

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).

DTC	Description	Action
U2100:00	Initial Configuration Not Complete: No Sub Type Information	CHECK the vehicle service history for recent service actions related to this module. This DTC sets due to incomplete or incorrect Programmable Module Installation (PMI) procedures. If there have been recent service actions with this module, REPEAT the Programmable Module Installation (PMI) procedure as directed by the diagnostic scan tool. If there have been no recent service actions, INSTALL a new GWM. REFER to: Gateway Module A (GWM) (418-00 Module Communications Network, Removal and Installation).
U3000:44	RAM Error During Normal Operation: Data Memory Failure	RETRIEVE all Continuous Memory Diagnostic Trouble Codes (CMDTCs). If DTC U3000:44 is retrieved, INSTALL a new GWM. REFER to: Gateway Module A (GWM) (418-00 Module Communications Network, Removal and Installation). If DTC U3000:44 is not retrieved, the module is operating correctly at this time. The concern may have been caused by an intermittent concern.

U3000:45	RAM Error During Normal Operation: Program Memory Failure	RETRIEVE all Continuous Memory Diagnostic Trouble Codes (CMDTCs). If DTC U3000:45 is retrieved, INSTALL a new GWM. REFER to: Gateway Module A (GWM) (418-00 Module Communications Network, Removal and Installation). If DTC U3000:45 is not retrieved, the module is operating correctly at this time. The concern may have been caused by an intermittent concern.
U3000:49	RAM Error During Normal Operation: Internal Electronic Failure	RETRIEVE all Continuous Memory Diagnostic Trouble Codes (CMDTCs). If DTC U3000:49 is retrieved, INSTALL a new GWM. REFER to: Gateway Module A (GWM) (418-00 Module Communications Network, Removal and Installation). If DTC U3000:49 is not retrieved, the module is operating correctly at this time. The concern may have been caused by an intermittent concern.

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 AO

No HS-CAN1 communication, all modules are not responding	Refer to the Pinpoint Test	GO to Pinpoint Test AK
No HS-CAN2 communication, all modules are not responding	Refer to the Pinpoint Test	GO to Pinpoint Test AL
No HS-CAN3 communication, all modules are not responding	Refer to the Pinpoint Test	GO to Pinpoint Test AM
No MS-CAN communication, all modules are not responding	Refer to the Pinpoint Test	GO to Pinpoint Test AN
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 BECMB does not respond to the diagnostic scan tool (except Raptor)	Refer to the Pinpoint Test	GO to Pinpoint Test E
The OCSM does not respond to the diagnostic scan tool	Refer to the Pinpoint Test	GO to Pinpoint Test F
The SCCM does not respond to the diagnostic scan tool	Refer to the Pinpoint Test	GO to Pinpoint Test G
The IPC does not respond to the diagnostic scan tool	Refer to the Pinpoint Test	GO to Pinpoint Test H
The BCM does not respond to the diagnostic scan tool	Refer to the Pinpoint Test	GO to Pinpoint Test I
The FCIM module does not respond to the diagnostic scan tool	Refer to the Pinpoint Test	GO to Pinpoint Test J
The ACM does not respond to the diagnostic scan tool	Refer to the Pinpoint Test	GO to Pinpoint Test K
The DACMC does not respond to the diagnostic scan tool (integral with the ACM)	Refer to the Pinpoint Test	GO to Pinpoint Test K
The IPMA does not respond to the diagnostic scan tool	Refer to the Pinpoint Test	GO to Pinpoint Test L

The IPMB does not respond to the diagnostic scan tool	Refer to the Pinpoint Test	GO to Pinpoint Test M
The FCDIM does not respond to the diagnostic scan tool	Refer to the Pinpoint Test	GO to Pinpoint Test N
The APIM does not respond to the diagnostic scan tool	Refer to the Pinpoint Test	GO to Pinpoint Test O
The audio DSP does not respond to the diagnostic scan tool	Refer to the Pinpoint Test	GO to Pinpoint Test P
The TCU does not respond to the diagnostic scan tool	Refer to the Pinpoint Test	GO to Pinpoint Test Q
The RTM does not respond to the diagnostic scan tool	Refer to the Pinpoint Test	GO to Pinpoint Test R
The PSCM does not respond to the diagnostic scan tool	Refer to the Pinpoint Test	GO to Pinpoint Test S
The DSM does not respond to the diagnostic scan tool	Refer to the Pinpoint Test	GO to Pinpoint Test T
The DDM does not respond to the diagnostic scan tool	Refer to the Pinpoint Test	GO to Pinpoint Test U
The PDM does not respond to the diagnostic scan tool	Refer to the Pinpoint Test	GO to Pinpoint Test V
The SODL does not respond to the diagnostic scan tool	Refer to the Pinpoint Test	GO to Pinpoint Test W
The SODR does not respond to the diagnostic scan tool	Refer to the Pinpoint Test	GO to Pinpoint Test X
The CCM does not respond to the diagnostic scan tool	Refer to the Pinpoint Test	GO to Pinpoint Test Y
The HUD module does not respond to the diagnostic scan tool	Refer to the Pinpoint Test	GO to Pinpoint Test Z
The PAM does not respond to the diagnostic scan tool (integrated with the BCM)	Refer to the Pinpoint Test	GO to Pinpoint Test I
The DC/ DC (DC/DC) Converter Control Module (Voltage Quality Module) does not respond to the diagnostic scan tool	Refer to the Pinpoint Test	GO to Pinpoint Test AA
The HSWM does not respond to the diagnostic scan tool	Refer to the Pinpoint Test	GO to Pinpoint Test AB

The SCME does not respond to the diagnostic scan tool (integrated with the DSM)	Refer to the Pinpoint Test	GO to Pinpoint Test T
The SCMG does not respond to the diagnostic scan tool	Refer to the Pinpoint Test	GO to Pinpoint Test AC
The SCMh does not respond to the diagnostic scan tool	Refer to the Pinpoint Test	GO to Pinpoint Test AD
The TRM does not respond to the diagnostic scan tool	Refer to the Pinpoint Test	GO to Pinpoint Test AE
The TBM does not respond to the diagnostic scan tool	Refer to the Pinpoint Test	GO to Pinpoint Test AF
The PRB module does not respond to the diagnostic scan tool	Refer to the Pinpoint Test	GO to Pinpoint Test AG
The TCCM does not respond to the diagnostic scan tool	Refer to the Pinpoint Test	GO to Pinpoint Test AH
The ATCM does not respond to the diagnostic scan tool	Refer to the Pinpoint Test	GO to Pinpoint Test AI
The GWM does not respond to the diagnostic scan tool	Refer to the Pinpoint Test	GO to Pinpoint Test AJ
No power to the DLC	Refer to the Pinpoint Test	GO to Pinpoint Test AO

Pinpoint Tests

The Powertrain Control Module (PCM) Does Not Respond To The Diagnostic Scan Tool

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

Refer to Wiring Diagrams Cell 23 for schematic and connector information.

Refer to Wiring Diagrams Cell 24 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.

Normal Operation and Fault Conditions

The PCM communicates with the diagnostic scan tool through the HS-CAN1. An IDS session cannot be established if the PCM communication fails when attempting to identify the vehicle.

Possible Sources

- Fuse
- Wiring, terminals and connectors
- PCM

PINPOINT TEST A : THE POWERTRAIN CONTROL MODULE (PCM) DOES NOT RESPOND TO THE DIAGNOSTIC SCAN TOOL

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, BECMB (except Raptor), BCM, Direct Current/Direct Current (DC/DC) Converter Control Module (Voltage Quality Module), PCM or TCM (if equipped)?	
Yes	If "pass" or a DTC was listed next to the PCM, a network fault is not currently present. If "pass" or a DTC was listed next to one or more modules other than the PCM, GO to A2
No	No modules are currently communicating on the HS-CAN1. GO to Pinpoint Test AK
A2 PC/ED (POWERTRAIN CONTROL/EMISSIONS DIAGNOSIS) MANUAL PINPOINT TEST QA VERIFICATION CHECK	

- Verify PC/ED manual pinpoint test QA has been performed.

Has pinpoint test QA been performed?

Yes	GO to A3
No	Refer to Powertrain Control/Emissions Diagnosis (PC/ED) manual.

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

- Ignition OFF.

Is the resistance between 54 and 66 ohms?

Yes	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 DLC (DATA LINK CONNECTOR) FOR AN OPEN

- Measure:

Click to display connectors

5.0L TiVCT

Positive Lead	Measurement / Action	Negative Lead
C1381B-27	Ω	C251-6
C1381B-12		C251-14

Are the resistances less than 3 ohms?

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

The Transmission Control Module (TCM) 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 with the diagnostic scan tool through the HS-CAN1.

Possible Sources

- Fuse
- Wiring, terminals and connectors
- TCM

Visual Inspection and Diagnostic Pre-checks

Verify BJB fuses 16 (10A) and 83 (15A) are OK.

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

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

- Ignition OFF.
- Disconnect: TCM C1822
- Ignition ON.

Are the voltages greater than 11 volts?

Yes	GO to B2
No	VERIFY the BJB fuses 16 (10A) and 83 (15A) are 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.

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 DLC (DATA LINK CONNECTOR) FOR AN OPEN

Are the resistances less than 3 ohms?

Yes	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 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 TCM 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 Technical Service Bulletins (TSBs). If a TSB exists for this concern, DISCONTINUE this test and FOLLOW TSB instructions. If no Technical Service Bulletins (TSBs) address this concern, INSTALL a new TCM. REFER to: Transmission Control Module (TCM) - 3.0L Power Stroke Diesel/3.5L EcoBoost (272kW/370PS) (307-01B Automatic Transmission - 10-Speed Automatic Transmission - 10R80, Removal and Installation).
No	The system is operating correctly at this time. The concern may have been caused by module connections. ADDRESS the root cause of any connector or pin issues.

The Anti-Lock Brake System (ABS) 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 with the diagnostic scan tool through the HS-CAN2.

Possible Sources

- Fuse
- Wiring, terminals and connectors
- ABS module

Visual Inspection and Diagnostic Pre-checks

Verify BJB fuses 4 (60A), 17 (10A) and 70 (40A) are OK.

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

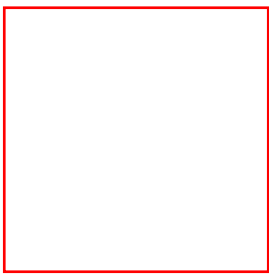
C1 CHECK THE ABS (ANTI-LOCK BRAKE SYSTEM) MODULE VOLTAGE SUPPLY CIRCUITS FOR AN OPEN

- Ignition OFF.
- Disconnect: ABS module C135 (with EPB) or C155 (without EPB)
- Ignition ON.
- Measure:

ABS Without EPB

Positive Lead	Measurement / Action	Negative Lead
C155-1		Ground
C155-25		Ground
C155-28		Ground

ABS With EPB

Positive Lead	Measurement / Action	Negative Lead
C135-1		Ground
C135-30		Ground

C135-36		Ground
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Are the voltages greater than 11 volts?

Yes	GO to C2
No	VERIFY the BJB fuses 4 (60A), 17 (10A) and 70 (40A) are 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 CIRCUIT FOR AN OPEN

- Ignition OFF.
- Measure:

ABS Without EPB

Positive Lead	Measurement / Action	Negative Lead
C155-13	Ω	Ground
C155-38		Ground

ABS With EPB

Positive Lead	Measurement / Action	Negative Lead
C135-14	Ω	Ground
C135-46		Ground

Is the resistance less than 3 ohms?

Yes	GO to C3
No	REPAIR the circuit.

C3 CHECK THE HS-CAN2 (HIGH SPEED-CONTROLLER AREA NETWORK 2) CIRCUITS BETWEEN THE ABS (ANTI-LOCK BRAKE SYSTEM) MODULE AND THE DLC (DATA LINK CONNECTOR) FOR AN OPEN

- Measure:

ABS Without EPB

Positive Lead	Measurement / Action	Negative Lead
C155-26	Ω	C251-3
C155-14		C251-11

ABS With EPB

Positive Lead	Measurement / Action	Negative Lead
C135-5	Ω	C251-3
C135-19		C251-11

Are the resistances less than 3 ohms?

Yes	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 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 ABS module 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 Technical Service Bulletins (TSBs). If a TSB exists for this concern, DISCONTINUE this test and FOLLOW TSB instructions. If no Technical Service Bulletins (TSBs) address this concern, INSTALL a new ABS module. REFER to: Hydraulic Control Unit (HCU) (206-09 Anti-Lock Brake System (ABS) and Stability Control, Removal and Installation).
No	The system is operating correctly at this time. The concern may have been caused by module connections. ADDRESS the root cause of any connector or pin issues.

The Restraints Control Module (RCM) 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 with the diagnostic scan tool through the HS-CAN2.

Possible Causes

- Fuse
- Wiring, terminals and connectors
- RCM

Visual Inspection and Diagnostic Pre-checks

Verify BCM fuses 9 (10A) and 19 (7.5A) or BCM fuse 35 (5A) (Raptor only) are OK.

PINPOINT TEST D : THE RESTRAINTS CONTROL MODULE (RCM) DOES NOT RESPOND TO THE DIAGNOSTIC SCAN TOOL



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	For Raptor, GO to D4 For all others, GO to D2
No	INSTALL a new wiring harness. REPOWER the Supplemental Restraint System (SRS). REFER to: Supplemental Restraint System (SRS) Repowering (501-20B Supplemental Restraint System, General Procedures).

D2 CHECK FOR BECMB (EXTENDED POWER MODULE) NETWORK COMMUNICATION

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

Does the BECMB pass the network test?

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

D3 RETRIEVE RECORDED BECMB (EXTENDED POWER MODULE) DIAGNOSTIC TROUBLE CODES (DTCS)

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

Are any Diagnostic Trouble Codes (DTCs) recorded?

Yes	DIAGNOSE the Diagnostic Trouble Codes (DTCs). REFER to: Airbag Supplemental Restraint System (SRS) - Raptor (501-20B Supplemental Restraint System, 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 \(SRS\) Repowering](#) (501-20B Supplemental Restraint System, General Procedures).
- Ignition ON.

Is the voltage greater than 11 volts?

Yes	GO to D5
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No	VERIFY BCM fuses 9 (10A) and 19 (7.5A) or BCM fuse 35 (5A) (Raptor only) 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.
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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 DLC (DATA LINK CONNECTOR) FOR AN OPEN

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

Are the resistances less than 3 ohms?

Yes	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).
REFER to: [Supplemental Restraint System \(SRS\) Repowering](#) (501-20B Supplemental Restraint System, General Procedures).
- Operate the system and determine if the concern is still present.

Is the concern still present?

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

The BECMB Does Not Respond To The Diagnostic Scan Tool (Except Raptor)

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 BECMB communicates with the diagnostic scan tool through the HS-CAN1.

Possible Causes

- Fuse
- Wiring, terminals and connectors
- BECMB

Visual Inspection and Diagnostic Pre-checks

Verify BCM fuses 9 (10A) and 19 (7.5A) are OK.

PINPOINT TEST E : THE BECMB (EXTENDED POWER MODULE) DOES NOT RESPOND TO THE DIAGNOSTIC SCAN TOOL

E1 CHECK THE BECMB (EXTENDED POWER MODULE) VOLTAGE SUPPLY CIRCUIT FOR AN OPEN	
• Disconnect BECMB C2518. • Ignition ON.	
Is the voltage greater than 11 volts?	
Yes	GO to E2
No	VERIFY BCM fuse 9 (10A) or fuse 19 (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.
E2 CHECK THE BECMB (EXTENDED POWER MODULE) GROUND CIRCUIT FOR AN OPEN	

- Ignition OFF.

Is the resistance less than 3 ohms?

Yes	GO to E3
No	REPAIR the circuit.

E3 CHECK THE HS-CAN1 (HIGH SPEED-CONTROLLER AREA NETWORK 1) CIRCUITS BETWEEN THE BECMB (EXTENDED POWER MODULE) AND THE DLC (DATA LINK CONNECTOR) FOR AN OPEN

Are the resistances less than 3 ohms?

Yes	GO to E4
No	REPAIR the circuit in question.

E4 CHECK FOR CORRECT BECMB (EXTENDED POWER MODULE) OPERATION

- Ignition OFF.
- Disconnect and inspect the BECMB 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 BECMB connector. Make sure it seats and latches correctly.
- Operate the system and determine if the concern is still present.

Is the concern still present?

Yes	CHECK OASIS for any applicable Technical Service Bulletins (TSBs). If a TSB exists for this concern, DISCONTINUE this test and FOLLOW TSB instructions. If no Technical Service Bulletins (TSBs) address this concern, INSTALL a new BECMB. REFER to: Battery Energy Control Module B (BECMB) (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.

The Occupant Classification System Module (OCSM) 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 OCSM communicates with the diagnostic scan tool through the HS-CAN2.

Possible Sources

- Fuse
- Wiring, terminals and connector
- OCSM

Visual Inspection and Diagnostic Pre-checks

Verify BCM fuse 22 (5A) is OK.

PINPOINT TEST F : THE OCCUPANT CLASSIFICATION SYSTEM MODULE (OCSM) DOES NOT RESPOND TO THE DIAGNOSTIC SCAN TOOL

F1 CHECK THE OCSM (OCCUPANT CLASSIFICATION SYSTEM MODULE) VOLTAGE SUPPLY CIRCUIT FOR AN OPEN

- Ignition OFF.
- Wait one minute.
- Disconnect: OCSM C3285
- Ignition ON.

Is the voltage greater than 11 volts?

Yes	GO to F2
No	VERIFY the BCM fuse 22 (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.

F2 CHECK THE OCSM (OCCUPANT CLASSIFICATION SYSTEM MODULE) GROUND CIRCUIT FOR AN OPEN

- Ignition OFF.

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 OCSM (OCCUPANT CLASSIFICATION SYSTEM MODULE) AND THE DLC (DATA LINK CONNECTOR) FOR AN OPEN

Are the resistances less than 3 ohms?

Yes	GO to F4
No	REPAIR the circuit in question.

F4 CHECK FOR CORRECT OCSM (OCCUPANT CLASSIFICATION SYSTEM MODULE) OPERATION

- Ignition OFF.
- Disconnect and inspect the OCSM 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 OCSM 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 Technical Service Bulletins (TSBs). If a TSB exists for this concern, DISCONTINUE this test and FOLLOW TSB instructions. If no Technical Service Bulletins (TSBs) address this concern, INSTALL a new OCSM. REFER to: Occupant Classification System (OCS) Sensor - Vehicles With: Multi-Contour Seats (501-20 Supplemental Restraint System) . orREFER to: Occupant Classification System (OCS) Sensor - Vehicles Without: Multi-Contour Seats (501-20 Supplemental Restraint System) .
No	The system is operating correctly at this time. The concern may have been caused by module connections. ADDRESS the root cause of any connector or pin issues.

The Steering Column Control Module (SCCM) 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 SCCM communicates with the diagnostic scan tool through the HS-CAN2.

Possible Causes

- Fuse
- Wiring, terminals and connector
- SCCM

Visual Inspection and Diagnostic Pre-checks

Verify BCM fuse 13 (7.5A) is OK.

PINPOINT TEST G : THE SCCM (STEERING COLUMN CONTROL MODULE) DOES NOT RESPOND TO THE DIAGNOSTIC SCAN TOOL

G1 CHECK THE HS-CAN2 (HIGH SPEED-CONTROLLER AREA NETWORK 2) TERMINATION RESISTANCE

- Ignition OFF.
- Disconnect the diagnostic scan tool cable from the DLC.

Is the resistance between 54 and 66 ohms?

Yes	GO to G3
No	GO to G2

G2 CHECK THE HS-CAN2 (HIGH SPEED-CONTROLLER AREA NETWORK 2) CIRCUITS BETWEEN THE SCCM (STEERING COLUMN CONTROL MODULE) AND THE DLC (DATA LINK CONNECTOR) FOR AN OPEN

- Disconnect SCCM C226

Are the resistances less than 3 ohms?

Yes	GO to G5
No	REPAIR the circuit in question.

G3 CHECK THE SCCM (STEERING COLUMN CONTROL MODULE) VOLTAGE SUPPLY CIRCUIT FOR AN OPEN

- Ignition ON.

Is the voltage greater than 11 volts?

Yes	GO to G4
No	VERIFY the 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 SCCM (STEERING COLUMN CONTROL MODULE) GROUND CIRCUIT FOR AN OPEN

- Ignition OFF.

Is the resistance less than 3 ohms?

Yes	GO to G5
No	REPAIR the circuit.

G5 CHECK FOR CORRECT SCCM (STEERING COLUMN CONTROL MODULE) OPERATION

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

The Instrument Panel Cluster (IPC) Does Not Respond To The Diagnostic Scan Tool

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 with the diagnostic scan tool through the HS-CAN3. Diagnostic messages are sent/received between the DLC and the diagnostic scan tool through the HS-CAN2 circuits at the DLC, and translated through the GWM to the HS-CAN3.

Possible Sources

- Fuse
- Wiring, terminals and connector
- IPC

Visual Inspection and Diagnostic Pre-checks

Verify BCM fuse 13 (7.5A) is OK.

PINPOINT TEST H : THE INSTRUMENT PANEL CLUSTER (IPC) DOES NOT RESPOND TO THE DIAGNOSTIC SCAN TOOL

H1 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	
Is the resistance between 108 and 132 ohms?	
Yes	GO to H3
No	GO to H2
H2 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

Are the resistances less than 3 ohms?

Yes	GO to H5
No	REPAIR the circuit in question.

H3 CHECK THE IPC (INSTRUMENT PANEL CLUSTER) VOLTAGE SUPPLY CIRCUIT

- Disconnect: IPC C220
- Connect negative battery cable.
- Ignition ON.

Is the voltage greater than 11 volts?

Yes	GO to H4
No	VERIFY the 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.

H4 CHECK THE IPC (INSTRUMENT PANEL CLUSTER) GROUND CIRCUIT

- Ignition OFF.
- Disconnect negative battery cable.

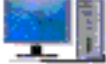
Is the resistance less than 3 ohms?

Yes	CONNECT negative battery cable. GO to H5
No	REPAIR the circuit.

H5 CHECK FOR CORRECT IPC (INSTRUMENT PANEL CLUSTER) OPERATION

- Ignition OFF.
- Disconnect and inspect the IPC 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 IPC 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 Technical Service Bulletins (TSBs). If a TSB exists for this concern, DISCONTINUE this test and FOLLOW TSB instructions. If no Technical Service Bulletins (TSBs) address this concern, INSTALL a new IPC.   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.

The Body Control Module (BCM) 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 with the diagnostic scan tool through the HS-CAN1.

Possible Causes

- Fuse
- Wiring, terminals and connector
- BCM

Visual Inspection and Diagnostic Pre-checks

Verify BJB fuse 4 (60A) is OK.

PINPOINT TEST I : THE BODY CONTROL MODULE (BCM) DOES NOT RESPOND TO THE DIAGNOSTIC SCAN TOOL

I1 CHECK THE BCM (BODY CONTROL MODULE) VOLTAGE SUPPLY CIRCUIT FOR AN OPEN

- Ignition OFF.
- Disconnect: BCM C2280H

Is the voltage greater than 11 volts?

Yes	Connect: BCM C2280H. GO to I2
No	VERIFY the BJB fuse 4 (60A) 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.

I2 CHECK THE BCM (BODY CONTROL MODULE) GROUND CIRCUITS FOR AN OPEN

- Disconnect: BCM C2280C

Are the resistances less than 3 ohms?

Yes	GO to I3
No	REPAIR the circuit in question.

I3 CHECK THE HS-CAN1 (HIGH SPEED-CONTROLLER AREA NETWORK 1) CIRCUITS BETWEEN THE BCM (BODY CONTROL MODULE) AND THE DLC (DATA LINK CONNECTOR) FOR AN OPEN

- Disconnect: BCM C2280G.

Are the resistances less than 3 ohms?

Yes	GO to I4
No	REPAIR the circuit in question.

I4 CHECK FOR CORRECT BCM (BODY CONTROL MODULE) OPERATION

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

The Front Controls Interface Module (FCIM) Does Not Respond To The Diagnostic Scan Tool

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

Refer to Wiring Diagrams Cell 55 for schematic and connector information.

Normal Operation and Fault Conditions

The FCIM communicates with the diagnostic scan tool through the MS-CAN. Diagnostic messages are sent/received between the DLC and the diagnostic scan tool through the HS-CAN2 circuits at the DLC, and translated through the GWM to the MS-CAN.

Possible Sources

- Fuse
- Wiring, terminals and connector
- FCIM

Visual Inspection and Diagnostic Pre-checks

Verify BCM fuse 12 (7.5A) are OK.

PINPOINT TEST J : THE FCIM (FRONT CONTROLS INTERFACE MODULE) DOES NOT RESPOND TO THE DIAGNOSTIC SCAN TOOL

J1 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	
Is the resistance between 108 and 132 ohms?	
Yes	GO to J3
No	GO to J2

J2 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.

Are the resistances less than 3 ohms?

Yes	GO to J5
No	REPAIR the circuit in question.

J3 CHECK THE FCIM (FRONT CONTROLS INTERFACE MODULE) VOLTAGE SUPPLY CIRCUIT FOR AN OPEN

- Connect negative battery cable.
- Ignition ON.

Is the voltage greater than 11 volts?

Yes	GO to J4
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.

J4 CHECK THE FCIM (FRONT CONTROLS INTERFACE MODULE) GROUND CIRCUIT FOR AN OPEN

- Ignition OFF.
- Disconnect negative battery cable.

Is the resistance less than 3 ohms?

Yes	CONNECT negative battery cable. GO to J5
No	REPAIR the circuit.

J5 CHECK FOR CORRECT FCIM (FRONT CONTROLS INTERFACE MODULE) OPERATION

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

The Audio Front Control Module (ACM) 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 with the diagnostic scan tool through the HS-CAN3. Diagnostic messages are sent/received between the DLC and the diagnostic scan tool through the HS-CAN2 circuits at the DLC, and translated through the GWM to the HS-CAN3.

Possible Sources

- Fuse
- Wiring, terminals and connector
- ACM

Visual Inspection and Diagnostic Pre-checks

Verify BCM fuse 33 (20A) is OK.

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

K1 CHECK THE ACM (AUDIO FRONT CONTROL MODULE) VOLTAGE SUPPLY CIRCUIT FOR AN OPEN

- | |
|---|
| <ul style="list-style-type: none">• Ignition OFF.• Disconnect: ACM C240A.• Ignition ON. |
|---|

Is the voltage greater than 11 volts?

Yes	GO to K2
-----	--------------------------

No	VERIFY the BCM fuse 33 (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.
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K2 CHECK THE ACM (AUDIO FRONT CONTROL MODULE) GROUND CIRCUIT FOR AN OPEN

- Ignition OFF.

Is the resistance less than 3 ohms?

Yes	GO to K3
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No	REPAIR the circuit.
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K3 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

- Disconnect: ACM C240A

Are the resistances less than 3 ohms?

Yes	GO to K4
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No	REPAIR the circuit in question.
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K4 CHECK FOR CORRECT ACM (AUDIO FRONT CONTROL MODULE) OPERATION

- Ignition OFF.
- Disconnect and inspect all the ACM 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 ACM 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 Technical Service Bulletins (TSBs). If a TSB exists for this concern, DISCONTINUE this test and FOLLOW TSB instructions. If no Technical Service Bulletins (TSBs) address this concern, INSTALL a new ACM. REFER to the appropriate 415 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.

The Image Processing Module A (IPMA) 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 IPMA communicates with the diagnostic scan tool through the HS-CAN2.

Possible Sources

- Fuse

- Wiring, terminals and connector
- IPMA

Visual Inspection and Diagnostic Pre-checks

Verify BCM fuse 36 (15A) is OK.

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

L1 CHECK THE IPMA (IMAGE PROCESSING MODULE A) VOLTAGE SUPPLY CIRCUIT FOR AN OPEN

- Ignition OFF.
- Disconnect: IPMA C9012 (without pre-collision assist) or C9224 (with pre-collision assist).
- Ignition ON.
- Measure:

Without Pre-Collision Assist

Positive Lead	Measurement / Action	Negative Lead
C9012-1		Ground

Pre-Collision Assist

Positive Lead	Measurement / Action	Negative Lead
C9224-4		Ground

Is the voltage greater than 11 volts?

Yes	GO to L2
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No	VERIFY the 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.
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L2 CHECK THE IPMA (IMAGE PROCESSING MODULE A) GROUND CIRCUIT FOR AN OPEN

- Ignition OFF.
- Measure:

Without Pre-Collision Assist

Positive Lead	Measurement / Action	Negative Lead
C9012-7	Ω	Ground

Pre-Collision Assist

Positive Lead	Measurement / Action	Negative Lead
C9224-5	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 IPMA (IMAGE PROCESSING MODULE A) AND THE DLC (DATA LINK CONNECTOR) FOR AN OPEN

- Measure:

Without Pre-Collision Assist

Positive Lead	Measurement / Action	Negative Lead
C9012-12	Ω	C251-3
C9012-13		C251-11

Pre-Collision Assist

Positive Lead	Measurement / Action	Negative Lead
C9224-10	Ω	C251-3
C9224-9		C251-11

Are the resistances less than 3 ohms?

Yes	GO to L4
No	REPAIR the circuit in question.

L4 CHECK FOR CORRECT IPMA (IMAGE PROCESSING MODULE A) OPERATION

- Ignition OFF.
- Disconnect and inspect the IPMA 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 IPMA 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 Technical Service Bulletins (TSBs). If a TSB exists for this concern, DISCONTINUE this test and FOLLOW TSB instructions. If no Technical Service Bulletins (TSBs) address this concern, INSTALL a new IPMA. REFER to: Image Processing Module A (IPMA) (419-07 Lane Keeping 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.

The Image Processing Module B (IPMB) 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 with the diagnostic scan tool through the HS-CAN2.

Possible Sources

- Fuse
- Wiring, terminals and connector
- IPMB

Visual Inspection and Diagnostic Pre-checks

Verify BCM fuse 36 (15A) is OK.

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

M1 CHECK THE IPMB (IMAGE PROCESSING MODULE B) VOLTAGE SUPPLY CIRCUIT FOR AN OPEN

- Ignition OFF.
- Disconnect: IPMB C2512A.
- Ignition ON.

Is the voltage greater than 11 volts?

Yes	GO to M2
No	VERIFY the 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.

M2 CHECK THE IPMB (IMAGE PROCESSING MODULE B) GROUND CIRCUIT FOR AN OPEN

- Ignition OFF.

Is the resistance less than 3 ohms?

Yes	GO to M3
No	REPAIR the circuit.

M3 CHECK THE HS-CAN2 (HIGH SPEED-CONTROLLER AREA NETWORK 2) CIRCUITS BETWEEN THE IPMB (IMAGE PROCESSING MODULE B) AND THE DLC (DATA LINK CONNECTOR) FOR AN OPEN

Are the resistances less than 3 ohms?

Yes	GO to M4
No	REPAIR the circuit in question.

M4 CHECK FOR CORRECT IPMB (IMAGE PROCESSING MODULE B) OPERATION

- Ignition OFF.
- Disconnect and inspect the IPMB 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 IPMB 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 Technical Service Bulletins (TSBs). If a TSB exists for this concern, DISCONTINUE this test and FOLLOW TSB instructions. If no Technical Service Bulletins (TSBs) 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.

The Front Control/Display Interface Module (FCDIM) Does Not Respond To The Diagnostic Scan Tool

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

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

Normal Operation and Fault Conditions

The FCDIM communicates with the diagnostic scan tool through the HS-CAN3. Diagnostic messages are sent/received between the DLC and the diagnostic scan tool through the HS-CAN2 circuits at the DLC, and translated through the GWM to the HS-CAN3.

Possible Sources

- Fuse
- Wiring, terminals and connector
- FCDIM

Visual Inspection and Diagnostic Pre-checks

Verify BCM fuse 32 (10A) is OK.

PINPOINT TEST N : THE FCDIM (FRONT CONTROL/DISPLAY INTERFACE MODULE) DOES NOT RESPOND TO THE DIAGNOSTIC SCAN TOOL

N1 CHECK THE FCDIM (FRONT CONTROL/DISPLAY INTERFACE MODULE) VOLTAGE SUPPLY CIRCUIT FOR AN OPEN

- Ignition OFF.
- Disconnect: FCDIM C2123.
- Ignition ON.

Is the voltage greater than 11 volts?

Yes	GO to N2
No	VERIFY the BCM fuse 32 (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.

N2 CHECK THE FCDIM (FRONT CONTROL/DISPLAY INTERFACE MODULE) GROUND CIRCUIT FOR AN OPEN

- Ignition OFF.

Is the resistance less than 3 ohms?

Yes	GO to N3
No	REPAIR the circuit.

N3 CHECK THE HS-CAN3 (HIGH SPEED-CONTROLLER AREA NETWORK 3) CIRCUITS BETWEEN THE FCDIM (FRONT CONTROL/DISPLAY INTERFACE MODULE) AND THE GWM (GATEWAY MODULE A) FOR AN OPEN

- Disconnect: GWM C2431

Are the resistances less than 3 ohms?

Yes	GO to N4
No	REPAIR the circuit in question.

N4 CHECK FOR CORRECT FCDIM (FRONT CONTROL/DISPLAY INTERFACE MODULE) OPERATION

- Ignition OFF.
- Disconnect and inspect the FCDIM 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 FCDIM 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 Technical Service Bulletins (TSBs). If a TSB exists for this concern, DISCONTINUE this test and FOLLOW TSB instructions. If no Technical Service Bulletins (TSBs) address this concern, INSTALL a new FCDIM. REFER to: Front Control/Display Interface Module (FCDIM) (415-00A Information and Entertainment System - General Information - Vehicles Without: SYNC, Removal and Installation). (without SYNC®) or REFER to: Front Control/Display Interface Module (FCDIM) (415-00 Information and Entertainment System - General Information - Vehicles With: SYNC Without Touchscreen) . (SYNC® without touchscreen)
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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.
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The Accessory Protocol Interface Module (APIM) Does Not Respond To The Diagnostic Scan Tool

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

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

Refer to Wiring Diagrams Cell 132 for schematic and connector information.

Normal Operation and Fault Conditions

The APIM communicates with the diagnostic scan tool through the HS-CAN1 and communicates with other modules through the HS-CAN3. Diagnostic messages to modules on the HS-CAN3 are sent/received between the DLC and the diagnostic scan tool through the HS-CAN2 circuits at the DLC, and translated through the GWM.

Possible Sources

- Fuse
- Wiring, terminals and connector
- APIM

Visual Inspection and Diagnostic Pre-checks

Verify BCM fuse 32 (10A) is OK.

PINPOINT TEST O : THE ACCESSORY PROTOCOL INTERFACE MODULE (APIM) DOES NOT RESPOND TO THE DIAGNOSTIC SCAN TOOL

O1 CHECK THE APIM (SYNC MODULE) VOLTAGE SUPPLY CIRCUIT FOR AN OPEN

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

Is the voltage greater than 11 volts?

Yes	GO to O2
No	VERIFY the BCM fuse 32 (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.

O2 CHECK THE APIM (SYNC MODULE) GROUND CIRCUITS FOR AN OPEN

- Ignition OFF.

Is the resistance less than 3 ohms?

Yes	GO to O3
No	REPAIR the circuit.

O3 CHECK THE HS-CAN1 (HIGH SPEED-CONTROLLER AREA NETWORK 1) CIRCUITS BETWEEN THE APIM (SYNC MODULE) AND THE DLC (DATA LINK CONNECTOR) FOR AN OPEN

Are the resistances less than 3 ohms?

Yes	GO to O4
No	REPAIR the circuit in question.

O4 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

- Disconnect GWM C2431

Are the resistances less than 3 ohms?

Yes	GO to O5
No	REPAIR the circuit in question.

O5 CHECK FOR CORRECT APIM (SYNC MODULE) OPERATION

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

The Audio Digital Signal Processing (DSP) 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.

Normal Operation and Fault Conditions

The Audio DSP communicates with the diagnostic scan tool through the HS-CAN3. Diagnostic messages are sent/received between the DLC and the diagnostic scan tool through the HS-CAN2 circuits at the DLC, and are translated through the GWM to the HS-CAN3.

Possible Sources

- Fuse
- Wiring, terminals and connector
- Audio DSP

Visual Inspection and Diagnostic Pre-checks

Verify BJB fuse 22 (20A) is OK.

PINPOINT TEST P : THE AUDIO DSP (AUDIO DIGITAL SIGNAL PROCESSING MODULE) DOES NOT RESPOND TO THE DIAGNOSTIC SCAN TOOL

P1 CHECK THE AUDIO DSP (AUDIO DIGITAL SIGNAL PROCESSING MODULE) VOLTAGE SUPPLY CIRCUIT FOR AN OPEN	
• Ignition OFF. • Disconnect: Audio DSP C3154C. • Ignition ON.	
Is the voltage greater than 11 volts?	
Yes	GO to P2
No	VERIFY the BJB fuse 22 (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.

P2 CHECK THE AUDIO DSP (AUDIO DIGITAL SIGNAL PROCESSING MODULE) GROUND CIRCUIT FOR AN OPEN

- Ignition OFF.

Is the resistance less than 3 ohms?

Yes	GO to P3
No	REPAIR the circuit.

P3 CHECK THE HS-CAN3 (HIGH SPEED-CONTROLLER AREA NETWORK 3) CIRCUITS BETWEEN THE AUDIO DSP (AUDIO DIGITAL SIGNAL PROCESSING MODULE) AND THE GWM (GATEWAY MODULE A) FOR AN OPEN

- Disconnect: GWM C2431
- Disconnect: Audio DSP C3154A

Are the resistances less than 3 ohms?

Yes	GO to P4
No	REPAIR the circuit in question.

P4 CHECK FOR CORRECT AUDIO DSP (AUDIO DIGITAL SIGNAL PROCESSING MODULE) OPERATION

- Ignition OFF.
- Disconnect and inspect the audio DSP 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 audio DSP 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 Technical Service Bulletins (TSBs). If a TSB exists for this concern, DISCONTINUE this test and FOLLOW TSB instructions. If no Technical Service Bulletins (TSBs) address this concern, INSTALL a new audio DSP. REFER to: Audio Digital Signal Processing (DSP) Module (415-00D Information and Entertainment System - General Information - Vehicles With: Bang and Olufsen Audio 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.

The Telematics Control Unit Module (TCU) 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.

Normal Operation and Fault Conditions

The TCU communicates with the diagnostic scan tool through the HS-CAN3. Diagnostic messages are sent/received between the DLC and the diagnostic scan tool through the HS-CAN2 circuits at the DLC,

and are translated through the GWM to the HS-CAN3.

Possible Sources

- Fuse
- Wiring, terminals and connector
- TCU

Visual Inspection and Diagnostic Pre-checks

Verify BCM fuse 10 (5A) is OK.

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

Q1 CHECK THE TCU (TELEMATIC CONTROL UNIT MODULE) VOLTAGE SUPPLY CIRCUIT FOR AN OPEN

- Ignition OFF.
- Disconnect:TCU C4803A.
- Ignition ON.

Is the voltage greater than 11 volts?

Yes	GO to Q2
No	VERIFY the BCM fuse 10 (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.

Q2 CHECK THE TCU (TELEMATIC CONTROL UNIT MODULE) GROUND CIRCUIT FOR AN OPEN

- Ignition OFF.

Is the resistance less than 3 ohms?

Yes	GO to Q3
No	REPAIR the circuit.

Q3 CHECK THE HS-CAN3 (HIGH SPEED-CONTROLLER AREA NETWORK 3) CIRCUITS BETWEEN THE TCU (TELEMATIC CONTROL UNIT MODULE) AND THE GWM (GATEWAY MODULE A) FOR AN OPEN

- Disconnect: GWM C2431

Are the resistances less than 3 ohms?

Yes	GO to Q4
No	REPAIR the circuit in question.

Q4 CHECK FOR CORRECT TCU (TELEMATIC CONTROL UNIT MODULE) OPERATION

- Ignition OFF.
- Disconnect and inspect the TCU 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 TCU 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 Technical Service Bulletins (TSBs). If a TSB exists for this concern, DISCONTINUE this test and FOLLOW TSB instructions. If no Technical Service Bulletins (TSBs) address this concern, INSTALL a new TCU. REFER to: Telematics Control Unit (TCU) Module (415-00C Information and Entertainment System - General Information - Vehicles With: Touchscreen Display, Removal and Installation). (Touchscreen display) or REFER to: Telematics Control Unit (TCU) Module (415-00D Information and Entertainment System - General Information - Vehicles With: Bang and Olufsen Audio System, Removal and Installation). (Bang & Olufsen audio system).
No	The system is operating correctly at this time. The concern may have been caused by module connections. ADDRESS the root cause of any connector or pin issues.

The Radio Transceiver Module (RTM) Does Not Respond To The Diagnostic Scan Tool

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 with the diagnostic scan tool through the MS-CAN. Diagnostic messages are sent/received between the DLC and the diagnostic scan tool through the HS-CAN2 circuits at the DLC, and are translated through the GWM to the MS-CAN.

Possible Sources

- Fuse
- Wiring, terminals and connector
- RTM

Visual Inspection and Diagnostic Pre-checks

Verify BCM fuse 32 (10A) is OK.

PINPOINT TEST R : THE RTM (RADIO TRANSCEIVER MODULE) DOES NOT RESPOND TO THE DIAGNOSTIC SCAN TOOL

R1 CHECK THE RTM (RADIO TRANSCEIVER MODULE) VOLTAGE SUPPLY CIRCUIT FOR AN OPEN

- Ignition OFF.
- Disconnect: RTM C9026
- Ignition ON.

Is the voltage greater than 11 volts?

Yes	GO to R2
No	VERIFY the BCM fuse 32 (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.

R2 CHECK THE RTM (RADIO TRANSCEIVER MODULE) GROUND CIRCUIT FOR AN OPEN

- Ignition OFF.

Is the resistance less than 3 ohms?

Yes	GO to R3
No	REPAIR the circuit.

R3 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

Are the resistances less than 3 ohms?

Yes	GO to R4
No	REPAIR the circuit in question.

R4 CHECK FOR CORRECT RTM (RADIO TRANSCEIVER MODULE) OPERATION

- Ignition OFF.
- Disconnect and inspect all the RTM 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 RTM 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 Technical Service Bulletins (TSBs). If a TSB exists for this concern, DISCONTINUE this test and FOLLOW TSB instructions. If no Technical Service Bulletins (TSBs) 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.

The Power Steering Control Module (PSCM) 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 with the diagnostic scan tool through the HS-CAN2.

Possible Sources

- Fuse
- Wiring, terminals and connector
- PSCM

Visual Inspection and Diagnostic Pre-checks

Verify high current BJB MEGA fuse 2 (125A) and BJB fuse 18 (10A) are OK.

PINPOINT TEST S : THE POWER STEERING CONTROL MODULE (PSCM) DOES NOT RESPOND TO THE DIAGNOSTIC SCAN TOOL

S1 CHECK THE PSCM (POWER STEERING CONTROL MODULE) VOLTAGE SUPPLY CIRCUITS FOR AN OPEN	
• Ignition OFF. • Disconnect: PSCM C1463A and C1463B • Ignition ON.	
Is the voltage greater than 11 volts?	
Yes	GO to S2
No	VERIFY the high current BJB MEGA fuse 2 (125A) or BJB fuse 18 (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.

S2 CHECK THE PSCM (POWER STEERING CONTROL MODULE) GROUND CIRCUIT FOR AN OPEN

- Ignition OFF.

Is the resistance less than 3 ohms?

Yes	GO to S3
No	REPAIR the circuit.

S3 CHECK THE HS-CAN2 (HIGH SPEED-CONTROLLER AREA NETWORK 2) CIRCUITS BETWEEN THE PSCM (POWER STEERING CONTROL MODULE) AND THE DLC (DATA LINK CONNECTOR) FOR AN OPEN

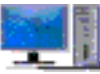
Are the resistances less than 3 ohms?

Yes	GO to S4
No	REPAIR the circuit in question.

S4 CHECK FOR CORRECT PSCM (POWER STEERING CONTROL MODULE) OPERATION

- Ignition OFF.
- Disconnect and inspect all the PSCM 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 PSCM 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 Technical Service Bulletins (TSBs). If a TSB exists for this concern, DISCONTINUE this test and FOLLOW TSB instructions. If no Technical Service Bulletins (TSBs) address this concern, REFER to the EPAS Symptom Chart.   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.

The Driver Seat Module (DSM) Does Not Respond To The Diagnostic Scan Tool

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 with the diagnostic scan tool through the MS-CAN. Diagnostic messages are sent/received between the DLC and the diagnostic scan tool through the HS-CAN2 circuits at the DLC, and are translated through the GWM to the MS-CAN.

Possible Sources

- Fuse
- Wiring, terminals and connector
- DSM

Visual Inspection and Diagnostic Pre-checks

Verify BJB fuse 37 (30A) and BCM fuse 2 (7.5A) are OK.

PINPOINT TEST T : THE DRIVER SEAT MODULE (DSM) DOES NOT RESPOND TO THE DIAGNOSTIC SCAN TOOL

T1 CHECK THE DSM (DRIVER FRONT SEAT MODULE) VOLTAGE SUPPLY CIRCUITS FOR AN OPEN

- Ignition OFF.
- Disconnect: DSM C3299B
- Ignition ON.

Is the voltage greater than 11 volts?

Yes	GO to T2
No	VERIFY BJB fuse 37 (30A) or BCM fuse 2 (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.

T2 CHECK THE DSM (DRIVER FRONT SEAT MODULE) GROUND CIRCUIT FOR AN OPEN

- Ignition OFF.
- Disconnect DSM C3299C.

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 DSM (DRIVER FRONT SEAT MODULE) AND THE GWM (GATEWAY MODULE A) FOR AN OPEN

- Disconnect: DSM C3299D
- Disconnect: GWM C2431.

Are the resistances less than 3 ohms?

Yes	GO to T4
No	REPAIR the circuit in question.

T4 CHECK FOR CORRECT DSM (DRIVER FRONT SEAT MODULE) OPERATION

- Ignition OFF.
- Disconnect and inspect all the DSM 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 DSM 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 Technical Service Bulletins (TSBs). If a TSB exists for this concern, DISCONTINUE this test and FOLLOW TSB instructions. If no Technical Service Bulletins (TSBs) address this concern, INSTALL a new DSM. REFER to: Driver Front Seat Module (DSM) (501-10 Front Seats) .
No	The system is operating correctly at this time. The concern may have been caused by module connections. ADDRESS the root cause of any connector or pin issues.

The Driver Door Module (DDM) Does Not Respond To The Diagnostic Scan Tool

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

Refer to Wiring Diagrams Cell 124 for schematic and connector information.

Normal Operation and Fault Conditions

The DDM communicates with the diagnostic scan tool through the MS-CAN. Diagnostic messages are sent/received between the DLC and the diagnostic scan tool through the HS-CAN2 circuits at the DLC, and are translated through the GWM to the MS-CAN.

Possible Sources

- Fuse
- Wiring, terminals and connector
- DDM

Visual Inspection and Diagnostic Pre-checks

Verify BCM fuse 25 (30A) is OK.

PINPOINT TEST U : THE DRIVER DOOR MODULE (DDM) DOES NOT RESPOND TO THE DIAGNOSTIC SCAN TOOL

U1 CHECK THE DDM (DRIVER DOOR MODULE) VOLTAGE SUPPLY CIRCUITS FOR AN OPEN

- Ignition OFF.
- Disconnect: DDM C501A.
- Ignition ON.

Is the voltage greater than 11 volts?

Yes	GO to U2
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No	VERIFY the BCM fuse 25 (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.
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U2 CHECK THE DDM (DRIVER DOOR MODULE) GROUND CIRCUIT FOR AN OPEN

- Ignition OFF.

Is the resistance less than 3 ohms?

Yes	GO to U3
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No	REPAIR the circuit.
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U3 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.

Are the resistances less than 3 ohms?

Yes	GO to U4
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No	REPAIR the circuit in question.
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U4 CHECK FOR CORRECT DDM (DRIVER DOOR MODULE) OPERATION

- Ignition OFF.
- Disconnect and inspect all the DDM 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 DDM 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 Technical Service Bulletins (TSBs). If a TSB exists for this concern, DISCONTINUE this test and FOLLOW TSB instructions. If no Technical Service Bulletins (TSBs) 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.

The Passenger Door Module (PDM) Does Not Respond To The Diagnostic Scan Tool

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

Refer to Wiring Diagrams Cell 124 for schematic and connector information.

Normal Operation and Fault Conditions

The PDM communicates with the diagnostic scan tool through the MS-CAN. Diagnostic messages are sent/received between the DLC and the diagnostic scan tool through the HS-CAN2 circuits at the DLC, and are translated through the GWM to the MS-CAN.

Possible Sources

- Fuse
- Wiring, terminals and connector
- PDM

Visual Inspection and Diagnostic Pre-checks

Verify BCM fuse 26 (30A) is OK.

PINPOINT TEST V : THE PASSENGER DOOR MODULE (PDM) DOES NOT RESPOND TO THE DIAGNOSTIC SCAN TOOL

V1 CHECK THE PDM (PASSENGER DOOR MODULE) VOLTAGE SUPPLY CIRCUITS FOR AN OPEN	
• Ignition OFF. • Disconnect: PDM C652A • Ignition ON.	
Is the voltage greater than 11 volts?	
Yes	GO to V2
No	VERIFY the 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.
V2 CHECK THE PDM (PASSENGER DOOR MODULE) GROUND CIRCUIT FOR AN OPEN	

- Ignition OFF.

Is the resistance less than 3 ohms?

Yes	GO to V3
No	REPAIR the circuit.

V3 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

Are the resistances less than 3 ohms?

Yes	GO to V4
No	REPAIR the circuit in question.

V4 CHECK FOR CORRECT PDM (PASSENGER DOOR MODULE) OPERATION

- Ignition OFF.
- Disconnect and inspect all the PDM 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 PDM 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 Technical Service Bulletins (TSBs). If a TSB exists for this concern, DISCONTINUE this test and FOLLOW TSB instructions. If no Technical Service Bulletins (TSBs) 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.

The Side Obstacle Detection Control Module LH (SOD-L) 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 SODL communicates with the diagnostic scan tool through the MS-CAN. Diagnostic messages are sent/received between the DLC and the diagnostic scan tool through the HS-CAN2 circuits at the DLC, and are translated through the GWM to the MS-CAN.

Possible Sources

- Fuse
- Wiring, terminals and connector
- SODL

Visual Inspection and Diagnostic Pre-checks

Verify BJB fuse 41 (30A) is OK.

PINPOINT TEST W : THE SIDE OBSTACLE DETECTION CONTROL MODULE LH (SOD-L) DOES NOT RESPOND TO THE DIAGNOSTIC SCAN TOOL

W1 CHECK FOR DC (DIRECT CURRENT) / DC (DIRECT CURRENT) CONVERTER CONTROL MODULE NETWORK COMMUNICATION

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

Does the DC/ DC Converter Control Module pass the network test?

Yes	GO to W2
No	DIAGNOSE a module communication concern. GO to Pinpoint Test AA

W2 RETRIEVE RECORDED DC (DIRECT CURRENT) / DC (DIRECT CURRENT) CONVERTER CONTROL MODULE DIAGNOSTIC TROUBLE CODES (DTCs)

- Using a diagnostic scan tool, perform a DC/ DC Converter Control Module self-test.

Are any Diagnostic Trouble Codes (DTCs) recorded?

Yes	DIAGNOSE the Diagnostic Trouble Codes (DTCs). REFER to: Direct Current/Direct Current (DC/DC) Converter Control Module (414-05 Voltage Converter/Inverter, Diagnosis and Testing).
No	GO to W3

W3 CHECK THE SODL (SIDE OBSTACLE DETECTION CONTROL MODULE LH) VOLTAGE SUPPLY CIRCUITS FOR AN OPEN

- Ignition OFF.
- Disconnect: SODL C4483.
- Ignition ON.

Is the voltage greater than 11 volts?

Yes	GO to W4
No	VERIFY the BJB fuse 41 (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.

W4 CHECK THE SODL (SIDE OBSTACLE DETECTION CONTROL MODULE LH) GROUND CIRCUIT FOR AN OPEN

- Ignition OFF.

Is the resistance less than 3 ohms?

Yes	GO to W5
No	REPAIR the circuit.

W5 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

Are the resistances less than 3 ohms?

Yes	GO to W6
No	REPAIR the circuit in question.

W6 CHECK FOR CORRECT SODL (SIDE OBSTACLE DETECTION CONTROL MODULE LH) OPERATION

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

The Side Obstacle Detection Control Module RH (SOD-R) 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 SODR communicates with the diagnostic scan tool through the MS-CAN. Diagnostic messages are sent/received between the DLC and the diagnostic scan tool through the HS-CAN2 circuits at the DLC, and are translated through the GWM to the MS-CAN.

Possible Sources

- Fuse
- Wiring, terminals and connector
- SODR

Visual Inspection and Diagnostic Pre-checks

Verify BJB fuse 41 (30A) is OK.

PINPOINT TEST X : THE SIDE OBSTACLE DETECTION CONTROL MODULE RH (SOD-R) DOES NOT RESPOND TO THE DIAGNOSTIC SCAN TOOL

X1 CHECK FOR DC (DIRECT CURRENT) / DC (DIRECT CURRENT) CONVERTER CONTROL MODULE NETWORK COMMUNICATION	
• Ignition ON. • Using a diagnostic scan tool, perform the network test.	
Does the DC/ DC Converter Control Module pass the network test?	
Yes	GO to X2
No	DIAGNOSE a module communication concern. GO to Pinpoint Test AA
X2 RETRIEVE RECORDED DC (DIRECT CURRENT) / DC (DIRECT CURRENT) CONVERTER CONTROL MODULE DIAGNOSTIC TROUBLE CODES (DTCS)	

- Using a diagnostic scan tool, perform a DC/ DC Converter Control Module self-test.

Are any Diagnostic Trouble Codes (DTCs) recorded?

Yes	DIAGNOSE the Diagnostic Trouble Codes (DTCs). REFER to: Direct Current/Direct Current (DC/DC) Converter Control Module (414-05 Voltage Converter/Inverter, Diagnosis and Testing).
No	GO to X3

X3 CHECK THE SODR (SIDE OBSTACLE DETECTION CONTROL MODULE RH) VOLTAGE SUPPLY CIRCUITS FOR AN OPEN

- Ignition OFF.
- Disconnect: SODR C4484.
- Ignition ON.

Is the voltage greater than 11 volts?

Yes	GO to X4
No	VERIFY the BJB fuse 41 (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.

X4 CHECK THE SODR (SIDE OBSTACLE DETECTION CONTROL MODULE RH) GROUND CIRCUIT FOR AN OPEN

- Ignition OFF.

Is the resistance less than 3 ohms?

Yes	GO to X5
No	REPAIR the circuit.

X5 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

- Disconnet: GWM C2431

Are the resistances less than 3 ohms?

Yes	GO to X6
No	REPAIR the circuit in question.

X6 CHECK FOR CORRECT SODR (SIDE OBSTACLE DETECTION CONTROL MODULE RH) OPERATION

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

The Cruise Control Module (CCM) Does Not Respond To The Diagnostic Scan Tool (Without Pre-Collision Assist)

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

Refer to Wiring Diagrams Cell 31 for schematic and connector information.

NOTE: For vehicles equipped with pre-collision assist, the CCM is not located directly on the HS-CAN2, but communicates with the IPMA on a private CAN. The IPMA communicates on the HS-CAN2. REFER to Section 419-03B.

Normal Operation and Fault Conditions

For vehicles without pre-collision assist, the CCM communicates with the diagnostic scan tool through the HS-CAN2.

Possible Sources

- Fuse
- Wiring, terminals and connector
- CCM

Visual Inspection and Diagnostic Pre-checks

Verify BJB fuse 13 (10A) is OK.

PINPOINT TEST Y : THE CRUISE CONTROL MODULE (CCM) DOES NOT RESPOND TO THE DIAGNOSTIC SCAN TOOL (WITHOUT PRE-COLLISION ASSIST)

Y1 CHECK THE CCM (CRUISE CONTROL MODULE) VOLTAGE SUPPLY CIRCUITS FOR AN OPEN

- Ignition OFF.
- Disconnect: CCM C1582.
- Ignition ON.

Is the voltage greater than 11 volts?

Yes	GO to Y2
No	VERIFY BJB fuse 13 (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.

Y2 CHECK THE CCM (CRUISE CONTROL MODULE) GROUND CIRCUIT FOR AN OPEN

- Ignition OFF.

Is the resistance less than 3 ohms?

Yes	GO to Y3
No	REPAIR the circuit.

Y3 CHECK THE HS-CAN2 (HIGH SPEED-CONTROLLER AREA NETWORK 2) CIRCUITS BETWEEN THE CCM (CRUISE CONTROL MODULE) AND THE DLC (DATA LINK CONNECTOR) FOR AN OPEN

Are the resistances less than 3 ohms?

Yes	GO to Y4
No	REPAIR the circuit in question.

Y4 CHECK FOR CORRECT CCM (CRUISE CONTROL MODULE) OPERATION

- Ignition OFF.
- Disconnect and inspect the CCM 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 CCM 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 Technical Service Bulletins (TSBs). If a TSB exists for this concern, DISCONTINUE this test and FOLLOW TSB instructions. If no Technical Service Bulletins (TSBs) address this concern, INSTALL a new CCM. REFER to: Cruise Control Module (CCM) (419-03 Cruise Control - Vehicles With: Adaptive Cruise Control) .
No	The system is operating correctly at this time. The concern may have been caused by module connections. ADDRESS the root cause of any connector or pin issues.

The Head Up Display (HUD) 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 with the diagnostic scan tool through the HS-CAN2.

Possible Sources

- Fuse
- Wiring, terminals and connector
- HUD module

Visual Inspection and Diagnostic Pre-checks

Verify BCM fuses 17 (5A) and 21 (5A) are OK.

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

Z1 CHECK THE HUD (HEAD UP DISPLAY) MODULE VOLTAGE SUPPLY CIRCUITS FOR AN OPEN

- Ignition OFF.
- Disconnect: HUD Module C2395.
- Ignition ON.

Is the voltage greater than 11 volts?

Yes	GO to Z2
No	VERIFY BCM fuse 17 (5A) or fuse 21 (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.

Z2 CHECK THE HUD (HEAD UP DISPLAY) MODULE GROUND CIRCUIT FOR AN OPEN

- Ignition OFF.

Is the resistance less than 3 ohms?

Yes	GO to Z3
No	REPAIR the circuit.

Z3 CHECK THE HS-CAN2 (HIGH SPEED-CONTROLLER AREA NETWORK 2) CIRCUITS BETWEEN THE HUD (HEAD UP DISPLAY) MODULE AND THE DLC (DATA LINK CONNECTOR) FOR AN OPEN

Are the resistances less than 3 ohms?

Yes	GO to Z4
No	REPAIR the circuit in question.

Z4 CHECK FOR CORRECT HUD (HEAD UP DISPLAY) MODULE OPERATION

- Ignition OFF.
- Disconnect and inspect the HUD module 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 HUD module 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 Technical Service Bulletins (TSBs). If a TSB exists for this concern, DISCONTINUE this test and FOLLOW TSB instructions. If no Technical Service Bulletins (TSBs) 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.

The Direct Current/Direct Current (DC/DC) Converter Control Module (Voltage Quality 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 40 for schematic and connector information.

Normal Operation and Fault Conditions

The Direct Current/Direct Current (DC/DC) Converter Control Module communicates with the diagnostic scan tool through the HS-CAN1.

Possible Sources

- Fuse
- Wiring, terminals and connectors
- Direct Current/Direct Current (DC/DC) Converter Control Module

Visual Inspection and Diagnostic Pre-checks

Verify BJB fuse 41 (30A) and fuse 15 (7.5A) are OK.

PINPOINT TEST AA : THE DIRECT CURRENT/DIRECT CURRENT (DC/DC) CONVERTER CONTROL MODULE (VOLTAGE QUALITY MODULE) DOES NOT RESPOND TO THE DIAGNOSTIC SCAN TOOL

AA1 CHECK THE DIRECT CURRENT/DIRECT CURRENT (DC/DC) CONVERTER CONTROL MODULE VOLTAGE SUPPLY CIRCUITS FOR AN OPEN

- Ignition OFF.
- Disconnect: Direct Current/Direct Current (DC/DC) Converter Control Module C2513.
- Ignition ON.

Is the voltage greater than 11 volts?

Yes	GO to AA2
No	VERIFY BJB fuse 41 (30A) or fuse 15 (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.

AA2 CHECK THE DIRECT CURRENT/DIRECT CURRENT (DC/DC) CONVERTER CONTROL MODULE GROUND CIRCUIT FOR AN OPEN

- Ignition OFF.

Is the resistance less than 3 ohms?

Yes	GO to AA3
No	REPAIR the circuit.

AA3 CHECK THE HS-CAN1 (HIGH SPEED-CONTROLLER AREA NETWORK 1) CIRCUITS BETWEEN THE DIRECT CURRENT/DIRECT CURRENT (DC/DC) CONVERTER CONTROL MODULE AND THE DLC (DATA LINK CONNECTOR) FOR AN OPEN

Are the resistances less than 3 ohms?

Yes	GO to AA4
No	REPAIR the circuit in question.

AA4 CHECK FOR CORRECT DIRECT CURRENT/DIRECT CURRENT (DC/DC) CONVERTER CONTROL MODULE OPERATION

- Ignition OFF.
- Disconnect and inspect the Direct Current/Direct Current (DC/DC) Converter Control Module 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 Direct Current/Direct Current (DC/DC) converter control module 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 Technical Service Bulletins (TSBs). If a TSB exists for this concern, DISCONTINUE this test and FOLLOW TSB instructions. If no Technical Service Bulletins (TSBs) address this concern, INSTALL a new Direct Current/Direct Current (DC/DC) Converter Control Module. REFER to: Direct Current/Direct Current (DC/DC) Converter Control Module (414-05 Voltage Converter/Inverter, Removal and Installation).
No	The system is operating correctly at this time. The concern may have been caused by module connections. ADDRESS the root cause of any connector or pin issues.

The Heated Steering Wheel Module (HSWM) 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 with the diagnostic scan tool through the MS-CAN. Diagnostic messages are sent/received between the DLC and the diagnostic scan tool through the HS-CAN2 circuits at the DLC, and are translated through the GWM to the MS-CAN.

Possible Sources

- Fuse
- Wiring, terminals and connectors
- HSWM

Visual Inspection and Diagnostic Pre-checks

Verify BCM fuse 36 (15A) is OK.

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

AB1 CHECK THE HSWM (HEATED STEERING WHEEL MODULE) VOLTAGE SUPPLY CIRCUITS FOR AN OPEN

- Ignition OFF.
- Disconnect: HSWM C2406.
- Ignition ON.

Is the voltage greater than 11 volts?

Yes	GO to AB2
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No	VERIFY the 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.
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AB2 CHECK THE HSWM (HEATED STEERING WHEEL MODULE) GROUND CIRCUIT FOR AN OPEN

- Ignition OFF.

Is the resistance less than 3 ohms?

Yes	GO to AB3
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No	REPAIR the circuit.
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AB3 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.

Are the resistances less than 3 ohms?

Yes	GO to AB4
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No	REPAIR the circuit in question.
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AB4 CHECK FOR CORRECT HSWM (HEATED STEERING WHEEL MODULE) OPERATION

- Ignition OFF.
- Disconnect and inspect the HSWM 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 HSWM 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 Technical Service Bulletins (TSBs). If a TSB exists for this concern, DISCONTINUE this test and FOLLOW TSB instructions. If no Technical Service Bulletins (TSBs) 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.

The Driver Multi-Contour Seat Module (SCMG) 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 with the diagnostic scan tool through the Medium Speed Controller Area Network (MS-CAN). Diagnostic messages are sent/received between the DLC and the diagnostic scan tool through the High Speed Controller Area Network 2 (HS2-CAN) circuits at the DLC, and are

translated through the GWM to the Medium Speed Controller Area Network (MS-CAN).

The multi-contour seat relay is integral to the BJB.

Possible Sources

- Fuse
- Wiring, terminals and connector
- SCMG

Visual Inspection and Diagnostic Pre-checks

Verify BJB fuse 88 (15A) is OK.

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

AC1 CHECK THE SCMG (DRIVER MULTI-CONTOUR SEAT MODULE) VOLTAGE SUPPLY CIRCUITS FOR AN OPEN	
• Ignition OFF. • Disconnect: SCMG C3385. • Ignition ON.	
Is the voltage greater than 11 volts?	
Yes	GO to AC3
No	VERIFY the BJB fuse 88 (15A) is OK. If OK, GO to AC2 If not OK, REFER to the Wiring Diagrams manual to identify the possible causes of the circuit short.
AC2 CHECK THE MULTI-CONTOUR SEAT RELAY CIRCUIT FOR AN OPEN	

- Ignition OFF.
- Disconnect: BJB C1035B.

Is the resistance less than 3 ohms?

Yes	GO to AC6
No	REPAIR the circuit.

AC3 CHECK THE SCMG (DRIVER MULTI-CONTOUR SEAT MODULE) GROUND CIRCUIT FOR AN OPEN

- Ignition OFF.

Is the resistance less than 3 ohms?

Yes	GO to AC4
No	REPAIR the circuit.

AC4 CHECK THE MEDIUM SPEED CONTROLLER AREA NETWORK (MS-CAN) CIRCUITS BETWEEN THE SCMG (DRIVER MULTI-CONTOUR SEAT MODULE) AND THE GWM (GATEWAY MODULE A) FOR AN OPEN

- Disconnect: GWM C2431.

Are the resistances less than 3 ohms?

Yes	GO to AC5
No	REPAIR the circuit in question.

AC5 CHECK FOR CORRECT SCMG (DRIVER MULTI-CONTOUR SEAT MODULE) OPERATION

- Ignition OFF.
- Disconnect and inspect the SCMG 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 SCMG 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 Technical Service Bulletins (TSBs). If a TSB exists for this concern, DISCONTINUE this test and FOLLOW TSB instructions. If no Technical Service Bulletins (TSBs) address this concern, INSTALL a new SCMG. REFER to: Driver Multi-Contour Seat Module [SCMG] (501-10 Front Seats) .
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.

AC6 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 AC7
No	DIAGNOSE the demand LP/battery saver relay. REFER to: Interior Lighting (417-02 Interior Lighting) .

AC7 CHECK THE MULTI-CONTOUR SEAT RELAY CIRCUIT FOR AN OPEN

- Ignition OFF.
- Disconnect BCM C2280G

Is the resistance less than 3 ohms?

Yes	GO to AC8
No	REPAIR the circuit.

AC8 CHECK FOR CORRECT BJB (BATTERY JUNCTION BOX) OPERATION

- Ignition OFF.
- Disconnect and inspect the BJB 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 BJB 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 Technical Service Bulletins (TSBs). If a TSB exists for this concern, DISCONTINUE this test and FOLLOW TSB instructions. If no Technical Service Bulletins (TSBs) 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.

The Passenger Active Motion Seat Module (SCMH) 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 with the diagnostic scan tool through the Medium Speed Controller Area Network (MS-CAN). Diagnostic messages are sent/received between the DLC and the diagnostic scan tool through the High Speed Controller Area Network 2 (HS2-CAN) circuits at the DLC, and are translated through the GWM to the Medium Speed Controller Area Network (MS-CAN).

The multi-contour seat relay is integral to the BJB.

Possible Sources

- Fuse
- Wiring, terminals and connector
- SCMH

Visual Inspection and Diagnostic Pre-checks

Verify BJB fuse 88 (15A) is OK.

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

AD1 CHECK THE SCMH (PASSENGER MULTI-CONTOUR SEAT MODULE) VOLTAGE SUPPLY CIRCUITS FOR AN OPEN

- Ignition OFF.
- Disconnect: SCMH C3386.
- Ignition ON.

Is the voltage greater than 11 volts?

Yes	GO to AD3
No	VERIFY the BJB fuse 88 (15A) is OK. If OK, GO to AD2 If not OK, REFER to the Wiring Diagrams manual to identify the possible causes of the circuit short.

AD2 CHECK THE MULTI-CONTOUR SEAT RELAY CIRCUIT FOR AN OPEN

- Ignition OFF.
- Disconnect: BJB C1035B.

Is the resistance less than 3 ohms?

Yes	GO to AD6
No	REPAIR the circuit.

AD3 CHECK THE SCMH (PASSENGER MULTI-CONTOUR SEAT MODULE) GROUND CIRCUIT FOR AN OPEN

- Ignition OFF.

Is the resistance less than 3 ohms?

Yes	GO to AD4
No	REPAIR the circuit.

AD4 CHECK THE MEDIUM SPEED CONTROLLER AREA NETWORK (MS-CAN) CIRCUITS BETWEEN THE SCMH (PASSENGER MULTI-CONTOUR SEAT MODULE) AND THE GWM (GATEWAY MODULE A) FOR AN OPEN

- Disconnect: GWM C2431.

Are the resistances less than 3 ohms?

Yes	GO to AD5
No	REPAIR the circuit in question.

AD5 CHECK FOR CORRECT SCMH (PASSENGER MULTI-CONTOUR SEAT MODULE) OPERATION

- Ignition OFF.
- Disconnect and inspect the SCMH 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 SCMH 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 Technical Service Bulletins (TSBs). If a TSB exists for this concern, DISCONTINUE this test and FOLLOW TSB instructions. If no Technical Service Bulletins (TSBs) address this concern, INSTALL a new SCMH. REFER to: Driver Multi-Contour Seat Module [SCMG] (501-10 Front Seats) .
No	The system is operating correctly at this time. The concern may have been caused by module connections. ADDRESS the root cause of any connector or pin issues.

AD6 CHECK 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 AD7
No	DIAGNOSE the Demand LP/battery saver relay. REFER to: Interior Lighting (417-02 Interior Lighting) .

AD7 CHECK THE MULTI-CONTOUR SEAT RELAY CIRCUIT FOR AN OPEN

- Ignition OFF.
- Disconnect BCM C2280G

Is the resistance less than 3 ohms?

Yes	GO to AD8
No	REPAIR the circuit.

AD8 CHECK FOR CORRECT BJB (BATTERY JUNCTION BOX) OPERATION

- Ignition OFF.
- Disconnect and inspect the BJB 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 BJB 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 Technical Service Bulletins (TSBs). If a TSB exists for this concern, DISCONTINUE this test and FOLLOW TSB instructions. If no Technical Service Bulletins (TSBs) 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.

The Trailer Module (TRM) 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 with the diagnostic scan tool through the MS-CAN. Diagnostic messages are sent/received between the DLC and the diagnostic scan tool through the HS-CAN2 circuits at the DLC, and are translated through the GWM to the MS-CAN.

Possible Sources

- Fuse
- Wiring, terminals and connectors
- TRM

Visual Inspection and Diagnostic Pre-checks

Verify BJB fuses 30 (25A) and 43 (20A) are OK.

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

AE1 CHECK THE TRM (TRAILER MODULE) VOLTAGE SUPPLY CIRCUITS FOR AN OPEN

- Ignition OFF.
- Disconnect: TRM C2498A.
- Ignition ON.

Is the voltage greater than 11 volts?

Yes	GO to AE2
No	VERIFY BJB fuse 30 (25A) or 43 (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.

AE2 CHECK THE TRM (TRAILER MODULE) GROUND CIRCUIT FOR AN OPEN

- Ignition OFF.
- Disconnect: TRM C2498B

Is the resistance less than 3 ohms?

Yes	GO to AE3
No	REPAIR the circuit.

AE3 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.

Are the resistances less than 3 ohms?

Yes	GO to AE4
No	REPAIR the circuit in question.

AE4 CHECK FOR CORRECT TRM (TRAILER MODULE) OPERATION

- Ignition OFF.
- Disconnect and inspect the TRM 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 TRM 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 Technical Service Bulletins (TSBs). If a TSB exists for this concern, DISCONTINUE this test and FOLLOW TSB instructions. If no Technical Service Bulletins (TSBs) 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.

The Trailer Brake Control Module (TBM) 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 with the diagnostic scan tool through the HS-CAN2.

Possible Sources

- Fuse
- Wiring, terminals and connectors
- TBM

Visual Inspection and Diagnostic Pre-checks

Verify BJB fuse 24 (30A) is OK.

PINPOINT TEST AF : THE TBM (TRAILER BRAKE CONTROL MODULE) DOES NOT RESPOND TO THE DIAGNOSTIC SCAN TOOL

AF1 CHECK THE TBM (TRAILER BRAKE CONTROL MODULE) VOLTAGE SUPPLY CIRCUITS FOR AN OPEN

- Ignition OFF.
- Disconnect: TBM C2142.
- Ignition ON.

Is the voltage greater than 11 volts?

Yes	GO to AF2
No	VERIFY the BJB fuse 24 (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.

AF2 CHECK THE TBM (TRAILER BRAKE CONTROL MODULE) GROUND CIRCUIT FOR AN OPEN

- Ignition OFF.

Is the resistance less than 3 ohms?

Yes	GO to AF3
No	REPAIR the circuit.

AF3 CHECK THE HS-CAN2 (HIGH SPEED-CONTROLLER AREA NETWORK 2) CIRCUITS BETWEEN THE TBM (TRAILER BRAKE CONTROL MODULE) AND THE DLC (DATA LINK CONNECTOR) FOR AN OPEN

Are the resistances less than 3 ohms?

Yes	GO to AF4
No	REPAIR the circuit in question.

AF4 CHECK FOR CORRECT TBM (TRAILER BRAKE CONTROL MODULE) OPERATION

- Ignition OFF.
- Disconnect and inspect the TBM 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 TBM 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 Technical Service Bulletins (TSBs). If a TSB exists for this concern, DISCONTINUE this test and FOLLOW TSB instructions. If no Technical Service Bulletins (TSBs) 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.

The Power Running Board (PRB) 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 PRB module communicates with the diagnostic scan tool through the MS-CAN. Diagnostic messages are sent/received between the DLC and the diagnostic scan tool through the HS-CAN2 circuits at the DLC, and are translated through the GWM to the MS-CAN.

Possible Sources

- Fuse
- Wiring, terminals and connectors
- PRB module

Visual Inspection and Diagnostic Pre-checks

Verify BJB fuse 89 (30A) is OK.

PINPOINT TEST AG : THE PRB (POWER RUNNING BOARD) MODULE DOES NOT RESPOND TO THE DIAGNOSTIC SCAN TOOL

AG1 CHECK THE PRB (POWER RUNNING BOARD) MODULE VOLTAGE SUPPLY CIRCUITS FOR AN OPEN

- Ignition OFF.
- Disconnect: PRB module C3313B.
- Ignition ON.

Is the voltage greater than 11 volts?

Yes	GO to AG2
No	VERIFY BJB fuse 89 (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.

AG2 CHECK THE PRB (POWER RUNNING BOARD) MODULE GROUND CIRCUIT FOR AN OPEN

- Ignition OFF.

Is the resistance less than 3 ohms?

Yes	GO to AG3
No	REPAIR the circuit.

AG3 CHECK THE MS-CAN (MEDIUM SPEED-CONTROLLER AREA NETWORK) CIRCUITS BETWEEN THE PRB (POWER RUNNING BOARD) MODULE AND THE GWM (GATEWAY MODULE A) FOR AN OPEN

- Disconnect GWM C2431.

Are the resistances less than 3 ohms?

Yes	GO to AG4
No	REPAIR the circuit in question.

AG4 CHECK FOR CORRECT PRB (POWER RUNNING BOARD) MODULE OPERATION

- Ignition OFF.
- Disconnect and inspect the PRB module 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 PRB module 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 Technical Service Bulletins (TSBs). If a TSB exists for this concern, DISCONTINUE this test and FOLLOW TSB instructions. If no Technical Service Bulletins (TSBs) address this concern, INSTALL a new PRB module. REFER to: Power Running Board (PRB) (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.

The Transfer Case Control Module (TCCM) 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 with the diagnostic scan tool through the HS-CAN2.

Possible Sources

- Fuse
- Wiring, terminals and connectors
- TCCM

Visual Inspection and Diagnostic Pre-checks

Verify BJB fuses 64 (15A) (E-locker), 13 (10A), 63 (25A) and 71 (25A) are OK.

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

AH1 CHECK THE TCCM (TRANSFER CASE CONTROL MODULE) VOLTAGE SUPPLY CIRCUITS FOR AN OPEN	
• Ignition OFF. • Disconnect: TCCM C2371A and C2371B. • Ignition ON.	
Is the voltage greater than 11 volts?	
Yes	GO to AH2
No	VERIFY BJB fuse 64 (15A) (E-locker), 13 (10A), 63 (25A) or 71 (25A) 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 TCCM (TRANSFER CASE CONTROL MODULE) GROUND CIRCUITS FOR AN OPEN

- Ignition OFF.

Is the resistance less than 3 ohms?

Yes	GO to AH3
No	REPAIR the circuit.

AH3 CHECK THE HS-CAN2 (HIGH SPEED-CONTROLLER AREA NETWORK 2) CIRCUITS BETWEEN THE TCCM (TRANSFER CASE CONTROL MODULE) AND THE DLC (DATA LINK CONNECTOR) FOR AN OPEN

Are the resistances less than 3 ohms?

Yes	GO to AH4
No	REPAIR the circuit in question.

AH4 CHECK FOR CORRECT TCCM (TRANSFER CASE CONTROL MODULE) OPERATION

- Ignition OFF.
- Disconnect and inspect the TCCM 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 TCCM 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 Technical Service Bulletins (TSBs). If a TSB exists for this concern, DISCONTINUE this test and FOLLOW TSB instructions. If no Technical Service Bulletins (TSBs) 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.

The All Terrain Control Module (ATCM) 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 ATCM communicates with the diagnostic scan tool through the HS-CAN2.

Possible Sources

- Fuse
- Wiring, terminals and connectors
- ATCM

Visual Inspection and Diagnostic Pre-checks

Verify BCM fuse 17 (5A) is OK.

PINPOINT TEST AI : THE ATCM (ALL TERRAIN CONTROL MODULE) DOES NOT RESPOND TO THE DIAGNOSTIC SCAN TOOL

AI1 CHECK THE ATCM (ALL TERRAIN CONTROL MODULE) VOLTAGE SUPPLY CIRCUITS FOR AN OPEN

- Ignition OFF.
- Disconnect: ATCM C2071.
- Ignition ON.

Is the voltage greater than 11 volts?

Yes	GO to AI2
No	VERIFY BCM fuse 17 (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.

AI2 CHECK THE ATCM (ALL TERRAIN CONTROL MODULE) GROUND CIRCUIT FOR AN OPEN

- Ignition OFF.

Is the resistance less than 3 ohms?

Yes	GO to AI3
No	REPAIR the circuit.

AI3 CHECK THE HS-CAN2 (HIGH SPEED-CONTROLLER AREA NETWORK 2) CIRCUITS BETWEEN THE ATCM (ALL TERRAIN CONTROL MODULE) AND THE DLC (DATA LINK CONNECTOR) FOR AN OPEN

Are the resistances less than 3 ohms?

Yes	GO to AI4
No	REPAIR the circuit in question.

AI4 CHECK FOR CORRECT ATCM (ALL TERRAIN CONTROL MODULE) OPERATION

- Ignition OFF.
- Disconnect and inspect the ATCM 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 ATCM 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 Technical Service Bulletins (TSBs). If a TSB exists for this concern, DISCONTINUE this test and FOLLOW TSB instructions. If no Technical Service Bulletins (TSBs) address this concern, INSTALL a new ATCM. REFER to: Mode Select Switch (MSS) (308-07A Four-Wheel Drive Systems, Removal and Installation). or REFER to: Mode Select Switch (MSS) - Raptor (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.

The Gateway Module (GWM) Does 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 HS-CAN1 and HS-CAN2. The

GWM operates as a gateway for communication between the modules on HS-CAN1, HS-CAN2, HS-CAN3 and MS-CAN.

Visual Inspection and Diagnostic Pre-checks

Verify BCM fuses 12 (7.5A) and 15 (10A) are OK.

PINPOINT TEST AJ : THE GATEWAY MODULE (GWM) DOES NOT RESPOND TO THE DIAGNOSTIC SCAN TOOL

AJ1 CHECK THE HS-CAN1 (HIGH SPEED-CONTROLLER AREA NETWORK 1) TERMINATION RESISTANCE

- Ignition OFF.
- Disconnect negative battery cable.
- Disconnect the diagnostic scan tool cable from the DLC.

Is the resistance between 54 and 66 ohms?

Yes	GO to AJ3
No	GO to AJ2

AJ2 CHECK THE HS-CAN1 (HIGH SPEED-CONTROLLER AREA NETWORK 1) CIRCUITS BETWEEN THE GWM (GATEWAY MODULE A) AND THE DLC (DATA LINK CONNECTOR) FOR AN OPEN

- Disconnect GWM C2431.

Are the resistances less than 3 ohms?

Yes	GO to AJ3
No	GO to AJ11

AJ3 CHECK THE HS-CAN2 (HIGH SPEED-CONTROLLER AREA NETWORK 2) TERMINATION RESISTANCE

- Connect: GWM C2431.

Is the resistance between 54 and 66 ohms?

Yes	GO to AJ5
No	GO to AJ4

AJ4 CHECK THE HS-CAN2 (HIGH SPEED-CONTROLLER AREA NETWORK 2) CIRCUITS BETWEEN THE GWM (GATEWAY MODULE A) AND THE DLC (DATA LINK CONNECTOR) FOR AN OPEN

- Disconnect: GWM C2431.

Are the resistances less than 3 ohms?

Yes	GO to AJ5
No	GO to AJ11

AJ5 CHECK THE MS-CAN (MEDIUM SPEED-CONTROLLER AREA NETWORK) TERMINATION RESISTANCE

- Disconnect: GWM C2431.

Is the resistance between 108 and 132 ohms?

Yes	GO to AJ6
No	GO to Pinpoint Test J

AJ6 CHECK THE MS-CAN (MEDIUM SPEED-CONTROLLER AREA NETWORK) TERMINATION RESISTANCE, COMPONENT SIDE

- Disconnect: GWM C2431.

Is the resistance between 108 and 132 ohms?

Yes	GO to AJ7
No	GO to AJ11

AJ7 CHECK THE HS-CAN3 (HIGH SPEED-CONTROLLER AREA NETWORK 3) TERMINATION RESISTANCE

Is the resistance between 108 and 132 ohms?

Yes	GO to AJ8
No	GO to Pinpoint Test H

AJ8 CHECK THE HS-CAN3 (HIGH SPEED-CONTROLLER AREA NETWORK 3) TERMINATION RESISTANCE, COMPONENT SIDE

Is the resistance between 108 and 132 ohms?

Yes	GO to AJ9
No	GO to AJ11

AJ9 CHECK THE GWM (GATEWAY MODULE A) VOLTAGE SUPPLY CIRCUITS FOR AN OPEN

- Connect negative battery cable.

Is the voltage greater than 11 volts?

Yes	GO to AJ10
No	VERIFY the BCM fuse 12 (7.5A) or fuse 15 (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.

AJ10 CHECK THE GWM (GATEWAY MODULE A) GROUND CIRCUIT FOR AN OPEN

- Ignition OFF.

Are the resistances less than 3 ohms?

Yes	GO to AJ11
No	REPAIR the circuit in question.

AJ11 CHECK FOR CORRECT GWM (GATEWAY MODULE A) OPERATION

- Ignition OFF.
- Disconnect and inspect the GWM 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 GWM 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 Technical Service Bulletins (TSBs). If a TSB exists for this concern, DISCONTINUE this test and FOLLOW TSB instructions. If no Technical Service Bulletins (TSBs) 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.

No High Speed Controller Area Network 1 (HS-CAN1) 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 directly through the DLC circuits.
REFER to: Communications Network (418-00 Module Communications Network) .

Possible Sources

- Fuse
- Wiring, terminals or connectors
- APIM (if equipped)
- BECMB (except Raptor)
- BCM
- Direct Current/Direct Current (DC/DC) converter control module (Voltage Quality Module) (if equipped)
- GWM
- PCM
- Telematics Module (if equipped with Ford Telematics)
- TCM (if equipped with 10R80 transmission)

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

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 4, 5, 6, 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 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 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 HS-CAN1 (HIGH SPEED-CONTROLLER AREA NETWORK 1) TERMINATION RESISTANCE

- Disconnect the negative battery cable.

Is the resistance between 54 and 66 ohms?

Yes	GO to AK4
No	GO to AK6

AK4 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

Are the resistances greater than 1,000 ohms?

Yes	GO to AK5
No	GO to AK12

AK5 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

- Connect the negative battery cable.
- Ignition ON.

Is the voltage greater than 6 volts on either circuit?

Yes	REPAIR the circuit in question.
No	GO to AK13

AK6 CHECK THE HS-CAN1 (HIGH SPEED-CONTROLLER AREA NETWORK 1) TERMINATION RESISTOR

Is the resistance between 108 and 132 ohms?

Yes	GO to AK7
No	GO to AK9

AK7 CHECK THE HS-CAN1 (HIGH SPEED-CONTROLLER AREA NETWORK 1) TERMINATION RESISTOR WITH THE PCM (POWERTRAIN CONTROL MODULE) DISCONNECTED

- Disconnect: PCM C1232B (2.7L GTDI), C1551B (3.3L TiVCT), C1915B (3.5L GTDI) or C1381B (5.0L TiVCT).

Is the resistance between 108 and 132 ohms?

Yes	GO to AK8
No	GO to AK24

AK8 CHECK THE HS-CAN1 (HIGH SPEED-CONTROLLER AREA NETWORK 1) CIRCUITS BETWEEN THE PCM (POWERTRAIN CONTROL MODULE) AND THE DLC (DATA LINK CONNECTOR) FOR AN OPEN

- Measure:

Click to display connectors

5.0L TiVCT

Positive Lead	Measurement / Action	Negative Lead
C1381B-27	Ω	C251-6
C1381B-12		C251-14

Are the resistances less than 3 ohms?

Yes	GO to AK13
No	REPAIR the circuit in question.

AK9 CHECK THE HS-CAN1 (HIGH SPEED-CONTROLLER AREA NETWORK 1) (+) AND HS-CAN1 (HIGH SPEED-CONTROLLER AREA NETWORK 1) (-) CIRCUITS FOR A SHORT TOGETHER

Is the resistance less than 3 ohms?

Yes	GO to AK11
No	GO to AK10

AK10 CHECK THE HS-CAN1 (HIGH SPEED-CONTROLLER AREA NETWORK 1) (+) AND HS-CAN1 (HIGH SPEED-CONTROLLER AREA NETWORK 1) (-) CIRCUITS FOR AN OPEN

Is the resistance greater than 10,000 ohms?

Yes	REPAIR the DLC or REPAIR the circuit in question.
No	A capacitor internal to a module can still be draining, causing irregular resistance readings. WAIT 5 minutes. REPEAT the pinpoint test. If the concern is still present, REPAIR the circuit.

AK11 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 modules one at a time until the resistance is greater than 3 ohms.
 - APIM C2383A (if equipped)
 - BECMB C2518 (except Raptor)
 - BCM C2280G
 - Direct Current/Direct Current (DC/DC) converter control module (Voltage Quality Module) C2513 (if equipped)
 - PCM C1232B (2.7L GTDI), C1551B (3.3L TiVCT), C1915B (3.5L GTDI) or C1381B (5.0L TiVCT)
 - Telematics Module C2409
 - TCM C1822 (if equipped)

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

Yes	For the APIM, GO to AK28 For the BECMB, GO to AK27 For the BCM, GO to AK26 For the Direct Current/Direct Current (DC/DC) converter control module (Voltage Quality Module), GO to AK29 For the PCM, GO to AK25 For the Telematics Module, GO to AK30 For the TCM, GO to AK31
No	REPAIR the circuit in question. CONNECT all modules.

AK12 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

- Disconnect modules one at a time until the resistance to ground is greater than 1,000 ohms.
 - APIM C2383A (if equipped)
 - BECMB C2518 (except Raptor)
 - BCM C2280G
 - Direct Current/Direct Current (DC/DC) converter control module (Voltage Quality Module) C2513
 - PCM C1232B (2.7L GTDI), C1551B (3.3L TiVCT), C1915B (3.5L GTDI) or C1381B (5.0L TiVCT)
 - Telematics Module C2409
 - TCM C1822 (if equipped)

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

Yes	For the APIM, GO to AK28 For the BECMB, GO to AK27 For the BCM, GO to AK26 For the Direct Current/Direct Current (DC/DC) converter control module (Voltage Quality Module), GO to AK29 For the PCM, GO to AK25 For the Telematics Module, GO to AK30 For the TCM, GO to AK31
No	REPAIR the circuit in question. CONNECT all modules.

AK13 CHECK FOR RESTORED COMMUNICATION WITH THE PCM (POWERTRAIN CONTROL MODULE) DISABLED

NOTE: Establish an IDS session prior to disabling the PCM in this test step. If the PCM has failed communication during multiple attempts to identify the vehicle, first identify the vehicle manually by entering a PCM part number, calibration number or tear tag when prompted by IDS. When a vehicle is manually identified by a PCM part number, calibration number or tear tag, the IDS does not automatically run a network test. Manually select and run the network test. 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 16 (10A) and fuse 38 (25A).
- Using a diagnostic scan tool, perform the network test.

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

Yes	INSTALL the removed fuses. GO to Pinpoint Test A
No	INSTALL the removed fuses. GO to AK14

AK14 CHECK FOR RESTORED COMMUNICATION WITH THE GWM (GATEWAY MODULE A) 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 12 (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 AJ
No	INSTALL the removed fuse. If equipped with a 10R80 transmission, GO to AK15 If not equipped with a 10R80 transmission, GO to AK16

AK15 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 fuse 16 (10A) and fuse 83 (15A) to disable the TCM.
- Using a diagnostic scan tool, perform the network test.

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

Yes	GO to Pinpoint Test B
No	For Raptor, GO to AK17 For all others, GO to AK16

AK16 CHECK FOR RESTORED COMMUNICATION WITH THE BECMB (EXTENDED POWER 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 9 (10A) and 19 (7.5A) to disable the BECMB.
- Using a diagnostic scan tool, perform the network test.

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

Yes	GO to Pinpoint Test E
No	GO to AK17

AK17 VERIFY VEHICLE EQUIPMENT - APIM (SYNC MODULE)

- Inspect the vehicle for an APIM.

Is the vehicle equipped with an APIM?

Yes	GO to AK18
No	GO to AK19

AK18 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 32 (10A) to disable the APIM.
- 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 O
No	INSTALL the removed fuse. GO to AK19

AK19 VERIFY VEHICLE EQUIPMENT - DIRECT CURRENT/DIRECT CURRENT (DC/DC) CONVERTER CONTROL MODULE (VOLTAGE QUALITY MODULE)

- Inspect the vehicle for a Direct Current/Direct Current (DC/DC) Converter Control Module (Voltage Quality Module).

Is the vehicle equipped with a Direct Current/Direct Current (DC/DC) Converter Control Module (Voltage Quality Module)?

Yes	GO to AK20
No	GO to AK22

AK20 CHECK FOR RESTORED NETWORK COMMUNICATION WITH THE DIRECT CURRENT/DIRECT CURRENT (DC/DC) CONVERTER CONTROL MODULE (VOLTAGE QUALITY 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 15 (7.5A) and fuse 41 (30A) to disable the Direct Current/Direct Current (DC/DC) Converter Control Module (Voltage Quality Module) .
- Using a diagnostic scan tool, perform the network test.

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

Yes	INSTALL the removed fuses. GO to Pinpoint Test AA
No	INSTALL the removed fuses. GO to AK21

AK21 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 to disable the BCM.
- Using a diagnostic scan tool, perform the network test.

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

Yes	CONNECT BCM C2280G. GO to Pinpoint Test I
No	CONNECT BCM C2280G. GO to AK22

AK22 VERIFY VEHICLE EQUIPMENT - TELEMATICS MODULE

- Inspect the vehicle for a Telematics Module (Crew Chief equipped vehicles only).

Is the vehicle equipped with a Telematics Module?

Yes	GO to AK23
No	The HS-CAN1 tests within specification. VERIFY the correct operation of the diagnostic scan tool on a known good vehicle.

AK23 CHECK FOR RESTORED NETWORK COMMUNICATION WITH THE TELEMATICS 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: Telematics Module C2409.
- Using a diagnostic scan tool, perform the network test.

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

Yes	GO to AK30
No	CONNECT the Telematics Module. The HS-CAN1 tests within specification. VERIFY the correct operation of the diagnostic scan tool on a known good vehicle.

AK24 CHECK FOR CORRECT GWM (GATEWAY MODULE A) OPERATION

- Ignition OFF.
- Disconnect and inspect the GWM 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 GWM 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 Technical Service Bulletins (TSBs). If a TSB exists for this concern, DISCONTINUE this test and FOLLOW TSB instructions. If no Technical Service Bulletins (TSBs) address this concern, INSTALL a new GWM. REFER to: Gateway Module A (GWM) (418-00 Module Communications Network, Removal and Installation).
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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.
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AK25 CHECK FOR CORRECT PCM (POWERTRAIN CONTROL MODULE) OPERATION

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

AK26 CHECK FOR CORRECT BCM (BODY CONTROL MODULE) OPERATION

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

AK27 CHECK FOR CORRECT BECMB (EXTENDED POWER MODULE) OPERATION

- Ignition OFF.
- Disconnect and inspect the BECMB 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 BECMB 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 Technical Service Bulletins (TSBs). If a TSB exists for this concern, DISCONTINUE this test and FOLLOW TSB instructions. If no Technical Service Bulletins (TSBs) address this concern, INSTALL a new BECMB. REFER to: Battery Energy Control Module B (BECMB) (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.

AK28 CHECK FOR CORRECT APIM (SYNC MODULE) OPERATION

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

AK29 CHECK FOR CORRECT DIRECT CURRENT/DIRECT CURRENT (DC/DC) CONVERTER CONTROL MODULE (VOLTAGE QUALITY MODULE) OPERATION

- Ignition OFF.
- Disconnect and inspect the Direct Current/Direct Current (DC/DC) converter control module 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 Direct Current/Direct Current (DC/DC) converter control module 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 Technical Service Bulletins (TSBs). If a TSB exists for this concern, DISCONTINUE this test and FOLLOW TSB instructions. If no Technical Service Bulletins (TSBs) address this concern, INSTALL a new Direct Current/Direct Current (DC/DC) Converter Control Module. REFER to: Direct Current/Direct Current (DC/DC) Converter Control Module (414-05 Voltage Converter/Inverter, 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 TELEMATICS MODULE OPERATION

- Ignition OFF.
- Disconnect and inspect the Telematics 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 Telematics 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 Technical Service Bulletins (TSBs). If a TSB exists for this concern, DISCONTINUE this test and FOLLOW TSB instructions. If no Technical Service Bulletins (TSBs) address this concern, INSTALL a new Telematics Module. REFER to: Telematics Module (415-00 Information and Entertainment System - General Information - Vehicles With: Ford Telematics) .
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 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 Technical Service Bulletins (TSBs). If a TSB exists for this concern, DISCONTINUE this test and FOLLOW TSB instructions. If no Technical Service Bulletins (TSBs) address this concern, INSTALL a new TCM. REFER to: Transmission Control Module (TCM) - 3.0L Power Stroke Diesel/3.5L EcoBoost (272kW/370PS) (307-01B Automatic Transmission - 10-Speed Automatic Transmission - 10R80, Removal and Installation).
No	The system is operating correctly at this time. The concern may have been caused by module connections. ADDRESS the root cause of any connector or pin issues.

No High Speed Controller Area Network 2 (HS-CAN2) 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 directly through the DLC circuits.
REFER to: Communications Network (418-00 Module Communications Network) .

Possible Sources

- Fuse
- Wiring, terminals or connectors
- ATCM (Raptor)
- ABS module
- CCM (if equipped, without pre-collision assist)
- GWM
- HUD module (if equipped)
- IPMA (if equipped)
- IPMB (if equipped)
- OCSM
- PSCM
- SCCM
- RCM

- TBM
- TCCM (if equipped)

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

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: 1.5mm 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 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 THE HS-CAN2 (HIGH SPEED-CONTROLLER AREA NETWORK 2) TERMINATION RESISTANCE

- Disconnect negative battery cable.

Is the resistance between 54 and 66 ohms?

Yes	GO to AL4
No	GO to AL6

AL4 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

Are the resistances greater than 1,000 ohms?

Yes	GO to AL5
No	GO to AL12

AL5 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

- Connect negative battery cable.
- Ignition ON.

Is the voltage greater than 6 volts on either circuit?

Yes	REPAIR the circuit in question.
No	GO to AL13

AL6 CHECK THE HS-CAN2 (HIGH SPEED-CONTROLLER AREA NETWORK 2) TERMINATION RESISTOR

Is the resistance between 108 and 132 ohms?

Yes	GO to AL7
No	GO to AL9

AL7 CHECK THE HS-CAN2 (HIGH SPEED-CONTROLLER AREA NETWORK 2) TERMINATION RESISTOR WITH THE GWM (GATEWAY MODULE A) DISCONNECTED

- Disconnect: GWM C2431.

Is the resistance between 108 and 132 ohms?

Yes	GO to AL8
No	GO to AL29

AL8 CHECK THE HS-CAN2 (HIGH SPEED-CONTROLLER AREA NETWORK 2) CIRCUITS BETWEEN THE SCCM (STEERING COLUMN CONTROL MODULE) AND THE DLC (DATA LINK CONNECTOR) FOR AN OPEN

- Connect GWM C2431.
- Disconnect: SCCM C226

Are the resistances less than 3 ohms?

Yes	GO to AL37
No	REPAIR the circuit in question.

AL9 CHECK THE HS-CAN2 (HIGH SPEED-CONTROLLER AREA NETWORK 2) (+) AND HS-CAN2 (HIGH SPEED-CONTROLLER AREA NETWORK 2) (-) CIRCUITS FOR A SHORT TOGETHER

Is the resistance less than 3 ohms?

Yes	GO to AL11
No	GO to AL10

AL10 CHECK THE HS-CAN2 (HIGH SPEED-CONTROLLER AREA NETWORK 2) (+) AND HS-CAN2 (HIGH SPEED-CONTROLLER AREA NETWORK 2) (-) CIRCUITS FOR AN OPEN

Is the resistance greater than 10,000 ohms?

Yes	REPAIR the DLC or REPAIR the circuit in question.
No	A capacitor internal to a module can still be draining, causing irregular resistance readings. WAIT 5 minutes. REPEAT the pinpoint test. If the concern is still present, REPAIR the circuit.

AL11 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 modules one at a time until the resistance is greater than 3 ohms.
 - ATCM C2071 (Raptor)
 - ABS module C135 (with EPB) or C155 (without EPB)
 - CCM C1582 (without pre-collision assist)
 - HUD module C2395
 - IPMA C9012 or C9224 (with pre-collision assist)
 - IPMB C2512A
 - OCSM C3285
 - PSCM C1463B
 - RCM C310B
 - SCCM C226
 - TBM C2142
 - TCCM C2371A

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

Yes	For the ATCM, GO to AL27 For the ABS module, GO to AL28 For the CCM, GO to AL30 For the HUD module, GO to AL31 For the IPMA, GO to AL32 For the IPMB, GO to AL33 For the OCSM, GO to AL35 For the PSCM, GO to AL34 For the RCM, GO to AL36 For the SCCM, GO to AL37 For the TBM, GO to AL38
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	For the TCCM, GO to AL39
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No	REPAIR the circuits.
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AL12 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

- Disconnect modules one at a time until the resistance to ground is greater than 1,000 ohms.
 - ATCM C2071 (Raptor)
 - ABS module C135 (with EPB) or C155 (without EPB)
 - CCM C1582 (without pre-collision assist)
 - HUD module C2395
 - IPMA C9012 or C9224 (with pre-collision assist)
 - IPMB C2512A
 - OCSM C3285
 - PSCM C1463B
 - RCM C310B
 - SCCM C226
 - TBM C2142
 - TCCM C2371A

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

Yes	For the ATCM, GO to AL27 For the ABS module, GO to AL28 For the CCM, GO to AL30 For the HUD module, GO to AL31 For the IPMA, GO to AL32 For the IPMB, GO to AL33 For the OCSM, GO to AL35 For the PSCM, GO to AL34 For the RCM, GO to AL36 For the SCCM, GO to AL37 For the TBM, GO to AL38 For the TCCM, GO to AL39
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No	REPAIR the circuit in question. CONNECT all modules.
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AL13 CHECK FOR RESTORED COMMUNICATION WITH THE GWM (GATEWAY MODULE A) 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 12 (7.5A) to disable the GWM.
- 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 AJ
No	GO to AL14

AL14 CHECK FOR RESTORED COMMUNICATION WITH THE SCCM (STEERING COLUMN CONTROL MODULE) DISABLED

- Disconnect: BCM fuse 13 (7.5A) to disable the SCCM.

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

Yes	GO to Pinpoint Test G
No	GO to AL15

AL15 CHECK FOR RESTORED COMMUNICATION WITH THE TCCM (TRANSFER CASE CONTROL MODULE) AND CCM (CRUISE 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 13 (10A) to disable the TCCM (if equipped) and CCM (less pre-collision assist).

- 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 a TCCM or a CCM (less pre-collision assist), GO to AL16 If not equipped with a TCCM or a CCM (less pre-collision assist), GO to AL17
No	INSTALL the removed fuse. GO to AL17

AL16 CHECK FOR RESTORED COMMUNICATION WITH THE TCCM (TRANSFER CASE 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: TCCM C2371A.
- 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 AH
No	CONNECT the module. GO to Pinpoint Test Y

AL17 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), 17 (10A) and 70 (40A).

- 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 C
No	INSTALL the removed fuses. GO to AL18

AL18 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: High Current BJB MEGA fuse 2 (125A) and BJB fuse 18 (10A) to disable the PSCM.
- 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 S
No	INSTALL the removed fuses. If equipped with lane departure, GO to AL19 If not equipped with lane departure, GO to AL22

AL19 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) to disable the IPMA (if equipped) and IPMB (if equipped).
- 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 a 360° view camera, GO to AL20 If not equipped with a 360° view camera, GO to Pinpoint Test L
No	

AL20 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 C2512A (if equipped).
- 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 M
No	CONNECT the module. GO to Pinpoint Test L

AL21 CHECK FOR RESTORED NETWORK COMMUNICATION WITH THE HUD (HEAD UP DISPLAY) MODULE

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 17 (5A) and 21 (5A) to disable the HUD module.
- Using a diagnostic scan tool, perform the network test.

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

Yes	GO to Pinpoint Test Z
No	GO to AL22

AL22 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: BCM fuses 9 (10A) and 19 (7.5A) or BCM fuse 35 (5A) (Raptor only).
- Using a diagnostic scan tool, perform the network test.

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

Yes	INSTALL the removed fuse(s). GO to Pinpoint Test D
No	INSTALL the removed fuse(s). GO to AL23

AL23 CHECK FOR RESTORED NETWORK COMMUNICATION WITH THE OCSM (OCCUPANT CLASSIFICATION SYSTEM MODULE) 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 22 (5A) to disable the OCSM.
- 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 F
No	INSTALL the removed fuse. GO to AL24

AL24 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 AL25
No	For Raptor vehicles, GO to AL26 Otherwise, 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.

AL25 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 24 (30A).
- 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 AF
No	INSTALL the removed fuse. For Raptor vehicles, GO to AL26 Otherwise, 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.

AL26 CHECK FOR RESTORED NETWORK COMMUNICATION WITH THE ATCM (ALL TERRAIN 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 (5A) to disable the ATCM.
- 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 AI
No	INSTALL the removed fuse. 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.

AL27 CHECK FOR CORRECT ATCM (ALL TERRAIN CONTROL MODULE) OPERATION

- Ignition OFF.
- Disconnect and inspect the ATCM 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 ATCM 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 Technical Service Bulletins (TSBs). If a TSB exists for this concern, DISCONTINUE this test and FOLLOW TSB instructions. If no Technical Service Bulletins (TSBs) address this concern, INSTALL a new ATCM. REFER to: Mode Select Switch (MSS) (308-07A Four-Wheel Drive Systems, Removal and Installation). or REFER to: Mode Select Switch (MSS) - Raptor (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.

AL28 CHECK FOR CORRECT ABS (ANTI-LOCK BRAKE SYSTEM) MODULE OPERATION

- Ignition OFF.
- Disconnect and inspect the ABS module 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 ABS module 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 Technical Service Bulletins (TSBs). If a TSB exists for this concern, DISCONTINUE this test and FOLLOW TSB instructions. If no Technical Service Bulletins (TSBs) address this concern, INSTALL a new ABS module. REFER to: Hydraulic Control Unit (HCU) (206-09 Anti-Lock Brake System (ABS) and Stability Control, 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.

AL29 CHECK FOR CORRECT GWM (GATEWAY MODULE A) OPERATION

- Ignition OFF.
- Disconnect and inspect the GWM 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 GWM 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 Technical Service Bulletins (TSBs). If a TSB exists for this concern, DISCONTINUE this test and FOLLOW TSB instructions. If no Technical Service Bulletins (TSBs) 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.

AL30 CHECK FOR CORRECT CCM (CRUISE CONTROL MODULE) OPERATION

- Ignition OFF.
- Disconnect and inspect the CCM 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 CCM 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 Technical Service Bulletins (TSBs). If a TSB exists for this concern, DISCONTINUE this test and FOLLOW TSB instructions. If no Technical Service Bulletins (TSBs) address this concern, INSTALL a new CCM. REFER to: Cruise Control Module (CCM) (419-03 Cruise Control - Vehicles With: Adaptive Cruise Control) .
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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.
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AL31 CHECK FOR CORRECT HUD (HEAD UP DISPLAY) OPERATION

- Ignition OFF.
- Disconnect and inspect the HUD module 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 HUD module 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 Technical Service Bulletins (TSBs). If a TSB exists for this concern, DISCONTINUE this test and FOLLOW TSB instructions. If no Technical Service Bulletins (TSBs) 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).
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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.
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AL32 CHECK FOR CORRECT IPMA (IMAGE PROCESSING MODULE A) OPERATION

- Ignition OFF.
- Disconnect and inspect the IPMA 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 IPMA module 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 Technical Service Bulletins (TSBs). If a TSB exists for this concern, DISCONTINUE this test and FOLLOW TSB instructions. If no Technical Service Bulletins (TSBs) address this concern, INSTALL a new IPMA module. REFER to: Image Processing Module A (IPMA) (419-07 Lane Keeping 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.

AL33 CHECK FOR CORRECT IPMB (IMAGE PROCESSING MODULE B) OPERATION

- Ignition OFF.
- Disconnect and inspect the IPMB 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 IPMB module connector and related in-line connectors. Make sure they seat and latch correctly.

- Operate the system and determine if the concern is still present.

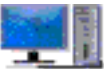
Is the concern still present?

Yes	CHECK OASIS for any applicable Technical Service Bulletins (TSBs). If a TSB exists for this concern, DISCONTINUE this test and FOLLOW TSB instructions. If no Technical Service Bulletins (TSBs) address this concern, INSTALL a new IPMB module. 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.

AL34 CHECK FOR CORRECT PSCM (POWER STEERING CONTROL MODULE) OPERATION

- Ignition OFF.
- Disconnect and inspect all the PSCM 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 PSCM 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 Technical Service Bulletins (TSBs). If a TSB exists for this concern, DISCONTINUE this test and FOLLOW TSB instructions. If no Technical Service Bulletins (TSBs) address this concern, REFER to the EPAS Symptom Chart.   Click here to access Guided Routine (EPAS).
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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.
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AL35 CHECK FOR CORRECT OCSM (OCCUPANT CLASSIFICATION SYSTEM MODULE) OPERATION

- Ignition OFF.
- Disconnect and inspect the OCSM 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 OCSM 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 Technical Service Bulletins (TSBs). If a TSB exists for this concern, DISCONTINUE this test and FOLLOW TSB instructions. If no Technical Service Bulletins (TSBs) address this concern, INSTALL a new OCSM. REFER to: Occupant Classification System (OCS) Sensor - Vehicles With: Multi-Contour Seats (501-20 Supplemental Restraint System) . or REFER to: Occupant Classification System (OCS) Sensor - Vehicles Without: Multi-Contour Seats (501-20 Supplemental Restraint System) .
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.

AL36 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 Technical Service Bulletins (TSBs). If a TSB exists for this concern, DISCONTINUE this test and FOLLOW TSB instructions. If no Technical Service Bulletins (TSBs) address this concern, INSTALL a new RCM. REFER to: Restraints Control Module (RCM) (501-20B Supplemental Restraint System, Removal and Installation).
No	The system is operating correctly at this time. The concern may have been caused by module connections. ADDRESS the root cause of any connector or pin issues.

AL37 CHECK FOR CORRECT SCCM (STEERING COLUMN CONTROL MODULE) OPERATION

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

AL38 CHECK FOR CORRECT TBM (TRAILER BRAKE CONTROL MODULE) OPERATION

- Ignition OFF.
- Disconnect and inspect all the TBM 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 TBM 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 Technical Service Bulletins (TSBs). If a TSB exists for this concern, DISCONTINUE this test and FOLLOW TSB instructions. If no Technical Service Bulletins (TSBs) address this concern, INSTALL a new TBM. REFER to: Trailer Brake Control Module (TBM) (206-10 Auxiliary Brake System, Removal and Installation).
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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.
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AL39 CHECK FOR CORRECT TCCM (TRANSFER CASE CONTROL MODULE) OPERATION

- Ignition OFF.
- Disconnect and inspect all the TCCM 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 TCCM 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 Technical Service Bulletins (TSBs). If a TSB exists for this concern, DISCONTINUE this test and FOLLOW TSB instructions. If no Technical Service Bulletins (TSBs) 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.

No High Speed Controller Area Network 3 (HS-CAN3) 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 HS-CAN2 circuits on the DLC.

REFER to: Communications Network (418-00 Module Communications Network) .

Possible Sources

- Fuse
- Wiring, terminals or connectors
- ACM
- APIM (if equipped)
- DSP (if equipped)
- IPC
- FCDIM (if equipped)
- GWM
- TCU (if equipped)

PINPOINT TEST AM : NO HIGH SPEED CONTROLLER AREA NETWORK 3 (HS-CAN3) COMMUNICATION, ALL MODULES ARE NOT RESPONDING

NOTE: <i>Various modules set network DTCs during this test procedure. Clear DTCs from all modules after completing the diagnostic procedure.</i>
AM1 CHECK THE DLC (DATA LINK CONNECTOR) PINS FOR DAMAGE
• Ignition OFF. • NOTE: <i>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.</i> 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 AL

AM4 CHECK THE HS-CAN3 (HIGH SPEED-CONTROLLER AREA NETWORK 3) TERMINATION RESISTANCE

- Disconnect: GWM C2431

Is the resistance between 108 and 132 ohms?

Yes	GO to AM5
No	GO to AM8

AM5 CHECK THE HS-CAN3 (HIGH SPEED-CONTROLLER AREA NETWORK 3) TERMINATION RESISTOR, COMPONENT SIDE

Is the resistance between 108 and 132 ohms?

Yes	GO to AM6
No	GO to AM26

AM6 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

- Ignition ON.

Are the resistances greater than 1,000 ohms?

Yes	GO to AM7
No	GO to AM11

AM7 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.

Are the voltages greater than 6 volts?

Yes	REPAIR the circuit in question.
No	GO to AM12

AM8 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.

Are the resistances less than 3 ohms?

Yes	GO to AM9
No	REPAIR the circuit in question.

AM9 CHECK THE HS-CAN3 (HIGH SPEED-CONTROLLER AREA NETWORK 3) (+) AND HS-CAN3 (HIGH SPEED-CONTROLLER AREA NETWORK 3) (-) CIRCUITS FOR A SHORT TOGETHER

Is the resistance less than 3 ohms?

Yes	GO to AM10
No	GO to AM25

AM10 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

- Disconnect modules one at a time until the resistance is greater than 3 ohms.
 - APIM C2383A (if equipped)
 - ACM C240A
 - DSP C3154A (if equipped)
 - FCDIM C2123 (if equipped)
 - IPC C220
 - 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 AM21 For the ACM, GO to AM22 For the DSP, GO to AM23 For the FCDIM, GO to AM24 For the IPC, GO to AM25 For the TCU, GO to AM27
No	REPAIR the circuits in question.

AM11 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

- 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)
 - FCDIM C2123 (if equipped)
 - IPC C220
 - 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 AM21 For the ACM, GO to AM22 For the DSP, GO to AM23 For the FCDIM, GO to AM24 For the IPC, GO to AM25 For the TCU, GO to AM27
No	REPAIR the circuit in question. CONNECT all modules.

AM12 CHECK FOR RESTORED COMMUNICATION WITH THE GWM (GATEWAY MODULE A) 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.

- Connect: GWM C2431
- Disconnect: BCM fuse 12 (7.5A).
- Using a diagnostic scan tool, perform the network test.

Do all other HS-CAN3 modules pass the network test?

Yes	INSTALL the fuse. GO to Pinpoint Test AJ
No	INSTALL the fuse. GO to AM13

AM13 CHECK FOR RESTORED COMMUNICATION WITH THE IPC (INSTRUMENT PANEL CLUSTER) 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 13 (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 H
No	INSTALL the removed fuse. GO to AM14

AM14 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 33 (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 K
No	INSTALL the removed fuse. GO to AM15

AM15 CHECK FOR RESTORED COMMUNICATION WITH THE FCDIM (FRONT CONTROL/DISPLAY INTERFACE MODULE) AND 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 32 (10A).
- Using a diagnostic scan tool, perform the network test.

Do all other HS-CAN3 modules pass the network test?

Yes	INSTALL the removed fuse. If the vehicle is equipped with a FCDIM, GO to AM16 If the vehicle is not equipped with a FCDIM, GO to Pinpoint Test O
No	GO to AM17

AM16 CHECK FOR RESTORED COMMUNICATION WITH THE FCDIM (FRONT CONTROL/DISPLAY INTERFACE 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: FCDIM C2123.
- 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 N
No	CONNECT the module. GO to Pinpoint Test O

AM17 VERIFY VEHICLE EQUIPMENT - DSP (AUDIO DIGITAL SIGNAL PROCESSING MODULE) (SONY SOUND)

- Inspect the vehicle for a DSP.

Is the vehicle equipped with a DSP?

Yes	GO to AM18
No	GO to AM19

AM18 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: BJB fuse 22 (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 P
No	INSTALL the removed fuse. GO to AM19

AM19 VERIFY VEHICLE EQUIPMENT - TCU (TELEMATIC CONTROL UNIT MODULE)

- Inspect the vehicle for a TCU.

Is the vehicle equipped with a TCU?

Yes	GO to AM20
No	The HS-CAN3 tests within specification. VERIFY the correct operation of the diagnostic scan tool on a known good vehicle.

AM20 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 10 (5A) to disabled the TCU.
- 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 Q
No	INSTALL the removed fuse. The HS-CAN3 tests within specification. VERIFY the correct operation of the diagnostic scan tool on a known good vehicle.

AM21 CHECK THE APIM (SYNC MODULE) FOR CORRECT OPERATION

- Ignition OFF.
- Disconnect and inspect the APIM 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 APIM 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 Technical Service Bulletins (TSBs). If a TSB exists for this concern, DISCONTINUE this test and FOLLOW TSB instructions. If no Technical Service Bulletins (TSBs) address this concern,  Click here to access Guided Routine (APIM).
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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.
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AM22 CHECK THE ACM (AUDIO FRONT CONTROL MODULE) FOR CORRECT OPERATION

- Ignition OFF.
- Disconnect and inspect all the ACM 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 ACM 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 Technical Service Bulletins (TSBs). If a TSB exists for this concern, DISCONTINUE this test and FOLLOW TSB instructions. If no Technical Service Bulletins (TSBs) address this concern, INSTALL a new ACM. REFER to the appropriate 415 section.
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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.
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AM23 CHECK THE DSP (AUDIO DIGITAL SIGNAL PROCESSING MODULE) FOR CORRECT OPERATION

- Ignition OFF.
- Disconnect and inspect the DSP 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 DSP 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 Technical Service Bulletins (TSBs). If a TSB exists for this concern, DISCONTINUE this test and FOLLOW TSB instructions. If no Technical Service Bulletins (TSBs) address this concern, INSTALL a new DSP. REFER to: Audio Digital Signal Processing (DSP) Module (415-00D Information and Entertainment System - General Information - Vehicles With: Bang and Olufsen Audio 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.

AM24 CHECK THE FCDIM (FRONT CONTROL/DISPLAY INTERFACE MODULE) FOR CORRECT OPERATION

- Ignition OFF.
- Disconnect and inspect the FCDIM 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 FCDIM 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 Technical Service Bulletins (TSBs). If a TSB exists for this concern, DISCONTINUE this test and FOLLOW TSB instructions. If no Technical Service Bulletins (TSBs) address this concern, INSTALL a new FCDIM. REFER to: Front Control/Display Interface Module (FCDIM) (415-00A Information and Entertainment System - General Information - Vehicles Without: SYNC, Removal and Installation). (without SYNC®) or REFER to: Front Control/Display Interface Module (FCDIM) (415-00 Information and Entertainment System - General Information - Vehicles With: SYNC Without Touchscreen) . (SYNC® without touchscreen)
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.

AM25 CHECK THE IPC (INSTRUMENT PANEL CLUSTER) FOR CORRECT OPERATION

- Ignition OFF.
- Disconnect and inspect the IPC 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 IPC 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 Technical Service Bulletins (TSBs). If a TSB exists for this concern, DISCONTINUE this test and FOLLOW TSB instructions. If no Technical Service Bulletins (TSBs) address this concern, INSTALL a new IPC.   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.

AM26 CHECK THE GWM (GATEWAY MODULE A) FOR CORRECT OPERATION

- Ignition OFF.
- Disconnect and inspect the GWM 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 GWM 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 Technical Service Bulletins (TSBs). If a TSB exists for this concern, DISCONTINUE this test and FOLLOW TSB instructions. If no Technical Service Bulletins (TSBs) 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.

AM27 CHECK THE TCU (TELEMATIC CONTROL UNIT MODULE) FOR CORRECT OPERATION

- Ignition OFF.
- Disconnect and inspect all the TCU 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 TCU 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 Technical Service Bulletins (TSBs). If a TSB exists for this concern, DISCONTINUE this test and FOLLOW TSB instructions. If no Technical Service Bulletins (TSBs) address this concern, INSTALL a new TCU. REFER to: Telematics Control Unit (TCU) Module (415-00C Information and Entertainment System - General Information - Vehicles With: Touchscreen Display, Removal and Installation). (Touchscreen audio) or REFER to: Telematics Control Unit (TCU) Module (415-00D Information and Entertainment System - General Information - Vehicles With: Bang and Olufsen Audio System, Removal and Installation). (Bang & Olufsen audio system).
No	The system is operating correctly at this time. The concern may have been caused by module connections. ADDRESS the root cause of any connector or pin issues.

No Medium Speed Controller Area Network (MS-CAN) 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 HS-CAN2 circuits on the DLC.

REFER to: Communications Network (418-00 Module Communications Network) .

Possible Sources

- Fuse
- Wiring, terminals or connectors
- DDM
- DSM (if equipped)
- SCMG (if equipped)
- FCIM
- GWM
- HSWM (if equipped)
- PDM
- SCMH (if equipped)
- PRB module (if equipped)

- RTM
- SODL (if equipped)
- SODR (if equipped)
- TRM (if equipped)

PINPOINT TEST AN : NO MEDIUM SPEED CONTROLLER AREA NETWORK (MS-CAN) COMMUNICATION, ALL MODULES ARE NOT RESPONDING

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: 1.5mm 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 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 AL

AN4 CHECK THE MS-CAN (MEDIUM SPEED-CONTROLLER AREA NETWORK) TERMINATION RESISTANCE

- Disconnect the negative battery cable.
- Disconnect: GWM C2431.

Is the resistance between 108 and 132 ohms?

Yes	GO to AN5
No	GO to AN8

AN5 CHECK THE MS-CAN (MEDIUM SPEED-CONTROLLER AREA NETWORK) TERMINATION RESISTOR, COMPONENT SIDE

- Disconnect: GWM C2431

Is the resistance between 108 and 132 ohms?

Yes	GO to AN6
No	GO to AN32

AN6 CHECK THE MS-CAN (MEDIUM SPEED-CONTROLLER AREA NETWORK) (+) AND MS-CAN (MEDIUM SPEED-CONTROLLER AREA NETWORK) (-) CIRCUITS FOR A SHORT TO GROUND

Are the resistances greater than 1,000 ohms?

Yes	GO to AN7
No	GO to AN11

AN7 CHECK THE MS-CAN (MEDIUM SPEED-CONTROLLER AREA NETWORK) (+) AND MS-CAN (MEDIUM SPEED-CONTROLLER AREA NETWORK) (-) CIRCUITS FOR A SHORT TO VOLTAGE

- Connect the negative battery cable.
- Ignition ON.

Are the voltages greater than 6 volts?

Yes	REPAIR the circuit in question.
No	GO to AN12

AN8 CHECK THE MS-CAN (MEDIUM SPEED-CONTROLLER AREA NETWORK) CIRCUITS BETWEEN THE FCIM AND THE GWM (GATEWAY MODULE A) FOR AN OPEN

Are the resistances less than 3 ohms?

Yes	GO to AN9
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

Is the resistance less than 3 ohms?

Yes	GO to AN10
No	GO to AN31

AN10 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

- Disconnect modules one at a time until the resistance is greater than 3 ohms.
 - DDM C501A
 - DSM C3299D (if equipped)
 - SCMG C3385 (if equipped)
 - FCIM C2402A
 - HSWM C2406 (if equipped)
 - PDM C652A
 - SCMH C3386 (if equipped)
 - PRB C3313B
 - RTM C9026
 - SODL C4483 (if equipped)
 - SODR C4484 (if equipped)
 - TRM C2498B

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 PRB, 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.

AN11 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

- Disconnect modules one at a time until the resistance to ground is greater than 1,000 ohms.
 - DDM C501A
 - DSM C3299D (if equipped)
 - SCMG C3385 (if equipped)
 - FCIM C2402A
 - HSWM C2406 (if equipped)
 - PDM C652A
 - SCMH C3386 (if equipped)
 - PRB C3313B
 - RTM C9026
 - SODL C4483 (if equipped)
 - SODR C4484 (if equipped)
 - TRM C2498B

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 PRB, 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.

AN12 CHECK FOR RESTORED COMMUNICATION WITH THE GWM (GATEWAY MODULE A) AND 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.

- Connect: GWM C2431
- Disconnect BCM fuse 12 (7.5A) to disable the GWM and the FCIM.
- 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 AN13
No	INSTALL the removed fuse. GO to AN14

AN13 CHECK FOR RESTORED NETWORK COMMUNICATION WITH THE FCIM (FRONT CONTROLS INTERFACE MODULE) DISCONNECTED

- Disconnect: FCIM C2402A
- 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 J
No	CONNECT the module. GO to Pinpoint Test AJ

AN14 VERIFY VEHICLE EQUIPMENT - HSWM (HEATED STEERING WHEEL MODULE)

- Inspect the vehicle for a HSWM.

Is the vehicle equipped with a HSWM?

Yes	GO to AN15
No	GO to AN16

AN15 CHECK FOR RESTORED NETWORK COMMUNICATION WITH THE HSWM (HEATED STEERING WHEEL MODULE) DISABLED

- Disconnect: BCM fuse 36 (15A) to disable the HSWM.
- 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 AB
No	INSTALL the removed fuse. GO to AN16

AN16 CHECK FOR RESTORED NETWORK COMMUNICATION WITH THE DDM (DRIVER DOOR MODULE) AND 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.

Disable modules one at a time until other MS-CAN modules pass the network test. Skip to the end once network operation is restored.

- Disconnect: BCM fuse 25 (30A) to disable the DDM.
- Using a diagnostic scan tool, perform a network test.
- Disconnect: BCM fuse 26 (30A) to disable the PDM.
- Using a diagnostic scan tool, perform a network test.

Do all other MS-CAN modules pass the network test?

Yes	INSTALL the removed fuses. If communication was restored with the DDM disabled, GO to Pinpoint Test U If communication was restored with the PDM disabled, GO to Pinpoint Test V
No	INSTALL the removed fuses. GO to AN17

AN17 VERIFY VEHICLE EQUIPMENT - RTM (RADIO TRANSCEIVER MODULE)

- Inspect the vehicle for a RTM.

Is the vehicle equipped with a RTM?

Yes	GO to AN18
No	GO to AN19

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 32 (10A) to disable the RTM.
- 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 R
No	INSTALL the removed fuse. GO to AN19

AN19 VERIFY VEHICLE EQUIPMENT - DSM (DRIVER FRONT SEAT MODULE)

- Inspect the vehicle for an DSM.

Is the vehicle equipped with a DSM?

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 fuse 37 (30A) and BCM fuse 2 (7.5A) to disable the DSM (if equipped).
- 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 T
No	GO to AN21

AN21 VERIFY VEHICLE EQUIPMENT - SCMG (DRIVER MULTI-CONTOUR SEAT MODULE) AND SCMH (PASSENGER MULTI-CONTOUR SEAT MODULE)

- Inspect the vehicle for a SCMG and SCMH.

Is the vehicle equipped with a SCMG and SCMH?

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 88 (15A) to disable the SCMG and SCMH.
- 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 AD
No	CONNECT the module. GO to Pinpoint Test AC

AN24 VERIFY VEHICLE EQUIPMENT - SODL (SIDE OBSTACLE DETECTION CONTROL MODULE LH) AND SODR (SIDE OBSTACLE DETECTION CONTROL MODULE RH)

- Inspect the vehicle for an 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 41 (30A) to disable the SODL and SODR (if equipped).
- 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	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 (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 X
No	CONNECT the module. GO to Pinpoint Test W

AN27 VERIFY VEHICLE EQUIPMENT - TRM (TRAILER MODULE)

- Inspect the vehicle for 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 fuse 30 (25A) and 43 (20A) to disable the TRM.
- 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 AE
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No	INSTALL the removed fuses. GO to AN29
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AN29 VERIFY VEHICLE EQUIPMENT - PRB (POWER RUNNING BOARD)

- Inspect the vehicle for a PRB.

Is the vehicle equipped with a PRB?

Yes	GO to AN30
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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.
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AN30 CHECK FOR RESTORED NETWORK COMMUNICATION WITH THE PRB (POWER RUNNING BOARD) 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 89 (30A) to disable the PRB.
- 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 AG
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No	INSTALL the removed fuse. 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.
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AN31 CHECK THE FCIM (FRONT CONTROLS INTERFACE MODULE) FOR CORRECT OPERATION

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

AN32 CHECK THE GWM (GATEWAY MODULE A) FOR CORRECT OPERATION

- Ignition OFF.
- Disconnect and inspect the GWM 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 GWM 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 Technical Service Bulletins (TSBs). If a TSB exists for this concern, DISCONTINUE this test and FOLLOW TSB instructions. If no Technical Service Bulletins (TSBs) 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 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 DDM 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 Technical Service Bulletins (TSBs). If a TSB exists for this concern, DISCONTINUE this test and FOLLOW TSB instructions. If no Technical Service Bulletins (TSBs) 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 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 HSWM 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 Technical Service Bulletins (TSBs). If a TSB exists for this concern, DISCONTINUE this test and FOLLOW TSB instructions. If no Technical Service Bulletins (TSBs) 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 the DSM 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 DSM 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 Technical Service Bulletins (TSBs). If a TSB exists for this concern, DISCONTINUE this test and FOLLOW TSB instructions. If no Technical Service Bulletins (TSBs) address this concern, INSTALL a new DSM. REFER to: Driver Front Seat Module (DSM) (501-10 Front Seats) .
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 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 SCMG 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 Technical Service Bulletins (TSBs). If a TSB exists for this concern, DISCONTINUE this test and FOLLOW TSB instructions. If no Technical Service Bulletins (TSBs) address this concern, INSTALL a new SCMG. REFER to: Driver Multi-Contour Seat Module [SCMG] (501-10 Front Seats) .
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 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 PDM 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 Technical Service Bulletins (TSBs). If a TSB exists for this concern, DISCONTINUE this test and FOLLOW TSB instructions. If no Technical Service Bulletins (TSBs) address this concern, INSTALL a new PDM. REFER to: Passenger Door Module (PDM) (419-10 Multifunction Electronic Modules, Removal and Installation).
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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.
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AN38 CHECK THE SCMH (PASSENGER MULTI-CONTOUR SEAT MODULE) FOR CORRECT OPERATION

- Ignition OFF.
- Disconnect and inspect all the SCMH 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 SCMH 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 Technical Service Bulletins (TSBs). If a TSB exists for this concern, DISCONTINUE this test and FOLLOW TSB instructions. If no Technical Service Bulletins (TSBs) address this concern, INSTALL a new SCMH. REFER to: Driver Multi-Contour Seat Module [SCMG] (501-10 Front Seats) .
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 PRB (POWER RUNNING BOARD) FOR CORRECT OPERATION

- Ignition OFF.
- Disconnect and inspect all the PRB 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 PRB 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 Technical Service Bulletins (TSBs). If a TSB exists for this concern, DISCONTINUE this test and FOLLOW TSB instructions. If no Technical Service Bulletins (TSBs) address this concern, INSTALL a new PRB. REFER to: Power Running Board (PRB) (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 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 RTM 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 Technical Service Bulletins (TSBs). If a TSB exists for this concern, DISCONTINUE this test and FOLLOW TSB instructions. If no Technical Service Bulletins (TSBs) 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 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 SODL 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 Technical Service Bulletins (TSBs). If a TSB exists for this concern, DISCONTINUE this test and FOLLOW TSB instructions. If no Technical Service Bulletins (TSBs) address this concern, INSTALL a new SODL. REFER to: Side Obstacle Detection Control Module (419-04 Side and Rear Vision, Removal and Installation).
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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.
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AN42 CHECK THE SODR (SIDE OBSTACLE DETECTION CONTROL MODULE RH) FOR CORRECT OPERATION

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

AN43 CHECK THE TRM (TRAILER MODULE) FOR CORRECT OPERATION

- Ignition OFF.
- Disconnect and inspect the TRM 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 TRM 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 Technical Service Bulletins (TSBs). If a TSB exists for this concern, DISCONTINUE this test and FOLLOW TSB instructions. If no Technical Service Bulletins (TSBs) 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.

No Power To The Data Link Connector (DLC)

Normal Operation and Fault Conditions

The diagnostic scan tool is connected to the DLC to communicate with the HS-CAN1 and HS-CAN2. The GWM translates diagnostic messages for the HS-CAN3 and the MS-CAN from the HS-CAN2. A loss of ground or poor ground at the DLC can result in network faults while the diagnostic scan tool is connected.

Possible Sources

- Fuse
- Wiring, terminals or connector

- DLC
- Diagnostic scan tool

Visual Inspection and Diagnostic Pre-checks

Verify BCM fuse 12 (7.5A) and fuse 15 (10A) are OK.

PINPOINT TEST AO : NO POWER TO THE DATA LINK CONNECTOR (DLC)

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 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 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 THE DLC (DATA LINK CONNECTOR) VOLTAGE SUPPLY FOR AN OPEN

Is the voltage greater than 11 volts?

Yes	GO to AO5
No	GO to AO4

AO4 CHECK THE GWM (GATEWAY MODULE A) VOLTAGE SUPPLY FOR AN OPEN

- Disconnect: GWM C2431

Is the voltage greater than 11 volts?

Yes	GO to AO6
No	VERIFY BCM fuse 12 (7.5A) and fuse 15 (10A) 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.

AO5 CHECK THE DLC (DATA LINK CONNECTOR) GROUND CIRCUITS FOR AN OPEN

Are the resistances less than 3 ohms?

Yes	REPAIR the diagnostic scan tool.
No	GO to AO6

AO6 CHECK THE GWM (GATEWAY MODULE A) GROUND CIRCUITS FOR AN OPEN

Are the resistances less than 3 ohms?

Yes	REPAIR the diagnostic scan tool.
No	GO to AO7

AO7 CHECK FOR CORRECT GWM (GATEWAY MODULE A) OPERATION

- Ignition OFF.
- Disconnect and inspect the GWM 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 GWM 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 Technical Service Bulletins (TSBs). If a TSB exists for this concern, DISCONTINUE this test and FOLLOW TSB instructions. If no Technical Service Bulletins (TSBs) 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.