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2007 FORD F-150 Super Crew OEM Service and Repair Workshop Manual

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	REFER to: Remote Function Actuator (RFA) Module (419-01D Passive Anti-Theft System (PATS) - Vehicles With: Phone as a Key, 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.

B9 CHECK FOR CORRECT BCM (BODY CONTROL MODULE) MODULE OPERATION

- Disconnect and inspect the BCM (body control module) connector C2280D .
- 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 the BCM (body control module) connector and 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 (Online Automotive Service Information System) for any applicable service articles: TSB (Technical Service Bulletin) , GSB (General Service Bulletin) , SSM (special service message) , or FSA (Field Service Action) . 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 RFA (remote function actuator) module. REFER to: Body Control Module (BCM) (419-10 Multifunction Electronic Modules, Removal and Installation).

No	The system is operating correctly at this time. The concern may have been caused by module connections. Address the root cause of any connector or pin issues.

PINPOINT TEST C : BLUETOOTH ANTENNA #8, #11, #12 CIRCUIT FAULTS- MULTIPLE DIAGNOSTIC TROUBLE CODES

Refer to Wiring Diagrams Cell 117for schematic and connector information.

B1597:31		antenna #11
RFA (remote function actuator) B1597:45	Antenna #11: Program Memory Failure	Sets when the RFA (remote function actuator) module detects a communication fault with the bluetooth antenna #11
RFA (remote function actuator) B1597:49	Antenna #11: Internal Electronic Failure	Sets when the RFA (remote function actuator) module detects a communication fault with the bluetooth antenna #11
RFA (remote function actuator) B1597:57	Antenna #11: Invalid/Incompatible Software Component	Sets when the RFA (remote function actuator) module detects a communication fault with the bluetooth antenna #11
RFA (remote function actuator) B1598:29	Antenna #12: Signal Invalid	Sets when the RFA (remote function actuator) module detects an invalid signal from bluetooth antenna #12
RFA (remote function actuator) B1598:31	Antenna #12: No Signal	Sets when the RFA (remote function actuator) module detects an invalid signal from bluetooth antenna #12
RFA (remote function actuator) B1598:45	Antenna #12: Program Memory Failure	Sets when the RFA (remote function actuator) module detects an invalid signal from bluetooth antenna #12
RFA (remote function actuator) B1598:49	Antenna #12: Internal Electronic Failure	Sets when the RFA (remote function actuator) module detects an invalid signal from bluetooth antenna #12
RFA (remote function actuator) B1598:57	Antenna #12: Invalid/Incompatible Software Component	Sets when the RFA (remote function actuator) module detects an invalid signal from bluetooth antenna #12

Possible Sources

- Wiring, terminals or connectors
- Bluetooth Antenna #8 Exterior Front Door Handle Antenna LH (left-hand)
- Bluetooth Antenna #11 Bluetooth Exterior Front Antenna
- Bluetooth Antenna #12 Exterior Rear Door Handle RH (right-hand)
- RFA (remote function actuator) module
- BCM (body control module)

Positive Lead	Measurement / Action	Negative Lead
C1480-3	V	Ground

Bluetooth Antenna #12

Positive Lead	Measurement / Action	Negative Lead
C852-2	V	Ground

Is any voltage present?

Yes	REPAIR the circuit.

No	GO to C3

C3 CHECK THE BLUETOOTH ANTENNA VOLTAGE CIRCUIT FOR A SHORT TO GROUND

- Ignition OFF.
- Measure:
  Bluetooth Antenna #8

Positive Lead	Measurement / Action	Negative Lead
C551-2	Ω	Ground

Bluetooth Antenna #11

Positive Lead	Measurement / Action	Negative Lead

Positive Lead	Measurement / Action	Negative Lead
C852-2	Ω	C3860-21

Bluetooth Antenna #8

Positive Lead	Measurement / Action	Negative Lead
C551-5	Ω	C2280D-20

Bluetooth Antenna #11

Positive Lead	Measurement / Action	Negative Lead
C1480-1	Ω	Ground

Bluetooth Antenna #12

Positive Lead	Measurement / Action	Negative Lead
C852-5	Ω	C2280D-20

Are the resistances less than 3 ohms?

Yes	GO to C5

No	REPAIR the circuit. REPAIR the circuit. If the concern is still present, GO to C8 for Antenna #11 or GO to C9 for Antenna #8 and Antenna #12

- Ignition OFF.
- Measure the suspect antenna:
  Bluetooth Antenna #8

Positive Lead	Measurement / Action	Negative Lead
C551-4	Ω	Ground

Bluetooth Antenna #11

Positive Lead	Measurement / Action	Negative Lead
C1480-2	Ω	Ground

Bluetooth Antenna #12

Positive Lead	Measurement / Action	Negative Lead
C852-4	Ω	Ground

Is the resistance greater than 10,000 ohms?

Yes	GO to C7

No	REPAIR the circuit.

C7 CHECK THE BLUETOOTH ANTENNA LIN (LOCAL INTERCONNECT NETWORK) CIRCUIT FOR AN OPEN

- Measure the suspect antenna:
  Bluetooth Antenna #8

- Disconnect and inspect the RFA (remote function actuator) module connector.
- 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 the RFA (remote function actuator) module connector 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 (Online Automotive Service Information System) for any applicable service articles: TSB (Technical Service Bulletin) , GSB (General Service Bulletin) , SSM (special service message) , or FSA (Field Service Action) . 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 RFA (remote function actuator) module. REFER to: Remote Function Actuator (RFA) Module (419-01D Passive Anti-Theft System (PATS) - Vehicles With: Phone as a Key, 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.

C9 CHECK FOR CORRECT BCM (BODY CONTROL MODULE) MODULE OPERATION

- Disconnect and inspect the BCM (body control module) connector C2280D .
- 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 the BCM (body control module) connector and 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 (Online Automotive Service Information System) for any applicable service articles: TSB (Technical Service Bulletin) , GSB (General Service Bulletin) , SSM (special service message) , or FSA (Field Service Action) . If a service article exists for this concern, DISCONTINUE this test and

- Using a diagnostic scan tool, carry out the RFA (remote function actuator) module self-test.

After performing the self-test do any other Diagnostic Trouble Codes (DTCs) appear?

Yes	DIAGNOSE the concern. REFER to the DTC (diagnostic trouble code) chart in this section.
No	The system is operating correctly at this time. The concern may have been caused by not completing the self-test.

PINPOINT TEST E : REMOTE FUNCTION ACTUATOR MODULE FAULTS- MULTIPLE DIAGNOSTIC TROUBLE CODES (DTCS)

Normal Operation and Fault Conditions

REFER to: Passive Anti-Theft System (PATS) - System Operation and Component Description(419-01D Passive Anti-Theft System (PATS) - Vehicles With: Phone as a Key, Description and Operation).

DTC Fault Trigger Conditions

DTC (diagnostic trouble code)	Description	Fault Trigger Condition
RFA (remote function actuator) U201A:06	Control Module Main Calibration Data: Algorithm Based Failures	Sets when the RFA (remote function actuator) module has incomplete or incorrect algorithm to output localization result.
RFA (remote function actuator) U201A:46	Control Module Main Calibration Data: Calibration/Parameter Memory Failure	Sets when the RFA (remote function actuator) module memory fails verification.
RFA (remote function actuator) U201A:55	Control Module Main Calibration Data: Not Configured	Sets when the RFA (remote function actuator) module memory not programmed.
RFA (remote function actuator) U2100:55	Initial Configuration Not Complete: Not Configured	Sets when the RFA (remote function actuator) module software configuration not complete.

Possible Sources

RFA (remote function actuator) P1623:00	Immobilizer Code Word/ID Number Write Failure: No Sub Type Information	Sets when the RFA (remote function actuator) module can not write ID in NVM (non-volatile memory)
BCM (body control module) B155F:51	Phone As A Key: Not Programmed	Sets when there is no BCM (body control module) ID stored in the RFA (remote function actuator) module memory.
RFA (remote function actuator) U0422:00	Invalid Data Received From Body Control Module: No Sub Type Information	Set by the RFA (remote function actuator) module when it fails to send or receive data from the BCM (body control module) .

Possible Sources

- There is no RFA (remote function actuator) module ID stored in the BCM (body control module) memory
- Internal memory

F1 CHECK RFA (REMOTE FUNCTION ACTUATOR) MODULE DIAGNOSTIC TROUBLE CODES (DTCS)

- Using a diagnostic scan tool, carry out the RFA (remote function actuator) module self-test.

Are any other Diagnostic Trouble Codes (DTCs) present?

Yes	REFER to DTC (diagnostic trouble code) chart in this section.
No	Using a diagnostic scan tool, CARRY OUT the RFA (remote function actuator) module initialization (parameter reset).

PINPOINT TEST G : REMOTE FEATURES FUNCTIONS ARE INOPERATIVE OR DO NOT OPERATE CORRECTLY FROM THE MOBILE PHONE APPLICATION

Normal Operation and Fault Conditions

REFER to: Passive Anti-Theft System (PATS) - System Operation and Component Description(419-01D Passive Anti-Theft System (PATS) - Vehicles With: Phone as a Key, Description and Operation).

See: Remote Start.

Possible Sources

- Outdated Ford Pass Mobile™ application software version/level
- Poor bluetooth antenna reception

	REFER to: Glass, Frames and Mechanisms - Vehicles With: One-Touch Open and Close Front Windows (501-11 Glass, Frames and Mechanisms, Diagnosis and Testing).

G3 CHECK FOR LOST COMMUNICATION DIAGNOSTIC TROUBLE CODES (DTCS)

- Ignition ON.
- Using a diagnostic scan tool, clear all Continuous Memory Diagnostic Trouble Codes (CMDTCs).
- Ignition OFF.
- Ignition ON.
- Wait at least 5 seconds.
- Using a diagnostic scan tool, retrieve all Continuous Memory Diagnostic Trouble Codes (CMDTCs).

Are any lost communication Diagnostic Trouble Codes (DTCs) set in BCM (body control module) , IPC (instrument panel cluster) , SOBDMC (secondary on-board diagnostic control module C) , and/or the TCU (telematic control unit module) ?

Yes	REFER to the Master DTC chart.
No	GO to G4

G4 CHECK FORD PASS APPLICATION FOR FUNCTIONALITY

- Ensure that the following conditions are present:
  - The installed Ford Pass Mobile™ application software version level matches the latest software version level available.
  - Bluetooth enabled.
  - Approved and supported mobile devices.
  - Correct vehicle selected.
  - The customer is logged in to the Ford Pass Mobile™ application with the login created from the application.
  - The vehicle is linked with an active and valid Ford Pass Mobile™ customer access key.
  - The customer removed and re-installed the Ford Pass app correctly.
  - The vehicle is within bluetooth antenna range.
    REFER to: Passive Anti-Theft System (PATS) - System Operation and Component Description(419-01D Passive Anti-Theft System (PATS) - Vehicles With: Phone as a Key, Description and Operation).