

Communications Network

DTC Chart: Gateway Module (GWM)

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).

Diagnostic Trouble Code Chart

Module	DTC	Description	Action <i>New: hover over Pinpoint Test links to show title</i>
GWM	U2100:00	Initial Configuration Not Complete: No Sub Type Information	GO to Pinpoint Test AR
GWM	U3000:44	Control Module: Data Memory Failure	GO to Pinpoint Test AQ
GWM	U3000:45	Control Module: Program Memory Failure	GO to Pinpoint Test AQ
GWM	U3000:46	Control Module: Calibration / Parameter Memory Failure	GO to Pinpoint Test AQ
GWM	U3000:47	Control Module: Watchdog / Safety μ C Failure	GO to Pinpoint Test AQ
GWM	U3000:49	Control Module: Internal Electronic Failure	GO to Pinpoint Test AQ

Symptom Chart(s)

Symptom Chart: Communication Network

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).

Symptom Chart

Condition	Possible Sources	Actions
The vehicle does not start with the diagnostic scan tool connected to the DLC and/or multiple malfunction indicators are only on when the diagnostic scan tool is connected to the DLC	Refer to the Pinpoint Test	GO to Pinpoint Test AP
No HS-CAN1 communication, all modules are not responding	Refer to the Pinpoint Test	GO to Pinpoint Test AJ
No HS-CAN2 communication, all modules are not responding	Refer to the Pinpoint Test	GO to Pinpoint Test AK
No HS-CAN3 communication, all modules are not responding	Refer to the Pinpoint Test	GO to Pinpoint Test AL
No HS-CAN4 communication, all modules are not responding	Refer to the Pinpoint Test	GO to Pinpoint Test AM

Condition	Possible Sources	Actions
No MS-CAN communication, all modules are not responding	Refer to the Pinpoint Test	GO to Pinpoint Test AN
No Medium Speed Controller Area Network 2 (MS-CAN2) communication, all modules are not responding (if equipped with trailer package)	Refer to the Pinpoint Test	GO to Pinpoint Test AO
The PCM does not respond to the diagnostic scan tool	Refer to the Pinpoint Test	GO to Pinpoint Test A
The TCM does not respond to the diagnostic scan tool	Refer to the Pinpoint Test	GO to Pinpoint Test B
The ABS module does not respond to the diagnostic scan tool	Refer to the Pinpoint Test	GO to Pinpoint Test C
The RCM does not respond to the diagnostic scan tool	Refer to the Pinpoint Test	GO to Pinpoint Test D
The SCCM does not respond to the diagnostic scan tool	Refer to the Pinpoint Test	GO to Pinpoint Test E
The SASM does not respond to the diagnostic scan tool	Refer to the Pinpoint Test	GO to Pinpoint Test F
The IPC does not respond to the diagnostic scan tool	Refer to the Pinpoint Test	GO to Pinpoint Test G
The BCM does not respond to the diagnostic scan tool	Refer to the Pinpoint Test	GO to Pinpoint Test H
The FCIM module does not respond to the diagnostic scan tool	Refer to the Pinpoint Test	GO to Pinpoint Test I
The ACM does not respond to the diagnostic scan tool	Refer to the Pinpoint Test	GO to Pinpoint Test J
The IPMA does not respond to the diagnostic scan tool	Refer to the Pinpoint Test	GO to Pinpoint Test K
The IPMB does not respond to the diagnostic scan tool	Refer to the Pinpoint Test	GO to Pinpoint Test L
The APIM does not respond to the diagnostic scan tool	Refer to the Pinpoint Test	GO to Pinpoint Test M
The DSP does not respond to the diagnostic scan tool	Refer to the Pinpoint Test	GO to Pinpoint Test N
The TCU does not respond to the diagnostic scan tool	Refer to the Pinpoint Test	GO to Pinpoint Test O
The RTM does not respond to the diagnostic scan tool	Refer to the Pinpoint Test	GO to Pinpoint Test P
The PSCM does not respond to the diagnostic scan tool	Refer to the Pinpoint Test	GO to Pinpoint Test Q
The DSM does not respond to the diagnostic scan tool	Refer to the Pinpoint Test	GO to Pinpoint Test R
The DDM does not respond to the diagnostic scan tool	Refer to the Pinpoint Test	GO to Pinpoint Test S
The PDM does not respond to the diagnostic scan tool	Refer to the Pinpoint Test	GO to Pinpoint Test T
The SODL does not respond to the diagnostic scan tool	Refer to the Pinpoint Test	GO to Pinpoint Test U
The SODR does not respond to the diagnostic scan tool	Refer to the Pinpoint Test	GO to Pinpoint Test V

Condition	Possible Sources	Actions
The HUD module does not respond to the diagnostic scan tool	Refer to the Pinpoint Test	GO to Pinpoint Test W
The PAM does not respond to the diagnostic scan tool	Refer to the Pinpoint Test	GO to Pinpoint Test X
The HSWM does not respond to the diagnostic scan tool	Refer to the Pinpoint Test	GO to Pinpoint Test Y
The SCME does not respond to the diagnostic scan tool (integrated with the DSM)	Refer to the Pinpoint Test	GO to Pinpoint Test R
The SCMG does not respond to the diagnostic scan tool	Refer to the Pinpoint Test	GO to Pinpoint Test Z
The SCMH does not respond to the diagnostic scan tool	Refer to the Pinpoint Test	GO to Pinpoint Test AA
The TRM does not respond to the diagnostic scan tool	Refer to the Pinpoint Test	GO to Pinpoint Test AB
The TBM does not respond to the diagnostic scan tool	Refer to the Pinpoint Test	GO to Pinpoint Test AC
The RBM does not respond to the diagnostic scan tool	Refer to the Pinpoint Test	GO to Pinpoint Test AD
The TCCM does not respond to the diagnostic scan tool	Refer to the Pinpoint Test	GO to Pinpoint Test AE
The GFM (Trailer TPMS) does not respond to the diagnostic scan tool	Refer to the Pinpoint Test	GO to Pinpoint Test AF
The GFM2 (Upfitter Switch) does not respond to the diagnostic scan tool	Refer to the Pinpoint Test	GO to Pinpoint Test AG
The WACM does not respond to the diagnostic scan tool	Refer to the Pinpoint Test	GO to Pinpoint Test AH
All networks do not respond to the diagnostic scan tool	Refer to the Pinpoint Test	GO to Pinpoint Test AI
No power to the DLC	Refer to the Pinpoint Test	GO to Pinpoint Test AP

Pinpoint Tests

☐ [PINPOINT TEST A : THE PCM \(POWERTRAIN CONTROL MODULE\) DOES NOT RESPOND TO THE DIAGNOSTIC SCAN TOOL](#)

Refer to Wiring Diagrams Cell [14](#) for schematic and connector information.

Refer to Wiring Diagrams Cell [25](#) for schematic and connector information.

Refer to Wiring Diagrams Cell [26](#) for schematic and connector information.

Refer to Wiring Diagrams Cell [27](#) for schematic and connector information.

Normal Operation and Fault Conditions

The PCM communicates on the HS-CAN1.

Possible Sources

- Fuse
- Wiring, terminals and connectors
- PCM

A1 VERIFY WHETHER OTHER HS-CAN1 (HIGH-SPEED CONTROLLER AREA NETWORK 1) MODULES PASS THE NETWORK TEST

- Using a diagnostic scan tool, perform the network test.

Is the text "pass" or a DTC listed next to any of the following modules (if equipped): APIM, BCM, GFM2 (Upfitter Switch), PAM, PCM or TCM (Diesel)?

Yes	GO to A2
No	No modules are currently communicating on the HS-CAN1. GO to Pinpoint Test AJ

A2 PC/ED (POWERTRAIN CONTROL/EMISSIONS DIAGNOSIS) MANUAL PINPOINT TEST VERIFICATION CHECK

- Verify PC/ED manual pinpoint test QA (Gas) or AE (Diesel) has been performed.

Has pinpoint test QA (Gas) or AE (Diesel) been performed?

Yes	GO to A3
No	Refer to PC/ED manual pinpoint test QA (Gas) or AE (Diesel) verification check.

A3 CHECK THE HS-CAN1 (HIGH-SPEED CONTROLLER AREA NETWORK 1) TERMINATION RESISTANCE

- Ignition OFF.
- Disconnect GWM [C2431](#) .
- Measure:

GATEWAY MODULE

Positive Lead	Measurement / Action	Negative Lead
C2431-20	Ω	C2431-19

Is the resistance between 108 and 132 ohms?

Yes	CONNECT the GWM. GO to A5
No	GO to A4

A4 CHECK THE HS-CAN1 (HIGH-SPEED CONTROLLER AREA NETWORK 1) CIRCUITS BETWEEN THE PCM (POWERTRAIN CONTROL MODULE) AND THE GWM (GATEWAY MODULE A) FOR AN OPEN

- Disconnect PCM [C175B](#) (6.2L/7.3L) or [C1232B](#) (6.7L Diesel).
- Measure:

POWERTRAIN CONTROL MODULE (PCM)	GATEWAY MODULE
---------------------------------	----------------

6.2L/7.3L Gas

Positive Lead	Measurement / Action	Negative Lead
C175B-27	Ω	C2431-20
C175B-12	Ω	C2431-19

POWERTRAIN CONTROL MODULE (PCM)	GATEWAY MODULE
---------------------------------	----------------

6.7L Diesel

Positive Lead	Measurement / Action	Negative Lead
C1232B-13	Ω	C2431-20
C1232B-12	Ω	C2431-19

Are the resistances less than 3 ohms?

Yes	CONNECT the GWM. GO to A5
No	REPAIR the circuit in question.

A5 CHECK FOR CORRECT PCM (POWERTRAIN CONTROL MODULE) OPERATION

- Ignition OFF.
- Disconnect and inspect all the PCM connectors.
- Repair:
 - corrosion (install new connector 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 service articles: 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 (PCM) .
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.

PINPOINT TEST B : THE TCM (TRANSMISSION CONTROL MODULE) DOES NOT RESPOND TO THE DIAGNOSTIC SCAN TOOL

Refer to Wiring Diagrams Cell [14](#) for schematic and connector information.

Refer to Wiring Diagrams Cell [30](#) for schematic and connector information.

Normal Operation and Fault Conditions

The TCM communicates on the HS-CAN1 (diesel engine only).

Possible Sources

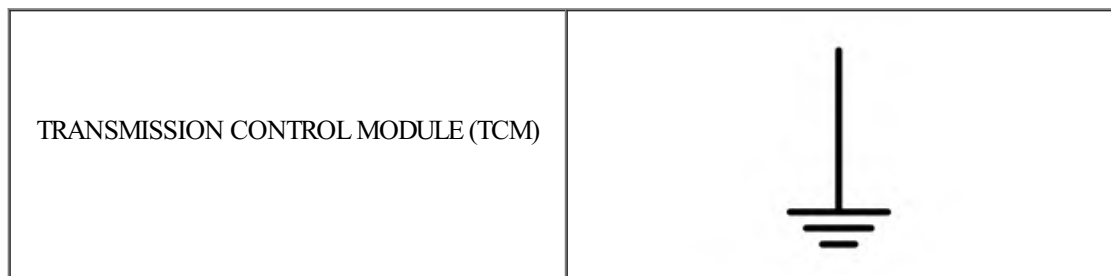
- Fuse
- Wiring, terminals and connectors
- TCM

Visual Inspection and Pre-checks

- Verify BJB fuses 48 (15A) and 50 (10A) are OK.

B1 CHECK THE TCM (TRANSMISSION CONTROL MODULE) VOLTAGE SUPPLY CIRCUITS FOR AN OPEN

- Ignition OFF.
- Disconnect: TCM [C1750](#)
- Ignition ON.
- Measure:



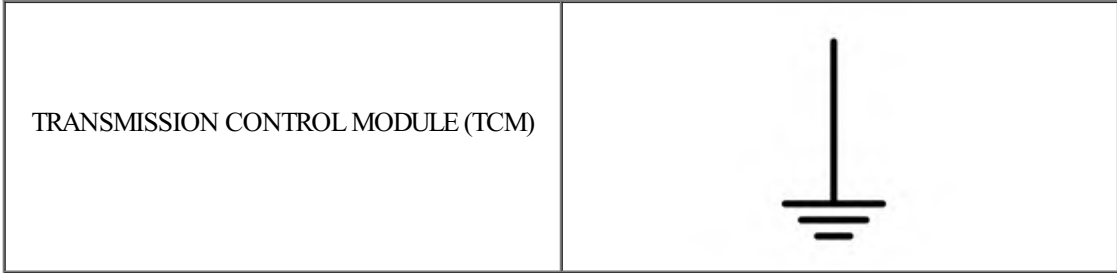
Positive Lead	Measurement / Action	Negative Lead
C1750-31		Ground
C1750-48		Ground

Are the voltages greater than 11 volts?

Yes	GO to B2
No	VERIFY BJB fuse 48 (15A) or 50 (10A) is OK. If OK, REPAIR the circuit in question. If not OK, REFER to the Wiring Diagrams manual to identify the possible causes of the circuit short.

B2 CHECK THE TCM (TRANSMISSION CONTROL MODULE) GROUND CIRCUIT FOR AN OPEN

- Ignition OFF.
- Measure:



Positive Lead	Measurement / Action	Negative Lead
C1750-50	Ω	Ground

Is the resistance less than 3 ohms?

Yes	GO to B3
No	REPAIR the circuit.

B3 CHECK THE HS-CAN1 (HIGH-SPEED CONTROLLER AREA NETWORK 1) CIRCUITS BETWEEN THE TCM (TRANSMISSION CONTROL MODULE) AND THE GWM (GATEWAY MODULE A) FOR AN OPEN

- Disconnect GWM [C2431](#) .
- Measure:

TRANSMISSION CONTROL MODULE (TCM)	GATEWAY MODULE
-----------------------------------	----------------

Positive Lead	Measurement / Action	Negative Lead
C1750-44	Ω	C2431-20
C1750-43	Ω	C2431-19

Are the resistances less than 3 ohms?

Yes	CONNECT the GWM. GO to B4
No	REPAIR the circuit in question.

B4 CHECK FOR CORRECT TCM (TRANSMISSION CONTROL MODULE) OPERATION

- Ignition OFF.
- Disconnect and inspect the TCM connector.
- Repair:
 - corrosion (install new connector or terminals - clean module pins)
 - damaged or bent pins - install new terminals/pins
 - pushed-out pins - install new pins as necessary
- Reconnect the TCM 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 service articles: 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, INSTALL a new TCM.
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.

☐ [PINPOINT TEST C : THE ABS \(ANTI-LOCK BRAKE SYSTEM\) MODULE DOES NOT RESPOND TO THE DIAGNOSTIC SCAN TOOL](#)

Refer to Wiring Diagrams Cell [14](#) for schematic and connector information.

Refer to Wiring Diagrams Cell [42](#) for schematic and connector information.

Normal Operation and Fault Conditions

The ABS module communicates on the HS-CAN2.

Possible Sources

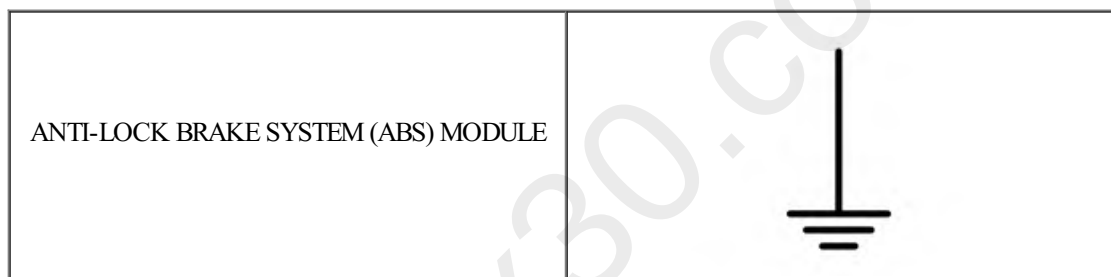
- Fuse
- Wiring, terminals and connectors
- ABS module

Visual Inspection and Pre-checks

- Verify BJB fuses 4 (60A), 7 (30A) and 49 (10A) are OK.

C1 CHECK THE ABS (ANTI-LOCK BRAKE SYSTEM) MODULE VOLTAGE SUPPLY CIRCUITS FOR AN OPEN

- Ignition OFF.
- Disconnect: ABS module [C135](#)
- Ignition ON.
- Measure:



Positive Lead	Measurement / Action	Negative Lead
C135-1		Ground
C135-25		Ground
C135-28		Ground

Are the voltages greater than 11 volts?

Yes	GO to C2
No	VERIFY BJB fuse 4 (60A), 7 (30A) or 49 (10A) is OK. If OK, REPAIR the circuit in question. If not OK, REFER to the Wiring Diagrams manual to identify the possible causes of the circuit short.

C2 CHECK THE ABS (ANTI-LOCK BRAKE SYSTEM) MODULE GROUND CIRCUITS FOR AN OPEN

- Ignition OFF.
- Measure:

ANTI-LOCK BRAKE SYSTEM (ABS) MODULE	
-------------------------------------	--

Positive Lead	Measurement / Action	Negative Lead
C135-13	Ω	Ground
C135-38	Ω	Ground

Are the resistances less than 3 ohms?

Yes	GO to C3
No	REPAIR the circuit in question.

C3 CHECK THE HS-CAN2 (HIGH-SPEED CONTROLLER AREA NETWORK 2) CIRCUITS BETWEEN THE ABS (ANTI-LOCK BRAKE SYSTEM) MODULE AND THE GWM (GATEWAY MODULE A) FOR AN OPEN

- Disconnect GWM [C2431](#).
- Measure:

ANTI-LOCK BRAKE SYSTEM (ABS) MODULE	GATEWAY MODULE
-------------------------------------	----------------

Positive Lead	Measurement / Action	Negative Lead
C135-26	Ω	C2431-18
C135-14	Ω	C2431-17

Are the resistances less than 3 ohms?

Yes	CONNECT the GWM. GO to C4
No	REPAIR the circuit in question.

C4 CHECK FOR CORRECT ABS (ANTI-LOCK BRAKE SYSTEM) MODULE OPERATION

- Ignition OFF.
- Disconnect and inspect the ABS module connector.
- Repair:
 - corrosion (install new connector 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 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 service articles: 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 (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.

☐ [PINPOINT TEST D : THE RCM \(RESTRAINTS CONTROL MODULE\) DOES NOT RESPOND TO THE DIAGNOSTIC SCAN TOOL](#)

Refer to Wiring Diagrams Cell [14](#) for schematic and connector information.

Refer to Wiring Diagrams Cell [46](#) for schematic and connector information.

Normal Operation and Fault Conditions

The RCM communicates on the HS-CAN2.

Possible Sources

- Fuse
- Wiring, terminals and connectors
- BCM
- RCM

⚠ WARNING: Never probe the electrical connectors on airbag, Safety Canopy[®] or side air curtain assemblies. Failure to follow this instruction may result in the accidental deployment of these assemblies, which increases the risk of serious personal injury or death.

⚠ WARNING: Never disassemble or tamper with seat belt deployable components, including pretensioners, load limiters and inflators. Never back probe deployable device electrical connectors. Tampering or back probing may cause an accidental deployment and result in personal injury or death.

NOTE: The Supplemental Restraint System (SRS) must be fully operational and free of faults before releasing the vehicle to the customer.

D1 CHECK THE RCM (RESTRAINTS CONTROL MODULE) CONNECTION

- Ignition OFF.
- Depower the SRS.
REFER to: Supplemental Restraint System (SRS) Depowering (501-20B Supplemental Restraint System, General Procedures).
- Disconnect: RCM C310A and C310B.

Are RCM C310A pin 19 and C310B pins 47 and 48 OK?

Yes	GO to D2
No	INSTALL a new wiring harness. REPOWER the Supplemental Restraint System (SRS). REFER to: Supplemental Restraint System (SRS) Depowering (501-20B Supplemental Restraint System, General Procedures).

D2 CHECK FOR BCM (BODY CONTROL MODULE) NETWORK CONNECTION

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

Does the BCM pass the network test?

Yes	GO to D3
No	DIAGNOSE a module communication concern. GO to Pinpoint Test H

D3 RETRIEVE THE RECORDED DIAGNOSTIC TROUBLE CODES (DTCS)

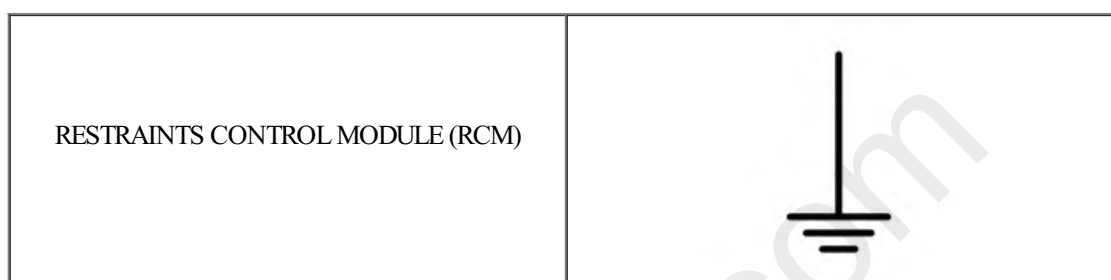
- Using a diagnostic scan tool, perform a BCM self-test.

Are any Diagnostic Trouble Codes (DTCs) recorded?

Yes	DIAGNOSE the Diagnostic Trouble Codes (DTCs). REFER to: Body Control Module (BCM) (419-10 Multifunction Electronic Modules, Diagnosis and Testing).
No	GO to D4

D4 CHECK THE RCM (RESTRAINTS CONTROL MODULE) VOLTAGE SUPPLY CIRCUIT FOR AN OPEN

- Repower the SRS.
REFER to: Supplemental Restraint System (SRS) Depowering (501-20B Supplemental Restraint System, General Procedures).
- Ignition ON.
- Measure:



Positive Lead	Measurement / Action	Negative Lead
C310A-19		Ground

Is the voltage greater than 11 volts?

Yes	GO to D5
No	REPAIR the circuit.

D5 CHECK THE RCM (RESTRAINTS CONTROL MODULE) CASE GROUND

- Ignition OFF.
- Measure the resistance between the RCM case and a good chassis ground.

Is the resistance less than 3 ohms?

Yes	GO to D6
No	REPAIR the RCM case ground as necessary.

D6 CHECK THE HS-CAN2 (HIGH-SPEED CONTROLLER AREA NETWORK 2) CIRCUITS BETWEEN THE RCM (RESTRAINTS CONTROL MODULE) AND THE GWM (GATEWAY MODULE A) FOR AN OPEN

- Depower the SRS.
REFER to: Supplemental Restraint System (SRS) Depowering (501-20B Supplemental Restraint System, General Procedures).
- Disconnect: GWM [C2431](#).
- Measure:

RESTRAINTS CONTROL MODULE (RCM)	GATEWAY MODULE
---------------------------------	----------------

Positive Lead	Measurement / Action	Negative Lead
C310B-48	Ω	C2431-18
C310B-47	Ω	C2431-17

Are the resistances less than 3 ohms?

Yes	CONNECT the GWM. GO to D7
No	REPAIR the circuit in question.

D7 CHECK FOR CORRECT RCM (RESTRAINTS CONTROL MODULE) OPERATION

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

Is the concern still present?

Yes	CHECK OASIS for any applicable service articles: 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 (RCM) .
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.

DIAGNOSTIC SCAN TOOL

Refer to Wiring Diagrams Cell [14](#) for schematic and connector information.

Refer to Wiring Diagrams Cell [81](#) for schematic and connector information.

Normal Operation and Fault Conditions

The SCCM communicates on the HS-CAN2.

Possible Sources

- Fuse
- Wiring, terminals and connector
- SCCM

Visual Inspection and Pre-checks

- Verify BCM fuse 13 (7.5A) is OK.

E1 CHECK THE HS-CAN2 (HIGH-SPEED CONTROLLER AREA NETWORK 2) TERMINATION RESISTANCE

- Ignition OFF.
- Disconnect negative battery cable.
- Disconnect the diagnostic scan tool cable from the DLC.
- Disconnect GWM [C2431](#) .
- Measure:



Positive Lead	Measurement / Action	Negative Lead
C2431-18	Ω	C2431-17

Is the resistance between 108 and 132 ohms?

Yes	CONNECT the GWM. GO to E3
No	GO to E2

E2 CHECK THE HS-CAN2 (HIGH-SPEED CONTROLLER AREA NETWORK 2) CIRCUITS BETWEEN THE SCCM (STEERING COLUMN CONTROL MODULE) AND THE GWM (GATEWAY MODULE A) FOR AN OPEN

- Disconnect SCCM [C226A](#)
- Measure:

STEERING COLUMN CONTROL MODULE (SCCM)	GATEWAY MODULE
--	----------------

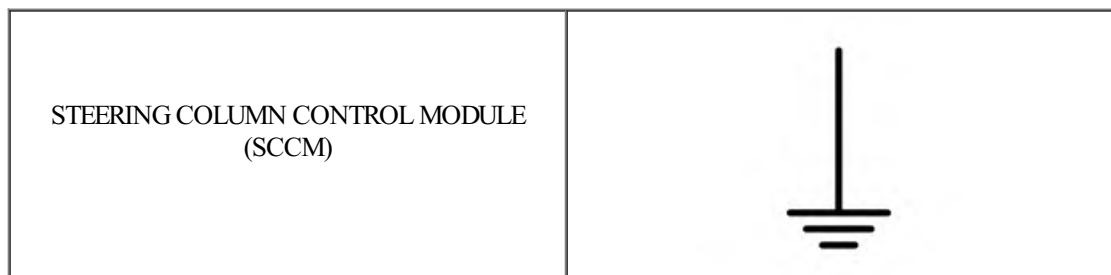
Positive Lead	Measurement / Action	Negative Lead
C226A-3	Ω	C2431-18
C226A-4	Ω	C2431-17

Are the resistances less than 3 ohms?

Yes	CONNECT all disconnected connectors. GO to E5
No	REPAIR the circuit in question.

E3 CHECK THE SCCM (STEERING COLUMN CONTROL MODULE) VOLTAGE SUPPLY CIRCUIT FOR AN OPEN

- Connect negative battery cable.
- Ignition ON.
- Measure:



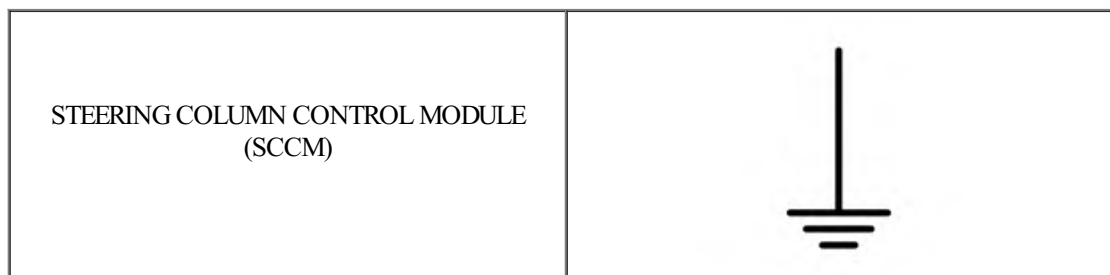
Positive Lead	Measurement / Action	Negative Lead
C226A-7		Ground

Is the voltage greater than 11 volts?

Yes	GO to E4
No	VERIFY BCM fuse 13 (7.5A) is OK. If OK, REPAIR the circuit. If not OK, REFER to the Wiring Diagrams manual to identify the possible causes of the circuit short.

E4 CHECK THE SCCM (STEERING COLUMN CONTROL MODULE) GROUND CIRCUIT FOR AN OPEN

- Ignition OFF.
- Measure:



Positive Lead	Measurement / Action	Negative Lead
C226A-5	Ω	Ground

Is the resistance less than 3 ohms?

Yes	GO to E5
No	REPAIR the circuit.

E5 CHECK FOR CORRECT SCCM (STEERING COLUMN CONTROL MODULE) OPERATION

- Ignition OFF.
- Disconnect and inspect all the SCCM connectors.
- Repair:
 - corrosion (install new connector or terminals - clean module pins)
 - damaged or bent pins - install new terminals/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 service articles: 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, INSTALL a new SCCM. Without adaptive steering, REFER to: Steering Column Control Module (SCCM) (211-05 Steering Wheel and Column Electrical Components, Removal and Installation). With adaptive steering, REFER to: Steering Column Control Module (SCCM) - Vehicles With: Adaptive Steering (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.

Refer to Wiring Diagrams Cell [14](#) for schematic and connector information.

Refer to Wiring Diagrams Cell [31](#) for schematic and connector information.

Normal Operation and Fault Conditions

The SASM communicates on the HS-CAN2.

Possible Sources

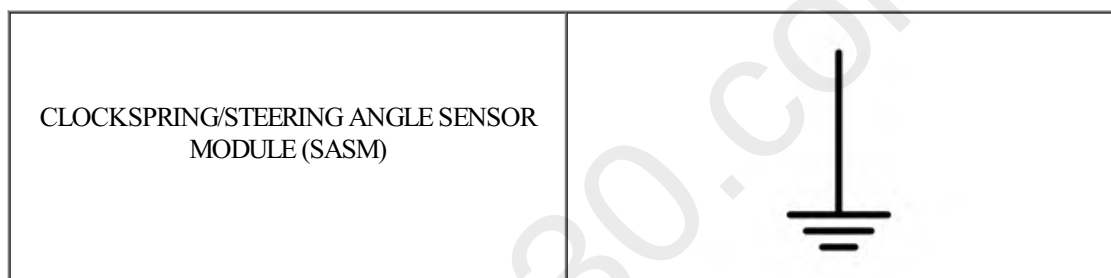
- Fuse
- Wiring, terminals and connector
- SASM

Visual Inspection and Pre-checks

- Verify BJB fuse 37 (40A) and BCM fuse 17 (7.5A) are OK.

F1 CHECK THE SASM (STEERING ANGLE SENSOR MODULE) VOLTAGE SUPPLY CIRCUITS FOR AN OPEN

- Ignition ON.
- Disconnect SASM [C2414](#).
- Measure:



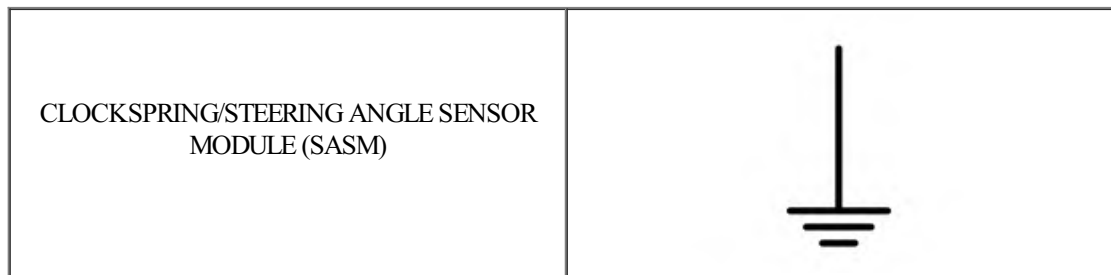
Positive Lead	Measurement / Action	Negative Lead
C2414-4		Ground
C2414-5		Ground

Are the voltages greater than 11 volts?

Yes	GO to F2
No	VERIFY BJB fuse 37 (40A) and BCM fuse 17 (7.5A) are OK. If OK, REPAIR the circuit. If not OK, REFER to the Wiring Diagrams manual to identify the possible causes of the circuit short.

F2 CHECK THE SASM (STEERING ANGLE SENSOR MODULE) GROUND CIRCUIT FOR AN OPEN

- Ignition OFF.
- Measure:



Positive Lead	Measurement / Action	Negative Lead
C2414-1	Ω	Ground

Is the resistance less than 3 ohms?

Yes	GO to F3
No	REPAIR the circuit.

F3 CHECK THE HS-CAN2 (HIGH-SPEED CONTROLLER AREA NETWORK 2) CIRCUITS BETWEEN THE SASM (STEERING ANGLE SENSOR MODULE) AND THE GWM (GATEWAY MODULE A) FOR AN OPEN

- Disconnect GWM [C2431](#) .
- Measure:

CLOCKSPRING/STEERING ANGLE SENSOR MODULE (SASM)	GATEWAY MODULE
--	----------------

Positive Lead	Measurement / Action	Negative Lead
C2414-2	Ω	C2431-18
C2414-3	Ω	C2431-17

Are the resistances less than 3 ohms?

Yes	CONNECT the GWM. GO to F4
No	REPAIR the circuit in question.

F4 CHECK FOR CORRECT SASM (STEERING ANGLE SENSOR MODULE) OPERATION

- Ignition OFF.
- Disconnect and inspect the SASM connector.
- Repair:
 - corrosion (install new connector or terminals - clean module pins)
 - damaged or bent pins - install new terminals/pins
 - pushed-out pins - install new pins as necessary
- Reconnect the SASM 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 service articles: 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, INSTALL a new SASM/Clockspring assembly. REFER to: Clockspring - Vehicles With: Adaptive Steering (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.

Refer to Wiring Diagrams Cell [14](#) for schematic and connector information.

Refer to Wiring Diagrams Cell [60](#) for schematic and connector information.

Normal Operation and Fault Conditions

The IPC communicates on the HS-CAN3.

Possible Sources

- Fuse
- Wiring, terminals and connector
- IPC

Visual Inspection and Pre-checks

- Verify BCM fuse 13 (7.5A) is OK.

G1 CHECK THE HS-CAN3 (HIGH-SPEED CONTROLLER AREA NETWORK 3) TERMINATION RESISTANCE

- Ignition OFF.
- Disconnect negative battery cable.
- Disconnect the diagnostic scan tool cable from the DLC.
- Disconnect GWM [C2431](#)
- Measure:



Positive Lead	Measurement / Action	Negative Lead
C2431-16	Ω	C2431-15

Is the resistance between 108 and 132 ohms?

Yes	CONNECT the GWM. GO to G3
No	GO to G2

G2 CHECK THE HS-CAN3 (HIGH-SPEED CONTROLLER AREA NETWORK 3) CIRCUITS BETWEEN THE IPC (INSTRUMENT PANEL CLUSTER) AND THE GWM (GATEWAY MODULE A) FOR AN OPEN

- Disconnect IPC [C220](#)
- Measure:

INSTRUMENT PANEL CLUSTER (IPC)	GATEWAY MODULE
--------------------------------	----------------

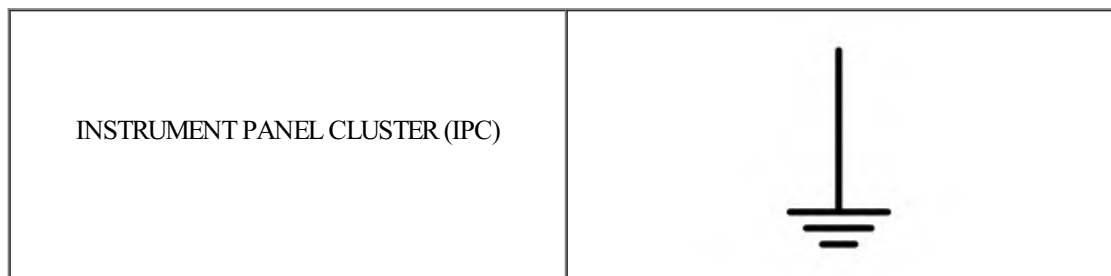
Positive Lead	Measurement / Action	Negative Lead
C220-12	Ω	C2431-16
C220-13	Ω	C2431-15

Are the resistances less than 3 ohms?

Yes	CONNECT all disconnected connectors. GO to G5
No	REPAIR the circuit in question.

G3 CHECK THE IPC (INSTRUMENT PANEL CLUSTER) VOLTAGE SUPPLY CIRCUIT

- Disconnect: IPC [C220](#)
- Connect negative battery cable.
- Ignition ON.
- Measure:



Positive Lead	Measurement / Action	Negative Lead
C220-8		Ground

Is the voltage greater than 11 volts?

Yes	GO to G4
No	VERIFY BCM fuse 13 (7.5A) is OK. If OK, REPAIR the circuit. If not OK, REFER to the Wiring Diagrams manual to identify the possible causes of the circuit short.

G4 CHECK THE IPC (INSTRUMENT PANEL CLUSTER) GROUND CIRCUIT

- Ignition OFF.
- Measure:

INSTRUMENT PANEL CLUSTER (IPC)	
--------------------------------	--

Positive Lead	Measurement / Action	Negative Lead
C220-3	Ω	Ground

Is the resistance less than 3 ohms?

Yes	GO to G5
No	REPAIR the circuit.

G5 CHECK FOR CORRECT IPC (INSTRUMENT PANEL CLUSTER) OPERATION

- Ignition OFF.
- Disconnect and inspect the IPC connector.
- Repair:
 - corrosion (install new connector 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 service articles: 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 (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.

☐ [PINPOINT TEST H : THE BCM \(BODY CONTROL MODULE\) DOES NOT RESPOND TO THE DIAGNOSTIC SCAN TOOL](#)

Refer to Wiring Diagrams Cell [13](#) for schematic and connector information.

Refer to Wiring Diagrams Cell [14](#) for schematic and connector information.

Normal Operation and Fault Conditions

The BCM communicates on the HS-CAN1.

Possible Sources

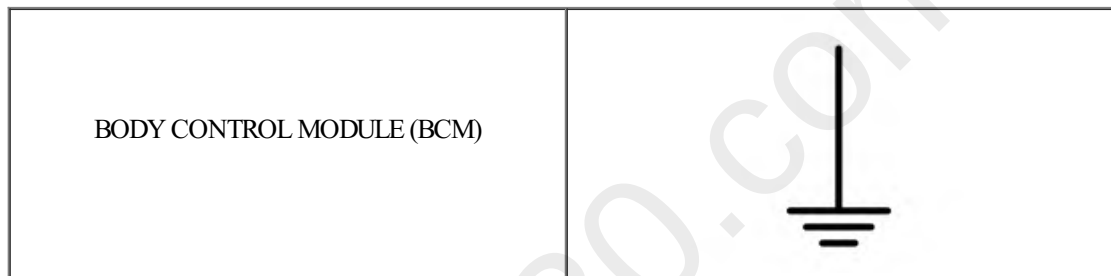
- Fuse
- Wiring, terminals and connector
- BCM

Visual Inspection and Pre-checks

- Verify BJB fuse 36 (60A) is OK.

H1 CHECK THE BCM (BODY CONTROL MODULE) VOLTAGE SUPPLY CIRCUIT FOR AN OPEN

- Ignition OFF.
- Disconnect: BCM [C2280H](#)
- Measure:



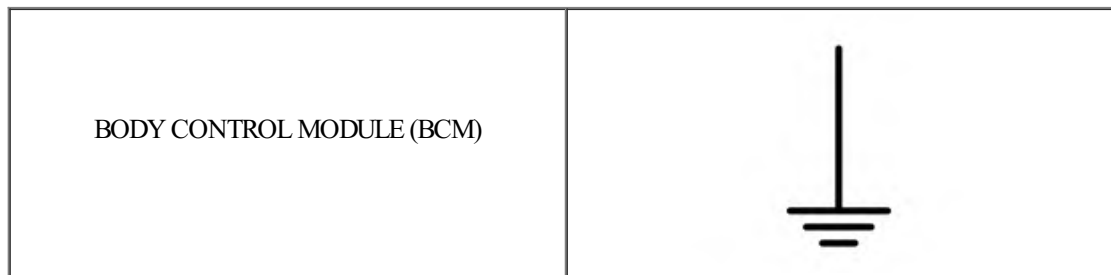
Positive Lead	Measurement / Action	Negative Lead
C2280H-1		Ground

Is the voltage greater than 11 volts?

Yes	GO to H2
No	VERIFY BJB fuse 36 (60A) is OK. If OK, repair the circuit. If not OK, REFER to the Wiring Diagrams Manual to identify the possible causes of the circuit short.

H2 CHECK THE BCM (BODY CONTROL MODULE) GROUND CIRCUITS FOR AN OPEN

- Disconnect: BCM [C2280C](#)
- Measure:



Positive Lead	Measurement / Action	Negative Lead
C2280C-6	Ω	Ground
C2280C-7	Ω	Ground
C2280C-10	Ω	Ground

Are the resistances less than 3 ohms?

Yes	GO to H3
No	REPAIR the circuit in question.

H3 CHECK THE HS-CAN1 (HIGH-SPEED CONTROLLER AREA NETWORK 1) CIRCUITS BETWEEN THE BCM (BODY CONTROL MODULE) AND THE GWM (GATEWAY MODULE A) FOR AN OPEN

- Disconnect GWM [C2431](#).
- Measure:

BODY CONTROL MODULE (BCM)	GATEWAY MODULE
---------------------------	----------------

Positive Lead	Measurement / Action	Negative Lead
C2280G-10	Ω	C2431-20
C2280G-9	Ω	C2431-19

Are the resistances less than 3 ohms?

Yes	CONNECT the GWM. GO to H4
No	REPAIR the circuit in question.

H4 CHECK FOR CORRECT BCM (BODY CONTROL MODULE) OPERATION

- Disconnect and inspect all the BCM connectors.
- Repair:
 - corrosion (install new connector 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 service articles: 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 (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.

☐ [PINPOINT TEST I : THE FCIM \(FRONT CONTROLS INTERFACE MODULE\) DOES NOT RESPOND TO THE DIAGNOSTIC SCAN TOOL](#)

Refer to Wiring Diagrams Cell [14](#) for schematic and connector information.

Refer to Wiring Diagrams Cell [54](#) for schematic and connector information.

Refer to Wiring Diagrams Cell [55](#) for schematic and connector information.

Normal Operation and Fault Conditions

The FCIM communicates on the MS-CAN.

Possible Sources

- Fuse
- Wiring, terminals and connector
- FCIM

Visual Inspection and Pre-checks

- Verify BCM fuse 12 (7.5A) is OK.

I1 CHECK THE MS-CAN (MEDIUM SPEED-CONTROLLER AREA NETWORK) TERMINATION RESISTANCE

- Ignition OFF.
- Disconnect negative battery cable.
- Disconnect the diagnostic scan tool cable from the DLC.
- Disconnect: GWM [C2431](#)
- Measure:



Positive Lead	Measurement / Action	Negative Lead
C2431-23	Ω	C2431-22

Is the resistance between 108 and 132 ohms?

Yes	CONNECT the GWM. GO to 13
No	GO to 12

I2 CHECK THE MS-CAN (MEDIUM SPEED-CONTROLLER AREA NETWORK) CIRCUITS BETWEEN THE FCIM (FRONT CONTROLS INTERFACE MODULE) AND THE GWM (GATEWAY MODULE A) FOR AN OPEN

- Disconnect FCIM [C2402A](#).
- Measure:

Positive Lead	Measurement / Action	Negative Lead
C2402A-17	Ω	C2431-23
C2402A-18	Ω	C2431-22

Are the resistances less than 3 ohms?

Yes	CONNECT all disconnected connectors. GO to I5
No	REPAIR the circuit in question.

I3 CHECK THE FCIM (FRONT CONTROLS INTERFACE MODULE) VOLTAGE SUPPLY CIRCUIT FOR AN OPEN

- Connect negative battery cable.
- Ignition ON.
- Measure:

Positive Lead	Measurement / Action	Negative Lead
C2402A-26		Ground

Is the voltage greater than 11 volts?

Yes	GO to I4
No	VERIFY BCM fuse 12 (7.5A) is OK. If OK, REPAIR the circuit. If not OK, REFER to the Wiring Diagrams manual to identify the possible causes of the circuit short.

I4 CHECK THE FCIM (FRONT CONTROLS INTERFACE MODULE) GROUND CIRCUIT FOR AN OPEN

- Ignition OFF.
- Measure:

Positive Lead	Measurement / Action	Negative Lead
C2402A-1	Ω	Ground

Is the resistance less than 3 ohms?

Yes	GO to I5
No	REPAIR the circuit.

I5 CHECK FOR CORRECT FCIM (FRONT CONTROLS INTERFACE MODULE) OPERATION

- Ignition OFF.
- Disconnect and inspect the FCIM connector.
- Repair:
 - corrosion (install new connector 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 service articles: TSB, GSB, SSM or FSA. If a service article exists for this concern, DISCONTINUE this test and FOLLOW service article instructions. If no service articles 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.

PINPOINT TEST J : THE ACM (AUDIO FRONT CONTROL MODULE) DOES NOT RESPOND TO THE DIAGNOSTIC SCAN TOOL

Refer to Wiring Diagrams Cell [14](#) for schematic and connector information.

Refer to Wiring Diagrams Cell [130](#) for schematic and connector information.

Normal Operation and Fault Conditions

The ACM communicates on the HS-CAN3.

Possible Sources

- Fuse
- Wiring, terminals and connector
- ACM

Visual Inspection and Pre-checks

- Verify BCM fuse 32 (20A) is OK.

J1 CHECK THE ACM (AUDIO FRONT CONTROL MODULE) VOLTAGE SUPPLY CIRCUIT FOR AN OPEN

- Ignition OFF.
- Disconnect: ACM [C240A](#).
- Ignition ON.
- Measure:

Positive Lead	Measurement / Action	Negative Lead
C240A-1		Ground

Is the voltage greater than 11 volts?

Yes	GO to J2
No	VERIFY BCM fuse 32 (20A) is OK. If OK, REPAIR the circuit. If not OK, REFER to the Wiring Diagrams manual to identify the possible causes of the circuit short.

J2 CHECK THE ACM (AUDIO FRONT CONTROL MODULE) GROUND CIRCUIT FOR AN OPEN

- Ignition OFF.
- Measure:

Positive Lead	Measurement / Action	Negative Lead
C240A-4	Ω	Ground

Is the resistance less than 3 ohms?

Yes	GO to J3
No	REPAIR the circuit.

J3 CHECK THE HS-CAN3 (HIGH-SPEED CONTROLLER AREA NETWORK 3) CIRCUITS BETWEEN THE ACM (AUDIO FRONT CONTROL MODULE) AND THE GWM (GATEWAY MODULE A) FOR AN OPEN

- Measure:

Positive Lead	Measurement / Action	Negative Lead
C240A-19	Ω	C2431-16
C240A-30	Ω	C2431-15

Are the resistances less than 3 ohms?

Yes	CONNECT the GWM. GO to J4
No	REPAIR the circuit in question.

J4 CHECK FOR CORRECT ACM (AUDIO FRONT CONTROL MODULE) OPERATION

- Ignition OFF.
- Disconnect and inspect all the ACM connectors.
- Repair:
 - corrosion (install new connector 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 service articles: 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, INSTALL a new ACM. REFER to: Audio Front Control Module (ACM) (415-00 Information and Entertainment System - General Information, 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.

☐ PINPOINT TEST K : THE IPMA (IMAGE PROCESSING MODULE A) DOES NOT RESPOND TO THE DIAGNOSTIC SCAN TOOL

Refer to Wiring Diagrams Cell [14](#) for schematic and connector information.

Refer to Wiring Diagrams Cell [31](#) for schematic and connector information.

Normal Operation and Fault Conditions

The IPMA communicates on the HS-CAN2.

Possible Sources

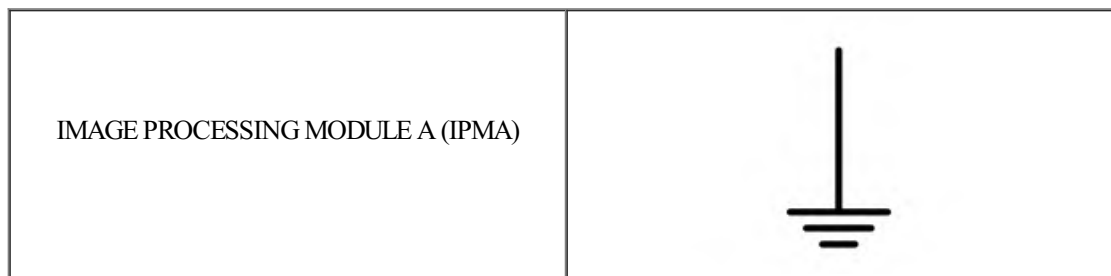
- Fuse
- Wiring, terminals and connector
- IPMA

Visual Inspection and Pre-checks

- Verify BCM fuse 36 (15A) is OK.

K1 CHECK THE IPMA (IMAGE PROCESSING MODULE A) VOLTAGE SUPPLY CIRCUIT FOR AN OPEN

- Ignition OFF.
- Disconnect: IPMA [C9224](#).
- Ignition ON.
- Measure:



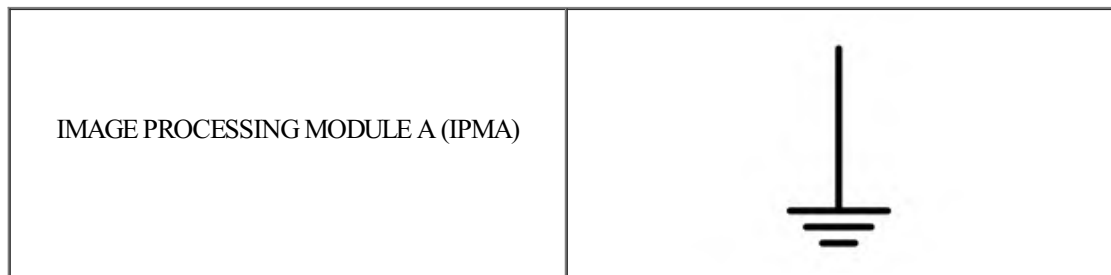
Positive Lead	Measurement / Action	Negative Lead
C9224-4		Ground

Is the voltage greater than 11 volts?

Yes	GO to K2
No	VERIFY BCM fuse 36 (15A) is OK. If OK, REPAIR the circuit. If not OK, REFER to the Wiring Diagrams manual to identify the possible causes of the circuit short.

K2 CHECK THE IPMA (IMAGE PROCESSING MODULE A) GROUND CIRCUIT FOR AN OPEN

- Ignition OFF.
- Measure:



Positive Lead	Measurement / Action	Negative Lead
C9224-5	Ω	Ground

Is the resistance less than 3 ohms?

Yes	GO to K3
No	REPAIR the circuit.

K3 CHECK THE HS-CAN2 (HIGH-SPEED CONTROLLER AREA NETWORK 2) CIRCUITS BETWEEN THE IPMA (IMAGE PROCESSING MODULE A) AND THE GWM (GATEWAY MODULE A) FOR AN OPEN

- Disconnect GWM [C2431](#).
- Measure:



Positive Lead	Measurement / Action	Negative Lead
C9224-10	Ω	C2431-18
C9224-9	Ω	C2431-17

Are the resistances less than 3 ohms?

Yes	CONNECT the GWM. GO to K4
No	REPAIR the circuit in question.

K4 CHECK FOR CORRECT IPMA (IMAGE PROCESSING MODULE A) OPERATION

- Ignition OFF.
- Disconnect and inspect the IPMA connector.
- Repair:
 - corrosion (install new connector or terminals - clean module pins)
 - damaged or bent pins - install new terminals/pins
 - pushed-out pins - install new pins as necessary
- Reconnect the IPMA 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 service articles: 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, INSTALL a new IPMA. REFER to: Interior Rear View Mirror (501-09 Rear View Mirrors, 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.

☐ PINPOINT TEST L : THE IPMB (IMAGE PROCESSING MODULE B) DOES NOT RESPOND TO THE DIAGNOSTIC SCAN TOOL

Refer to Wiring Diagrams Cell [14](#) for schematic and connector information.

Refer to Wiring Diagrams Cell [145](#) for schematic and connector information.

Normal Operation and Fault Conditions

The IPMB communicates on the HS-CAN2.

Possible Sources

- Fuse
- Wiring terminals and connector
- IPMB

Visual Inspection and Pre-checks

- Verify BCM fuse 36 (15A) is OK.

L1 CHECK THE IPMB (IMAGE PROCESSING MODULE B) VOLTAGE SUPPLY CIRCUIT FOR AN OPEN

- Ignition OFF.
- Disconnect: IPMB [C2512A](#) (without 360 camera) or [C2512](#) (with 360 camera).
- Ignition ON.
- Measure:

Without 360 Camera

Positive Lead	Measurement / Action	Negative Lead
C2512A-1		Ground

With 360 Camera

Positive Lead	Measurement / Action	Negative Lead
C2512-10		Ground

Is the voltage greater than 11 volts?

Yes	GO to L2
No	VERIFY BCM fuse 36 (15A) is OK. If OK, REPAIR the circuit. If not OK, REFER to the Wiring Diagrams manual to identify the possible causes of the circuit short.

L2 CHECK THE IPMB (IMAGE PROCESSING MODULE B) GROUND CIRCUIT FOR AN OPEN

- Ignition OFF.
- Measure:

Without 360 Camera

Positive Lead	Measurement / Action	Negative Lead
C2512A-11	Ω	Ground

With 360 Camera

Positive Lead	Measurement / Action	Negative Lead
C2512-24	Ω	Ground

Is the resistance less than 3 ohms?

Yes	GO to L3
No	REPAIR the circuit.

L3 CHECK THE HS-CAN2 (HIGH-SPEED CONTROLLER AREA NETWORK 2) CIRCUITS BETWEEN THE IPMB (IMAGE PROCESSING MODULE B) AND THE GWM (GATEWAY MODULE A) FOR AN OPEN

- Disconnect IPMB [C2512B](#) (without 360 camera) .
- Disconnect GWM [C2431](#) .
- Measure:

Without 360 Camera

Positive Lead	Measurement / Action	Negative Lead
C2512B-7	Ω	C2431-18
C2512B-6	Ω	C2431-17

With 360 Camera

Positive Lead	Measurement / Action	Negative Lead
C2512-5	Ω	C2431-18
C2512-15	Ω	C2431-17

Are the resistances less than 3 ohms?

Yes	CONNECT the GWM. GO to L4
No	REPAIR the circuit in question.

L4 CHECK FOR CORRECT IPMB (IMAGE PROCESSING MODULE B) OPERATION

- Ignition OFF.
- Disconnect and inspect all the IPMB connectors.
- Repair:
 - corrosion (install new connector or terminals - clean module pins)
 - damaged or bent pins - install new terminals/pins
 - pushed-out pins - install new pins as necessary
- Reconnect the IPMB 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 service articles: TSB, GSB, SSM or FSA If a service article exists for this concern, DISCONTINUE this test and FOLLOW service article instructions. If no service articles address this concern, INSTALL a new IPMB. REFER to: Image Processing Module B (IPMB) (413-13B Parking Aid - Vehicles With: Parking Aid Camera, 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.

PINPOINT TEST M : THE APIM (SYNC MODULE) DOES NOT RESPOND TO THE DIAGNOSTIC SCAN TOOL

Refer to Wiring Diagrams Cell [14](#) for schematic and connector information.

Refer to Wiring Diagrams Cell [132](#) for schematic and connector information.

Refer to Wiring Diagrams Cell [133](#) for schematic and connector information.

Normal Operation and Fault Conditions

The APIM communicates on the HS-CAN1, HS-CAN3 and HS-CAN4.

Possible Sources

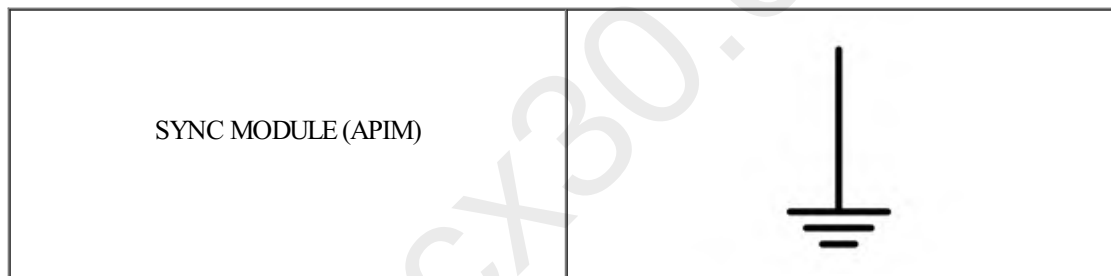
- Fuse
- Wiring, terminals and connector
- APIM

Visual Inspection and Pre-checks

- Verify BCM fuse 15 (15A) is OK.

M1 CHECK THE APIM (SYNC MODULE) VOLTAGE SUPPLY CIRCUIT FOR AN OPEN

- Ignition OFF.
- Disconnect: APIM [C2383A](#).
- Ignition ON.
- Measure:



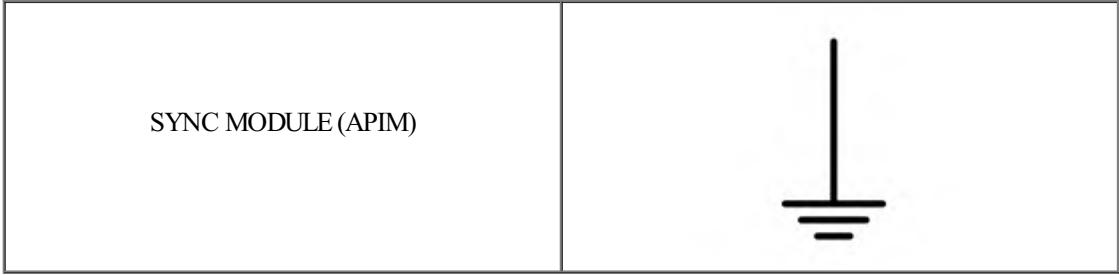
Positive Lead	Measurement / Action	Negative Lead
C2383A-1		Ground

Is the voltage greater than 11 volts?

Yes	GO to M2
No	VERIFY BCM fuse 15 (15A) is OK. If OK, REPAIR the circuit. If not OK, REFER to the Wiring Diagrams manual to identify the possible causes of the circuit short.

M2 CHECK THE APIM (SYNC MODULE) GROUND CIRCUIT FOR AN OPEN

- Ignition OFF.
- Measure:



Positive Lead	Measurement / Action	Negative Lead
C2383A-37	Ω	Ground

Is the resistance less than 3 ohms?

Yes	GO to M3
No	REPAIR the circuit.

M3 CHECK THE HS-CAN1 (HIGH-SPEED CONTROLLER AREA NETWORK 1) CIRCUITS BETWEEN THE APIM (SYNC MODULE) AND THE GWM (GATEWAY MODULE A) FOR AN OPEN

- Disconnect GWM [C2431](#) .
- Measure:

SYNC MODULE (APIM)	GATEWAY MODULE
--------------------	----------------

Positive Lead	Measurement / Action	Negative Lead
C2383A-53	Ω	C2431-20
C2383A-54	Ω	C2431-19

Are the resistances less than 3 ohms?

Yes	GO to M4
No	REPAIR the circuit in question.

M4 CHECK THE HS-CAN3 (HIGH-SPEED CONTROLLER AREA NETWORK 3) CIRCUITS BETWEEN THE APIM (SYNC MODULE) AND THE GWM (GATEWAY MODULE A) FOR AN OPEN

- Measure:

SYNC MODULE (APIM)	GATEWAY MODULE
--------------------	----------------

Positive Lead	Measurement / Action	Negative Lead
C2383A-19	Ω	C2431-16
C2383A-20	Ω	C2431-15

Are the resistances less than 3 ohms?

Yes	If equipped with a TCU, GO to M5 If not equipped with a TCU, CONNECT the GWM. GO to M6
No	REPAIR the circuit in question.

M5 CHECK THE HS-CAN4 (HIGH-SPEED CONTROLLER AREA NETWORK 4) CIRCUITS BETWEEN THE APIM (SYNC MODULE) AND THE GWM (GATEWAY MODULE A) FOR AN OPEN

- Measure:

SYNC MODULE (APIM)	GATEWAY MODULE
--------------------	----------------

Positive Lead	Measurement / Action	Negative Lead
C2383A-41	Ω	C2431-7
C2383A-42	Ω	C2431-6

Are the resistances less than 3 ohms?

Yes	CONNECT the GWM. GO to M6
No	REPAIR the circuit in question.

M6 CHECK FOR CORRECT APIM (SYNC MODULE) OPERATION

- Ignition OFF.
- Disconnect and inspect all the APIM connectors.
- Repair:
 - corrosion (install new connector 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 service articles: 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.

Refer to Wiring Diagrams Cell [14](#) for schematic and connector information.

Refer to Wiring Diagrams Cell [133](#) for schematic and connector information.

Normal Operation and Fault Conditions

The DSP communicates on the HS-CAN3.

Possible Sources

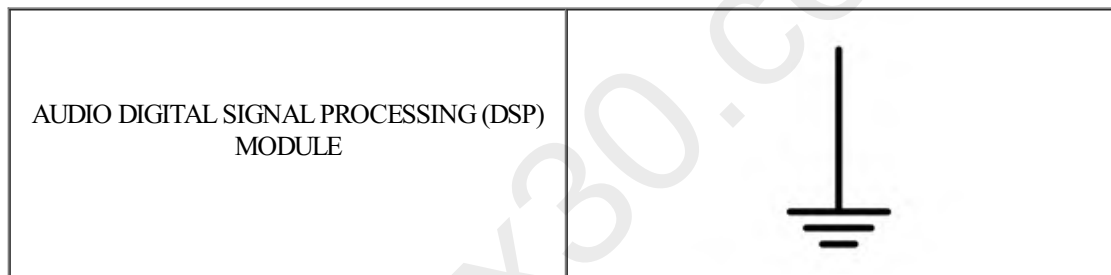
- Fuse
- Wiring, terminals and connector
- DSP

Visual Inspection and Pre-checks

- Verify BCM fuse 28 (30A) is OK.

N1 CHECK THE DSP (AUDIO DIGITAL SIGNAL PROCESSING MODULE) VOLTAGE SUPPLY CIRCUITS FOR AN OPEN

- Ignition OFF.
- Disconnect: DSP [C3154C](#).
- Ignition ON.
- Measure:



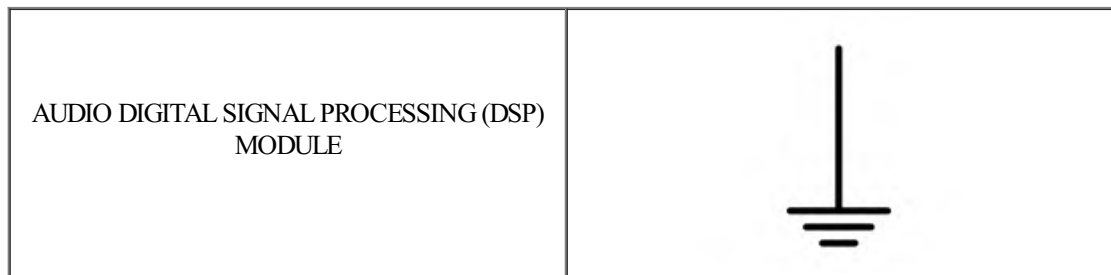
Positive Lead	Measurement / Action	Negative Lead
C3154C-4		Ground
C3154C-8		Ground

Are the voltages greater than 11 volts?

Yes	GO to N2
No	VERIFY BCM fuse 28 (30A) is OK. If OK, REPAIR the circuit in question. If not OK, REFER to the Wiring Diagrams manual to identify the possible causes of the circuit short.

N2 CHECK THE DSP (AUDIO DIGITAL SIGNAL PROCESSING MODULE) GROUND CIRCUITS FOR AN OPEN

- Ignition OFF.
- Measure:



Positive Lead	Measurement / Action	Negative Lead
C3154C-1	Ω	Ground
C3154C-5	Ω	Ground

Are the resistances less than 3 ohms?

Yes	GO to N3
No	REPAIR the circuit in question.

N3 CHECK THE HS-CAN3 (HIGH-SPEED CONTROLLER AREA NETWORK 3) CIRCUITS BETWEEN THE DSP (AUDIO DIGITAL SIGNAL PROCESSING MODULE) AND THE GWM (GATEWAY MODULE A) FOR AN OPEN

- Disconnect: GWM [C2431](#)
- Disconnect: DSP [C3154A](#)
- Measure:

AUDIO DIGITAL SIGNAL PROCESSING (DSP) MODULE	GATEWAY MODULE
---	----------------

Positive Lead	Measurement / Action	Negative Lead
C3154A-1	Ω	C2431-16
C3154A-11	Ω	C2431-15

Are the resistances less than 3 ohms?

Yes	CONNECT the GWM. GO to N4
No	REPAIR the circuit in question.

N4 CHECK FOR CORRECT DSP (AUDIO DIGITAL SIGNAL PROCESSING MODULE) OPERATION

- Ignition OFF.
- Disconnect and inspect all the DSP connectors.
- Repair:
 - corrosion (install new connector or terminals - clean module pins)
 - damaged or bent pins - install new terminals/pins
 - pushed-out pins - install new pins as necessary
- Reconnect the DSP 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 service articles: 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, INSTALL a new DSP. REFER to: Audio Digital Signal Processing (DSP) Module (415-00 Information and Entertainment System - General Information, 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.

PINPOINT TEST O : THE TCU (TELEMATIC CONTROL UNIT MODULE) DOES NOT RESPOND TO THE DIAGNOSTIC SCAN TOOL

Refer to Wiring Diagrams Cell [14](#) for schematic and connector information.

Refer to Wiring Diagrams Cell [130](#) for schematic and connector information.

Normal Operation and Fault Conditions

The TCU communicates on the HS-CAN4.

Possible Sources

- Fuse
- Wiring, terminals and connector
- TCU

Visual Inspection and Pre-checks

- Verify BCM fuse 8 (5A) is OK.

O1 CHECK THE HS-CAN4 (HIGH-SPEED CONTROLLER AREA NETWORK 4) TERMINATION RESISTANCE

- Ignition OFF.
- Disconnect negative battery cable.
- Disconnect the diagnostic scan tool cable from the DLC.
- Disconnect: GWM [C2431](#).
- Measure:

GATEWAY MODULE

Positive Lead	Measurement / Action	Negative Lead
C2431-7	Ω	C2431-6

Is the resistance between 108 and 132 ohms?

Yes	CONNECT the GWM. GO to O3
No	GO to O2

O2 CHECK THE HS-CAN4 (HIGH-SPEED CONTROLLER AREA NETWORK 4) CIRCUITS BETWEEN THE TCU (TELEMATIC CONTROL UNIT MODULE) AND THE GWM (GATEWAY MODULE A) FOR AN OPEN

- Disconnect: TCU [C4803A](#).
- Measure:

	GATEWAY MODULE
--	----------------

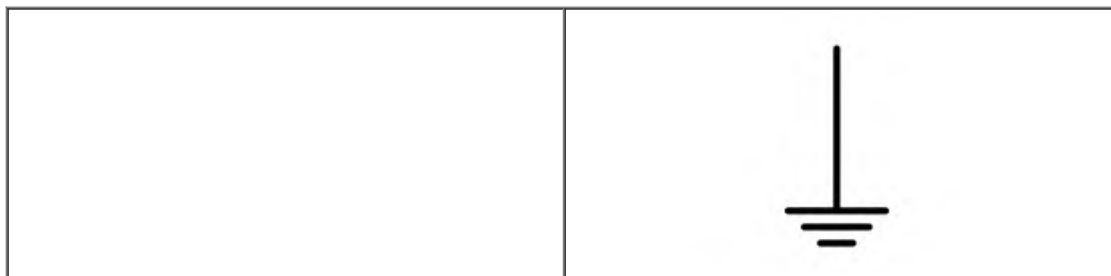
Positive Lead	Measurement / Action	Negative Lead
C4803A-8	Ω	C2431-7
C4803A-16	Ω	C2431-6

Are the resistances less than 3 ohms?

Yes	CONNECT all disconnected connectors. GO to Q5
No	REPAIR the circuit in question.

O3 CHECK THE TCU (TELEMATIC CONTROL UNIT MODULE) VOLTAGE SUPPLY CIRCUIT FOR AN OPEN

- Connect negative battery cable.
- Ignition ON.
- Measure:



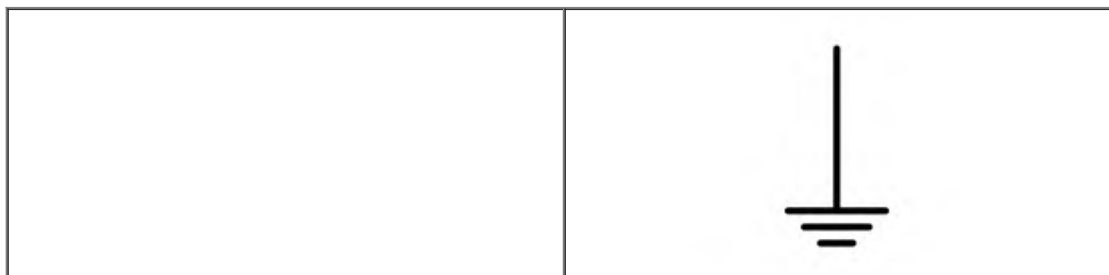
Positive Lead	Measurement / Action	Negative Lead
C4803A-1		Ground

Is the voltage greater than 11 volts?

Yes	GO to Q4
No	VERIFY BCM fuse 8 (5A) is OK. If OK, REPAIR the circuit. If not OK, REFER to the Wiring Diagrams manual to identify the possible causes of the circuit short.

Q4 CHECK THE TCU (TELEMATIC CONTROL UNIT MODULE) GROUND CIRCUIT FOR AN OPEN

- Ignition OFF.
- Measure:



Positive Lead	Measurement / Action	Negative Lead
C4803A-13	Ω	Ground

Is the resistance less than 3 ohms?

Yes	GO to Q5
No	REPAIR the circuit.

O5 CHECK FOR CORRECT TCU (TELEMATIC CONTROL UNIT MODULE) OPERATION

- Ignition OFF.
- Disconnect and inspect the TCU connector.
- Repair:
 - corrosion (install new connector or terminals - clean module pins)
 - damaged or bent pins - install new terminals/pins
 - pushed-out pins - install new pins as necessary
- Reconnect the TCU 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 service articles: 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, INSTALL a new TCU. REFER to: Telematics Control Unit (TCU) Module (415-00 Information and Entertainment System - General Information, 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.

Refer to Wiring Diagrams Cell [14](#) for schematic and connector information.

Refer to Wiring Diagrams Cell [118](#) for schematic and connector information.

Normal Operation and Fault Conditions

The RTM communicates on the MS-CAN.

Possible Sources

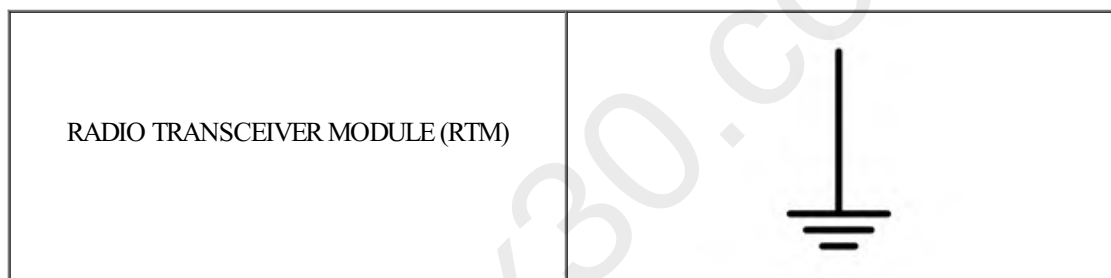
- Fuse
- Wiring, terminals and connector
- RTM

Visual Inspection and Pre-checks

- Verify BCM fuse 31 (10A) is OK.

P1 CHECK THE RTM (RADIO TRANSCEIVER MODULE) VOLTAGE SUPPLY CIRCUIT FOR AN OPEN

- Ignition OFF.
- Disconnect: RTM [C9026](#)
- Ignition ON.
- Measure:



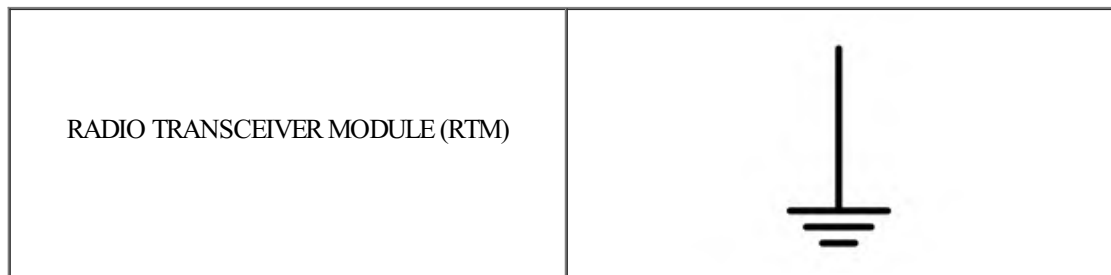
Positive Lead	Measurement / Action	Negative Lead
C9026-6		Ground

Is the voltage greater than 11 volts?

Yes	GO to P2
No	VERIFY BCM fuse 31 (10A) is OK. If OK, REPAIR the circuit. If not OK, REFER to the Wiring Diagrams manual to identify the possible causes of the circuit short.

P2 CHECK THE RTM (RADIO TRANSCEIVER MODULE) GROUND CIRCUIT FOR AN OPEN

- Ignition OFF.
- Measure:



Positive Lead	Measurement / Action	Negative Lead
C9026-1	Ω	Ground

Is the resistance less than 3 ohms?

Yes	GO to P3
No	REPAIR the circuit.

P3 CHECK THE MS-CAN (MEDIUM SPEED-CONTROLLER AREA NETWORK) CIRCUITS BETWEEN THE RTM (RADIO TRANSCEIVER MODULE) AND THE GWM (GATEWAY MODULE A) FOR AN OPEN

- Disconnect: GWM [C2431](#)
- Measure:



Positive Lead	Measurement / Action	Negative Lead
C9026-4	Ω	C2431-23
C9026-3	Ω	C2431-22

Are the resistances less than 3 ohms?

Yes	CONNECT the GWM. GO to P4
No	REPAIR the circuit in question.

P4 CHECK FOR CORRECT RTM (RADIO TRANSCEIVER MODULE) OPERATION

- Ignition OFF.
- Disconnect and inspect the RTM connector.
- Repair:
 - corrosion (install new connector or terminals - clean module pins)
 - damaged or bent pins - install new terminals/pins
 - pushed-out pins - install new pins as necessary
- Reconnect the RTM 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 service articles: 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, INSTALL a new RTM. REFER to: Radio Transceiver Module (RTM) (419-10 Multifunction Electronic Modules, 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.

☐ [PINPOINT TEST Q : THE PSCM \(POWER STEERING CONTROL MODULE\) DOES NOT RESPOND TO THE DIAGNOSTIC SCAN TOOL](#)

Refer to Wiring Diagrams Cell [14](#) for schematic and connector information.

Refer to Wiring Diagrams Cell [43](#) for schematic and connector information.

Normal Operation and Fault Conditions

The PSCM communicates on the HS-CAN2.

Possible Sources

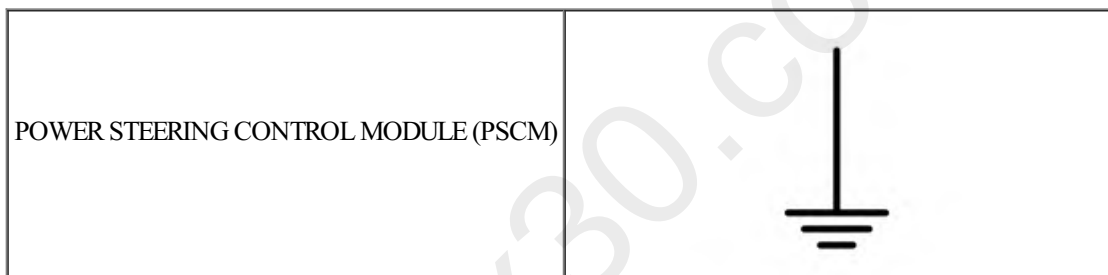
- Fuse
- Wiring, terminals and connectors
- PSCM

Visual Inspection and Pre-checks

- Verify BJB fuses 44 (40A) and 69 (10A) are OK.

Q1 CHECK THE PSCM (POWER STEERING CONTROL MODULE) VOLTAGE SUPPLY CIRCUITS FOR AN OPEN

- Ignition OFF.
- Disconnect: PSCM [C1463](#).
- Ignition ON.
- Measure:



Positive Lead	Measurement / Action	Negative Lead
C1463-4		Ground
C1463-7		Ground

Are the voltages greater than 11 volts?

Yes	GO to Q2
No	VERIFY BJB fuses 44 (40A) or 69 (10A) is OK. If OK, REPAIR the circuit in question. If not OK, REFER to the Wiring Diagrams manual to identify the possible causes of the circuit short.

Q2 CHECK THE PSCM (POWER STEERING CONTROL MODULE) GROUND CIRCUIT FOR AN OPEN

- Ignition OFF.
- Measure:

POWER STEERING CONTROL MODULE (PSCM)



Positive Lead	Measurement / Action	Negative Lead
C1463-8	Ω	Ground

Is the resistance less than 3 ohms?

Yes	GO to Q3
No	REPAIR the circuit.

Q3 CHECK THE HS-CAN2 (HIGH-SPEED CONTROLLER AREA NETWORK 2) CIRCUITS BETWEEN THE PSCM (POWER STEERING CONTROL MODULE) AND THE GWM (GATEWAY MODULE A) FOR AN OPEN

- Disconnect GWM [C2431](#) .
- Measure:

POWER STEERING CONTROL MODULE (PSCM)	GATEWAY MODULE
--------------------------------------	----------------

Positive Lead	Measurement / Action	Negative Lead
C1463-5	Ω	C2431-18
C1463-6	Ω	C2431-17

Are the resistances less than 3 ohms?

Yes	CONNECT the GWM. GO to Q4
No	REPAIR the circuit in question.

Q4 CHECK FOR CORRECT PSCM (POWER STEERING CONTROL MODULE) OPERATION

- Ignition OFF.
- Disconnect and inspect the PSCM connector and related in-line connectors.
- Repair:
 - corrosion (install new connector or terminals - clean module pins)
 - damaged or bent pins - install new terminals/pins
 - pushed-out pins - install new pins as necessary
- Reconnect the PSCM connector and 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 service articles: 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 (EPAS) .
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.

Refer to Wiring Diagrams Cell [14](#) for schematic and connector information.

Refer to Wiring Diagrams Cell [123](#) for schematic and connector information.

Normal Operation and Fault Conditions

The DSM communicates on the MS-CAN.

Possible Sources

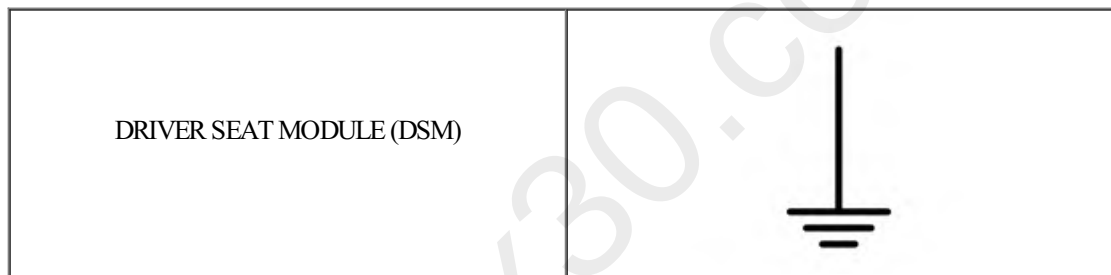
- Fuse
- Wiring, terminals and connector
- DSM

Visual Inspection and Pre-checks

- Verify BJB fuses 9 (30A) and 41 (30A) are OK.

R1 CHECK THE DSM (DRIVER FRONT SEAT MODULE) VOLTAGE SUPPLY CIRCUITS FOR AN OPEN

- Ignition OFF.
- Disconnect: DSM [C341B](#).
- Ignition ON.
- Measure:



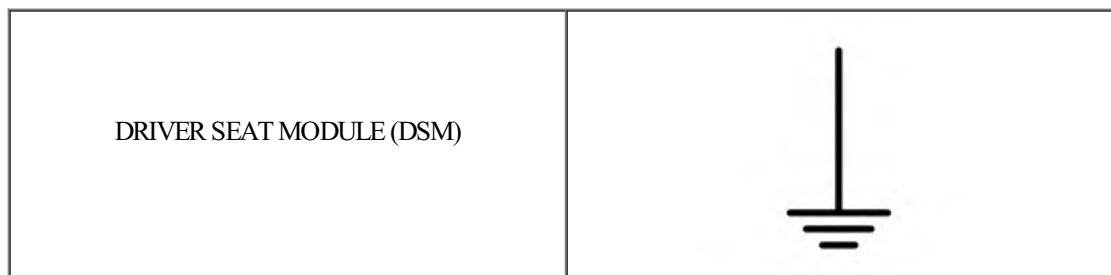
Positive Lead	Measurement / Action	Negative Lead
C341B-8		Ground
C341B-9		Ground
C341B-10		Ground

Are the voltages greater than 11 volts?

Yes	GO to R2
No	VERIFY BJB fuses 9 (30A) or 41 (30A) is OK. If OK, REPAIR the circuit in question. If not OK, REFER to the Wiring Diagrams manual to identify the possible causes of the circuit short.

R2 CHECK THE DSM (DRIVER FRONT SEAT MODULE) GROUND CIRCUITS FOR AN OPEN

- Ignition OFF.
- Disconnect: DSM [C341C](#).
- Measure:



Positive Lead	Measurement / Action	Negative Lead
C341C-7	Ω	Ground
C341C-8	Ω	Ground
C341C-9	Ω	Ground

Are the resistances less than 3 ohms?

Yes	GO to R3
No	REPAIR the circuit in question.

R3 CHECK THE MS-CAN (MEDIUM SPEED-CONTROLLER AREA NETWORK) CIRCUITS BETWEEN THE DSM (DRIVER FRONT SEAT MODULE) AND THE GWM (GATEWAY MODULE A) FOR AN OPEN

- Disconnect: DSM [C341D](#)
- Disconnect: GWM [C2431](#).
- Measure:

DRIVER SEAT MODULE (DSM)	GATEWAY MODULE
--------------------------	----------------

Positive Lead	Measurement / Action	Negative Lead
C341D-2	Ω	C2431-23
C341D-3	Ω	C2431-22

Are the resistances less than 3 ohms?

Yes	CONNECT the GWM. GO to R4
No	REPAIR the circuit in question.

R4 CHECK FOR CORRECT DSM (DRIVER FRONT SEAT MODULE) OPERATION

- Ignition OFF.
- Disconnect and inspect all the DSM connectors.
- Repair:
 - corrosion (install new connector or terminals - clean module pins)
 - damaged or bent pins - install new terminals/pins
 - pushed-out pins - install new pins as necessary
- Reconnect the DSM 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 service articles: 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, INSTALL a new DSM. REFER to: Driver Front Seat Module (DSM) (501-10A Front Seats, 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.

Refer to Wiring Diagrams Cell [14](#) for schematic and connector information.

Refer to Wiring Diagrams Cell [100](#) for schematic and connector information.

Refer to Wiring Diagrams Cell [117](#) for schematic and connector information.

Normal Operation and Fault Conditions

The DDM communicates on the MS-CAN.

Possible Sources

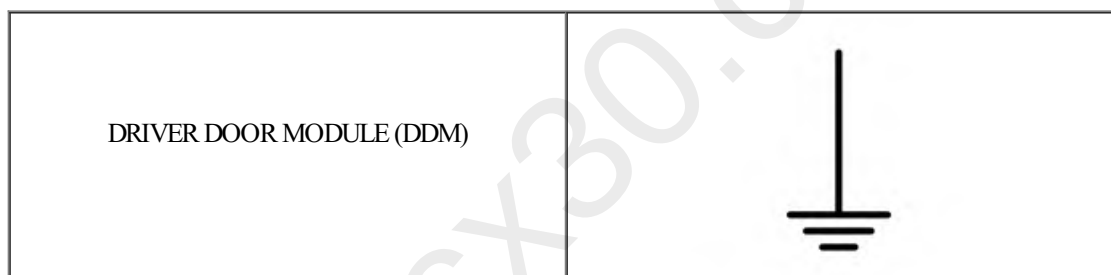
- Fuse
- Wiring, terminals and connector
- DDM

Visual Inspection and Pre-checks

- Verify BCM fuse 23 (30A) is OK.

S1 CHECK THE DDM (DRIVER DOOR MODULE) VOLTAGE SUPPLY CIRCUIT FOR AN OPEN

- Ignition OFF.
- Disconnect: DDM [C501A](#).
- Ignition ON.
- Measure:



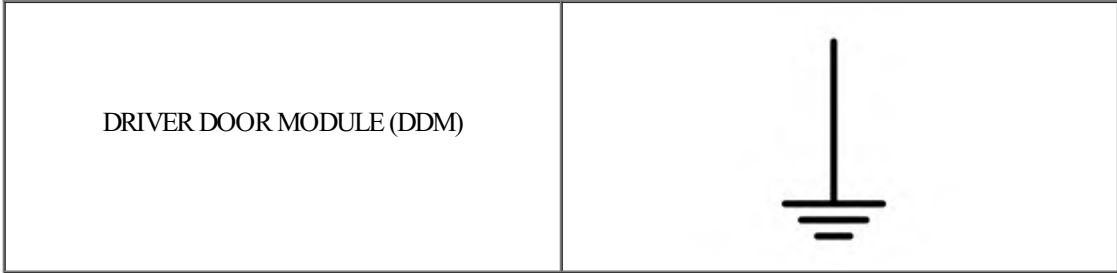
Positive Lead	Measurement / Action	Negative Lead
C501A-1		Ground

Is the voltage greater than 11 volts?

Yes	GO to S2
No	VERIFY BCM fuse 23 (30A) is OK. If OK, REPAIR the circuit. If not OK, REFER to the Wiring Diagrams manual to identify the possible causes of the circuit short.

S2 CHECK THE DDM (DRIVER DOOR MODULE) GROUND CIRCUIT FOR AN OPEN

- Ignition OFF.
- Measure:



Positive Lead	Measurement / Action	Negative Lead
C501A-2	Ω	Ground

Is the resistance less than 3 ohms?

Yes	GO to S3
No	REPAIR the circuit.

S3 CHECK THE MS-CAN (MEDIUM SPEED-CONTROLLER AREA NETWORK) CIRCUITS BETWEEN THE DDM (DRIVER DOOR MODULE) AND THE GWM (GATEWAY MODULE A) FOR AN OPEN

- Disconnect: GWM [C2431](#).
- Measure:

DRIVER DOOR MODULE (DDM)	GATEWAY MODULE
--------------------------	----------------

Positive Lead	Measurement / Action	Negative Lead
C501A-7	Ω	C2431-23
C501A-6	Ω	C2431-22

Are the resistances less than 3 ohms?

Yes	CONNECT the GWM. GO to S4
No	REPAIR the circuit in question.

S4 CHECK FOR CORRECT DDM (DRIVER DOOR MODULE) OPERATION

- Ignition OFF.
- Disconnect and inspect all the DDM connectors.
- Repair:
 - corrosion (install new connector or terminals - clean module pins)
 - damaged or bent pins - install new terminals/pins
 - pushed-out pins - install new pins as necessary
- Reconnect the DDM 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 service articles: 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, INSTALL a new DDM. REFER to: Driver Door Module (DDM) (419-10 Multifunction Electronic Modules, 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.

Refer to Wiring Diagrams Cell [14](#) for schematic and connector information.

Refer to Wiring Diagrams Cell [117](#) for schematic and connector information.

Normal Operation and Fault Conditions

The PDM communicates on the MS-CAN.

Possible Sources

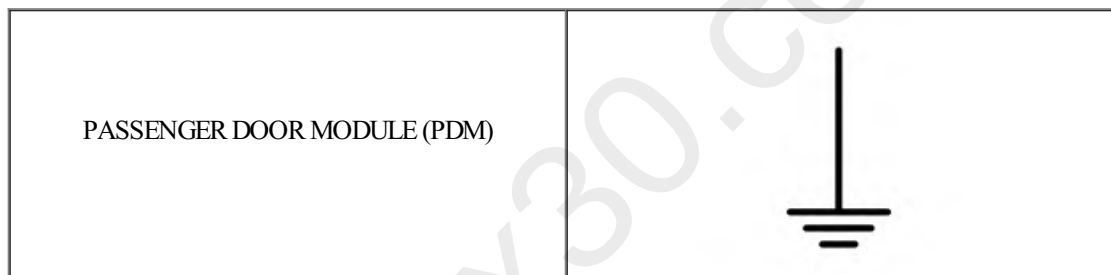
- Fuse
- Wiring, terminals and connector
- PDM

Visual Inspection and Pre-checks

- Verify BCM fuse 26 (30A) is OK.

T1 CHECK THE PDM (PASSENGER DOOR MODULE) VOLTAGE SUPPLY CIRCUIT FOR AN OPEN

- Ignition OFF.
- Disconnect: PDM [C652A](#)
- Ignition ON.
- Measure:



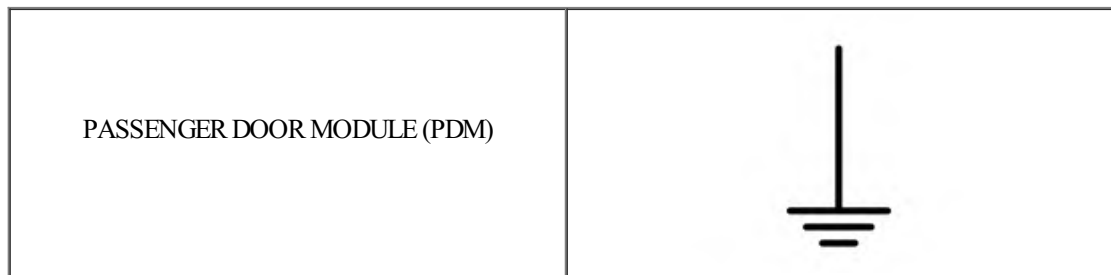
Positive Lead	Measurement / Action	Negative Lead
C652A-1		Ground

Is the voltage greater than 11 volts?

Yes	GO to T2
No	VERIFY BCM fuse 26 (30A) is OK. If OK, REPAIR the circuit. If not OK, REFER to the Wiring Diagrams manual to identify the possible causes of the circuit short.

T2 CHECK THE PDM (PASSENGER DOOR MODULE) GROUND CIRCUIT FOR AN OPEN

- Ignition OFF.
- Measure:



Positive Lead	Measurement / Action	Negative Lead
C652A-2	Ω	Ground

Is the resistance less than 3 ohms?

Yes	GO to T3
No	REPAIR the circuit.

T3 CHECK THE MS-CAN (MEDIUM SPEED-CONTROLLER AREA NETWORK) CIRCUITS BETWEEN THE PDM (PASSENGER DOOR MODULE) AND THE GWM (GATEWAY MODULE A) FOR AN OPEN

- Disconnect: GWM [C2431](#)
- Measure:



Positive Lead	Measurement / Action	Negative Lead
C652A-7	Ω	C2431-23
C652A-6	Ω	C2431-22

Are the resistances less than 3 ohms?

Yes	CONNECT the GWM. GO to T4
No	REPAIR the circuit in question.

T4 CHECK FOR CORRECT PDM (PASSENGER DOOR MODULE) OPERATION

- Ignition OFF.
- Disconnect and inspect all the PDM connectors.
- Repair:
 - corrosion (install new connector or terminals - clean module pins)
 - damaged or bent pins - install new terminals/pins
 - pushed-out pins - install new pins as necessary
- Reconnect the PDM 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 service articles: 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, INSTALL a new PDM. REFER to: Passenger Door Module (PDM) (419-10 Multifunction Electronic Modules, 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.

☐ PINPOINT TEST U : THE SODL (SIDE OBSTACLE DETECTION CONTROL MODULE LH) DOES NOT RESPOND TO THE DIAGNOSTIC SCAN TOOL

Refer to Wiring Diagrams Cell [14](#) for schematic and connector information.

Refer to Wiring Diagrams Cell [93](#) for schematic and connector information.

Normal Operation and Fault Conditions

The SODL communicates on the MS-CAN.

Possible Sources

- Fuse
- Wiring, terminals and connector
- SODL

Visual Inspection and Pre-checks

- Verify BJB fuse 51 (10A) is OK.

U1 CHECK THE SODL (SIDE OBSTACLE DETECTION CONTROL MODULE LH) VOLTAGE SUPPLY CIRCUITS FOR AN OPEN

- Ignition OFF.
- Disconnect: SODL [C4483](#) (with LED rear lamps) or [C451](#) (without LED rear lamps).
- Ignition ON.
- Measure:

With LED rear lamps

Positive Lead	Measurement / Action	Negative Lead
C4483-5		Ground

Without LED rear lamps

Positive Lead	Measurement / Action	Negative Lead
C451-3		Ground

Is the voltage greater than 11 volts?

Yes	GO to U2
No	VERIFY BJB fuse 51 (10A) is OK. If OK, REPAIR the circuit. If not OK, REFER to the Wiring Diagrams manual to identify the possible causes of the circuit short.

U2 CHECK THE SODL (SIDE OBSTACLE DETECTION CONTROL MODULE LH) GROUND CIRCUITS FOR AN OPEN

- Ignition OFF.
- Measure:

With LED rear lamps

Positive Lead	Measurement / Action	Negative Lead
C4483-8	Ω	Ground
C4483-9	Ω	Ground

Without LED rear lamps

Positive Lead	Measurement / Action	Negative Lead
C451-1	Ω	Ground
C451-6	Ω	Ground

Are the resistances less than 3 ohms?

Yes	GO to U3
No	REPAIR the circuit in question.

U3 CHECK THE MS-CAN (MEDIUM SPEED-CONTROLLER AREA NETWORK) CIRCUITS BETWEEN THE SODL (SIDE OBSTACLE DETECTION CONTROL MODULE LH) AND THE GWM (GATEWAY MODULE A) FOR AN OPEN

- Disconnect: GWM [C2431](#)
- Measure:

With LED rear lamps

Positive Lead	Measurement / Action	Negative Lead
C4483-6	Ω	C2431-23
C4483-12	Ω	C2431-22

Without LED rear lamps

Positive Lead	Measurement / Action	Negative Lead
C451-4	Ω	C2431-23
C451-8	Ω	C2431-22

Are the resistances less than 3 ohms?

Yes	CONNECT the GWM. GO to U4
No	REPAIR the circuit in question.

U4 CHECK FOR CORRECT SODL (SIDE OBSTACLE DETECTION CONTROL MODULE LH) OPERATION

- Ignition OFF.
- Disconnect and inspect the SODL connector.
- Repair:
 - corrosion (install new connector 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 service articles: 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, 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.

Refer to Wiring Diagrams Cell [14](#) for schematic and connector information.

Refer to Wiring Diagrams Cell [93](#) for schematic and connector information.

Normal Operation and Fault Conditions

The SODR communicates on the MS-CAN.

Possible Sources

- Fuse
- Wiring, terminals and connector
- SODR

Visual Inspection and Pre-checks

- Verify BJB fuse 51 (10A) is OK.

V1 CHECK THE SODR (SIDE OBSTACLE DETECTION CONTROL MODULE RH) VOLTAGE SUPPLY CIRCUIT FOR AN OPEN

- Ignition OFF.
- Disconnect: SODR [C4484](#) (with LED rear lamps) or [C461](#) (without LED rear lamps).
- Ignition ON.
- Measure:

With LED rear lamps

Positive Lead	Measurement / Action	Negative Lead
C4484-5		Ground

Without LED rear lamps

Positive Lead	Measurement / Action	Negative Lead
C461-3		Ground

Is the voltage greater than 11 volts?

Yes	GO to V2
No	VERIFY BJB fuse 51 (10A) is OK. If OK, REPAIR the circuit. If not OK, REFER to the Wiring Diagrams manual to identify the possible causes of the circuit short.

V2 CHECK THE SODR (SIDE OBSTACLE DETECTION CONTROL MODULE RH) GROUND CIRCUITS FOR AN OPEN

- Ignition OFF.
- Measure:

With LED rear lamps

Positive Lead	Measurement / Action	Negative Lead
C4484-1	Ω	Ground
C4484-8	Ω	Ground
C4484-9	Ω	Ground

Without LED rear lamps

Positive Lead	Measurement / Action	Negative Lead
C461-1	Ω	Ground
C461-6	Ω	Ground
C461-7	Ω	Ground

Are the resistances less than 3 ohms?

Yes	GO to V3
No	REPAIR the circuit in question.

V3 CHECK THE MS-CAN (MEDIUM SPEED-CONTROLLER AREA NETWORK) CIRCUITS BETWEEN THE SODR (SIDE OBSTACLE DETECTION CONTROL MODULE RH) AND THE GWM (GATEWAY MODULE A) FOR AN OPEN

- Disconnect: GWM [C2431](#)
- Measure:

With LED rear lamps

Positive Lead	Measurement / Action	Negative Lead
C4484-6	Ω	C2431-23
C4484-12	Ω	C2431-22

Without LED rear lamps

Positive Lead	Measurement / Action	Negative Lead
C461-4	Ω	C2431-23
C491-8	Ω	C2431-22

Are the resistances less than 3 ohms?

Yes	CONNECT the GWM. GO to V4
No	REPAIR the circuit in question.

V4 CHECK FOR CORRECT SODR (SIDE OBSTACLE DETECTION CONTROL MODULE RH) OPERATION

- Ignition OFF.
- Disconnect and inspect the SODR connector.
- Repair:
 - corrosion (install new connector or terminals - clean module pins)
 - damaged or bent pins - install new terminals/pins
 - pushed-out pins - install new pins as necessary
- Reconnect the SODR 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 service articles: 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, 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.

PINPOINT TEST W : THE HUD (HEAD UP DISPLAY) MODULE DOES NOT RESPOND TO THE DIAGNOSTIC SCAN TOOL

Refer to Wiring Diagrams Cell [14](#) for schematic and connector information.

Refer to Wiring Diagrams Cell [146](#) for schematic and connector information.

Normal Operation and Fault Conditions

The HUD module communicates on the HS-CAN2.

Possible Sources

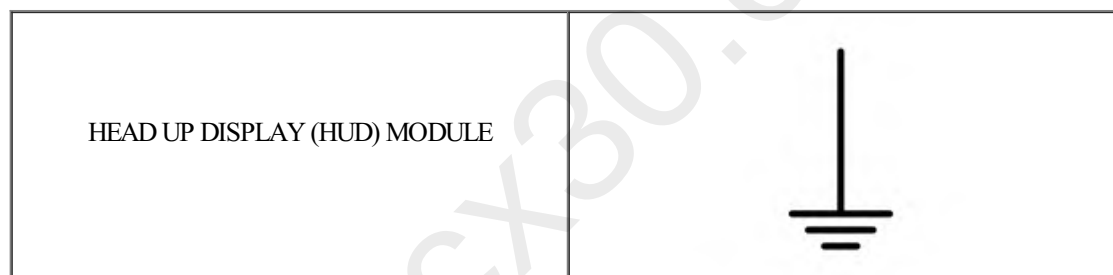
- Fuse
- Wiring, terminals and connector
- HUD module

Visual Inspection and Pre-checks

- Verify BCM fuses 19 (5A) and 21 (5A) are OK.

W1 CHECK THE HUD (HEAD UP DISPLAY) MODULE VOLTAGE SUPPLY CIRCUITS FOR AN OPEN

- Ignition OFF.
- Disconnect: HUD module [C2395](#).
- Ignition ON.
- Measure:



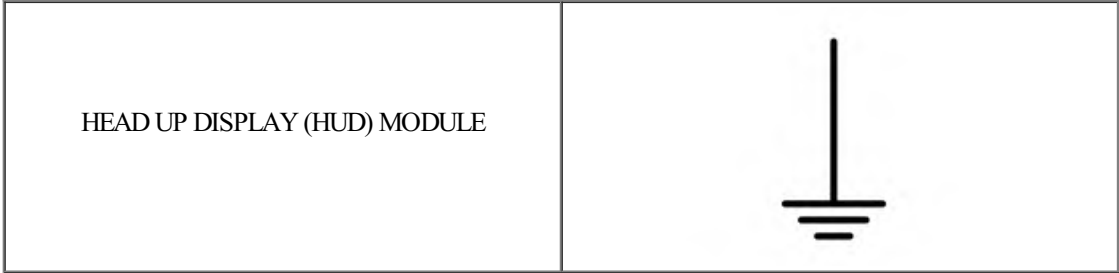
Positive Lead	Measurement / Action	Negative Lead
C2395-4		Ground
C2395-5		Ground

Are the voltages greater than 11 volts?

Yes	GO to W2
No	VERIFY BCM fuses 19 (5A) or 21 (5A) is OK. If OK, REPAIR the circuit in question. If not OK, REFER to the Wiring Diagrams manual to identify the possible causes of the circuit short.

W2 CHECK THE HUD (HEAD UP DISPLAY) MODULE GROUND CIRCUIT FOR AN OPEN

- Ignition OFF.
- Measure:



Positive Lead	Measurement / Action	Negative Lead
C2395-1	Ω	Ground

Is the resistance less than 3 ohms?

Yes	GO to W3
No	REPAIR the circuit.

W3 CHECK THE HS-CAN2 (HIGH-SPEED CONTROLLER AREA NETWORK 2) CIRCUITS BETWEEN THE HUD (HEAD UP DISPLAY) MODULE AND THE GWM (GATEWAY MODULE A) FOR AN OPEN

- Disconnect: GWM [C2431](#).
- Measure:

HEAD UP DISPLAY (HUD) MODULE	GATEWAY MODULE
------------------------------	----------------

Positive Lead	Measurement / Action	Negative Lead
C2395-3	Ω	C2431-16
C2395-2	Ω	C2431-15

Are the resistances less than 3 ohms?

Yes	CONNECT the GWM. GO to W4
No	REPAIR the circuit in question.

W4 CHECK FOR CORRECT HUD (HEAD UP DISPLAY) MODULE OPERATION

- Ignition OFF.
- Disconnect and inspect the HUD module connector.
- Repair:
 - corrosion (install new connector or terminals - clean module pins)
 - damaged or bent pins - install new terminals/pins
 - pushed-out pins - install new pins as necessary
- Reconnect the HUD module 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 service articles: 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, INSTALL a new HUD module. REFER to: Head Up Display (HUD) Module (419-03C Collision Warning and Collision Avoidance 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.

PINPOINT TEST X : THE PAM (PARKING ASSIST CONTROL MODULE) DOES NOT RESPOND TO THE DIAGNOSTIC SCAN TOOL

Refer to Wiring Diagrams Cell [14](#) for schematic and connector information.

Refer to Wiring Diagrams Cell [145](#) for schematic and connector information.

Normal Operation and Fault Conditions

The PAM communicates on the HS-CAN1.

Possible Sources

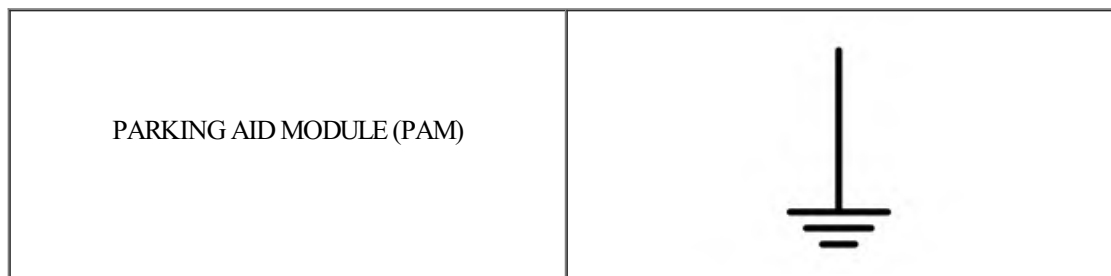
- Fuse
- Wiring, terminals and connector
- PAM

Visual Inspection and Pre-checks

- Verify BCM fuse 17 (7.5A) is OK.

X1 CHECK THE PAM (PARKING ASSIST CONTROL MODULE) VOLTAGE SUPPLY CIRCUIT FOR AN OPEN

- Ignition OFF.
- Disconnect: PAM [C4226A](#).
- Ignition ON.
- Measure:



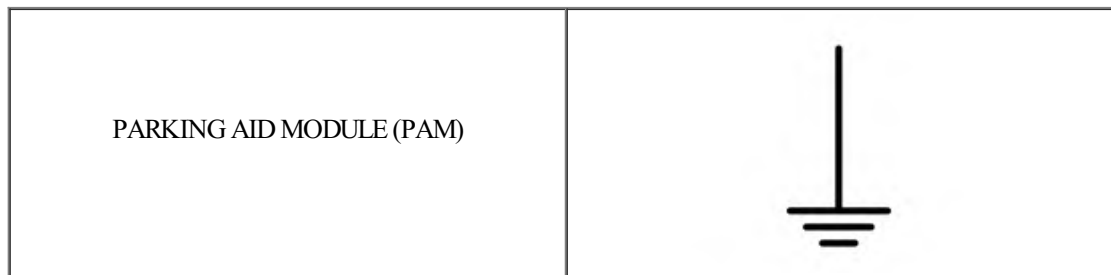
Positive Lead	Measurement / Action	Negative Lead
C4226A-1		Ground

Is the voltage greater than 11 volts?

Yes	GO to X2
No	VERIFY BCM fuse 17 (7.5A) is OK. If OK, repair the circuit. If not OK, REFER to the Wiring Diagrams Manual to identify the possible causes of the circuit short.

X2 CHECK THE PAM (PARKING ASSIST CONTROL MODULE) GROUND CIRCUIT FOR AN OPEN

- Ignition OFF.
- Measure:



Positive Lead	Measurement / Action	Negative Lead
C4226A-20	Ω	Ground

Is the resistance less than 3 ohms?

Yes	GO to X3
No	REPAIR the circuit.

X3 CHECK THE HS-CAN1 (HIGH-SPEED CONTROLLER AREA NETWORK 1) CIRCUITS BETWEEN THE PAM (PARKING ASSIST CONTROL MODULE) AND THE GWM (GATEWAY MODULE A) FOR AN OPEN

- Disconnect GWM [C2431](#).
- Measure:



Positive Lead	Measurement / Action	Negative Lead
C4226A-9	Ω	C2431-20
C4226A-8	Ω	C2431-19

Are the resistances less than 3 ohms?

Yes	CONNECT the GWM. GO to X4
No	REPAIR the circuit in question.

X4 CHECK FOR CORRECT PAM (PARKING ASSIST CONTROL MODULE) OPERATION

- Disconnect and inspect all the PAM connectors.
- Repair:
 - corrosion (install new connector or terminals - clean module pins)
 - damaged or bent pins - install new terminals/pins
 - pushed-out pins - install new pins as necessary
- Reconnect the PAM 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 service articles: 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, INSTALL a new PAM. REFER to the appropriate 413-13 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.

☐ PINPOINT TEST Y: THE HSWM (HEATED STEERING WHEEL MODULE) DOES NOT RESPOND TO THE DIAGNOSTIC SCAN TOOL

Refer to Wiring Diagrams Cell [14](#) for schematic and connector information.

Refer to Wiring Diagrams Cell [128](#) for schematic and connector information.

Normal Operation and Fault Conditions

The HSWM communicates on the MS-CAN.

Possible Sources

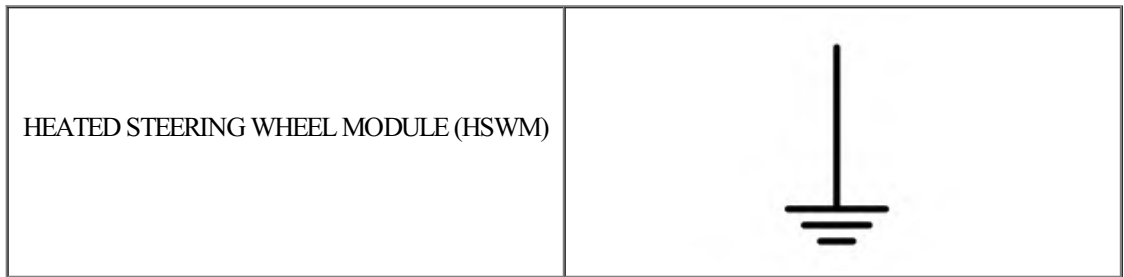
- Fuse
- Wiring, terminals and connector
- HSWM

Visual Inspection and Pre-checks

- Verify BCM fuse 37 (20A) is OK.

Y1 CHECK THE HSWM (HEATED STEERING WHEEL MODULE) VOLTAGE SUPPLY CIRCUIT FOR AN OPEN

- Ignition OFF.
- Disconnect: HSWM [C2406](#).
- Ignition ON.
- Measure:



Positive Lead	Measurement / Action	Negative Lead
C2406-1		Ground

Is the voltage greater than 11 volts?

Yes	GO to Y2
No	VERIFY BCM fuse 37 (20A) is OK. If OK, REPAIR the circuit. If not OK, REFER to the Wiring Diagrams manual to identify the possible causes of the circuit short.

Y2 CHECK THE HSWM (HEATED STEERING WHEEL MODULE) GROUND CIRCUIT FOR AN OPEN

- Ignition OFF.
- Measure:

HEATED STEERING WHEEL MODULE (HSWM)	
-------------------------------------	--

Positive Lead	Measurement / Action	Negative Lead
C2406-14	Ω	Ground

Is the resistance less than 3 ohms?

Yes	GO to Y3
No	REPAIR the circuit.

Y3 CHECK THE MS-CAN (MEDIUM SPEED-CONTROLLER AREA NETWORK) CIRCUITS BETWEEN THE HSWM (HEATED STEERING WHEEL MODULE) AND THE GWM (GATEWAY MODULE A) FOR AN OPEN

- Disconnect GWM [C2431](#).
- Measure:

HEATED STEERING WHEEL MODULE (HSWM)	GATEWAY MODULE
-------------------------------------	----------------

Positive Lead	Measurement / Action	Negative Lead
C2406-4	Ω	C2431-23
C2406-3	Ω	C2431-22

Are the resistances less than 3 ohms?

Yes	CONNECT the GWM. GO to Y4
No	REPAIR the circuit in question.

Y4 CHECK FOR CORRECT HSWM (HEATED STEERING WHEEL MODULE) OPERATION

- Ignition OFF.
- Disconnect and inspect the HSWM connector.
- Repair:
 - corrosion (install new connector or terminals - clean module pins)
 - damaged or bent pins - install new terminals/pins
 - pushed-out pins - install new pins as necessary
- Reconnect the HSWM 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 service articles: 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, INSTALL a new HSWM. REFER to: Heated Steering Wheel Module (HSWM) (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.

☐ PINPOINT TEST Z: THE SCMG (DRIVER MULTI-CONTOUR SEAT MODULE) DOES NOT RESPOND TO THE DIAGNOSTIC SCAN TOOL

Refer to Wiring Diagrams Cell [14](#) for schematic and connector information.

Refer to Wiring Diagrams Cell [120](#) for schematic and connector information.

Normal Operation and Fault Conditions

The SCMG communicates on the MS-CAN.

Possible Sources

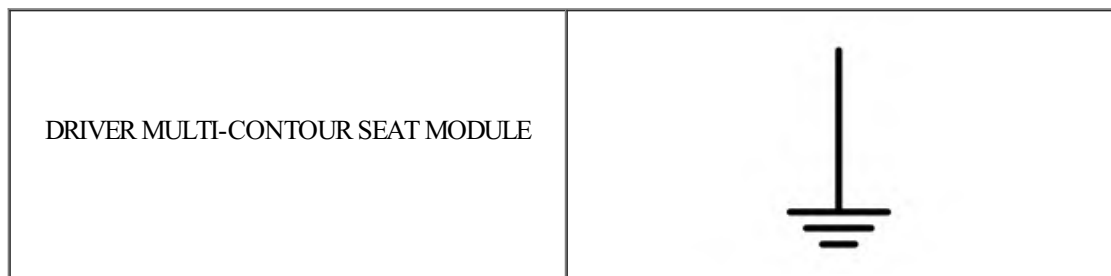
- Fuse
- Wiring, terminals and connector
- SCMG

Visual Inspection and Pre-checks

- Verify BJB fuse 64 (15A) is OK.

Z1 CHECK THE SCMG (DRIVER MULTI-CONTOUR SEAT MODULE) VOLTAGE SUPPLY CIRCUIT FOR AN OPEN

- Ignition OFF.
- Disconnect: SCMG [C3385](#).
- Ignition ON.
- Measure:



Positive Lead	Measurement / Action	Negative Lead
C3385-1		Ground

Is the voltage greater than 11 volts?

Yes	GO to Z3
No	VERIFY BJB fuse 64 (15A) is OK. If OK, GO to Z2 If not OK, REFER to the Wiring Diagrams manual to identify the possible causes of the circuit short.

Z2 CHECK THE MULTI-CONTOUR SEAT RELAY CIRCUIT FOR AN OPEN

- Ignition OFF.
- Disconnect: BJB [C1035A](#).
- Measure:

BATTERY JUNCTION BOX (BJB)	DRIVER MULTI-CONTOUR SEAT MODULE
----------------------------	----------------------------------

Positive Lead	Measurement / Action	Negative Lead
C1035A-55	Ω	C3385-1

Is the resistance less than 3 ohms?

Yes	GO to Z6
No	REPAIR the circuit.

Z3 CHECK THE SCMG (DRIVER MULTI-CONTOUR SEAT MODULE) GROUND CIRCUIT FOR AN OPEN

- Ignition OFF.
- Measure:

DRIVER MULTI-CONTOUR SEAT MODULE	
----------------------------------	--

Positive Lead	Measurement / Action	Negative Lead
C3385-16	Ω	Ground

Is the resistance less than 3 ohms?

Yes	GO to Z4
No	REPAIR the circuit.

Z4 CHECK THE MS-CAN (MEDIUM SPEED-CONTROLLER AREA NETWORK) CIRCUITS BETWEEN THE SCMG (DRIVER MULTI-CONTOUR SEAT MODULE) AND THE GWM (GATEWAY MODULE A) FOR AN OPEN

- Disconnect: GWM [C2431](#).
- Measure:

DRIVER MULTI-CONTOUR SEAT MODULE	GATEWAY MODULE
----------------------------------	----------------

Positive Lead	Measurement / Action	Negative Lead
C3385-8	Ω	C2431-23
C3385-7	Ω	C2431-22

Are the resistances less than 3 ohms?

Yes	CONNECT the GWM. GO to Z5
No	REPAIR the circuit in question.

Z5 CHECK FOR CORRECT SCMG (DRIVER MULTI-CONTOUR SEAT MODULE) OPERATION

- Ignition OFF.
- Disconnect and inspect the SCMG connector.
- Repair:
 - corrosion (install new connector or terminals - clean module pins)
 - damaged or bent pins - install new terminals/pins
 - pushed-out pins - install new pins as necessary
- Reconnect the SCMG 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 service articles: 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, INSTALL a new SCMG. REFER to: Driver Multi-Contour Seat Module [SCMG] (501-10A Front Seats, 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.

Z6 CHECK OPERATION OF INTERIOR LIGHTING

- Check operation of the interior lamps (dome lamp, courtesy lamps, luggage compartment lamp, etc).

Are the interior lamps operating normally?

Yes	GO to Z7
No	DIAGNOSE the demand LP/battery saver relay. REFER to: Interior Lighting (417-02 Interior Lighting, Diagnosis and Testing).

Z7 CHECK THE MULTI-CONTOUR SEAT RELAY CONTROL CIRCUIT FOR AN OPEN

- Ignition OFF.
- Disconnect: BCM [C2280G](#)
- Measure:

BODY CONTROL MODULE (BCM)	BATTERY JUNCTION BOX (BJB)
---------------------------	----------------------------

Positive Lead	Measurement / Action	Negative Lead
C2280G-16	Ω	C1035A-29

Is the resistance less than 3 ohms?

Yes	CONNECT the BCM. GO to Z8
No	REPAIR the circuit.

Z8 CHECK FOR CORRECT BJB (BATTERY JUNCTION BOX) OPERATION

- Ignition OFF.
- Disconnect and inspect the BJB connector.
- Repair:
 - corrosion (install new connector or terminals - clean module pins)
 - damaged or bent pins - install new terminals/pins
 - pushed-out pins - install new pins as necessary
- Reconnect the BJB 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 service articles: 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, INSTALL a new BJB. The multi-contour seat relay is not serviceable.
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.

PINPOINT TEST AA : THE SCMH (PASSENGER MULTI-CONTOUR SEAT MODULE) DOES NOT RESPOND TO THE DIAGNOSTIC SCAN TOOL

Refer to Wiring Diagrams Cell [14](#) for schematic and connector information.

Refer to Wiring Diagrams Cell [120](#) for schematic and connector information.

Normal Operation and Fault Conditions

The SCMH communicates on the MS-CAN.

Possible Sources

- Fuse
- Wiring, terminals and connector
- SCMH

Visual Inspection and Pre-checks

- Verify BJB fuse 64 (15A) is OK.

AA1 CHECK THE SCMH (PASSENGER MULTI-CONTOUR SEAT MODULE) VOLTAGE SUPPLY CIRCUIT FOR AN OPEN

- Ignition OFF.
- Disconnect: SCMH [C3386](#).
- Ignition ON.
- Measure:

PASSENGER MULTI-CONTOUR SEAT MODULE	
-------------------------------------	--

Positive Lead	Measurement / Action	Negative Lead
C3386-1		Ground

Is the voltage greater than 11 volts?

Yes	GO to AA3
No	VERIFY BJB fuse 64 (15A) is OK. If OK, GO to AA2 If not OK, REFER to the Wiring Diagrams manual to identify the possible causes of the circuit short.

AA2 CHECK THE MULTI-CONTOUR SEAT RELAY CIRCUIT FOR AN OPEN

- Ignition OFF.
- Disconnect: BJB [C1035A](#).
- Measure:

BATTERY JUNCTION BOX (BJB)	PASSENGER MULTI-CONTOUR SEAT MODULE
----------------------------	-------------------------------------

Positive Lead	Measurement / Action	Negative Lead
C1035A-55	Ω	C3386-1

Is the resistance less than 3 ohms?

Yes	GO to AA6
No	REPAIR the circuit.

AA3 CHECK THE SCMH (PASSENGER MULTI-CONTOUR SEAT MODULE) GROUND CIRCUIT FOR AN OPEN

- Ignition OFF.
- Measure:

PASSENGER MULTI-CONTOUR SEAT MODULE	
-------------------------------------	--

Positive Lead	Measurement / Action	Negative Lead
C3386-16	Ω	Ground

Is the resistance less than 3 ohms?

Yes	GO to AA4
No	REPAIR the circuit.

AA4 CHECK THE MS-CAN (MEDIUM SPEED-CONTROLLER AREA NETWORK) CIRCUITS BETWEEN THE SCMH (PASSENGER MULTI-CONTOUR SEAT MODULE) AND THE GWM (GATEWAY MODULE A) FOR AN OPEN

- Disconnect: GWM [C2431](#).
- Measure:

PASSENGER MULTI-CONTOUR SEAT MODULE	GATEWAY MODULE
-------------------------------------	----------------

Positive Lead	Measurement / Action	Negative Lead
C3386-8	Ω	C2431-23
C3386-7	Ω	C2431-22

Are the resistances less than 3 ohms?

Yes	CONNECT the GWM. GO to AA5
No	REPAIR the circuit in question.

AA5 CHECK FOR CORRECT SCMH (PASSENGER MULTI-CONTOUR SEAT MODULE) OPERATION

- Ignition OFF.
- Disconnect and inspect the SCMH connector.
- Repair:
 - corrosion (install new connector or terminals - clean module pins)
 - damaged or bent pins - install new terminals/pins
 - pushed-out pins - install new pins as necessary
- Reconnect the SCMH 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 service articles: 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, INSTALL a new SCMH. REFER to: Driver Multi-Contour Seat Module [SCMG] (501-10A Front Seats, 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.

AA6 CHECK OPERATION OF INTERIOR LIGHTING

- Check operation of the interior lamps (dome lamp, courtesy lamps, luggage compartment lamp, etc).

Are the interior lamps operating normally?

Yes	GO to AA7
No	DIAGNOSE the Demand LP/battery saver relay. REFER to: Interior Lighting (417-02 Interior Lighting, Diagnosis and Testing).

AA7 CHECK THE MULTI-CONTOUR SEAT RELAY CONTROL CIRCUIT FOR AN OPEN

- Ignition OFF.
- Disconnect: BCM [C2280G](#)
- Measure:

BODY CONTROL MODULE (BCM)	BATTERY JUNCTION BOX (BJB)
---------------------------	----------------------------

Positive Lead	Measurement / Action	Negative Lead
C2280G-16	Ω	C1035A-29

Is the resistance less than 3 ohms?

Yes	CONNECT the BCM. GO to AA8
No	REPAIR the circuit.

AA8 CHECK FOR CORRECT BJB (BATTERY JUNCTION BOX) OPERATION

- Ignition OFF.
- Disconnect and inspect the BJB connector.
- Repair:
 - corrosion (install new connector or terminals - clean module pins)
 - damaged or bent pins - install new terminals/pins
 - pushed-out pins - install new pins as necessary
- Reconnect the BJB 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 service articles: 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, INSTALL a new BJB. The multi-contour seat relay is not serviceable.
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.

PINPOINT TEST AB : THE TRM (TRAILER MODULE) DOES NOT RESPOND TO THE DIAGNOSTIC SCAN TOOL

Refer to Wiring Diagrams Cell [14](#) for schematic and connector information.

Refer to Wiring Diagrams Cell [95](#) for schematic and connector information.

Normal Operation and Fault Conditions

The TRM communicates on the MS-CAN.

Possible Sources

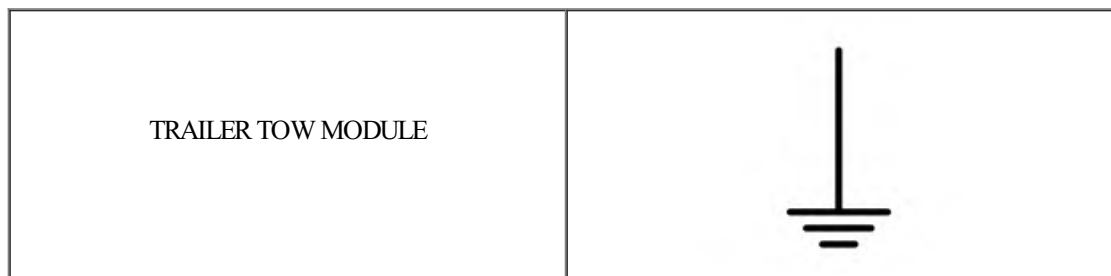
- Fuse
- Wiring, terminals and connector
- TRM

Visual Inspection and Pre-checks

- Verify BJB fuses 42 (40A) and 10 (30A) are OK.

AB1 CHECK THE TRM (TRAILER MODULE) VOLTAGE SUPPLY CIRCUITS FOR AN OPEN

- Ignition OFF.
- Disconnect: TRM [C2496A](#).
- Ignition ON.
- Measure:



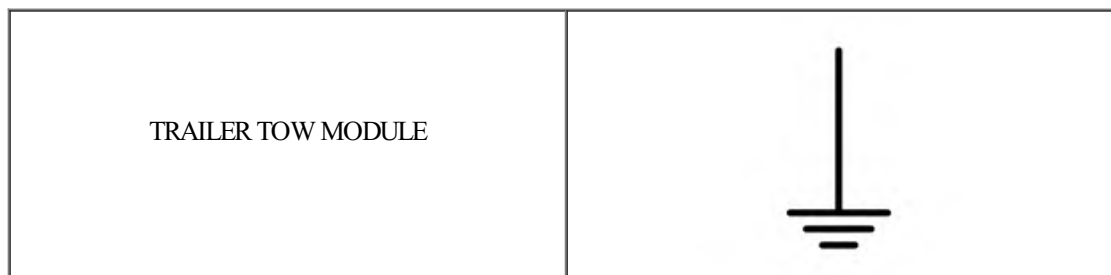
Positive Lead	Measurement / Action	Negative Lead
C2496A-1		Ground
C2496A-2		Ground

Is the voltage greater than 11 volts?

Yes	GO to AB2
No	VERIFY BJB fuses 42 (40A) or 10 (30A) is OK. If OK, REPAIR the circuit in question. If not OK, REFER to the Wiring Diagrams manual to identify the possible causes of the circuit short.

AB2 CHECK THE TRM (TRAILER MODULE) GROUND CIRCUIT FOR AN OPEN

- Ignition OFF.
- Disconnect: TRM [C2496B](#).
- Measure:



Positive Lead	Measurement / Action	Negative Lead
C2496B-1	Ω	Ground

Is the resistance less than 3 ohms?

Yes	GO to AB3
No	REPAIR the circuit.

AB3 CHECK THE MS-CAN (MEDIUM SPEED-CONTROLLER AREA NETWORK) CIRCUITS BETWEEN THE TRM (TRAILER MODULE) AND THE GWM (GATEWAY MODULE A) FOR AN OPEN

- Disconnect GWM [C2431](#).
- Measure:

TRAILER TOW MODULE	GATEWAY MODULE
--------------------	----------------

Positive Lead	Measurement / Action	Negative Lead
C2496B-3	Ω	C2431-23
C2496B-2	Ω	C2431-22

Are the resistances less than 3 ohms?

Yes	CONNECT the GWM. GO to AB4
No	REPAIR the circuit in question.

AB4 CHECK FOR CORRECT TRM (TRAILER MODULE) OPERATION

- Ignition OFF.
- Disconnect and inspect all the TRM connectors.
- Repair:
 - corrosion (install new connector or terminals - clean module pins)
 - damaged or bent pins - install new terminals/pins
 - pushed-out pins - install new pins as necessary
- Reconnect the TRM 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 service articles: 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, INSTALL a new TRM. REFER to: Trailer Module (TRM) (417-01 Exterior Lighting, 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.

☐ [PINPOINT TEST AC : THE TBM \(TRAILER BRAKE CONTROL MODULE\) DOES NOT RESPOND TO THE DIAGNOSTIC SCAN TOOL](#)

Refer to Wiring Diagrams Cell [14](#) for schematic and connector information.

Refer to Wiring Diagrams Cell [95](#) for schematic and connector information.

Normal Operation and Fault Conditions

The TBM communicates on the HS-CAN2.

Possible Sources

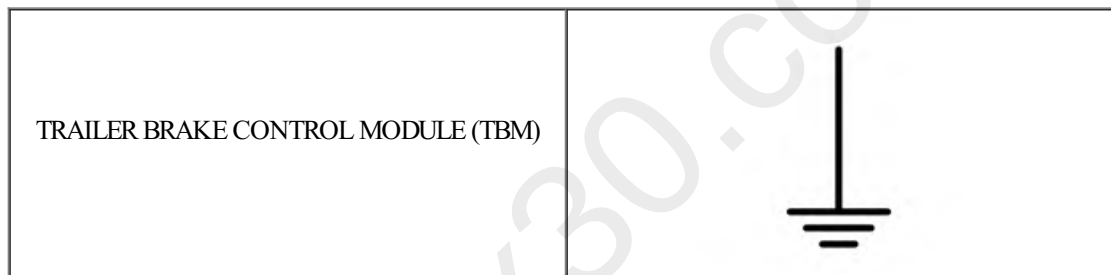
- Fuse
- Wiring, terminals and connector
- TBM

Visual Inspection and Pre-checks

- Verify BJB fuse 8 (40A) is OK.

AC1 CHECK THE TBM (TRAILER BRAKE CONTROL MODULE) VOLTAGE SUPPLY CIRCUIT FOR AN OPEN

- Ignition OFF.
- Disconnect: TBM [C2142](#).
- Ignition ON.
- Measure:



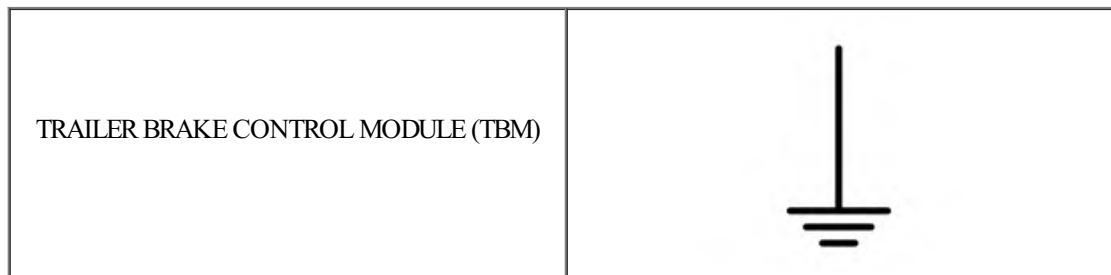
Positive Lead	Measurement / Action	Negative Lead
C2142-8		Ground

Is the voltage greater than 11 volts?

Yes	GO to AC2
No	VERIFY BJB fuse 8 (40A) is OK. If OK, REPAIR the circuit. If not OK, REFER to the Wiring Diagrams manual to identify the possible causes of the circuit short.

AC2 CHECK THE TBM (TRAILER BRAKE CONTROL MODULE) GROUND CIRCUIT FOR AN OPEN

- Ignition OFF.
- Measure:



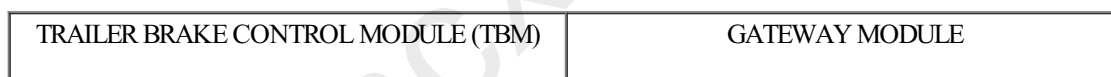
Positive Lead	Measurement / Action	Negative Lead
C2142-3	Ω	Ground

Is the resistance less than 3 ohms?

Yes	GO to AC3
No	REPAIR the circuit.

AC3 CHECK THE HS-CAN2 (HIGH-SPEED CONTROLLER AREA NETWORK 2) CIRCUITS BETWEEN THE TBM (TRAILER BRAKE CONTROL MODULE) AND THE GWM (GATEWAY MODULE A) FOR AN OPEN

- Disconnect GWM [C2431](#) .
- Measure:



Positive Lead	Measurement / Action	Negative Lead
C2142-10	Ω	C2431-18
C2142-11	Ω	C2431-17

Are the resistances less than 3 ohms?

Yes	CONNECT the GWM. GO to AC4
No	REPAIR the circuit in question.

AC4 CHECK FOR CORRECT TBM (TRAILER BRAKE CONTROL MODULE) OPERATION

- Ignition OFF.
- Disconnect and inspect the TBM connector.
- Repair:
 - corrosion (install new connector or terminals - clean module pins)
 - damaged or bent pins - install new terminals/pins
 - pushed-out pins - install new pins as necessary
- Reconnect the TBM 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 service articles: 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, INSTALL a new TBM. REFER to: Trailer Brake Control Module (TBM) (206-10 Auxiliary Brake 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.

☐ [PINPOINT TEST AD : THE RBM \(RUNNING BOARD CONTROL MODULE\) DOES NOT RESPOND TO THE DIAGNOSTIC SCAN TOOL](#)

Refer to Wiring Diagrams Cell [14](#) for schematic and connector information.

Refer to Wiring Diagrams Cell [109](#) for schematic and connector information.

Normal Operation and Fault Conditions

The RBM communicates on the MS-CAN.

Possible Sources

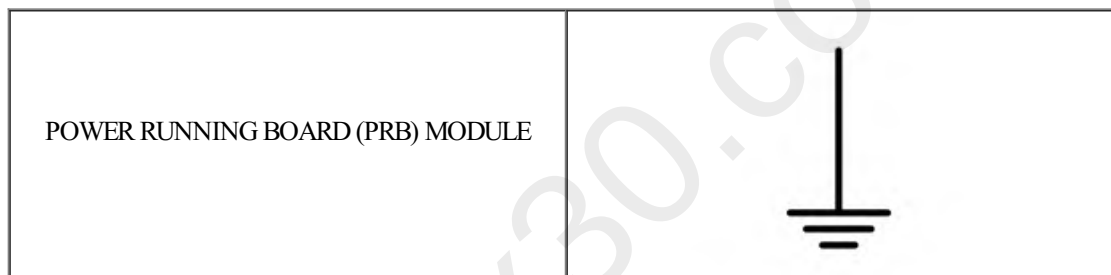
- Fuse
- Wiring, terminals and connector
- RBM

Visual Inspection and Pre-checks

- Verify BJB fuse 6 (30A) is OK.

AD1 CHECK THE RBM (RUNNING BOARD CONTROL MODULE) VOLTAGE SUPPLY CIRCUIT FOR AN OPEN

- Ignition OFF.
- Disconnect: RBM [C3313B](#).
- Ignition ON.
- Measure:



Positive Lead	Measurement / Action	Negative Lead
C3313B-1		Ground

Is the voltage greater than 11 volts?

Yes	GO to AD2
No	VERIFY BJB fuse 6 (30A) is OK. If OK, REPAIR the circuit. If not OK, REFER to the Wiring Diagrams manual to identify the possible causes of the circuit short.

AD2 CHECK THE RBM (RUNNING BOARD CONTROL MODULE) GROUND CIRCUIT FOR AN OPEN

- Ignition OFF.
- Measure:

POWER RUNNING BOARD (PRB) MODULE	
----------------------------------	--

Positive Lead	Measurement / Action	Negative Lead
C3313B-4	Ω	Ground

Is the resistance less than 3 ohms?

Yes	GO to AD3
No	REPAIR the circuit.

AD3 CHECK THE MS-CAN (MEDIUM SPEED-CONTROLLER AREA NETWORK) CIRCUITS BETWEEN THE RBM (RUNNING BOARD CONTROL MODULE) AND THE GWM (GATEWAY MODULE A) FOR AN OPEN

- Disconnect GWM [C2431](#).
- Measure:

POWER RUNNING BOARD (PRB) MODULE	GATEWAY MODULE
----------------------------------	----------------

Positive Lead	Measurement / Action	Negative Lead
C3313B-8	Ω	C2431-23
C3313B-7	Ω	C2431-22

Are the resistances less than 3 ohms?

Yes	CONNECT the GWM. GO to AD4
No	REPAIR the circuit in question.

AD4 CHECK FOR CORRECT RBM (RUNNING BOARD CONTROL MODULE) OPERATION

- Ignition OFF.
- Disconnect and inspect all the RBM connectors.
- Repair:
 - corrosion (install new connector or terminals - clean module pins)
 - damaged or bent pins - install new terminals/pins
 - pushed-out pins - install new pins as necessary
- Reconnect the RBM 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 service articles: 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, INSTALL a new RBM. REFER to: Running Board Control Module (RBM) (501-08 Exterior Trim and Ornamentation, 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.

☐ PINPOINT TEST AE : THE TCCM (TRANSFER CASE CONTROL MODULE) DOES NOT RESPOND TO THE DIAGNOSTIC SCAN TOOL

Refer to Wiring Diagrams Cell [14](#) for schematic and connector information.

Refer to Wiring Diagrams Cell [34](#) for schematic and connector information.

Normal Operation and Fault Conditions

The TCCM communicates on the HS-CAN2.

Possible Sources

- Fuse
- Wiring, terminals and connector
- TCCM

Visual Inspection and Pre-checks

- Verify BJB fuses 52 (10A), 13 (25A) and 11 (25A) (Electronic Shift On Fly (ESOF) or ELD) are OK.

AE1 CHECK THE TCCM (TRANSFER CASE CONTROL MODULE) VOLTAGE SUPPLY CIRCUITS FOR AN OPEN

- Ignition OFF.
- Disconnect: TCCM [C2371A](#) and [C2371B](#).
- Ignition ON.
- Measure:

TRANSFER CASE CONTROL MODULE (TCCM)	
-------------------------------------	--

Positive Lead	Measurement / Action	Negative Lead
C2371A-7		Ground

TRANSFER CASE CONTROL MODULE (TCCM)	
-------------------------------------	---

Positive Lead	Measurement / Action	Negative Lead
C2371B-6		Ground
C2371B-7		Ground

Are the voltages greater than 11 volts?

Yes	GO to AE2
No	VERIFY BJB fuses 52 (10A), 13 (25A) and 11 (25A) (Electronic Shift On Fly (ESOF) or ELD) is OK. If OK, REPAIR the circuit in question. If not OK, REFER to the Wiring Diagrams manual to identify the possible causes of the circuit short.

AE2 CHECK THE TCCM (TRANSFER CASE CONTROL MODULE) GROUND CIRCUITS FOR AN OPEN

- Ignition OFF.
- Measure:

TRANSFER CASE CONTROL MODULE (TCCM)	
-------------------------------------	--

Positive Lead	Measurement / Action	Negative Lead
C2371B-1	Ω	Ground
C2371B-3	Ω	Ground

Are the resistances less than 3 ohms?

Yes	GO to AE3
No	REPAIR the circuit.

AE3 CHECK THE HS-CAN2 (HIGH-SPEED CONTROLLER AREA NETWORK 2) CIRCUITS BETWEEN THE TCCM (TRANSFER CASE CONTROL MODULE) AND THE GWM (GATEWAY MODULE A) FOR AN OPEN

- Disconnect GWM [C2431](#) .
- Measure:

TRANSFER CASE CONTROL MODULE (TCCM)	GATEWAY MODULE
-------------------------------------	----------------

Positive Lead	Measurement / Action	Negative Lead
C2371A-10	Ω	C2431-18
C2371A-9	Ω	C2431-17

Are the resistances less than 3 ohms?

Yes	CONNECT the GWM. GO to AE4
No	REPAIR the circuit in question.

AE4 CHECK FOR CORRECT TCCM (TRANSFER CASE CONTROL MODULE) OPERATION

- Ignition OFF.
- Disconnect and inspect all the TCCM connectors.
- Repair:
 - corrosion (install new connector or terminals - clean module pins)
 - damaged or bent pins - install new terminals/pins
 - pushed-out pins - install new pins as necessary
- Reconnect the TCCM 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 service articles: 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, INSTALL a new TCCM. REFER to: Transfer Case Control Module (TCCM) (308-07A Four-Wheel Drive Systems, 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.

Refer to Wiring Diagrams Cell [14](#) for schematic and connector information.

Refer to Wiring Diagrams Cell [95](#) for schematic and connector information.

Normal Operation and Fault Conditions

The GFM (Trailer TPMS) communicates on the Medium Speed Controller Area Network 2 (MS-CAN2).

Possible Sources

- Fuse
- Wiring, terminals and connector
- GFM (Trailer TPMS)

Visual Inspection and Pre-checks

- Verify BJB fuse 51 (10A) is OK.

AF1 CHECK THE MEDIUM SPEED CONTROLLER AREA NETWORK 2 (MS-CAN2) TERMINATION RESISTANCE

- Ignition OFF.
- Disconnect negative battery cable.
- Disconnect the diagnostic scan tool cable from the DLC.
- Disconnect GWM [C2431](#) .
- Measure:



Positive Lead	Measurement / Action	Negative Lead
C2431-21	Ω	C2431-9

Is the resistance between 108 and 132 ohms?

Yes	CONNECT the GWM. GO to AF3
No	GO to AF2

AF2 CHECK THE MEDIUM SPEED CONTROLLER AREA NETWORK 2 (MS-CAN2) CIRCUITS BETWEEN THE GFM (GENERIC FUNCTION MODULE) (TRAILER TPMS (TIRE PRESSURE MONITORING SYSTEM)) AND THE GWM (GATEWAY MODULE A) FOR AN OPEN

- Disconnect: GFM (TRAILER TPMS) [C4321](#)
- Measure:

TRAILER TIRE PRESSURE MONITOR SYSTEM (TPMS) MODULE	GATEWAY MODULE
---	----------------

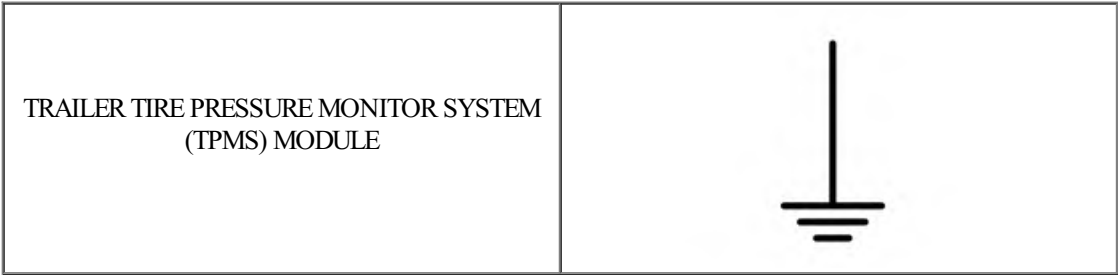
Positive Lead	Measurement / Action	Negative Lead
C4321-3	Ω	C2431-21
C4321-4	Ω	C2431-9

Are the resistances less than 3 ohms?

Yes	CONNECT all disconnected connectors. GO to AF5
No	REPAIR the circuit in question.

AF3 CHECK THE GFM (GENERIC FUNCTION MODULE) (TRAILER TPMS (TIRE PRESSURE MONITORING SYSTEM)) VOLTAGE SUPPLY CIRCUIT FOR AN OPEN

- Connect negative battery cable.
- Ignition ON.
- Measure:



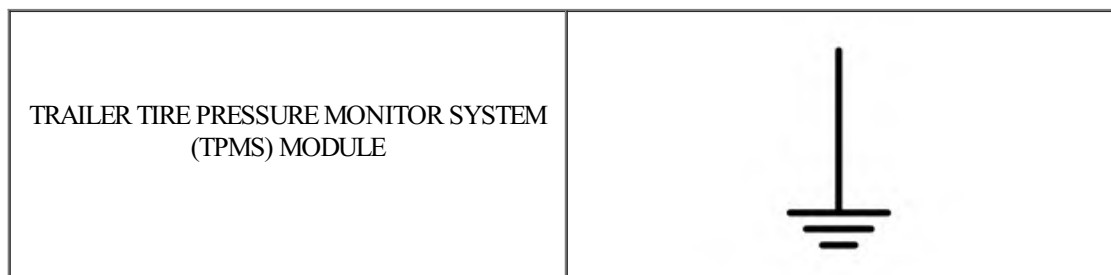
Positive Lead	Measurement / Action	Negative Lead
C4321-1		Ground

Is the voltage greater than 11 volts?

Yes	GO to AF4
No	VERIFY BJB fuse 51 (10A) is OK. If OK, REPAIR the circuit. If not OK, REFER to the Wiring Diagrams manual to identify the possible causes of the circuit short.

AF4 CHECK THE GFM (GENERIC FUNCTION MODULE) (TRAILER TPMS (TIRE PRESSURE MONITORING SYSTEM)) GROUND CIRCUIT FOR AN OPEN

- Ignition OFF.
- Measure:



Positive Lead	Measurement / Action	Negative Lead
C4321-2	Ω	Ground

Is the resistance less than 3 ohms?

Yes	GO to AF5
No	REPAIR the circuit.

AF5 CHECK FOR CORRECT GFM (GENERIC FUNCTION MODULE) (TRAILER TPMS (TIRE PRESSURE MONITORING SYSTEM)) OPERATION

- Ignition OFF.
- Disconnect and inspect the GFM (Trailer TPMS) connector.
- Repair:
 - corrosion (install new connector or terminals - clean module pins)
 - damaged or bent pins - install new terminals/pins
 - pushed-out pins - install new pins as necessary
- Reconnect the GFM (Trailer TPMS) 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 service articles: 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, INSTALL a new GFM (Trailer TPMS).
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.

☐ [PINPOINT TEST AG : THE GFM2 \(GENERIC FUNCTION MODULE 2\) DOES NOT RESPOND TO THE DIAGNOSTIC SCAN TOOL](#)

Refer to Wiring Diagrams Cell [14](#) for schematic and connector information.

Refer to Wiring Diagrams Cell [140](#) for schematic and connector information.

Normal Operation and Fault Conditions

The GFM2 (upfitter switch) communicates on the HS-CAN1.

Possible Sources

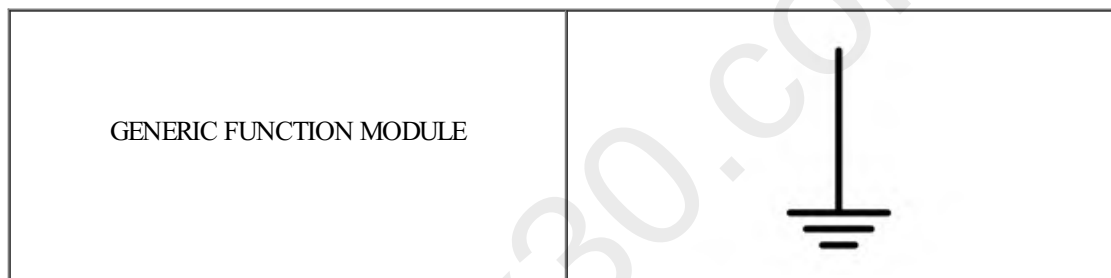
- Fuse
- Wiring, terminals and connector
- GFM2

Visual Inspection and Pre-checks

- Verify BJB fuse 47 (10A) is OK.

AG1 CHECK THE GFM2 (GENERIC FUNCTION MODULE 2) VOLTAGE SUPPLY CIRCUIT FOR AN OPEN

- Ignition OFF.
- Disconnect: GFM2 [C290C](#)
- Ignition ON.
- Measure:



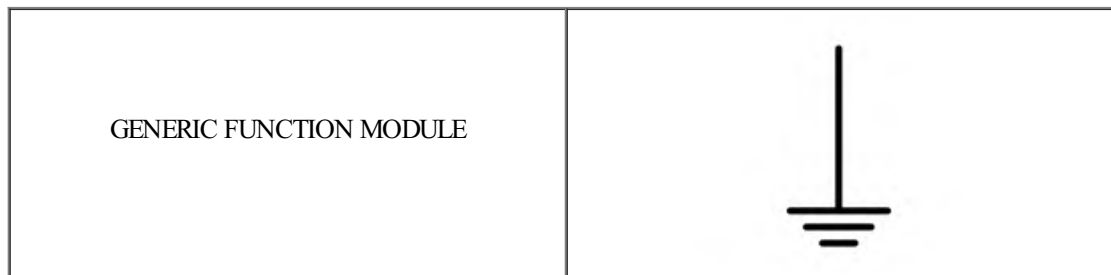
Positive Lead	Measurement / Action	Negative Lead
C290C-1		Ground

Is the voltage greater than 11 volts?

Yes	GO to AG2
No	VERIFY BJB fuse 47 (10A) is OK. If OK, REPAIR the circuit. If not OK, REFER to the Wiring Diagrams manual to identify the possible causes of the circuit short.

AG2 CHECK THE GFM2 (GENERIC FUNCTION MODULE 2) GROUND CIRCUIT FOR AN OPEN

- Ignition OFF.
- Measure:



Positive Lead	Measurement / Action	Negative Lead
C290C-4	Ω	Ground

Is the resistance less than 3 ohms?

Yes	GO to AG3
No	REPAIR the circuit.

AG3 CHECK THE HS-CAN1 (HIGH-SPEED CONTROLLER AREA NETWORK 1) CIRCUITS BETWEEN THE GFM2 (GENERIC FUNCTION MODULE 2) AND THE GWM (GATEWAY MODULE A) FOR AN OPEN

- Disconnect GWM [C2431](#).
- Measure:



Positive Lead	Measurement / Action	Negative Lead
C290C-6	Ω	C2431-20
C290C-7	Ω	C2431-19

Are the resistances less than 3 ohms?

Yes	CONNECT the GWM. GO to AG4
No	REPAIR the circuit in question.

AG4 CHECK FOR CORRECT GFM2 (GENERIC FUNCTION MODULE 2) OPERATION

- Ignition OFF.
- Disconnect and inspect all the GFM2 connectors.
- Repair:
 - corrosion (install new connector or terminals - clean module pins)
 - damaged or bent pins - install new terminals/pins
 - pushed-out pins - install new pins as necessary
- Reconnect the GFM2 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 service articles: 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, INSTALL a new GFM2. REFER to: Generic Function Module 2 (GFM2) (419-10 Multifunction Electronic Modules, 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.

☐ PINPOINT TEST AH : THE WACM (WIRELESS ACCESSORY CHARGING MODULE) DOES NOT RESPOND TO THE DIAGNOSTIC SCAN TOOL

Refer to Wiring Diagrams Cell [14](#) for schematic and connector information.

Refer to Wiring Diagrams Cell [44](#) for schematic and connector information.

Normal Operation and Fault Conditions

The WACM communicates on the HS-CAN3.

Possible Sources

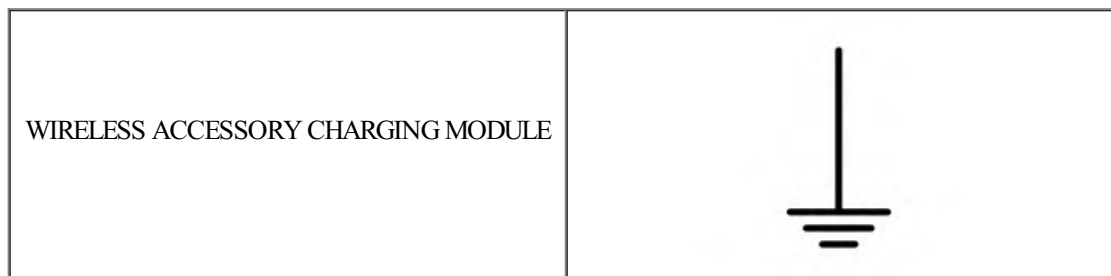
- Fuse
- Wiring, terminals and connector
- WACM

Visual Inspection and Pre-checks

- Verify BCM fuse 3 (7.5A) is OK.

AH1 CHECK THE WACM (WIRELESS ACCESSORY CHARGING MODULE) VOLTAGE SUPPLY CIRCUIT FOR AN OPEN

- Ignition OFF.
- Disconnect: WACM [C390](#).
- Ignition ON.
- Measure:



Positive Lead	Measurement / Action	Negative Lead
C390-1		Ground

Is the voltage greater than 11 volts?

Yes	GO to AH2
No	VERIFY BCM fuse 3 (7.5A) is OK. If OK, REPAIR the circuit. If not OK, REFER to the Wiring Diagrams manual to identify the possible causes of the circuit short.

AH2 CHECK THE WACM (WIRELESS ACCESSORY CHARGING MODULE) GROUND CIRCUIT FOR AN OPEN

- Ignition OFF.
- Measure:

WIRELESS ACCESSORY CHARGING MODULE	
------------------------------------	--

Positive Lead	Measurement / Action	Negative Lead
C390-5	Ω	Ground

Is the resistance less than 3 ohms?

Yes	GO to AH3
No	REPAIR the circuit.

AH3 CHECK THE HS-CAN3 (HIGH-SPEED CONTROLLER AREA NETWORK 3) CIRCUITS BETWEEN THE WACM (WIRELESS ACCESSORY CHARGING MODULE) AND THE GWM (GATEWAY MODULE A) FOR AN OPEN

- Disconnect GWM [C2431](#).
- Measure:

WIRELESS ACCESSORY CHARGING MODULE	GATEWAY MODULE
------------------------------------	----------------

Positive Lead	Measurement / Action	Negative Lead
C390-8	Ω	C2431-16
C390-7	Ω	C2431-15

Are the resistances less than 3 ohms?

Yes	CONNECT the GWM. GO to AH4
No	REPAIR the circuit in question.

AH4 CHECK FOR CORRECT WACM (WIRELESS ACCESSORY CHARGING MODULE) OPERATION

- Ignition OFF.
- Disconnect and inspect the WACM connector.
- Repair:
 - corrosion (install new connector or terminals - clean module pins)
 - damaged or bent pins - install new terminals/pins
 - pushed-out pins - install new pins as necessary
- Reconnect the WACM 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 service articles: 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, INSTALL a new WACM. REFER to: Wireless Accessory Charging Module (WACM) (414-06 Accessory Charging, 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.

☐ PINPOINT TEST AI : ALL NETWORKS DO NOT RESPOND TO THE DIAGNOSTIC SCAN TOOL

Refer to Wiring Diagrams Cell [14](#) for schematic and connector information.

Normal Operation and Fault Conditions

The GWM communicates with the diagnostic scan tool through the DIAG 1 and DIAG 2 networks. The GWM operates as a gateway for communication between the modules on HS-CAN1, HS-CAN2, HS-CAN3, HS-CAN4, MS-CAN and Medium Speed Controller Area Network 2 (MS-CAN2).

Possible Sources

- Fuse
- Wiring, terminals and connector
- GWM

Visual Inspection and Pre-checks

- Verify BCM fuse 12 (7.5A) and BJB fuse 70 (10A) are OK.

AI1 CHECK THE DLC (DATA LINK CONNECTOR) PINS FOR DAMAGE

- Ignition OFF.
- **NOTE:** *If the vehicle exhibits one or more modules becoming inoperative or observable symptoms are present when a scan tool is connected, this condition is likely due to spread ground terminals 4 and 5 at the DLC. An improperly grounded scan tool will corrupt the network message traffic.*

Disconnect the diagnostic scan tool cable from the DLC.

- Inspect the DLC pins 3, 4, 5, 6, 11, 14 and 16 for spreading or damage using a flex probe with the dimensions: 1.5mm width x .080mm thickness, Rotunda probe 300-08039 (violet).

Are any pin fit concerns or damage observed with DLC pins 3, 4, 5, 6, 11, 14 and 16?

Yes	CHECK OASIS for any applicable service articles: 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, INSTALL a new GWM. REFER to: Gateway Module A (GWM) (418-00 Module Communications Network, Removal and Installation).
No	GO to AI2

AI2 CHECK THE GWM (GATEWAY MODULE A) C2431

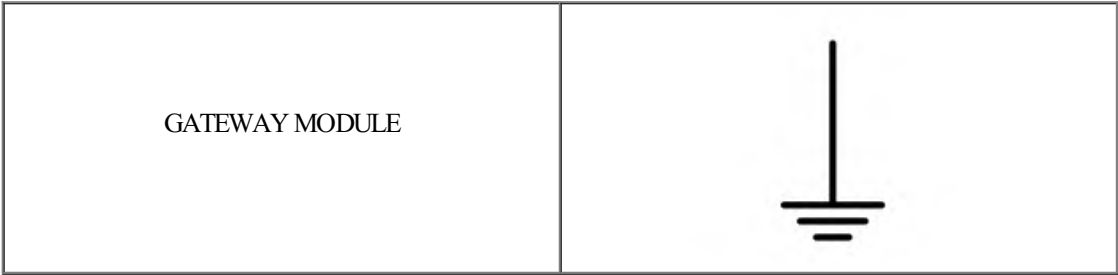
- Disconnect and inspect the GWM [C2431](#).
- Repair:
 - corrosion (install new connector or terminals - clean module pins)
 - spread, damaged or bent pins - install new terminals/pins
 - pushed-out pins - install new pins as necessary
- Reconnect the GWM [C2431](#). Make sure it seats and latches correctly.
- Operate the system and determine if the concern is still present.

Is the concern still present?

Yes	GO to AI3
No	The system is operating correctly at this time. The concern may have been caused by module or scan tool connections. ADDRESS the root cause of any connector or pin issues.

AI3 CHECK THE GWM (GATEWAY MODULE A) VOLTAGE SUPPLY CIRCUITS FOR AN OPEN

- Ignition OFF.
- Disconnect: GWM [C2431](#).
- Ignition ON.
- Measure:



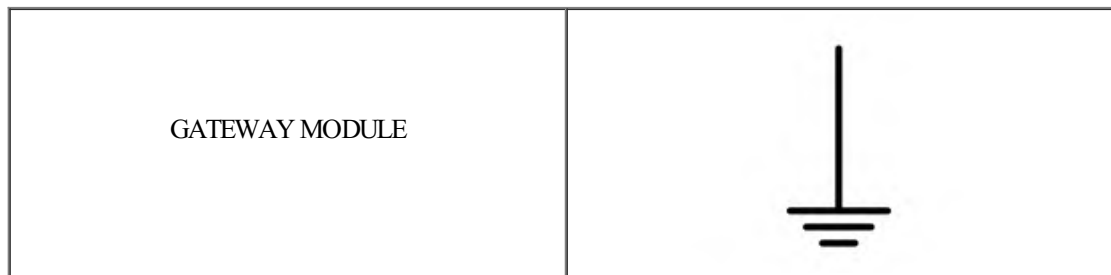
Positive Lead	Measurement / Action	Negative Lead
C2431-24		Ground
C2431-13		Ground

Are the voltages greater than 11 volts?

Yes	GO to AI4
No	VERIFY BCM fuse 12 (7.5A) and BJB fuse 70 (10A). If OK, REPAIR the circuit in question. If not OK, REFER to the Wiring Diagrams manual to identify the possible causes of the circuit short.

AI4 CHECK THE GWM (GATEWAY MODULE A) GROUND CIRCUITS FOR AN OPEN

- Ignition OFF.
- Measure:



Positive Lead	Measurement / Action	Negative Lead
C2431-1	Ω	Ground
C2431-14	Ω	Ground

Are the resistances less than 3 ohms?

Yes	GO to A15
No	REPAIR the circuit in question.

AI5 CHECK THE DIAG 1 TERMINATION RESISTANCE, COMPONENT SIDE

- Measure:

DATA LINK CONNECTOR (DLC)

Positive Lead	Measurement / Action	Negative Lead
C251-6 (Component Side)	Ω	C251-14 (Component Side)

Is the resistance between 108 and 132 ohms?

Yes	GO to AI6
No	INSTALL a new GWM. REFER to: Gateway Module A (GWM) (418-00 Module Communications Network, Removal and Installation).

AI6 CHECK THE DIAG 2 TERMINATION RESISTANCE, COMPONENT SIDE

- Measure:

DATA LINK CONNECTOR (DLC)

Positive Lead	Measurement / Action	Negative Lead
C251-3 (Component Side)	Ω	C251-11 (Component Side)

Is the resistance between 108 and 132 ohms?

Yes	Connect the disconnected connector and test for normal operation. If the concern is still present, GO to AI7
No	INSTALL a new GWM. REFER to: Gateway Module A (GWM) (418-00 Module Communications Network, Removal and Installation).

AI7 CHECK FOR CORRECT GWM (GATEWAY MODULE A) OPERATION

- Ignition OFF.
- Disconnect and inspect the GWM connector.
- Repair:
 - corrosion (install new connector or terminals - clean module pins)
 - damaged or bent pins - install new terminals/pins
 - pushed-out pins - install new pins as necessary
- Reconnect the GWM 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 service articles: 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, INSTALL a new GWM. REFER to: Gateway Module A (GWM) (418-00 Module Communications Network, 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.

PINPOINT TEST AJ : NO HS-CAN1 (HIGH-SPEED CONTROLLER AREA NETWORK 1) COMMUNICATION, ALL MODULES ARE NOT RESPONDING

Refer to Wiring Diagrams Cell [14](#) for schematic and connector information.

Normal Operation and Fault Conditions

The HS-CAN1 modules communicate with the diagnostic scan tool through the DLC DIAG 1 circuits. REFER to: Communications Network - System Operation and Component Description (418-00 Module Communications Network, Description and Operation).

Possible Sources

- Fuse
- Wiring, terminals or connectors
- APIM (if equipped)
- BCM
- GWM
- GFM2 (Upfitter switch)
- PAM
- PCM
- TCM (Diesel)

NOTE: Various modules set network DTCs during this test procedure. Clear DTCs from all modules after completing the diagnostic procedure.

AJ1 CHECK THE DLC (DATA LINK CONNECTOR) PINS FOR DAMAGE

- Ignition OFF.
 - **NOTE:** If the vehicle exhibits one or more modules becoming inoperative or observable symptoms are present when a scan tool is connected, this condition is likely due to spread ground terminals 4 and 5 at the DLC. An improperly grounded scan tool will corrupt the network message traffic.
- Disconnect the diagnostic scan tool cable from the DLC.
- Inspect the DLC pins 4, 5, 6, 14 and 16 for spreading or damage using a flex probe with the dimensions: 1.5 mm width x 0.080 mm thickness, Rotunda probe 300-08039 (violet).

Are any pin fit concerns or damage observed with DLC pins 4, 5, 6, 14 and 16?

Yes	CHECK OASIS for any applicable service articles: 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, INSTALL a new GWM. REFER to: Gateway Module A (GWM) (418-00 Module Communications Network, Removal and Installation).
No	GO to AJ2

AJ2 CHECK THE GWM (GATEWAY MODULE A) C2431

- Disconnect and inspect the GWM [C2431](#).
- Repair:
 - corrosion (install new connector or terminals - clean module pins)
 - spread, damaged or bent pins - install new terminals/pins
 - pushed-out pins - install new pins as necessary
- Reconnect the GWM [C2431](#). Make sure it seats and latches correctly.
- Operate the system and determine if the concern is still present.

Is the concern still present?

Yes	GO to AJ3
No	The system is operating correctly at this time. The concern may have been caused by module or scan tool connections. ADDRESS the root cause of any connector or pin issues.

AJ3 CHECK THE DIAG 1 NETWORK CIRCUIT TERMINATION RESISTANCE

- Disconnect the negative battery cable.
- Measure:

DATA LINK CONNECTOR (DLC)

Positive Lead	Measurement / Action	Negative Lead
C251-6	Ω	C251-14

Is the resistance between 108 and 132 ohms?

Yes	GO to AJ4
No	INSTALL a new GWM. REFER to: Gateway Module A (GWM) (418-00 Module Communications Network, Removal and Installation).

AJ4 CHECK THE HS-CAN1 (HIGH-SPEED CONTROLLER AREA NETWORK 1) TERMINATION RESISTOR (PCM (POWERTRAIN CONTROL MODULE)) WITH THE GWM (GATEWAY MODULE A) DISCONNECTED

- Ignition OFF.
- Disconnect: GWM [C2431](#).
- Measure:

GATEWAY MODULE

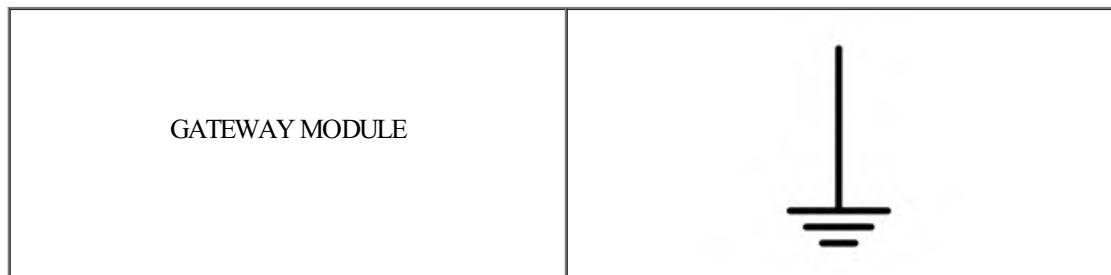
Positive Lead	Measurement / Action	Negative Lead
C2431-20	Ω	C2431-19

Is the resistance between 108 and 132 ohms?

Yes	GO to AJ5
No	If the resistance is greater than 132 ohms, GO to AJ8 If the resistance is less than 108 ohms, CONNECT all disconnected connectors. GO to AJ9

AJ5 CHECK THE HS-CAN1 (HIGH-SPEED CONTROLLER AREA NETWORK 1) (+) AND HS-CAN1 (HIGH-SPEED CONTROLLER AREA NETWORK 1) (-) CIRCUITS FOR A SHORT TO GROUND

- Connect the negative battery cable.
- Measure:



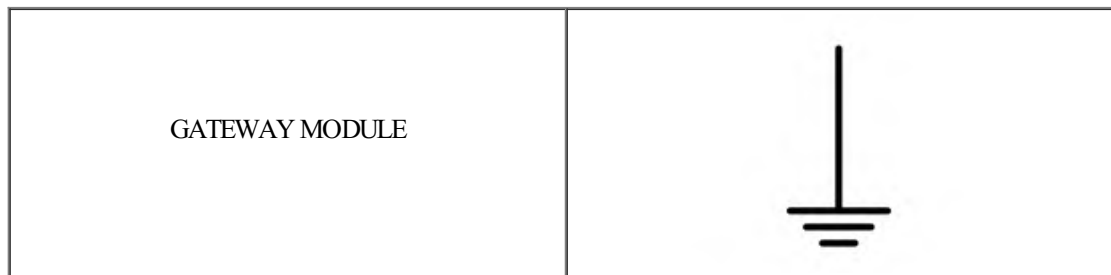
Positive Lead	Measurement / Action	Negative Lead
C2431-20	Ω	Ground
C2431-19	Ω	Ground

Are the resistances greater than 1,000 ohms?

Yes	GO to AJ6
No	GO to AJ10

AJ6 CHECK THE HS-CAN1 (HIGH-SPEED CONTROLLER AREA NETWORK 1) (+) AND HS-CAN1 (HIGH-SPEED CONTROLLER AREA NETWORK 1) (-) CIRCUITS FOR A SHORT TO VOLTAGE

- Ignition ON.
- Measure:



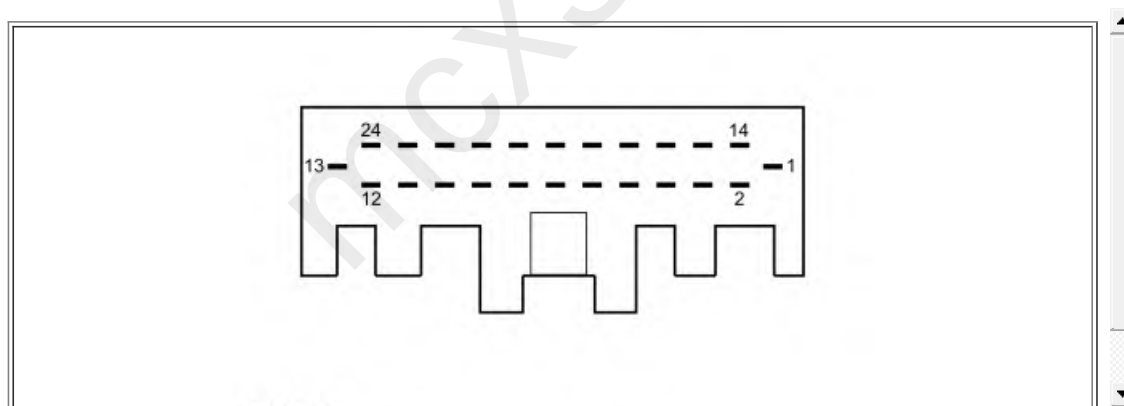
Positive Lead	Measurement / Action	Negative Lead
C2431-20	  	Ground
C2431-19	  	Ground

Is the voltage greater than 6 volts on either circuit?

Yes	REPAIR the circuit in question.
No	GO to AJ7

AJ7 CHECK THE GWM (GATEWAY MODULE A) TERMINATION RESISTOR (COMPONENT SIDE)

- Measure:



Positive Lead	Measurement / Action	Negative Lead
C2431-20 (Component Side)	Ω	C2431-19 (Component Side)

Is the resistance between 108 ohms and 132 ohms?

Yes	GO to AJ22
No	INSTALL a new GWM. REFER to: Gateway Module A (GWM) (418-00 Module Communications Network, Removal and Installation).

AJ8 CHECK THE HS-CAN1 (HIGH-SPEED CONTROLLER AREA NETWORK 1) CIRCUITS BETWEEN THE PCM (POWERTRAIN CONTROL MODULE) AND THE GWM (GATEWAY MODULE A) FOR AN OPEN

- Disconnect PCM [C175B](#) (6.2L/7.3L) or [C1232B](#) (6.7L Diesel) .
- Measure:

POWERTRAIN CONTROL MODULE (PCM)	GATEWAY MODULE
---------------------------------	----------------

6.2L/7.3L

Positive Lead	Measurement / Action	Negative Lead
C175B-27	Ω	C2431-20
C175B-12	Ω	C2431-19

POWERTRAIN CONTROL MODULE (PCM)	GATEWAY MODULE
---------------------------------	----------------

6.7L Diesel

Positive Lead	Measurement / Action	Negative Lead
C1232B-13	Ω	C2431-20
C1232B-12	Ω	C2431-19

Are the resistances less than 3 ohms?

Yes	CONNECT all disconnected connectors. GO to AJ11
No	REPAIR the circuit in question.

AJ9 CHECK THE HS-CAN1 (HIGH-SPEED CONTROLLER AREA NETWORK 1) (+) AND HS-CAN1 (HIGH-SPEED CONTROLLER AREA NETWORK 1) (-) CIRCUITS FOR A SHORT TOGETHER WITH THE MODULES DISCONNECTED

- Disconnect: GWM [C2431](#).
- Measure:

GATEWAY MODULE

Positive Lead	Measurement / Action	Negative Lead
C2431-20	Ω	C2431-19

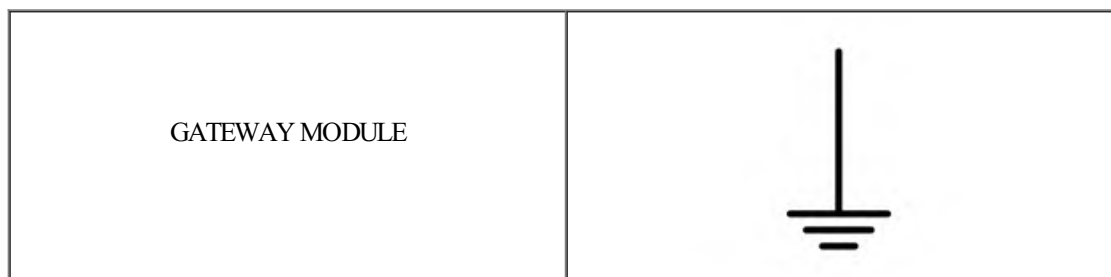
- Disconnect modules one at a time until the resistance is greater than 3 ohms.
 - APIM [C2383A](#) (if equipped)
 - BCM [C2280G](#)
 - GFM2 (Upfitter switch) [C290C](#) (if equipped)
 - PAM [C4226A](#) (if equipped)
 - PCM [C175B](#) (6.2L/7.3L) or [C1232B](#) (6.7L Diesel)
 - TCM [C1750](#) (Diesel)

Did the resistance change to greater than 3 ohms with one of the modules disconnected?

Yes	For the APIM, GO to AJ20 For the BCM, GO to AJ21 For the GFM2 (Upfitter switch), GO to AJ23 For the PAM, GO to AJ24 For the PCM, GO to AJ25 For the TCM, GO to AJ26
No	REPAIR the circuit in question. CONNECT all modules.

AJ10 CHECK THE HS-CAN1 (HIGH-SPEED CONTROLLER AREA NETWORK 1) (+) AND HS-CAN1 (HIGH-SPEED CONTROLLER AREA NETWORK 1) (-) CIRCUITS FOR A SHORT TO GROUND WITH THE MODULES DISCONNECTED

- Measure:



Positive Lead	Measurement / Action	Negative Lead
C2431-20	Ω	Ground
C2431-19	Ω	Ground

- Disconnect modules one at a time until the resistance to ground is greater than 1,000 ohms.
 - APIM [C2383A](#) (if equipped)
 - BCM [C2280G](#)
 - GFM2 (Upfitter switch) [C290C](#) (if equipped)
 - PAM [C4226A](#) (if equipped)
 - PCM [C175B](#) (6.2L/7.3L) or [C1232B](#) (6.7L Diesel)
 - TCM [C1750](#) (Diesel)

Did the resistance change to greater than 1,000 ohms with one of the modules disconnected?

Yes	For the APIM, GO to AJ20 For the BCM, GO to AJ21 For the GFM2 (Upfitter switch), GO to AJ23 For the PAM, GO to AJ24 For the PCM, GO to AJ25 For the TCM, GO to AJ26
No	REPAIR the circuit in question. CONNECT all modules.

AJ11 CHECK FOR RESTORED COMMUNICATION WITH THE PCM (POWERTRAIN CONTROL MODULE) DISCONNECTED

NOTE: When re-running the network test, close the network test application first or the screen display reverts back to the prior network test results.

- Disconnect: PCM [C175B](#) (6.2L/7.3L) or [C1232B](#) (6.7L Diesel).
- Using a diagnostic scan tool, perform the network test.

Do all other modules pass the network test?

Yes	CONNECT the module. GO to Pinpoint Test A
No	CONNECT the module. GO to AJ12

AJ12 VERIFY VEHICLE EQUIPMENT - 6.7L DIESEL

- Verify the vehicle is equipped with a 6.7L Diesel engine.

Is the vehicle equipped with a 6.7L Diesel engine?

Yes	GO to AJ13
No	GO to AJ14

AJ13 CHECK FOR RESTORED COMMUNICATION WITH THE TCM (TRANSMISSION CONTROL MODULE) DISABLED

NOTE: When re-running the network test, close the network test application first or the screen display reverts back to the prior network test results.

- Disconnect: BJB fuses 48 (15A) and 50 (10A).
- Using a diagnostic scan tool, perform the network test.

Do all other modules pass the network test?

Yes	INSTALL the removed fuses. GO to Pinpoint Test B
No	INSTALL the removed fuses. GO to AJ14

AJ14 CHECK FOR RESTORED NETWORK COMMUNICATION WITH THE APIM (SYNC MODULE) DISABLED

NOTE: When re-running the network test, close the network test application first or the screen display reverts back to the prior network test results.

- Disconnect: BCM fuse 15 (15A).
- Using a diagnostic scan tool, perform the network test.

Do all other HS-CAN1 modules pass the network test?

Yes	INSTALL the removed fuse. GO to Pinpoint Test M
No	INSTALL the removed fuse. GO to AJ15

AJ15 VERIFY VEHICLE EQUIPMENT - GFM2 (GENERIC FUNCTION MODULE 2) (UPFITTER SWITCH)

- Verify the vehicle is equipped with a GFM2 (Upfitter Switch).

Is the vehicle equipped with a GFM2 (Upfitter Switch)?

Yes	GO to AJ16
No	GO to AJ17

AJ16 CHECK FOR RESTORED NETWORK COMMUNICATION WITH THE GFM2 (GENERIC FUNCTION MODULE 2) (UPFITTER SWITCH) DISABLED

NOTE: When re-running the network test, close the network test application first or the screen display reverts back to the prior network test results.

- Disconnect: BJB fuse 47 (10A).
- Using a diagnostic scan tool, perform the network test.

Do all other HS-CAN1 modules pass the network test?

Yes	INSTALL the removed fuse. GO to Pinpoint Test AG
No	INSTALL the removed fuse. GO to AJ17

AJ17 VERIFY VEHICLE EQUIPMENT - PAM (PARKING ASSIST CONTROL MODULE)

- Inspect the vehicle for a PAM.

Is the vehicle equipped with a PAM?

Yes	GO to AJ18
No	GO to AJ19

AJ18 CHECK FOR RESTORED NETWORK COMMUNICATION WITH THE PAM (PARKING ASSIST CONTROL MODULE) DISABLED

NOTE: When re-running the network test, close the network test application first or the screen display reverts back to the prior network test results.

- Disconnect: BCM fuse 17 (7.5A).
- Using a diagnostic scan tool, perform the network test.

Do all other HS-CAN1 modules pass the network test?

Yes	INSTALL the removed fuse. GO to Pinpoint Test X
No	INSTALL the removed fuse. GO to AJ19

AJ19 CHECK FOR RESTORED NETWORK COMMUNICATION WITH THE BCM (BODY CONTROL MODULE) DISCONNECTED

NOTE: When re-running the network test, close the network test application first or the screen display reverts back to the prior network test results.

- Disconnect: BCM [C2280G](#).
- Using a diagnostic scan tool, perform the network test.

Do all other HS-CAN1 modules pass the network test?

Yes	CONNECT the module. GO to Pinpoint Test H
No	CONNECT the module. The HS-CAN1 tests within specification. The concern may have been caused by module connections. CONNECT any disconnected connectors or fuses. Test for normal operation. If the concern is still present, ADDRESS the root cause of any connector or pin issues.

AJ20 CHECK FOR CORRECT APIM (SYNC MODULE) OPERATION

- Ignition OFF.
- Disconnect and inspect the APIM connector.
- Repair:
 - corrosion (install new connector or terminals - clean module pins)
 - damaged or bent pins - install new terminals/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 service articles: 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.

AJ21 CHECK FOR CORRECT BCM (BODY CONTROL MODULE) OPERATION

- Ignition OFF.
- Disconnect and inspect all the BCM connectors.
- Repair:
 - corrosion (install new connector 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 service articles: 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 (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.

AJ22 CHECK FOR CORRECT GWM (GATEWAY MODULE A) OPERATION

- Ignition OFF.
- Disconnect and inspect the GWM connector.
- Repair:
 - corrosion (install new connector or terminals - clean module pins)
 - damaged or bent pins - install new terminals/pins
 - pushed-out pins - install new pins as necessary
- Reconnect the GWM 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 service articles: 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, INSTALL a new GWM. REFER to: Gateway Module A (GWM) (418-00 Module Communications Network, 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.

AJ23 CHECK FOR CORRECT GFM2 (GENERIC FUNCTION MODULE 2) (UPFITTER SWITCH) OPERATION

- Ignition OFF.
- Disconnect and inspect the GFM2 connector.
- Repair:
 - corrosion (install new connector or terminals -clean module pins)
 - damaged or bent pins - install new terminals/pins
 - pushed-out pins - install new pins as necessary
- Reconnect the GFM2 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 service articles: 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, INSTALL a new GFM2. REFER to: Generic Function Module 2 (GFM2) (419-10 Multifunction Electronic Modules, 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.

AJ24 CHECK FOR CORRECT PAM (PARKING ASSIST CONTROL MODULE) OPERATION

- Ignition OFF.
- Disconnect and inspect the PAM connector.
- Repair:
 - corrosion (install new connector or terminals - clean module pins)
 - damaged or bent pins - install new terminals/pins
 - pushed-out pins - install new pins as necessary
- Reconnect the PAM 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 service articles: 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, INSTALL a new PAM. REFER to the appropriate 413-13 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.

AJ25 CHECK FOR CORRECT PCM (POWERTRAIN CONTROL MODULE) OPERATION

- Ignition OFF.
- Disconnect and inspect all the PCM connectors.
- Repair:
 - corrosion (install new connector 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 service articles: 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 (PCM) .
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.

AJ26 CHECK FOR CORRECT TCM (TRANSMISSION CONTROL MODULE) OPERATION

- Ignition OFF.
- Disconnect and inspect the TCM connector.
- Repair:
 - corrosion (install new connector or terminals - clean module pins)
 - damaged or bent pins - install new terminals/pins
 - pushed-out pins - install new pins as necessary
- Reconnect the TCM 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 service articles: 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, INSTALL a new TCM. REFER to: Transmission Control Module (TCM) (307-01B Automatic Transmission, Transfer Case and Power Transfer Unit - 10-Speed Automatic Transmission â€“ 10R140, 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.

PINPOINT TEST AK : NO HS-CAN2 (HIGH-SPEED CONTROLLER AREA NETWORK 2) COMMUNICATION, ALL MODULES ARE NOT RESPONDING

Refer to Wiring Diagrams Cell [14](#) for schematic and connector information.

Normal Operation and Fault Conditions

The HS-CAN2 modules communicate with the diagnostic scan tool through the DLC DIAG 2 circuits. REFER to: Communications Network - System Operation and Component Description (418-00 Module Communications Network, Description and Operation).

Possible Sources

- Fuse
- Wiring, terminals or connectors
- ABS module
- GWM
- HUD module (if equipped)
- IPMA (if equipped)
- IPMB (if equipped)
- PSCM (if equipped)
- SASM (if equipped)
- SCCM
- RCM
- TBM
- TCCM (if equipped)

NOTE: Various modules set network DTCs during this test procedure. Clear DTCs from all modules after completing the diagnostic procedure.

AK1 CHECK THE DLC (DATA LINK CONNECTOR) PINS FOR DAMAGE

- Ignition OFF.
- **NOTE:** If the vehicle exhibits one or more modules becoming inoperative or observable symptoms are present when a scan tool is connected, this condition is likely due to spread ground terminals 4 and 5 at the DLC. An improperly grounded scan tool will corrupt the network message traffic.

Disconnect the diagnostic scan tool cable from the DLC.
- Inspect the DLC pins 3, 4, 5, 11 and 16 for spreading or damage using a flex probe with the dimensions: 1.5 mm width x 0.080 mm thickness, Rotunda probe 300-08039 (violet).

Are any pin fit concerns or damage observed with DLC pins 3, 4, 5, 11 and 16?

Yes	CHECK OASIS for any applicable service articles: 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, INSTALL a new GWM. REFER to: Gateway Module A (GWM) (418-00 Module Communications Network, Removal and Installation).
No	GO to AK2

AK2 CHECK THE GWM (GATEWAY MODULE A) C2431

- Disconnect and inspect the GWM [C2431](#).
- Repair:
 - corrosion (install new connector or terminals - clean module pins)
 - spread, damaged or bent pins - install new terminals/pins
 - pushed-out pins - install new pins as necessary
- Reconnect the GWM [C2431](#). Make sure it seats and latches correctly.
- Operate the system and determine if the concern is still present.

Is the concern still present?

Yes	GO to AK3
No	The system is operating correctly at this time. The concern may have been caused by module or scan tool connections. ADDRESS the root cause of any connector or pin issues.

AK3 CHECK THE DIAG 2 NETWORK CIRCUIT TERMINATION RESISTANCE

- Disconnect the negative battery cable.
- Measure:

DATA LINK CONNECTOR (DLC)

Positive Lead	Measurement / Action	Negative Lead
C251-3	Ω	C251-11

Is the resistance between 108 and 132 ohms?

Yes	GO to AK4
No	INSTALL a new GWM. REFER to: Gateway Module A (GWM) (418-00 Module Communications Network, Removal and Installation).

AK4 CHECK THE HS-CAN2 (HIGH-SPEED CONTROLLER AREA NETWORK 2) TERMINATION RESISTOR (SCCM (STEERING COLUMN CONTROL MODULE)) WITH THE GWM (GATEWAY MODULE A) DISCONNECTED

- Ignition OFF.
- Disconnect the negative battery cable.
- Disconnect GWM [C2431](#).
- Measure:

GATEWAY MODULE

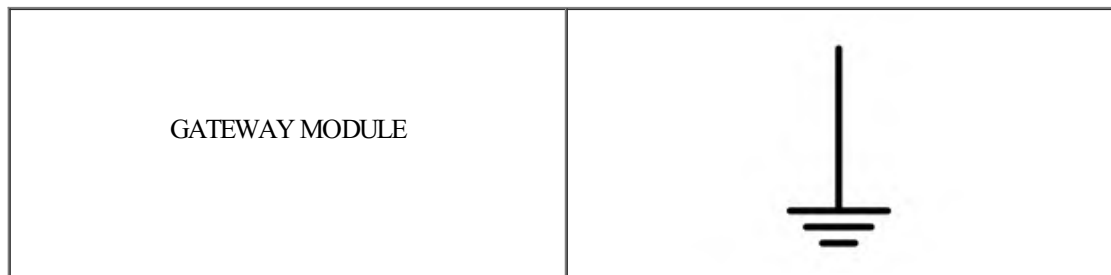
Positive Lead	Measurement / Action	Negative Lead
C2431-18	Ω	C2431-17

Is the resistance between 108 and 132 ohms?

Yes	GO to AK5
No	If the resistance is greater than 132 ohms, GO to AK8 If the resistance is less than 108 ohms, CONNECT all disconnected connectors. GO to AK9

AK5 CHECK THE HS-CAN2 (HIGH-SPEED CONTROLLER AREA NETWORK 2) (+) AND HS-CAN2 (HIGH-SPEED CONTROLLER AREA NETWORK 2) (-) CIRCUITS FOR A SHORT TO GROUND

- Connect the negative battery cable.
- Measure:



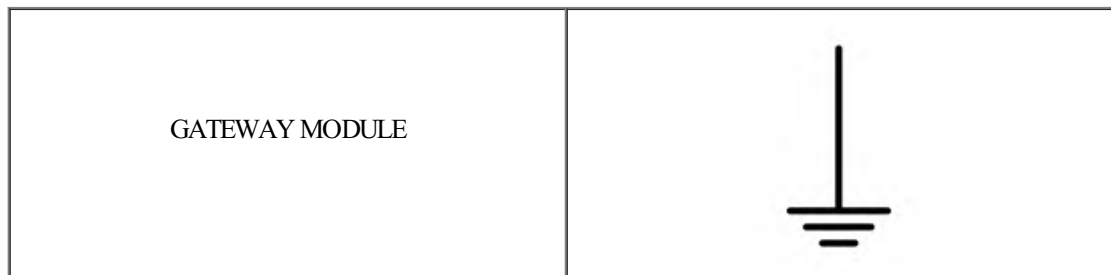
Positive Lead	Measurement / Action	Negative Lead
C2431-18	Ω	Ground
C2431-17	Ω	Ground

Are the resistances greater than 1,000 ohms?

Yes	GO to AK6
No	GO to AK10

AK6 CHECK THE HS-CAN2 (HIGH-SPEED CONTROLLER AREA NETWORK 2) (+) AND HS-CAN2 (HIGH-SPEED CONTROLLER AREA NETWORK 2) (-) CIRCUITS FOR A SHORT TO VOLTAGE

- Ignition ON.
- Measure:



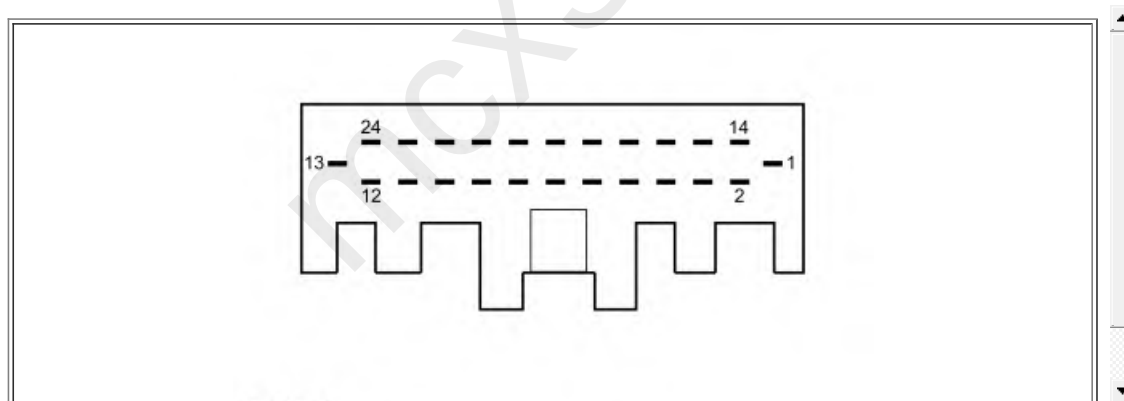
Positive Lead	Measurement / Action	Negative Lead
C2431-18	  	Ground
C2431-17	  	Ground

Is the voltage greater than 6 volts on either circuit?

Yes	REPAIR the circuit in question.
No	GO to AK7

AK7 CHECK THE GWM (GATEWAY MODULE A) TERMINATION RESISTOR (COMPONENT SIDE)

- Measure:



Positive Lead	Measurement / Action	Negative Lead
C2431-18 (Component Side)	Ω	C2431-17 (Component Side)

Is the resistance between 108 ohms and 132 ohms?

Yes	GO to AK28
No	INSTALL a new GWM. REFER to: Gateway Module A (GWM) (418-00 Module Communications Network, Removal and Installation).

AK8 CHECK THE HS-CAN2 (HIGH-SPEED CONTROLLER AREA NETWORK 2) CIRCUITS BETWEEN THE SCCM (STEERING COLUMN CONTROL MODULE) AND THE GWM (GATEWAY MODULE A) FOR AN OPEN

- Disconnect SCCM [C226A](#) .
- Measure:

STEERING COLUMN CONTROL MODULE (SCCM)	GATEWAY MODULE
--	----------------

Positive Lead	Measurement / Action	Negative Lead
C226A-3	Ω	C2431-18
C226A-4	Ω	C2431-17

Are the resistances less than 3 ohms?

Yes	CONNECT all disconnected connectors. GO to AK11
No	REPAIR the circuit in question.

AK9 CHECK THE HS-CAN2 (HIGH-SPEED CONTROLLER AREA NETWORK 2) (+) AND HS-CAN2 (HIGH-SPEED CONTROLLER AREA NETWORK 2) (-) CIRCUITS FOR A SHORT TOGETHER WITH THE MODULES DISCONNECTED

- Disconnect: GWM [C2431](#).
- Measure:

GATEWAY MODULE

Positive Lead	Measurement / Action	Negative Lead
C2431-18	Ω	C2431-17

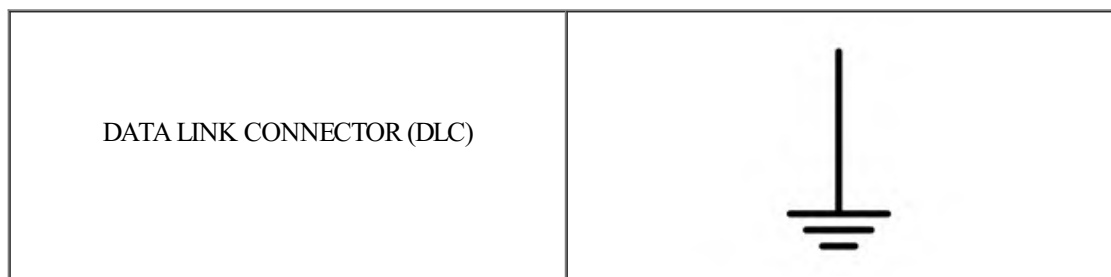
- Disconnect modules one at a time until the resistance is greater than 3 ohms.
 - ABS module [C135](#)
 - HUD module [C2395](#) (if equipped)
 - IPMA [C9224](#) (if equipped)
 - IPMB [C2512B](#) (without 360 camera) or [C2512](#) (with 360 camera) (if equipped)
 - PSCM [C1463](#) (if equipped)
 - RCM [C310B](#)
 - SASM [C2414](#) (if equipped)
 - SCCM [C226A](#)
 - TBM [C2142](#)
 - TCCM [C2371A](#) (if equipped)

Did the resistance change to greater than 3 ohms with one of the modules disconnected?

Yes	For the ABS module, GO to AK27 For the HUD module, GO to AK29 For the IPMA, GO to AK30 For the IPMB, GO to AK32 For the PSCM, GO to AK31 For the RCM, GO to AK33 For the SASM, GO to AK34 For the SCCM, GO to AK35 For the TBM, GO to AK36 For the TCCM, GO to AK37
No	REPAIR the circuits.

AK10 CHECK THE HS-CAN2 (HIGH-SPEED CONTROLLER AREA NETWORK 2) (+) AND HS-CAN2 (HIGH-SPEED CONTROLLER AREA NETWORK 2) (-) CIRCUITS FOR A SHORT TO GROUND WITH THE MODULES DISCONNECTED

- Measure:



Positive Lead	Measurement / Action	Negative Lead
C251-3	Ω	Ground
C251-11	Ω	Ground

- Disconnect modules one at a time until the resistance to ground is greater than 1,000 ohms.
 - ABS module [C135](#)
 - HUD module [C2395](#) (if equipped)
 - IPMA [C9224](#) (if equipped)
 - IPMB [C2512B](#) (without 360 camera) or [C2512](#) (with 360 camera) (if equipped)
 - PSCM [C1463](#) (if equipped)
 - RCM [C310B](#)
 - SASM [C2414](#) (if equipped)
 - SCCM [C226A](#)
 - TBM [C2142](#)
 - TCCM [C2371A](#) (if equipped)

Did the resistance change to greater than 1,000 ohms with one of the modules disconnected?

Yes	For the ABS module, GO to AK27 For the HUD module, GO to AK29 For the IPMA, GO to AK30 For the IPMB, GO to AK32 For the PSCM, GO to AK31 For the RCM, GO to AK33 For the SASM, GO to AK34 For the SCCM, GO to AK35 For the TBM, GO to AK36 For the TCCM, GO to AK37
No	REPAIR the circuit in question. CONNECT all modules.

AK11 CHECK FOR RESTORED COMMUNICATION WITH THE SCCM (STEERING COLUMN CONTROL MODULE) DISCONNECTED

- **NOTE:** When re-running the network test, close the network test application first or the screen display reverts back to the prior network test results.

Disconnect: SCCM [C226A](#).

- Using a diagnostic scan tool, perform the network test.

Do all other modules pass the network test?

Yes	CONNECT the module. GO to Pinpoint Test E
No	CONNECT the module. GO to AK12

AK12 CHECK FOR RESTORED COMMUNICATION WITH THE ABS (ANTI-LOCK BRAKE SYSTEM) MODULE DISABLED

- **NOTE:** When re-running the network test, close the network test application first or the screen display reverts back to the prior network test results.

Disconnect: BJB fuses 4 (60A), 7 (30A) and 49 (10A).

- Using a diagnostic scan tool, perform the network test.

Do all other modules pass the network test?

Yes	INSTALL the removed fuses. GO to Pinpoint Test C
No	INSTALL the removed fuses. GO to AK13

AK13 VERIFY VEHICLE EQUIPMENT - PSCM (POWER STEERING CONTROL MODULE)

- Inspect the vehicle for a PSCM.

Is the vehicle equipped with a PSCM?

Yes	GO to AK14
No	GO to AK15

AK14 CHECK FOR RESTORED NETWORK COMMUNICATION WITH THE PSCM (POWER STEERING CONTROL MODULE) DISABLED

NOTE: When re-running the network test, close the network test application first or the screen display reverts back to the prior network test results.

- Disconnect: BJB fuses 44 (40A) and 69 (10A).
- Using a diagnostic scan tool, perform the network test.

Do all other HS-CAN2 modules pass the network test?

Yes	INSTALL the removed fuses. GO to Pinpoint Test Q
No	INSTALL the removed fuses. GO to AK15

AK15 VERIFY VEHICLE EQUIPMENT - HUD (HEAD UP DISPLAY) MODULE

- Inspect the vehicle for a HUD module.

Is the vehicle equipped with a HUD module?

Yes	GO to AK16
No	GO to AK17

AK16 CHECK FOR RESTORED NETWORK COMMUNICATION WITH THE HUD (HEAD UP DISPLAY) MODULE DISABLED

NOTE: When re-running the network test, close the network test application first or the screen display reverts back to the prior network test results.

- Disconnect: BCM fuses 19 (5A) and 21 (5A).
- Using a diagnostic scan tool, perform the network test.

Do all other HS-CAN2 modules pass the network test?

Yes	INSTALL the removed fuses. GO to Pinpoint Test W
No	INSTALL the removed fuses. GO to AK17

AK17 VERIFY VEHICLE EQUIPMENT - 4-WHEEL DRIVE OR ELECTRONIC LOCKING DIFFERENTIAL

- Verify the vehicle is equipped with 4-wheel drive or electronic locking differential.

Is the vehicle equipped with 4-wheel drive or electronic locking differential?

Yes	GO to AK18
No	GO to AK19

AK18 CHECK FOR RESTORED NETWORK COMMUNICATION WITH THE TCCM (TRANSFER CASE CONTROL MODULE) DISABLED

NOTE: When re-running the network test, close the network test application first or the screen display reverts back to the prior network test results.

- Disconnect: BJB fuses 52 (10A), 13 (25A) and 11 (25A).
- Using a diagnostic scan tool, perform the network test.

Do all other HS-CAN2 modules pass the network test?

Yes	INSTALL the removed fuses. GO to Pinpoint Test AE
No	INSTALL the removed fuses. GO to AK19

AK19 VERIFY VEHICLE EQUIPMENT - LANE DEPARTURE OR TRAILER BACKUP ASSIST

- Verify the vehicle is equipped with lane departure or trailer backup assist.

Is the vehicle equipped with lane departure or trailer backup assist?

Yes	GO to AK20
No	GO to AK22

AK20 CHECK FOR RESTORED NETWORK COMMUNICATION WITH THE IPMA (IMAGE PROCESSING MODULE A) AND IPMB (IMAGE PROCESSING MODULE B) DISABLED

NOTE: When re-running the network test, close the network test application first or the screen display reverts back to the prior network test results.

- Disconnect: BCM fuse 36 (15A).
- Using a diagnostic scan tool, perform the network test.

Do all other HS-CAN2 modules pass the network test?

Yes	INSTALL the removed fuse. If equipped with an IPMB, GO to AK21 If not equipped with an IPMB, GO to Pinpoint Test K
No	GO to AK22

AK21 CHECK FOR RESTORED NETWORK COMMUNICATION WITH THE IPMB (IMAGE PROCESSING MODULE B) DISCONNECTED

NOTE: When re-running the network test, close the network test application first or the screen display reverts back to the prior network test results.

- Disconnect: IPMB [C2512B](#) (without 360 camera) or [C2512](#) (with 360 camera).
- Using a diagnostic scan tool, perform the network test.

Do all other HS-CAN2 modules pass the network test?

Yes	CONNECT the module. GO to Pinpoint Test L
No	CONNECT the module. GO to Pinpoint Test K

AK22 CHECK FOR RESTORED NETWORK COMMUNICATION WITH THE RCM (RESTRAINTS CONTROL MODULE) DISABLED

NOTE: When re-running the network test, close the network test application first or the screen display reverts back to the prior network test results.

- Disconnect: RCM [C310B](#).
- Using a diagnostic scan tool, perform the network test.

Do all other modules pass the network test?

Yes	CONNECT the module. GO to Pinpoint Test D
No	CONNECT the module. GO to AK23

AK23 VERIFY VEHICLE EQUIPMENT - ADAPTIVE STEERING

- Verify the vehicle is equipped with adaptive steering.

Is the vehicle equipped with adaptive steering?

Yes	GO to AK24
No	GO to AK25

AK24 CHECK FOR RESTORED NETWORK COMMUNICATION WITH THE SASM (STEERING ANGLE SENSOR MODULE) DISABLED

NOTE: When re-running the network test, close the network test application first or the screen display reverts back to the prior network test results.

- Disconnect: BJB fuse 37 (40A) and BCM fuse 17 (7.5A).
- Using a diagnostic scan tool, perform the network test.

Do all other HS-CAN2 modules pass the network test?

Yes	INSTALL the removed fuses. GO to Pinpoint Test F
No	INSTALL the removed fuses. GO to AK25

AK25 VERIFY VEHICLE EQUIPMENT - TBM (TRAILER BRAKE CONTROL MODULE)

- Verify the vehicle is equipped with a TBM.

Is the vehicle equipped with a TBM?

Yes	GO to AK26
No	The HS-CAN2 tests within specification. The concern may have been caused by module connections. CONNECT any disconnected connectors or fuses. Test for normal operation. If the concern is still present, ADDRESS the root cause of any connector or pin issues.

AK26 CHECK FOR RESTORED NETWORK COMMUNICATION WITH THE TBM (TRAILER BRAKE CONTROL MODULE) DISABLED

NOTE: When re-running the network test, close the network test application first or the screen display reverts back to the prior network test results.

- Disconnect: BJB fuse 8 (40A).
- Using a diagnostic scan tool, perform the network test.

Do all other HS-CAN2 modules pass the network test?

Yes	INSTALL the removed fuse. GO to Pinpoint Test AC
No	INSTALL the removed fuse. The HS-CAN2 tests within specification. The concern may have been caused by module connections. CONNECT any disconnected connectors or fuses. Test for normal operation. If the concern is still present, ADDRESS the root cause of any connector or pin issues.

AK27 CHECK FOR CORRECT ABS (ANTI-LOCK BRAKE SYSTEM) MODULE OPERATION

- Ignition OFF.
- Disconnect and inspect the ABS module connector.
- Repair:
 - corrosion (install new connector 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 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 service articles: 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 (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.

AK28 CHECK FOR CORRECT GWM (GATEWAY MODULE A) OPERATION

- Ignition OFF.
- Disconnect and inspect the GWM connector.
- Repair:
 - corrosion (install new connector or terminals - clean module pins)
 - damaged or bent pins - install new terminals/pins
 - pushed-out pins - install new pins as necessary
- Reconnect the GWM 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 service articles: 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, INSTALL a new GWM. REFER to: Gateway Module A (GWM) (418-00 Module Communications Network, 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.

AK29 CHECK FOR CORRECT HUD (HEAD UP DISPLAY) OPERATION

- Ignition OFF.
- Disconnect and inspect the HUD module connector.
- Repair:
 - corrosion (install new connector or terminals - clean module pins)
 - damaged or bent pins - install new terminals/pins
 - pushed-out pins - install new pins as necessary
- Reconnect the HUD module 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 service articles: 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, INSTALL a new HUD module. REFER to: Head Up Display (HUD) Module (419-03C Collision Warning and Collision Avoidance 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.

AK30 CHECK FOR CORRECT IPMA (IMAGE PROCESSING MODULE A) OPERATION

- Ignition OFF.
- Disconnect and inspect the IPMA connector.
- Repair:
 - corrosion (install new connector or terminals - clean module pins)
 - damaged or bent pins - install new terminals/pins
 - pushed-out pins - install new pins as necessary
- Reconnect the IPMA 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 service articles: 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, INSTALL a new IPMA module. REFER to: Interior Rear View Mirror (501-09 Rear View Mirrors, 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.

AK31 CHECK FOR CORRECT PSCM (POWER STEERING CONTROL MODULE) OPERATION

- Ignition OFF.
- Disconnect and inspect the PSCM connector and related in-line connectors.
- Repair:
 - corrosion (install new connector or terminals - clean module pins)
 - damaged or bent pins - install new terminals/pins
 - pushed-out pins - install new pins as necessary
- Reconnect the PSCM connector and 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 service articles: 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 (EPAS) .
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.

AK32 CHECK FOR CORRECT IPMB (IMAGE PROCESSING MODULE B) OPERATION

- Ignition OFF.
- Disconnect and inspect all the IPMB connectors.
- Repair:
 - corrosion (install new connector or terminals - clean module pins)
 - damaged or bent pins - install new terminals/pins
 - pushed-out pins - install new pins as necessary
- Reconnect the IPMB 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 service articles: 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, INSTALL a new IPMB. REFER to: Image Processing Module B (IPMB) (413-13B Parking Aid - Vehicles With: Parking Aid Camera, 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.

AK33 CHECK FOR CORRECT RCM (RESTRAINTS CONTROL MODULE) OPERATION

- Ignition OFF.
- Disconnect and inspect all the RCM connectors and related in-line connectors.
- Repair:
 - corrosion (install new connector or terminals - clean module pins)
 - damaged or bent pins - install new terminals/pins
 - pushed-out pins - install new pins as necessary
- Reconnect the RCM connectors and 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 service articles: 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 (RCM).
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.

AK34 CHECK FOR CORRECT SASM (STEERING ANGLE SENSOR MODULE) OPERATION

- Ignition OFF.
- Disconnect and inspect the SASM connector.
- Repair:
 - corrosion (install new connector or terminals - clean module pins)
 - damaged or bent pins - install new terminals/pins
 - pushed-out pins - install new pins as necessary
- Reconnect the SASM 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 service articles: 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, INSTALL a new SASM. REFER to: Clockspring - Vehicles With: Adaptive Steering (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.

AK35 CHECK FOR CORRECT SCCM (STEERING COLUMN CONTROL MODULE) OPERATION

- Ignition OFF.
- Disconnect and inspect the SCCM connector.
- Repair:
 - corrosion (install new connector or terminals - clean module pins)
 - damaged or bent pins - install new terminals/pins
 - pushed-out pins - install new pins as necessary
- Reconnect the SCCM 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 service articles: 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, INSTALL a new SCCM. Without adaptive steering, REFER to: Steering Column Control Module (SCCM) (211-05 Steering Wheel and Column Electrical Components, Removal and Installation). With adaptive steering, REFER to: Steering Column Control Module (SCCM) - Vehicles With: Adaptive Steering (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.

AK36 CHECK FOR CORRECT TBM (TRAILER BRAKE CONTROL MODULE) OPERATION

- Ignition OFF.
- Disconnect and inspect the TBM connector.
- Repair:
 - corrosion (install new connector or terminals - clean module pins)
 - damaged or bent pins - install new terminals/pins
 - pushed-out pins - install new pins as necessary
- Reconnect the TBM 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 service articles: 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, INSTALL a new TBM. REFER to: Trailer Brake Control Module (TBM) (206-10 Auxiliary Brake 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.

AK37 CHECK FOR CORRECT TCCM (TRANSFER CASE CONTROL MODULE) OPERATION

- Ignition OFF.
- Disconnect and inspect all the TCCM connectors.
- Repair:
 - corrosion (install new connector or terminals - clean module pins)
 - damaged or bent pins - install new terminals/pins
 - pushed-out pins - install new pins as necessary
- Reconnect the TCCM 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 service articles: 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, INSTALL a new TCCM. REFER to: Transfer Case Control Module (TCCM) (308-07A Four-Wheel Drive Systems, 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.

PINPOINT TEST AL : NO HS-CAN3 (HIGH-SPEED CONTROLLER AREA NETWORK 3) COMMUNICATION, ALL MODULES ARE NOT RESPONDING

Refer to Wiring Diagrams Cell [14](#) for schematic and connector information.

Normal Operation and Fault Conditions

Diagnostic messages sent/received between the diagnostic scan tool and the HS-CAN3 modules are accessed through the DIAG 2 circuits on the DLC. REFER to: Communications Network - System Operation and Component Description (418-00 Module Communications Network, Description and Operation).

Possible Sources

- Fuse
- Wiring, terminals or connectors
- ACM
- APIM (if equipped)
- DSP (if equipped)
- GWM
- IPC
- WACM (if equipped)

NOTE: Various modules set network DTCs during this test procedure. Clear DTCs from all modules after completing the diagnostic procedure.

AL1 CHECK THE DLC (DATA LINK CONNECTOR) PINS FOR DAMAGE

- Ignition OFF.
 - **NOTE:** *If the vehicle exhibits one or more modules becoming inoperative or observable symptoms are present when a scan tool is connected, this condition is likely due to spread ground terminals 4 and 5 at the DLC. An improperly grounded scan tool will corrupt the network message traffic.*
- Disconnect the diagnostic scan tool cable from the DLC.
- Inspect the DLC pins 3, 4, 5, 11 and 16 for spreading or damage using a flex probe with the dimensions: 1.5 mm width x 0.080 mm thickness, Rotunda probe 300-08039 (violet).

Are any pin fit concerns or damage observed with DLC pins 3, 4, 5, 11 and 16?

Yes	CHECK OASIS for any applicable service articles: 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, INSTALL a new GWM. REFER to: Gateway Module A (GWM) (418-00 Module Communications Network, Removal and Installation).
No	GO to AL2

AL2 CHECK THE GWM (GATEWAY MODULE A) C2431

- Disconnect and inspect the GWM [C2431](#).
- Repair:
 - corrosion (install new connector or terminals - clean module pins)
 - spread, damaged or bent pins - install new terminals/pins
 - pushed-out pins - install new pins as necessary
- Reconnect the GWM [C2431](#). Make sure it seats and latches correctly.
- Operate the system and determine if the concern is still present.

Is the concern still present?

Yes	GO to AL3
No	The system is operating correctly at this time. The concern may have been caused by module or scan tool connections. ADDRESS the root cause of any connector or pin issues.

AL3 CHECK FOR HS-CAN2 (HIGH-SPEED CONTROLLER AREA NETWORK 2) COMMUNICATION

- Using a diagnostic scan tool, perform a network test.

Does the RCM pass the network test?

Yes	GO to AL4
No	GO to Pinpoint Test AK

AL4 CHECK THE HS-CAN3 (HIGH-SPEED CONTROLLER AREA NETWORK 3) (IPC (INSTRUMENT PANEL CLUSTER)) TERMINATION RESISTANCE

- Disconnect: GWM [C2431](#)
- Measure:

GATEWAY MODULE

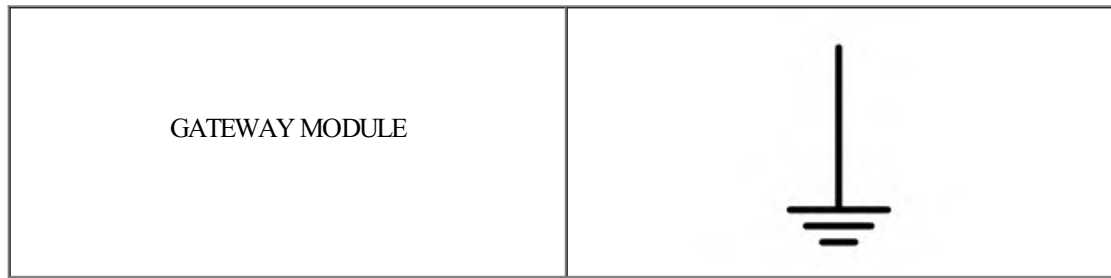
Positive Lead	Measurement / Action	Negative Lead
C2431-16	Ω	C2431-15

Is the resistance between 108 and 132 ohms?

Yes	GO to AL5
No	If the resistance is greater than 132 ohms, GO to AL8 If the resistance is less than 108 ohms, GO to AL9

AL5 CHECK THE HS-CAN3 (HIGH-SPEED CONTROLLER AREA NETWORK 3) (+) AND HS-CAN3 (HIGH-SPEED CONTROLLER AREA NETWORK 3) (-) CIRCUITS FOR A SHORT TO GROUND

- Measure:



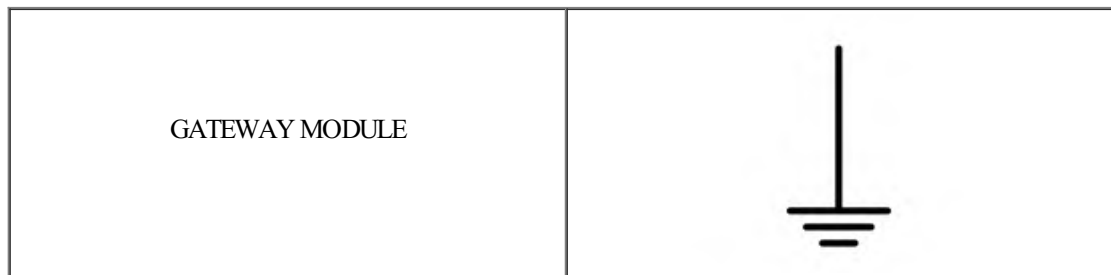
Positive Lead	Measurement / Action	Negative Lead
C2431-16	Ω	Ground
C2431-15	Ω	Ground

Are the resistances greater than 1,000 ohms?

Yes	GO to AL6
No	GO to AL10

AL6 CHECK THE HS-CAN3 (HIGH-SPEED CONTROLLER AREA NETWORK 3) (+) AND HS-CAN3 (HIGH-SPEED CONTROLLER AREA NETWORK 3) (-) CIRCUITS FOR A SHORT TO VOLTAGE

- Ignition ON.
- Measure:



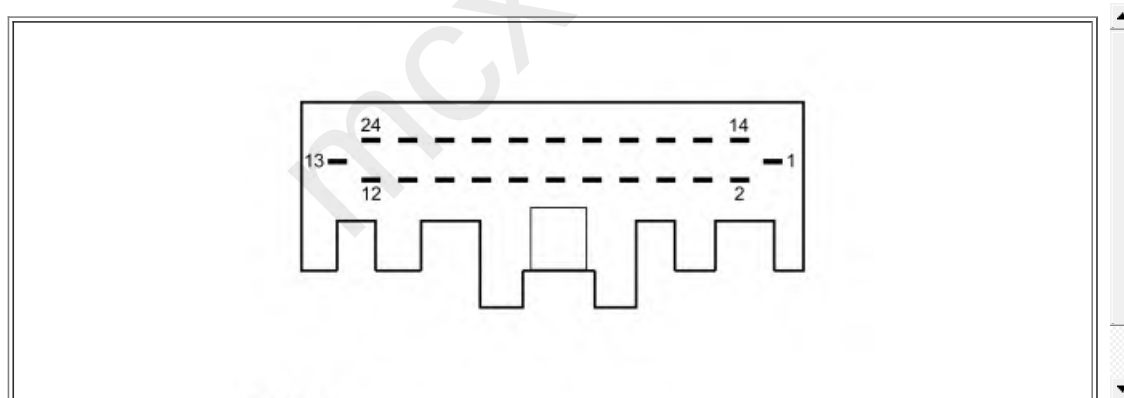
Positive Lead	Measurement / Action	Negative Lead
C2431-16		Ground
C2431-15		Ground

Are the voltages greater than 6 volts?

Yes	REPAIR the circuit in question.
No	GO to AL7

AL7 CHECK THE GWM (GATEWAY MODULE A) HS-CAN3 (HIGH-SPEED CONTROLLER AREA NETWORK 3) TERMINATION RESISTOR (COMPONENT SIDE)

- Measure:



Positive Lead	Measurement / Action	Negative Lead
C2431-16 (Component Side)	Ω	C2431-15 (Component Side)

Is the resistance between 108 ohms and 132 ohms?

Yes	GO to AL24
No	INSTALL a new GWM. REFER to: Gateway Module A (GWM) (418-00 Module Communications Network, Removal and Installation).

AL8 CHECK THE HS-CAN3 (HIGH-SPEED CONTROLLER AREA NETWORK 3) CIRCUITS BETWEEN THE IPC (INSTRUMENT PANEL CLUSTER) AND THE GWM (GATEWAY MODULE A) FOR AN OPEN

- Disconnect: IPC [C220](#).
- Measure:

INSTRUMENT PANEL CLUSTER (IPC)	GATEWAY MODULE
--------------------------------	----------------

Positive Lead	Measurement / Action	Negative Lead
C220-12	Ω	C2431-16
C220-13	Ω	C2431-15

Are the resistances less than 3 ohms?

Yes	CONNECT all disconnected connectors. GO to AL11
No	REPAIR the circuit in question.

AL9 CHECK THE HS-CAN3 (HIGH-SPEED CONTROLLER AREA NETWORK 3) (+) AND HS-CAN3 (HIGH-SPEED CONTROLLER AREA NETWORK 3) (-) CIRCUITS FOR A SHORT TOGETHER WITH THE MODULES DISCONNECTED

- Measure:

GATEWAY MODULE

Positive Lead	Measurement / Action	Negative Lead
C2431-16	Ω	C2431-15

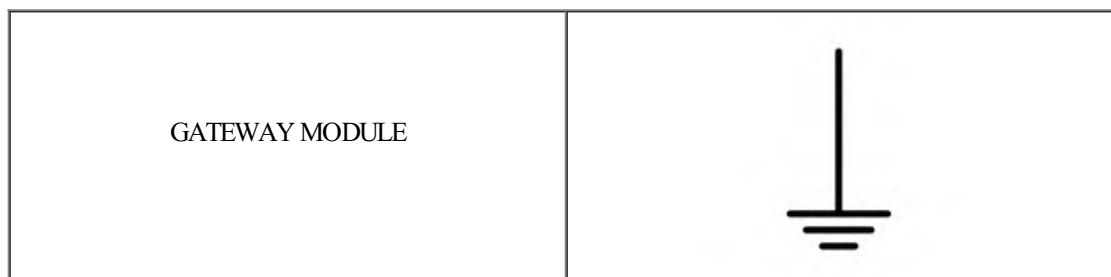
- Disconnect modules one at a time until the resistance is greater than 3 ohms.
 - APIM [C2383A](#) (if equipped)
 - ACM [C240A](#)
 - DSP [C3154A](#) (if equipped)
 - IPC [C220](#)
 - WACM [C390](#) (if equipped)

Did the resistance change to greater than 3 ohms with one of the modules disconnected?

Yes	For the APIM, GO to AL19 For the ACM, GO to AL20 For the DSP, GO to AL21 For the IPC, GO to AL22 For the WACM, GO to AL23
No	REPAIR the circuits in question.

AL10 CHECK THE HS-CAN3 (HIGH-SPEED CONTROLLER AREA NETWORK 3) (+) AND HS-CAN3 (HIGH-SPEED CONTROLLER AREA NETWORK 3) (-) CIRCUITS FOR A SHORT TO GROUND WITH THE MODULES DISCONNECTED

- Measure:



Positive Lead	Measurement / Action	Negative Lead
C2431-16	Ω	Ground
C2431-15	Ω	Ground

- Disconnect modules one at a time until the resistance to ground is greater than 1,000 ohms.
 - APIM [C2383A](#) (if equipped)
 - ACM [C240A](#)
 - DSP [C3154A](#) (if equipped)
 - IPC [C220](#)
 - WACM [C390](#) (if equipped)

Did the resistance change to greater than 1,000 ohms with one of the modules disconnected?

Yes	For the APIM, GO to AL19 For the ACM, GO to AL20 For the DSP, GO to AL21 For the IPC, GO to AL22 For the WACM, GO to AL23
No	REPAIR the circuit in question. CONNECT all modules.

AL11 CHECK FOR RESTORED COMMUNICATION WITH THE IPC (INSTRUMENT PANEL CLUSTER) DISCONNECTED

NOTE: When re-running the network test, close the network test application first or the screen display reverts back to the prior network test results.

- Disconnect: IPC [C220](#).
- Using a diagnostic scan tool, perform the network test.

Do all other HS-CAN3 modules pass the network test?

Yes	CONNECT the module. GO to Pinpoint Test G
No	CONNECT the module. GO to AL12

AL12 CHECK FOR RESTORED COMMUNICATION WITH THE ACM (AUDIO FRONT CONTROL MODULE) DISABLED

NOTE: When re-running the network test, close the network test application first or the screen display reverts back to the prior network test results.

- Disconnect: BCM fuse 32 (20A).
- Using a diagnostic scan tool, perform the network test.

Do all other HS-CAN3 modules pass the network test?

Yes	INSTALL the removed fuse. GO to Pinpoint Test J
No	INSTALL the removed fuse. GO to AL13

AL13 VERIFY VEHICLE EQUIPMENT - APIM (SYNC MODULE)

- Verify the vehicle is equipped with an APIM.

Is the vehicle equipped with an APIM?

Yes	GO to AL14
No	GO to AL15

AL14 CHECK FOR RESTORED COMMUNICATION WITH THE APIM (SYNC MODULE) DISABLED

NOTE: When re-running the network test, close the network test application first or the screen display reverts back to the prior network test results.

- Disconnect: BCM fuse 15 (15A).
- Using a diagnostic scan tool, perform the network test.

Do all other HS-CAN3 modules pass the network test?

Yes	INSTALL the removed fuse. GO to Pinpoint Test M
No	INSTALL the removed fuse. GO to AL15

AL15 VERIFY VEHICLE EQUIPMENT - DSP (AUDIO DIGITAL SIGNAL PROCESSING MODULE)

- Verify the vehicle is equipped with a DSP.

Is the vehicle equipped with a DSP?

Yes	GO to AL16
No	GO to AL17

AL16 CHECK FOR RESTORED COMMUNICATION WITH THE DSP (AUDIO DIGITAL SIGNAL PROCESSING MODULE) DISABLED

NOTE: When re-running the network test, close the network test application first or the screen display reverts back to the prior network test results.

- Disconnect: BCM fuse 28 (30A).
- Using a diagnostic scan tool, perform the network test.

Do all other HS-CAN3 modules pass the network test?

Yes	INSTALL the removed fuse. GO to Pinpoint Test N
No	INSTALL the removed fuse. GO to AL17

AL17 VERIFY VEHICLE EQUIPMENT - WACM (WIRELESS ACCESSORY CHARGING MODULE)

- Inspect the vehicle for a WACM.

Is the vehicle equipped with a WACM?

Yes	GO to AL18
No	The HS-CAN3 tests within specification. The concern may have been caused by module connections. CONNECT any disconnected connectors or fuses. Test for normal operation. If the concern is still present, ADDRESS the root cause of any connector or pin issues.

AL18 CHECK FOR RESTORED COMMUNICATION WITH THE WACM (WIRELESS ACCESSORY CHARGING MODULE) DISABLED

NOTE: When re-running the network test, close the network test application first or the screen display reverts back to the prior network test results.

- Disconnect: BCM fuse 3 (7.5A).
- Using a diagnostic scan tool, perform the network test.

Do all other HS-CAN3 modules pass the network test?

Yes	INSTALL the removed fuse. GO to Pinpoint Test AH
No	INSTALL the removed fuse. The HS-CAN3 tests within specification. The concern may have been caused by module connections. CONNECT any disconnected connectors or fuses. Test for normal operation. If the concern is still present, ADDRESS the root cause of any connector or pin issues.

AL19 CHECK THE APIM (SYNC MODULE) FOR CORRECT OPERATION

- Ignition OFF.
- Disconnect and inspect the APIM connector.
- Repair:
 - corrosion (install new connector or terminals - clean module pins)
 - damaged or bent pins - install new terminals/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 service articles: 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.

AL20 CHECK THE ACM (AUDIO FRONT CONTROL MODULE) FOR CORRECT OPERATION

- Ignition OFF.
- Disconnect and inspect all the ACM connectors.
- Repair:
 - corrosion (install new connector 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 service articles: 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, INSTALL a new ACM. REFER to: Audio Front Control Module (ACM) (415-00 Information and Entertainment System - General Information, 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.

AL21 CHECK THE DSP (AUDIO DIGITAL SIGNAL PROCESSING MODULE) FOR CORRECT OPERATION

- Ignition OFF.
- Disconnect and inspect all the DSP connectors.
- Repair:
 - corrosion (install new connector or terminals - clean module pins)
 - damaged or bent pins - install new terminals/pins
 - pushed-out pins - install new pins as necessary
- Reconnect the DSP 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 service articles: 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, INSTALL a new DSP. REFER to: Audio Digital Signal Processing (DSP) Module (415-00 Information and Entertainment System - General Information, 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.

AL22 CHECK THE IPC (INSTRUMENT PANEL CLUSTER) FOR CORRECT OPERATION

- Ignition OFF.
- Disconnect and inspect the IPC connector.
- Repair:
 - corrosion (install new connector 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 service articles: 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 (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.

AL23 CHECK THE WACM (WIRELESS ACCESSORY CHARGING MODULE) FOR CORRECT OPERATION

- Ignition OFF.
- Disconnect and inspect the WACM connector.
- Repair:
 - corrosion (install new connector or terminals - clean module pins)
 - damaged or bent pins - install new terminals/pins
 - pushed-out pins - install new pins as necessary
- Reconnect the WACM 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 service articles: 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, INSTALL a new WACM. REFER to: Wireless Accessory Charging Module (WACM) (414-06 Accessory Charging, 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.

AL24 CHECK THE GWM (GATEWAY MODULE A) FOR CORRECT OPERATION

- Ignition OFF.
- Disconnect and inspect the GWM connector.
- Repair:
 - corrosion (install new connector or terminals - clean module pins)
 - damaged or bent pins - install new terminals/pins
 - pushed-out pins - install new pins as necessary
- Reconnect the GWM 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 service articles: 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, INSTALL a new GWM. REFER to: Gateway Module A (GWM) (418-00 Module Communications Network, 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.

☐ **PINPOINT TEST AM : NO HS-CAN4 (HIGH-SPEED CONTROLLER AREA NETWORK 4) COMMUNICATION, ALL MODULES ARE NOT RESPONDING**

Refer to Wiring Diagrams Cell [14](#) for schematic and connector information.

Normal Operation and Fault Conditions

Diagnostic messages sent/received between the diagnostic scan tool and the HS-CAN4 modules are accessed through the Diag 2 circuits on the DLC. REFER to: Communications Network - System Operation and Component Description (418-00 Module Communications Network, Description and Operation).

Possible Sources

- Fuse
- Wiring, terminals or connectors
- APIM (if equipped)
- GWM
- TCU (if equipped)

NOTE: Various modules set network DTCs during this test procedure. Clear DTCs from all modules after completing the diagnostic procedure.

AM1 CHECK THE DLC (DATA LINK CONNECTOR) PINS FOR DAMAGE

- Ignition OFF.
- **NOTE:** If the vehicle exhibits one or more modules becoming inoperative or observable symptoms are present when a scan tool is connected, this condition is likely due to spread ground terminals 4 and 5 at the DLC. An improperly grounded scan tool will corrupt the network message traffic.

Disconnect the diagnostic scan tool cable from the DLC.
- Inspect the DLC pins 3, 4, 5, 11 and 16 for spreading or damage using a flex probe with the dimensions: 1.5mm width x .080mm thickness, Rotunda probe 300-08039 (violet).

Are any pin fit concerns or damage observed with DLC pins 3, 4, 5, 11 and 16?

Yes	CHECK OASIS for any applicable service articles: 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, INSTALL a new GWM. REFER to: Gateway Module A (GWM) (418-00 Module Communications Network, Removal and Installation).
No	GO to AM2

AM2 CHECK THE GWM (GATEWAY MODULE A) C2431

- Disconnect and inspect the GWM [C2431](#).
- Repair:
 - corrosion (install new connector or terminals - clean module pins)
 - spread, damaged or bent pins - install new terminals/pins
 - pushed-out pins - install new pins as necessary
- Reconnect the GWM [C2431](#). Make sure it seats and latches correctly.
- Operate the system and determine if the concern is still present.

Is the concern still present?

Yes	GO to AM3
No	The system is operating correctly at this time. The concern may have been caused by module or scan tool connections. ADDRESS the root cause of any connector or pin issues.

AM3 CHECK FOR HS-CAN2 (HIGH-SPEED CONTROLLER AREA NETWORK 2) COMMUNICATION

- Using a diagnostic scan tool, perform a network test.

Does the RCM pass the network test?

Yes	GO to AM4
No	GO to Pinpoint Test AK

AM4 CHECK THE HS-CAN4 (HIGH-SPEED CONTROLLER AREA NETWORK 4) TERMINATION RESISTANCE

- Disconnect GWM [C2431](#) .
- Measure:

GATEWAY MODULE

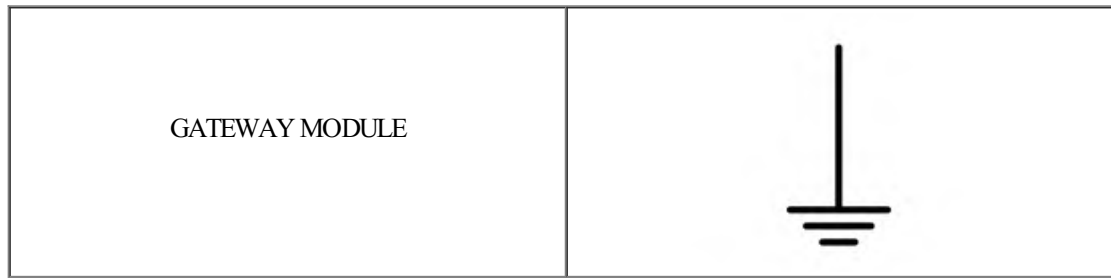
Positive Lead	Measurement / Action	Negative Lead
C2431-7	Ω	C2431-6

Is the resistance between 108 and 132 ohms?

Yes	GO to AM5
No	If the resistance is greater than 132 ohms, GO to AM8 If the resistance is less than 108 ohms, GO to AM9

AM5 CHECK THE HS-CAN4 (HIGH-SPEED CONTROLLER AREA NETWORK 4) (+) AND HS-CAN4 (HIGH-SPEED CONTROLLER AREA NETWORK 4) (-) CIRCUITS FOR A SHORT TO GROUND

- Measure:



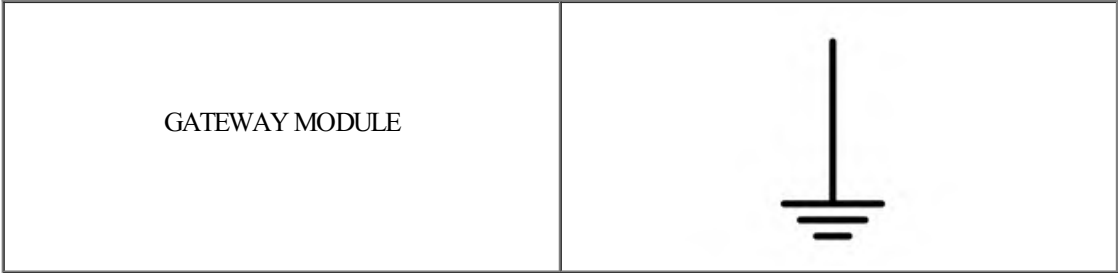
Positive Lead	Measurement / Action	Negative Lead
C2431-7	Ω	Ground
C2431-6	Ω	Ground

Are the resistances greater than 1,000 ohms?

Yes	GO to AM6
No	GO to AM10

AM6 CHECK THE HS-CAN4 (HIGH-SPEED CONTROLLER AREA NETWORK 4) (+) AND HS-CAN4 (HIGH-SPEED CONTROLLER AREA NETWORK 4) (-) CIRCUITS FOR A SHORT TO VOLTAGE

- Ignition ON.
- Measure:



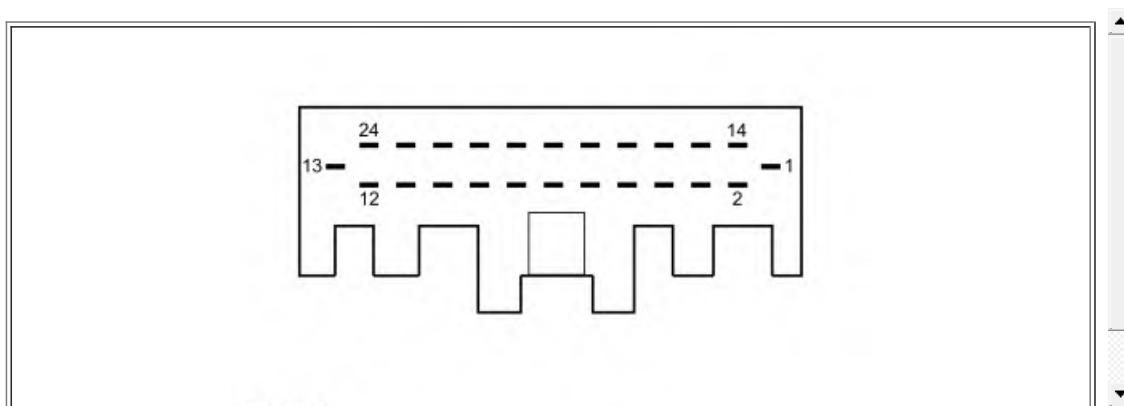
Positive Lead	Measurement / Action	Negative Lead
C2431-7		Ground
C2431-6		Ground

Are the voltages greater than 6 volts?

Yes	REPAIR the circuit in question.
No	GO to AM7

AM7 CHECK THE GWM (GATEWAY MODULE A) HS-CAN4 (HIGH-SPEED CONTROLLER AREA NETWORK 4) TERMINATION RESISTOR (COMPONENT SIDE)

- Measure:



Positive Lead	Measurement / Action	Negative Lead
C2431-7 (Component Side)	Ω	C2431-6 (Component Side)

Is the resistance between 108 ohms and 132 ohms?

Yes	GO to AM14
No	INSTALL a new GWM. REFER to: Gateway Module A (GWM) (418-00 Module Communications Network, Removal and Installation).

AM8 CHECK THE HS-CAN4 (HIGH-SPEED CONTROLLER AREA NETWORK 4) CIRCUITS BETWEEN THE TCU (TELEMATIC CONTROL UNIT MODULE) AND THE GWM (GATEWAY MODULE A) FOR AN OPEN

- Disconnect: TCU [C4803A](#).
- Measure:

	GATEWAY MODULE
--	----------------

Positive Lead	Measurement / Action	Negative Lead
C4803A-8	Ω	C2431-7
C4803A-16	Ω	C2431-6

Are the resistances less than 3 ohms?

Yes	CONNECT all disconnected connectors. GO to AM11
No	REPAIR the circuit in question.

AM9 CHECK THE HS-CAN4 (HIGH-SPEED CONTROLLER AREA NETWORK 4) (+) AND HS-CAN4 (HIGH-SPEED CONTROLLER AREA NETWORK 4) (-) CIRCUITS FOR A SHORT TOGETHER WITH THE MODULES DISCONNECTED

- Measure:

GATEWAY MODULE

Positive Lead	Measurement / Action	Negative Lead
C2431-7	Ω	C2431-6

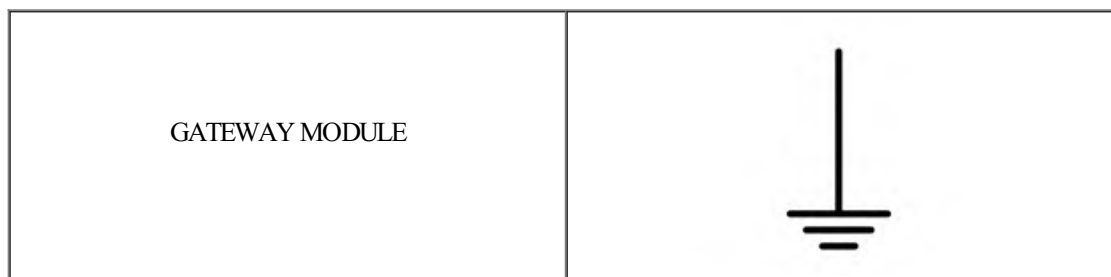
- Disconnect modules one at a time until the resistance is greater than 3 ohms.
 - APIM [C2383A](#) (if equipped)
 - TCU [C4803A](#) (if equipped)

Did the resistance change to greater than 3 ohms with one of the modules disconnected?

Yes	For the APIM, GO to AM13 For the TCU, GO to AM15
No	REPAIR the circuits in question.

AM10 CHECK THE HS-CAN4 (HIGH-SPEED CONTROLLER AREA NETWORK 4) (+) AND HS-CAN4 (HIGH-SPEED CONTROLLER AREA NETWORK 4) (-) CIRCUITS FOR A SHORT TO GROUND WITH THE MODULES DISCONNECTED

- Measure:



Positive Lead	Measurement / Action	Negative Lead
C2431-7	Ω	Ground
C2431-6	Ω	Ground

- Disconnect modules one at a time until the resistance to ground is greater than 1,000 ohms.
 - APIM [C2383A](#) (if equipped)
 - TCU [C4803A](#) (if equipped)

Did the resistance change to greater than 1,000 ohms with one of the modules disconnected?

Yes	For the APIM, GO to AM13 For the TCU, GO to AM15
No	REPAIR the circuit in question. CONNECT all modules.

AM11 CHECK FOR RESTORED COMMUNICATION WITH THE TCU (TELEMATIC CONTROL UNIT MODULE) DISABLED

NOTE: When re-running the network test, close the network test application first or the screen display reverts back to the prior network test results.

- Disconnect: BCM fuse 8 (5A).
- Using a diagnostic scan tool, perform the network test.

Do all other HS-CAN4 modules pass the network test?

Yes	INSTALL the removed fuse. GO to Pinpoint Test O
No	INSTALL the removed fuse. GO to AM12

AM12 CHECK FOR RESTORED COMMUNICATION WITH THE APIM (SYNC MODULE) DISABLED

NOTE: When re-running the network test, close the network test application first or the screen display reverts back to the prior network test results.

- Disconnect: BCM fuse 15 (15A).
- Using a diagnostic scan tool, perform the network test.

Do all other HS-CAN4 modules pass the network test?

Yes	INSTALL the removed fuse. GO to Pinpoint Test M
No	INSTALL the removed fuse. The HS-CAN4 tests within specification. The concern may have been caused by module connections. CONNECT any disconnected connectors or fuses. Test for normal operation. If the concern is still present, ADDRESS the root cause of any connector or pin issues.

AM13 CHECK THE APIM (SYNC MODULE) FOR CORRECT OPERATION

- Ignition OFF.
- Disconnect and inspect the APIM connector.
- Repair:
 - corrosion (install new connector or terminals - clean module pins)
 - damaged or bent pins - install new terminals/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 service articles: 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.

AM14 CHECK THE GWM (GATEWAY MODULE A) FOR CORRECT OPERATION

- Ignition OFF.
- Disconnect and inspect the GWM connector.
- Repair:
 - corrosion (install new connector or terminals - clean module pins)
 - damaged or bent pins - install new terminals/pins
 - pushed-out pins - install new pins as necessary
- Reconnect the GWM 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 service articles: 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, INSTALL a new GWM. REFER to: Gateway Module A (GWM) (418-00 Module Communications Network, 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.

AM15 CHECK THE TCU (TELEMATIC CONTROL UNIT MODULE) FOR CORRECT OPERATION

- Ignition OFF.
- Disconnect and inspect the TCU connector.
- Repair:
 - corrosion (install new connector or terminals - clean module pins)
 - damaged or bent pins - install new terminals/pins
 - pushed-out pins - install new pins as necessary
- Reconnect the TCU 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 service articles: 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, INSTALL a new TCU. REFER to: Telematics Control Unit (TCU) Module (415-00 Information and Entertainment System - General Information, 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.

☐ **PINPOINT TEST AN : NO MS-CAN (MEDIUM SPEED-CONTROLLER AREA NETWORK) COMMUNICATION, ALL MODULES ARE NOT RESPONDING**

Refer to Wiring Diagrams Cell [14](#) for schematic and connector information.

Normal Operation and Fault Conditions

Diagnostic messages sent/received between the diagnostic scan tool and the MS-CAN modules are accessed through the DIAG 2 circuits on the DLC. REFER to: Communications Network - System Operation and Component Description (418-00 Module Communications Network, Description and Operation).

Possible Sources

- Fuse
- Wiring, terminals or connectors
- DDM
- DSM (if equipped)
- FCIM
- GWM
- HSWM (if equipped)
- PDM
- RBM (if equipped)
- SCMG (if equipped)
- SCMH (if equipped)
- RTM
- SODL (if equipped)
- SODR (if equipped)
- TRM (if equipped)

NOTE: Various modules set network DTCs during this test procedure. Clear DTCs from all modules after completing the diagnostic procedure.

AN1 CHECK THE DLC (DATA LINK CONNECTOR) PINS FOR DAMAGE

- Ignition OFF.
- **NOTE:** If the vehicle exhibits one or more modules becoming inoperative or observable symptoms are present when a scan tool is connected, this condition is likely due to spread ground terminals 4 and 5 at the DLC. An improperly grounded scan tool will corrupt the network message traffic.

Disconnect the diagnostic scan tool cable from the DLC.
- Inspect the DLC pins 3, 4, 5, 11 and 16 for spreading or damage using a flex probe with the dimensions: 1.5 mm width x 0.080 mm thickness, Rotunda probe 300-08039 (violet).

Are any pin fit concerns or damage observed with DLC pins 3, 4, 5, 11 and 16?

Yes	CHECK OASIS for any applicable service articles: 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, INSTALL a new GWM. REFER to: Gateway Module A (GWM) (418-00 Module Communications Network, Removal and Installation).
No	GO to AN2

AN2 CHECK THE GWM (GATEWAY MODULE A) C2431

- Disconnect and inspect the GWM [C2431](#).
- Repair:
 - corrosion (install new connector or terminals - clean module pins)
 - spread, damaged or bent pins - install new terminals/pins
 - pushed-out pins - install new pins as necessary
- Reconnect the GWM [C2431](#). Make sure it seats and latches correctly.
- Operate the system and determine if the concern is still present.

Is the concern still present?

Yes	GO to AN3
No	The system is operating correctly at this time. The concern may have been caused by module or scan tool connections. ADDRESS the root cause of any connector or pin issues.

AN3 CHECK FOR HS-CAN2 (HIGH-SPEED CONTROLLER AREA NETWORK 2) COMMUNICATION

- Using a diagnostic scan tool, perform a network test.

Does the RCM pass the network test?

Yes	GO to AN4
No	GO to Pinpoint Test AK

AN4 CHECK THE MS-CAN (MEDIUM SPEED-CONTROLLER AREA NETWORK) (FCIM (FRONT CONTROLS INTERFACE MODULE)) TERMINATION RESISTANCE

- Disconnect the negative battery cable.
- Disconnect: GWM [C2431](#).
- Measure:

GATEWAY MODULE

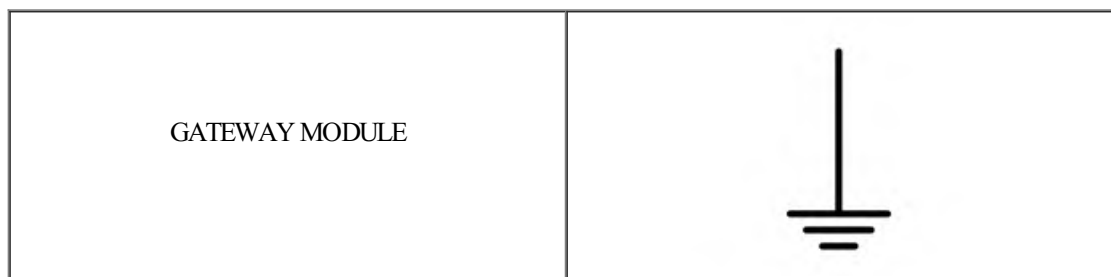
Positive Lead	Measurement / Action	Negative Lead
C2431-23	Ω	C2431-22

Is the resistance between 108 and 132 ohms?

Yes	GO to AN5
No	If the resistance is greater than 132 ohms, GO to AN8 If the resistance is less than 108 ohms, GO to AN9

AN5 CHECK THE MS-CAN (MEDIUM SPEED-CONTROLLER AREA NETWORK) (+) AND MS-CAN (MEDIUM SPEED-CONTROLLER AREA NETWORK) (-) CIRCUITS FOR A SHORT TO GROUND

- Measure:



Positive Lead	Measurement / Action	Negative Lead
C2431-23	Ω	Ground
C2431-22	Ω	Ground

Are the resistances greater than 1,000 ohms?

Yes	GO to AN6
No	GO to AN10

AN6 CHECK THE MS-CAN (MEDIUM SPEED-CONTROLLER AREA NETWORK) (+) AND MS-CAN (MEDIUM SPEED-CONTROLLER AREA NETWORK) (-) CIRCUITS FOR A SHORT TO VOLTAGE

- Ignition ON.
- Measure:



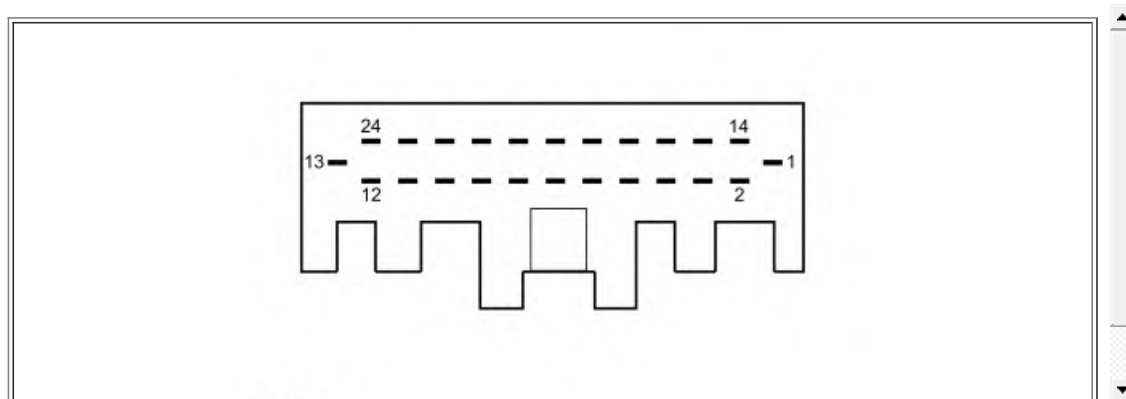
Positive Lead	Measurement / Action	Negative Lead
C2431-23		Ground
C2431-22		Ground

Are the voltages greater than 6 volts?

Yes	REPAIR the circuit in question.
No	GO to AN7

AN7 CHECK THE GWM (GATEWAY MODULE A) MS-CAN (MEDIUM SPEED-CONTROLLER AREA NETWORK) TERMINATION RESISTOR (COMPONENT SIDE)

- Measure:



Positive Lead	Measurement / Action	Negative Lead
C2431-23 (Component Side)	Ω	C2431-22 (Component Side)

Is the resistance between 108 ohms and 132 ohms?

Yes	GO to AN32
No	INSTALL a new GWM. REFER to: Gateway Module A (GWM) (418-00 Module Communications Network, Removal and Installation).

AN8 CHECK THE MS-CAN (MEDIUM SPEED-CONTROLLER AREA NETWORK) CIRCUITS BETWEEN THE FCIM (FRONT CONTROLS INTERFACE MODULE) AND THE GWM (GATEWAY MODULE A) FOR AN OPEN

- Disconnect: FCIM [C2402A](#).
- Measure:

FRONT CONTROLS INTERFACE MODULE (FCIM)	GATEWAY MODULE
---	----------------

Positive Lead	Measurement / Action	Negative Lead
C2402A-17	Ω	C2431-23
C2402A-18	Ω	C2431-22

Are the resistances less than 3 ohms?

Yes	CONNECT all disconnected connectors. GO to AN11
No	REPAIR the circuit in question.

AN9 CHECK THE MS-CAN (MEDIUM SPEED-CONTROLLER AREA NETWORK) (+) AND MS-CAN (MEDIUM SPEED-CONTROLLER AREA NETWORK) (-) CIRCUITS FOR A SHORT TOGETHER WITH MODULES DISCONNECTED

- Measure:

GATEWAY MODULE

Positive Lead	Measurement / Action	Negative Lead
C2431-23	Ω	C2431-22

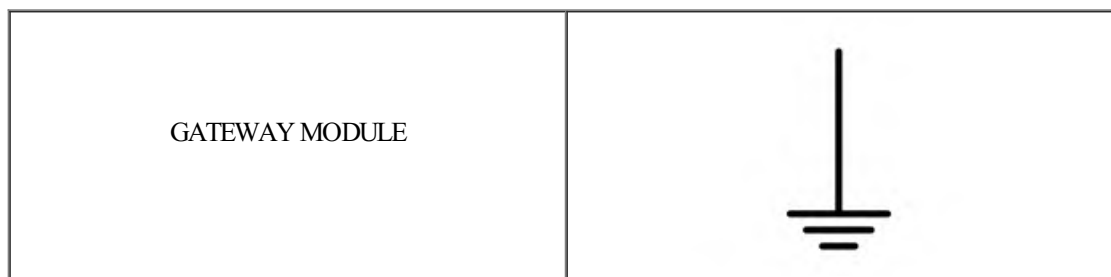
- Disconnect modules one at a time until the resistance is greater than 3 ohms.
 - DDM [C501A](#)
 - DSM [C341D](#) (if equipped)
 - SCMG [C3385](#) (if equipped)
 - FCIM [C2402A](#)
 - HSWM [C2406](#) (if equipped)
 - PDM [C652A](#)
 - SCMH [C3386](#) (if equipped)
 - RBM [C3313B](#) (if equipped)
 - RTM [C9026](#)
 - SODL [C4483](#) (with LED rear lamps) or [C451](#) (without LED rear amps) (if equipped)
 - SODR [C4484](#) (with LED rear lamps) or [C461](#) (without LED rear lamps) (if equipped)
 - TRM [C2496B](#) (if equipped)

Did the resistance change to greater than 3 ohms with one of the modules disconnected?

Yes	For the DDM, GO to AN33 For the DSM, GO to AN35 For the SCMG, GO to AN36 For the FCIM, GO to AN31 For the HSWM, GO to AN34 For the PDM, GO to AN37 For the SCMH, GO to AN38 For the RBM, GO to AN39 For the RTM, GO to AN40 For the SODL, GO to AN41 For the SODR, GO to AN42 For the TRM, GO to AN43
No	REPAIR the circuits.

AN10 CHECK THE MS-CAN (MEDIUM SPEED-CONTROLLER AREA NETWORK) (+) AND MS-CAN (MEDIUM SPEED-CONTROLLER AREA NETWORK) (-) CIRCUITS FOR A SHORT TO GROUND WITH THE MODULES DISCONNECTED

- Measure



Positive Lead	Measurement / Action	Negative Lead
C2431-23	Ω	Ground
C2431-22	Ω	Ground

- Disconnect modules one at a time until the resistance to ground is greater than 1,000 ohms.
 - DDM [C501A](#)
 - DSM [C341D](#) (if equipped)
 - SCMG [C3385](#) (if equipped)
 - FCIM [C2402A](#)
 - HSWM [C2406](#) (if equipped)
 - PDM [C652A](#)
 - SCMH [C3386](#) (if equipped)
 - RBM [C3313B](#) (if equipped)
 - RTM [C9026](#)
 - SODL [C4483](#) (with LED rear lamps) or [C451](#) (without LED rear amps) (if equipped)
 - SODR [C4484](#) (with LED rear lamps) or [C461](#) (without LED rear lamps) (if equipped)
 - TRM [C2496B](#) (if equipped)

Did the resistance change to greater than 1,000 ohms with one of the modules disconnected?

Yes	For the DDM, GO to AN33 For the DSM, GO to AN35 For the SCMG, GO to AN36 For the FCIM, GO to AN31 For the HSWM, GO to AN34 For the PDM, GO to AN37 For the SCMH, GO to AN38 For the RBM, GO to AN39 For the RTM, GO to AN40 For the SODL, GO to AN41 For the SODR, GO to AN42 For the TRM, GO to AN43
No	REPAIR the circuit in question.

AN11 CHECK FOR RESTORED COMMUNICATION WITH THE FCIM (FRONT CONTROLS INTERFACE MODULE) DISABLED

NOTE: When re-running the network test, close the Network Test application first or the screen display reverts back to the prior run Network Test results.

- Disconnect: BCM fuse 12 (7.5A).
- Using a diagnostic scan tool, perform the network test.

Do all other MS-CAN modules pass the network test?

Yes	INSTALL the removed fuse. GO to Pinpoint Test I
No	INSTALL the removed fuse. GO to AN12

AN12 VERIFY VEHICLE EQUIPMENT - HSWM (HEATED STEERING WHEEL MODULE)

- Verify the vehicle is equipped with a HSWM.

Is the vehicle equipped with a HSWM?

Yes	GO to AN13
No	GO to AN14

AN13 CHECK FOR RESTORED NETWORK COMMUNICATION WITH THE HSWM (HEATED STEERING WHEEL MODULE) DISABLED

- Disconnect: BCM fuse 37 (20A).
- Using a diagnostic scan tool, perform the network test.

Do all other MS-CAN modules pass the network test?

Yes	INSTALL the removed fuse. GO to Pinpoint Test Y
No	INSTALL the removed fuse. GO to AN14

AN14 VERIFY VEHICLE EQUIPMENT - DDM (DRIVER DOOR MODULE)

- Inspect the vehicle for a DDM.

Is the vehicle equipped with a DDM?

Yes	GO to AN15
No	GO to AN16

AN15 CHECK FOR RESTORED NETWORK COMMUNICATION WITH THE DDM (DRIVER DOOR MODULE) DISABLED

NOTE: When re-running the network test, close the network test application first or the screen display reverts back to the prior network test results.

- Disconnect: BCM fuse 23 (30A).
- Using a diagnostic scan tool, perform a network test.

Do all other MS-CAN modules pass the network test?

Yes	INSTALL the removed fuse. GO to Pinpoint Test S
No	INSTALL the removed fuse. GO to AN16

AN16 VERIFY VEHICLE EQUIPMENT - PDM (PASSENGER DOOR MODULE)

- Inspect the vehicle for a PDM.

Is the vehicle equipped with a PDM?

Yes	GO to AN17
No	GO to AN18

AN17 CHECK FOR RESTORED NETWORK COMMUNICATION WITH THE PDM (PASSENGER DOOR MODULE) DISABLED

NOTE: When re-running the network test, close the network test application first or the screen display reverts back to the prior network test results.

- Disconnect: BCM fuse 26 (30A).
- Using a diagnostic scan tool, perform a network test.

Do all other MS-CAN modules pass the network test?

Yes	INSTALL the removed fuse. GO to Pinpoint Test T
No	INSTALL the removed fuse. GO to AN18

AN18 CHECK FOR RESTORED COMMUNICATION WITH THE RTM (RADIO TRANSCEIVER MODULE) DISABLED

NOTE: When re-running the network test, close the network test application first or the screen display reverts back to the prior network test results.

- Disconnect: BCM fuse 31 (10A).
- Using a diagnostic scan tool, perform the network test.

Do all other MS-CAN modules pass the network test?

Yes	INSTALL the removed fuse. GO to Pinpoint Test P
No	INSTALL the removed fuse. GO to AN19

AN19 VERIFY VEHICLE EQUIPMENT - MEMORY FRONT DRIVER SEAT

- Verify the vehicle is equipped with a memory front driver seat.

Is the vehicle equipped with a memory front driver seat?

Yes	GO to AN20
No	GO to AN21

AN20 CHECK FOR RESTORED NETWORK COMMUNICATION WITH THE DSM (DRIVER FRONT SEAT MODULE) DISABLED

NOTE: When re-running the network test, close the network test application first or the screen display reverts back to the prior network test results.

- Disconnect: BJB fuses 9 (30A) and 41 (30A).
- Using a diagnostic scan tool, perform the network test.

Do all other MS-CAN modules pass the network test?

Yes	INSTALL the removed fuses. GO to Pinpoint Test R
No	INSTALL the removed fuses. GO to AN21

AN21 VERIFY VEHICLE EQUIPMENT - FRONT MULTI-CONTOUR SEATS

- Verify the vehicle is equipped with front multi-contour seats.

Is the vehicle equipped with front multi-contour seats?

Yes	GO to AN22
No	GO to AN24

AN22 CHECK FOR RESTORED NETWORK COMMUNICATION WITH THE SCMG (DRIVER MULTI-CONTOUR SEAT MODULE) AND SCMH (PASSENGER MULTI-CONTOUR SEAT MODULE) DISABLED

NOTE: When re-running the network test, close the network test application first or the screen display reverts back to the prior network test results.

- Disconnect: BJB fuse 64 (15A).
- Using a diagnostic scan tool, perform the network test.

Do all other MS-CAN modules pass the network test?

Yes	INSTALL the removed fuse. GO to AN23
No	INSTALL the removed fuse. GO to AN24

AN23 CHECK FOR RESTORED NETWORK COMMUNICATION WITH THE SCMH (PASSENGER MULTI-CONTOUR SEAT MODULE) DISCONNECTED

NOTE: When re-running the network test, close the network test application first or the screen display reverts back to the prior network test results.

- Disconnect: SCMH [C3386](#).
- Using a diagnostic scan tool, perform the network test.

Do all other MS-CAN modules pass the network test?

Yes	CONNECT the module. GO to Pinpoint Test AA
No	CONNECT the module. GO to Pinpoint Test Z

AN24 VERIFY VEHICLE EQUIPMENT - SODL (SIDE OBSTACLE DETECTION CONTROL MODULE LH) AND SODR (SIDE OBSTACLE DETECTION CONTROL MODULE RH)

- Verify the vehicle is equipped with a SODL and SODR.

Is the vehicle equipped with a SODL and SODR?

Yes	GO to AN25
No	GO to AN27

AN25 CHECK FOR RESTORED NETWORK COMMUNICATION WITH THE SODL (SIDE OBSTACLE DETECTION CONTROL MODULE LH) AND SODR (SIDE OBSTACLE DETECTION CONTROL MODULE RH) DISABLED

NOTE: When re-running the network test, close the network test application first or the screen display reverts back to the prior network test results.

- Disconnect: BJB fuse 51 (10A).
- Using a diagnostic scan tool, perform the network test.

Do all other MS-CAN modules pass the network test?

Yes	INSTALL the removed fuse. GO to AN26
No	INSTALL the removed fuse. GO to AN27

AN26 CHECK FOR RESTORED NETWORK COMMUNICATION WITH THE SODR (SIDE OBSTACLE DETECTION CONTROL MODULE RH) DISCONNECTED

NOTE: When re-running the network test, close the network test application first or the screen display reverts back to the prior network test results.

- Disconnect: SODR [C4484](#) (with LED rear lamps) or [C461](#) (without LED rear lamps) (if equipped).
- Using a diagnostic scan tool, perform the network test.

Do all other MS-CAN modules pass the network test?

Yes	CONNECT the module. GO to Pinpoint Test V
No	CONNECT the module. GO to Pinpoint Test U

AN27 VERIFY VEHICLE EQUIPMENT - TRM (TRAILER MODULE)

- Verify the vehicle is equipped with a TRM.

Is the vehicle equipped with a TRM?

Yes	GO to AN28
No	GO to AN29

AN28 CHECK FOR RESTORED NETWORK COMMUNICATION WITH THE TRM (TRAILER MODULE) DISABLED

NOTE: When re-running the network test, close the network test application first or the screen display reverts back to the prior network test results.

- Disconnect: BJB fuses 42 (40A) and 10 (30A).
- Using a diagnostic scan tool, perform the network test.

Do all other MS-CAN modules pass the network test?

Yes	INSTALL the removed fuses. GO to Pinpoint Test AB
No	INSTALL the removed fuses. GO to AN29

AN29 VERIFY VEHICLE EQUIPMENT - RBM (RUNNING BOARD CONTROL MODULE)

- Verify the vehicle is equipped with a RBM.

Is the vehicle equipped with a RBM?

Yes	GO to AN30
No	The MS-CAN tests within specification. The concern may have been caused by module connections. CONNECT any disconnected connectors or fuses. Test for normal operation. If the concern is still present, ADDRESS the root cause of any connector or pin issues.

AN30 CHECK FOR RESTORED NETWORK COMMUNICATION WITH THE RBM (RUNNING BOARD CONTROL MODULE) DISABLED

NOTE: When re-running the network test, close the network test application first or the screen display reverts back to the prior network test results.

- Disconnect: BJB fuse 6 (30A).
- Using a diagnostic scan tool, perform the network test.

Do all other MS-CAN modules pass the network test?

Yes	INSTALL the removed fuse. GO to Pinpoint Test AD
No	INSTALL the removed fuse. The MS-CAN tests within specification. The concern may have been caused by module connections. CONNECT any disconnected connectors or fuses. Test for normal operation. If the concern is still present, ADDRESS the root cause of any connector or pin issues.

AN31 CHECK THE FCIM (FRONT CONTROLS INTERFACE MODULE) FOR CORRECT OPERATION

- Ignition OFF.
- Disconnect and inspect all the FCIM connectors.
- Repair:
 - corrosion (install new connector or terminals - clean module pins)
 - damaged or bent pins - install new terminals/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 service articles: 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 (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.

AN32 CHECK THE GWM (GATEWAY MODULE A) FOR CORRECT OPERATION

- Ignition OFF.
- Disconnect and inspect the GWM connector.
- Repair:
 - corrosion (install new connector or terminals - clean module pins)
 - damaged or bent pins - install new terminals/pins
 - pushed-out pins - install new pins as necessary
- Reconnect the GWM 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 service articles: 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, INSTALL a new GWM. REFER to: Gateway Module A (GWM) (418-00 Module Communications Network, 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.

AN33 CHECK THE DDM (DRIVER DOOR MODULE) FOR CORRECT OPERATION

- Ignition OFF.
- Disconnect and inspect all the DDM connectors.
- Repair:
 - corrosion (install new connector or terminals - clean module pins)
 - damaged or bent pins - install new terminals/pins
 - pushed-out pins - install new pins as necessary
- Reconnect the DDM 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 service articles: 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, INSTALL a new DDM. REFER to: Driver Door Module (DDM) (419-10 Multifunction Electronic Modules, 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.

AN34 CHECK THE HSWM (HEATED STEERING WHEEL MODULE) FOR CORRECT OPERATION

- Ignition OFF.
- Disconnect and inspect the HSWM connector.
- Repair:
 - corrosion (install new connector or terminals - clean module pins)
 - damaged or bent pins - install new terminals/pins
 - pushed-out pins - install new pins as necessary
- Reconnect the HSWM 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 service articles: 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, INSTALL a new HSWM. REFER to: Heated Steering Wheel Module (HSWM) (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.

AN35 CHECK THE DSM (DRIVER FRONT SEAT MODULE) FOR CORRECT OPERATION

- Ignition OFF.
- Disconnect and inspect all the DSM connectors.
- Repair:
 - corrosion (install new connector or terminals - clean module pins)
 - damaged or bent pins - install new terminals/pins
 - pushed-out pins - install new pins as necessary
- Reconnect the DSM 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 service articles: 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, INSTALL a new DSM. REFER to: Driver Front Seat Module (DSM) (501-10A Front Seats, 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.

AN36 CHECK THE SCMG (DRIVER MULTI-CONTOUR SEAT MODULE) FOR CORRECT OPERATION

- Ignition OFF.
- Disconnect and inspect the SCMG connector.
- Repair:
 - corrosion (install new connector or terminals - clean module pins)
 - damaged or bent pins - install new terminals/pins
 - pushed-out pins - install new pins as necessary
- Reconnect the SCMG 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 service articles: 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, INSTALL a new SCMG. REFER to: Driver Multi-Contour Seat Module [SCMG] (501-10A Front Seats, 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.

AN37 CHECK THE PDM (PASSENGER DOOR MODULE) FOR CORRECT OPERATION

- Ignition OFF.
- Disconnect and inspect the PDM connector.
- Repair:
 - corrosion (install new connector or terminals - clean module pins)
 - damaged or bent pins - install new terminals/pins
 - pushed-out pins - install new pins as necessary
- Reconnect the PDM 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 service articles: 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, INSTALL a new PDM. REFER to: Passenger Door Module (PDM) (419-10 Multifunction Electronic Modules, 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.

AN38 CHECK THE SCMH (PASSENGER MULTI-CONTOUR SEAT MODULE) FOR CORRECT OPERATION

- Ignition OFF.
- Disconnect and inspect the SCMH connector.
- Repair:
 - corrosion (install new connector or terminals - clean module pins)
 - damaged or bent pins - install new terminals/pins
 - pushed-out pins - install new pins as necessary
- Reconnect the SCMH 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 service articles: 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, INSTALL a new SCMH. REFER to: Driver Multi-Contour Seat Module [SCMG] (501-10A Front Seats, 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.

AN39 CHECK THE RBM (RUNNING BOARD CONTROL MODULE) FOR CORRECT OPERATION

- Ignition OFF.
- Disconnect and inspect all the RBM connectors.
- Repair:
 - corrosion (install new connector or terminals - clean module pins)
 - damaged or bent pins - install new terminals/pins
 - pushed-out pins - install new pins as necessary
- Reconnect the RBM 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 service articles: 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, INSTALL a new RBM. REFER to: Running Board Control Module (RBM) (501-08 Exterior Trim and Ornamentation, 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.

AN40 CHECK THE RTM (RADIO TRANSCEIVER MODULE) FOR CORRECT OPERATION

- Ignition OFF.
- Disconnect and inspect the RTM connector.
- Repair:
 - corrosion (install new connector or terminals - clean module pins)
 - damaged or bent pins - install new terminals/pins
 - pushed-out pins - install new pins as necessary
- Reconnect the RTM 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 service articles: 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, INSTALL a new RTM. REFER to: Radio Transceiver Module (RTM) (419-10 Multifunction Electronic Modules, 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.

AN41 CHECK THE SODL (SIDE OBSTACLE DETECTION CONTROL MODULE LH) FOR CORRECT OPERATION

- Ignition OFF.
- Disconnect and inspect the SODL connector.
- Repair:
 - corrosion (install new connector 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 service articles: 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, 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.

AN42 CHECK THE SODR (SIDE OBSTACLE DETECTION CONTROL MODULE RH) FOR CORRECT OPERATION

- Ignition OFF.
- Disconnect and inspect the SODR connector.
- Repair:
 - corrosion (install new connector or terminals - clean module pins)
 - damaged or bent pins - install new terminals/pins
 - pushed-out pins - install new pins as necessary
- Reconnect the SODR 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 service articles: 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, 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.

AN43 CHECK THE TRM (TRAILER MODULE) FOR CORRECT OPERATION

- Ignition OFF.
- Disconnect and inspect all the TRM connectors.
- Repair:
 - corrosion (install new connector or terminals - clean module pins)
 - damaged or bent pins - install new terminals/pins
 - pushed-out pins - install new pins as necessary
- Reconnect the TRM 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 service articles: 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, INSTALL a new TRM. REFER to: Trailer Module (TRM) (417-01 Exterior Lighting, 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.

PINPOINT TEST AO : NO MEDIUM SPEED CONTROLLER AREA NETWORK 2 (MS-CAN2) COMMUNICATION, ALL MODULES ARE NOT RESPONDING

Refer to Wiring Diagrams Cell [14](#) for schematic and connector information.

Normal Operation and Fault Conditions

Diagnostic messages sent/received between the diagnostic scan tool and the Medium Speed Controller Area Network 2 (MS-CAN2) modules are accessed through the DIAG 2 circuits on the DLC. REFER to: Communications Network - System Operation and Component Description (418-00 Module Communications Network, Description and Operation).

Possible Sources

- Fuse
- Wiring, terminals or connectors
- GWM
- GFM (Trailer TPMS)

NOTE: Various modules set network DTCs during this test procedure. Clear DTCs from all modules after completing the diagnostic procedure.

AO1 CHECK THE DLC (DATA LINK CONNECTOR) PINS FOR DAMAGE

- Ignition OFF.
 - **NOTE:** *If the vehicle exhibits one or more modules becoming inoperative or observable symptoms are present when a scan tool is connected, this condition is likely due to spread ground terminals 4 and 5 at the DLC. An improperly grounded scan tool will corrupt the network message traffic.*
- Disconnect the diagnostic scan tool cable from the DLC.
- Inspect the DLC pins 3, 4, 5, 11 and 16 for spreading or damage using a flex probe with the dimensions: 1.5 mm width x 0.080 mm thickness, Rotunda probe 300-08039 (violet).

Are any pin fit concerns or damage observed with DLC pins 3, 4, 5, 11 and 16?

Yes	CHECK OASIS for any applicable service articles: 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, INSTALL a new GWM. REFER to: Gateway Module A (GWM) (418-00 Module Communications Network, Removal and Installation).
No	GO to AO2

AO2 CHECK THE GWM (GATEWAY MODULE A) C2431

- Disconnect and inspect the GWM [C2431](#).
- Repair:
 - corrosion (install new connector or terminals - clean module pins)
 - spread, damaged or bent pins - install new terminals/pins
 - pushed-out pins - install new pins as necessary
- Reconnect the GWM [C2431](#). Make sure it seats and latches correctly.
- Operate the system and determine if the concern is still present.

Is the concern still present?

Yes	GO to AO3
No	The system is operating correctly at this time. The concern may have been caused by module or scan tool connections. ADDRESS the root cause of any connector or pin issues.

AO3 CHECK FOR HS-CAN2 (HIGH-SPEED CONTROLLER AREA NETWORK 2) COMMUNICATION

- Using a diagnostic scan tool, perform a network test.

Does the RCM pass the network test?

Yes	GO to AO4
No	GO to Pinpoint Test AK

AO4 CHECK THE MEDIUM SPEED CONTROLLER AREA NETWORK 2 (MS-CAN2) TERMINATION RESISTANCE

- Disconnect: GWM [C2431](#).
- Measure:

GATEWAY MODULE

Positive Lead	Measurement / Action	Negative Lead
C2431-21	Ω	C2431-9

Is the resistance between 108 and 132 ohms?

Yes	GO to AO5
No	If the resistance is greater than 132 ohms, GO to AO8 If the resistance is less than 108 ohms, GO to AO9

AO5 CHECK THE MEDIUM SPEED CONTROLLER AREA NETWORK 2 (MS-CAN2) (+) AND MEDIUM SPEED CONTROLLER AREA NETWORK 2 (MS-CAN2) (-) CIRCUITS FOR A SHORT TO GROUND

- Measure:

GATEWAY MODULE	
----------------	--

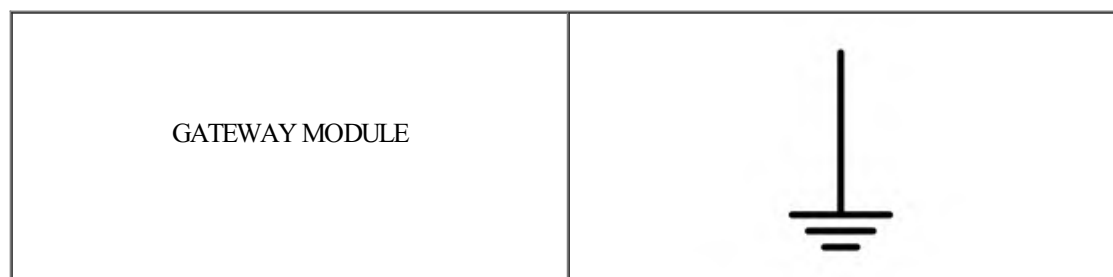
Positive Lead	Measurement / Action	Negative Lead
C2431-21	Ω	Ground
C2431-9	Ω	Ground

Are the resistances greater than 1,000 ohms?

Yes	GO to AO6
No	GO to AO10

AO6 CHECK THE MEDIUM SPEED CONTROLLER AREA NETWORK 2 (MS-CAN2) (+) AND MEDIUM SPEED CONTROLLER AREA NETWORK 2 (MS-CAN2) (-) CIRCUITS FOR A SHORT TO VOLTAGE

- Connect the negative battery cable.
- Ignition ON.
- Measure:



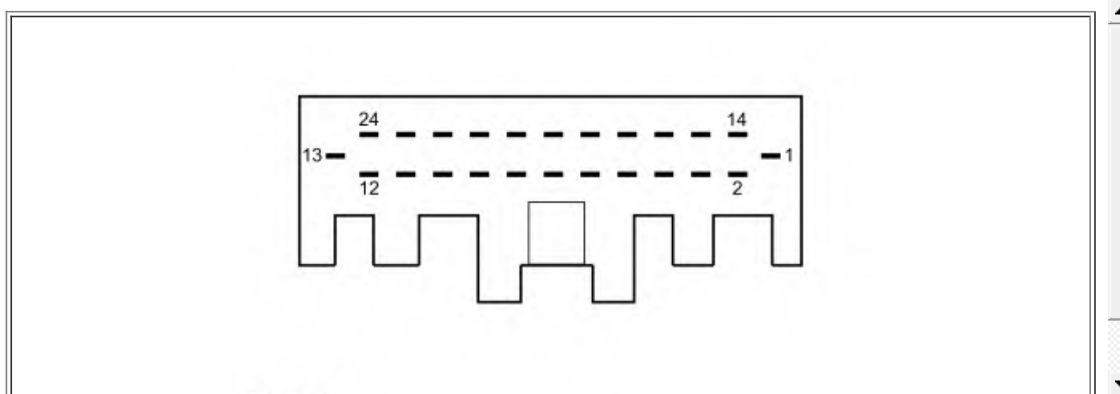
Positive Lead	Measurement / Action	Negative Lead
C2431-21		Ground
C2431-9		Ground

Are the voltages greater than 6 volts?

Yes	REPAIR the circuit in question.
No	GO to AO7

AO7 CHECK THE MEDIUM SPEED CONTROLLER AREA NETWORK 2 (MS-CAN2) TERMINATION RESISTOR, COMPONENT SIDE

- Disconnect: GWM [C2431](#).
- Measure:



Positive Lead	Measurement / Action	Negative Lead
C2431-21 (Component Side)	Ω	C2431-9 (Component Side)

Is the resistance between 108 and 132 ohms?

Yes	GO to AO13
No	INSTALL a new GWM. REFER to: Gateway Module A (GWM) (418-00 Module Communications Network, Removal and Installation).

AO8 CHECK THE MEDIUM SPEED CONTROLLER AREA NETWORK 2 (MS-CAN2) CIRCUITS BETWEEN THE GFM (GENERIC FUNCTION MODULE) AND THE GWM (GATEWAY MODULE A) FOR AN OPEN

- Disconnect GFM [C4321](#) .
- Measure:

Positive Lead	Measurement / Action	Negative Lead
C4321-3	Ω	C2431-21
C4321-4	Ω	C2431-9

Are the resistances less than 3 ohms?

Yes	CONNECT all disconnected connectors. GO to AO11
No	REPAIR the circuit in question.

AO9 CHECK THE MEDIUM SPEED CONTROLLER AREA NETWORK 2 (MS-CAN2) (+) AND MEDIUM SPEED CONTROLLER AREA NETWORK 2 (MS-CAN2) (-) CIRCUITS FOR A SHORT TOGETHER WITH THE GFM (GENERIC FUNCTION MODULE) DISCONNECTED

- Disconnect GFM [C4321](#) .
- Measure:

GATEWAY MODULE

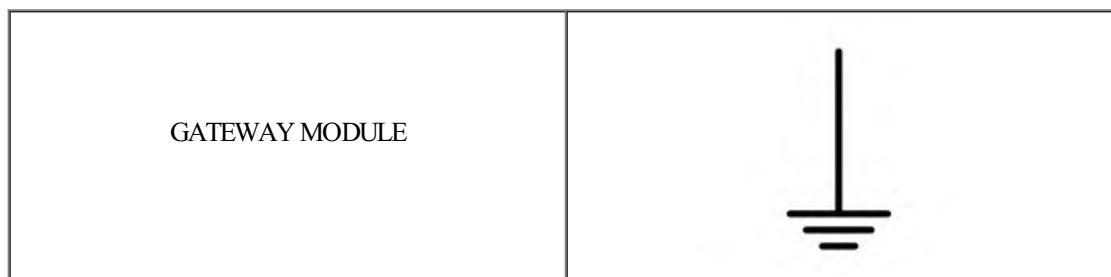
Positive Lead	Measurement / Action	Negative Lead
C2431-21	Ω	C2431-9

Is the resistance greater than 3 ohms?

Yes	GO to AO12
No	REPAIR the circuit.

AO10 CHECK THE MEDIUM SPEED CONTROLLER AREA NETWORK 2 (MS-CAN2) (+) AND MEDIUM SPEED CONTROLLER AREA NETWORK 2 (MS-CAN2) (-) CIRCUITS FOR A SHORT TO GROUND WITH THE GFM (GENERIC FUNCTION MODULE) DISCONNECTED

- Measure



Positive Lead	Measurement / Action	Negative Lead
C2431-21	Ω	Ground
C2431-9	Ω	Ground

Is the resistance greater than 1,000 ohms?

Yes	GO to AO12
No	REPAIR the circuit in question.

AO11 CHECK FOR RESTORED COMMUNICATION WITH THE GFM (GENERIC FUNCTION MODULE) DISABLED

NOTE: When re-running the network test, close the Network Test application first or the screen display reverts back to the prior run Network Test results.

- Disconnect BJB fuse 51 (10A).
- Using a diagnostic scan tool, perform the network test.

Do all other Medium Speed Controller Area Network 2 (MS-CAN2) modules pass the network test?

Yes	INSTALL the removed fuse. GO to Pinpoint Test AF
No	INSTALL the removed fuse. The Medium Speed Controller Area Network 2 (MS-CAN2) tests within specification. The concern may have been caused by module connections. CONNECT any disconnected connectors or fuses. Test for normal operation. If the concern is still present, ADDRESS the root cause of any connector or pin issues.

AO12 CHECK THE GFM (GENERIC FUNCTION MODULE) FOR CORRECT OPERATION

- Ignition OFF.
- Disconnect and inspect the GFM connector and related in-line connectors.
- Repair:
 - corrosion (install new connector or terminals - clean module pins)
 - damaged or bent pins - install new terminals/pins
 - pushed-out pins - install new pins as necessary
- Reconnect the GFM connector and 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 service articles: 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, INSTALL a new GFM.
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.

AO13 CHECK THE GWM (GATEWAY MODULE A) FOR CORRECT OPERATION

- Ignition OFF.
- Disconnect and inspect the GWM connector.
- Repair:
 - corrosion (install new connector or terminals - clean module pins)
 - damaged or bent pins - install new terminals/pins
 - pushed-out pins - install new pins as necessary
- Reconnect the GWM 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 service articles: 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, INSTALL a new GWM. REFER to: Gateway Module A (GWM) (418-00 Module Communications Network, 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.

PINPOINT TEST AP : NO POWER TO THE DLC (DATA LINK CONNECTOR)

Normal Operation and Fault Conditions

The diagnostic scan tool is connected to the DLC to communicate with the DIAG 1 and DIAG 2 circuits. The GWM translates diagnostic messages for the HS-CAN1, HS-CAN2, HS-CAN3, HS-CAN4, MS-CAN and Medium Speed Controller Area Network 2 (MS-CAN2).

Possible Sources

- Fuse
- Wiring, terminals or connector
- Diagnostic scan tool
- GWM

Visual Inspection and Pre-checks

- Verify BCM fuse 12 (7.5A) and 70 (10A) are OK.

AP1 CHECK THE DLC (DATA LINK CONNECTOR) PINS FOR DAMAGE

- Ignition OFF.
- **NOTE:** *If the vehicle exhibits one or more modules becoming inoperative or observable symptoms are present when a scan tool is connected, this condition is likely due to spread ground terminals 4 and 5 at the DLC. An improperly grounded scan tool will corrupt the network message traffic.*

Disconnect the diagnostic scan tool cable from the DLC.

- Inspect the DLC pins 4, 5 and 16 for spreading or damage using a flex probe with the dimensions: 1.5mm width x .080mm thickness, Rotunda probe 300-08039 (violet).

Are any pin fit concerns or damage observed with DLC pins 4, 5 and 16?

Yes	CHECK OASIS for any applicable service articles: 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, INSTALL a new GWM. REFER to: Gateway Module A (GWM) (418-00 Module Communications Network, Removal and Installation).
No	GO to AP2

AP2 CHECK THE GWM (GATEWAY MODULE A) C2431

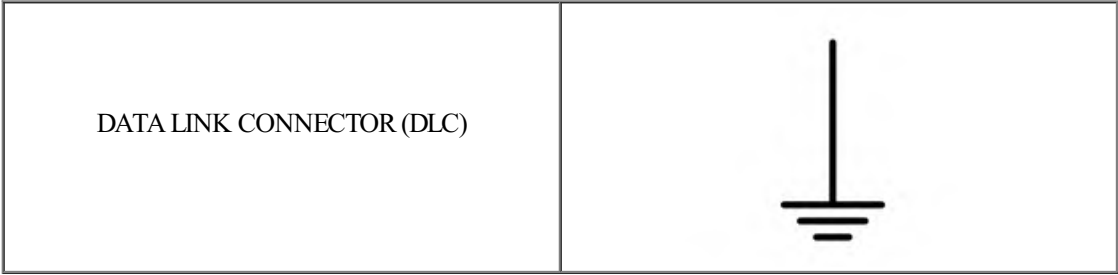
- Disconnect and inspect the GWM [C2431](#).
- Repair:
 - corrosion (install new connector or terminals - clean module pins)
 - spread, damaged or bent pins - install new terminals/pins
 - pushed-out pins - install new pins as necessary
- Reconnect the GWM [C2431](#). Make sure it seats and latches correctly.
- Operate the system and determine if the concern is still present.

Is the concern still present?

Yes	GO to AP3
No	The system is operating correctly at this time. The concern may have been caused by module or scan tool connections. ADDRESS the root cause of any connector or pin issues.

AP3 CHECK THE DLC (DATA LINK CONNECTOR) VOLTAGE SUPPLY FOR AN OPEN

- Measure:



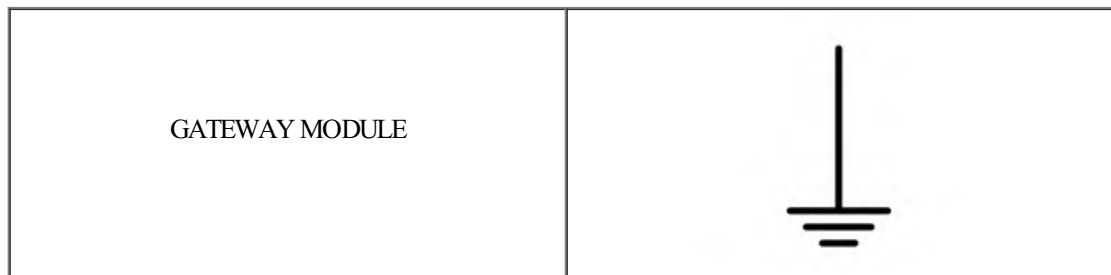
Positive Lead	Measurement / Action	Negative Lead
C251-16		Ground

Is the voltage greater than 11 volts?

Yes	GO to AP5
No	GO to AP4

AP4 CHECK THE GWM (GATEWAY MODULE A) VOLTAGE SUPPLY CIRCUITS FOR AN OPEN

- Disconnect GWM [C2431](#) .
- Measure:



Positive Lead	Measurement / Action	Negative Lead
C2431-13	  	Ground
C2431-24	  	Ground

Are the voltages greater than 11 volts?

Yes	GO to AP5
No	VERIFY BCM fuse 12 (7.5A) or 70 (10A) is OK. If OK, REPAIR the circuit in question. If not OK, REFER to the Wiring Diagrams manual to identify the possible causes of the circuit short.

AP5 CHECK THE DLC (DATA LINK CONNECTOR) GROUND CIRCUITS FOR AN OPEN

- Measure:

DATA LINK CONNECTOR (DLC)	
---------------------------	--

Positive Lead	Measurement / Action	Negative Lead
C251-4	Ω	Ground
C251-5	Ω	Ground

Are the resistances less than 3 ohms?

Yes	The vehicle wiring tests within specification. The concern may have been caused by the diagnostic scan tool.
No	GO to AP6

AP6 CHECK THE GWM (GATEWAY MODULE A) GROUND CIRCUITS FOR AN OPEN

- Measure:

GATEWAY MODULE	
----------------	--

Positive Lead	Measurement / Action	Negative Lead
C2431-1	Ω	Ground
C2431-14	Ω	Ground

Are the resistances less than 3 ohms?

Yes	The vehicle wiring tests within specification. The concern may have been caused by the diagnostic scan tool.
No	GO to AP7

AP7 CHECK FOR CORRECT GWM (GATEWAY MODULE A) OPERATION

- Ignition OFF.
- Disconnect and inspect the GWM connector.
- Repair:
 - corrosion (install new connector or terminals - clean module pins)
 - damaged or bent pins - install new terminals/pins
 - pushed-out pins - install new pins as necessary
- Reconnect the GWM 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 service articles: 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, INSTALL a new GWM. REFER to: Gateway Module A (GWM) (418-00 Module Communications Network, 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.

PINPOINT TEST AQ : U3000:44, U3000:45, U3000:46, U3000:47 OR U3000:49

Normal Operation and Fault Conditions

DTC Fault Trigger Conditions

DTC	Description	Fault Trigger Condition
GWM U3000:44	Control Module: Data Memory Failure	Sets in the GWM when an internal memory failure is detected
GWM U3000:45	Control Module: Program Memory Failure	Sets in the GWM when an internal failure is detected.
GWM U3000:46	Control Module: Calibration/Parameter Memory Failure	Sets in the GWM when an internal failure is detected.
GWM U3000:47	Control Module: Watchdog/Safety μ C Failure	Sets in the GWM when an internal failure is detected.
GWM U3000:49	Control Module: Internal Electronic Failure	Sets in the GWM when an internal failure is detected.

Possible Sources

- GWM

AQ1 RETRIEVE GWM (GATEWAY MODULE A) DIAGNOSTIC TROUBLE CODES (DTCS)

- Ignition ON.
- Using a diagnostic scan tool, clear the Diagnostic Trouble Codes (DTCs).
- Wait 10 seconds.
- Using a diagnostic scan tool, perform the GWM self-test.

Is DTC U3000:44, U3000:45, U3000:46, U3000:47 or U3000:49 recorded?

Yes	INSTALL a new GWM. REFER to: Gateway Module A (GWM) (418-00 Module Communications Network, Removal and Installation).
No	The system is operating correctly at this time.

PINPOINT TEST AR : U2100:00

Normal Operation and Fault Conditions

CHECK the vehicle service history for recent service actions related to this module.

DTC Fault Trigger Conditions

DTC	Description	Fault Trigger Condition
GWM U2100:00	Initial Configuration Not Complete: No Sub Type Information	Sets due to incomplete or incorrect PMI procedures.

Possible Sources

- Incomplete or incorrect PMI procedures.

AR1 RETRIEVE GWM (GATEWAY MODULE A) DIAGNOSTIC TROUBLE CODES (DTCS)

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

Is DTC U2100:00 recorded?

Yes	INSTALL As-Built data from PTS following diagnostic scan tool instructions under Module Programming>As-Built.
No	The system is operating correctly at this time.