Anti-Theft System, Passive

Inspection and Verification

NOTE: The PATS module must be reconfigured after replacement. Refer to the PATS Configuration Command Index. For additional reprogramming assistance, refer to the help screen on the New Generation STAR (NGS) Tester configuration card.

1. Verify the customer concern by duplicating the condition.
2. Inspect to determine if one of the following mechanical or electrical concerns apply:

VISUAL INSPECTION CHART

Mechanical	Electrical
• Damaged ignition lock cylinder • Damaged encoded ignition key • A non-encoded ignition key being used • A non-programmed encoded ignition key.	• Open fuses: Fuse junction panel Fuse 16 (20A), Fuse 18 (20A) • Inoperative transceiver module • Loose connections • Corroded connections • Damaged ignition switch

3. If inspection reveals an obvious concern that can be readily repaired, correct the concern before continuing with Inspection and Verification.
4. If the concern remains after the inspection, connect the New Generation STAR (NGS) Tester to the data link connector (DLC) located beneath the instrument panel and select the vehicle to be tested from the NGS menu. If the NGS does not communicate with the vehicle:
   - check that the program card is properly installed.
   - check the connections to the vehicle.
   - check the ignition switch position.
5. If the NGS still does not communicate with the vehicle, refer to the New Generation STAR Tester manual.
6. Perform the DATA LINK DIAGNOSTIC TEST. If the NGS responds with:
   - CKT914, CKT915 or CKT70 = ALL ECUS NO RESP/NOT EQUIP, refer to Section 18-04.
   - NO RESP/NOT EQUIP for PATS module, go to Pinpoint Test A.
   - SYSTEM PASSED, retrieve and record the continuous diagnostic trouble codes (DTCs), erase the continuous DTCs and perform self-test diagnostics for the PATS module.
7. If the DTCs retrieved are related to the concern, go to PATS Diagnostic Trouble Code (DTC) Index to continue diagnostics.
8. If no DTCs related to the concern are retrieved, proceed to Symptom chart to continue diagnostics.

Rotunda SBDS® 418-F001 (001-00001) may also be used to diagnose this system.

PATS Diagnostic Trouble Code (DTC) Index

DTC	Description	Action to Take
B1213	Anti-Theft Number of Programmed Keys is Below Minimum	GO to DTC B1213.
B1232 or B2103	Antenna Not Connected — Defective Transceiver	GO to DTC B1232
B1600	PATS Ignition Key Transponder Signal Is Not Received — Damaged Key or Non-PATS Key	GO to DTC B1600.
B1601	PATS Received Incorrect Key Code From Ignition Key Transponder (Unprogrammed Encoded Ignition Key)	GO to DTC B1601.
B1602	PATS Received Invalid Key Code Format From Ignition Key Transponder (Partial Key Read)	GO to DTC B1602.
B1681	PATS Transceiver Signal Is Not Received — Transceiver Defective or Not Connected	GO to DTC B1681.
B2139	PCM ID Does Not Match Between PATS and PCM	GO to DTC B2139-.
B2141	NVM Configuration Failure — No Security ID Exchange Between PATS and PCM	GO to DTC B2141
U1147	SCP Invalid or Missing Data For Vehicle Security	GO to DTC U1147-.
U1262	Missing SCP Message	GO to Section 18-04.

PATS Parameter Identification (PID) Index

Display	Description	PID Content
CCNTPATS	Number of Continuous DTCs on PATS	one count per bit
IGN_PAT	Ignition Switch	RUN/OFF

NUMKEYS	Number of Ignition Key Codes Programmed	BCD (valid range 0-8)
M_KEY	Programmed Key In Ignition?	Yes/No
ENABL_S	Has PATS Enabled the Vehicle?	Enabled/Disabled
ACCESS	Security Access Status	TIMED/CODED
MIN#KEY	Minimum Number of Programmed Key Required to Start Vehicle	BCD (Valid Ranger 2-8)
ANTISCN	Timeout for Unprogrammed PATS Key (ACTIVE Will Last Up to 20 Seconds)	ACTIVE, notACT
PCM_ID	Is PCM ID Stored In PATS?	STORED, notSTR
SPAREKY	Can You Add Spare Keys With Two Programmed Keys?	YES, NO
SERVMOD	Service Module?	YES, NO
PCM_VFY	PCM ID Matches Between PCM and PATS	YES, NO

PATS Active Command Index

Active Command	Display	Action
ANTI-THEFT INDICATOR LAMP	THEFT LMP	ON, OFF
TRANSMIT SIGNAL COMMAND	TRANSMIT	ON, OFF

PATS Configuration Command Index

Display	NGS/SBDS Menu	Description
Ignition Key Code Erase	PATS	Erase All Programmed Ignition Key Codes
Paramater Reset — PATS	PATS	Clear the PCM ID Stored in PATS that Matches the PATS Module to the PCM
Paramater Reset — PCM	PCM	Reset PCM Security ID (Required After Replacing PATS Module)
Spare Key Switch Enable	PATS	Enable the Spare Key Programming Procedure
Spare Key Switch Disable	PATS	Disable the Spare Key Programming Procedure

Symptom Chart

Refer to the Electrical and Vacuum Troubleshooting Manual for the connector numbers cited in the pinpoint tests.

Use 73 Digital Multimeter 105-R0051 or equivalent to perform pinpoint tests.

Symptom Chart

Condition	Possible Source	Action
• The Vehicle Does Not Start (Theft Indicator Is Flashing or On Solid)	• Less than two keys programmed to the system. • Transceiver not connected/defective. • Circuitry. • Transceiver internal antenna damage. • Non-PATS key or damaged key.	• PERFORM PATS on-demand self-test. RETRIEVE DTCs. If DTCs are present, GO to PATS Diagnostic Trouble Code (DTC) Index. If no other DTCs are retrieved, CHECK for other no start causes.
	• No key code received. • No PCM ID stored in PATS. • PATS/PCM ID do not match. • SCP link.	• CLEAR stored DTCs. CYCLE the ignition from OFF to RUN. RETRIEVE continuous DTCs. If DTCs are present, GO to PATS Diagnostic Trouble Code (DTC) Index. If no other DTCs are retrieved, CHECK for other possible causes.
• No Communication With Passive Anti-Theft System Module	• Fuses. • Circuitry. • PATS module.	• GO to Pinpoint Test A.
• No Theft Indicator Proveout — Vehicle Starts Normally but Anti-Theft Indicator Is Always/Never On	• Circuitry. • PATS module. • Instrument cluster. • Theft LED.	• GO to Pinpoint Test B.
• Vehicle Starts But Flashes a Fault Code on the Theft Indicator When the Ignition Is in Run	• Incorrect PCM calibration.	• GO to DTC U1147-.

Pinpoint Tests

DTC B1213: ANTI-THEFT NUMBER OF PROGRAMMED KEYS IS BELOW MINIMUM

B1213-1 CHECK FOR ADDITIONAL DIAGNOSTIC TROUBLE CODES

- Key OFF.
- Connect the NGS.
- Retrieve and document continuous DTCs.
- Clear continuous DTCs.
- Perform PATS on-demand self-test.

Is DTC B1213 the only DTC retrieved?

Yes	No
GO to **B1213-2** .	REPAIR other DTCs retrieved. TEST the system for normal operation. REPEAT self-test.

B1213-2 CHECK PATS PID: NUMKEYS

- Enter NGS: PIDs/Data Monitor and Record Check PID: NUMKEYS.

Did PATS PID: NUMKEYS display less than two encoded ignition keys programmed?

Yes	No
GO to **B1213-3** .	System is OK.

B1213-3 PROGRAM IN TWO KEYS

NOTE: Two programmed encoded keys must be available to start the vehicle.

- Cut new encoded ignition lock cylinder key.
- Insert new encoded ignition key into ignition switch.
- Program the new encoded ignition key; refer to Spare Key Programming — Without Programmed Keys.

Does the theft indicator illuminate for 35 seconds and then go out?

Yes	No
CLEAR DTCs and RUN self-test to VERIFY no diagnostic trouble code. TEST the system for normal operation.	If the theft indicator is on continuously, REPEAT B1213-3 with second new encoded ignition key. TEST the system for normal operation. If the theft indicator is flashing, RETRIEVE DTC stored for new fault. REPAIR the other DTC(s) retrieved.

DTC B2103: DEFECTIVE TRANSCEIVER — ANTENNA NOT CONNECTED

B2103-1 INSPECT ANTENNA FOR PROPER INSTALLATION

- Key off.
- Verify the PATS transceiver is properly installed; refer to Transceiver.
- Connect NGS.
- Perform PATS on-demand self-test.
- Retrieve and document continuous DTCs.
- Clear continuous DTCs.

Is DTC B1232 or B2103 retrieved?

Yes	No
REPLACE the PATS transceiver; REFER to Transceiver. CYCLE the ignition to RUN using two encoded ignition keys. GO to Pinpoint Test B2139-. CLEAR the DTCs. REPEAT the PATS on-demand self-test. TEST the system for normal operation.	System is OK.

DTC B1600: PATS IGNITION KEY TRANSPONDER SIGNAL IS NOT RECEIVED — DAMAGED ENCODED IGNITION KEY OR USE OF NON-PATS KEY

B1600-1 RETRIEVE THE DTCS

- Key off.
- Connect NGS to DLC.
- Retrieve and document continuous DTCs.
- Clear continuous DTCs.
- Perform PATS on-demand self-test.

Is DTC B1600 retrieved?

Yes	No
GO to **B1600-2** .	If other DTCs are retrieved, REFER to PATS Diagnostic Trouble Code (DTC) Index. If no DTCs are retrieved, the system is OK.

B1600-2 REPLACE THE ENCODED IGNITION KEY

- Key off.

  NOTE: Check to make sure the customer and encoded ignition keys must be approved Ford encoded PATS ignition keys. Unapproved PATS keys do not always operate properly over different temperature ranges (encoded keys from Rotunda, Ilco, or Strattec are approved encoded ignition keys). Cut a new encoded ignition key.

- Key on.
- Program the new encoded ignition key; refer to Key Programming — Erase All Key Codes and Program Two Keys.
- Perform PATS on-demand self-test.

Is DTC B1600 still present?

Yes	No
GO to **B1600-3** .	If no other DTCs are retrieved, the system is OK. If other DTCs are retrieved, REFER to PATS Diagnostic Trouble Code (DTC) Index.

B1600-3 REPLACE THE PATS TRANSCEIVER

- Key off.
- Replace the PATS transceiver; refer to Transceiver.
- Key on.

  NOTE: Use the customer's original encoded ignition key that was cut in the previous step.

- Perform the PATS on-demand self-test.

Is DTC B1600 retrieved?

Yes	No
REPLACE the PATS module; REFER to Passive Anti-Theft System (PATS) Control Module. CYCLE the ignition to RUN using two encoded ignition keys. GO to Pinpoint Test B2139-. CLEAR the DTCs. TEST the system for normal operation.	System is OK.

DTC B1601: PATS RECEIVED INCORRECT KEY CODE FROM IGNITION TRANSPONDER (UNPROGRAMMED ENCODED IGNITION KEY)

B1601-1 RETRIEVE THE DTCS

- Key off.
- Connect NGS to DLC.
- Retrieve and document continuous DTCs.
- Clear continuous DTCs.
- Perform PATS on-demand self-test.

Is DTC B1601 retrieved?

Yes	No
GO to **B1601-2** .	System is OK. CHECK all other encoded ignition keys with PATS on-demand self-test to verify all other encoded ignition keys are

	programmed.

B1601-2 CHECK FOR PROGRAMMED ENCODED IGNITION KEYS — MONITOR THE PATS PID NUMKEYS

- Monitor the PATS PID NUMKEYS.

Does the PATS PID NUMKEYS display 8?

Yes	No
ERASE and REPROGRAM the key codes; REFER to Key Programming — Erase All Key Codes and Program Two Keys. CLEAR the DTCs. TEST the system for normal operation.	GO to **B1601-3** .

B1601-3 CHECK THE NUMBER OF ENCODED IGNITION KEYS AVAILABLE

- Verify there are at least two currently programmed encoded ignition keys available with the vehicle.

Are at least two currently programmed encoded ignition keys available with the vehicle?

Yes	No
GO to **B1601-4** .	CUT new encoded ignition key so that at least two keys are available. PROGRAM the encoded ignition keys; REFER to Key Programming — Erase All Key Codes and Program Two Keys. GO to **B1601-4** .

B1601-4 VERIFY THE PATS PID SPARE_KY INDICATES ENABLE

- Monitor the PATS PID SPARE_KY.

Does the PATS PID SPARE_KY indicate ENABLE?

Yes	No
REFER to Key Programming — Program a Key Using Two Programmed Keys. TEST the system for normal operation.	REFER to Key Programming — Spare Key Programming Switch to enable the PID SPARE_KY to ENABLE. TEST the system for normal operation. Once completed, GO to **B1601-5** .

B1601-5 CHECK THE ENCODED IGNITION KEYS FOR PROPER OPERATION

- Key off.
- Turn the ignition to RUN for three seconds using the first encoded ignition key.
- Turn the ignition to RUN using the second encoded ignition key.
- Start the vehicle using the second encoded ignition key.

Does the vehicle start properly using both encoded ignition keys?

Yes	No
System is OK. If there are additional keys that need to be programmed, REFER to Key Programming — Program a Key Using Two Programmed Keys.	GO to **B1601-6** .

B1601-6 RETRIEVE THE DTCS — CHECK FOR DTC B1601

- Retrieve and document continuous DTCs.
- Clear continuous DTCs.
- Perform a Self-Test using both ignition keys from Step B1601-5.

Is DTC B1601 retrieved?

Yes	No
REPLACE the PATS module; REFER to Passive Anti-Theft System (PATS) Control Module. CYCLE the ignition to RUN using two encoded ignition keys. GO to Pinpoint Test B2139-. CLEAR the DTCs. TEST the system for normal operation.	System is OK. If other DTCs are retrieved, REFER to PATS Diagnostic Trouble Code (DTC) Index.

DTC B1602: PATS RECEIVED INVALID KEY CODE FORMAT FROM IGNITION KEY TRANSPONDER (PARTIAL KEY READ)

B1602-1 RETRIEVE THE DTCS

- Key off.
- Connect NGS to DLC.
- Retrieve and document continuous DTCs.
- Clear continuous DTCs.
- Perform PATS on-demand self-test.

Is DTC B1602 retrieved?

Yes	No
GO to **B1602-2** .	System is OK. CHECK all customer encoded ignition keys with PATS on-demand self-test to verify all others are programmed.

B1602-2 REPLACE THE ENCODED IGNITION KEY

- Key off.

  NOTE: Check to make sure the customer and encoded ignition keys must be approved Ford encoded PATS ignition keys. Unapproved PATS keys do not always operate properly over different temperature ranges (encoded keys from Rotunda, Ilco, Curtis, or Strattec are approved encoded ignition keys). Cut a new encoded ignition key.

- Key on.
- Program a new encoded ignition key; refer to Key Programming — Erase All Key Codes and Program Two Keys.
- Perform PATS on-demand self-test.

Is DTC B1602 retrieved?

Yes	No
GO to **B1602-3** .	System is OK. If the customer has any remaining encoded keys at home, INSTRUCT them to perform Key Programming — Programming a Key Using Two Programmed Keys on each remaining keys. This procedure is detailed in the owners manual.

B1602-3 REPLACE THE PATS TRANSCEIVER

NOTE: Large metal objects on the key chain or a second PATS key on the same key chain may cause this fault code under some conditions.

- Key off.
- Replace the PATS transceiver; refer to Transceiver.
- Key on.
- Perform PATS on-demand self-test.

Are any DTCs retrieved?

Yes	No
REFER to PATS Module Diagnostic Trouble Code (DTC) Index.	System is OK.

DTC B1681: PATS TRANSCEIVER SIGNAL IS NOT RECEIVED — TRANSCEIVER DEFECTIVE OR NOT CONNECTED

B1681-1 RETRIEVE THE DTCS

- Key off.
- Connect NGS to DLC.
- Retrieve and document continuous DTCs.
- Clear continuous DTCs.
- Perform PATS on-demand self-test.

Is DTC B1681 retrieved?

Yes	No
GO to **B1681-2** .	System is OK.

B1681-2 CHECK THE PATS TRANSCEIVER FOR VOLTAGE — CIRCUIT 24 (DB/O)

- Key off.
- Disconnect PATS transceiver C221.
- Key on.
- Measure the voltage between PATS transceiver C221 , circuit 24 (DB/O), and ground.

Is the voltage greater than 10 volts?

Yes	No
GO to **B1681-3** .	REPAIR circuit 24 (DB/O). CLEAR the DTCs. TEST the system for normal operation.

B1681-3 CHECK THE PATS TRANSCEIVER GROUND — CIRCUIT 25 (DG/P)

- Key off.
- Measure the resistance between PATS transceiver C221 , circuit 25 (DG/P), and ground.

Is the resistance less than 5 ohms?

Yes	No
GO to **B1681-4** .	REPAIR circuit 25 (DG/P). CLEAR the DTCs. TEST the system for normal operation.

B1681-4 CHECK THE PATS TRANSCEIVER RECEIVE CIRCUIT FOR VOLTAGE — CIRCUIT 934 (R/Y)

- Reconnect PATS transceiver C221.
- Key on.
- Measure the voltage by back probing between PATS transceiver C221 , circuit 934 (R/Y), and ground.

Is the voltage greater than 9 volts?

Yes	No
GO to **B1681-7** .	GO to **B1681-5** .

B1681-5 CHECK THE PATS TRANSCEIVER RECEIVE CIRCUIT FOR SHORT — CIRCUIT 934 (R/Y)

- Key off.
- Disconnect PATS transceiver C221.
- Measure the resistance between PATS transceiver C221 , circuit 934 (R/Y), and ground.

Is the resistance greater than 100 ohms?

Yes	No
GO to **B1681-6** .	CHECK circuit 934 (R/Y) for short to ground. If OK, REPLACE the PATS module; REFER to Passive Anti-Theft System (PATS) Control Module. CYCLE the ignition to RUN using two encoded ignition keys. GO to Pinpoint Test B2139-. CLEAR the DTCs. TEST the system for normal operation. If the circuit is not OK, REPAIR circuit 934 (R/Y). CLEAR the DTCs. TEST the system for normal operation.

B1681-6 CHECK CIRCUIT FOR OPEN

- Measure the resistance between PATS transceiver C241 , circuit 168 (R/BK), and PATS module C242 , circuit 168 (R/BK).

Is the resistance less than 5 ohms?

Yes	No
GO to **B1681-7** .	REPAIR circuit 168 (R/BK). CLEAR the DTCs. TEST the system for normal operation.

B1681-7 CHECK THE PATS TRANSCEIVER TRANSMIT CIRCUIT FOR VOLTAGE — CIRCUIT 933 (BK/O)

- Key off.
- Reconnect PATS transceiver C221.

- Key on.
- Measure the voltage by back probing between PATS transceiver C221 , circuit 933 (BK/O), and ground.

Is the voltage greater than 9 volts?

Yes	No
GO to **B1681-9** .	GO to **B1681-8** .

B1681-8 CHECK THE PATS TRANSCEIVER TRANSMIT CIRCUIT FOR OPEN — CIRCUIT 933 (BK/O)

- Key off.
- Disconnect PATS transceiver C221.
- Measure the resistance between PATS transceiver C221 , circuit 933 (BK/O), and ground.

Is the resistance greater than 100 ohms?

Yes	No
GO to **B1681-9** .	CHECK circuit 933 (BK/O) for short to ground. If OK, REPLACE the PATS module; REFER to Passive Anti-Theft System (PATS) Control Module. CYCLE the ignition to RUN using two encoded ignition keys. GO to Pinpoint Test B2139-. CLEAR the DTCs. TEST the system for normal operation. If the circuit is not OK, REPAIR circuit 933 (BK/O). CLEAR the DTCs. TEST the system for normal operation.

B1681-9 CHECK THE PATS TRANSMIT CIRCUIT FOR PROPER OPERATION — CIRCUIT 934 (BK/O)

- Reconnect PATS transceiver C221.
- Key on.
- Trigger the PATS active command TRANSMIT SIGNAL COMMAND to ON.
- Measure the voltage by back probing between PATS transceiver C221 , circuit 934 (BK/O), and ground.

Does the voltage drop from greater than 9 volts to less than 1 volt when the active command is triggered on?

Yes	No
GO to **B1681-10** .	CHECK circuit 933 (BK/O) for continuity to PATS module C217 . If OK, REPLACE the PATS module; REFER to Passive Anti-Theft System (PATS) Control Module. CYCLE the ignition to RUN using two encoded ignition keys. GO to Pinpoint Test B2139-. CLEAR the DTCs. TEST the system for normal operation. If the circuit is not OK, REPAIR circuit 933 (BK/O). CLEAR the DTCs. TEST the system for normal operation.

B1681-10 CHECK THE PATS SYSTEM WITH NEW PATS TRANSCEIVER

- Key off.
- Replace the PATS transceiver; refer to Transceiver.
- Key on.
- Perform the PATS on-demand self-test.

Is DTC B1681 retrieved?

Yes	No
GO to **B1681-11** .	System is OK.

B1681-11 CHECK THE PATS SYSTEM WITH NEW PATS MODULE

- Key off.
- Replace the PATS module; refer to Passive Anti-Theft System (PATS) Control Module. Cycle the ignition to RUN using two encoded ignition keys. GO to Pinpoint Test B2139-. Clear the DTCs. Test the system for normal operation.
- Key on.
- Perform the PATS on-demand self-test.

Is DTC B1681 retrieved?

Yes	No
REPAIR circuit 25 (DG/P), 24 (DB/O), 933 (BK/O), and 934 (R/Y). CLEAR the DTCs. TEST the system for normal operation.	If no DTCs are retrieved, the system is OK. If other DTCs are retrieved, REFER to PATS Diagnostic Trouble Code (DTC) Index.

DTC B2139: PCM ID DOES NOT MATCH BETWEEN PATS AND PCM

B2139-1 RETRIEVE THE DTCS

- Key off.
- Connect NGS to DLC.
- Retrieve and document continuous DTCs.
- Clear continuous DTCs.
- Key OFF and key ON and retrieve DTCs.

Is DTC B2139 retrieved?

Yes	No
GO to **B2139-2** .	System is OK.

B2139-2 CLEAR SECURITY ID FROM PATS MODULE AND PCM

- Perform the security access procedure for PATS Module; refer to Security Access Procedure.

  NOTE: Do NOT perform ignition key code erase.

- Select PARAMETER RESET command for PATS.
- Use diagnostic card PCM Active Command Keep Alive Memory Reset.
- Turn the ignition switch to run for thirty seconds.
- Clear continuous DTCs.
- Retrieve continuous DTCs.

Is DTC B2139 retrieved?

Yes	No
VERIFY PCM calibration is correct for vehicle. If correct, REPEAT Step 2. If fault code persists, REPLACE the PATS module. REFER to Passive Anti-Theft System (PATS) Control Module. CYCLE the ignition to RUN using two encoded ignition keys. GO to Pinpoint Test B2139-. CLEAR the DTCs. TEST the system for normal operation. If DTC B2139 still exists, REPLACE the PCM; GO to Pinpoint Test B2139-. CLEAR the DTCs.	System is OK. CHECK for any other DTCs; FOLLOW Diagnostic Trouble Code (DTC) Index.

DTC B2141: NO SECURITY ID EXCHANGE BETWEEN PATS AND PCM

B2141-1 RETRIEVE THE DTCS

- Key off.
- Connect NGS to DLC.
- Retrieve and document continuous DTCs.
- Clear continuous DTCs.
- Key OFF and key ON and retrieve DTCs.

Is DTC B2141 retrieved?

Yes	No
If DTC B2141 is the only DTC retrieved, GO to **B2141-2** . If DTC U1147 is retrieved with DTC B2141, GO to Pinpoint Test U1147-.	System is OK.

B2141-2 PERFORM KEEP ALIVE MEMORY RESET FROM PCM

- Use diagnostic card for PCM Active Command — Keep Alive Memory Reset.
- Key OFF.
- Turn ignition key to RUN for thirty seconds.
- Key OFF.
- Attempt to start vehicle.

Does vehicle start?

Yes	No

System is OK.	CONNECT NGS and CLEAR continuous DTCs from the PATS module. Key OFF and then key ON and RETRIEVE continuous DTCs. GO to **B2141-3** .

B2141-3 CHECK SYSTEM FOR DTC B2141

- Perform PATS on-demand self-test.

Is DTC B2141 retrieved?

Yes	No
REPEAT **B2141-2** . If fault persists, VERIFY PCM calibration. If PCM calibration is OK, REPLACE the PATS module; REFER to Passive Anti-Theft System (PATS) Control Module. CYCLE the ignition to RUN using two encoded ignition keys. GO to Pinpoint Test B2139-. CLEAR the DTCs. TEST the system for normal operation. If fault persists, REPLACE the PCM; GO to Pinpoint Test B2139-. CLEAR the DTCs. TEST the system for normal operation.	If other DTCs are retrieved, REFER to PATS Diagnostic Trouble Code (DTC) Index.

DTC U1147: SCP INVALID OR MISSING DATA FOR VEHICLE SECURITY

U1147-1 CHECK THE ANTI-THEFT INDICATOR FOR PROPER OPERATION

- Start the vehicle.
- Verify the theft indicator proves out properly.

Does the vehicle start with the theft indicator flashing?

Yes	No
If the vehicle starts, VERIFY the PCM calibration is correct for the vehicle. REFER to Section 3A in Powertrain Control/Emissions Diagnostics Manual.	GO to **U1147-2** .

U1147-2 CHECK THE PCM DIAGNOSTIC CAPABILITY

- Connect NGS to DLC.
- Retrieve and document continuous DTCs.
- Clear continuous DTCs.
- PCM Self-Test.

Does the NGS communicate with the PCM?

Yes	No
GO to **U1147-3** .	REFER to Section 18-04.

U1147-3 RETRIEVE THE PCM DTCS

- Retrieve and document continuous DTCs.

Is DTC P1260 retrieved?

Yes	No
GO to **U1147-4** .	VERIFY PCM power and ground. REFER to Section 3A in Powertrain Control/Emissions Diagnostic Manual .

U1147-4 CHECK THE COMMUNICATION NETWORK

- Repeat Inspection and Verification steps 4 through 8; refer to Inspection and Verification.
- Key off.
- Retrieve and document continuous DTCs.
- Clear continuous DTCs.
- Perform PATS on-demand self-test.

Is DTC U1147- retrieved?

Yes	No
REPLACE the PATS module; REFER to Passive Anti-Theft System (PATS) Control Module. CYCLE the ignition to RUN using two encoded ignition keys. GO to Pinpoint Test B2139-. CLEAR the DTCs. TEST the system for normal operation.	System is OK.

PINPOINT TEST A: NO COMMUNICATION WITH PASSIVE ANTI-THEFT SYSTEM (PATS) CONTROL MODULE

A1 CHECK FUSE JUNCTION PANEL FUSES 16 (20A) AND 18 (20A)

- Turn ignition switch OFF.
- Remove fuse junction panel fuse 16 (20A) and fuse 18 (20A).
- Using an ohmmeter, measure resistance across fuse terminals.

Is resistance of each fuse 5 ohms or less?

Yes	No
GO to **A3** .	GO to **A2** .

A2 CHECK CIRCUITS 196 (DB/O) AND 16 (R/LG) FOR SHORTS TO GROUND

- Remove fuse 16 (20A) and fuse 18 (20A) from fuse junction panel.
- Disconnect PATS module C217.
- Measure the resistance between PATS module C217 , circuit 196 (DB/O), and ground; and between PATS module C217 , circuit 16 (R/LG), and ground.

Are the resistances greater than 10,000 ohms?

Yes	No
REPLACE the PATS module; REFER to Passive Anti-Theft System (PATS) Control Module. CYCLE the ignition to RUN using two encoded ignition keys. GO to Pinpoint Test B2139-. TEST the system for normal operation.	REPAIR circuit(s) 196 (DB/O) and/or 16 (R/LG). TEST the system for normal operation.

A3 CHECK FOR VOLTAGE TO THE PATS MODULE — CIRCUIT 196 (DB/O) AND 16 (R/LG)

- Turn ignition switch OFF.
- Disconnect PATS module C217.
- Turn ignition switch to RUN.
- Measure voltage connector pin C217, circuit 196 (DB/O) and pin C217 , circuit 16 (R/LG).

Are the voltages greater than 10 volts?

Yes	No
GO to **A4** .	REPAIR circuit(s) 196 (DB/O) and/or 16 (R/LG). TEST the system for normal operation.

A4 CHECK CIRCUIT 397 (BK/W) FOR OPEN

- Turn ignition switch OFF.
- Measure the resistance between PATS module C217, circuit 397 (BK/W), and ground.

Is the resistance less than 5 ohms?

Yes	No
DIAGNOSE the module communication network; REFER to Section 18-04.	REPAIR circuit 397 (BK/W). TEST the system for normal operation.

PINPOINT TEST B: NO THEFT INDICATOR PROVE OUT — VEHICLE STARTS NORMALLY BUT THE ANTI-THEFT INDICATOR IS ALWAYS/NEVER ON

B1 CHECK THE THEFT INDICATOR FOR ON CONTINUOUS

- Turn the ignition switch to RUN.
- Observe the theft indicator for at least 10 seconds.

Does the theft indicator remain illuminated?

Yes	No
PERFORM the PATS on-demand self-test and CHECK for stored DTCs. If DTCs are retrieved, REFER to PATS Diagnostic Trouble Code (DTC) Index. If no DTCs are retrieved, GO to **B2** .	GO to **B4** .

B2 CHECK THE THEFT INDICATOR CIRCUIT FOR SHORT TO GROUND

- Turn the ignition switch to OFF.
- Disconnect PATS module C217.
- Turn the ignition switch to RUN.

Does the indicator remain illuminated?

Yes	No
CHECK circuit 343 (DB/LG) for short to ground. TEST the system for normal operation.	GO to **B3** .

B3 CHECK THE THEFT INDICATOR USING THE ACTIVE COMMAND THEFT LMP

- Turn the ignition switch to OFF.
- Reconnect PATS module C242.
- Turn the ignition switch to RUN.
- Trigger the PATS active command THEFT LMP ON and OFF.

Does the theft indicator illuminate when the active command is triggered ON and go off when the active command is triggered OFF?

Yes	No
PERFORM the PATS On-Demand Self-Test and CHECK for stored DTCs. If DTCs are retrieved, REFER to PATS Diagnostic Trouble Code (DTC) Index. If no DTCs are retrieved, REPLACE the PATS module. REFER to Passive Anti-Theft System Control Module. CYCLE the ignition to RUN using two encoded ignition keys. GO to Pinpoint Test B2139-.	REPLACE the PATS module. REFER to Passive Anti-Theft System Control Module. CYCLE the ignition to RUN using two encoded ignition keys. GO to DTC B2139-.

B4 ENTER THE PATS ACTIVE COMMAND MODE

- Turn the ignition switch to RUN.
- Enter the PATS active command mode using the NGS.

Can the PATS active command mode be entered?

Yes	No
GO to **B5** .	GO to Pinpoint Test A.

B5 CHECK THE THEFT INDICATOR — TRIGGER THE PATS ACTIVE COMMAND THEFT LMP ON

- Turn the ignition switch to RUN.
- Trigger the PATS active command THEFT LMP ON.

Does the theft indicator illuminate?

Yes	No
System OK.	GO to **B6** .

B6 CHECK THE PATS MODULE OUTPUT TO THE THEFT INDICATOR FOR VOLTAGE — CIRCUIT 343 (DB/LG)

- Turn the ignition switch to RUN.
- Trigger the PATS active command THEFT LMP ON.
- Measure the voltage by backprobing between PATS module C217 , circuit 343 (DB/LG), and ground.

Is the voltage greater than 9 volts?

Yes	No
GO to **B8** .	GO to **B7** .

B7 CHECK FOR CONTINUITY BETWEEN THE THEFT INDICATOR AND PATS MODULE — CIRCUIT 343 (DB/LG)

- Turn the ignition switch to OFF.
- Disconnect PATS module C217.
- Disconnect instrument cluster C250.
- Measure the resistance between PATS module C217 , circuit 343 (DB/LG), and instrument cluster C250 , circuit 343 (DB/LG).

Is the resistance less than 5 ohms?

Yes	No
GO to **B10** .	REPAIR circuit 343 (DB/LG). TEST the system for normal operation.

B8 CHECK FOR SHORT BETWEEN THE THEFT INDICATOR AND PATS MODULE — CIRCUIT 343 (DB/LG)

- Turn the ignition switch to OFF.
- Disconnect PATS module C217.
- Disconnect instrument cluster C250.
- Measure the voltage between PATS module C229, circuit 343 (DB/LG), and ground.

Is the voltage greater than 9 volts?

Yes	No
REPAIR circuit 343 (DB/LG). TEST the system for normal operation.	GO to **B9** .

B9 CHECK THE PATS MODULE OUTPUT TO THE INDICATOR FOR VOLTAGE — CIRCUIT 343 (DB/LG)

- Reconnect PATS module C217.
- Reconnect instrument cluster C250.
- Turn the ignition switch to RUN.
- Measure the voltage by backprobing between PATS module C217 , circuit 343 (DB/LG), and ground while triggering the PATS active command THEFT LMP ON and OFF.

Does the voltage change from greater than 9 volts to less than 9 volts as the active command THEFT LMP is triggered ON and OFF?

Yes	No
REPLACE the theft LED. TEST the system for normal operation.	REPLACE the PATS module. REFER to Passive Anti-Theft System Control Module. CYCLE the ignition to RUN using two encoded ignition keys. GO to DTC B2139-.

B10 CHECK THE THEFT INDICATOR SUPPLY FOR OPEN — CIRCUIT 54 (LG/Y)

- Turn the ignition switch to OFF.
- Disconnect instrument cluster C250.
- Measure the voltage between instrument cluster C250, circuit 54 (LG/Y), and ground.

Is the voltage greater than 10 volts?

Yes	No
REPLACE the theft LED. TEST the system for normal operation.	REPAIR circuit 54 (LG/Y). TEST the system for normal operation.