No Sub Type Information	GO to Pinpoint Test W
U0184:00	Lost Communication With Radio: No Sub Type Information	GO to Pinpoint Test X
U0232:00	Lost Communication With Side Obstacle Detection Control Module - Left: No Sub Type Information	GO to Pinpoint Test Y
U0233:00	Lost Communication With Side Obstacle Detection Control Module - Right: No Sub Type Information	GO to Pinpoint Test Z
U0256:00	Lost Communication With Front Controls Interface Module "A": No Sub Type Information	GO to Pinpoint Test AB
U0415:00	Invalid Data Received From Anti-Lock Brake System (ABS) Control Module: No Sub Type Information	● DIAGNOSE any Diagnostic Trouble Codes (DTCs) present in the ABS module. REFER to: Anti-Lock Brake System (ABS) and Stability Control (206-09 Anti-Lock Brake System (ABS) and Stability Control) . ○ If no Diagnostic Trouble Codes (DTCs) are present in the ABS module, DIAGNOSE the observable symptom. ○ If no symptoms are present, DISREGARD this DTC.

U0422:00	Invalid Data Received From Body Control Module: No Sub Type Information	● DIAGNOSE any Diagnostic Trouble Codes (DTCs) present in the BCM. REFER to: Body Control Module (BCM) (419-10 Multifunction Electronic Modules) . ○ If no Diagnostic Trouble Codes (DTCs) are present in the BCM, DIAGNOSE the observable symptom. ○ If no symptoms are present, DISREGARD this DTC.
U0423:00	Invalid Data Received From Instrument Panel Cluster Control Module: No Sub Type Information	● DIAGNOSE any Diagnostic Trouble Codes (DTCs) present in the IPC. REFER to: Instrumentation, Message Center and Warning Chimes (413-01 Instrumentation, Message Center and Warning Chimes, Diagnosis and Testing). ○ If no Diagnostic Trouble Codes (DTCs) are present in the IPC, DIAGNOSE the observable symptom. ○ If no symptoms are present, DISREGARD this DTC.
U0452:00	Invalid Data Received From Restraints Control Module: No Sub Type Information	● DIAGNOSE any Diagnostic Trouble Codes (DTCs) present in the RCM. REFER to: Airbag Supplemental Restraint System (SRS) - Raptor (501-20B Supplemental Restraint System, Diagnosis and Testing). REFER to: Airbag Supplemental Restraint System (SRS) (501-20B Supplemental Restraint System, Diagnosis and Testing). ○ If no Diagnostic Trouble Codes (DTCs) are present in the RCM, Diagnose the observable symptom. ○ If no symptoms are present, DISREGARD this DTC.
U2017:45	Control Module Software #2: Program Memory Failure	CLEAR the Diagnostic Trouble Codes (DTCs). WAIT at least 10 seconds and then REPEAT the self-test. If the DTC is retrieved again,  Click here to access Guided Routine (APIM) .
U2017:51	Control Module Software #2: Not Programmed	This DTC sets due to an incorrect or incomplete APIM configuration. Using a diagnostic scan tool, CARRY OUT the APIM programming procedure. REFER to: SYNC Module [APIM] Programming (415-00B Information and Entertainment System - General Information - Vehicles With: SYNC Without Touchscreen, General Procedures).
U2017:52	Control Module Software #2: Not Activated	This DTC sets due to an incorrect or incomplete APIM configuration. Using a diagnostic scan tool, CARRY OUT the APIM programming procedure. REFER to: SYNC Module [APIM] Programming (415-00B Information and Entertainment System - General Information - Vehicles With: SYNC Without Touchscreen, General Procedures).
U2017:54	Control Module Software #2: Missing Calibration	This DTC sets due to an incorrect or incomplete APIM configuration. Using a diagnostic scan tool, CARRY OUT the APIM programming procedure. REFER to: SYNC Module [APIM] Programming (415-00B Information and Entertainment System - General Information - Vehicles With: SYNC Without Touchscreen, General Procedures).
U2100:00	Initial Configuration Not Complete: No Sub Type Information	This DTC sets due to an incorrect or incomplete APIM configuration. Using a diagnostic scan tool, CARRY OUT the APIM programming procedure. REFER to: SYNC Module [APIM] Programming (415-00B Information and Entertainment System - General Information - Vehicles With: SYNC Without Touchscreen, General Procedures).

U2101:00	Control Module Configuration Incompatible: No Sub Type Information	This DTC sets due to an incorrect or incomplete APIM configuration. Using a diagnostic scan tool, CARRY OUT the APIM programming procedure. REFER to: SYNC Module [APIM] Programming (415-00B Information and Entertainment System - General Information - Vehicles With: SYNC Without Touchscreen, General Procedures).
U3000:04	Control Module: System Internal Failure	CLEAR the Diagnostic Trouble Codes (DTCs). WAIT at least 10 seconds and then REPEAT the self-test. If the DTC is retrieved again,   Click here to access Guided Routine (APIM).
U3000:09	Control Module: Component Failure	CLEAR the Diagnostic Trouble Codes (DTCs). WAIT at least 10 seconds and then REPEAT the self-test. If the DTC is retrieved again,   Click here to access Guided Routine (APIM).
U3000:41	Control Module: General Checksum Failure	CLEAR the Diagnostic Trouble Codes (DTCs). WAIT at least 10 seconds and then REPEAT the self-test. If the DTC is retrieved again,   Click here to access Guided Routine (APIM).
U3000:88	Control Module: Bus Off	NOTE: The module was unable to communicate on the network at a point in time. The fault is not currently present since the module had to communicate with the diagnostic scan tool to report this DTC. INSPECT for damaged or corroded wiring at the APIM. Refer to Wiring Diagrams Cell 14 for schematic and connector information. CLEAR the DTC. WAIT at least 10 seconds and then REPEAT the self-test. If the DTC is retrieved again,   Click here to access Guided Routine (APIM).
U3003:16	Battery Voltage: Circuit Voltage Below Threshold	GO to Pinpoint Test AC
U3003:17	Battery Voltage: Circuit Voltage Above Threshold	GO to Pinpoint Test AD

FCIM DTC Chart

Diagnostics in this manual assume a certain skill level and knowledge of Ford-specific diagnostic practices.
REFER to: [Diagnostic Methods](#) (100-00 General Information, Description and Operation).

DTC	Description	Action
B00D5:01	Restraint System Passenger Disable Indicator: General Electrical Failure	CLEAR the Diagnostic Trouble Codes (DTCs). WAIT at least 10 seconds and then REPEAT the self-test. If the DTC is retrieved again,   Click here to access Guided Routine (FCIM).
B1034:11	Left Front Seat Heater Element: Circuit Short To Ground	REFER to: Front Seats (501-10A Front Seats, Diagnosis and Testing).
B1034:15	Left Front Seat Heater Element: Circuit Short To Battery or Open	REFER to: Front Seats (501-10A Front Seats, Diagnosis and Testing).
B1036:11	Right Front Seat Heater Element: Circuit Short To Ground	REFER to: Front Seats (501-10A Front Seats, Diagnosis and Testing).

B1036:15	Right Front Seat Heater Element: Circuit Short To Battery or Open	REFER to: Front Seats (501-10A Front Seats, Diagnosis and Testing).
B1038:11	Left Front Seat Heater Sensor: Circuit Short To Ground	REFER to: Front Seats (501-10A Front Seats, Diagnosis and Testing).
B1038:15	Left Front Seat Heater Sensor: Circuit Short To Battery or Open	REFER to: Front Seats (501-10A Front Seats, Diagnosis and Testing).
B103A:11	Right Front Seat Heater Sensor: Circuit Short To Ground	REFER to: Front Seats (501-10A Front Seats, Diagnosis and Testing).
B103A:15	Right Front Seat Heater Sensor: Circuit Short To Battery or Open	REFER to: Front Seats (501-10A Front Seats, Diagnosis and Testing).
B105A:12	Cabin Temperature Sensor Fan: Circuit Short To Battery	REFER to: Climate Control System - Vehicles With: Electronic Manual Temperature Control (EMTC) (412-00 Climate Control System - General Information, Diagnosis and Testing). REFER to: Climate Control System - Raptor, Vehicles With: Electronic Manual Temperature Control (EMTC) (412-00 Climate Control System - General Information, Diagnosis and Testing).
B105A:14	Cabin Temperature Sensor Fan: Circuit Short To Ground or Open	REFER to: Climate Control System - Vehicles With: Electronic Manual Temperature Control (EMTC) (412-00 Climate Control System - General Information, Diagnosis and Testing). REFER to: Climate Control System - Raptor, Vehicles With: Electronic Manual Temperature Control (EMTC) (412-00 Climate Control System - General Information, Diagnosis and Testing).
B1081:07	Left Temperature Damper Motor: Mechanical Failure	REFER to: Climate Control System - Vehicles With: Electronic Manual Temperature Control (EMTC) (412-00 Climate Control System - General Information, Diagnosis and Testing). REFER to: Climate Control System - Raptor, Vehicles With: Electronic Manual Temperature Control (EMTC) (412-00 Climate Control System - General Information, Diagnosis and Testing).
B1081:11	Left Temperature Damper Motor: Circuit Short To Ground	REFER to: Climate Control System - Vehicles With: Electronic Manual Temperature Control (EMTC) (412-00 Climate Control System - General Information, Diagnosis and Testing). REFER to: Climate Control System - Raptor, Vehicles With: Electronic Manual Temperature Control (EMTC) (412-00 Climate Control System - General Information, Diagnosis and Testing).
B1081:12	Left Temperature Damper Motor: Circuit Short To Battery	REFER to: Climate Control System - Vehicles With: Electronic Manual Temperature Control (EMTC) (412-00 Climate Control System - General Information, Diagnosis and Testing). REFER to: Climate Control System - Raptor, Vehicles With: Electronic Manual Temperature Control (EMTC) (412-00 Climate Control System - General Information, Diagnosis and Testing).

B1081:13	Left Temperature Damper Motor: Circuit Open	REFER to: Climate Control System - Vehicles With: Electronic Manual Temperature Control (EMTC) (412-00 Climate Control System - General Information, Diagnosis and Testing). REFER to: Climate Control System - Raptor, Vehicles With: Electronic Manual Temperature Control (EMTC) (412-00 Climate Control System - General Information, Diagnosis and Testing).
B1083:07	Recirculation Damper Motor: Mechanical Failure	REFER to: Climate Control System - Vehicles With: Electronic Manual Temperature Control (EMTC) (412-00 Climate Control System - General Information, Diagnosis and Testing). REFER to: Climate Control System - Raptor, Vehicles With: Electronic Manual Temperature Control (EMTC) (412-00 Climate Control System - General Information, Diagnosis and Testing).
B1083:11	Recirculation Damper Motor: Circuit Short To Ground	REFER to: Climate Control System - Vehicles With: Electronic Manual Temperature Control (EMTC) (412-00 Climate Control System - General Information, Diagnosis and Testing). REFER to: Climate Control System - Raptor, Vehicles With: Electronic Manual Temperature Control (EMTC) (412-00 Climate Control System - General Information, Diagnosis and Testing).
B1083:12	Recirculation Damper Motor: Circuit Short To Battery	REFER to: Climate Control System - Vehicles With: Electronic Manual Temperature Control (EMTC) (412-00 Climate Control System - General Information, Diagnosis and Testing). REFER to: Climate Control System - Raptor, Vehicles With: Electronic Manual Temperature Control (EMTC) (412-00 Climate Control System - General Information, Diagnosis and Testing).
B1083:13	Recirculation Damper Motor: Circuit Open	REFER to: Climate Control System - Vehicles With: Electronic Manual Temperature Control (EMTC) (412-00 Climate Control System - General Information, Diagnosis and Testing). REFER to: Climate Control System - Raptor, Vehicles With: Electronic Manual Temperature Control (EMTC) (412-00 Climate Control System - General Information, Diagnosis and Testing).
B1086:07	Air Distribution Damper Motor: Mechanical Failure	REFER to: Climate Control System - Vehicles With: Electronic Manual Temperature Control (EMTC) (412-00 Climate Control System - General Information, Diagnosis and Testing). REFER to: Climate Control System - Raptor, Vehicles With: Electronic Manual Temperature Control (EMTC) (412-00 Climate Control System - General Information, Diagnosis and Testing).
B1086:11	Air Distribution Damper Motor: Circuit Short To Ground	REFER to: Climate Control System - Vehicles With: Electronic Manual Temperature Control (EMTC) (412-00 Climate Control System - General Information, Diagnosis and Testing). REFER to: Climate Control System - Raptor, Vehicles With: Electronic Manual Temperature Control (EMTC) (412-00 Climate Control System - General Information, Diagnosis and Testing).
B1086:12	Air Distribution Damper Motor: Circuit Short To Battery	REFER to: Climate Control System - Vehicles With: Electronic Manual Temperature Control (EMTC) (412-00 Climate Control System - General Information, Diagnosis and Testing). REFER to: Climate Control System - Raptor, Vehicles With: Electronic Manual Temperature Control (EMTC) (412-00 Climate Control System - General Information, Diagnosis and Testing).

B1086:13	Air Distribution Damper Motor: Circuit Open	REFER to: Climate Control System - Vehicles With: Electronic Manual Temperature Control (EMTC) (412-00 Climate Control System - General Information, Diagnosis and Testing). REFER to: Climate Control System - Raptor, Vehicles With: Electronic Manual Temperature Control (EMTC) (412-00 Climate Control System - General Information, Diagnosis and Testing).
B10AF:11	Blower Fan Relay: Circuit Short To Ground	REFER to: Climate Control System - Vehicles With: Electronic Manual Temperature Control (EMTC) (412-00 Climate Control System - General Information, Diagnosis and Testing). REFER to: Climate Control System - Raptor, Vehicles With: Electronic Manual Temperature Control (EMTC) (412-00 Climate Control System - General Information, Diagnosis and Testing).
B10AF:15	Blower Fan Relay: Circuit Short To Battery or Open	REFER to: Climate Control System - Vehicles With: Electronic Manual Temperature Control (EMTC) (412-00 Climate Control System - General Information, Diagnosis and Testing). REFER to: Climate Control System - Raptor, Vehicles With: Electronic Manual Temperature Control (EMTC) (412-00 Climate Control System - General Information, Diagnosis and Testing).
B10B5:11	Left Panel Air Discharge Temperature: Circuit Short To Ground	REFER to: Climate Control System - Vehicles With: Electronic Manual Temperature Control (EMTC) (412-00 Climate Control System - General Information, Diagnosis and Testing). REFER to: Climate Control System - Raptor, Vehicles With: Electronic Manual Temperature Control (EMTC) (412-00 Climate Control System - General Information, Diagnosis and Testing).
B10B5:15	Left Panel Air Discharge Temperature: Circuit Short To Battery or Open	REFER to: Climate Control System - Vehicles With: Electronic Manual Temperature Control (EMTC) (412-00 Climate Control System - General Information, Diagnosis and Testing). REFER to: Climate Control System - Raptor, Vehicles With: Electronic Manual Temperature Control (EMTC) (412-00 Climate Control System - General Information, Diagnosis and Testing).
B10B6:11	Left Floor Air Discharge Temperature: Circuit Short To Ground	REFER to: Climate Control System - Vehicles With: Electronic Manual Temperature Control (EMTC) (412-00 Climate Control System - General Information, Diagnosis and Testing). REFER to: Climate Control System - Raptor, Vehicles With: Electronic Manual Temperature Control (EMTC) (412-00 Climate Control System - General Information, Diagnosis and Testing).
B10B6:15	Left Floor Air Discharge Temperature: Circuit Short To Battery or Open	REFER to: Climate Control System - Vehicles With: Electronic Manual Temperature Control (EMTC) (412-00 Climate Control System - General Information, Diagnosis and Testing). REFER to: Climate Control System - Raptor, Vehicles With: Electronic Manual Temperature Control (EMTC) (412-00 Climate Control System - General Information, Diagnosis and Testing).
B10B8:63	Push Buttons: Circuit / Component Protection Time-Out	CLEAR the Diagnostic Trouble Codes (DTCs). WAIT at least 10 seconds and REPEAT the self-test. If the DTC is retrieved again,   Click here to access Guided Routine (FCIM) .

B10B9:12	Blower Control: Circuit Short To Battery	REFER to: Climate Control System - Vehicles With: Electronic Manual Temperature Control (EMTC) (412-00 Climate Control System - General Information, Diagnosis and Testing). REFER to: Climate Control System - Raptor, Vehicles With: Electronic Manual Temperature Control (EMTC) (412-00 Climate Control System - General Information, Diagnosis and Testing).
B10B9:14	Blower Control: Circuit Short To Ground or Open	REFER to: Climate Control System - Vehicles With: Electronic Manual Temperature Control (EMTC) (412-00 Climate Control System - General Information, Diagnosis and Testing). REFER to: Climate Control System - Raptor, Vehicles With: Electronic Manual Temperature Control (EMTC) (412-00 Climate Control System - General Information, Diagnosis and Testing).
B11E5:12	Left HVAC Damper Position Sensor: Circuit Short To Battery	REFER to: Climate Control System - Vehicles With: Electronic Manual Temperature Control (EMTC) (412-00 Climate Control System - General Information, Diagnosis and Testing). REFER to: Climate Control System - Raptor, Vehicles With: Electronic Manual Temperature Control (EMTC) (412-00 Climate Control System - General Information, Diagnosis and Testing).
B11E5:14	Left HVAC Damper Position Sensor: Circuit Short To Ground or Open	REFER to: Climate Control System - Vehicles With: Electronic Manual Temperature Control (EMTC) (412-00 Climate Control System - General Information, Diagnosis and Testing). REFER to: Climate Control System - Raptor, Vehicles With: Electronic Manual Temperature Control (EMTC) (412-00 Climate Control System - General Information, Diagnosis and Testing).
B11E7:12	Air Distribution Damper Position Sensor: Circuit Short To Battery	REFER to: Climate Control System - Vehicles With: Electronic Manual Temperature Control (EMTC) (412-00 Climate Control System - General Information, Diagnosis and Testing). REFER to: Climate Control System - Raptor, Vehicles With: Electronic Manual Temperature Control (EMTC) (412-00 Climate Control System - General Information, Diagnosis and Testing).
B11E7:14	Air Distribution Damper Position Sensor: Circuit Short To Ground or Open	REFER to: Climate Control System - Vehicles With: Electronic Manual Temperature Control (EMTC) (412-00 Climate Control System - General Information, Diagnosis and Testing). REFER to: Climate Control System - Raptor, Vehicles With: Electronic Manual Temperature Control (EMTC) (412-00 Climate Control System - General Information, Diagnosis and Testing).
B11F0:12	Air Intake Damper Position Sensor: Circuit Short To Battery	REFER to: Climate Control System - Vehicles With: Electronic Manual Temperature Control (EMTC) (412-00 Climate Control System - General Information, Diagnosis and Testing). REFER to: Climate Control System - Raptor, Vehicles With: Electronic Manual Temperature Control (EMTC) (412-00 Climate Control System - General Information, Diagnosis and Testing).
B11F0:14	Air Intake Damper Position Sensor: Circuit Short To Ground or Open	REFER to: Climate Control System - Vehicles With: Electronic Manual Temperature Control (EMTC) (412-00 Climate Control System - General Information, Diagnosis and Testing). REFER to: Climate Control System - Raptor, Vehicles With: Electronic Manual Temperature Control (EMTC) (412-00 Climate Control System - General Information, Diagnosis and Testing).

B1202:01	Restraint System Passenger Enable Indicator: General Electrical Failure	CLEAR the Diagnostic Trouble Codes (DTCs). WAIT at least 10 seconds and REPEAT the self-test. If the DTC is retrieved again,   Click here to access Guided Routine (FCIM).
B12CA:11	Start/Stop "Eco-Start" Status Indicator: Circuit Short To Ground	REFER to the Diagnosis and Testing in the appropriate 303-06 section.
B12CA:15	Start/Stop "Eco-Start" Status Indicator: Circuit Short To Battery or Open	REFER to the Diagnosis and Testing in the appropriate 303-06 section.
B14B7:63	Snow Plow Button: Circuit / Component Protection Time-Out	REFER to: Snow Plow Package (419-10 Multifunction Electronic Modules) .
B14BF:11	Snow Plow LED: Circuit Short To Ground	REFER to: Snow Plow Package (419-10 Multifunction Electronic Modules) .
B14BF:15	Snow Plow LED: Circuit Short To Battery or Open	REFER to: Snow Plow Package (419-10 Multifunction Electronic Modules) .
B1A61:11	Cabin Temperature Sensor: Circuit Short To Ground	REFER to: Climate Control System - Vehicles With: Electronic Manual Temperature Control (EMTC) (412-00 Climate Control System - General Information, Diagnosis and Testing). REFER to: Climate Control System - Raptor, Vehicles With: Electronic Manual Temperature Control (EMTC) (412-00 Climate Control System - General Information, Diagnosis and Testing).
B1A61:15	Cabin Temperature Sensor: Circuit Short To Battery or Open	REFER to: Climate Control System - Vehicles With: Electronic Manual Temperature Control (EMTC) (412-00 Climate Control System - General Information, Diagnosis and Testing). REFER to: Climate Control System - Raptor, Vehicles With: Electronic Manual Temperature Control (EMTC) (412-00 Climate Control System - General Information, Diagnosis and Testing).
B1A69:12	Humidity Sensor: Circuit Short To Battery	REFER to: Climate Control System - Vehicles With: Electronic Manual Temperature Control (EMTC) (412-00 Climate Control System - General Information, Diagnosis and Testing). REFER to: Climate Control System - Raptor, Vehicles With: Electronic Manual Temperature Control (EMTC) (412-00 Climate Control System - General Information, Diagnosis and Testing).
B1A69:14	Humidity Sensor: Circuit Short To Ground or Open	REFER to: Climate Control System - Vehicles With: Electronic Manual Temperature Control (EMTC) (412-00 Climate Control System - General Information, Diagnosis and Testing). REFER to: Climate Control System - Raptor, Vehicles With: Electronic Manual Temperature Control (EMTC) (412-00 Climate Control System - General Information, Diagnosis and Testing).
B1B71:11	Evaporator Temperature Sensor: Circuit Short To Ground	REFER to: Climate Control System - Vehicles With: Electronic Manual Temperature Control (EMTC) (412-00 Climate Control System - General Information, Diagnosis and Testing). REFER to: Climate Control System - Raptor, Vehicles With: Electronic Manual Temperature Control (EMTC) (412-00 Climate Control System - General Information, Diagnosis and Testing).

B1B71:15	Evaporator Temperature Sensor: Circuit Short To Battery or Open	REFER to: Climate Control System - Vehicles With: Electronic Manual Temperature Control (EMTC) (412-00 Climate Control System - General Information, Diagnosis and Testing). REFER to: Climate Control System - Raptor, Vehicles With: Electronic Manual Temperature Control (EMTC) (412-00 Climate Control System - General Information, Diagnosis and Testing).
B1C83:12	Rear Defog Relay: Circuit Short To Battery	REFER to: Glass, Frames and Mechanisms (501-11 Glass, Frames and Mechanisms) .
B1C83:14	Rear Defog Relay: Circuit Short To Ground or Open	REFER to: Glass, Frames and Mechanisms (501-11 Glass, Frames and Mechanisms) .
C1B14:11	Sensor Supply Voltage A: Circuit Short To Ground	REFER to: Climate Control System - Vehicles With: Electronic Manual Temperature Control (EMTC) (412-00 Climate Control System - General Information, Diagnosis and Testing). REFER to: Climate Control System - Raptor, Vehicles With: Electronic Manual Temperature Control (EMTC) (412-00 Climate Control System - General Information, Diagnosis and Testing).
C1B14:12	Sensor Supply Voltage A: Circuit Short To Battery	REFER to: Climate Control System - Vehicles With: Electronic Manual Temperature Control (EMTC) (412-00 Climate Control System - General Information, Diagnosis and Testing). REFER to: Climate Control System - Raptor, Vehicles With: Electronic Manual Temperature Control (EMTC) (412-00 Climate Control System - General Information, Diagnosis and Testing).
U0140:00	Lost Communication With Body Control Module: No Sub Type Information	GO to Pinpoint Test U
U0151:00	Lost Communication With Restraints Control Module: No Sub Type Information	GO to Pinpoint Test V
U0155:00	Lost Communication With Instrument Panel Cluster (IPC) Control Module: No Sub Type Information	GO to Pinpoint Test W
U0253:00	Lost Communication With Accessory Protocol Interface Module: No Sub Type Information	GO to Pinpoint Test AA
U0401:00	Invalid Data Received from ECM/PCM A: No Sub Type Information	● DIAGNOSE any Diagnostic Trouble Codes (DTCs) present in the PCM. REFER to the Diagnosis and Testing in the appropriate 303-14 section. ○ If no Diagnostic Trouble Codes (DTCs) are present in the PCM, DIAGNOSE the observable symptom. ○ If no symptoms are present, DISREGARD this DTC.
U0401:82	Invalid Data Received from ECM/PCM A: Alive / Sequence Counter Incorrect / Not Updated	● DIAGNOSE any Diagnostic Trouble Codes (DTCs) present in the PCM. REFER to the Diagnosis and Testing in the appropriate 303-14 section. ○ If no Diagnostic Trouble Codes (DTCs) are present in the PCM, DIAGNOSE the observable symptom. ○ If no symptoms are present, DISREGARD this DTC.

U0422:68	Invalid Data Received From Body Control Module: Event Information	● DIAGNOSE any Diagnostic Trouble Codes (DTCs) present in the BCM. REFER to: Body Control Module (BCM) (419-10 Multifunction Electronic Modules) . ○ If no Diagnostic Trouble Codes (DTCs) are present in the BCM, DIAGNOSE the observable symptom. ○ If no symptoms are present, DISREGARD this DTC.
U0422:81	Invalid Data Received From Body Control Module: Invalid Serial Data Received	● DIAGNOSE any Diagnostic Trouble Codes (DTCs) present in the BCM. REFER to: Body Control Module (BCM) (419-10 Multifunction Electronic Modules) . ○ If no Diagnostic Trouble Codes (DTCs) are present in the BCM, DIAGNOSE the observable symptom. ○ If no symptoms are present, DISREGARD this DTC.
U0452:82	Invalid Data Received From Restraints Control Module: Alive / Sequence Counter Incorrect / Not Updated	● DIAGNOSE any Diagnostic Trouble Codes (DTCs) present in the RCM. REFER to: Airbag Supplemental Restraint System (SRS) - Raptor (501-20B Supplemental Restraint System, Diagnosis and Testing). REFER to: Airbag Supplemental Restraint System (SRS) (501-20B Supplemental Restraint System, Diagnosis and Testing). ○ If no Diagnostic Trouble Codes (DTCs) are present in the RCM, DIAGNOSE the observable symptom. ○ If no symptoms are present, DISREGARD this DTC.
U1000:00	Solid State Driver Protection Active -Driver Disabled: No Sub Type Information	NOTE: The FCIM has temporarily disabled a HVAC control output because an excessive current draw exists (such as a short to ground). The FCIM cannot enable the output until the cause of the short is corrected. ADDRESS all other FCIM Diagnostic Trouble Codes (DTCs) first. After the cause of the concern is corrected, CLEAR the Diagnostic Trouble Codes (DTCs) and then REPEAT the self-test. If the DTC is retrieved again,   Click here to access Guided Routine (FCIM).
U2024:51	Control Module Cal-Config Data: Not Programmed	This DTC sets due to an incorrect or incomplete FCIM configuration. Using a diagnostic scan tool, CARRY OUT the FCIM programming procedure using as-built data.
U2100:00	Initial Configuration Not Complete: No Sub Type Information	This DTC sets due to an incorrect or incomplete FCIM configuration. Using a diagnostic scan tool, CARRY OUT the FCIM programming procedure using as-built data.
U3000:41	Control Module: General Checksum Failure	CLEAR the Diagnostic Trouble Codes (DTCs). WAIT at least 10 seconds and then REPEAT the self-test. If the DTC is retrieved again,   Click here to access Guided Routine (FCIM) .
U3000:49	Control Module: Internal Electronic Failure	CLEAR the Diagnostic Trouble Codes (DTCs). WAIT at least 10 seconds and then REPEAT the self-test. If the DTC is retrieved again,   Click here to access Guided Routine (FCIM) .
U3003:16	Battery Voltage: Circuit Voltage Below Threshold	GO to Pinpoint Test AC
U3003:17	Battery Voltage: Circuit Voltage Above Threshold	GO to Pinpoint Test AD

SCCM DTC Chart

Diagnostics in this manual assume a certain skill level and knowledge of Ford-specific diagnostic practices.

REFER to: [Diagnostic Methods](#) (100-00 General Information, Description and Operation).

DTC	Description	Action
B1380:09	Steering Wheel Right Switch Pack: Component Failure	GO to Pinpoint Test K
B1380:11	Steering Wheel Right Switch Pack: Circuit Short To Ground	GO to Pinpoint Test K
B1380:17	Steering Wheel Right Switch Pack: Circuit Voltage Above Threshold	GO to Pinpoint Test K
All other Diagnostic Trouble Codes (DTCs)	—	REFER to: Steering Wheel and Column Electrical Components (211-05 Steering Wheel and Column Electrical Components) .

Symptom Charts

Symptom Chart: Radio

Diagnostics in this manual assume a certain skill level and knowledge of Ford-specific diagnostic practices.

REFER to: [Diagnostic Methods](#) (100-00 General Information, Description and Operation).

Condition	Possible Sources	Actions
A module does not respond to the diagnostic scan tool	Refer to the Pinpoint Test	REFER to: Communications Network (418-00 Module Communications Network, Diagnosis and Testing).
The AM radio is inoperative	Refer to the Pinpoint Test	GO to Pinpoint Test A
The FM radio is inoperative	Refer to the Pinpoint Test	GO to Pinpoint Test A
Poor AM reception	Refer to the Pinpoint Test	GO to Pinpoint Test A
Poor FM reception	Refer to the Pinpoint Test	GO to Pinpoint Test A
Continuous seek or scan in AM/ FM	Refer to the Pinpoint Test	GO to Pinpoint Test A
Poor satellite radio reception	Refer to the Pinpoint Test	GO to Pinpoint Test B

Poor sound quality or no sound while in satellite radio mode - all other functions operate correctly	Refer to the Pinpoint Test	GO to Pinpoint Test B
The satellite radio is inoperative or does not operate correctly	Refer to the Pinpoint Test	GO to Pinpoint Test B
The audio system does not operate correctly from the FCIM	Refer to the Pinpoint Test	GO to Pinpoint Test J
One or more audio steering wheel control button is inoperative	Refer to the Pinpoint Test	GO to Pinpoint Test K
The CD player is inoperative or does not operate correctly	Refer to the Pinpoint Test	GO to Pinpoint Test I
The FCIM illumination is inoperative or does not dim	Refer to the Pinpoint Test	REFER to: Instrument Panel and Interior Switches Illumination (413-00 Instrument Panel and Interior Switches Illumination, Diagnosis and Testing).
The FCDIM is inoperative or does not operate correctly	Refer to the Pinpoint Test	GO to Pinpoint Test L

Symptom Chart: Sound Quality

Diagnostics in this manual assume a certain skill level and knowledge of Ford-specific diagnostic practices.
REFER to: [Diagnostic Methods](#) (100-00 General Information, Description and Operation).

Condition	Possible Sources	Actions
A loud popping sound is heard when cycling the ignition	Refer to the Pinpoint Test	GO to Pinpoint Test C
No sound from all speakers	Refer to the Pinpoint Test	GO to Pinpoint Test D
The left speakers are inoperative when using Bluetooth and USB hub SYNC features	Refer to the Pinpoint Test	GO to Pinpoint Test M
The right speakers are inoperative when using Bluetooth and USB hub SYNC features	Refer to the Pinpoint Test	GO to Pinpoint Test M
Poor sound quality or distorted sound from one or more speakers (not all speakers)	Refer to the Pinpoint Test	GO to Pinpoint Test E
The speed compensated volume does not operate correctly	Refer to the Pinpoint Test	GO to Pinpoint Test F
The left front door speaker is inoperative	Refer to the Pinpoint Test	GO to Pinpoint Test G
The left A-pillar tweeter speaker is inoperative	Refer to the Pinpoint Test	GO to Pinpoint Test G
The right front door speaker is inoperative	Refer to the Pinpoint Test	GO to Pinpoint Test G
The right A-pillar tweeter speaker is inoperative	Refer to the Pinpoint Test	GO to Pinpoint Test G
The center instrument panel speaker is inoperative	Refer to the Pinpoint Test	GO to Pinpoint Test G
The left rear door speaker is inoperative	Refer to the Pinpoint Test	GO to Pinpoint Test G
The right rear door speaker is inoperative	Refer to the Pinpoint Test	GO to Pinpoint Test G

The subwoofer speaker is inoperative	Refer to the Pinpoint Test	GO to Pinpoint Test H
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Symptom Chart: Non-Touchscreen Display (FCDIM)

Diagnostics in this manual assume a certain skill level and knowledge of Ford-specific diagnostic practices.

REFER to: [Diagnostic Methods](#) (100-00 General Information, Description and Operation).

Condition	Possible Sources	Actions
The FCDIM is blank or black	Refer to the Pinpoint Test	GO to Pinpoint Test L
The image displayed on the FCDIM is incorrect, the image color is incorrect, or the image is distorted, flickering, or unclear	Refer to the Pinpoint Test	GO to Pinpoint Test L
The image on the FCDIM is locked or frozen	Refer to the Pinpoint Test	GO to Pinpoint Test L
The FCDIM changes brightness	• Illumination setting • Illumination system concern	• CHECK the operation of the backlighting system and make sure it operates correctly. ◦ If the backlighting system operates correctly, REVIEW the brightness settings in the IPC message center, the instrument panel illumination setting and the display brightness settings within the display menu. REVIEW the available settings with the vehicle owner and ADJUST the settings as necessary. ◦ If the backlighting system does not operate correctly, REFER to: Instrument Panel and Interior Switches Illumination (413-00 Instrument Panel and Interior Switches Illumination, Diagnosis and Testing).
The compass is inoperative or does not operate correctly	Refer to the Pinpoint Test	GO to Pinpoint Test R

Symptom Chart: SYNC Features/Media/Phone

Diagnostics in this manual assume a certain skill level and knowledge of Ford-specific diagnostic practices.

REFER to: [Diagnostic Methods](#) (100-00 General Information, Description and Operation).

Condition	Possible Sources	Actions
The SYNC system does not operate correctly from the FCIM	Refer to the Pinpoint Test	GO to Pinpoint Test J

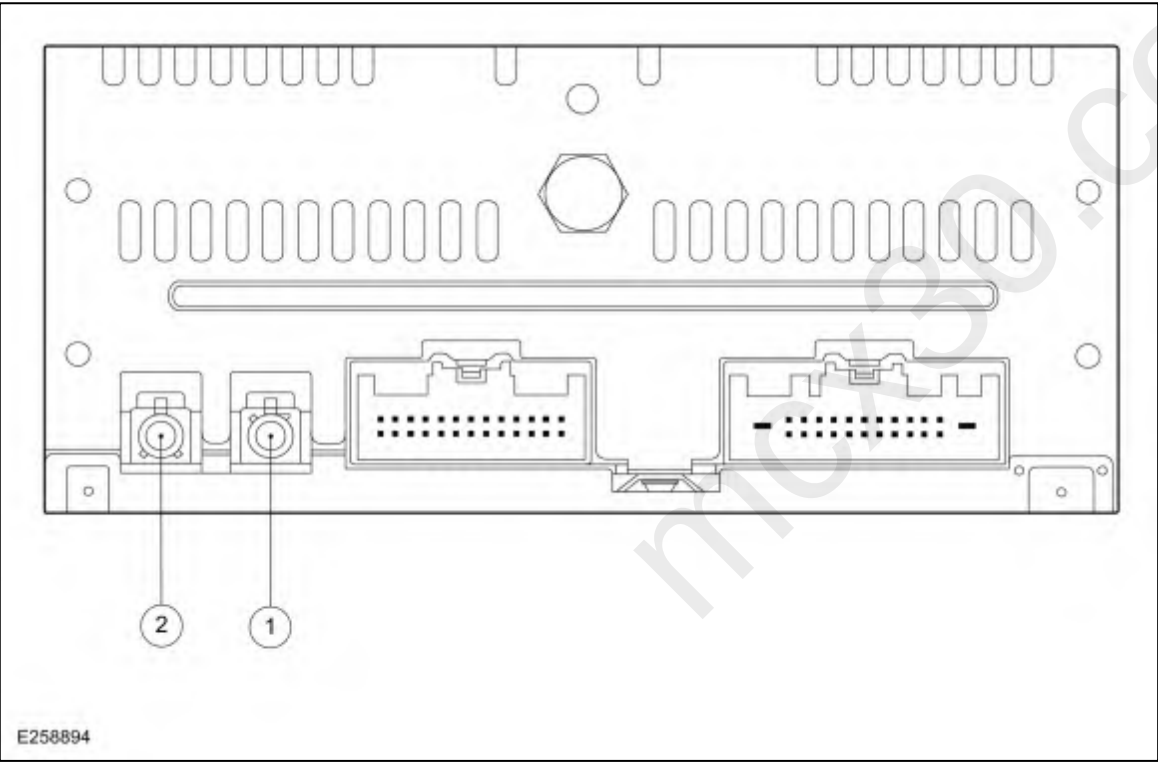
One or more steering wheel control button is inoperative	Refer to the Pinpoint Test	GO to Pinpoint Test K
The left speakers are inoperative when using Bluetooth and USB hub SYNC features	Refer to the Pinpoint Test	GO to Pinpoint Test M
The right speakers are inoperative when using Bluetooth and USB hub SYNC features	Refer to the Pinpoint Test	GO to Pinpoint Test M
The SYNC system audible prompts are inoperative or do not operate correctly	Refer to the Pinpoint Test	GO to Pinpoint Test M
During a phone call, no incoming audio is heard in the vehicle	Refer to the Pinpoint Test	GO to Pinpoint Test M
Poor sound quality, distorted, or no sound while in SYNC mode	Refer to the Pinpoint Test	GO to Pinpoint Test M
An individual Bluetooth device or feature is inoperative	Device compatibility	NOTE: <i>If an individual Bluetooth device is able to pair with the SYNC system, there are no concerns with the APIM.</i> INSTRUCT the customer to review the device compatibility list. REFER to the appropriate Ford authorized website to view a list of compatible devices and features. Not all phone features are available through the SYNC system. This is normal operation.
Unable to pair Bluetooth device or the Bluetooth functionality is inoperative	Refer to the Pinpoint Test	GO to Pinpoint Test P
SYNC AppLink is inoperative or does not operate correctly	Refer to the Pinpoint Test	- INSTRUCT the vehicle customer to review the mobile device platform, application, and application version compatibility list. REFER to the appropriate Ford authorized website to view a list of compatible devices and features. It is normal operation for incompatible mobile device platforms, applications, and application versions to be unavailable through SYNC AppLink. - If the mobile device platform, application, and application version are compatible, and the device is connected through Bluetooth only, GO to Pinpoint Test P - If the mobile device platform, application, and application version are compatible, and the device is connected through Bluetooth and the USB port, GO to Pinpoint Test O
Voice recognition is inoperative or outgoing audio is not transmitted during a phone call	Refer to the Pinpoint Test	GO to Pinpoint Test N
A USB device is not recognized by the SYNC system or audio files on a USB device are not found using the SYNC system from one or both USB ports	Refer to the Pinpoint Test	GO to Pinpoint Test O

The 911 Assist or Emergency Assistance Not Operational message displays	Refer to the Pinpoint Test	GO to Pinpoint Test Q
Unable to discover or log onto a Wi-Fi® connection	Refer to the Owner Literature	INSTRUCT the customer to refer to “Wi-Fi Issues” in the SYNC 3 Troubleshooting section of the Owner Literature.
The Wi-Fi® connection does not operate correctly	Refer to the Owner Literature	INSTRUCT the customer to refer to “Wi-Fi Issues” in the SYNC 3 Troubleshooting section of the Owner Literature.

Pinpoint Tests

Poor AM Or FM Reception

Refer to Wiring Diagrams Cell 131 for schematic and connector information.



Item	Part Number	Description
1	—	Audio unit antenna connection
2	—	Satellite radio connection

Normal Operation and Fault Conditions

REFER to: [Information and Entertainment System - System Operation and Component Description](#) (415-00B Information and Entertainment System - General Information - Vehicles With: SYNC Without Touchscreen, Description and Operation).

Possible Causes

- Wiring, terminals, or connectors
- Ignition system
- Noise suppression equipment
- Generator
- Audio unit antenna cable
- Audio unit antenna
- ACM

PINPOINT TEST A : POOR AM (AMPLITUDE MODULATION) OR FM (FREQUENCY MODULATION) RECEPTION

NOTE: Prior to carrying out diagnostics, it may be beneficial to determine the cause using the Antenna Kit Tool 420-525 (Rotunda part number NUD420-525) or equivalent tool.

A1 CHECK THE AUDIO SYSTEM RECEPTION WITH THE ENGINE RUNNING

- Operate the audio system in AM/ FM mode.
- Check the reception with the engine running and with the engine off.

Does the poor reception only occur with the engine running?

Yes	GO to A2
No	GO to A4

A2 CHECK THE GENERATOR

- Ignition OFF.
- **NOTICE: Do not allow the generator B+ cable terminal to make contact with a conductive surface. Failure to follow this instruction may result in personal injury or damage to the vehicle.**

Disconnect the generator B+ cable.

- Start the engine.
- Operate the audio system in AM/ FM mode.

Is the reception OK?

Yes	INSTALL a new generator. REFER to the appropriate Removal and Installation procedure in section 414-02.
No	GO to A3

A3 CHECK THE IGNITION CIRCUITS

- Ignition OFF.
- Connect the generator B+ cable.
- Inspect the engine compartment and make sure all ignition coils are correctly and securely connected, and no cracks are visible in the coil housings.
- Inspect all the wiring harnesses and connectors for damaged insulation and loose or broken conditions.

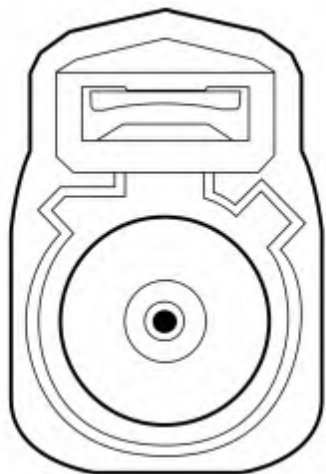
Are the ignition components OK?

Yes	USE a jumper cable to ground various parts of the vehicle to the frame (for example: engine, fenders, quarter panels, stone deflectors, air cleaner, and body sheet metal). When the noise is eliminated, PROVIDE a permanent ground where necessary.
No	REPAIR the ignition system as necessary.

A4 CHECK THE AUDIO UNIT ANTENNA CABLE CORE AND SHIELD FOR A SHORT TO VOLTAGE

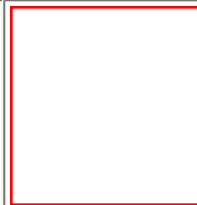
- Ignition OFF.
- Disconnect the audio unit antenna cable at the ACM.
- Ignition ON.
- Measure:

Positive Lead	Measurement / Action	Negative Lead

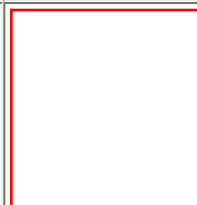
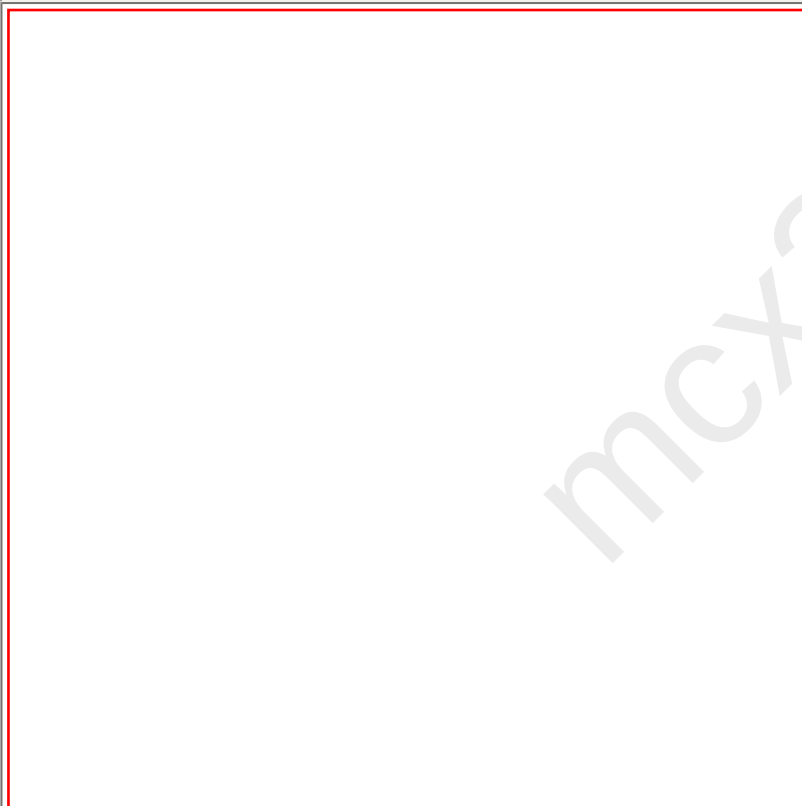


E260212

Audio unit antenna cable core at the ACM



Ground



Ground

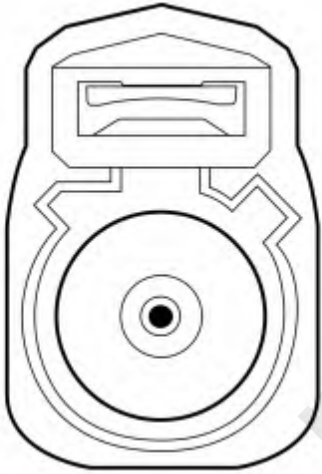
Audio unit antenna cable shield at the ACM

Is any voltage present?

Yes	IDENTIFY the cause of the short to voltage and REPAIR or INSTALL a new audio unit antenna cable or audio unit antenna in question. REFER to: Audio Unit Antenna Cable (415-00B Information and Entertainment System - General Information - Vehicles With: SYNC Without Touchscreen, Removal and Installation). REFER to: Audio Unit Antenna (415-00B Information and Entertainment System - General Information - Vehicles With: SYNC Without Touchscreen, Removal and Installation).
No	GO to A5

A5 CHECK THE AUDIO UNIT ANTENNA AND CABLE CORE FOR A SHORT TO GROUND CONDITION

- Ignition OFF.
- Measure:

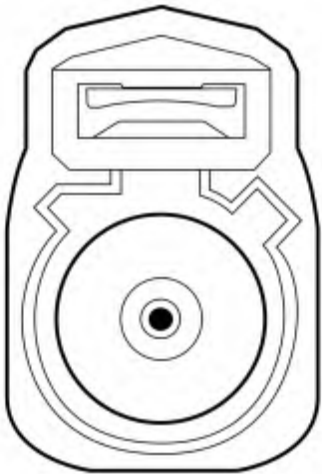
Positive Lead	Measurement / Action	Negative Lead
 E260212 Audio unit antenna cable core at the ACM		Ground

Is the resistance greater than 10,000 ohms?

Yes	GO to A7
No	GO to A6

A6 CHECK THE AUDIO UNIT ANTENNA CABLE FOR A SHORT TO GROUND

- Disconnect the audio unit antenna cable to the audio unit antenna connection located behind the glove compartment.
- Measure:

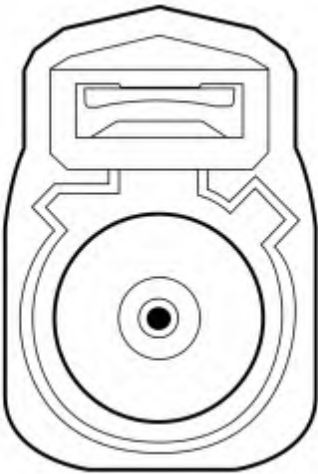
Positive Lead	Measurement / Action	Negative Lead
 E260212 Audio unit antenna cable core at the ACM		Ground

Is the resistance greater than 10,000 ohms?

Yes	INSTALL a new audio unit antenna. REFER to: Audio Unit Antenna (415-00B Information and Entertainment System - General Information - Vehicles With: SYNC Without Touchscreen, Removal and Installation).
No	INSTALL a new audio unit antenna cable. REFER to: Audio Unit Antenna Cable (415-00B Information and Entertainment System - General Information - Vehicles With: SYNC Without Touchscreen, Removal and Installation).

A7 CHECK THE AUDIO UNIT ANTENNA CABLE CORE AND SHIELD FOR A SHORT TOGETHER CONDITION

- Measure:

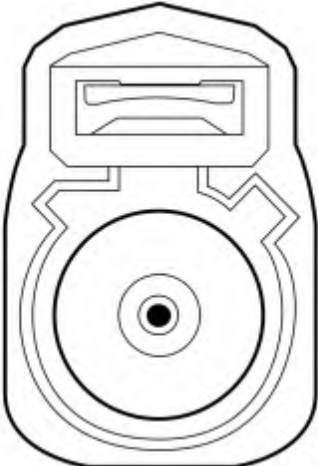
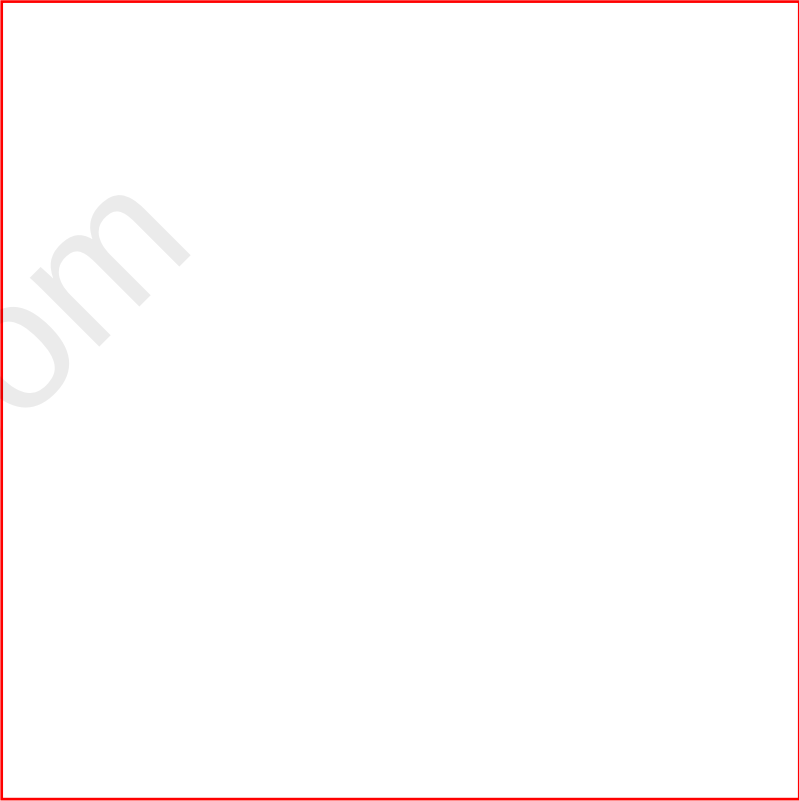
Positive Lead	Measurement / Action	Negative Lead
 E260212 Audio unit antenna cable core at the ACM		Audio unit antenna cable shield at the ACM

Is the resistance greater than 10,000 ohms?

Yes	GO to A9
No	GO to A8

A8 ISOLATE THE AUDIO UNIT ANTENNA CABLE CORE AND SHIELD FOR A SHORT TOGETHER

- Disconnect the audio unit antenna cable to the audio unit antenna connection located behind the glove compartment.
- Measure:

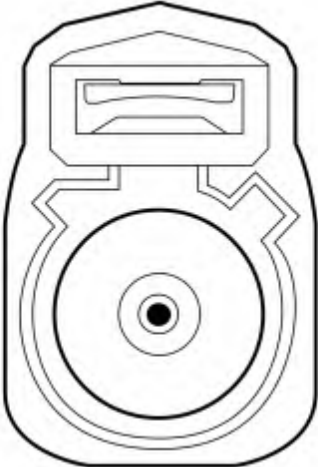
Positive Lead	Measurement / Action	Negative Lead
 E260212 Audio unit antenna cable core at the ACM		 Audio unit antenna cable shield at the ACM

Is the resistance greater than 10,000 ohms?

Yes	INSTALL a new audio unit antenna. REFER to: Audio Unit Antenna (415-00B Information and Entertainment System - General Information - Vehicles With: SYNC Without Touchscreen, Removal and Installation).
No	INSTALL a new audio unit antenna cable. REFER to: Audio Unit Antenna Cable (415-00B Information and Entertainment System - General Information - Vehicles With: SYNC Without Touchscreen, Removal and Installation).

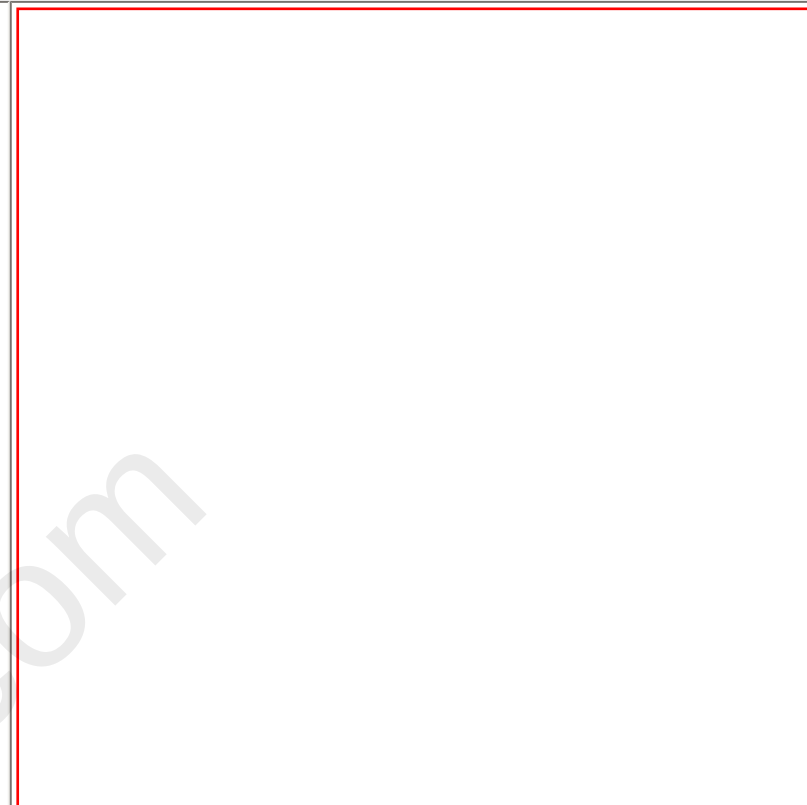
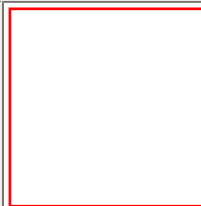
A9 CHECK THE AUDIO UNIT ANTENNA CABLE CORE AND SHIELD FOR AN OPEN

- Disconnect the audio unit antenna cable to the audio unit antenna connection located behind the glove compartment.
- Measure:

Positive Lead	Measurement / Action	Negative Lead
 E260212 Audio unit antenna cable core at the ACM		Audio unit antenna cable core at the audio unit antenna connection



Audio unit antenna cable shield at the ACM



Audio unit antenna cable shield at the audio unit antenna connection

Are the resistances less than 1 ohm?

Yes	GO to A10
No	INSTALL a new audio unit antenna cable. REFER to: Audio Unit Antenna Cable (415-00B Information and Entertainment System - General Information - Vehicles With: SYNC Without Touchscreen, Removal and Installation).

A10 ISOLATE THE AUDIO UNIT ANTENNA

- Install a new audio unit antenna.
REFER to: [Audio Unit Antenna](#) (415-00B Information and Entertainment System - General Information - Vehicles With: SYNC Without Touchscreen, Removal and Installation).
- Operate the audio system in AM/ FM mode.

Is the reception OK?

Yes	The system is operating correctly at this time. The concern was caused by the audio unit antenna.
No	GO to A11

A11 CHECK FOR CORRECT ACM (AUDIO FRONT CONTROL MODULE) OPERATION

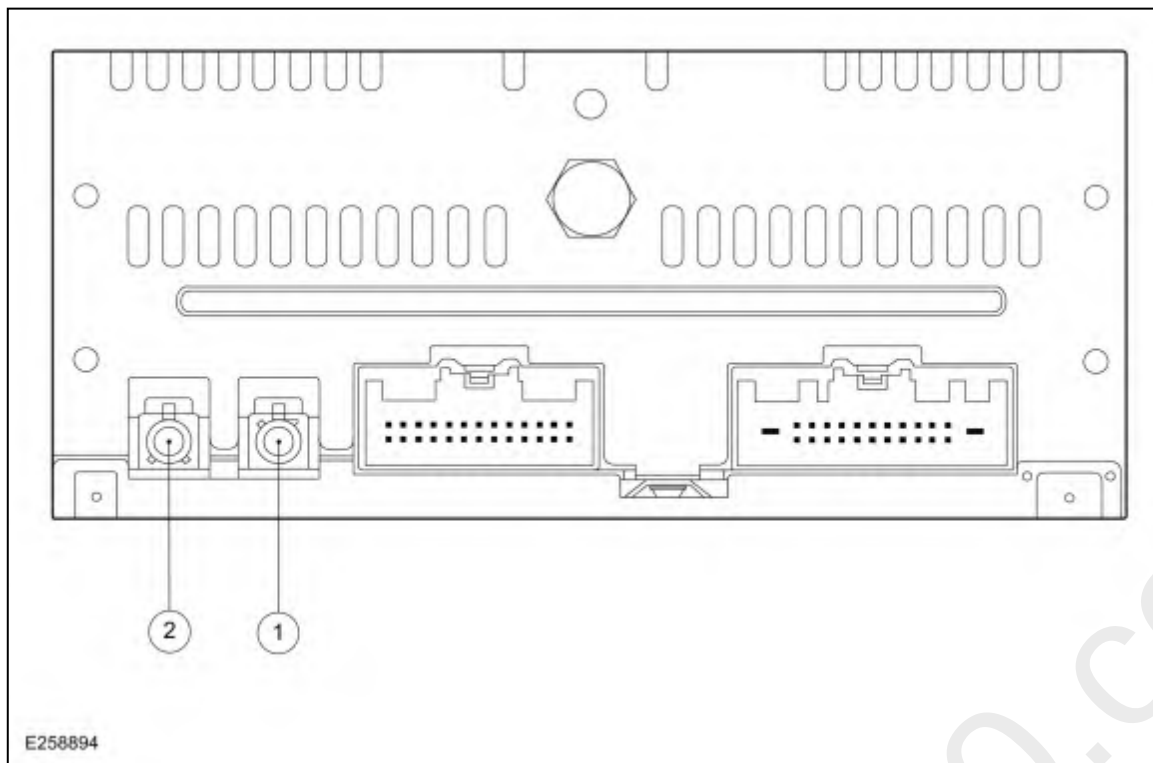
- Ignition OFF.
- Disconnect and inspect all the ACM connectors.
- Repair:
 - Corrosion (clean module pins or install new connectors or terminals)
 - Damaged or bent pins (install new terminals or pins)
 - Pushed-out pins (install new pins as necessary)
- Reconnect the ACM connectors. Make sure they seat and latch correctly.
- Operate the system and determine if the concern is still present.

Is the concern still present?

Yes	CHECK OASIS for any applicable Technical Service Bulletins (TSBs). If a TSB exists for this concern, DISCONTINUE this test and FOLLOW the TSB instructions. If no Technical Service Bulletins (TSBs) address this concern, INSTALL a new ACM. REFER to: Audio Front Control Module (ACM) (415-00B Information and Entertainment System - General Information - Vehicles With: SYNC Without Touchscreen, Removal and Installation).
No	The system is operating correctly at this time. The concern may have been caused by module connections. ADDRESS the root cause of any connector or pin issues.

The Satellite Radio Is Inoperative, Has Poor Reception Or Sound Quality Or Has No Sound

Refer to Wiring Diagrams Cell 131 for schematic and connector information.



Item	Part Number	Description
1	—	Audio unit antenna connection
2	—	Satellite radio connection

Normal Operation and Fault Conditions

REFER to: [Information and Entertainment System - System Operation and Component Description](#) (415-00B Information and Entertainment System - General Information - Vehicles With: SYNC Without Touchscreen, Description and Operation).

When a satellite radio subscription is activated, the ESN of the satellite radio receiver built into the ACM is associated with the VIN.

ACM DTC Fault Trigger Conditions

DTC	Description	Fault Trigger Conditions
B1A89:11	Satellite Antenna: Circuit Short To Ground	Sets continuous or during the on-demand self-test when the ACM detects a short to ground from the satellite radio coaxial cable for more than 1 second. This DTC can be either continuous or on-demand.

B1A89:13	Satellite Antenna: Circuit Open	Sets continuous or during the on-demand self-test when the ACM detects an open from the satellite radio coaxial cable. This DTC can be either continuous or on-demand.
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Possible Causes

- Expired subscription
- Obstructions in the antenna line of sight
- Incorrectly matched ESN
- Lower satellite radio antenna cable (includes GPS splitter)
- Satellite radio antenna
- ACM

PINPOINT TEST B : THE SATELLITE RADIO IS INOPERATIVE, HAS POOR RECEPTION OR SOUND QUALITY OR HAS NO SOUND

NOTE: Prior to carrying out diagnostics, it may be beneficial to determine the cause using the Antenna Kit Tool 420-525 (Rotunda part number NUD420-525) or equivalent tool.

B1 VERIFY AN ACTIVE SUBSCRIPTION

- Operate the audio system in satellite radio mode and observe the display.

Does the display indicate the subscription has expired?

Yes	The system is operating correctly. INSTRUCT the customer to contact SIRIUS to reactivate the subscription.
No	GO to B2

B2 CHECK THE RECEPTION

- Drive the vehicle to an open location free from obstacles such as tall buildings or large trees.
- Using a diagnostic scan tool, view the ACM Parameter Identifications (PIDs).
- Monitor the satellite signal strength (SAT_SIG_STR) PID.

Can a "Good," "Very Good," or "Excellent" value be obtained?

Yes	GO to B3
No	GO to B6

B3 CHECK THE SATELLITE RADIO SYSTEM FOR CORRECT OPERATION

- Operate multiple channels with the audio system in satellite radio mode.

Does the satellite radio system receive multiple channels with normal sound quality?

Yes	The system is operating correctly. The concern may have been caused by obstructions in the antenna line of sight.
No	GO to B4

B4 CHECK FOR PROMOTIONAL CHANNEL 184

- Select channel 184.

Does the satellite radio system receive channel 184 with normal sound quality?

Yes	GO to B5
No	GO to B6

B5 VERIFY THE VIN (VEHICLE IDENTIFICATION NUMBER) AND THE ESN (ELECTRONIC SERIAL NUMBER) ON FILE MATCHES THE VIN (VEHICLE IDENTIFICATION NUMBER) AND THE ESN (ELECTRONIC SERIAL NUMBER) FROM THE VEHICLE

- Retrieve the satellite radio ESN by tuning to channel 0.
- Contact the SIRIUS Dealer Support.
- Make sure the VIN and the ESN SIRIUS has on the customer file match the VIN and the ESN retrieved from the vehicle.
- Follow the actions from step B2 to obtain "Good," "Very Good," or "Excellent" reception.
- Operate the audio system in satellite radio mode.
- **NOTE:** *It may take up to 30 minutes for the activation signal to be received and satellite radio functions to operate.*

Request for SIRIUS to send the activation signal to the vehicle 2-3 times.

- Operate multiple channels with the audio system in satellite radio mode.

Does the satellite radio system receive multiple channels with normal sound quality?

Yes	The system is operating correctly. The concern may have been caused by the SIRIUS file information not matching the vehicle or a result of the activation signal needing to be resent.
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No	GO to B6
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B6 CHECK THE OPERATION OF THE COMPASS

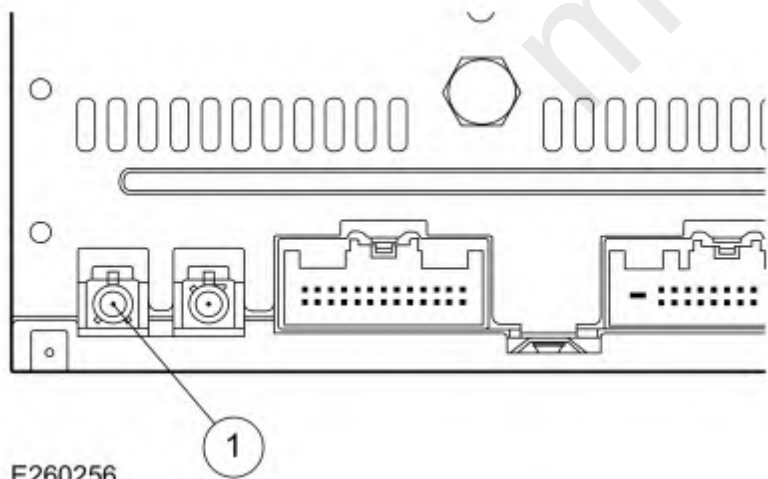
- Ignition ON.
- Check the operation of the compass

Does the compass operate correctly?

Yes	GO to B7
No	GO to Pinpoint Test R

B7 CHECK FOR CORRECT CMDTC (CONTINUOUS MEMORY DIAGNOSTIC TROUBLE CODE) OUTPUT VOLTAGE TO THE SATELLITE RADIO ANTENNA CABLE

- Ignition OFF.
- Disconnect the satellite radio antenna cable at the ACM.
- Ignition ON.
- Using the female Flex Probe 300-08058 (0.5 mm x 0.5 mm) or equivalent, measure:

Positive Lead	Measurement / Action	Negative Lead
 E260256		Ground

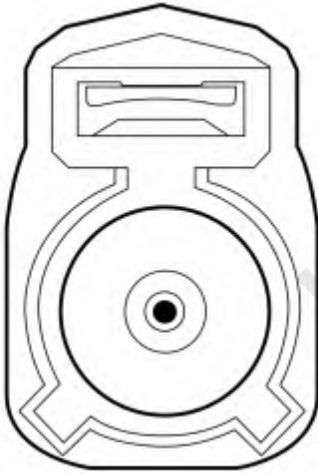
Satellite cable core (ACM component side)

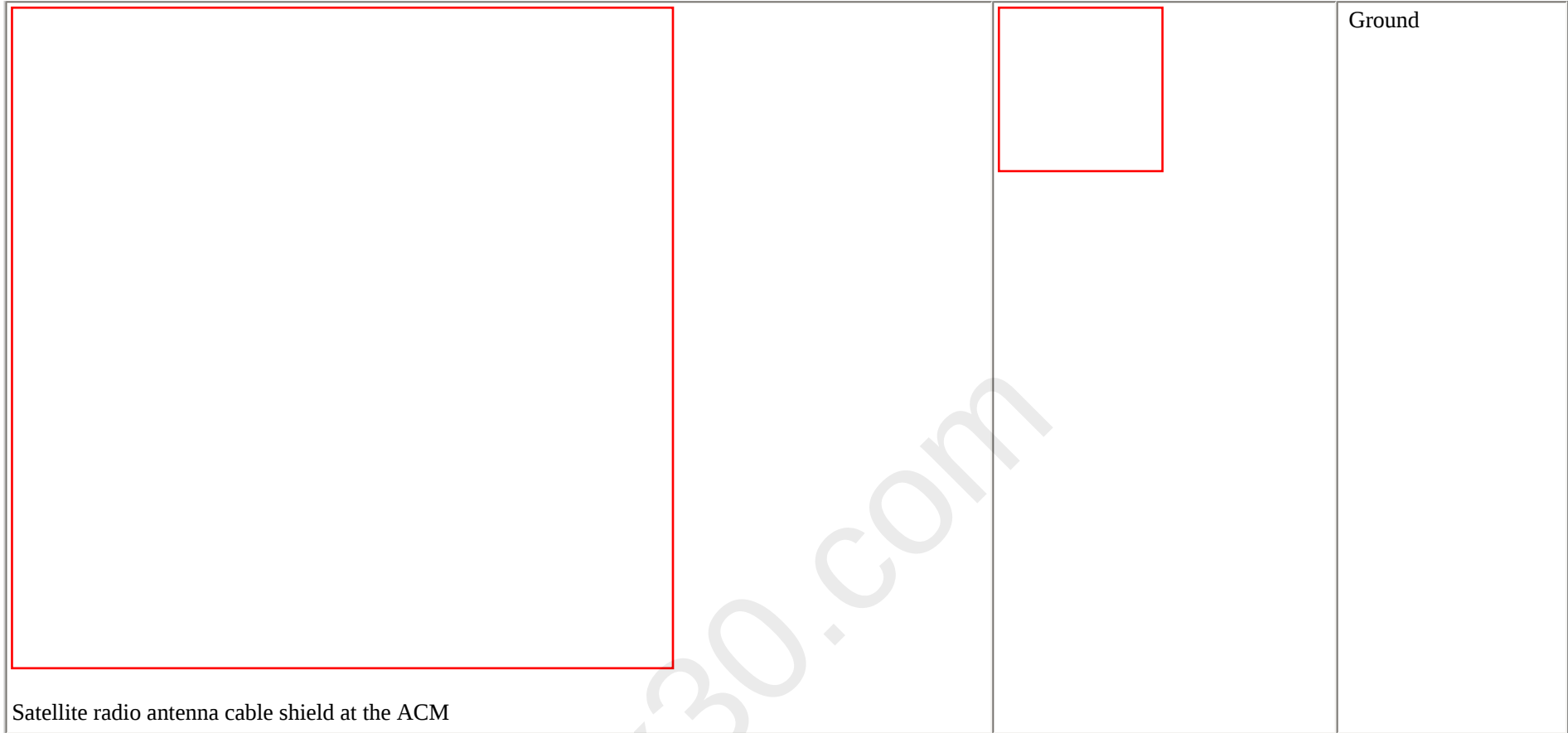
Is the voltage between 4.7 and 5.8 volts?

Yes	GO to B8
No	GO to B13

B8 CHECK THE LOWER SATELLITE RADIO ANTENNA CABLE CORE AND SHIELD FOR A SHORT TO VOLTAGE

- Ignition OFF.
- Disconnect the lower satellite radio antenna cable to the upper satellite radio antenna cable connection located behind the glove compartment.
- Ignition ON.
- Measure:

Positive Lead	Measurement / Action	Negative Lead
 E260213 Satellite radio antenna cable core at the ACM		Ground



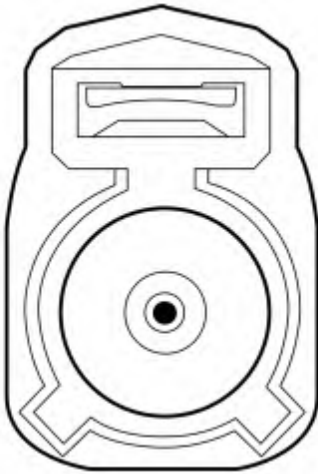
Is any voltage present?

Yes	INSTALL a new lower satellite radio antenna cable. REFER to: Satellite Radio Antenna Cable (415-00B Information and Entertainment System - General Information - Vehicles With: SYNC Without Touchscreen, Removal and Installation).
No	GO to B9

B9 CHECK THE LOWER SATELLITE RADIO ANTENNA COAXIAL CABLE CORE FOR A SHORT TO GROUND

- Ignition OFF.

- Measure:

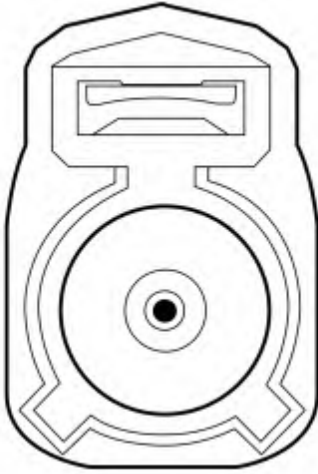
Positive Lead	Measurement / Action	Negative Lead
 E260213 Satellite radio antenna cable core at the ACM		Ground

Is the resistance greater than 10,000 ohms?

Yes	GO to B10
No	INSTALL a new lower satellite radio antenna cable. REFER to: Satellite Radio Antenna Cable (415-00B Information and Entertainment System - General Information - Vehicles With: SYNC Without Touchscreen, Removal and Installation).

B10 CHECK THE LOWER SATELLITE RADIO ANTENNA CABLE CORE AND SHIELD FOR A SHORT TOGETHER

- Measure:

Positive Lead	Measurement / Action	Negative Lead
 E260213 Satellite radio antenna cable core at the ACM		Satellite radio antenna cable shield at the ACM

Is the resistance greater than 10,000 ohms?

Yes	GO to B11
No	INSTALL a new lower satellite radio antenna cable. REFER to: Satellite Radio Antenna Cable (415-00B Information and Entertainment System - General Information - Vehicles With: SYNC Without Touchscreen, Removal and Installation).

B11 ISOLATE THE LOWER SATELLITE RADIO ANTENNA CABLE

- INSTALL a new lower satellite radio antenna cable.
REFER to: [Satellite Radio Antenna Cable](#) (415-00B Information and Entertainment System - General Information - Vehicles With: SYNC Without Touchscreen, Removal and Installation).
- Operate the audio system in satellite radio mode.
- Operate multiple channels with the audio system in satellite radio mode.

Does the satellite radio system receive multiple channels with normal sound quality?

Yes	The system is operating correctly. The concern was caused by the original lower satellite radio antenna cable.
No	GO to B12

B12 ISOLATE THE SATELLITE RADIO ANTENNA

- INSTALL a new satellite radio antenna.
REFER to: [Satellite Radio Antenna](#) (415-00B Information and Entertainment System - General Information - Vehicles With: SYNC Without Touchscreen, Removal and Installation).
- Operate the audio system in satellite radio mode.
- Operate multiple channels with the audio system in satellite radio mode.

Does the satellite radio system receive multiple channels with normal sound quality?

Yes	The system is operating correctly. The concern was caused by the original lower satellite radio antenna.
No	GO to B13

B13 CHECK FOR CORRECT ACM (AUDIO FRONT CONTROL MODULE) OPERATION

- Ignition ON.
- Disconnect and inspect all ACM connectors.
- Repair:
 - Corrosion (clean module pins or install new connectors or terminals)
 - Damaged or bent pins (install new terminals or pins)
 - Pushed-out pins (install new pins as necessary)
- Reconnect the ACM connectors. Make sure they seat and latch correctly.
- Operate the system and determine if the concern is still present.

Is the concern still present?

Yes	CHECK OASIS for any applicable Technical Service Bulletins (TSBs). If a TSB exists for this concern, DISCONTINUE this test and FOLLOW the TSB instructions. If no Technical Service Bulletins (TSBs) address this concern, INSTALL a new ACM. REFER to: Audio Front Control Module (ACM) (415-00B Information and Entertainment System - General Information - Vehicles With: SYNC Without Touchscreen, Removal and Installation).
No	The system is operating correctly at this time. The concern may have been caused by module connections. ADDRESS the root cause of any connector or pin issues.

A Loud Popping Sound Is Heard When Cycling The Ignition

Refer to Wiring Diagrams Cell 131 for schematic and connector information.

Refer to Wiring Diagrams Cell 13 for schematic and connector information.

Normal Operation and Fault Conditions

REFER to: [Information and Entertainment System - System Operation and Component Description](#) (415-00B Information and Entertainment System - General Information - Vehicles With: SYNC Without Touchscreen, Description and Operation).

To prevent voltage spikes from producing popping noises through the speakers when the ignition is in the START mode, the PCM provides voltage to the starter relay. The start signal to the ACM is provided on the same circuit. When the voltage is detected by the ACM, the audio signal output is muted.

Possible Causes

- Wiring, terminals, or connectors

- ACM

PINPOINT TEST C : A LOUD POPPING SOUND IS HEARD WHEN CYCLING THE IGNITION

C1 CHECK FOR PCM (POWERTRAIN CONTROL MODULE) DIAGNOSTIC TROUBLE CODES (DTCS)

- Ignition ON.
- Using a diagnostic scan tool, carry out the PCM KOEO and KOER self-tests.

Are any Diagnostic Trouble Codes (DTCs) present?

Yes	REFER to the Diagnosis and Testing in the appropriate 303-14 section.
No	GO to C2

C2 CHECK THE START SENSE CIRCUIT FOR AN OPEN

- Ignition OFF.
- Disconnect ACM C240A.
- Disconnect BJB C1035C.

Is the resistances less than 3 ohms?

Yes	GO to C3
No	REPAIR the circuit.

C3 CHECK FOR CORRECT ACM (AUDIO FRONT CONTROL MODULE) OPERATION

- Ignition OFF.
- Disconnect and inspect all the ACM connectors.
- Repair:
 - Corrosion (clean module pins or install new connectors or terminals)
 - Damaged or bent pins (install new terminals or pins)
 - Pushed-out pins (install new pins as necessary)
- Reconnect the ACM connectors. Make sure they seat and latch correctly.
- Operate the system and determine if the concern is still present.

Is the concern still present?

Yes	CHECK OASIS for any applicable Technical Service Bulletins (TSBs). If a TSB exists for this concern, DISCONTINUE this test and FOLLOW the TSB instructions. If no Technical Service Bulletins (TSBs) address this concern, INSTALL a new ACM. REFER to: Audio Front Control Module (ACM) (415-00B Information and Entertainment System - General Information - Vehicles With: SYNC Without Touchscreen, Removal and Installation).
No	The system is operating correctly at this time. The concern may have been caused by module connections. ADDRESS the root cause of any connector or pin issues.

No Sound From All Speakers

Refer to Wiring Diagrams Cell 131 for schematic and connector information.

Refer to Wiring Diagrams Cell 13 for schematic and connector information.

Normal Operation and Fault Conditions

REFER to: [Information and Entertainment System - System Operation and Component Description](#) (415-00B Information and Entertainment System - General Information - Vehicles With: SYNC Without Touchscreen, Description and Operation).

A short to ground or short to voltage in the circuitry to one of the speakers may cause multiple speakers to lose sound due to the built-in overload protection feature of the ACM. In this case, a speaker fault DTC sets.

Possible Causes

- Network communication concern

- Wiring, terminals, or connectors
- ACM

PINPOINT TEST D : NO SOUND FROM ALL SPEAKERS

D1 VERIFY THE ACM (AUDIO FRONT CONTROL MODULE) PASSES THE NETWORK TEST

- Ignition ON.
- Using a diagnostic scan tool, carry out the network test.

Does the ACM pass the network test?

Yes	GO to D2
No	REFER to: Communications Network (418-00 Module Communications Network, Diagnosis and Testing).

D2 CHECK FOR PCM (POWERTRAIN CONTROL MODULE) DIAGNOSTIC TROUBLE CODES (DTCS)

- Using a diagnostic scan tool, carry out the PCM KOEO self-test.

Are any Diagnostic Trouble Codes (DTCs) present?

Yes	REFER to Diagnosis and Testing in the appropriate 303-14 section.
No	GO to D3

D3 CHECK THE START SENSE CIRCUIT FOR A SHORT TO VOLTAGE

- Ignition OFF.
- Disconnect ACM C240A.
- Ignition ON.

Is any voltage present?

Yes	REFER to the Wiring Diagrams manual to identify the possible causes of the circuit short.
No	GO to D4

D4 CHECK FOR CORRECT ACM (AUDIO FRONT CONTROL MODULE) OPERATION

- Ignition OFF.
- Disconnect and inspect all the ACM connectors.
- Repair:
 - Corrosion (clean module pins or install new connectors or terminals)
 - Damaged or bent pins (install new terminals or pins)
 - Pushed-out pins (install new pins as necessary)
- Reconnect the ACM connectors. Make sure they seat and latch correctly.
- Operate the system and determine if the concern is still present.

Is the concern still present?

Yes	CHECK OASIS for any applicable Technical Service Bulletins (TSBs). If a TSB exists for this concern, DISCONTINUE this test and FOLLOW the TSB instructions. If no Technical Service Bulletins (TSBs) address this concern, INSTALL a new ACM. REFER to: Audio Front Control Module (ACM) (415-00B Information and Entertainment System - General Information - Vehicles With: SYNC Without Touchscreen, Removal and Installation).
No	The system is operating correctly at this time. The concern may have been caused by module connections. ADDRESS the root cause of any connector or pin issues.

Poor Sound Quality Or Distorted Sound From One Or More Speakers (Not All Speakers)

Normal Operation and Fault Conditions

REFER to: [Information and Entertainment System - System Operation and Component Description](#) (415-00B Information and Entertainment System - General Information - Vehicles With: SYNC Without Touchscreen, Description and Operation).

The ACM sends audio signals to the speakers in the form of AC voltage, resulting in clear audio output.

Possible Causes

- Loose component fasteners
- Loose door handle, lock, and other trim panel components and fasteners
- Loose items in storage areas
- Loose speaker grilles
- Loose wire harnesses or wire harness fasteners

- Speaker
- Water shield bonding and placement

Visual Inspection and Diagnostic Pre-checks

Inspect the suspect area for any possible rattle conditions such as:

- Any storage compartments including cup holders (if equipped)
- Door map pockets for contents that can rattle (if equipped)
- Door pull cup attachments (if equipped)
- Door switch bezels (if equipped)
- Speaker grilles
- Trim panels and fasteners

PINPOINT TEST E : POOR SOUND QUALITY OR DISTORTED SOUND FROM ONE OR MORE SPEAKERS (NOT ALL SPEAKERS)

E1 ISOLATE THE ZONE

- Download all the diagnostic sound tracks to a suitable USB flash drive and connect it to the USB hub.
REFER to: [Speaker Audio Test](#) (415-00B Information and Entertainment System - General Information - Vehicles With: SYNC Without Touchscreen, General Procedures).
- Operate the audio system in USB mode.
- Using the audio system fade and balance settings, adjust the audio sound to each of the zones (left front, right front and, left rear, right rear for 4-door vehicles) and use the 6 diagnostic sound tracks to isolate the poor sound quality.
- Locate and apply pressure to the trim panel(s) around the poor sound quality area in question.

Does applying pressure to a trim panel reduce or eliminate the noise?

Yes	REPAIR or REPLACE the trim panel as needed.
No	GO to E2

E2 REMOVE AND INSPECT BEHIND/UNDERNEATH THE SUSPECT TRIM PANEL

- Remove the trim panel to access the suspect speaker.
- Operate the audio system in USB mode using the downloaded audio files.
- Validate where the poor sound quality area is located.
- Check:
 - Trim panel for loose components (e.g. speaker grille) around the speaker area.
 - Trim panel joining components for missing or broken pieces.
 - Door latch mechanical parts for correct attachment.
 - Wire harnesses for correct routing and attachment.
 - Water shield for correct placement (speaker air path not blocked).
 - Water shield for correct bonding to sheet metal.
 - Storage areas for loose items.
 - All safety belt retractors.
 - All speaker bracket and related fasteners. Make sure they are secure and tightened to specified torque.

Is the source of the noise located?

Yes	REPAIR or REPLACE any loose or broken component or fastener as necessary.
No	GO to E3

E3 CHECK THE SUSPECT SPEAKER FOR WATER INTRUSION

- Inspect for watermarks.
- Check the following speaker components:
 - Cone
 - Magnet
 - Basket

Are any watermarks present on the speaker?

Yes	VERIFY the water shield is in the correct location, REPAIR or REPLACE any trim, door or speaker seal as required. DRY the speaker in question and TEST the system for normal operation.
No	GO to E4

E4 ISOLATE SPEAKER TO VERIFY NOISE

- Remove the suspect speaker from its location and leave the speaker connected to the harness.
- Hold the speaker away from any trim panel and make sure the speaker is isolated from contact.
- Operate the audio system using digital media such as a CD or MP3 player.

Is the noise still present in the suspect speaker?

Yes	INSTALL a new speaker for the one in question.
No	LOCATE the source of the noise and REPAIR as necessary.

The Speed Compensated Volume Does Not Operate Correctly

Normal Operation and Fault Conditions

REFER to: [Information and Entertainment System - Overview](#) (415-00B Information and Entertainment System - General Information - Vehicles With: SYNC Without Touchscreen, Description and Operation).

REFER to: [Information and Entertainment System - System Operation and Component Description](#) (415-00B Information and Entertainment System - General Information - Vehicles With: SYNC Without Touchscreen, Description and Operation).

Possible Causes

- Speed compensated volume setting
- Speed signal concern
- Network communication concern
- ACM

PINPOINT TEST F : THE SPEED COMPENSATED VOLUME DOES NOT OPERATE CORRECTLY

F1 CHECK THE SPEEDOMETER OPERATION

- Drive the vehicle and observe the speedometer.

Does the speedometer operate correctly?

Yes	GO to F2
No	REFER to: Instrumentation, Message Center and Warning Chimes (413-01 Instrumentation, Message Center and Warning Chimes, Diagnosis and Testing).

F2 CHECK THE SPEED COMPENSATED VOLUME SETTING

NOTE: Refer to the Owner Literature to access the speed compensated volume settings.

- Turn the speed compensated volume off.
- Operate the audio system in AM/ FM mode.
- Drive the vehicle at various speeds and observe the speaker volume.
- Set the speed compensated volume to maximum compensation.
- Operate the audio system in AM/ FM mode.
- Drive the vehicle at various speeds and observe the speaker volume.

Does the volume remain constant with the speed compensated volume turned off, and increase and decrease with vehicle speed with the speed compensated volume set to maximum?

Yes	The system is operating correctly at this time. INFORM the customer in the correct usage of the speed compensated volume feature.
No	GO to F3

F3 CHECK FOR COMMUNICATION DIAGNOSTIC TROUBLE CODES (DTCS)

- Using a diagnostic scan tool, carry out the ACM self-test.

Are any Diagnostic Trouble Codes (DTCs) present?

Yes	REFER to the ACM DTC Chart in this section.
No	GO to F4

F4 CHECK FOR CORRECT ACM (AUDIO FRONT CONTROL MODULE) OPERATION

- Ignition OFF.
- Disconnect and inspect all the ACM connectors.
- Repair:
 - Corrosion (clean module pins or install new connectors or terminals)
 - Damaged or bent pins (install new terminals or pins)
 - Pushed-out pins (install new pins as necessary)
- Reconnect the ACM connectors. Make sure they seat and latch correctly.
- Operate the system and determine if the concern is still present.

Is the concern still present?

Yes	CHECK OASIS for any applicable Technical Service Bulletins (TSBs). If a TSB exists for this concern, DISCONTINUE this test and FOLLOW the TSB instructions. If no Technical Service Bulletins (TSBs) address this concern, INSTALL a new ACM. REFER to: Audio Front Control Module (ACM) (415-00B Information and Entertainment System - General Information - Vehicles With: SYNC Without Touchscreen, Removal and Installation).
No	The system is operating correctly at this time. The concern may have been caused by module connections. ADDRESS the root cause of any connector or pin issues.

One Or More Speaker Is Inoperative

Refer to Wiring Diagrams Cell 131 for schematic and connector information.

Normal Operation and Fault Conditions

REFER to: [Information and Entertainment System - System Operation and Component Description](#) (415-00B Information and Entertainment System - General Information - Vehicles With: SYNC Without Touchscreen, Description and Operation).

ACM DTC Fault Trigger Conditions

DTC	Description	Fault Trigger Conditions
B1A01:01	Speaker #1: General Electrical Failure	Sets during the on-demand self-test when the ACM detects a failure from the left front door speaker and left A-pillar tweeter speaker circuits.
B1A01:11	Speaker #1: Circuit Short To Ground	Sets continuous and during the on-demand self-test when the ACM detects a short to ground from the left front door speaker and left A-pillar tweeter speaker circuits. The speaker output is disabled when this DTC is set.
B1A01:12	Speaker #1: Circuit Short To Battery	Sets continuous and during the on-demand self-test when the ACM detects a short to voltage from the left front door speaker and left A-pillar tweeter speaker circuits. The speaker output is disabled when this DTC is set.
B1A01:13	Speaker #1: Circuit Open	Sets during the on-demand self-test when the ACM detects an open from the left front door speaker or left A-pillar tweeter speaker circuits.
B1A02:01	Speaker #2: General Electrical Failure	Sets during the on-demand self-test when the ACM detects a failure from the right front door or right A-pillar tweeter speaker circuits.
B1A02:11	Speaker #2: Circuit Short To Ground	Sets continuous and during the on-demand self-test when the ACM detects a short to ground from the right front door or right A-pillar tweeter speaker circuits. The speaker output is disabled when this DTC is set.
B1A02:12	Speaker #2: Circuit Short To Battery	Sets continuous and during the on-demand self-test when the ACM detects a short to voltage from the right front door or right A-pillar tweeter speaker circuits. The speaker output is disabled when this DTC is set.
B1A02:13	Speaker #2: Circuit Open	Sets during the on-demand self-test when the ACM detects an open from the right front door or right A-pillar tweeter speaker circuits.
B1A03:01	Speaker #3: General Electrical Failure	Sets during the on-demand self-test when the ACM detects a failure from the right rear door speaker circuits.
B1A03:11	Speaker #3: Circuit Short To Ground	Sets continuous and during the on-demand self-test when the ACM detects a short to ground from the right rear door speaker circuits. The speaker output is disabled when this DTC is set.
B1A03:12	Speaker #3: Circuit Short To Battery	Sets continuous and during the on-demand self-test when the ACM detects a short to voltage from the right rear door speaker circuits. The speaker output is disabled when this DTC is set.
B1A03:13	Speaker #3: Circuit Open	Sets during the on-demand self-test when the ACM detects an open from the right rear door speaker circuits.
B1A04:01	Speaker #4: General Electrical Failure	Sets during the on-demand self-test when the ACM detects a failure from the left rear door speaker circuits.
B1A04:11	Speaker #4: Circuit Short To Ground	Sets continuous and during the on-demand self-test when the ACM detects a short to ground from the left rear door speaker circuits. The speaker output is disabled when this DTC is set.
B1A04:12	Speaker #4: Circuit Short To Battery	Sets continuous and during the on-demand self-test when the ACM detects a short to voltage from the left rear door speaker circuits. The speaker output is disabled when this DTC is set.
B1A04:13	Speaker #4: Circuit Open	Sets during the on-demand self-test when the ACM detects an open from the left rear door speaker circuits.
B1A06:01	Speaker #6: General Electrical Failure	Sets during the on-demand self-test when the ACM detects a failure from the center instrument panel speaker circuits.

B1A06:02	Speaker #6: General Signal Failure	Sets during the on-demand self-test when the ACM detects a failure from the center instrument panel speaker circuits.
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Possible Causes

- Wiring, terminals, or connectors
- Speaker
- ACM

PINPOINT TEST G : ONE OR MORE SPEAKER IS INOPERATIVE

NOTE: *The front door speaker and tweeter speaker share the same audio signal. If a concern exists with both speakers, retest the system with one of them disconnected to determine if the disconnected speaker is the cause of the fault.*

G1 CHECK THE AUDIO CIRCUITS TO THE SPEAKER FOR A SHORT TO VOLTAGE

- Ignition OFF.
- Disconnect the suspect speaker.
- Disconnect ACM C240A.
- Ignition ON.
- For the suspect speaker, measure:

Click to display connectors

Right Rear Door Speaker

Positive Lead	Measurement / Action	Negative Lead
C802-1		Ground
C802-4		Ground

Is any voltage present?

Yes	REPAIR the circuit in question.
-----	---------------------------------

No	GO to G2
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G2 CHECK THE AUDIO CIRCUITS TO THE SPEAKER FOR A SHORT TO GROUND

- Ignition OFF.
- For the suspect speaker, measure:

Click to display connectors

Right Rear Door Speaker

Positive Lead	Measurement / Action	Negative Lead
C802-1	Ω	Ground
C802-4		Ground

Are the resistances greater than 10,000 ohms?

Yes	GO to G3
No	REPAIR the circuit in question.

G3 CHECK THE AUDIO CIRCUITS TO THE SPEAKER FOR A SHORT TOGETHER

- For the suspect speaker, measure:

Click to display connectors

Right Rear Door Speaker

Positive Lead	Measurement / Action	Negative Lead
C802-1	Ω	C802-4

Are the resistances greater than 10,000 ohms?

Yes	GO to G4
No	REPAIR the circuits in question.

G4 CHECK THE AUDIO CIRCUITS TO THE SPEAKER FOR AN OPEN

- For the suspect speaker, measure:

Click to display connectors

Right Rear Door Speaker

Positive Lead	Measurement / Action	Negative Lead
C802-1	Ω	C240A-24
C802-4		C240A-12

Are the resistances less than 3 ohms?

Yes	GO to G5
No	REPAIR the circuit in question.

G5 CHECK THE AUDIO SIGNAL TO THE SUSPECT SPEAKER

- Connect ACM C240A.
- Ignition ON.
- Operate the audio system in AM/ FM mode.
- For the suspect speaker, measure:

Click to display connectors

Right Rear Door Speaker

Positive Lead	Measurement / Action	Negative Lead
C802-1		C802-4

Is a fluctuating AC voltage present?

Yes	INSTALL a new speaker in question.
No	GO to G6

G6 CHECK FOR CORRECT ACM (AUDIO FRONT CONTROL MODULE) OPERATION

- Ignition OFF.
- Disconnect and inspect all the ACM connectors.
- Repair:
 - Corrosion (clean module pins or install new connectors or terminals)
 - Damaged or bent pins (install new terminals or pins)
 - Pushed-out pins (install new pins as necessary)
- Reconnect the ACM connectors. Make sure they seat and latch correctly.
- Operate the system and determine if the concern is still present.

Is the concern still present?

Yes	CHECK OASIS for any applicable Technical Service Bulletins (TSBs). If a TSB exists for this concern, DISCONTINUE this test and FOLLOW the TSB instructions. If no Technical Service Bulletins (TSBs) address this concern, INSTALL a new ACM. REFER to: Audio Front Control Module (ACM) (415-00B Information and Entertainment System - General Information - Vehicles With: SYNC Without Touchscreen, Removal and Installation).
No	The system is operating correctly at this time. The concern may have been caused by module connections. ADDRESS the root cause of any connector or pin issues.

The Subwoofer Speaker Is Inoperative

Refer to Wiring Diagrams Cell 131 for schematic and connector information.

Normal Operation and Fault Conditions

REFER to: [Information and Entertainment System - System Operation and Component Description](#) (415-00B Information and Entertainment System - General Information - Vehicles With: SYNC Without Touchscreen, Description and Operation).

If the audio unit amplifier detects an open, short to ground, or less than 4.5 volts from the enable circuit, the speaker output is muted.

ACM DTC Fault Trigger Conditions

DTC	Description	Fault Trigger Conditions
B1A05:02	Speaker #5: General Signal Failure	Sets during the on-demand self-test when the ACM detects a failure from the audio signal circuits to the audio unit amplifier or from the audio unit amplifier enable circuit.

Possible Causes

- Fuse
- Wiring, terminals, or connectors
- ACM
- Subwoofer speaker and enclosure
- Subwoofer amplifier

Visual Inspection and Diagnostic Pre-checks

- Check the BJB fuse 22 (20A).

PINPOINT TEST H : THE SUBWOOFER SPEAKER IS INOPERATIVE

H1 CHECK THE SUBWOOFER SPEAKER AND ENCLOSURE FOR PHYSICAL DAMAGE

- Ignition OFF.
- Inspect the subwoofer speaker by looking through the grille for any obvious damage to the speaker cone and foam.
- Inspect the subwoofer speaker enclosure for any obvious damage to the assembly.

Is any damage present?

Yes	INSTALL a new subwoofer speaker enclosure. REFER to: Subwoofer Speaker (415-00B Information and Entertainment System - General Information - Vehicles With: SYNC Without Touchscreen, Removal and Installation).
No	GO to H2

H2 CHECK THE SUBWOOFER AMPLIFIER VOLTAGE SUPPLY

- Disconnect Subwoofer Amplifier C3041.
- Ignition ON.

Is the voltage greater than 11 volts?

Yes	GO to H4
No	VERIFY the BJB Fuse 22 (20A) is OK. If OK, GO to H3 If not OK, REFER to the Wiring Diagram manual to identify the possible causes of the circuit short.

H3 CHECK THE SUBWOOFER AMPLIFIER VOLTAGE SUPPLY CIRCUIT FOR AN OPEN

- Ignition OFF.
- Disconnect BJB C1035B.

Is the resistance less than 3 ohms?

Yes	INSTALL a new BJB
No	REPAIR the circuit.

H4 CHECK THE SUBWOOFER AMPLIFIER GROUND CIRCUIT

Is the voltage greater than 11 volts?

Yes	GO to H5
No	REPAIR the circuit.

H5 CHECK THE SUBWOOFER AMPLIFIER ENABLE CIRCUIT FOR CORRECT VOLTAGE

NOTICE: This pinpoint test step directs testing circuits using a back-probe method. Use the special back-probe tool POM6411. Do not force test leads or other probes into connectors. Adequate care must be exercised to avoid connector terminal damage, while ensuring good electrical contact is made with the circuit or terminal. Failure to follow these instructions may cause damage to wiring, terminals, or connectors, and may cause subsequent electrical faults.

- Ignition OFF.
- Connect Subwoofer Amplifier C3041.
- Ignition ON.
- Operate the audio system in AM/ FM mode.

Is the voltage between 3.5 and 5 volts?

Yes	GO to H9
No	GO to H6

H6 CHECK THE SUBWOOFER AMPLIFIER ENABLE CIRCUIT FOR A SHORT TO VOLTAGE

- Ignition OFF.
- Disconnect Subwoofer Amplifier C3041.
- Disconnect ACM C240B.
- Ignition ON.

Is any voltage present?

Yes	REPAIR the circuit.
No	GO to H7

H7 CHECK THE SUBWOOFER AMPLIFIER ENABLE CIRCUIT FOR A SHORT TO GROUND

- Ignition OFF.

Is the resistance greater than 10,000 ohms?

Yes	GO to H8
No	REPAIR the circuit.

H8 CHECK THE SUBWOOFER AMPLIFIER ENABLE CIRCUIT FOR AN OPEN

Is the resistance less than 3 ohms?

Yes	GO to H14
No	REPAIR the circuit.

H9 CHECK THE AUDIO CIRCUITS TO THE SUBWOOFER AMPLIFIER FOR A SHORT TO VOLTAGE

- Ignition OFF.
- Disconnect Subwoofer Amplifier C3041.
- Disconnect ACM C240B.
- Ignition ON.

Is any voltage present?

Yes	REPAIR the circuit in question.
No	GO to H10

H10 CHECK THE AUDIO CIRCUITS TO THE SUBWOOFER AMPLIFIER FOR A SHORT TO GROUND

- Ignition OFF.

Are the resistances greater than 10,000 ohms?

Yes	GO to H11
No	REPAIR the circuit in question.

H11 CHECK THE AUDIO CIRCUITS TO THE SUBWOOFER AMPLIFIER FOR A SHORT TOGETHER

Is the resistance greater than 10,000 ohms?

Yes	GO to H12
No	REPAIR the circuits.

H12 CHECK THE AUDIO CIRCUITS TO THE SUBWOOFER AMPLIFIER FOR AN OPEN

Are the resistances less than 3 ohms?

Yes	GO to H13
No	REPAIR the circuit in question.

H13 CHECK THE AUDIO SIGNAL TO THE SUBWOOFER AMPLIFIER

- Ignition OFF.
- Connect ACM C240B.
- Ignition ON.
- Operate the audio system in AM/ FM mode.

Is a fluctuating AC voltage present?

Yes	INSTALL a new subwoofer amplifier. REFER to: Subwoofer Speaker (415-00B Information and Entertainment System - General Information - Vehicles With: SYNC Without Touchscreen, Removal and Installation). TEST the system for normal operation. If the concern is still present, install a new subwoofer speaker enclosure. REFER to: Subwoofer Speaker (415-00B Information and Entertainment System - General Information - Vehicles With: SYNC Without Touchscreen, Removal and Installation).
No	GO to H14

H14 CHECK FOR CORRECT ACM (AUDIO FRONT CONTROL MODULE) OPERATION

- Disconnect and inspect all the ACM connectors.
- Repair:
 - Corrosion (clean module pins or install new connectors or terminals)
 - Damaged or bent pins (install new terminals or pins)
 - Pushed-out pins (install new pins as necessary)
- Reconnect the ACM connectors. Make sure they seat and latch correctly.
- Operate the system and determine if the concern is still present.

Is the concern still present?

Yes	CHECK OASIS for any applicable Technical Service Bulletins (TSBs). If a TSB exists for this concern, DISCONTINUE this test and FOLLOW the TSB instructions. If no Technical Service Bulletins (TSBs) address this concern, INSTALL a new ACM. REFER to: Audio Front Control Module (ACM) (415-00B Information and Entertainment System - General Information - Vehicles With: SYNC Without Touchscreen, Removal and Installation).
No	The system is operating correctly at this time. The concern may have been caused by module connections. ADDRESS the root cause of any connector or pin issues.

The CD Player Is Inoperative Or Does Not Operate Correctly

Normal Operation and Fault Conditions

REFER to: [Information and Entertainment System - System Operation and Component Description](#) (415-00B Information and Entertainment System - General Information - Vehicles With: SYNC Without Touchscreen, Description and Operation).

ACM DTC Fault Trigger Conditions

DTC	Description	Fault Trigger Conditions
B1D19:49	Compact Disc Unit: Internal Electronic Failure	Sets continuous and during the on-demand self-test when the ACM detects the internal circuit board cannot communicate with the CD mechanism while in CD mode.
B1D19:4B	Compact Disc Unit: Over Temperature	Sets continuous when the ACM detects the internal circuit board detects the CD mechanism exceeds the temperature threshold while in CD mode.

Possible Causes

- Misaligned FCIM
- CD
- ACM

PINPOINT TEST I : THE CD (COMPACT DISC) PLAYER IS INOPERATIVE OR DOES NOT OPERATE CORRECTLY

I1 VERIFY THE FCIM (FRONT CONTROLS INTERFACE MODULE) CD (COMPACT DISC) EJECT BUTTON OPERATION

- Ignition ON.
- Operate the audio system in CD mode.
- Press the EJECT button on the FCIM to eject the CD.

Does the CD eject?

Yes	GO to I4
No	If the FCIM EJECT button is responsive, GO to I2 If the FCIM EJECT button is not responsive, GO to I3

I2 VERIFY THE FCIM (FRONT CONTROLS INTERFACE MODULE) IS CORRECTLY ALIGNED WITH THE CD (COMPACT DISC) SLOT

- Remove the FCIM, but do not disconnect any electrical connectors.
REFER to: [Front Controls Interface Module \(FCIM\)](#) (415-00B Information and Entertainment System - General Information - Vehicles With: SYNC Without Touchscreen, Removal and Installation).
- Press the EJECT button on the FCIM to eject the CD.

Does the CD eject?

Yes	INSTALL the FCIM and make sure the FCIM CD slot is correctly aligned with the ACM CD slot. REFER to: Front Controls Interface Module (FCIM) (415-00B Information and Entertainment System - General Information - Vehicles With: SYNC Without Touchscreen, Removal and Installation).
No	GO to I8

I3 CHECK FOR ACM (AUDIO FRONT CONTROL MODULE) DTC (DIAGNOSTIC TROUBLE CODE) U0256:00

- Using a diagnostic scan tool, carry out the ACM self-test.

Is DTC U0256:00 present?

Yes	GO to Pinpoint Test AB
No	GO to Pinpoint Test J

I4 VERIFY THE CD (COMPACT DISC) PLAYER OPERATION

- Insert a known good CD.
- Operate the audio system in CD mode and play an audio file.

Is the audio output OK for the CD player?

Yes	The system is operating correctly. The concern is with the CD (inspect for fingerprints, loose paper label, incorrect format, irregular shape, scratches, or other damage).
No	GO to I5

I5 CHECK FOR ACM (AUDIO FRONT CONTROL MODULE) DTC (DIAGNOSTIC TROUBLE CODE) B1D19:49 AND B1D19:4B

- With the audio system in CD mode, carry out the ACM self-test using a diagnostic scan tool.

Is DTC B1D19:49 or B1D19:4B present?

Yes	For DTC B1D19:49, GO to I6 For DTC B1D19:4B, the system is operating correctly at this time. The concern may have been caused by extended CD player use. Audio operation can resume after the ACM cools. Clear the DTC.
No	GO to I8

I6 RECHECK FOR DTC (DIAGNOSTIC TROUBLE CODE) B1D19:49

- Using a diagnostic scan tool, clear the ACM Diagnostic Trouble Codes (DTCs).
- Ignition OFF.
- Ignition ON.
- Wait at 10 seconds.
- With the audio system in CD mode, carry out the ACM self-test using a diagnostic scan tool.

Is DTC B1D19:49 still present?

Yes	GO to I8
No	GO to I7

I7 CHECK FOR CORRECT CD (COMPACT DISC) PLAYER OPERATION

- Operate the audio system in CD mode and play an audio file.

Is the audio output OK for the CD player?

Yes	The system is operating correctly at this time. The concern may have been caused by the CD.
No	GO to I8

I8 CHECK FOR CORRECT ACM (AUDIO FRONT CONTROL MODULE) OPERATION

- Ignition OFF.
- Disconnect and inspect all the ACM connectors.
- Repair:
 - Corrosion (clean module pins or install new connectors or terminals)
 - Damaged or bent pins (install new terminals or pins)
 - Pushed-out pins (install new pins as necessary)
- Reconnect the ACM connectors. Make sure they seat and latch correctly.
- Operate the system and determine if the concern is still present.

Is the concern still present?

Yes	CHECK OASIS for any applicable Technical Service Bulletins (TSBs). If a TSB exists for this concern, DISCONTINUE this test and FOLLOW the TSB instructions. If no Technical Service Bulletins (TSBs) address this concern, INSTALL a new ACM. REFER to: Audio Front Control Module (ACM) (415-00B Information and Entertainment System - General Information - Vehicles With: SYNC Without Touchscreen, Removal and Installation).
No	The system is operating correctly at this time. The concern may have been caused by module connections. ADDRESS the root cause of any connector or pin issues.

The Audio/SYNC System Does Not Operate Correctly From The FCIM

Normal Operation and Fault Conditions

REFER to: [Information and Entertainment System - System Operation and Component Description](#) (415-00B Information and Entertainment System - General Information - Vehicles With: SYNC Without Touchscreen, Description and Operation).

Possible Causes

- Network communication concern
- ACM concern
- FCIM

PINPOINT TEST J : THE AUDIO/SYNC SYSTEM DOES NOT OPERATE CORRECTLY FROM THE FCIM (FRONT CONTROLS INTERFACE MODULE)

J1 VERIFY THE ACM (AUDIO FRONT CONTROL MODULE) AND THE FCIM (FRONT CONTROLS INTERFACE MODULE) PASS THE NETWORK TEST

- Using a diagnostic scan tool, carry out the network test.

Does the ACM and the FCIM pass the network test?

Yes	GO to J2
No	REFER to: Communications Network (418-00 Module Communications Network, Diagnosis and Testing).

J2 RETRIEVE THE ACM (AUDIO FRONT CONTROL MODULE) AND THE FCIM (FRONT CONTROLS INTERFACE MODULE) DIAGNOSTIC TROUBLE CODES (DTCs)

- Using a diagnostic scan tool, carry out the self-test for the following modules:
 - ACM
 - FCIM

Are any Diagnostic Trouble Codes (DTCs) present?

Yes	REFER to the appropriate DTC Chart in this section.
No	GO to J3

J3 CHECK FOR CORRECT FCIM (FRONT CONTROLS INTERFACE MODULE) OPERATION

- Ignition OFF.
- Disconnect and inspect the FCIM connectors.
- Repair:
 - Corrosion (clean module pins or install new connectors or terminals)
 - Damaged or bent pins (install new terminals or pins)
 - Pushed-out pins (install new pins as necessary)
- Reconnect the FCIM connectors. Make sure they seat and latch correctly.
- Operate the system and determine if the concern is still present.

Is the concern still present?

Yes	CHECK OASIS for any applicable Technical Service Bulletins (TSBs). If a TSB exists for this concern, DISCONTINUE this test and FOLLOW the TSB instructions. If no Technical Service Bulletins (TSBs) address this concern,   Click here to access Guided Routine (FCIM).
No	The system is operating correctly at this time. The concern may have been caused by module connections. Address the root cause of any connector or pin issues.

One Or More Steering Wheel Audio/SYNC Control Button Is Inoperative

Refer to Wiring Diagrams Cell 131 for schematic and connector information.

Normal Operation and Fault Conditions

REFER to: [Information and Entertainment System - System Operation and Component Description](#) (415-00B Information and Entertainment System - General Information - Vehicles With: SYNC Without Touchscreen, Description and Operation).

SCCM DTC Fault Trigger Conditions

DTC	Description	Fault Trigger Conditions
B1380:09	Steering Wheel Right Switch Pack: Component Failure	Sets continuous and during the on-demand self-test when the SCCM detects a right steering wheel switch is active for more than 2 minutes.

B1380:11	Steering Wheel Right Switch Pack: Circuit Short To Ground	Set continuous and during the on-demand self-test when the SCCM detects a short to ground from the right steering wheel switch circuits.
B1380:17	Steering Wheel Right Switch Pack: Circuit Voltage Above Threshold	Set continuous and during the on-demand self-test when the SCCM detects an open or short to voltage from the right steering wheel switch circuits.

Possible Causes

- Wiring, terminals, or connectors
- Steering wheel switch
- Clockspring
- Steering wheel
- SCCM

PINPOINT TEST K : ONE OR MORE STEERING WHEEL AUDIO/SYNC CONTROL BUTTON IS INOPERATIVE

K1 CHECK FOR VOLTAGE TO THE STEERING WHEEL SWITCH

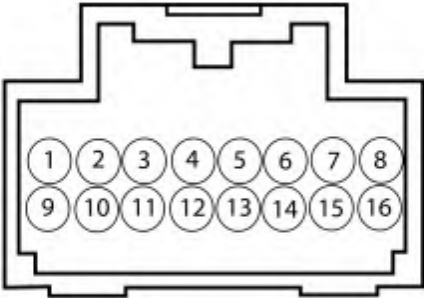
- Ignition OFF.
- Remove the driver airbag.
REFER to: [Driver Airbag](#) (501-20B Supplemental Restraint System, Removal and Installation).
- Disconnect Right Steering Wheel Switch C2999.
- Disconnect Left Steering Wheel Switch C2998.
- Ignition ON.

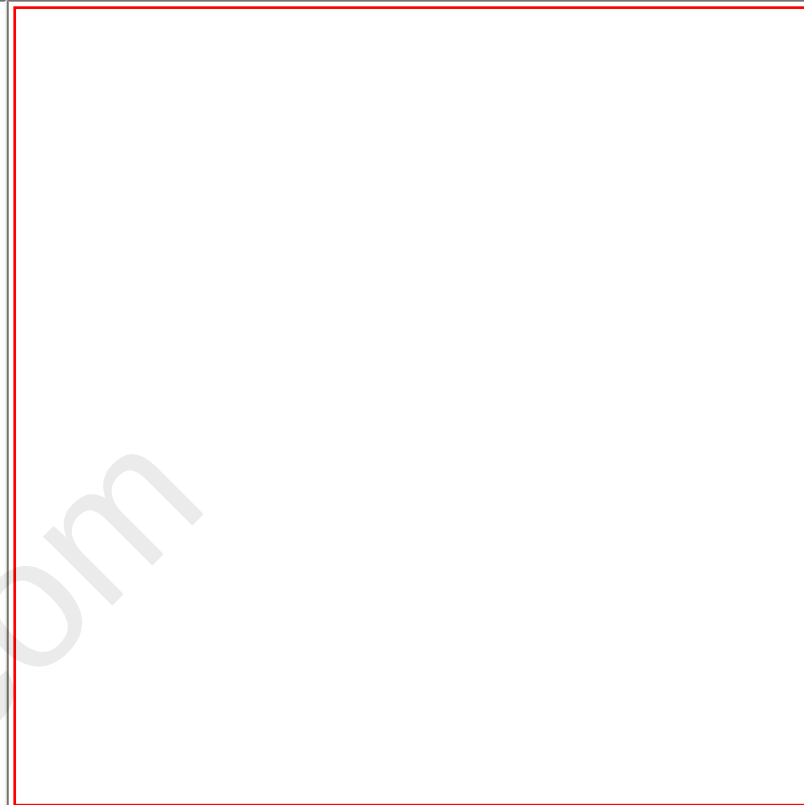
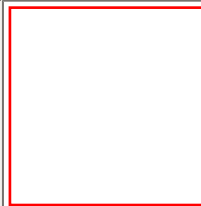
Is the voltage approximately 5 volts?

Yes	INSTALL a new right steering wheel switch. REFER to: Steering Wheel Multifunction Switch (211-05 Steering Wheel and Column Electrical Components, Removal and Installation).
No	GO to K2

K2 CHECK THE STEERING WHEEL HARNESS

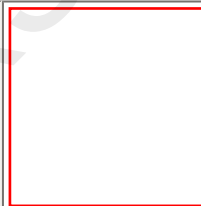
- Ignition OFF.
- Disconnect Clockspring C218B.
- Ignition ON.
- Measure:

Positive Lead	Measurement / Action	Negative Lead
 E155137 Upper Clockspring C218B, pin 14 (component side)		Upper Clockspring C218B, pin 16 (component side)



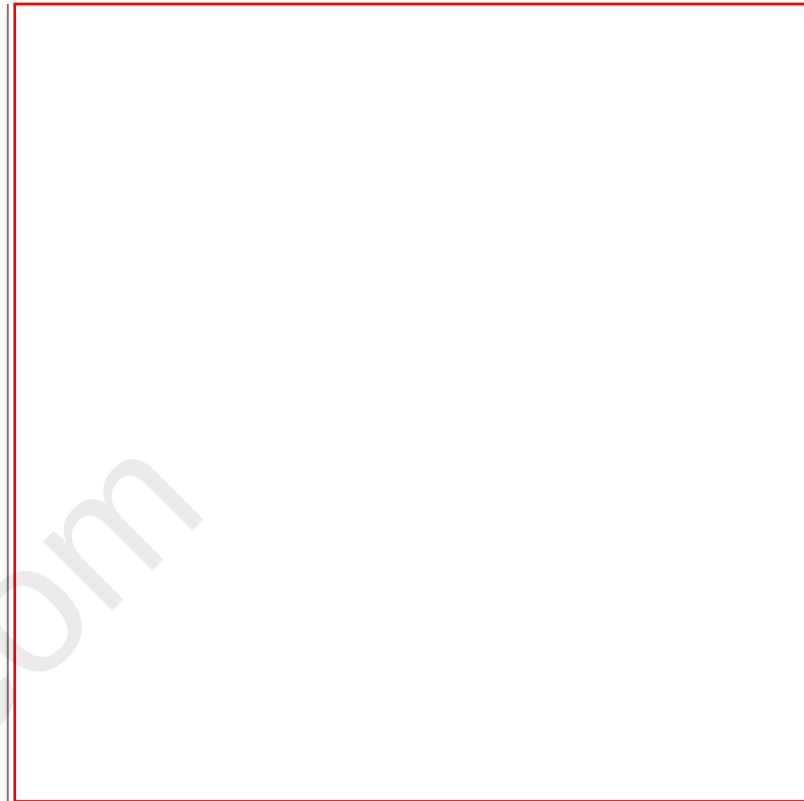
Upper Clockspring C218B, pin 16 (component side)

Upper Clockspring C218B, pin 16 (component side)

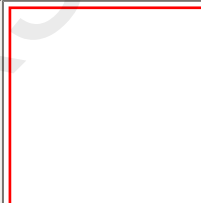




Upper Clockspring C218B, pin 6 (component side)

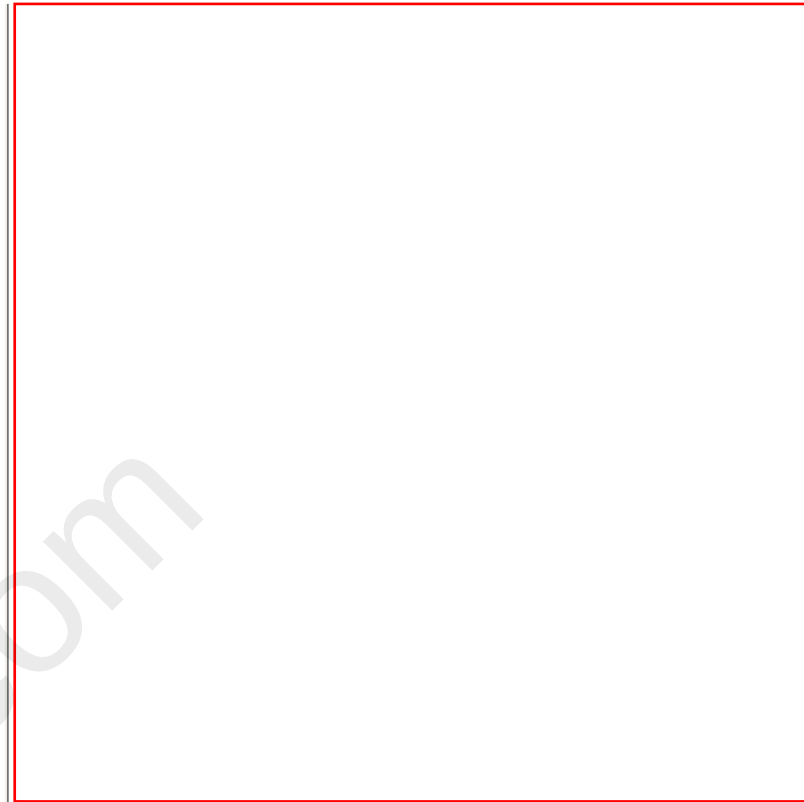


Upper Clockspring C218B, pin 16 (component side)





Upper Clockspring C218B, pin 7 (component side)



Upper Clockspring C218B, pin 16 (component side)

Is the voltage approximately 5 volts?

Yes	REPAIR the steering wheel harness (open or short is present) or INSTALL a new steering wheel as necessary. REFER to: Steering Wheel (211-04 Steering Column, Removal and Installation).
No	GO to K3

K3 CHECK FOR DTC (DIAGNOSTIC TROUBLE CODE) B1380:11

- Using a diagnostic scan tool, carry out the SCCM self-test.

Is DTC B1380:11 present?

Yes	GO to K4
No	GO to K5

K4 CHECK THE CLOCKSPRING FOR A SHORT TO GROUND

- Ignition OFF.
- Remove the clockspring.
REFER to: [Clockspring](#) (501-20B Supplemental Restraint System, Removal and Installation).
- Ignition ON.
- Wait 30 seconds.
- Using a diagnostic scan tool, clear the SCCM Diagnostic Trouble Codes (DTCs).
- **NOTE:** *DTC B1380:17 may be present when carrying out this step and should be disregarded at this time.*

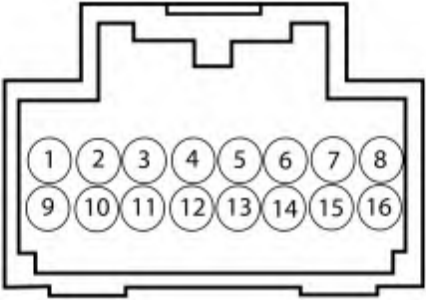
Using a diagnostic scan tool, carry out the SCCM self-test.

Is DTC B1380:11 still present?

Yes	GO to K6
No	INSTALL a new clockspring. REFER to: Clockspring (501-20B Supplemental Restraint System, Removal and Installation).

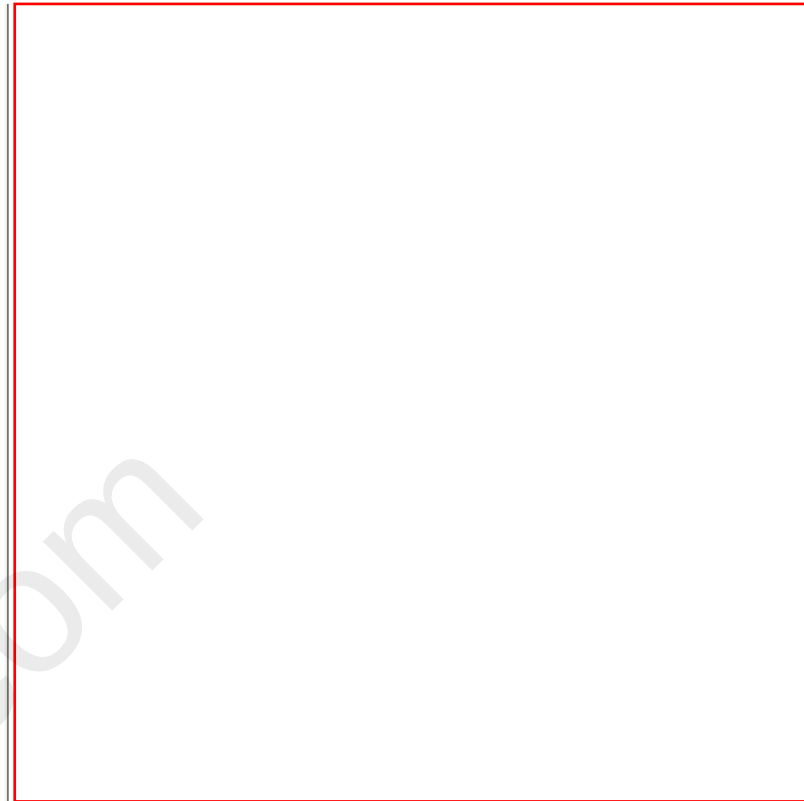
K5 CHECK THE CLOCKSPRING FOR AN OPEN

- Ignition OFF.
- Measure:

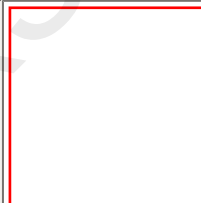
Positive Lead	Measurement / Action	Negative Lead
 E155137 Upper Clockspring C218B, pin 14 (component side)		Lower Clockspring C218D, pin 6 (component side)



Upper Clockspring C218B, pin 15 (component side)

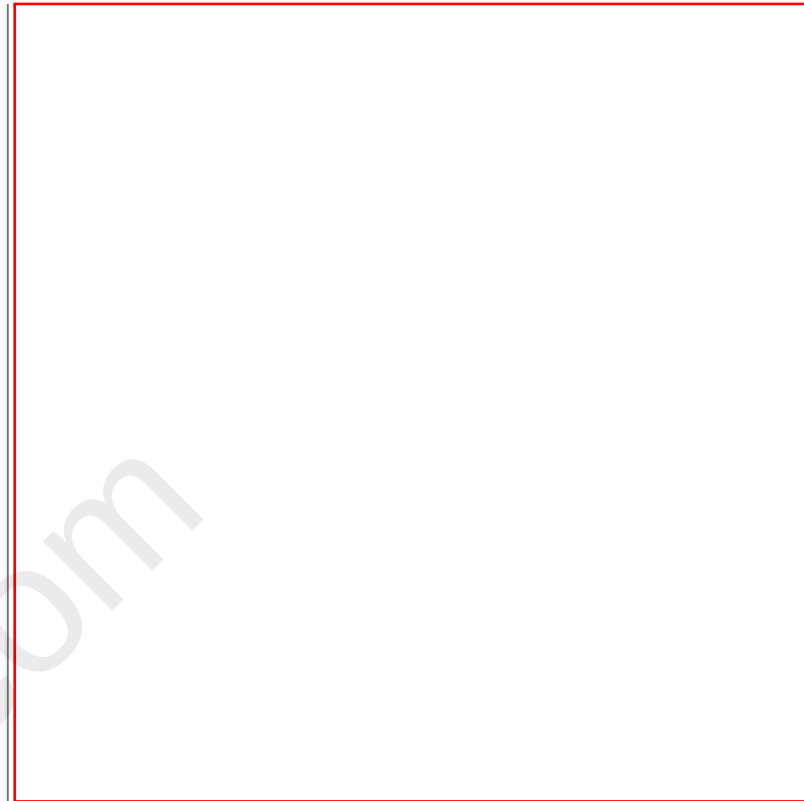


Lower Clockspring C218D, pin 8 (component side)

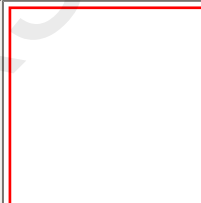




Upper Clockspring C218B, pin 6 (component side)

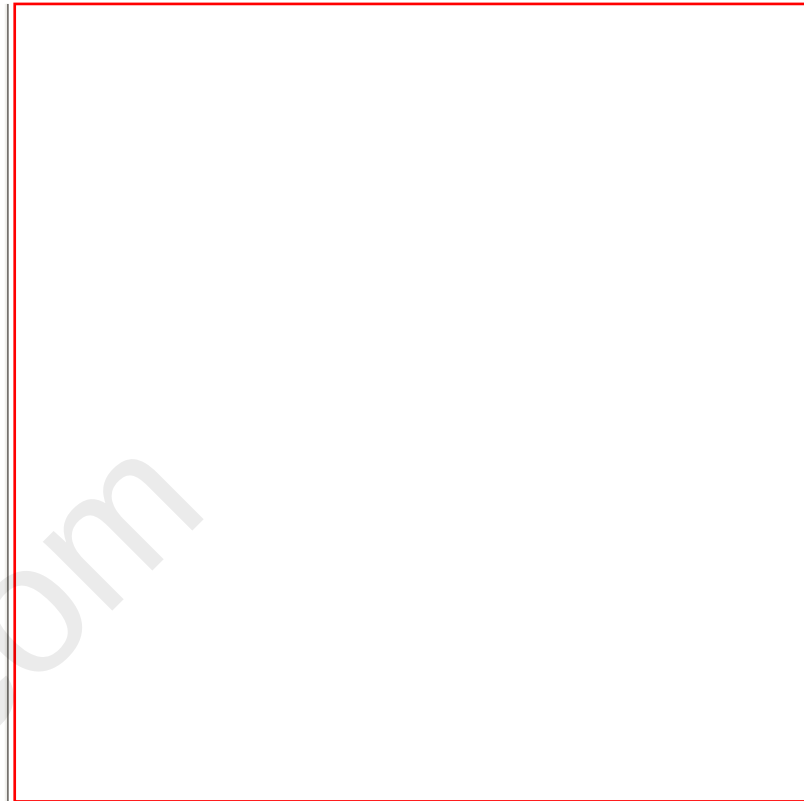


Lower Clockspring C218D, pin 5 (component side)

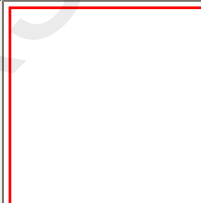




Upper Clockspring C218B, pin 7 (component side)

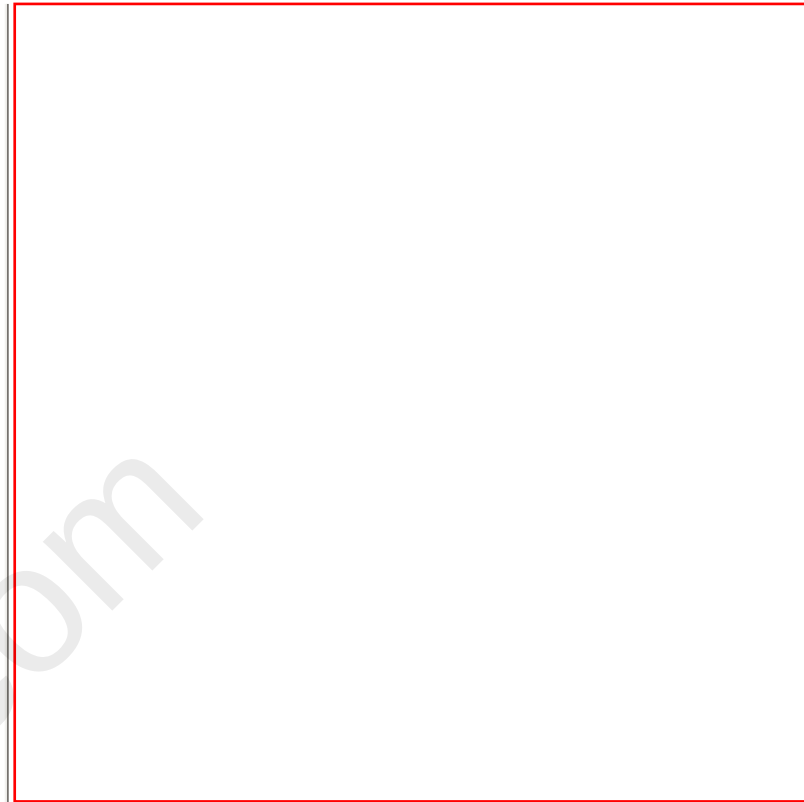


Lower Clockspring C218D, pin 7 (component side)





Upper Clockspring C218B, pin 16 (component side)



Lower Clockspring C218D, pin 10 (component side)

Are the resistances less than 3 ohms?

Yes	GO to K6
No	INSTALL a new clockspring. REFER to: Clockspring (501-20B Supplemental Restraint System, Removal and Installation).

K6 CHECK FOR CORRECT SCCM (STEERING COLUMN CONTROL MODULE) OPERATION

- Ignition OFF.
- Disconnect and inspect all the SCCM connectors.
- Repair:
 - Corrosion (clean module pins or install new connectors or terminals)
 - Damaged or bent pins (install new terminals or pins)
 - Pushed-out pins (install new pins as necessary)
- Reconnect the SCCM connectors. Make sure they seat and latch correctly.
- Operate the system and determine if the concern is still present.

Is the concern still present?

Yes	CHECK OASIS for any applicable Technical Service Bulletins (TSBs). If a TSB exists for this concern, DISCONTINUE this test and FOLLOW the TSB instructions. If no Technical Service Bulletins (TSBs) address this concern, INSTALL a new SCCM. REFER to: Steering Column Control Module (SCCM) (211-05 Steering Wheel and Column Electrical Components, Removal and Installation).
No	The system is operating correctly at this time. The concern may have been caused by module connections. ADDRESS the root cause of any connector or pin issues.

The FCDIM Is Inoperative Or Does Not Operate Correctly

Refer to Wiring Diagrams Cell 131 for schematic and connector information.

Normal Operation and Fault Conditions

REFER to: [Information and Entertainment System - System Operation and Component Description](#) (415-00B Information and Entertainment System - General Information - Vehicles With: SYNC Without Touchscreen, Description and Operation).

APIM DTC Fault Trigger Conditions

DTC	Description	Fault Trigger Conditions
B108E:02	Display: General Signal Failure	Sets in continuous memory when the APIM receives a message from the FCDIM indicating a fault.
B108E:87	Display: Missing Message	Sets in continuous memory when the APIM loses communication to the FCDIM.

Possible Causes

- Network communication concern
- Configuration concern
- LVDS cable
- FCDIM
- APIM

PINPOINT TEST L : THE FCDIM (FRONT CONTROL/DISPLAY INTERFACE MODULE) IS INOPERATIVE OR DOES NOT OPERATE CORRECTLY

NOTE: Prior to carrying out diagnostics, it may be beneficial to determine the cause using the Circuit Tester and LVDS Adapter Kit 420-912 (Rotunda part number NUD420-912) or equivalent tool.

L1 CHECK FOR A NETWORK COMMUNICATION CONCERN

NOTE: The display screen is blank if a concern with the HS-CAN3 is present.

- Ignition ON.
- Using a diagnostic scan tool, carry out the network test.

Does the ACM and the APIM pass the network test?

Yes	GO to L2
No	REFER to: Communications Network (418-00 Module Communications Network, Diagnosis and Testing).

L2 CHECK FOR COMMUNICATION AND CONFIGURATION DIAGNOSTIC TROUBLE CODES (DTCS)

- Using a diagnostic scan tool, retrieve all Continuous Memory Diagnostic Trouble Code (CMDTCs).

Are any communication or configuration related Diagnostic Trouble Codes (DTCs) present?

Yes	DIAGNOSE these Diagnostic Trouble Codes (DTCs) first. REFER to the appropriate module DTC Chart in the appropriate section.
No	GO to L3

L3 CHECK FOR ACM (AUDIO FRONT CONTROL MODULE) DIAGNOSTIC TROUBLE CODES (DTCS)

- Using a diagnostic scan tool, carry out the ACM self-test.

Are any Diagnostic Trouble Codes (DTCs) present?

Yes	REFER to the ACM DTC Chart in this section.
No	GO to L4

L4 CHECK FOR APIM (SYNC MODULE) DIAGNOSTIC TROUBLE CODES (DTCS)

- Using a diagnostic scan tool, carry out the APIM self-test.

Are any Diagnostic Trouble Codes (DTCs) present?

Yes	For DTC B108E:4B or B108E:87, GO to L5 For all other Diagnostic Trouble Codes (DTCs), REFER to the APIM DTC Chart in this section.
No	GO to L5

L5 CHECK THE LVDS (LOW VOLTAGE DIFFERENTIAL SIGNALING) CABLE FOR AN OPEN

NOTICE: Use the male Flex Probe 300-08057 (0.5 mm) or equivalent. Failure to use the correct probe may damage the LVDS cable.

- Ignition OFF.
- Disconnect APIM C2383D.
- Disconnect FCDIM C2614.

Are the resistances less than 3 ohms?

Yes	GO to L6
No	INSTALL a new LVDS cable. After installing a new cable, REBOOT the APIM by simultaneously pressing and holding the SEEK UP and POWER buttons on the FCIM for 10 seconds and verify the display operation.

L6 CHECK FOR CORRECT VOLTAGE TO THE FCDIM (FRONT CONTROL/DISPLAY INTERFACE MODULE)

NOTICE: Use the male Flex Probe 300-08057 (0.5 mm) or equivalent. Failure to use the correct probe may damage the LVDS cable.

- Connect APIM C2383D.
- Ignition ON.
- **NOTE:** Set the multimeter to the mVDC setting (if necessary, refer to the multimeter manual for information on how to access the mV range). Do not use the LVDS cable ground for this measurement.

Is the DC voltage between 0.5 and 10 millivolts?

Yes	INSTALL a new FCDIM. REFER to: Front Control/Display Interface Module (FCDIM) (415-00 Information and Entertainment System - General Information - Vehicles With: SYNC Without Touchscreen) .
No	GO to L7

L7 TEMPORARILY REMOVE THE POWER FROM THE APIM (SYNC MODULE) AND RECHECK THE SYSTEM OPERATION

- Ignition OFF.
- Connect FCDIM C2614.
- Remove BCM fuse 32 (10A).
- Wait 1 minute.
- Install BCM fuse 32 (10A).
- Ignition ON.
- Test the system to verify the concern is still present.

Is the concern still present?

Yes	GO to L8
No	The system is operating correctly at this time. VERIFY the specific concern by duplicating the steps that were taken when the original concern was generated. If the concern cannot be duplicated, the concern may have been caused from a low/high voltage event such as jump starting a vehicle.

L8 CHECK FOR CORRECT APIM (SYNC MODULE) OPERATION

- Ignition OFF.
- Disconnect and inspect all the APIM connectors.
- Repair:
 - corrosion (install new connectors or terminals - clean module pins)
 - damaged or bent pins - install new terminals pins
 - pushed-out pins - install new pins as necessary
- Reconnect the APIM connectors. Make sure they seat and latch correctly.
- Operate the system and determine if the concern is still present.

Is the concern still present?

Yes	CHECK OASIS for any applicable Technical Service Bulletins (TSBs). If a TSB exists for this concern, DISCONTINUE this test and FOLLOW the TSB instructions. If no Technical Service Bulletins (TSBs) address this concern,   Click here to access Guided Routine (APIM).
No	The system is operating correctly at this time. The concern may have been caused by module connections. ADDRESS the root cause of any connector or pin issues.

Sound From The SYNC System (Music/Audible Prompts) Is Inoperative Or Does Not Operate Correctly

Refer to Wiring Diagrams Cell 131 for schematic and connector information.

Normal Operation and Fault Conditions

For a list of SYNC stereo and mono outputs,

REFER to: [Information and Entertainment System - System Operation and Component Description](#) (415-00B Information and Entertainment System - General Information - Vehicles With: SYNC Without Touchscreen, Description and Operation).

Possible Causes

- Customer device
- Wiring, terminals, or connectors
- Steering wheel switch input concern
- APIM
- ACM

PINPOINT TEST M : SOUND FROM THE SYNC SYSTEM (MUSIC/AUDIBLE PROMPTS) IS INOPERATIVE OR DOES NOT OPERATE CORRECTLY

M1 CHECK THE OPERATION OF THE SPEAKERS USING THE AM (AMPLITUDE MODULATION) / FM (FREQUENCY MODULATION) MODE

- Ignition ON.
- Operate the audio system in AM/ FM mode.
- Using the audio system fade and balance features, adjust the audio sound to each of the zones (left front, right front, left rear and right rear).

Do all of the speakers operate?

Yes	GO to M2
No	GO to Pinpoint Test G

M2 CHECK THE SCCM (STEERING COLUMN CONTROL MODULE) STEERING WHEEL SWITCH PARAMETER IDENTIFICATIONS (PIDS)

- Using a diagnostic scan tool, view the SCCM Parameter Identifications (PIDs).
- Using a diagnostic scan tool, view the following SCCM steering wheel audio/media switch Parameter Identifications (PIDs) while pressing each button.
 - SW_VOICE (Steering Wheel Voice Button)
 - SW_MEDIA (Steering Wheel Media Button)
 - SW_MUTE (Steering Wheel Mute Button)

Do the Parameter Identifications (PIDs) correspond correctly?

Yes	GO to M3
No	GO to Pinpoint Test K

M3 CHECK THE APIM (SYNC MODULE) OUTPUT CIRCUITS FOR A SHORT TO VOLTAGE

- Ignition OFF.
- Disconnect ACM C240B.
- Disconnect APIM C2383A.
- Ignition ON.
- Measure:

Click to display connectors

Stereo Right

Positive Lead	Measurement / Action	Negative Lead
C240B-13		Ground
C240B-26		Ground

Is any voltage present?

Yes	REPAIR the circuit in question.
No	GO to M4

M4 CHECK THE APIM (SYNC MODULE) OUTPUT CIRCUITS FOR A SHORT TO GROUND

- Ignition OFF.

- Measure:

Click to display connectors

Stereo Right

Positive Lead	Measurement / Action	Negative Lead
C240B-13	Ω	Ground
C240B-26		Ground

Are the resistances greater than 10,000 ohms?

Yes	GO to M5
No	REPAIR the circuit in question.

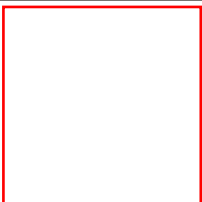
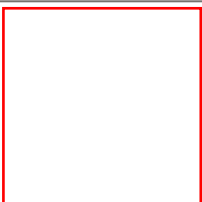
M5 CHECK THE APIM (SYNC MODULE) OUTPUT CIRCUITS FOR A SHORT TOGETHER

- Measure:

Click to display connectors

Stereo Left and Right

Positive Lead	Measurement / Action	Negative Lead
C240B-12	Ω	C240B-13
C240B-12		C240B-25

C240B-12		C240B-26
C240B-13		C240B-25
C240B-13		C240B-26
C240B-25		C240B-26

Are the resistances greater than 10,000 ohms?

Yes	GO to M6
No	REPAIR the circuits in question.

M6 CHECK THE APIM (SYNC MODULE) OUTPUT CIRCUITS FOR AN OPEN

- Measure:

Click to display connectors

Stereo Right

Positive Lead	Measurement / Action	Negative Lead
C240B-13	Ω	C2383A-25
C240B-26		C2383A-26

Are the resistances less than 3 ohms?

Yes	GO to M7
No	REPAIR the circuit in question.

M7 CHECK FOR AN AC (ALTERNATING CURRENT) VOLTAGE SIGNAL FROM THE APIM (SYNC MODULE) OUTPUT CIRCUITS

- Connect APIM C2383A.
- Ignition ON.
- For a concern playing music using the SYNC system, play an audio file through the audio system using a SYNC audio source (Bluetooth or USB port).
- For a concern with the SYNC audible prompts, repeatedly press the VOICE button on the steering wheel switch while measuring the voltage.
- **NOTE:** The ACM C240A connector must be connected for this test.

Measure:

Click to display connectors

Stereo Right

Positive Lead	Measurement / Action	Negative Lead
---------------	----------------------	---------------

C240B-13



C240B-26

Is a fluctuating AC voltage present?

Yes	GO to M9
No	GO to M8

M8 CHECK FOR CORRECT APIM (SYNC MODULE) OPERATION

- Ignition OFF.
- Disconnect and inspect the APIM connector.
- Repair:
 - Corrosion (clean module pins or install new connectors or terminals)
 - Damaged or bent pins (install new terminals or pins)
 - Pushed-out pins (install new pins as necessary)
- Reconnect the APIM connector. Make sure it seats and latches correctly.
- Operate the system and determine if the concern is still present.

Is the concern still present?

Yes	CHECK OASIS for any applicable Technical Service Bulletins (TSBs). If a TSB exists for this concern, DISCONTINUE this test and FOLLOW the TSB instructions. If no Technical Service Bulletins (TSBs) address this concern,   Click here to access Guided Routine (APIM).
No	The system is operating correctly at this time. The concern may have been caused by module connections. ADDRESS the root cause of any connector or pin issues.

M9 CHECK FOR CORRECT ACM (AUDIO FRONT CONTROL MODULE) OPERATION

- Ignition OFF.
- Disconnect and inspect all the ACM connectors.
- Repair:
 - Corrosion (clean module pins or install new connectors or terminals)
 - Damaged or bent pins (install new terminals or pins)
 - Pushed-out pins (install new pins as necessary)
- Reconnect the ACM connectors. Make sure they seat and latch correctly.
- Operate the system and determine if the concern is still present.

Is the concern still present?

Yes	CHECK OASIS for any applicable Technical Service Bulletins (TSBs). If a TSB exists for this concern, DISCONTINUE this test and FOLLOW the TSB instructions. If no Technical Service Bulletins (TSBs) address this concern, INSTALL a new ACM. REFER to: Audio Front Control Module (ACM) (415-00B Information and Entertainment System - General Information - Vehicles With: SYNC Without Touchscreen, Removal and Installation).
No	The system is operating correctly at this time. The concern may have been caused by module connections. ADDRESS the root cause of any connector or pin issues.

Voice Recognition Is Inoperative Or Outgoing Audio Is Not Transmitted During A Phone Call

Refer to Wiring Diagrams Cell 131 for schematic and connector information.

Normal Operation and Fault Conditions

REFER to: [Information and Entertainment System - System Operation and Component Description](#) (415-00B Information and Entertainment System - General Information - Vehicles With: SYNC Without Touchscreen, Description and Operation).

APIM DTC Fault Trigger Conditions

DTC	Description	Fault Trigger Conditions
B1D79:11	Microphone Input: Circuit Short To Ground	Sets during the on-demand self-test when the APIM detects a short to ground from the microphone circuitry.
B1D79:12	Microphone Input: Circuit Short To Battery	Sets during the on-demand self-test when the APIM detects a short to voltage from the microphone circuitry.

B1D79:13	Microphone Input: Circuit Open	Sets during the on-demand self-test when the APIM detects an open from the microphone circuitry.
----------	--------------------------------	--

Possible Causes

- Wiring, terminals, or connectors
- Steering wheel switch input concern
- Microphone
- APIM

PINPOINT TEST N : VOICE RECOGNITION IS INOPERATIVE OR OUTGOING AUDIO IS NOT TRANSMITTED DURING A PHONE CALL

N1 CHECK THE SCCM (STEERING COLUMN CONTROL MODULE) STEERING WHEEL VOICE BUTTON (SW_VOICE) AND STEERING WHEEL MUTE BUTTON (SW_MUTE) PARAMETER IDENTIFICATIONS (PIDS)	
• Ignition ON. • Using a diagnostic scan tool, view the SCCM Parameter Identifications (PIDs). • Using a diagnostic scan tool, view the SCCM SW_VOICE and SW_MUTE Parameter Identifications (PIDs) while pressing the voice and mute buttons on the steering wheel.	
Do the Parameter Identifications (PIDs) correspond correctly?	
Yes	GO to N2
No	GO to Pinpoint Test K
N2 CHECK THE MICROPHONE CIRCUITS FOR A SHORT TO VOLTAGE	
• Ignition OFF. • Disconnect APIM C2383A. • Disconnect Microphone C9221. • Ignition ON.	
Is any voltage present?	
Yes	REPAIR the circuit in question.
No	GO to N3

N3 CHECK THE MICROPHONE CIRCUITS FOR A SHORT TO GROUND

- Ignition OFF.

Are the resistances greater than 10,000 ohms?

Yes	GO to N4
No	REPAIR the circuit in question.

N4 CHECK THE MICROPHONE CIRCUITS FOR AN OPEN

Are the resistances less than 3 ohms?

Yes	GO to N5
No	REPAIR the circuit in question.

N5 CHECK THE MICROPHONE CIRCUITS FOR A SHORT TOGETHER

Is the resistance greater than 10,000 ohms?

Yes	Install a new microphone. REFER to: Microphone (415-00B Information and Entertainment System - General Information - Vehicles With: SYNC Without Touchscreen, Removal and Installation). TEST the system for normal operation. If the concern is still present, GO to N6
No	REPAIR the circuits.

N6 CHECK FOR CORRECT APIM (SYNC MODULE) OPERATION

- Ignition OFF.
- Disconnect and inspect the APIM connector.
- Repair:
 - Corrosion (clean module pins or install new connectors or terminals)
 - Damaged or bent pins (install new terminals or pins)
 - Pushed-out pins (install new pins as necessary)
- Reconnect the APIM connector. Make sure they seat and latch correctly.
- Wait at least 2 minutes for the APIM to re-initialize.
- Operate the system and determine if the concern is still present.

Is the concern still present?

Yes	CHECK OASIS for any applicable Technical Service Bulletins (TSBs). If a TSB exists for this concern, DISCONTINUE this test and FOLLOW the TSB instructions. If no Technical Service Bulletins (TSBs) address this concern,   Click here to access Guided Routine (APIM).
No	The system is operating correctly at this time. The concern may have been caused by module connections. ADDRESS the root cause of any connector or pin issues.

A USB Device Is Not Recognized By The Sync System Or Audio Files On A USB Device Are Not Found Using The Sync System From One Or Both USB Ports

Refer to Wiring Diagrams Cell 131 for schematic and connector information.

Normal Operation and Fault Conditions

REFER to: [Information and Entertainment System - System Operation and Component Description](#) (415-00B Information and Entertainment System - General Information - Vehicles With: SYNC Without Touchscreen, Description and Operation).

APIM DTC Fault Trigger Conditions

DTC	Description	Fault Trigger Conditions

B1252:11	USB Port: Circuit Short to Ground	Sets in continuous memory and during the on-demand self-test when the APIM detects a short to ground from the USB cable.
B1252:13	USB Port: Circuit Open	Sets during the on-demand self-test when the APIM detects an open from the USB cable.
B14FD:11	External Media Control Connectivity: Circuit Short To Ground	Sets in continuous memory when the APIM detects a short to ground from the USB hub power supply circuit.

Possible Causes

- USB device
- Foreign object in the USB port
- USB cable
- USB hub
- APIM

PINPOINT TEST O : A USB (UNIVERSAL SERIAL BUS) DEVICE IS NOT RECOGNIZED BY THE SYNC SYSTEM OR AUDIO FILES ON A USB (UNIVERSAL SERIAL BUS) DEVICE ARE NOT FOUND USING THE SYNC SYSTEM FROM ONE OR BOTH USB (UNIVERSAL SERIAL BUS) PORTS

O1 CHECK FOR FOREIGN MATERIAL IN THE USB (UNIVERSAL SERIAL BUS) PORTS

- Ignition OFF.
- Remove any devices connected to the USB ports.
- Inspect the USB ports for foreign material.

Is any foreign material present in either USB port?

Yes	REMOVE the foreign material present in the USB port.
No	GO to O2

O2 CHECK THE OPERATION FROM BOTH USB (UNIVERSAL SERIAL BUS) PORTS

- Ignition ON.
- Connect the MIT 105-00120 to one USB port.
- Using the MIT 105-00120, attempt to play an audio file.
- Connect the MIT 105-00120 to the other USB port.
- Using the MIT 105-00120, attempt to play an audio file.

Is the audio output OK for both USB ports?

Yes	The system is operating correctly. The concern is with the customer USB device.
No	If the audio output is inoperative for only one USB port, INSTALL a new USB hub. If the audio output is inoperative for both USB ports, GO to O3

O3 CHECK FOR APIM (SYNC MODULE) DTC (DIAGNOSTIC TROUBLE CODE) B1252:11 AND B14FD:11

- Using a diagnostic scan tool, carry out the APIM self-test.

Is DTC B1252:11 or B14FD:11 present?

Yes	GO to O4
No	GO to O8

O4 ISOLATE THE USB (UNIVERSAL SERIAL BUS) HUB

- Ignition OFF.
- Disconnect USB Hub C3512A (with floor console) or C2809A (without floor console).
- Disconnect USB Hub C3512B (with floor console) or C2809B (without floor console).
- Ignition ON.
- Using a diagnostic scan tool, clear the APIM Diagnostic Trouble Codes (DTCs).
- Wait 30 seconds.
- **NOTE:** DTC B1252:13 may be present when carrying out this step and should be disregarded at this time.

Using a diagnostic scan tool, carry out the APIM self-test.

Is DTC B1252:11 or B14FD:11 still present?

Yes	For DTC B1252:11, GO to O5 For DTC B14FD:11, GO to O6
No	INSTALL a new USB hub.

O5 ISOLATE THE USB (UNIVERSAL SERIAL BUS) CABLE FOR A SHORT TO GROUND

- Ignition OFF.
- Disconnect APIM C2383B.
- Ignition ON.
- Using a diagnostic scan tool, clear the APIM Diagnostic Trouble Codes (DTCs).
- Wait 30 seconds.
- **NOTE:** *DTC B1252:13 may be present when carrying out this step and should be disregarded at this time.*

Using a diagnostic scan tool, carry out the APIM self-test.

Is DTC B1252:11 still present?

Yes	GO to O13
No	INSTALL a new USB cable.

O6 CHECK THE USB (UNIVERSAL SERIAL BUS) HUB POWER AND RETURN CIRCUITS FOR A SHORT TO GROUND

- Ignition OFF.
- Disconnect APIM C2383A.

Are the resistances greater than 10,000 ohms?

Yes	GO to O7
No	REPAIR the circuit in question.

O7 CHECK THE USB (UNIVERSAL SERIAL BUS) HUB POWER AND RETURN CIRCUITS FOR A SHORT TO EACH OTHER

Is the resistance greater than 10,000 ohms?

Yes	GO to O13
No	REPAIR the circuits.

O8 CHECK FOR POWER TO THE USB (UNIVERSAL SERIAL BUS) HUB

- Ignition OFF.
- Disconnect USB Hub C3512A (with floor console) or C2809A (without floor console).
- Ignition ON.
- Measure:

Click to display connectors

Without Floor Console

Positive Lead	Measurement / Action	Negative Lead
C2809A-1		C2809A-4

Is the voltage approximately 5 volts?

Yes	GO to O11
-----	---------------------------

No	GO to O9
----	--------------------------

O9 CHECK THE USB (UNIVERSAL SERIAL BUS) HUB POWER AND RETURN CIRCUITS FOR A SHORT TO VOLTAGE

- Ignition OFF.
- Disconnect APIM C2383A.
- Ignition ON.

Is any voltage present?

Yes	REPAIR the circuit in question.
No	GO to O10

O10 CHECK THE USB (UNIVERSAL SERIAL BUS) HUB POWER AND RETURN CIRCUITS FOR AN OPEN

- Ignition OFF.
- Measure:

Click to display connectors

Without Floor Console

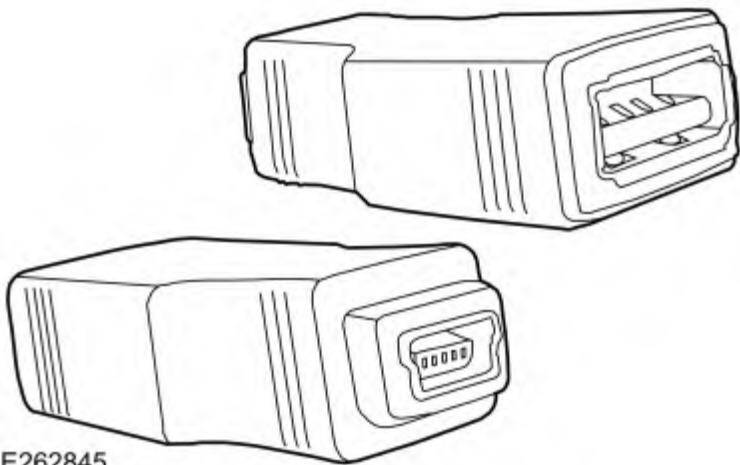
Positive Lead	Measurement / Action	Negative Lead
C2809A-1	Ω	C2383A-8
C2809A-4		C2383A-38

Are the resistances less than 3 ohms?

Yes	GO to O13
No	REPAIR the circuit in question.

O11 BYPASS THE USB (UNIVERSAL SERIAL BUS) HUB

- Ignition OFF.
- Disconnect USB Hub C3512B (with floor console) or C2809B (without floor console).



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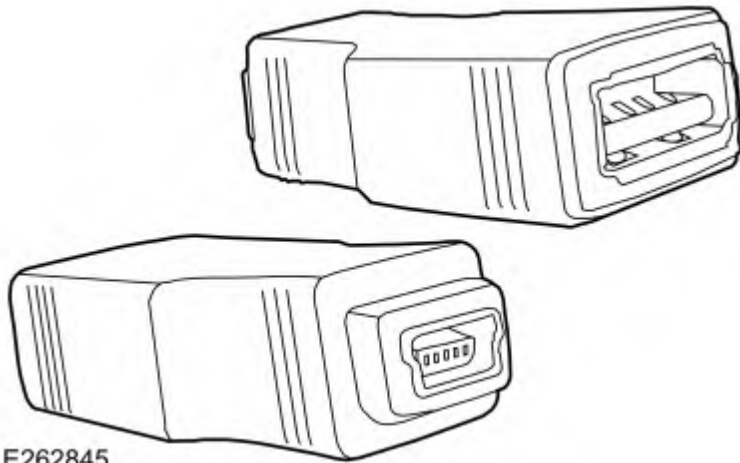
- Connect a Type A 4 Pin To Female Type Mini-B 5 Pin USB 2.0 Adaptor (Rotunda part number CCMUSB-AF-BF5) or equivalent to the USB hub C3512B.
- Ignition ON.
- Connect the MIT 105-00120 to the USB adaptor.
- Using the MIT 105-00120, attempt to play an audio file.

Is the audio output OK?

Yes	INSTALL a new USB hub.
No	GO to O12

O12 BYPASS THE USB (UNIVERSAL SERIAL BUS) CABLE

- Ignition OFF.
- Obtain a new USB cable.
- Connect one end of the new USB cable to the APIM C2383B.



- Connect a Type A 4 Pin To Female Type Mini-B 5 Pin USB 2.0 Adaptor (Rotunda part number CCMUSB-AF-BF5) or equivalent to the new USB cable.
- Ignition ON.
- Connect the MIT 105-00120 to the USB adaptor.
- Using the MIT 105-00120, attempt to play an audio file.

Is the audio output OK?

Yes	INSTALL a new USB cable.
No	GO to O13

O13 CHECK FOR CORRECT APIM (SYNC MODULE) OPERATION

- Ignition OFF.
- Disconnect and inspect the APIM connectors.
- Repair:
 - corrosion (install new connectors or terminals - clean module pins)
 - damaged or bent pins - install new terminals pins
 - pushed-out pins - install new pins as necessary
- Reconnect the APIM connectors. Make sure they seat and latch correctly.
- Wait 2 minutes for the APIM to re-initialize.
- Operate the system and determine if the concern is still present.

Is the concern still present?

Yes	CHECK OASIS for any applicable Technical Service Bulletins (TSBs). If a TSB exists for this concern, DISCONTINUE this test and FOLLOW the TSB instructions. If no Technical Service Bulletins (TSBs) address this concern, INSTALL a new APIM.   Click here to access Guided Routine (APIM).
No	The system is operating correctly at this time. The concern may have been caused by module connections. ADDRESS the root cause of any connector or pin issues.

Unable To Pair Bluetooth Device Or The Bluetooth Functionality Is Inoperative

Normal Operation and Fault Conditions

REFER to: [Information and Entertainment System - System Operation and Component Description](#) (415-00B Information and Entertainment System - General Information - Vehicles With: SYNC Without Touchscreen, Description and Operation).

Possible Causes

- Customer error
- Incompatible Bluetooth device
- Bluetooth device
- APIM

PINPOINT TEST P : UNABLE TO PAIR BLUETOOTH DEVICE OR THE BLUETOOTH FUNCTIONALITY IS INOPERATIVE

NOTE: It may be necessary for the vehicle owner to provide the Bluetooth device to complete diagnostics.

P1 CHECK THE APIM (SYNC MODULE) BLUETOOTH PAIRING CAPABILITY

- Ignition ON.
- Connect one of the following to a USB port:
 - A MIT 420-373 (or Rotunda part number 105-00120-GEN2) or equivalent verification tool.
 - Compatible Bluetooth Device (only if the MIT (or equivalent verification tool) **is not** available). Refer to the appropriate Ford website to view a list of compatible devices and features.
- With the MIT (equivalent verification tool) or compatible Bluetooth device in Bluetooth mode, pair it with the APIM. Follow the device instructions for Bluetooth pairing.
- Using a diagnostic scan tool, view the APIM Parameter Identifications (PIDs).
- Monitor the APIM Bluetooth device paired (BT_PAIR) and the Bluetooth device connected (BT_CONN) Parameter Identifications (PIDs).

Do the Parameter Identifications (PIDs) both read "Yes"?

Yes	GO to P2
No	GO to P6

P2 CARRY OUT A MASTER RESET AND RETEST THE CUSTOMER DEVICE

- **NOTE:** Carrying out a Master Reset returns all preference settings to the factory defaults, erases the phone book and call histories, deletes any Bluetooth devices paired with the SYNC system, and removes any Wi-Fi® network connections, cancelling any system update download or installation in progress.

Carry out a Master Reset. Refer to “Master Reset” in the Owner Literature.

- Pair and connect the customer's Bluetooth device with the APIM. Refer to the Owner Literature.
- Using a diagnostic scan tool, view the APIM Parameter Identifications (PIDs).
- Monitor the Bluetooth device paired PID (BT_PAIR) and the Bluetooth device connected PID (BT_CONN).

Do the Parameter Identifications (PIDs) both read "Yes"?

Yes	GO to P3
No	GO to P4

P3 CHECK THE SUSPECT BLUETOOTH DEVICE FEATURES

- Check the operation of the suspect Bluetooth device feature such as text messaging, media playback or controls, phone book download, call history, or call waiting.

Does the suspect Bluetooth device feature operate?

Yes	The system is operating correctly at this time. REVIEW the pairing process with the vehicle owner.
No	GO to P4

P4 CHECK THE INOPERATIVE BLUETOOTH DEVICE AND FEATURE FOR COMPATIBILITY

- Review the device compatibility list and determine if the inoperative Bluetooth device and feature is compatible. Refer to the appropriate Ford website to view a list of compatible devices and features.

Is the inoperative Bluetooth device and feature compatible?

Yes	GO to P5
No	The system is operating correctly. The Bluetooth device or feature in question is not compatible with the SYNC system.

P5 CHECK THE SUSPECT DEVICE

- Power off the suspect device.
- If possible, remove the battery and install it for a complete reboot.
- Power on the suspect device for a simple reboot.
- If necessary, check the suspect device for updates.
- Make sure "SYNC" is deleted from the suspect device Bluetooth menu prior to attempting to pair the Bluetooth device with the APIM.
- If necessary, carry out a Master Clear, Master Reset, or Factory Data Reset on the suspect device following the manufacturer instructions (in the device owner manual and/or website).

Is the concern still present?

Yes	GO to P6
No	The system is operating correctly. The fault was with the suspect device.

P6 CHECK FOR CORRECT APIM (SYNC MODULE) OPERATION

- Ignition OFF.
- Disconnect and inspect the APIM connector.
- Repair:
 - Corrosion (clean module pins or install new connectors or terminals)
 - Damaged or bent pins (install new terminals or pins)
 - Pushed-out pins (install new pins as necessary)
- Reconnect the APIM connector. Make sure it seats and latches correctly.
- Operate the system and determine if the concern is still present.

Is the concern still present?

Yes	CHECK OASIS for any applicable Technical Service Bulletins (TSBs). If a TSB exists for this concern, DISCONTINUE this test and FOLLOW the TSB instructions. If no Technical Service Bulletins (TSBs) address this concern,   Click here to access Guided Routine (APIM).
No	The system is operating correctly at this time. The concern may have been caused by module connections. ADDRESS the root cause of any connector or pin issues.

The 911 Assist or Emergency Assistance Not Operational Message Displays

Normal Operation and Fault Conditions

REFER to: [Information and Entertainment System - Overview](#) (415-00D Information and Entertainment System - General Information - Vehicles With: Bang and Olufsen Audio System, Description and Operation).

If a fault message appears indicating the 911 Assist or Emergency Assistance is not operational, the concern may be caused due to modules not communicating or incorrect APIM procedures.

Possible Causes

- 911 Assist or Emergency Assistance feature disabled
- Network communication concern
- Module configuration concern
- APIM

PINPOINT TEST Q : THE 911 ASSIST OR EMERGENCY ASSISTANCE NOT OPERATIONAL MESSAGE DISPLAYS

Q1 CHECK FOR CONTINUOUS MEMORY DIAGNOSTIC TROUBLE CODES (CMDTCS)

- Ignition ON.
- Using a diagnostic scan tool, retrieve the Continuous Memory Diagnostic Trouble Codes (CMDTCs).

Are any Continuous Memory Diagnostic Trouble Codes (CMDTCs) present?

Yes	REFER to the appropriate module DTC Chart in the appropriate section.
No	GO to Q2

Q2 VERIFY THE 911 ASSIST OR EMERGENCY ASSISTANCE FEATURE IS ENABLED

- Check the 911 Assist or Emergency Assistance feature setting in the display settings menu.

Is the 911 Assist or Emergency Assistance setting enabled?

Yes	GO to Q3
No	Enable the 911 Assist or Emergency Assistance feature.

Q3 CHECK THE VEHICLE SERVICE HISTORY

- Check the vehicle service history for recent service actions related to the RCM and the APIM.

Is any recent service action noted with the RCM or the APIM noted?

Yes	CARRY OUT the PMI procedure using As-Built data as directed by the diagnostic scan tool.
No	GO to Q4

Q4 CHECK FOR CORRECT APIM (SYNC MODULE) OPERATION

- Ignition OFF.
- Disconnect and inspect the APIM and any related in-line connectors.
- Repair:
 - corrosion (install new connectors or terminals - clean module pins)
 - damaged or bent pins - install new terminals pins
 - pushed-out pins - install new pins as necessary
- Reconnect the APIM and any related in-line connectors. Make sure they seat and latch correctly.
- Operate the system and determine if the concern is still present.

Is the concern still present?

Yes	CHECK OASIS for any applicable TSB, GSB, SSM or FSA. If a service article exists for this concern, DISCONTINUE this test and FOLLOW the service article instructions. If no service articles address this concern,   Click here to access Guided Routine (APIM).
No	The system is operating correctly at this time. The concern may have been caused by module connections. ADDRESS the root cause of any connector or pin issues.

The Compass Is Inoperative Or Does Not Operate Correctly

Normal Operation and Fault Conditions

REFER to: [Information and Entertainment System - System Operation and Component Description](#) (415-00B Information and Entertainment System - General Information - Vehicles With: SYNC Without Touchscreen, Description and Operation).

APIM DTC Fault Trigger Conditions

DTC	Description	Fault Trigger Conditions
B119F:01	GPS Antenna: General Electrical Failure	Sets in continuous memory when the APIM detects a short to ground or short to voltage from the GPS coaxial cable.
B119F:13	GPS Antenna: Circuit Open	Sets in continuous memory when the APIM detects an open from the GPS coaxial cable.

Possible Causes

- Corrosion
- Network communication concern
- Obstructions in the GPS antenna line of sight to the satellite
- Satellite radio antenna cable
- Satellite radio antenna
- APIM

PINPOINT TEST R : THE COMPASS IS INOPERATIVE OR DOES NOT OPERATE CORRECTLY

NOTE: Prior to carrying out diagnostics, it may be beneficial to determine the cause using the Antenna Kit Tool 420-525 (Rotunda part number NUD420-525) or equivalent tool.

R1 CHECK FOR APIM (SYNC MODULE) DTC (DIAGNOSTIC TROUBLE CODE) U0121:00

- Ignition ON.
- Using a diagnostic scan tool, carry out the APIM self-test.

Is DTC U0121:00 present?

Yes	GO to Pinpoint Test T
No	GO to R2

R2 CHECK FOR CORRECT APIM (SYNC MODULE) OUTPUT VOLTAGE FROM THE GPS (GLOBAL POSITIONING SYSTEM) COAXIAL CABLE CONNECTION

- Ignition OFF.
- Disconnect GPS Coaxial Cable from the APIM.
- Ignition ON.
- Using the female Flex Probe 300-08058 (0.5 mm x 0.5 mm) or equivalent, measure:

Positive Lead	Measurement / Action	Negative Lead



E231524

GPS coaxial cable core (APIM component side)



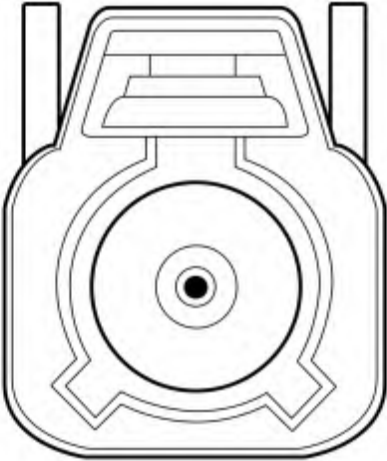
Ground

Is the voltage between 4.7 and 5.8 volts?

Yes	GO to R3
No	GO to R9

R3 CHECK THE GPS (GLOBAL POSITIONING SYSTEM) ANTENNA COAXIAL CABLE CORE AND SHIELD FOR A SHORT TO VOLTAGE

- Ignition OFF.
- Disconnect Satellite radio antenna cable from the ACM.
- Disconnect Satellite radio antenna cable from the satellite radio antenna.
- Ignition ON.
- Measure:

Positive Lead	Measurement / Action	Negative Lead
 E258796 Coaxial cable core at the APIM		Ground
		Ground

Coaxial cable shield at the APIM

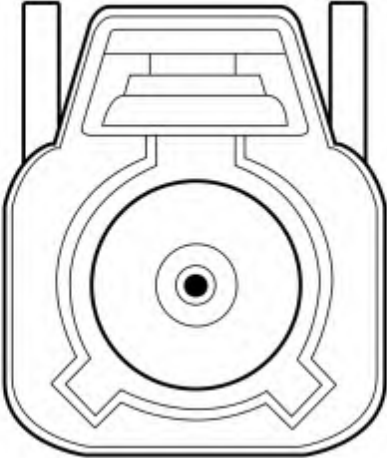
Is any voltage present?

Yes	IDENTIFY the location of the short to voltage. REPAIR or INSTALL a new coaxial cable in question. REFER to: Satellite Radio Antenna Cable (415-00B Information and Entertainment System - General Information - Vehicles With: SYNC Without Touchscreen, Removal and Installation).
No	GO to R4

R4 CHECK THE GPS (GLOBAL POSITIONING SYSTEM) ANTENNA COAXIAL CABLE CORE FOR A SHORT TO GROUND

- Ignition OFF.

- Measure:

Positive Lead	Measurement / Action	Negative Lead
 E258796 Coaxial cable core at the APIM		Ground

Is the resistance greater than 10,000 ohms?

Yes	GO to R5
No	IDENTIFY the location of the short to ground. REPAIR or INSTALL a new coaxial cable in question. REFER to: Satellite Radio Antenna Cable (415-00B Information and Entertainment System - General Information - Vehicles With: SYNC Without Touchscreen, Removal and Installation).

R5 CHECK THE GPS (GLOBAL POSITIONING SYSTEM) ANTENNA COAXIAL CABLE CORE AND SHIELD FOR A SHORT TOGETHER

- Measure:

Click to display connectors

Positive Lead	Measurement / Action	Negative Lead
Coaxial cable core at the APIM	Ω	Coaxial cable shield at the APIM

Is the resistance greater than 10,000 ohms?

Yes	GO to R6
No	IDENTIFY the location of the short. INSTALL a new coaxial cable in question. REFER to: Satellite Radio Antenna Cable (415-00B Information and Entertainment System - General Information - Vehicles With: SYNC Without Touchscreen, Removal and Installation).

R6 CHECK THE GPS (GLOBAL POSITIONING SYSTEM) ANTENNA COAXIAL CABLE CORE AND SHIELD FOR AN OPEN

- Measure:

Click to display connectors

Positive Lead	Measurement / Action	Negative Lead
Coaxial cable core at the APIM	Ω	Coaxial cable core at the satellite radio antenna
Coaxial cable shield at the APIM		Coaxial cable shield at the satellite radio antenna

Are the resistances less than 3 ohms?

Yes	GO to R7
No	IDENTIFY the location of the open. INSTALL a new coaxial cable in question. REFER to: Satellite Radio Antenna Cable (415-00B Information and Entertainment System - General Information - Vehicles With: SYNC Without Touchscreen, Removal and Installation).

R7 CHECK THE SATELLITE RADIO ANTENNA BASE AND MOUNTING SURFACE

- Remove the satellite radio antenna.
REFER to: [Satellite Radio Antenna](#) (415-00B Information and Entertainment System - General Information - Vehicles With: SYNC Without Touchscreen, Removal and Installation).
- Inspect for corrosion on the satellite radio antenna base and the vehicle mounting surface.

Is audio unit base and mounting free of corrosion?

Yes	GO to R8
No	REPAIR any corrosion on the antenna unit base and/or vehicle mounting surface. INSTALL the antenna and make sure the correct torque value is used when tightening the fastener. REFER to: Satellite Radio Antenna (415-00B Information and Entertainment System - General Information - Vehicles With: SYNC Without Touchscreen, Removal and Installation).

R8 CHECK THE LOWER SATELLITE/GPS (GLOBAL POSITIONING SYSTEM) ANTENNA COAXIAL CABLE

- Install the satellite radio antenna.
REFER to: [Satellite Radio Antenna](#) (415-00B Information and Entertainment System - General Information - Vehicles With: SYNC Without Touchscreen, Removal and Installation).
- Install a new lower satellite/GPS antenna coaxial cable.
REFER to: [Satellite Radio Antenna Cable](#) (415-00B Information and Entertainment System - General Information - Vehicles With: SYNC Without Touchscreen, Removal and Installation).
- Test the system for normal operation.

Is the concern still present?

Yes	INSTALL a new satellite radio antenna REFER to: Satellite Radio Antenna (415-00B Information and Entertainment System - General Information - Vehicles With: SYNC Without Touchscreen, Removal and Installation). TEST the system for normal operation. If the concern is still present, GO to R9
No	The repair is complete. The concern was caused by the lower satellite/GPS antenna coaxial cable.

R9 CHECK FOR CORRECT APIM (SYNC MODULE) OPERATION

- Ignition OFF.
- Disconnect and inspect all the APIM connectors.
- Repair:
 - corrosion (install new connectors or terminals - clean module pins)
 - damaged or bent pins - install new terminals pins
 - pushed-out pins - install new pins as necessary
- Reconnect the APIM connectors. Make sure they seat and latch correctly.
- Operate the system and determine if the concern is still present.

Is the concern still present?

Yes	CHECK OASIS for any applicable Technical Service Bulletins (TSBs). If a TSB exists for this concern, DISCONTINUE this test and FOLLOW the TSB instructions. If no Technical Service Bulletins (TSBs) address this concern,   Click here to access Guided Routine (APIM).
No	The system is operating correctly at this time. The concern may have been caused by module connections. ADDRESS the root cause of any connector or pin issues.

U0100:00 (ACM)

Normal Operation and Fault Conditions

The ACM communicates with the PCM over the CAN through the GWM. If the ACM does not receive messages from the PCM, features such as the speed compensated volume can be inoperative.

ACM DTC Fault Trigger Conditions

DTC	Description	Fault Trigger Conditions
U0100:00	Lost Communication with ECM/PCM "A": No Sub Type Information	Sets in continuous memory when the ACM detects network messages are missing from the PCM for more than 5 seconds when the ignition is on.

Possible Causes

- Network communication concern

- ACM concern
- GWM concern
- PCM

PINPOINT TEST S : U0100:00 (ACM (AUDIO FRONT CONTROL MODULE))

S1 VERIFY THE CONCERN

- Ignition ON.
- Verify there is an observable symptom present.

Is an observable symptom present?

Yes	GO to S2
No	CLEAR the DTC. The system is operating correctly at this time. The DTC may have been set due to high network traffic or an intermittent fault condition.

S2 CHECK FOR NON-NETWORK ACM (AUDIO FRONT CONTROL MODULE) DIAGNOSTIC TROUBLE CODES (DTCS)

- Ignition ON.
- Using a diagnostic scan tool, carry out the ACM self-test.

Are any non-network Diagnostic Trouble Codes (DTCs) present?

Yes	DIAGNOSE all non-network Diagnostic Trouble Codes (DTCs) first. REFER to the ACM DTC Chart in this section.
No	GO to S3

S3 CHECK FOR PCM (POWERTRAIN CONTROL MODULE) TROUBLE CODES (DTCS)

- Using a diagnostic scan tool, carry out the PCM self-test.

Are any Diagnostic Trouble Codes (DTCs) present?

Yes	REFER to the appropriate Diagnosis and Testing in section 414-00.
No	GO to S4

S4 CHECK FOR GWM (GATEWAY MODULE A) DIAGNOSTIC TROUBLE CODES (DTCS)

- Using a diagnostic scan tool, carry out the GWM self-test.

Are any Diagnostic Trouble Codes (DTCs) present?

Yes	REFER to: Communications Network (418-00 Module Communications Network, Diagnosis and Testing).
No	GO to S5

S5 RECHECK THE ACM (AUDIO FRONT CONTROL MODULE) DIAGNOSTIC TROUBLE CODES (DTCS)

- Using a diagnostic scan tool, clear the ACM Diagnostic Trouble Codes (DTCs).
- Ignition OFF.
- Ignition ON.
- Wait 10 seconds.
- Using a diagnostic scan tool, carry out the ACM self-test.

Is DTC U0100:00 still present?

Yes	GO to S6
No	The system is operating correctly at this time. The DTC may have set due to high network traffic or an intermittent fault condition.

S6 CHECK FOR OTHER CAUSES OF NETWORK COMMUNICATION CONCERN

NOTE: *If new modules were installed prior to the DTC being set, the module configuration can be incorrectly set during the PMI or the PMI may not have been carried out.*

- CHECK the vehicle service history for recent service actions related to the PCM, the GWM or the ACM. If recent service history is found:
 - verify correct replacement module was installed
 - vehicle parts build list may be used to verify correct part fitment
 - verify the configuration of replacement module was correct
 - re-configure module using as-built data if prior configuration is suspect
 - verify the module was not obtained from a like vehicle and installed into vehicle with concern
 - return the swapped module to source vehicle and obtain new replacement module
- Operate the system and determine if the observable symptom is still present.

Is the observable symptom still present?

Yes	GO to S7
No	The system is operating correctly at this time. The concern may have been due to incorrect parts replacement procedures or incorrect module configuration.

S7 CHECK FOR CORRECT PCM (POWERTRAIN CONTROL MODULE) OPERATION

- Ignition OFF.
- Disconnect and inspect all the PCM connectors.
- Repair:
 - corrosion (install new connectors or terminals - clean module pins)
 - damaged or bent pins - install new terminals pins
 - pushed-out pins - install new pins as necessary
- Reconnect the PCM connectors. Make sure they seat and latch correctly.
- Operate the system and determine if the concern is still present.

Is the concern still present?

Yes	CHECK OASIS for any applicable Technical Service Bulletins (TSBs). If a TSB exists for this concern, DISCONTINUE this test and FOLLOW the TSB instructions. If no Technical Service Bulletins (TSBs) address this concern, INSTALL a new PCM. REFER to the Removal and Installation procedure in the appropriate 303-14 section.
No	The system is operating correctly at this time. The concern may have been caused by module connections. ADDRESS the root cause of any connector or pin issues.

U0121:00 (APIM)

Refer to Wiring Diagrams Cell 14 for schematic and connector information.

Normal Operation and Fault Conditions

The APIM communicates with the ABS module over the CAN through the GWM. If the APIM does not receive messages from the ABS module, the GPS feature may not be accurate.

APIM DTC Fault Trigger Conditions

DTC	Description	Fault Trigger Conditions
U0121:00	Lost Communication With Anti-Lock Brake System (ABS) Control Module: No Sub Type Information	Sets in continuous memory when the APIM detects network messages are missing from the ABS module for more than 5 seconds when the ignition is on.

Possible Causes

- Network communication concern
- APIM concern
- GWM concern
- ABS module

PINPOINT TEST T : U0121:00 (APIM (SYNC MODULE))

T1 VERIFY THE CONCERN

- Ignition ON.
- Verify there is an observable symptom present.

Is an observable symptom present?

Yes	GO to T2
No	CLEAR the DTC. The system is operating correctly at this time. The DTC may have been set due to high network traffic or an intermittent fault condition.

T2 CHECK THE NETWORKCOMMUNICATION

- Using a diagnostic scan tool, carry out the network test.

Does the ABS module pass the network test?

Yes	GO to T3
No	REFER to: Communications Network (418-00 Module Communications Network, Diagnosis and Testing).

T3 CHECK FOR NON-NETWORK APIM (SYNC MODULE) DIAGNOSTIC TROUBLE CODES (DTCS)

- Using a diagnostic scan tool, carry out the APIM self-test.

Are any non-network Diagnostic Trouble Codes (DTCs) present?

Yes	DIAGNOSE all non-network Diagnostic Trouble Codes (DTCs) first. REFER to the APIM DTC Chart in this section.
No	GO to T4

T4 CHECK FOR NON-NETWORK ABS (ANTI-LOCK BRAKE SYSTEM) MODULE DIAGNOSTIC TROUBLE CODES (DTCS)

- Using a diagnostic scan tool, carry out the ABS module self-test.

Are any non-network Diagnostic Trouble Codes (DTCs) present?

Yes	REFER to: Anti-Lock Brake System (ABS) and Stability Control (206-09 Anti-Lock Brake System (ABS) and Stability Control) .
No	GO to T5

T5 CHECK FOR GWM (GATEWAY MODULE A) DIAGNOSTIC TROUBLE CODES (DTCS)

- Using a diagnostic scan tool, carry out the GWM self-test.

Are any Diagnostic Trouble Codes (DTCs) present?

Yes	REFER to: Communications Network (418-00 Module Communications Network, Diagnosis and Testing).
No	GO to T6

T6 RECHECK FOR APIM (SYNC MODULE) DIAGNOSTIC TROUBLE CODES (DTCs)

- Using a diagnostic scan tool, clear the APIM Diagnostic Trouble Codes (DTCs).
- Ignition OFF.
- Ignition ON.
- Wait 10 seconds.
- Using a diagnostic scan tool, carry out the APIM self-test.

Is DTC U0121:00 still present?

Yes	GO to T7
No	The system is operating correctly at this time. The DTC may have been set due to high network traffic or an intermittent fault condition.

T7 CHECK FOR OTHER CAUSES OF NETWORK COMMUNICATION CONCERN

NOTE: *If new modules were installed prior to the DTC being set, the module configuration can be incorrectly set during the PMI or the PMI may not have been carried out.*

- CHECK the vehicle service history for recent service actions related to the ABS module, the GWM or the APIM. If recent service history is found:
 - verify correct replacement module was installed
 - vehicle parts build list may be used to verify correct part fitment
 - verify the configuration of replacement module was correct
 - re-configure module using as-built data if prior configuration is suspect
 - verify the module was not obtained from a like vehicle and installed into vehicle with concern
 - return the swapped module to source vehicle and obtain new replacement module
- Operate the system and determine if the observable symptom is still present.

Is the observable symptom still present?

Yes	GO to T8
No	The system is operating correctly at this time. The concern may have been due to incorrect parts replacement procedures or incorrect module configuration.

T8 CHECK FOR CORRECT ABS (ANTI-LOCK BRAKE SYSTEM) MODULE OPERATION

- Ignition OFF.
- Disconnect and inspect the ABS module connector.
- Repair:
 - corrosion (install new connectors or terminals - clean module pins)
 - damaged or bent pins - install new terminals pins
 - pushed-out pins - install new pins as necessary
- Reconnect the ABS module connector. Make sure they seat and latch correctly.
- Operate the system and determine if the concern is still present.

Is the concern still present?

Yes	CHECK OASIS for any applicable Technical Service Bulletins (TSBs). If a TSB exists for this concern, DISCONTINUE this test and FOLLOW the TSB instructions. If no Technical Service Bulletins (TSBs) address this concern,   Click here to access Guided Routine (ABS).
No	The system is operating correctly at this time. The concern may have been caused by module connections. ADDRESS the root cause of any connector or pin issues.

U0140:00 (ACM/ APIM/ FCIM)

Normal Operation and Fault Conditions

The ACM, the APIM and the FCIM communicate with the BCM over the CAN through the GWM. If the APIM does not receive messages from the BCM, the display screen brightness may not operate correctly.

ACM/ APIM/ FCIM DTC Fault Trigger Conditions

DTC	Description	Fault Trigger Conditions
U0140:00	Lost Communication With Body Control Module: No Sub Type Information	Sets in continuous memory when the ACM, the APIM or the FCIM detects network messages are missing from the BCM for more than 5 seconds when the ignition is on.

Possible Causes

- Network communication concern
- ACM concern
- FCIM concern
- GWM concern
- APIM concern
- BCM

PINPOINT TEST U : U0140:00 (ACM (AUDIO FRONT CONTROL MODULE) / APIM (SYNC MODULE) / FCIM (FRONT CONTROLS INTERFACE MODULE))

U1 VERIFY THE CONCERN

- Ignition ON.
- Verify if there is an observable symptom present.

Is an observable symptom present?

Yes	GO to U2
No	CLEAR the DTC. The system is operating correctly at this time. The DTC may have been set due to high network traffic or an intermittent fault condition.

U2 CHECK THE NETWORK COMMUNICATION

- Using a diagnostic scan tool, carry out the network test.

Does the BCM pass the network test?

Yes	GO to U3
No	The system is operating correctly at this time. The DTC may have been set due to high network traffic or an intermittent fault condition.

U3 CHECK FOR NON-NETWORK ACM (AUDIO FRONT CONTROL MODULE) DIAGNOSTIC TROUBLE CODES (DTCS)

- Using a diagnostic scan tool, carry out the ACM self-test.

Are any non-network Diagnostic Trouble Codes (DTCs) present?

Yes	DIAGNOSE all non-network Diagnostic Trouble Codes (DTCs) first. REFER to the ACM DTC Chart in this section.
No	GO to U4

U4 CHECK FOR NON-NETWORK APIM (SYNC MODULE) DIAGNOSTIC TROUBLE CODES (DTCS)

- Using a diagnostic scan tool, carry out the APIM self-test.

Are any non-network Diagnostic Trouble Codes (DTCs) present?

Yes	DIAGNOSE all non-network Diagnostic Trouble Codes (DTCs) first. REFER to the APIM DTC Chart in this section.
No	GO to U5

U5 CHECK FOR NON-NETWORK FCIM (FRONT CONTROLS INTERFACE MODULE) DIAGNOSTIC TROUBLE CODES (DTCS)

- Using a diagnostic scan tool, carry out the FCIM self-test.

Are any non-network Diagnostic Trouble Codes (DTCs) present?

Yes	DIAGNOSE all non-network Diagnostic Trouble Codes (DTCs) first. REFER to the FCIM DTC Chart in this section.
No	GO to U6

U6 CHECK FOR NON-NETWORK BCM (BODY CONTROL MODULE) DIAGNOSTIC TROUBLE CODES (DTCS)

- Using a diagnostic scan tool, carry out the BCM self-test.

Are any non-network Diagnostic Trouble Codes (DTCs) present?

Yes	REFER to: Body Control Module (BCM) (419-10 Multifunction Electronic Modules) .
No	GO to U6

U7 CHECK FOR GWM (GATEWAY MODULE A) DIAGNOSTIC TROUBLE CODES (DTCS)

- Using a diagnostic scan tool, carry out the GWM self-test.

Are any Diagnostic Trouble Codes (DTCs) present?

Yes	REFER to: Communications Network (418-00 Module Communications Network, Diagnosis and Testing).
No	GO to U8

U8 RECHECK FOR ACM (AUDIO FRONT CONTROL MODULE) / APIM (SYNC MODULE) / FCIM (FRONT CONTROLS INTERFACE MODULE) DIAGNOSTIC TROUBLE CODES (DTCS)

- Using a diagnostic scan tool, clear the ACM/ APIM/ FCIM Diagnostic Trouble Codes (DTCs).
- Ignition OFF.
- Ignition ON.
- Wait 10 seconds.
- Using a diagnostic scan tool, carry out the ACM/ APIM/ FCIM self-test.

Is DTC U0140:00 still present?

Yes	GO to U9
No	The system is operating correctly at this time. The DTC may have been set due to high network traffic or an intermittent fault condition.

U9 CHECK FOR OTHER CAUSES OF NETWORK COMMUNICATION CONCERN

NOTE: *If new modules were installed prior to the DTC being set, the module configuration can be incorrectly set during the PMI or the PMI may not have been carried out.*

- CHECK the vehicle service history for recent service actions related to the BCM, the GWM, the ACM, the APIM or the FCIM. If recent service history is found:
 - verify correct replacement module was installed
 - vehicle parts build list may be used to verify correct part fitment
 - verify the configuration of replacement module was correct
 - re-configure module using as-built data if prior configuration is suspect
 - verify the module was not obtained from a like vehicle and installed into vehicle with concern
 - return the swapped module to source vehicle and obtain new replacement module

- Operate the system and determine if the observable symptom is still present.

Is the observable symptom still present?

Yes	GO to U10
No	The system is operating correctly at this time. The concern may have been due to incorrect parts replacement procedures or incorrect module configuration.

U10 CHECK FOR CORRECT BCM (BODY CONTROL MODULE) OPERATION

- Ignition OFF.
- Disconnect and inspect all the BCM connectors.
- Repair:
 - corrosion (install new connectors or terminals - clean module pins)
 - damaged or bent pins - install new terminals pins
 - pushed-out pins - install new pins as necessary
- Reconnect the BCM connectors. Make sure they seat and latch correctly.
- Operate the system and determine if the concern is still present.

Is the concern still present?

Yes	CHECK OASIS for any applicable Technical Service Bulletins (TSBs). If a TSB exists for this concern, DISCONTINUE this test and FOLLOW the TSB instructions. If no Technical Service Bulletins (TSBs) address this concern,   Click here to access Guided Routine (BCM).
No	The system is operating correctly at this time. The concern may have been caused by module connections. ADDRESS the root cause of any connector or pin issues.

U0151:00 (APIM/ FCIM)

Normal Operation and Fault Conditions

The APIM and the FCIM communicate with the RCM over the CAN through the GWM. If messages are missing or not received from the RCM, features such as the passenger airbag disable indicator may be inoperative.

APIM/ FCIM DTC Fault Trigger Conditions

DTC	Description	Fault Trigger Conditions
U0151:00	Lost Communication With Restraints Control Module: No Sub Type Information	Sets in continuous memory when the APIM or the FCIM detects messages from the RCM are missing for more than 5 seconds when the ignition is on.

Possible Causes

- Network communication concern
- FCIM concern
- APIM concern
- GWM concern
- RCM

PINPOINT TEST V : U0151:00 (APIM (SYNC MODULE) / FCIM (FRONT CONTROLS INTERFACE MODULE))

V1 VERIFY THE CONCERN

- Ignition ON.
- Verify there is an observable symptom present.

Is an observable symptom present?

Yes	GO to V2
No	CLEAR the DTC. The system is operating correctly at this time. The DTC may have been set due to high network traffic or an intermittent fault condition.

V2 CHECK THE NETWORK COMMUNICATION

- Using a diagnostic scan tool, carry out the network test.

Does the RCM pass the network test?

Yes	GO to V3
No	REFER to: Communications Network (418-00 Module Communications Network, Diagnosis and Testing).

V3 CHECK FOR NON-NETWORK APIM (SYNC MODULE) DIAGNOSTIC TROUBLE CODES (DTCS)

- Using a diagnostic scan tool, carry out the APIM self-test.

Are any non-network Diagnostic Trouble Codes (DTCs) present?

Yes	DIAGNOSE all non-network Diagnostic Trouble Codes (DTCs) first. REFER to the APIM DTC Chart in this section.
No	GO to V4

V4 CHECK FOR NON-NETWORK FCIM (FRONT CONTROLS INTERFACE MODULE) DIAGNOSTIC TROUBLE CODES (DTCS)

- Using a diagnostic scan tool, carry out the FCIM self-test.

Are any non-network Diagnostic Trouble Codes (DTCs) present?

Yes	DIAGNOSE all non-network Diagnostic Trouble Codes (DTCs) first. REFER to the FCIM DTC Chart in this section.
No	GO to V5

V5 CHECK FOR NON-NETWORK RCM (RESTRAINTS CONTROL MODULE) DIAGNOSTIC TROUBLE CODES (DTCS)

- Using a diagnostic scan tool, carry out the RCM self-test.

Are any non-network Diagnostic Trouble Codes (DTCs) present?

Yes	REFER to: Airbag Supplemental Restraint System (SRS) - Raptor (501-20B Supplemental Restraint System, Diagnosis and Testing). REFER to: Airbag Supplemental Restraint System (SRS) (501-20B Supplemental Restraint System, Diagnosis and Testing).
No	GO to V6

V6 CHECK FOR GWM (GATEWAY MODULE A) DIAGNOSTIC TROUBLE CODES (DTCS)

- Using a diagnostic scan tool, carry out the GWM self-test.

Are any Diagnostic Trouble Codes (DTCs) present?

Yes	REFER to: Communications Network (418-00 Module Communications Network, Diagnosis and Testing).
No	GO to V7

V7 RECHECK FOR APIM (SYNC MODULE) / FCIM (FRONT CONTROLS INTERFACE MODULE) DIAGNOSTIC TROUBLE CODES (DTCS)

- Using a diagnostic scan tool, clear the APIM/ FCIM Diagnostic Trouble Codes (DTCs).
- Ignition OFF.
- Ignition ON.
- Wait 10 seconds.
- Using a diagnostic scan tool, carry out the APIM/ FCIM self-test.

Is DTC U0151:00 still present?

Yes	GO to V8
No	The system is operating correctly at this time. The DTC may have been set due to high network traffic or an intermittent fault condition.

V8 CHECK FOR OTHER CAUSES OF NETWORK COMMUNICATION CONCERN

NOTE: If new modules were installed prior to the DTC being set, the module configuration can be incorrectly set during the PMI or the PMI may not have been carried out.

- CHECK the vehicle service history for recent service actions related to the RCM, the GWM, the APIM or the FCIM. If recent service history is found:
 - verify correct replacement module was installed
 - vehicle parts build list may be used to verify correct part fitment
 - verify the configuration of replacement module was correct
 - re-configure module using as-built data if prior configuration is suspect
 - verify the module was not obtained from a like vehicle and installed into vehicle with concern
 - return the swapped module to source vehicle and obtain new replacement module
- Operate the system and determine if the observable symptom is still present.

Is the observable symptom still present?

Yes	GO to V9
No	The system is operating correctly at this time. The concern may have been due to incorrect parts replacement procedures or incorrect module configuration.

V9 CHECK FOR CORRECT RCM (RESTRAINTS CONTROL MODULE) OPERATION

- Ignition OFF.
- Disconnect and inspect all the RCM and any related in-line connectors.
- Repair:
 - corrosion (install new connectors or terminals - clean module pins)
 - damaged or bent pins - install new terminals pins
 - pushed-out pins - install new pins as necessary
- Reconnect the RCM and any related in-line connectors. Make sure they seat and latch correctly.
- Operate the system and determine if the concern is still present.

Is the concern still present?

Yes	CHECK OASIS for any applicable Technical Service Bulletins (TSBs). If a TSB exists for this concern, DISCONTINUE this test and FOLLOW the TSB instructions. If no Technical Service Bulletins (TSBs) address this concern, INSTALL a new RCM. REFER to: Restraints Control Module (RCM) (501-20B Supplemental Restraint System, Removal and Installation).
No	The system is operating correctly at this time. The concern may have been caused by module connections. ADDRESS the root cause of any connector or pin issues.

U0155:00 (ACM/ APIM/ FCIM)

Normal Operation and Fault Conditions

The ACM, the APIM and the FCIM communicates with the IPC over the CAN. If messages are missing or not received from the IPC, features such as the display illumination or warning chimes may not operate correctly.

ACM/ APIM/ FCIM DTC Fault Trigger Conditions

DTC	Description	Fault Trigger Conditions
U0155:00	Lost Communication With Instrument Panel Cluster (IPC) Control Module: No Sub Type Information	Sets in continuous when the ACM, the APIM or the FCIM detects network messages are missing from the IPC for more than 5 seconds when the ignition is on.

Possible Causes

- Network communication concern
- ACM concern
- APIM concern
- FCIM concern
- IPC

PINPOINT TEST W : U0155:00 (ACM (AUDIO FRONT CONTROL MODULE) / APIM (SYNC MODULE) / FCIM (FRONT CONTROLS INTERFACE MODULE))

W1 VERIFY THE CONCERN	
• Ignition ON. • Verify there is an observable symptom present.	
Is an observable symptom present?	
Yes	GO to W2
No	CLEAR the DTC. The system is operating correctly at this time. The DTC may have been set due to high network traffic or an intermittent fault condition.

W2 CHECK THE NETWORK COMMUNICATION

- Using a diagnostic scan tool, carry out the network test.

Does the IPC pass the network test?

Yes	GO to W3
No	REFER to: Communications Network (418-00 Module Communications Network, Diagnosis and Testing).

W3 CHECK FOR NON-NETWORK IPC (INSTRUMENT PANEL CLUSTER) DIAGNOSTIC TROUBLE CODES (DTCS)

- Using a diagnostic scan tool, carry out the IPC self-test.

Are any non-network Diagnostic Trouble Codes (DTCs) present?

Yes	REFER to: Instrumentation, Message Center and Warning Chimes (413-01 Instrumentation, Message Center and Warning Chimes, Diagnosis and Testing).
No	GO to W4

W4 CHECK FOR NON-NETWORK ACM (AUDIO FRONT CONTROL MODULE) DIAGNOSTIC TROUBLE CODES (DTCS)

- Using a diagnostic scan tool, carry out the ACM self-test.

Are any non-network Diagnostic Trouble Codes (DTCs) present?

Yes	DIAGNOSE all non-network Diagnostic Trouble Codes (DTCs) first. REFER to the ACM DTC Chart in this section.
No	GO to W5

W5 CHECK FOR NON-NETWORK APIM (SYNC MODULE) DIAGNOSTIC TROUBLE CODES (DTCS)

- Using a diagnostic scan tool, carry out the APIM self-test.

Are any non-network Diagnostic Trouble Codes (DTCs) present?

Yes	DIAGNOSE all non-network Diagnostic Trouble Codes (DTCs) first. REFER to the APIM DTC Chart in this section.
No	GO to W6

W6 CHECK FOR NON-NETWORK FCIM (FRONT CONTROLS INTERFACE MODULE) DIAGNOSTIC TROUBLE CODES (DTCS)

- Using a diagnostic scan tool, carry out the FCIM self-test.

Are any non-network Diagnostic Trouble Codes (DTCs) present?

Yes	DIAGNOSE all non-network Diagnostic Trouble Codes (DTCs) first. REFER to the FCIM DTC Chart in this section.
No	GO to W7

W7 RECHECK FOR ACM (AUDIO FRONT CONTROL MODULE) / APIM (SYNC MODULE) / FCIM (FRONT CONTROLS INTERFACE MODULE) DIAGNOSTIC TROUBLE CODES (DTCS)

- Using a diagnostic scan tool, clear the ACM/ APIM/ FCIM Diagnostic Trouble Codes (DTCs).
- Ignition OFF.
- Ignition ON.
- Wait 10 seconds.
- Using a diagnostic scan tool, carry out the ACM/ APIM/ FCIM self-test.

Is DTC U0155:00 still present?

Yes	GO to W8
No	The system is operating correctly at this time. The DTC may have been set due to high network traffic or an intermittent fault condition.

W8 CHECK FOR OTHER CAUSES OF NETWORK COMMUNICATION CONCERN

NOTE: If new modules were installed prior to the DTC being set, the module configuration can be incorrectly set during the PMI or the PMI may not have been carried out.

- CHECK the vehicle service history for recent service actions related to the IPC, the ACM, the APIM or the FCIM. If recent service history is found:
 - verify correct replacement module was installed
 - vehicle parts build list may be used to verify correct part fitment
 - verify the configuration of replacement module was correct
 - re-configure module using as-built data if prior configuration is suspect
 - verify the module was not obtained from a like vehicle and installed into vehicle with concern
 - return the swapped module to source vehicle and obtain new replacement module
- Operate the system and determine if the observable symptom is still present.

Is the observable symptom still present?

Yes	GO to W9
No	The system is operating correctly at this time. The concern may have been due to incorrect parts replacement procedures or incorrect module configuration.

W9 CHECK FOR CORRECT IPC (INSTRUMENT PANEL CLUSTER) OPERATION

- Ignition OFF.
- Disconnect and inspect the IPC connector.
- Repair:
 - corrosion (install new connectors or terminals - clean module pins)
 - damaged or bent pins - install new terminals pins
 - pushed-out pins - install new pins as necessary
- Reconnect the IPC connector. Make sure it seats and latches correctly.
- Operate the system and determine if the concern is still present.

Is the concern still present?

Yes	CHECK OASIS for any applicable Technical Service Bulletins (TSBs). If a TSB exists for this concern, DISCONTINUE this test and FOLLOW the TSB instructions. If no Technical Service Bulletins (TSBs) address this concern,   Click here to access Guided Routine (IPC).
No	The system is operating correctly at this time. The concern may have been caused by module connections. ADDRESS the root cause of any connector or pin issues.

U0184:00 (APIM)

Normal Operation and Fault Conditions

The APIM communicates with the ACM over the CAN. If messages are missing or not received from the ACM, the infotainment display is blank.

APIM DTC Fault Trigger Conditions

DTC	Description	Fault Trigger Conditions
U0184:00	Lost Communication With Radio: No Sub Type Information	Sets in continuous memory when the APIM detects network messages are missing from the ACM for more than 5 seconds when the ignition is on.

Possible Causes

- Network communication concern
- APIM concern
- ACM

PINPOINT TEST X : U0184:00 (APIM (SYNC MODULE))

X1 VERIFY THE CONCERN	
• Ignition ON. • Verify there is an observable symptom present.	
Is an observable symptom present?	
Yes	GO to X2
No	CLEAR the DTC. The system is operating correctly at this time. The DTC may have been set due to high network traffic or an intermittent fault condition.
X2 CHECK THE NETWORK COMMUNICATION	

- Using a diagnostic scan tool, carry out the network test.

Does the ACM pass the network test?

Yes	GO to X3
No	REFER to: Communications Network (418-00 Module Communications Network, Diagnosis and Testing).

X3 CHECK FOR NON-NETWORK APIM (SYNC MODULE) DIAGNOSTIC TROUBLE CODES (DTCS)

- Using a diagnostic scan tool, carry out the APIM self-test.

Are any non-network Diagnostic Trouble Codes (DTCs) present?

Yes	DIAGNOSE all non-network Diagnostic Trouble Codes (DTCs) first. REFER to the APIM DTC Chart in this section.
No	GO to X4

X4 CHECK FOR NON-NETWORK ACM (AUDIO FRONT CONTROL MODULE) DIAGNOSTIC TROUBLE CODES (DTCS)

- Using a diagnostic scan tool, carry out the ACM self-test.

Are any non-network Diagnostic Trouble Codes (DTCs) present?

Yes	REFER to the ACM DTC Chart in this section.
No	GO to X5

X5 RECHECK FOR APIM (SYNC MODULE) DIAGNOSTIC TROUBLE CODES (DTCS)

- Using a diagnostic scan tool, clear the APIM Diagnostic Trouble Codes (DTCs).
- Ignition OFF.
- Ignition ON.
- Wait 10 seconds.
- Using a diagnostic scan tool, carry out the APIM self-test.

Is DTC U0184:00 still present?

Yes	GO to X6
No	The system is operating correctly at this time. The DTC may have been set due to high network traffic or an intermittent fault condition.

X6 CHECK FOR OTHER CAUSES OF NETWORK COMMUNICATION CONCERN

NOTE: *If new modules were installed prior to the DTC being set, the module configuration can be incorrectly set during the PMI or the PMI may not have been carried out.*

- CHECK the vehicle service history for recent service actions related to the ACM and the APIM. If recent service history is found:
 - verify correct replacement module was installed
 - vehicle parts build list may be used to verify correct part fitment
 - verify the configuration of replacement module was correct
 - re-configure module using as-built data if prior configuration is suspect
 - verify the module was not obtained from a like vehicle and installed into vehicle with concern
 - return the swapped module to source vehicle and obtain new replacement module
- Operate the system and determine if the observable symptom is still present.

Is the observable symptom still present?

Yes	GO to X7
No	The system is operating correctly at this time. The concern may have been due to incorrect parts replacement procedures or incorrect module configuration.

X7 CHECK FOR CORRECT ACM (AUDIO FRONT CONTROL MODULE) OPERATION

- Ignition OFF.
- Disconnect and inspect all the ACM connectors.
- Repair:
 - corrosion (install new connectors or terminals - clean module pins)
 - damaged or bent pins - install new terminals pins
 - pushed-out pins - install new pins as necessary
- Reconnect the ACM connectors. Make sure they seat and latch correctly.
- Operate the system and determine if the concern is still present.

Is the concern still present?

Yes	CHECK OASIS for any applicable Technical Service Bulletins (TSBs). If a TSB exists for this concern, DISCONTINUE this test and FOLLOW the TSB instructions. If no Technical Service Bulletins (TSBs) address this concern, INSTALL a new ACM. REFER to: Audio Front Control Module (ACM) (415-00B Information and Entertainment System - General Information - Vehicles With: SYNC Without Touchscreen, Removal and Installation).
No	The system is operating correctly at this time. The concern may have been caused by module connections. ADDRESS the root cause of any connector or pin issues.

U0232:00 (APIM)

Normal Operation and Fault Conditions

The APIM communicates with the SODL over the CAN. If messages are missing or not received from the SODL, features such as the side detection settings or warning chimes may not operate correctly.

APIM DTC Fault Trigger Conditions

DTC	Description	Fault Trigger Conditions
U0232:00	Lost Communication With Side Obstacle Detection Control Module - Left: No Sub Type Information	Sets in continuous memory when the APIM detects network messages are missing from the SODL for more than 5 seconds when the ignition is on.

Possible Causes

- Network communication concern
- GWM concern
- APIM concern
- SODL

PINPOINT TEST Y : U0232:00 (APIM (SYNC MODULE))

Y1 VERIFY THE CONCERN

- Ignition ON.
- Verify there is an observable symptom present.

Is an observable symptom present?

Yes	GO to Y2
No	CLEAR the DTC. The system is operating correctly at this time. The DTC may have been set due to high network traffic or an intermittent fault condition.

Y2 CHECK THE NETWORK COMMUNICATION

- Using a diagnostic scan tool, carry out the network test.

Does the SODL pass the network test?

Yes	GO to Y3
No	REFER to: Communications Network (418-00 Module Communications Network, Diagnosis and Testing).

Y3 CHECK FOR NON-NETWORK APIM (SYNC MODULE) DIAGNOSTIC TROUBLE CODES (DTCs)

- Using a diagnostic scan tool, carry out the APIM self-test.

Are any non-network Diagnostic Trouble Codes (DTCs) present?

Yes	DIAGNOSE all non-network Diagnostic Trouble Codes (DTCs) first. REFER to the APIM DTC Chart in this section.
No	GO to Y4

Y4 CHECK FOR NON-NETWORK SODL (SIDE OBSTACLE DETECTION CONTROL MODULE LH) DIAGNOSTIC TROUBLE CODES (DTCS)

- Using a diagnostic scan tool, carry out the SODL self-test.

Are any non-network Diagnostic Trouble Codes (DTCs) present?

Yes	REFER to: Blind Spot Information System (419-04 Side and Rear Vision, Diagnosis and Testing).
No	GO to Y5

Y5 CHECK FOR GWM (GATEWAY MODULE A) DIAGNOSTIC TROUBLE CODES (DTCS)

- Using a diagnostic scan tool, carry out the GWM self-test.

Are any Diagnostic Trouble Codes (DTCs) present?

Yes	REFER to: Communications Network (418-00 Module Communications Network, Diagnosis and Testing).
No	GO to Y6

Y6 RECHECK FOR APIM (SYNC MODULE) DIAGNOSTIC TROUBLE CODES (DTCS)

- Using a diagnostic scan tool, clear the APIM Diagnostic Trouble Codes (DTCs).
- Ignition OFF.
- Ignition ON.
- Wait 10 seconds.
- Using a diagnostic scan tool, carry out the APIM self-test.

Is DTC U0232:00 still present?

Yes	GO to Y7
No	The system is operating correctly at this time. The DTC may have been set due to high network traffic or an intermittent fault condition.

Y7 CHECK FOR OTHER CAUSES OF NETWORK COMMUNICATION CONCERN

NOTE: If new modules were installed prior to the DTC being set, the module configuration can be incorrectly set during the PMI or the PMI may not have been carried out.

- CHECK the vehicle service history for recent service actions related to the SODL, the GWM and the APIM. If recent service history is found:
 - verify correct replacement module was installed
 - vehicle parts build list may be used to verify correct part fitment
 - verify the configuration of replacement module was correct
 - re-configure module using as-built data if prior configuration is suspect
 - verify the module was not obtained from a like vehicle and installed into vehicle with concern
 - return the swapped module to source vehicle and obtain new replacement module
- Operate the system and determine if the observable symptom is still present.

Is the observable symptom still present?

Yes	GO to Y8
No	The system is operating correctly at this time. The concern may have been due to incorrect parts replacement procedures or incorrect module configuration.

Y8 CHECK FOR CORRECT SODL (SIDE OBSTACLE DETECTION CONTROL MODULE LH) OPERATION

- Ignition OFF.
- Disconnect and inspect all the SODL connector.
- Repair:
 - corrosion (install new connectors or terminals - clean module pins)
 - damaged or bent pins - install new terminals pins
 - pushed-out pins - install new pins as necessary
- Reconnect the SODL connector. Make sure it seats and latches correctly.
- Operate the system and determine if the concern is still present.

Is the concern still present?

Yes	CHECK OASIS for any applicable Technical Service Bulletins (TSBs). If a TSB exists for this concern, DISCONTINUE this test and FOLLOW the TSB instructions. If no Technical Service Bulletins (TSBs) address this concern, INSTALL a new SODL. REFER to: Side Obstacle Detection Control Module (419-04 Side and Rear Vision, Removal and Installation).
No	The system is operating correctly at this time. The concern may have been caused by module connections. ADDRESS the root cause of any connector or pin issues.

U0233:00 (APIM)

Normal Operation and Fault Conditions

The APIM communicates with the SODR over the CAN. If messages are missing or not received from the SODR, features such as the side detection settings or warning chimes may not operate correctly.

APIM DTC Fault Trigger Conditions

DTC	Description	Fault Trigger Conditions
U0233:00	Lost Communication With Side Obstacle Detection Control Module - Right: No Sub Type Information	Sets in continuous memory when the APIM detects network messages are missing from the SODR for more than 5 seconds when the ignition is on.

Possible Causes

- Network communication concern
- GWM concern
- APIM concern
- SODR

PINPOINT TEST Z : U0233:00 (APIM (SYNC MODULE))

Z1 VERIFY THE CONCERN	
• Ignition ON. • Verify there is an observable symptom present.	
Is an observable symptom present?	
Yes	GO to Z2
No	CLEAR the DTC. The system is operating correctly at this time. The DTC may have been set due to high network traffic or an intermittent fault condition.

Z2 CHECK THE NETWORK COMMUNICATION

- Using a diagnostic scan tool, carry out the network test.

Does the SODR pass the network test?

Yes	GO to Z3
No	REFER to: Communications Network (418-00 Module Communications Network, Diagnosis and Testing).

Z3 CHECK FOR NON-NETWORK APIM (SYNC MODULE) DIAGNOSTIC TROUBLE CODES (DTCS)

- Using a diagnostic scan tool, carry out the APIM self-test.

Are any non-network Diagnostic Trouble Codes (DTCs) present?

Yes	DIAGNOSE all non-network Diagnostic Trouble Codes (DTCs) first. REFER to the APIM DTC Chart in this section.
No	GO to Z4

Z4 CHECK FOR NON-NETWORK SODR (SIDE OBSTACLE DETECTION CONTROL MODULE RH) DIAGNOSTIC TROUBLE CODES (DTCS)

- Using a diagnostic scan tool, carry out the SODR self-test.

Are any non-network Diagnostic Trouble Codes (DTCs) present?

Yes	REFER to: Blind Spot Information System (419-04 Side and Rear Vision, Diagnosis and Testing).
No	GO to Z5

Z5 CHECK FOR GWM (GATEWAY MODULE A) DIAGNOSTIC TROUBLE CODES (DTCS)

- Using a diagnostic scan tool, carry out the GWM self-test.

Are any Diagnostic Trouble Codes (DTCs) present?

Yes	REFER to: Communications Network (418-00 Module Communications Network, Diagnosis and Testing).
No	GO to Z6

Z6 RECHECK FOR APIM (SYNC MODULE) DIAGNOSTIC TROUBLE CODES (DTCs)

- Using a diagnostic scan tool, clear the APIM Diagnostic Trouble Codes (DTCs).
- Ignition OFF.
- Ignition ON.
- Wait 10 seconds.
- Using a diagnostic scan tool, carry out the APIM self-test.

Is DTC U0233:00 still present?

Yes	GO to Z7
No	The system is operating correctly at this time. The DTC may have been set due to high network traffic or an intermittent fault condition.

Z7 CHECK FOR OTHER CAUSES OF NETWORK COMMUNICATION CONCERN

NOTE: *If new modules were installed prior to the DTC being set, the module configuration can be incorrectly set during the PMI or the PMI may not have been carried out.*

- CHECK the vehicle service history for recent service actions related to the SODR, the GWM and the APIM. If recent service history is found:
 - verify correct replacement module was installed
 - vehicle parts build list may be used to verify correct part fitment
 - verify the configuration of replacement module was correct
 - re-configure module using as-built data if prior configuration is suspect
 - verify the module was not obtained from a like vehicle and installed into vehicle with concern
 - return the swapped module to source vehicle and obtain new replacement module
- Operate the system and determine if the observable symptom is still present.

Is the observable symptom still present?

Yes	GO to Z8
No	The system is operating correctly at this time. The concern may have been due to incorrect parts replacement procedures or incorrect module configuration.

Z8 CHECK FOR CORRECT SODR (SIDE OBSTACLE DETECTION CONTROL MODULE RH) OPERATION

- Ignition OFF.
- Disconnect and inspect all the SODR connector.
- Repair:
 - corrosion (install new connectors or terminals - clean module pins)
 - damaged or bent pins - install new terminals pins
 - pushed-out pins - install new pins as necessary
- Reconnect the SODR connectors. Make sure it seats and latches correctly.
- Operate the system and determine if the concern is still present.

Is the concern still present?

Yes	CHECK OASIS for any applicable Technical Service Bulletins (TSBs). If a TSB exists for this concern, DISCONTINUE this test and FOLLOW the TSB instructions. If no Technical Service Bulletins (TSBs) address this concern, INSTALL a new SODR. REFER to: Side Obstacle Detection Control Module (419-04 Side and Rear Vision, Removal and Installation).
No	The system is operating correctly at this time. The concern may have been caused by module connections. ADDRESS the root cause of any connector or pin issues.

U0253:00 (ACM/ FCIM)**Normal Operation and Fault Conditions**

The ACM and the FCIM communicates with the APIM other over the CAN. If messages are missing or not received from the APIM, the infotainment display may be inoperative.

ACM/ FCIM DTC Fault Trigger Conditions

DTC	Description	Fault Trigger Conditions
U0253:00	Lost Communication With Accessory Protocol Interface Module: No Sub Type Information	Sets when the ACM or the FCIM detects network messages are missing from the APIM for more than 5 seconds when the ignition is on.

Possible Causes

- Network communication concern
- ACM concern
- FCIM concern
- APIM

PINPOINT TEST AA : U0253:00 (ACM (AUDIO FRONT CONTROL MODULE) / FCIM (FRONT CONTROLS INTERFACE MODULE))

AA1 VERIFY THE CONCERN

- Ignition ON.
- Verify there is an observable symptom present.

Is an observable symptom present?

Yes	GO to AA2
No	CLEAR the DTC. The system is operating correctly at this time. The DTC may have been set due to high network traffic or an intermittent fault condition.

AA2 CHECK THE NETWORK COMMUNICATION

- Using a diagnostic scan tool, carry out the network test.

Does the APIM pass the network test?

Yes	GO to AA3
No	REFER to: Communications Network (418-00 Module Communications Network, Diagnosis and Testing).

AA3 CHECK FOR NON-NETWORK APIM (SYNC MODULE) DIAGNOSTIC TROUBLE CODES (DTCS)

- Using a diagnostic scan tool, carry out the APIM self-test.

Are any non-network Diagnostic Trouble Codes (DTCs) present?

Yes	REFER to the APIM DTC Chart in this section.
No	GO to AA4

AA4 CHECK FOR NON-NETWORK ACM (AUDIO FRONT CONTROL MODULE) DIAGNOSTIC TROUBLE CODES (DTCS)

- Using a diagnostic scan tool, carry out the ACM self-test.

Are any non-network Diagnostic Trouble Codes (DTCs) present?

Yes	DIAGNOSE all non-network Diagnostic Trouble Codes (DTCs) first. REFER to the ACM DTC Chart in this section.
No	GO to AA5

AA5 CHECK FOR NON-NETWORK FCIM (FRONT CONTROLS INTERFACE MODULE) DIAGNOSTIC TROUBLE CODES (DTCS)

- Using a diagnostic scan tool, carry out the FCIM self-test.

Are any non-network Diagnostic Trouble Codes (DTCs) present?

Yes	DIAGNOSE all non-network Diagnostic Trouble Codes (DTCs) first. REFER to the FCIM DTC Chart in this section.
No	GO to AA6

AA6 RECHECK FOR ACM (AUDIO FRONT CONTROL MODULE) / FCIM (FRONT CONTROLS INTERFACE MODULE) DIAGNOSTIC TROUBLE CODES (DTCS)

- Using a diagnostic scan tool, clear the ACM/ FCIM Diagnostic Trouble Codes (DTCs).
- Ignition OFF.
- Ignition ON.
- Wait 10 seconds.
- Using a diagnostic scan tool, carry out the ACM/ FCIM self-test.

Is DTC U0253:00 still present?

Yes	GO to AA7
No	The system is operating correctly at this time. The DTC may have been set due to high network traffic or an intermittent fault condition.

AA7 CHECK FOR OTHER CAUSES OF NETWORK COMMUNICATION CONCERN

NOTE: *If new modules were installed prior to the DTC being set, the module configuration can be incorrectly set during the PMI or the PMI may not have been carried out.*

- CHECK the vehicle service history for recent service actions related to the APIM and the ACM. If recent service history is found:
 - verify correct replacement module was installed
 - vehicle parts build list may be used to verify correct part fitment
 - verify the configuration of replacement module was correct
 - re-configure module using as-built data if prior configuration is suspect
 - verify the module was not obtained from a like vehicle and installed into vehicle with concern
 - return the swapped module to source vehicle and obtain new replacement module
- Operate the system and determine if the observable symptom is still present.

Is the observable symptom still present?

Yes	GO to AA8
No	The system is operating correctly at this time. The concern may have been due to incorrect parts replacement procedures or incorrect module configuration.

AA8 CHECK FOR CORRECT APIM (SYNC MODULE) OPERATION

- Ignition OFF.
- Disconnect and inspect all the APIM connectors.
- Repair:
 - corrosion (install new connectors or terminals - clean module pins)
 - damaged or bent pins - install new terminals pins
 - pushed-out pins - install new pins as necessary
- Reconnect the APIM connectors. Make sure they seat and latch correctly.
- Operate the system and determine if the concern is still present.

Is the concern still present?

Yes	CHECK OASIS for any applicable Technical Service Bulletins (TSBs). If a TSB exists for this concern, DISCONTINUE this test and FOLLOW the TSB instructions. If no Technical Service Bulletins (TSBs) address this concern,   Click here to access Guided Routine (APIM).
No	The system is operating correctly at this time. The concern may have been caused by module connections. ADDRESS the root cause of any connector or pin issues.

U0256:00 (ACM/ APIM)

Normal Operation and Fault Conditions

The ACM and the APIM communicates with the FCIM over the CAN. If messages are missing or not received from the FCIM, button presses such on the FCIM may be inoperative.

ACM/ APIM DTC Fault Trigger Conditions

DTC	Description	Fault Trigger Conditions
U0256:00	Lost Communication With Front Controls Interface Module "A": No Sub Type Information	Sets when the ACM or the APIM detects network messages are missing from the FCIM for more than 5 seconds when the ignition is on.

Possible Causes

- Network communication concern
- ACM concern
- APIM concern
- FCIM

PINPOINT TEST AB : U0256:00 (ACM (AUDIO FRONT CONTROL MODULE) / APIM (SYNC MODULE))

AB1 VERIFY THE CONCERN

- Ignition ON.
- Verify there is an observable symptom present.

Is an observable symptom present?

Yes	GO to AB2
No	CLEAR the DTC. The system is operating correctly at this time. The DTC may have been set due to high network traffic or an intermittent fault condition.

AB2 CHECK THE NETWORK COMMUNICATION

- Using a diagnostic scan tool, carry out the network test.

Does the FCIM pass the network test?

Yes	GO to AB3
No	REFER to: Communications Network (418-00 Module Communications Network, Diagnosis and Testing).

AB3 CHECK FOR NON-NETWORK FCIM (FRONT CONTROLS INTERFACE MODULE) DIAGNOSTIC TROUBLE CODES (DTCS)

- Using a diagnostic scan tool, carry out the FCIM self-test.

Are any non-network Diagnostic Trouble Codes (DTCs) present?

Yes	REFER to the FCIM DTC Chart in this section.
No	GO to AB4

AB4 CHECK FOR NON-NETWORK ACM (AUDIO FRONT CONTROL MODULE) DIAGNOSTIC TROUBLE CODES (DTCS)

- Using a diagnostic scan tool, carry out the ACM self-test.

Are any non-network Diagnostic Trouble Codes (DTCs) present?

Yes	DIAGNOSE all non-network Diagnostic Trouble Codes (DTCs) first. REFER to the ACM DTC Chart in this section.
No	GO to AB5

AB5 CHECK FOR NON-NETWORK APIM (SYNC MODULE) DIAGNOSTIC TROUBLE CODES (DTCS)

- Using a diagnostic scan tool, carry out the APIM self-test.

Are any non-network Diagnostic Trouble Codes (DTCs) present?

Yes	DIAGNOSE all non-network Diagnostic Trouble Codes (DTCs) first. REFER to the APIM DTC Chart in this section.
No	GO to AB6

AB6 RECHECK FOR ACM (AUDIO FRONT CONTROL MODULE) / APIM (SYNC MODULE) DIAGNOSTIC TROUBLE CODES (DTCS)

- Using a diagnostic scan tool, clear the ACM/ APIM Diagnostic Trouble Codes (DTCs).
- Ignition OFF.
- Ignition ON.
- Wait 10 seconds.
- Using a diagnostic scan tool, carry out the ACM/ APIM self-test.

Is DTC U0256:00 still present?

Yes	GO to AB7
No	The system is operating correctly at this time. The DTC may have been set due to high network traffic or an intermittent fault condition.

AB7 CHECK FOR OTHER CAUSES OF NETWORK COMMUNICATION CONCERN

NOTE: If new modules were installed prior to the DTC being set, the module configuration can be incorrectly set during the PMI or the PMI may not have been carried out.

- CHECK the vehicle service history for recent service actions related to the ACM, the APIM and the FCIM. If recent service history is found:
 - verify correct replacement module was installed
 - vehicle parts build list may be used to verify correct part fitment
 - verify the configuration of replacement module was correct
 - re-configure module using as-built data if prior configuration is suspect
 - verify the module was not obtained from a like vehicle and installed into vehicle with concern
 - return the swapped module to source vehicle and obtain new replacement module
- Operate the system and determine if the observable symptom is still present.

Is the observable symptom still present?

Yes	GO to AB8
No	The system is operating correctly at this time. The concern may have been due to incorrect parts replacement procedures or incorrect module configuration.

AB8 CHECK FOR CORRECT FCIM (FRONT CONTROLS INTERFACE MODULE) OPERATION

- Ignition OFF.
- Disconnect and inspect all the FCIM connector.
- Repair:
 - corrosion (install new connectors or terminals - clean module pins)
 - damaged or bent pins - install new terminals pins
 - pushed-out pins - install new pins as necessary
- Reconnect the FCIM connector. Make sure it seats and latches correctly.
- Operate the system and determine if the concern is still present.

Is the concern still present?

Yes	CHECK OASIS for any applicable Technical Service Bulletins (TSBs). If a TSB exists for this concern, DISCONTINUE this test and FOLLOW the TSB instructions. If no Technical Service Bulletins (TSBs) address this concern,   Click here to access Guided Routine (FCIM).
No	The system is operating correctly at this time. The concern may have been caused by module connections. ADDRESS the root cause of any connector or pin issues.

U3003:16 (ACM/ APIM/ FCIM)

Refer to Wiring Diagrams Cell 131 for schematic and connector information.

Normal Operation and Fault Conditions

The modules monitor the supplied voltage and set a DTC if it falls below a threshold.

ACM/ APIM/ FCIM DTC Fault Trigger Conditions

DTC	Description	Fault Trigger Conditions
U3003:16	Battery Voltage: Circuit Voltage Below Threshold	Sets in continuous memory and during the on-demand self-test when the ACM, the APIM or the FCIM detects the supply voltage falls below 10 volts.

Possible Causes

- Previous low battery voltage
- Wiring, terminals, or connectors
- Charging system concern
- ACM
- APIM
- FCIM

PINPOINT TEST AC : U3003:16 (ACM (AUDIO FRONT CONTROL MODULE) / APIM (SYNC MODULE) / FCIM (FRONT CONTROLS INTERFACE MODULE))

AC1 RECHECK FOR LOW VOLTAGE DIAGNOSTIC TROUBLE CODES (DTCS)

- Ignition ON.
- Using a diagnostic scan tool, clear the Diagnostic Trouble Codes (DTCs) for the module in question setting the low voltage DTC.
- Wait 10 seconds.
- Using a diagnostic scan tool, carry out the self-test for the module in question setting the low voltage DTC.

Is DTC U3003:16 still present?

Yes	GO to AC2
No	The system is operating correctly at this time. The DTC may have been set due to a previous low battery voltage condition.

AC2 CHECK FOR CHARGING SYSTEM DIAGNOSTIC TROUBLE CODES (DTCS)

- Using a diagnostic scan tool, carry out the PCM KOEO and KOER self-tests.

Are any voltage-related Diagnostic Trouble Codes (DTCs) present?

Yes	DIAGNOSE the charging system concern. REFER to the appropriate Diagnosis and Testing in section 414-00.
No	GO to AC3

AC3 CHECK THE BATTERY CONDITION AND STATE OF CHARGE

- Ignition OFF.
- Check the battery condition and verify the battery is fully charged.
REFER to: [Battery](#) (414-01 Battery, Mounting and Cables, Diagnosis and Testing).

Is the battery OK and fully charged?

Yes	GO to AC4
No	DIAGNOSE the battery. REFER to: Battery (414-01 Battery, Mounting and Cables, Diagnosis and Testing).

AC4 COMPARE THE SUSPECT MODULE VOLTAGE SUPPLY PID (PARAMETER IDENTIFICATION) TO THE BATTERY VOLTAGE

- Ignition ON.
- Measure and record the battery voltage.
- For the suspect module, monitor the voltage supply PID:
 - ACM - VPWR_ACM (Module supply voltage)
 - APIM - BATMOD (Battery Module Voltage)
 - FCIM - VPWR_FCMI (Module supply voltage)

Is the voltage reading within 0.2 volt of the recorded battery voltage?

Yes	For the ACM, GO to AC7 For the APIM, GO to AC8 For the FCIM, GO to AC9
No	GO to AC5

AC5 CHECK THE MODULE VOLTAGE SUPPLY CIRCUIT FOR HIGH RESISTANCE

- Ignition OFF.
- Disconnect the suspect module.
- Ignition ON.
- Measure and record the battery voltage.
- For the suspect module, measure:

Click to display connectors

FCIM

Positive Lead	Measurement / Action	Negative Lead
C2402A-26		Ground

Is the voltage reading within 0.2 volt of the recorded battery voltage?

Yes	GO to AC6
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No	REPAIR the circuit for high resistance.
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AC6 CHECK THE SUSPECT MODULE GROUND CIRCUIT FOR HIGH RESISTANCE

- For the suspect module, measure:

Click to display connectors

FCIM

Positive Lead	Measurement / Action	Negative Lead
C2402A-26		C2402A-1

Is the suspect module voltage greater than 11 volts?

Yes	ACM, GO to AC7 APIM, GO to AC8 FCIM, GO to AC9
No	REPAIR the circuit for high resistance.

AC7 CHECK FOR CORRECT ACM (AUDIO FRONT CONTROL MODULE) OPERATION

- Ignition OFF.
- Disconnect and inspect all the ACM connectors.
- Repair:
 - corrosion (install new connectors or terminals - clean module pins)
 - damaged or bent pins - install new terminals pins
 - pushed-out pins - install new pins as necessary
- Reconnect the ACM connectors. Make sure they seat and latch correctly.
- Operate the system and determine if the concern is still present.

Is the concern still present?

Yes	CHECK OASIS for any applicable Technical Service Bulletins (TSBs). If a TSB exists for this concern, DISCONTINUE this test and FOLLOW the TSB instructions. If no Technical Service Bulletins (TSBs) address this concern, INSTALL a new ACM. REFER to: Audio Front Control Module (ACM) (415-00B Information and Entertainment System - General Information - Vehicles With: SYNC Without Touchscreen, Removal and Installation).
No	The system is operating correctly at this time. The concern may have been caused by module connections. ADDRESS the root cause of any connector or pin issues.

AC8 CHECK FOR CORRECT APIM (SYNC MODULE) OPERATION

- Ignition OFF.
- Disconnect and inspect the APIM connectors.
- Repair:
 - corrosion (install new connectors or terminals - clean module pins)
 - damaged or bent pins - install new terminals pins
 - pushed-out pins - install new pins as necessary
- Reconnect the APIM connectors. Make sure they seat and latch correctly.
- Wait 2 minutes for the APIM to re-initialize.
- Operate the system and determine if the concern is still present.

Is the concern still present?

Yes	CHECK OASIS for any applicable Technical Service Bulletins (TSBs). If a TSB exists for this concern, DISCONTINUE this test and FOLLOW the TSB instructions. If no Technical Service Bulletins (TSBs) address this concern,   Click here to access Guided Routine (APIM).
No	The system is operating correctly at this time. The concern may have been caused by module connections. ADDRESS the root cause of any connector or pin issues.

AC9 CHECK FOR CORRECT FCIM (FRONT CONTROLS INTERFACE MODULE) OPERATION

- Ignition OFF.
- Disconnect and inspect the FCIM connector.
- Repair:
 - corrosion (install new connectors or terminals - clean module pins)
 - damaged or bent pins - install new terminals pins
 - pushed-out pins - install new pins as necessary
- Reconnect the FCIM connector. Make sure it seats and latches correctly.
- Wait 2 minutes for the FCIM to re-initialize.
- Operate the system and determine if the concern is still present.

Is the concern still present?

Yes	CHECK OASIS for any applicable Technical Service Bulletins (TSBs). If a TSB exists for this concern, DISCONTINUE this test and FOLLOW the TSB instructions. If no Technical Service Bulletins (TSBs) address this concern,   Click here to access Guided Routine (FCIM).
No	The system is operating correctly at this time. The concern may have been caused by module connections. ADDRESS the root cause of any connector or pin issues.

U3003:17 (ACM/ APIM/ FCIM)

Normal Operation and Fault Conditions

The modules monitor the supplied voltage and set a DTC if it rises above a threshold.

ACM/ APIM/ FCIM DTC Fault Trigger Conditions

DTC	Description	Fault Trigger Conditions
U3003:17	Battery Voltage: Circuit Voltage Above Threshold	Sets when the ACM, the APIM or the FCIM detects the supply voltage is greater than 16 volts.

Possible Causes

- Charging system concern

- ACM
- FCIM
- APIM

PINPOINT TEST AD : U3003:17 (ACM (AUDIO FRONT CONTROL MODULE) / APIM (SYNC MODULE) / FCIM (FRONT CONTROLS INTERFACE MODULE))

AD1 CHECK FOR HIGH VOLTAGE DIAGNOSTIC TROUBLE CODES (DTCs) SET IN OTHER MODULES

- Ignition ON.
- Using a diagnostic scan tool, retrieve the Continuous Memory Diagnostic Trouble Codes (CMDTCs).

Are any charging or over-voltage related voltage Diagnostic Trouble Codes (DTCs) present in multiple modules?

Yes	DIAGNOSE the overcharging condition. REFER to the Diagnosis and Testing in the appropriate 414-00 section.
No	GO to AD2

AD2 CHECK THE BATTERY VOLTAGE WITH THE ENGINE RUNNING

- Turn off all interior/exterior lights and accessories.
- Start and run the engine at approximately 2,000 RPM for 3 minutes while monitoring the battery voltage.

Does the battery voltage rise to 15.5 volts or higher?

Yes	DIAGNOSE the overcharging condition. REFER to the Diagnosis and Testing in the appropriate 414-00 section.
No	GO to AD3

AD3 RECHECK FOR THE HIGH VOLTAGE DTC (DIAGNOSTIC TROUBLE CODE)

- Ignition OFF.
- Ignition ON.
- Using a diagnostic scan tool, clear the DTC for the suspect module.
- Wait 10 seconds.
- Using a diagnostic scan tool, carry out the self-test for the suspect module setting the high voltage DTC.

Is DTC U3003:17 still present?

Yes	For the ACM, GO to AD4 For the APIM, GO to AD5 For the FCIM, GO to AD6
No	The system is operating correctly at this time. The DTC may have been set previously during battery charging or while jump starting the vehicle.

AD4 CHECK FOR CORRECT ACM (AUDIO FRONT CONTROL MODULE) OPERATION

- Ignition OFF.
- Disconnect and inspect all the ACM connectors.
- Repair:
 - corrosion (install new connectors or terminals - clean module pins)
 - damaged or bent pins - install new terminals pins
 - pushed-out pins - install new pins as necessary
- Reconnect the ACM connectors. Make sure they seat and latch correctly.
- Operate the system and determine if the concern is still present.

Is the concern still present?

Yes	CHECK OASIS for any applicable Technical Service Bulletins (TSBs). If a TSB exists for this concern, DISCONTINUE this test and FOLLOW the TSB instructions. If no Technical Service Bulletins (TSBs) address this concern, INSTALL a new ACM. REFER to: Audio Front Control Module (ACM) (415-00B Information and Entertainment System - General Information - Vehicles With: SYNC Without Touchscreen, Removal and Installation).
No	The system is operating correctly at this time. The concern may have been caused by module connections. ADDRESS the root cause of any connector or pin issues.

AD5 CHECK FOR CORRECT APIM (SYNC MODULE) OPERATION

- Ignition OFF.
- Disconnect and inspect the APIM connectors.
- Repair:
 - corrosion (install new connectors or terminals - clean module pins)
 - damaged or bent pins - install new terminals pins
 - pushed-out pins - install new pins as necessary
- Reconnect the APIM connectors. Make sure they seat and latch correctly.
- Wait 2 minutes for the APIM to re-initialize.
- Operate the system and determine if the concern is still present.

Is the concern still present?

Yes	CHECK OASIS for any applicable Technical Service Bulletins (TSBs). If a TSB exists for this concern, DISCONTINUE this test and FOLLOW the TSB instructions. If no Technical Service Bulletins (TSBs) address this concern,   Click here to access Guided Routine (APIM).
No	The system is operating correctly at this time. The concern may have been caused by module connections. ADDRESS the root cause of any connector or pin issues.

AD6 CHECK FOR CORRECT FCIM (FRONT CONTROLS INTERFACE MODULE) OPERATION

- Ignition OFF.
- Disconnect and inspect the FCIM connector.
- Repair:
 - corrosion (install new connectors or terminals - clean module pins)
 - damaged or bent pins - install new terminals pins
 - pushed-out pins - install new pins as necessary
- Reconnect the FCIM connector. Make sure it seats and latches correctly.
- Wait 2 minutes for the FCIM to re-initialize.
- Operate the system and determine if the concern is still present.

Is the concern still present?

Yes	CHECK OASIS for any applicable Technical Service Bulletins (TSBs). If a TSB exists for this concern, DISCONTINUE this test and FOLLOW the TSB instructions. If no Technical Service Bulletins (TSBs) address this concern,   Click here to access Guided Routine (FCIM).
No	The system is operating correctly at this time. The concern may have been caused by module connections. ADDRESS the root cause of any connector or pin issues.