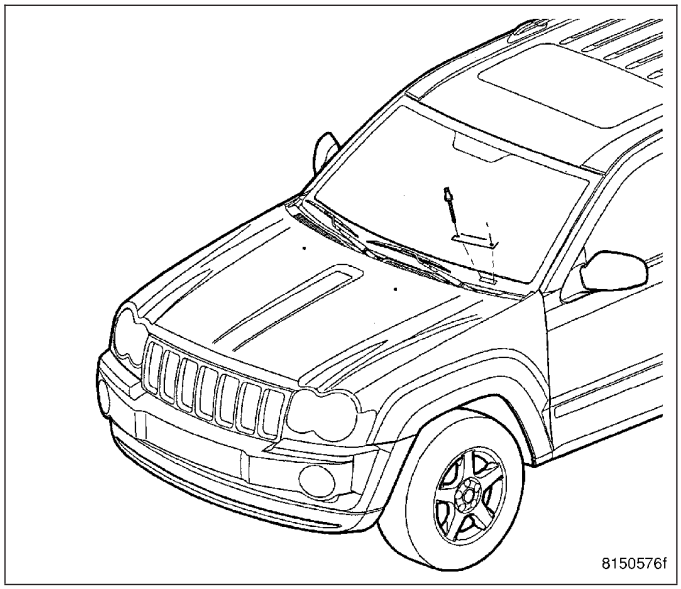
VEHICLE IDENTIFICATION NUMBER

DESCRIPTION

The Vehicle Identification Number (VIN) plate is attached to the top left side of the instrument panel. The VIN contains 17 characters that provide data concerning the vehicle. Refer to the decoding chart to determine the identification of a vehicle.

To protect the consumer from theft and possible fraud the manufacturer is required to include a Check Digit at the ninth position of the Vehicle Identification Number. The check digit is used by the manufacturer and government agencies to verify the authenticity of the vehicle and official documentation. The formula to use the check digit is not released to the general public.



VEHICLE IDENTIFICATION NUMBER DECODING CHART

POSITION	INTERPRETATION	CODE = DESCRIPTION
1	Country of Origin	1 = Manufactured By DaimlerChrysler Corporation
2	Make	J = Jeep
3	Vehicle Type	4 = MPV Less Side Air Bags 8 = MPV With Side Air Bags
4	Gross Vehicle Weight Rating	G = 5001-6000 lbs.
5	Vehicle Line (XK)	G = Commander Left Hand Drive (4X4) H = Commander Left Hand Drive (4X2)
5	Vehicle Line (XH)	3 = Grand Cherokee Left Hand Drive (4X4) 1 = Grand Cherokee Right Hand Drive (4X4)
6	Series	4 = Commander 5 = Commander Limited
7	Body Style	8 = Sport Utility 4 Door
8	Engine	K = 3.7K 6 cyl. MPI Gasoline N = 4.7L 8 cyl. MPI Gasoline 2 = 5.7L 8 cyl. HEMI Multiple Displacement Gasoline M = 3.0L 6 cyl. Turbo Diesel
9	Check Digit	0 through 9 or X
10	Model Year	6=2006
11	Assembly Plant	C = Jefferson North Assembly Y = Chrysler Steyer Assembly
12 thru 17	Vehicle Build Sequence	

METRIC SYSTEM

DESCRIPTION

The metric system is based on quantities of one, ten, one hundred, one thousand and one million.

The following chart will assist in converting metric units to equivalent English and SAE units, or vise versa.

CONVERSION FORMULAS AND EQUIVALENT VALUES

MULTIPLY	BY	TO GET	MULTIPLY	BY	TO GET
in-lbs	x 0.11298	= Newton Meters (N·m)	N·m	x 8.851	= in-lbs
ft-lbs	x 1.3558	= Newton Meters (N·m)	N·m	x 0.7376	= ft-lbs
Inches Hg (60° F)	x 3.377	= Kilopascals (kPa)	kPa	x 0.2961	= Inches Hg
psi	x 6.895	= Kilopascals (kPa)	kPa	x 0.145	= psi
Inches	x 25.4	= Millimeters (mm)	mm	x 0.03937	= Inches
Feet	x 0.3048	= Meters (M)	M	x 3.281	= Feet
Yards	x 0.9144	= Meters	M	x 1.0936	= Yards
mph	x 1.6093	= Kilometers/Hr. (Km/h)	Km/h	x 0.6214	= mph
Feet/Sec	x 0.3048	= Meters/Sec (M/S)	M/S	x 3.281	= Feet/Sec
mph	x 0.4470	= Meters/Sec (M/S)	M/S	x 2.237	= mph
Kilometers/Hr. (Km/h)	x 0.27778	= Meters/Sec (M/S)	M/S	x 3.600	Kilometers/Hr. (Km/h)

COMMON METRIC EQUIVALENTS

1 inch = 25 Millimeters	1 Cubic Inch = 16 Cubic Centimeters
1 Foot = 0.3 Meter	1 Cubic Foot = 0.03 Cubic Meter
1 Yard = 0.9 Meter	1 Cubic Yard = 0.8 Cubic Meter
1 Mile = 1.6 Kilometers	

Refer to the Metric Conversion Chart to convert torque values listed in metric Newton-meters (N·m). Also, use the chart to convert between millimeters (mm) and inches (in.).

FUSE LOCATIONS & TYPES

SPECIFICATIONS

FUSE PANEL

Interior Fuses

The fuse panel is on the lower instrument panel just to the left of the steering column.

Cavity	Fuse/Color	Description
1	30 Amp Pink	Audio Amp (B+)
2	15 Amp Blue	Sunroof (B+)
3	10 Amp Red	Htd Mirror (EBL)
4	20 Amp Yellow	Rr Pwr Out (B+)
5	10 Amp Red	Rr HVAC (R/O)
6	10 Amp Red	OCM (B+)
7	20 Amp Yellow	Door Locks (B+)
8	15 Amp Blue	Steer Col Lock (B+)
9	20 Amp Yellow	Pwr Outlet (B+)
10	10 Amp Red	Ign Run Only Out (R/O)
11	Spare	
12	10 Amp Red	Mem. Sw, Courtesy Lamp (B+)
13	Spare	
14	20 Amp Yellow	Cigar Ltr (R/A)
15	10 Amp Red	Tire Press Mon (R/O)
16	10 Amp Red	SCM, Cluster OBD (B+)
17	15 Amp Blue	Flipper Glass (B+)
19	10 Amp Red	OCM (R/S)
20	10 Amp Red	WCM, Cluster (R/S)
21	15 Amp Blue	Autowipe (Accy Delay)
22	15 Amp Blue	Rear Wiper (B+)

CONDITION	POSSIBLE CAUSES	CORRECTION
COOLANT LOSS TO THE GROUND WITHOUT PRESSURE CAP BLOWOFF. GAUGE READING HIGH OR HOT	1. Coolant leaks in radiator, cooling system hoses, water pump or engine.	1. Pressure test and repair as necessary. (Refer to 7 - COOLING - DIAGNOSIS AND TESTING).
DETONATION OR PRE-IGNITION (NOT CAUSED BY IGNITION SYSTEM). GAUGE MAY OR MAY NOT BE READING HIGH	1. Engine overheating. 2. Freeze point of coolant not correct. Mixture is too rich or too lean.	1. Check reason for overheating and repair as necessary. 2. Check coolant concentration. (Refer to 7 - COOLING/ENGINE/ COOLANT - DESCRIPTION) and adjust ratio as required.
HOSE OR HOSES COLLAPSE WHILE ENGINE IS RUNNING	1. Vacuum created in cooling system on engine cool-down is not being relieved through coolant reserve/overflow system.	1. (a) Radiator cap relief valve stuck. (Refer to 7 - COOLING/ ENGINE/RADIATOR PRESSURE CAP - DIAGNOSIS AND TESTING). Replace if necessary (b) Hose between coolant reserve/overflow tank and radiator is kinked. Repair as necessary. (c) Vent at coolant reserve/overflow tank is plugged. Clean vent and repair as necessary. (d) Reserve/overflow tank is internally blocked or plugged. Check for blockage and repair as necessary.
NOISY VISCOUS FAN/DRIVE	1. Fan blades loose - 4.7L. 2. Fan blades striking a surrounding object. 3. Air obstructions at radiator or air conditioning condenser. 4. Thermal viscous fan drive has defective bearing - 4.7L	1. Replace fan blade assembly. (Refer to 7 - COOLING/ENGINE/ RADIATOR FAN - REMOVAL) 2. Locate point of fan blade contact and repair as necessary. 3. Remove obstructions and/or clean debris or insects from radiator or A/C condenser. 4. Replace fan drive. Bearing is not serviceable. (Refer to 7 - COOLING/ ENGINE/RADIATOR FAN - REMOVAL).

B222C-VEHICLE CONFIGURATION NOT PROGRAMMED

For a complete wiring diagram **Refer to Section 8W**.

- **When Monitored:**
  With the ignition on.
- **Set Condition:**
  The Front Control Module is not configured correctly to the vehicle.

Possible Causes
FRONT CONTROL MODULE NOT CONFIGURED CORRECTLY
FRONT CONTROL MODULE

Diagnostic Test

1. CHECK FOR ACTIVE DTC

With the scan tool, read the active DTC's.

Cycle the ignition switch from off to on at least 5 times, leaving the ignition on for a minimum of 90 seconds per cycle.

With the scan tool, read the active DTC's.

Does the scan tool display this DTC as active?

Yes >> Go To 2

No >> If the DTC is stored, check for an intermittent condition. Visually inspect the related wiring harness connectors. Look for broken, bent, pushed out, or corroded terminals.

2. CONFIGURE THE FCM TO THE VEHICLE

With the scan tool enter program network configuration and program the FCM to the vehicle configuration.

With the scan tool, erase FCM DTC's.

Cycle the ignition switch from off to on at least 5 times, leaving the ignition on for a minimum of 90 seconds per cycle.

With the scan tool, read the active DTC's.

Does the scan tool display this DTC as active?

Yes >> Inspect the wiring and connectors for damage or shorted circuits. If ok, replace and program the Front Control Module in accordance with the service information.

Perform BODY VERIFICATION TEST – VER 1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE).

No >> Repair is complete.

ELECTRONIC MODULE IGNITION-OFF DRAW (IOD) TABLE			
Module	Time Out? (If Yes, Interval And Wake-Up Input)	IOD	IOD After Time Out
Radio	No	1 to 3 milliamperes	N/A
Audio Power Amplifier	No	up to 1 milliampere	N/A
Central Timer Module (CTM)	No	4.75 milliamperes (max.)	N/A
Powertrain Control Module (PCM)	No	0.95 milliampere	N/A
ElectroMechanical Instrument Cluster (EMIC)	No	0.44 milliampere	N/A
Combination Flasher	No	0.08 milliampere	N/A

2. Determine that the underhood lamp is operating properly, then disconnect the lamp wire harness connector or remove the lamp bulb.
3. Disconnect the battery negative cable.
4. Set an electronic digital multi-meter to its highest amperage scale. Connect the multi-meter between the disconnected battery negative cable terminal clamp and the battery negative terminal post. Make sure that the doors remain closed so that the illuminated entry system is not activated. The multi-meter amperage reading may remain high for up to three minutes, or may not give any reading at all while set in the highest amperage scale, depending upon the electrical equipment in the vehicle. The multi-meter leads must be securely clamped to the battery negative cable terminal clamp and the battery negative terminal post. If continuity between the battery negative terminal post and the negative cable terminal clamp is lost during any part of the IOD test, the electronic timer function will be activated and all of the tests will have to be repeated.
5. After about three minutes, the high-amperage IOD reading on the multi-meter should become very low or nonexistent, depending upon the electrical equipment in the vehicle. If the amperage reading remains high, remove and replace each fuse or circuit breaker in the Power Distribution Center (PDC) and then in the Junction Block (JB), one at a time until the amperage reading becomes very low, or nonexistent. Refer to the appropriate wiring information for complete PDC and JB fuse, circuit breaker, and circuit identification. This will isolate each circuit and identify the circuit that is the source of the high-amperage IOD. If the amperage reading remains high after removing and replacing each fuse and circuit breaker, disconnect the wire harness from the generator. If the amperage reading now becomes very low or nonexistent, diagnose and repair the Charging System as necessary. After the high-amperage IOD has been corrected, switch the multi-meter to progressively lower amperage scales and, if necessary, repeat the fuse and circuit breaker remove-and-replace process to identify and correct all sources of excessive IOD. It is now safe to select the lowest milliampere scale of the multi-meter to check the low-amperage IOD.

CAUTION: Do not open any doors, or turn on any electrical accessories with the lowest milliampere scale selected, or the multi-meter may be damaged.

6. Observe the multi-meter reading. The low-amperage IOD should not exceed thirty-five milliamperes (0.035 ampere). If the current draw exceeds thirty-five milliamperes, isolate each circuit using the fuse and circuit breaker remove-and-replace process in Step 5. The multi-meter reading will drop to within the acceptable limit when the source of the excessive current draw is disconnected. Repair this circuit as required; whether a wiring short, incorrect switch adjustment, or an inoperative component is the cause.

- **When Monitored:**
  With the ignition on.
- **Set Condition:**
  The Instrument Cluster detects the C/T Switch active for greater than 20 seconds.

Possible Causes
(G105) C/T SWITCH INPUT CIRCUIT SHORT TO GROUND
UPPER SWITCH BANK
INSTRUMENT CLUSTER

Diagnostic Test

1. CHECK FOR ACTIVE DTC

Press and release the switch three times.
Turn the ignition on.
With the scan tool, record and erase Instrument Cluster DTCs.
Turn the ignition off.
Turn the ignition on.
Wait 30 seconds.
With the scan tool, read Instrument Cluster DTCs.

Is DTC: B1241-C/T SWITCH STUCK active?

Yes >> Go To 2

No >> The condition that caused this code to set is not present at this time. Check for an intermittent condition by inspecting the related wiring harness for chafed, pierced, pinched, and partially broken wires. Also inspect the related connectors for broken, bent, pushed out, spread, corroded, or contaminated terminals.
Perform BODY VERIFICATION TEST VER 1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

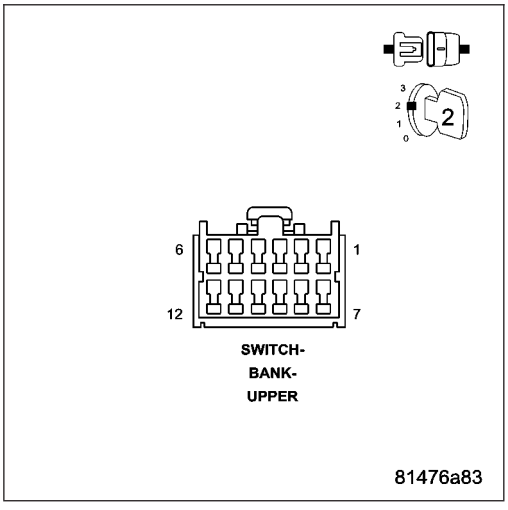
2. CHECK OPERATION OF THE UPPER SWITCH BANK

Turn the ignition off.
Disconnect the Upper Switch Bank Harness Connector.
Turn the ignition on.
Wait 30 seconds.
With the scan tool, read Instrument Cluster DTCs.

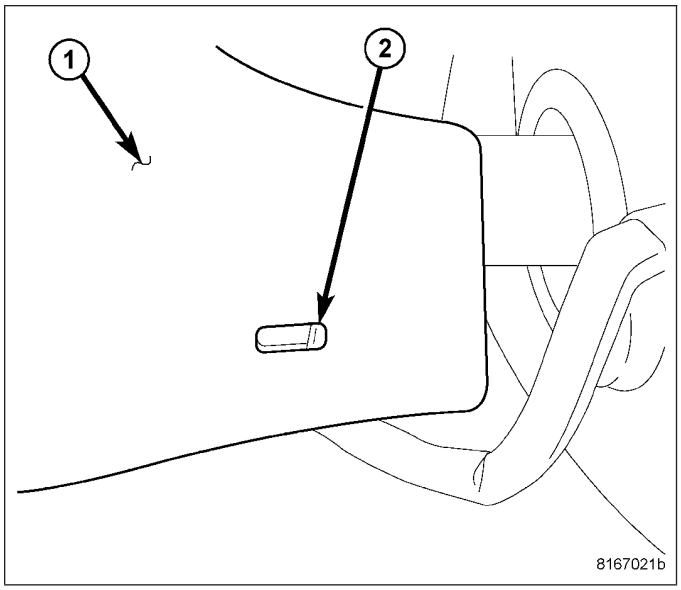
Does the scan tool display: B1241-C/T SWITCH STUCK?

Yes >> Go To 3

No >> Replace the Upper Switch Bank in accordance with the Service Information.
Perform BODY VERIFICATION TEST VER 1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

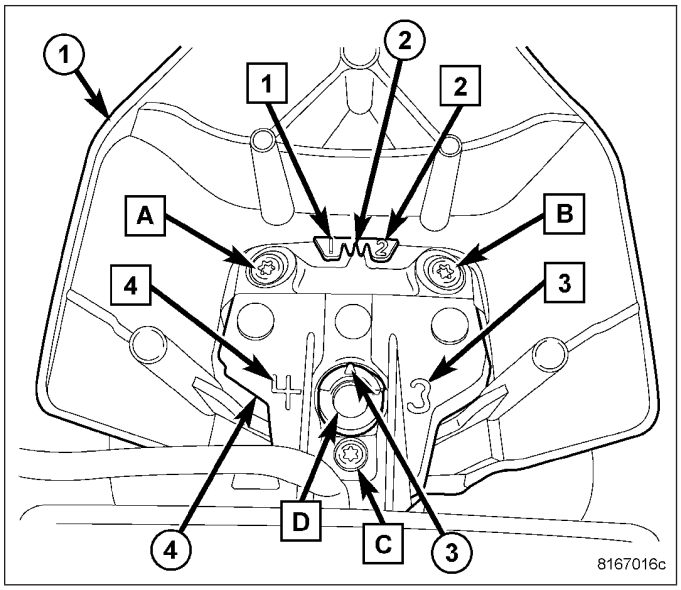


1. Using a diagnostic scan tool, read and record the SmartBeam (also referred to as the Automatic High Beam Module/AHBM) Diagnostic Trouble Code (DTC) data. Refer to the appropriate diagnostic procedures.
2. Insert a screwdriver into the slot (2) on each side of the inside rear view mirror mount (1) to depress the tabs that secure the cover to the underside of the mount.
3. After releasing both tabs, pull the cover downward to remove it from the mount.
4. Remove the inside rear view mirror and imager pod from the support bracket above the headliner as a unit. (Refer to 23 - BODY/INTERIOR/REAR VIEW MIRROR - REMOVAL).



NOTE: The SmartBeam inside rear view mirror is manufactured with both the horizontal index pointer (2) and vertical index pointer (3) located in their central or neutral positions, as shown in the illustration.

5. Refer to the Imager Adjustment Table that follows for the fault code or codes that have been recorded. Then carefully loosen the appropriate screws on the imager bracket (4) the indicated number of turns, reposition the bracket horizontal index pointer (2) into the appropriate slot in the mirror mount (1) and/or rotate the vertical index adjustment wheel pointer (3) to the appropriate location to correct the fault or faults.



IMAGER ADJUSTMENT TABLE		
High Beam Camera Alignment Performance Fault DTC	**Loosen Screws (Boxed Letters In Graphic) - Number Of Complete Turns**	**Index Location - (Boxed Numbers In Graphic)**
B16A8 - Right	A, B & C - 7 Turns Each	Horizontal 1 (Right)
B16A7 - Left	A, B & C - 7 Turns Each	Horizontal 2 (Left)
B16A9 - Top	A, B & C - 4 Turns Each, D - 1 Turn	Vertical 4 (Top)
B16AA - Bottom	A, B & C - 4 Turns Each, D - 1 Turn	Vertical 3 (Bottom)
If more than one High Beam Camera Alignment Performance Fault DTC was retrieved, the appropriate screws should be loosened and the imager bracket to mirror mount indexed both horizontally and vertically for the two faults. In this case, the total amount of available correction will be slightly diminished from that available for a single fault however, in most cases, this action should result in a sufficient amount of correction to remedy both fault conditions.		

6. Holding the imager bracket securely to the mirror mount in the proper index position, tighten each of the loosened screws in alphabetical sequence to secure the bracket to the mount. Be certain the horizontal and vertical pointers remain in their proper index positions. Tighten the screws to 0.8 N·m (7 in. lbs.).
7. Reinstall the inside rear view mirror and imager to the support bracket above the headliner as a unit. (Refer to 23 - BODY/INTERIOR/REAR VIEW M

3. (D55) CAN B BUS (+) CIRCUIT OPEN

Turn the ignition off.

Disconnect the negative battery cable.

Disconnect the Sunroof Motor/Module connector.

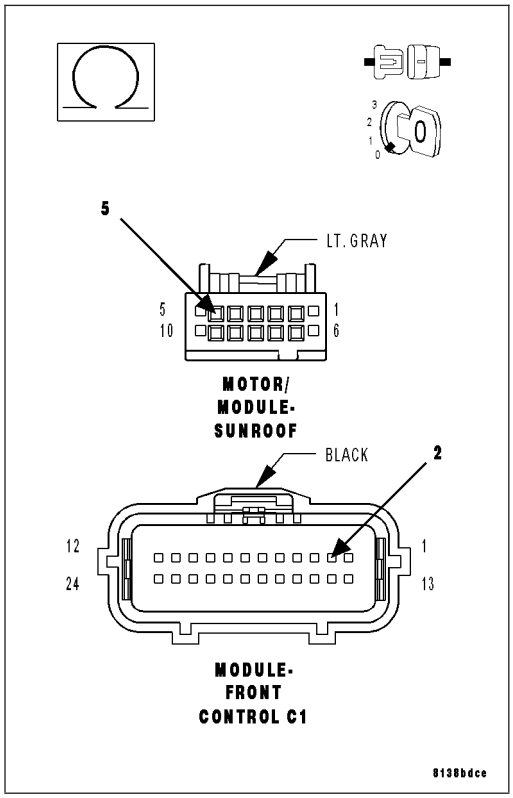
Disconnect the Front Control Module C1 connector.

Measure the resistance of the (D55) CAN B Bus (+) circuit between the Front Control Module C1 connector and the Sunroof Motor/Module connector.

Is the resistance below 2.0 ohms?

Yes >> Go To 4

No >> Repair the (D55) CAN B Bus (+) circuit for an open.
Perform BODY VERIFICATION TEST – VER 1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)



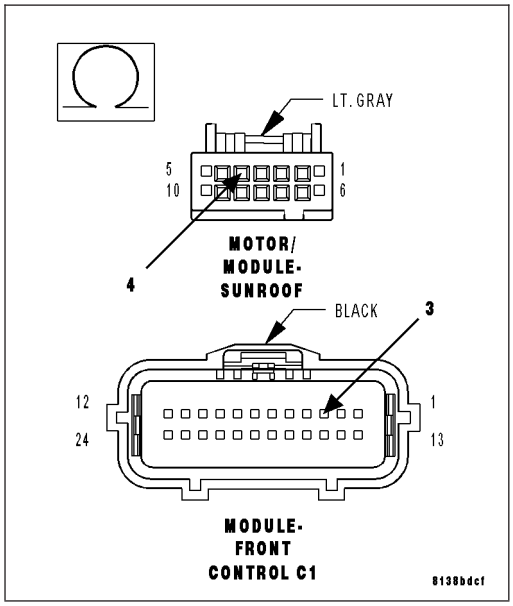
4. (D54) CAN B BUS (–) CIRCUIT OPEN

Measure the resistance of the (D54) CAN B Bus (–) circuit between the Front Control Module C1 connector and the Sunroof Motor/Module connector.

Is the resistance below 2.0 ohms?

Yes >> Replace the Sunroof Motor/Module in accordance with the service information.
Perform the Sunroof Position Calibration, (Refer to 8 - ELECTRICAL/POWER TOP/MOTOR - STANDARD PROCEDURE - SUNROOF POSITION CALIBRATION). Perform the Excessive Force Limitation Calibration, (Refer to 8 - ELECTRICAL/POWER TOP/MOTOR - STANDARD PROCEDURE - EXCESSIVE FORCE LIMITATION CALIBRATION).
Perform BODY VERIFICATION TEST - VER 1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

No >> Repair the (D54) CAN B Bus (–) circuit for an open.
Perform BODY VERIFICATION TEST – VER 1. (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)



6. CHECK (R262) SEAT POSITION SENSOR DATA-PASSENGER CIRCUIT & (R264) SEAT POSITION SENSOR VOLTAGE-PASSENGER CIRCUIT FOR AN OPEN

Measure the resistance of the (R262) Seat Position Sensor Data-Passenger circuit between the OCM C2 connector and the Passenger Seat Track Position Sensor connector.

Measure the resistance of the (R264) Seat Position Sensor Voltage-Passenger circuit between the OCM C2 connector and the Passenger Seat Track Position Sensor connector.

Is the resistance of either circuit above 5.0 ohms?

Yes >>

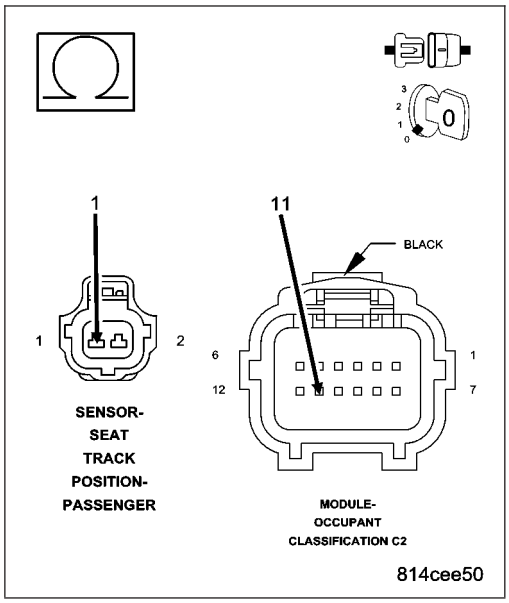
NOTE: Do not attempt to repair the Seat Harness. Replace the Seat Harness if the condition inspecting or testing for is present in the Seat Harness.

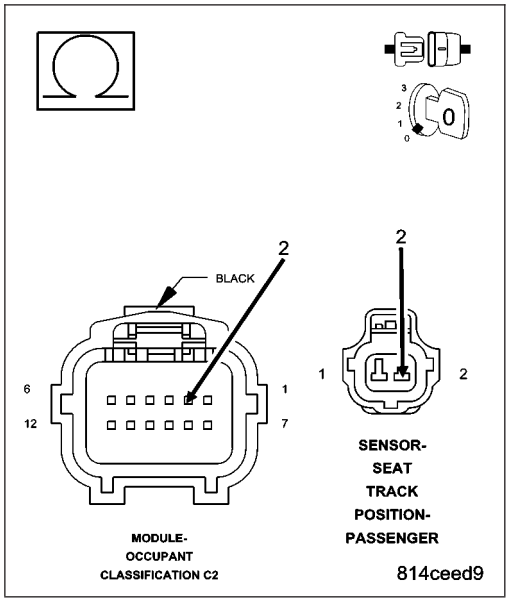
Replace the Passenger Seat Harness in accordance with the Service Information.

Perform the *OCS VERIFICATION TEST-VER 1. (Refer to 8 - ELECTRICAL/RESTRAINTS - DIAGNOSIS AND TESTING)

No >> Replace the OCM in accordance with the service information.

Perform the *OCS VERIFICATION TEST-VER 1. (Refer to 8 - ELECTRICAL/RESTRAINTS - DIAGNOSIS AND TESTING)





7. TEST FOR AN INTERMITTENT CONDITION

With the scan tool, record and erase all DTCs from the OCM.

If any ACTIVE codes are present they must be resolved before diagnosing any stored codes.

WARNING: To avoid personal injury or death, turn the ignition off, disconnect the battery and wait two minutes before proceeding.

Using the wiring diagram/schematic as a guide, inspect the wiring and connectors.

Look for chaffed, pierced, pinched, or partially broken wires and broken, bent, pushed out, spread, corroded, or contaminated terminals.

The following additional checks may assist you in identifying a possible intermittent problem.

Reconnect any disconnected components and harness connector.

WARNING: To avoid personal injury or death, turn the ignition on, then reconnect the battery.

With the scan tool monitor active codes as you work through the following steps.

B1A47-SECURITY TRANSMITTER/RECEIVER SENSOR RETURN CIRCUIT HIGH

For a complete wiring diagram **Refer to Section 8W**.

- **When Monitored:**
  During the VTSS pre-arm process.
- **Set Condition:**
  The Intrusion Transceiver Module detects a short to battery condition on the sensor ground circuit.

Possible Causes
TRANSMITTER (G945) SENSOR GROUND CIRCUIT SHORTED TO BATTERY
RECEIVER (G946) SENSOR GROUND CIRCUIT SHORTED TO BATTERY
INTRUSION TRANSCEIVER MODULE

Diagnostic Test

1. DETERMINING IF DTC IS CURRENT

NOTE: Diagnose any related Communication DTC(s) before continuing.
With a scan tool, read and record DTC(s).
With the scan tool, clear DTC(s).
Turn the ignition off and remove the key from the ignition.
Lock and close all doors to allow the VTSS to go from pre-arm to armed status and wait one minute.
Disarm the VTSS.
Using the scan tool, read DTC(s).

Does the DTC reset?

Yes >> Go to 2

No >> DTC is not active at this time. Test complete.
Perform BODY VERIFICATION TEST – VER 1 (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

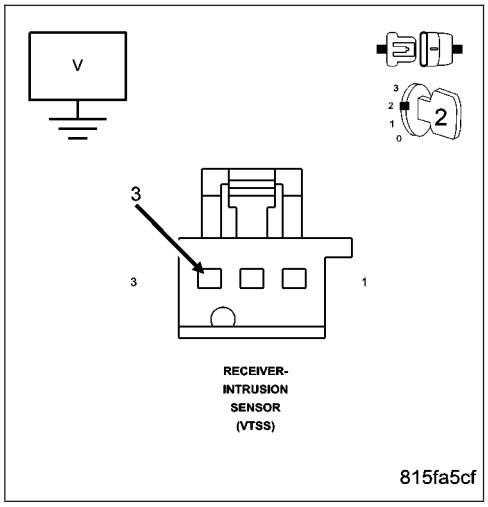
2. CHECK THE (G946) SENSOR GROUND CIRCUIT SHORT TO BATTERY

Turn the ignition off.
Disconnect the Intrusion Sensor Receiver connector.
Disconnect the Intrusion Transceiver Module connector.
Turn the ignition on.
Measure the voltage of the (G946) Sensor Ground circuit in the Intrusion Sensor Receiver connector.

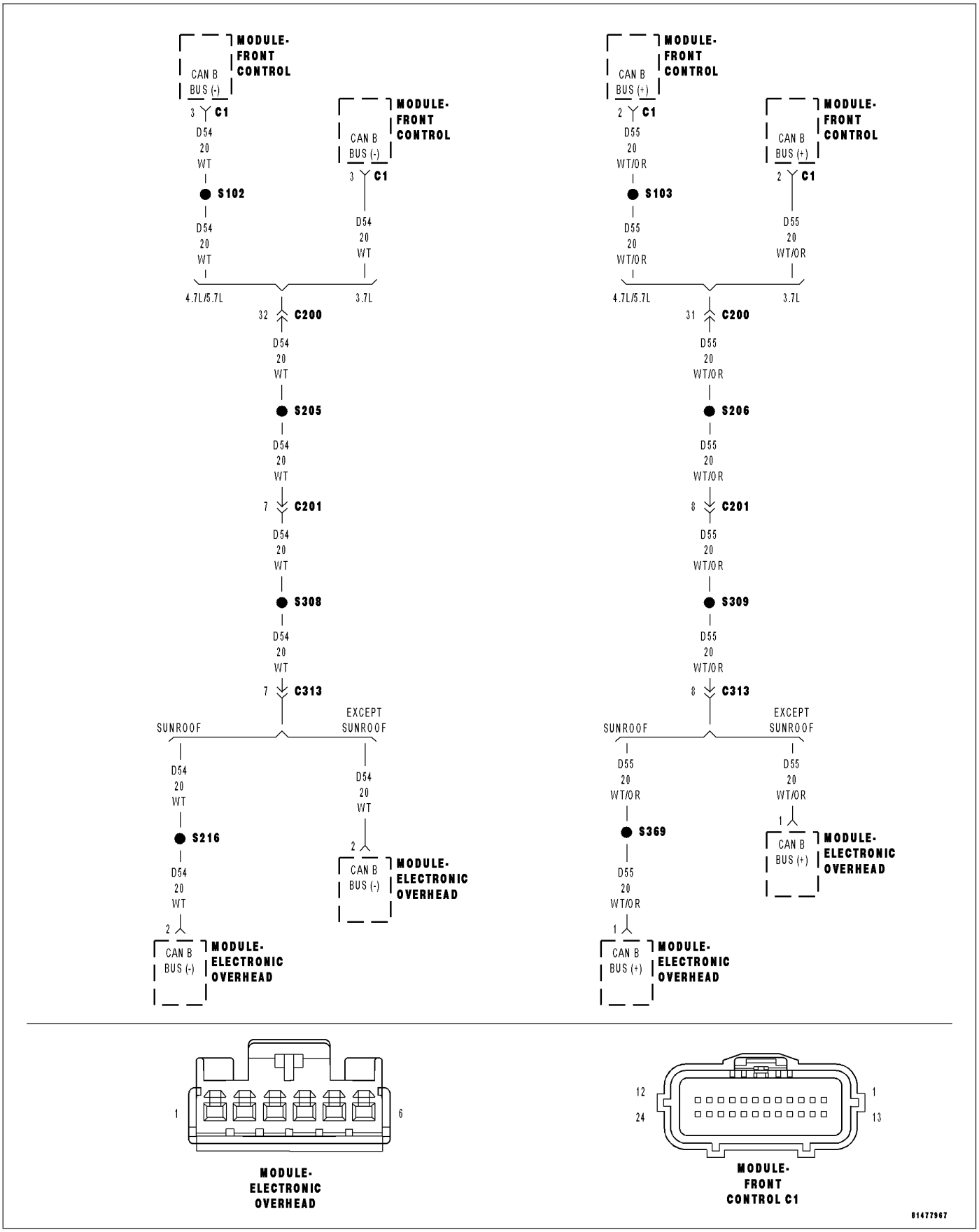
Is there any voltage present?

Yes >> Repair the (G946) Sensor Ground circuit for a short to voltage.
Perform BODY VERIFICATION TEST – VER 1 (Refer to 8 - ELECTRICAL/ELECTRONIC CONTROL MODULES - STANDARD PROCEDURE)

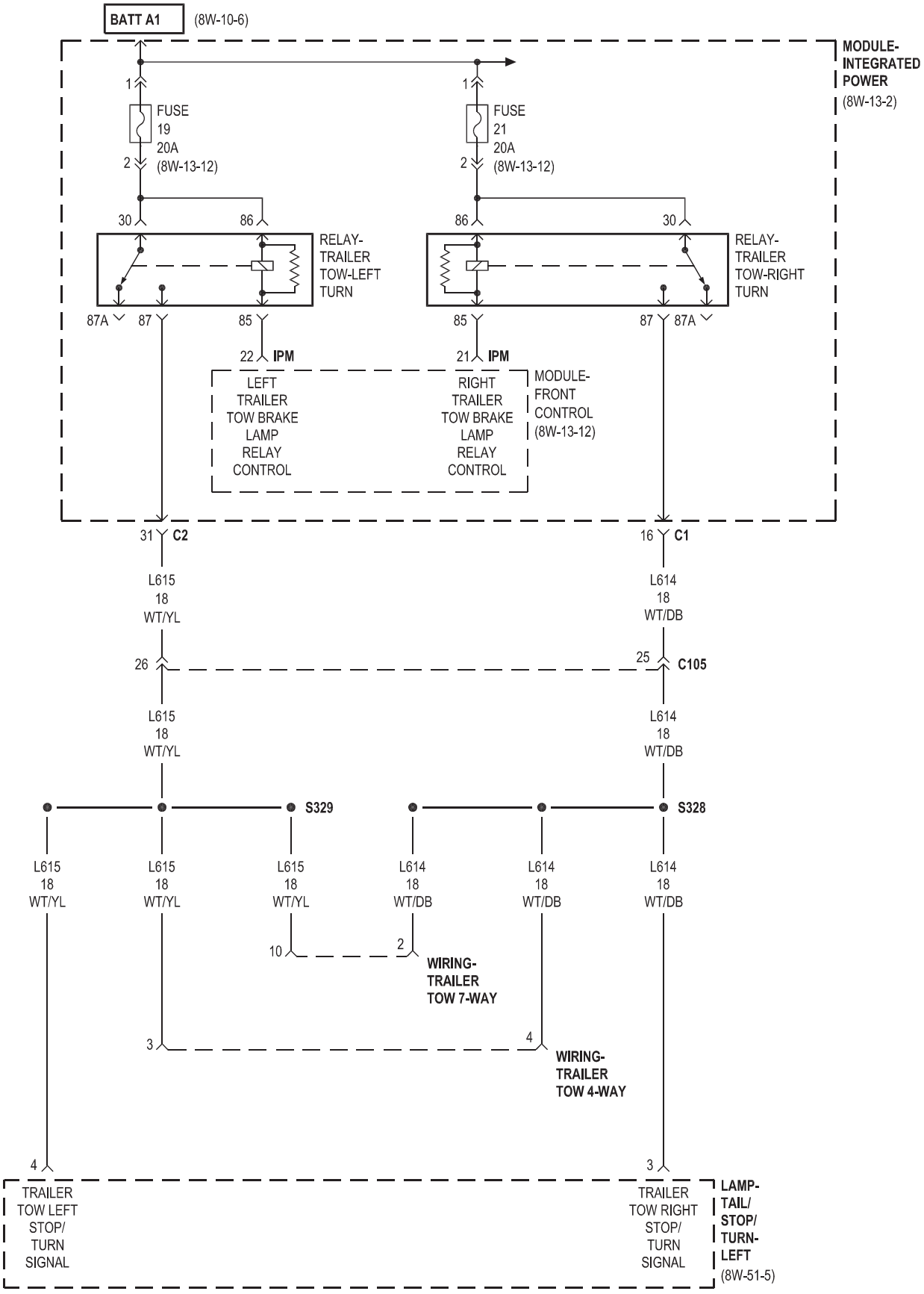
No >> Go To 3



U0019–CAN B BUS



For a complete wiring diagram **Refer to Section 8W**.

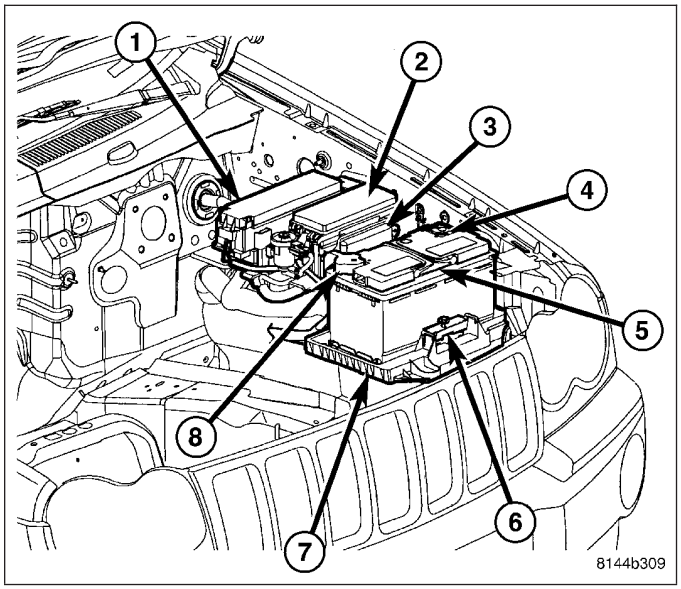

BATT A1
(8W-10-6)
MODULE-
INTEGRATED
POWER
(8W-13-2)
1
FUSE
19
20A
2
(8W-13-12)
1
FUSE
21
20A
2
(8W-13-12)
30
86
RELAY-
TRAILER
TOW-LEFT
TURN
86
30
RELAY-
TRAILER
TOW-RIGHT
TURN
87A
87
85
85
87
87A
22
IPM
21
IPM
LEFT
TRAILER
TOW BRAKE
LAMP
RELAY
CONTROL
RIGHT
TRAILER
TOW BRAKE
LAMP
RELAY
CONTROL
MODULE-
FRONT
CONTROL
(8W-13-12)
31
C2
16
C1
L615
18
WT/YL
L614
18
WT/DB
26
25
C105
L615
18
WT/YL
L614
18
WT/DB
S329
S328
L615
18
WT/YL
L615
18
WT/YL
L615
18
WT/YL
L614
18
WT/DB
L614
18
WT/DB
L614
18
WT/DB
10
2
WIRING-
TRAILER
TOW 7-WAY
3
4
WIRING-
TRAILER
TOW 4-WAY
4
3
TRAILER
TOW LEFT
STOP/
TURN
SIGNAL
TRAILER
TOW RIGHT
STOP/
TURN
SIGNAL
LAMP-
TAIL/
STOP/
TURN-
LEFT
(8W-51-5)

MODULE-INTEGRATED POWER

DESCRIPTION

The Integrated Power Module (IPM) (2) is a combination of a printed circuit board based module that contains fuses and relays and the Front Control Module (FCM) (3). The FCM contains electronics that control the IPM as well as other vehicle functions. The IPM connects directly to the battery positive via a stud located on top of the unit. The ground connection is via electrical connectors. The IPM provides the primary means of voltage distribution and protection for many vehicle systems.

The IPM (2) is located in the engine compartment, next to the battery (5) and in front of the Power Distribution Center (PDC) (1). It is secured to a bracket with three locating slots that snap onto the bracket tabs holding it securely in place. The printed circuit board portion of the IPM cannot be repaired and must be replaced if inoperative or damaged, (Refer to 8 - ELECTRICAL/POWER DISTRIBUTION/INTEGRATED POWER MODULE - REMOVAL).

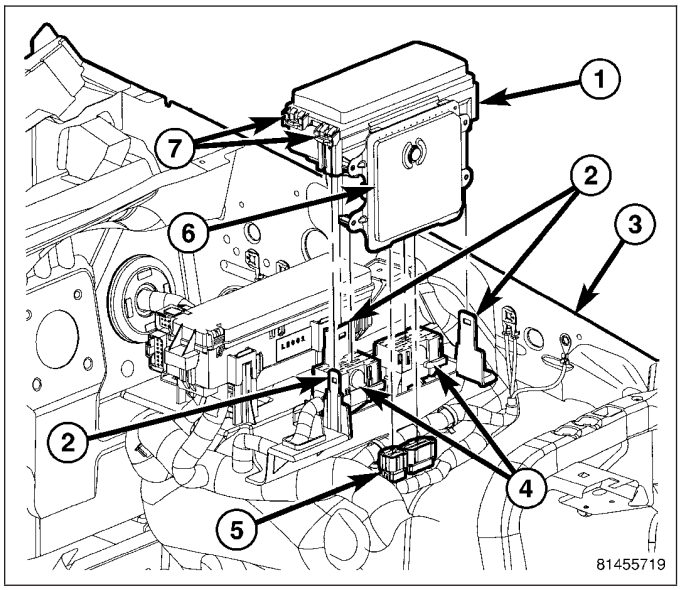


OPERATION

All of the current from the battery and the generator output enters the integrated power module via a stud on the top of the module. Internal connections of all of the power distribution center circuits is accomplished by a combination of bus bars and a printed circuit board.

REMOVAL

1. Disconnect and isolate the battery negative cable.
2. Remove the Integrated Power Module (IPM) cover by pulling up on the cover tabs (7) and pivoting the cover outward.



NOTE: Remove the jumper wire before continuing.

10. (K41) O2 SENSOR 1/1 SIGNAL CIRCUIT

WARNING: When the engine is operating, do not stand in direct line with the fan. Do not put your hands near the pulleys, belts, or fan. Do not wear loose clothing. Failure to follow these instructions can result in personal injury or death.

Start the engine.

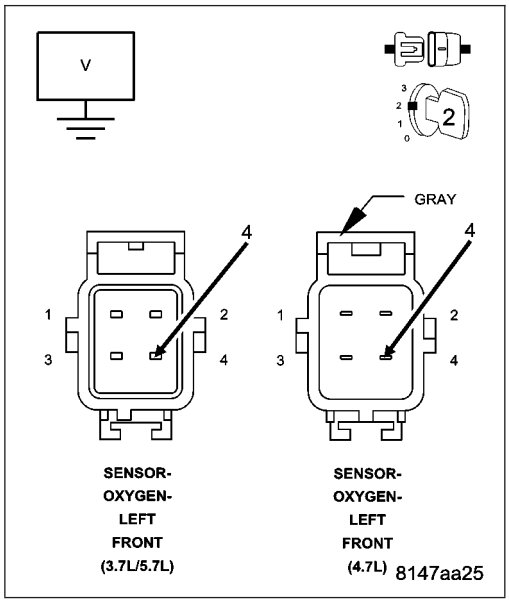
Measure the voltage on the (K41) O2 Sensor 1/1 Signal circuit in the O2 Sensor harness connector.

Is the voltage above 4.8 volts?

Yes >> Check the (K41) O2 Sensor 1/1 Signal circuit for damage, short to ground, open, or short to voltage. Inspect the O2 Sensor connector and the PCM harness connector. If OK, replace and program the Powertrain Control Module per Service Information.

Perform the POWERTRAIN VERIFICATION TEST. (Refer to 9 - ENGINE - STANDARD PROCEDURE)

No >> Go To 11



11. (K902) O2 SENSOR RETURN UPSTREAM CIRCUIT

Engine still running.

Measure the voltage on the (K902) O2 Return Upstream circuit in the 1/1 O2 Sensor harness connector.

Is the voltage at 2.5 volts?

Yes >> Go To 12

No >> Check the (K902) O2 Return Upstream circuit for damage, short to ground, open, or short to voltage. Inspect the O2 Sensor connector and the PCM harness connector. If OK, replace and program the Powertrain Control Module per Service Information.

Perform the POWERTRAIN VERIFICATION TEST. (Refer to 9 - ENGINE - STANDARD PROCEDURE)

NOTE: Turn the ignition off before continuing.