

Passive Anti-Theft System (PATS)

DTC Charts

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).

BCM DTC Chart

DTC	Description	Action
B10C7:01	Interior Trunk Antenna: General Electrical Failure	GO to Pinpoint Test A
B10C8:01	Interior Centre Antenna: General Electrical Failure	GO to Pinpoint Test A
B10D7:05	PATS Key: System Programming Failure	DIAGNOSE all other Diagnostic Trouble codes (DTCs) first. If no other Diagnostic Trouble codes (DTCs) are present, PROGRAM the suspect passive key again. If key programming fails, REPLACE the suspect passive key. PROGRAM the new passive key. REFER to: Anti-Theft Security Access and Key Programming - Scan Tool (419-01C Passive Anti-Theft System (PATS) - Vehicles With: Keyless Vehicle System, General Procedures).

B10D7:55	PATS Key: Not Configured	The Configurable Engine Immobilizer (CEI) was not completed during the PMI procedure. CARRY OUT the Configurable Engine Immobilizer (CEI) as part of the PMI procedure.
B10D8:00	PATS Key Less Than Minimum Programmed: No Sub Type Information	Less than 2 keys are programmed (minimum of 2 keys must be programmed). PROGRAM the customer's second key. REFER to: Anti-Theft Security Access and Key Programming - Scan Tool (419-01C Passive Anti-Theft System (PATS) - Vehicles With: Keyless Vehicle System, General Procedures).
B10DA:51	PATS Target Identifier: Not Programmed	There is no PCM ID stored in the BCM memory. PERFORM a parameter reset. REFER to: Anti-Theft Security Access and Key Programming - Scan Tool (419-01C Passive Anti-Theft System (PATS) - Vehicles With: Keyless Vehicle System, General Procedures).
B11C6:01	Passenger Door External Antenna: General Electrical Failure	GO to Pinpoint Test A
B11CA:01	Driver Door External Antenna: General Electrical Failure	GO to Pinpoint Test A
B1336:01	Left Front Door External Antenna: General Electrical Failure	GO to Pinpoint Test A
B1337:01	Right Front Door External Antenna: General Electrical Failure	GO to Pinpoint Test A

All other Diagnostic Trouble Codes (DTCs)	-	REFER to: Body Control Module (BCM) (419-10 Multifunction Electronic Modules, Diagnosis and Testing).
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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).

PCM DTC Chart

DTC	Description	Action
P161A	Incorrect Response from Immobilizer Control Module	The BCM ID received by the PCM does not match the ID stored in the PCM memory. PERFORM a parameter reset. REFER to: Anti-Theft Security Access and Key Programming - Scan Tool (419-01C Passive Anti-Theft System (PATS) - Vehicles With: Keyless Vehicle System, General Procedures).
All other Diagnostic Trouble Codes (DTCs)	-	REFER to the PCM DTC Chart in the appropriate 303-14 section.

Symptom Chart

Symptom Chart: PATS

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

Condition	Possible Sources	Actions
No Key Detected displays in the message center	Refer to the Pinpoint Test	GO to Pinpoint Test A
The vehicle does not start with the passive key in certain areas within the vehicle but starts using the passive key backup location	Refer to the Pinpoint Test	GO to Pinpoint Test A
Unable to program keys	Refer to the Pinpoint Test	GO to Pinpoint Test A
Unable to turn the ignition on	Refer to the Pinpoint Test	GO to Pinpoint Test B

Pinpoint Tests

No Key Detected Displays In The Message Center

Refer to Wiring Diagrams Cell 112 for schematic and connector information.

Normal Operation and Fault Conditions

REFER to: [Passive Anti-Theft System \(PATS\) - System Operation and Component Description](#) (419-01C Passive Anti-Theft System (PATS) - Vehicles With: Keyless Vehicle System, Description and Operation).

The PATS does not disable an already running vehicle.

BCM DTC Fault Trigger Conditions

DTC	Description	Fault Trigger Conditions

B10C7:01	Interior Trunk Antenna: General Electrical Failure	Sets when the BCM detects a fault with the keyless entry rear antenna or associated circuitry.
B10C8:01	Interior Centre Antenna: General Electrical Failure	Sets when the BCM detects a fault with the PATS center antenna or associated circuitry.
B11C6:01	Passenger Door External Antenna: General Electrical Failure	Sets when the BCM detects a fault with the passenger door keyless entry antenna or associated circuitry.
B11CA:01	Driver Door External Antenna: General Electrical Failure	Sets when the BCM detects a fault with the driver door keyless entry antenna or associated circuitry.
B1336:01	Left Front Door External Antenna: General Electrical Failure	Sets when the BCM detects a fault with the driver door keyless entry antenna or associated circuitry.
B1337:01	Right Front Door External Antenna: General Electrical Failure	Sets when the BCM detects a fault with the passenger door keyless entry antenna or associated circuitry.

Possible Causes

- Environmental interference
- Wiring, terminals or connectors
- Passive key not programmed
- PATS center antenna
- PATS rear antenna
- Driver exterior front door handle
- Passenger exterior front door handle
- BCM

Visual Inspection and Diagnostic Pre-checks

- If the selection is available on the scan tool (Body>Security>PATS Functions), make sure the passive entry/passive start feature is enabled. If disabled, the vehicle only starts with the key in the backup starting location.

PINPOINT TEST A : NO KEY DETECTED DISPLAYS IN THE MESSAGE CENTER

NOTICE: Use the correct probe adapter(s) when making measurements. Failure to use the correct probe adapter(s) may damage the connector.

NOTE: *If unable to program new keys, follow the diagnostics for DTC B10C8:01.*

A1 CHECK FOR BCM (BODY CONTROL MODULE) ANTENNA DIAGNOSTIC TROUBLE CODES (DTCS)

- Ignition ON.
- Using a diagnostic scan tool, perform the BCM self-test. Record the DTC.
- Ignition OFF.

Is BCM DTC B10C7:01, B10C8:01, B11C6:01 or B11CA:01 present?

Yes	GO to A8
No	GO to A2

A2 CHECK IF THE PASSIVE KEYS START THE VEHICLE FROM THE BACKUP STARTING LOCATION

- Place the suspect passive key in the backup starting location and attempt to start the vehicle.
REFER to: [Passive Anti-Theft System \(PATS\) - System Operation and Component Description](#) (419-01C Passive Anti-Theft System (PATS) - Vehicles With: Keyless Vehicle System, Description and Operation).

Does the key start the vehicle?

Yes	GO to A5
No	GO to A3

A3 DOCUMENT THE KEY IDENTIFICATIONS USING THE BCM (BODY CONTROL MODULE) KEY ID AND RTM (RADIO TRANSCEIVER MODULE) KEY ID PARAMETER IDENTIFICATIONS (PIDS)

- Using the diagnostic scan tool, view the BCM PIDs.
- Using the diagnostic scan tool, monitor the following BCM PIDs:
 - TIC_01_BCM (Programmed Transmitter ID Code (TIC) Value 1)
 - TIC_02_BCM (Programmed Transmitter ID Code (TIC) Value 2)
 - TIC_03_BCM (Programmed Transmitter ID Code (TIC) Value 3)
 - TIC_04_BCM (Programmed Transmitter ID Code (TIC) Value 4)
 - TIC_05_BCM (Programmed Transmitter ID Code (TIC) Value 5)
 - TIC_06_BCM (Programmed Transmitter ID Code (TIC) Value 6)
- Document each programmed TIC ID.
- Using the diagnostic scan tool, view the RTM PIDs.
- Using the diagnostic scan tool, monitor the RTM Lst_Xm_ID_Cd (Last Received Transmitter ID Code (TIC)) PID while pressing the lock and unlock buttons on the suspect key.
- Document the RTM Lst_Xm_ID_Cd TIC ID displayed when pressing the lock and unlock buttons on the suspect key.
- Compare the RTM TIC ID to the recorded BCM TIC IDs.

Does the RTM TIC ID match any of the recorded BCM TIC IDs?

Yes	GO to A4
No	No fault found. The key in question is not the original key that came with the vehicle.

A4 VERIFY THE KEY OPERATION

- Check the operation of the suspect key.

Is the concern still present?

Yes	REPLACE the suspect key. PROGRAM the new key. Refer to the appropriate key programming procedure. REFER to: Anti-Theft Security Access and Key Programming - Scan Tool (419-01C Passive Anti-Theft System (PATS) - Vehicles With: Keyless Vehicle System, General Procedures).
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No	The system is OK. The concern was caused by an incompleting programmed key.
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A5 CHECK THE RKE (REMOTE KEYLESS ENTRY) TRANSMITTER OPERATION

- Press the lock and unlock RKE transmitter buttons on the suspect passive key.

Do the doors lock and unlock?

Yes	GO to A6
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No	REFER to: Locks, Latches and Entry Systems (501-14 Handles, Locks, Latches and Entry Systems, Diagnosis and Testing).
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A6 CHECK THE PASSIVE KEY LOCATION

- Check the location of the passive key. If it is placed in the far corners of the interior of the vehicle, move the passive key out of these areas and attempt to start the vehicle.

Does the vehicle start?

Yes	The system is OK. INFORM the customer of the normal vehicle operation.
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No	GO to A7
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A7 CHECK FOR ENVIRONMENTAL INTERFERENCE

- Check for the use of a charger or other wireless device that can cause interference with the passive key. If any device is found, remove the device and attempt to start the vehicle.

Does the vehicle start?

Yes	INFORM the customer of the cause of the concern and the normal operation of the vehicle.
No	GO to A8

A8 CHECK THE SUSPECT ANTENNA

NOTE: For a concern with key programming or if unable to start the vehicle with the passive key in the backup starting location, follow the diagnostics for the PATS front/center antenna.

- Disconnect suspect antenna.
- Measure:

Click to display connectors

PATS Center Antenna

Positive Lead	Measurement / Action	Negative Lead
C325, pin 1, component side	Ω	C325, pin 2, component side

Click to display connectors

PATS Rear Antenna

Positive Lead	Measurement / Action	Negative Lead
C348, pin 1, component side	Ω	C348, pin 2, component side

Click to display connectors

Driver Exterior Front Door Handle

Positive Lead	Measurement / Action	Negative Lead
C543, pin 2, component side	Ω	C543, pin 3, component side

Click to display connectors

Passenger Exterior Front Door Handle

Positive Lead	Measurement / Action	Negative Lead
C634, pin 2, component side	Ω	C634, pin 3, component side

Is the resistance between 1 and 3 ohms?

Yes	GO to A9
No	INSTALL a new antenna in question. REFER to: Passive Anti-Theft System (PATS) Center Antenna - Vehicles With: Floor Shift (419-01C Passive Anti-Theft System (PATS) - Vehicles With: Keyless Vehicle System, Removal and Installation). REFER to: Passive Anti-Theft System (PATS) Rear Antenna (419-01C Passive Anti-Theft System (PATS) - Vehicles With: Keyless Vehicle System, Removal and Installation). REFER to: Keyless Entry Rear Antenna (501-14 Handles, Locks, Latches and Entry Systems, Removal and Installation).

A9 CHECK THE SUSPECT ANTENNA CIRCUITS FOR A SHORT TO VOLTAGE

- Disconnect BCM C2280B (center antenna).
- Disconnect BCM C2280D (door handle or rear antenna).
- Measure:

Click to display connectors

Passenger Exterior Front Door Handle

Positive Lead	Measurement / Action	Negative Lead
C634-2		Ground
C634-3		Ground

Is any voltage present?

Yes	REPAIR the circuit in question.
No	GO to A10

A10 CHECK THE SUSPECT ANTENNA CIRCUITS FOR A SHORT TO GROUND

- Measure:

Click to display connectors

Passenger Exterior Front Door Handle

Positive Lead	Measurement / Action	Negative Lead
C634-2	Ω	Ground
C634-3		Ground

Are the resistances greater than 10,000 ohms?

Yes	GO to A11
No	REPAIR the circuit in question.

A11 CHECK THE SUSPECT ANTENNA CIRCUITS FOR AN OPEN

- Measure:

Click to display connectors

Passenger Exterior Front Door Handle

Positive Lead	Measurement / Action	Negative Lead
C634-2	Ω	C2280D-12

C634-3		C2280D-29
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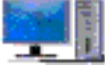
Are the resistances less than 3 ohms?

Yes	INSTALL a new antenna in question. REFER to: Passive Anti-Theft System (PATS) Center Antenna - Vehicles With: Floor Shift (419-01C Passive Anti-Theft System (PATS) - Vehicles With: Keyless Vehicle System, Removal and Installation). REFER to: Passive Anti-Theft System (PATS) Rear Antenna (419-01C Passive Anti-Theft System (PATS) - Vehicles With: Keyless Vehicle System, Removal and Installation). REFER to: Keyless Entry Rear Antenna (501-14 Handles, Locks, Latches and Entry Systems, Removal and Installation). TEST the system for normal operation. If the concern is still present, GO to A12
No	REPAIR the circuit in question.

A12 CHECK FOR CORRECT BCM (BODY CONTROL MODULE) OPERATION

- Disconnect and inspect all of the BCM connectors.
- Repair:
 - corrosion (install new connectors or terminals, clean module pins)
 - damaged or bent pins - install new terminals/pins
 - pushed-out pins - install new pins as necessary
- Reconnect all the BCM connectors and 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.

Unable To Turn The Ignition On

Normal Operation and Fault Conditions

REFER to: [Passive Anti-Theft System \(PATS\) - System Operation and Component Description](#) (419-01C Passive Anti-Theft System (PATS) - Vehicles With: Keyless Vehicle System, Description and Operation).

Possible Causes

- Battery voltage concern
- Driveability system concern
- Starting system concern
- PATS concern

PINPOINT TEST B : UNABLE TO TURN THE IGNITION ON

B1 CHECK VEHICLE BATTERY

- Carry out the Battery Condition Test.
REFER to: [Battery](#) (414-01 Battery, Mounting and Cables, Diagnosis and Testing).

Is the battery OK?

Yes	GO to B2
No	CORRECT the battery condition and VERIFY correct charging operation. Refer to the appropriate section in Group 414 for the procedure.

B2 CHECK FOR THE NO KEY DETECTED MESSAGE

- Press and release the START/STOP button while monitoring the message center.

Is the No Key Detected message displayed in the message center?

Yes	GO to Pinpoint Test A
No	GO to B3

B3 CHECK FOR IGNITION ON MODE

- Press and release the START/STOP button while monitoring the ignition mode indicator at the top of the button.

Does the ignition mode indicator flash on and off continuously?

Yes	The condition is not PATS-related. DIAGNOSE no power in ON. REFER to: Steering Wheel and Column Electrical Components (211-05 Steering Wheel and Column Electrical Components, Diagnosis and Testing).
No	GO to B4

B4 CHECK FOR BCM (BODY CONTROL MODULE) DIAGNOSTIC TROUBLE CODES (DTCs)

- Follow the procedure to establish a diagnostic scan tool session with the vehicle.
REFER to: [Diagnostic Methods](#) (100-00 General Information, Description and Operation).
- Using a diagnostic scan tool, perform the BCM self-test.

Are any BCM Diagnostic Trouble Codes (DTCs) present?

Yes	REFER to the BCM DTC Chart in this section.
No	The condition is not PATS-related. DIAGNOSE no power in ON. REFER to: Steering Wheel and Column Electrical Components (211-05 Steering Wheel and Column Electrical Components, Diagnosis and Testing).

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