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2008 FORD F-150 Super Crew OEM Service and Repair Workshop Manual

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- Disconnect Antenna #1 C854, Antenna #2 C754, Antenna #3 C649 and Antenna #4 C576 .
- Ignition ON.
- Measure:

Bluetooth Antenna #1

Positive Lead	Measurement / Action	Negative Lead
C854-5	\bar{V}	Ground

Bluetooth Antenna #2

Positive Lead	Measurement / Action	Negative Lead
C754-5	\bar{V}	Ground

Bluetooth Antenna #3

Positive Lead	Measurement / Action	Negative Lead
C649-5	\bar{V}	Ground

Bluetooth Antenna #4

Positive Lead	Measurement / Action	Negative Lead
C576-5	\bar{V}	Ground

Is any voltage present?

Yes	REPAIR the circuit.
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Is the resistance greater than 10,000 ohms?

Yes	GO to A4
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No	REPAIR the circuit.
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A4 CHECK THE BLUETOOTH ANTENNA VOLTAGE SUPPLY CIRCUITS FOR AN OPEN

- Measure the suspect anyenna:

Bluetooth Antenna #1

Positive Lead	Measurement / Action	Negative Lead
C854-5	Ω	C3860-20

Bluetooth Antenna #2

Positive Lead	Measurement / Action	Negative Lead
C754-5	Ω	C3860-20

Bluetooth Antenna #3

Positive Lead	Measurement / Action	Negative Lead
C649-5	Ω	C3860-20

Bluetooth Antenna #4

Positive Lead	Measurement / Action	Negative Lead
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Positive Lead	Measurement / Action	Negative Lead
C576-5	Ω	Ground

Are all the resistances less than 3 ohms?

Yes	GO to A6
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No	REPAIR the circuit(s) . If the concern is still present, GO to A9
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A6 CHECK THE BLUE TOOTH ANTENNA LIN (LOCAL INTERCONNECT NETWORK) CIRCUIT FOR A SHORT TO VOLTAGE

- Ignition ON.
- Measure the suspect antenna:

Bluetooth Antenna #1

Positive Lead	Measurement / Action	Negative Lead
C854-6	\bar{V}	Ground

Bluetooth Antenna #2

Positive Lead	Measurement / Action	Negative Lead
C754-6	\bar{V}	Ground

Bluetooth Antenna #3

Positive Lead	Measurement / Action	Negative Lead

Bluetooth Antenna #3

Positive Lead	Measurement / Action	Negative Lead
C649-6	Ω	Ground

Bluetooth Antenna #4

Positive Lead	Measurement / Action	Negative Lead
C576-6	Ω	Ground

Is the resistance greater than 10,000 ohms?

Yes	GO to A8
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No	REPAIR the circuit.
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A8 CHECK THE BLUETOOTH ANTENNA LIN (LOCAL INTERCONNECT NETWORK) CIRCUIT FOR AN OPEN

- Measure the suspect antenna:

Bluetooth Antenna #1

Positive Lead	Measurement / Action	Negative Lead
C854-6	Ω	C3860-15

Bluetooth Antenna #2

Positive Lead	Measurement / Action	Negative Lead
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- 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 it seats and latches correctly.
- Operate the system and determine if the concern is still present.

Is the concern still present?

<p>Yes</p>	<p>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.</p> <p>REFER to: Remote Function Actuator (RFA) Module (419-01D Passive Anti-Theft System (PATS) - Vehicles With: Phone as a Key, Removal and Installation).</p>
<p>No</p>	<p>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.</p>

PINPOINT TEST B : BLUETOOTH ANTENNA #5, #6, #7 CIRCUIT FAULTS- MULTIPLE DIAGNOSTIC CODES

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

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) U200E:11	Control Module Output Power B: Circuit Short To Ground	Sets when the RFA (remote function actuator) module detects a a short to ground with bluetooth antennas #5, #6, and #7
RFA (remote function actuator) U200E:15	Control Module Output Power B: Circuit Short To Battery Or Open	Sets when the RFA (remote function actuator) module detects a a short to battery or open with bluetooth antennas #5, #6, and #7

RFA (remote function actuator) B1593:29	Antenna #7: Signal Invalid	Sets when the RFA (remote function actuator) module detects an invalid signal from bluetooth antenna #7
RFA (remote function actuator) B1593:31	Antenna #7: No Signal	Sets when the RFA (remote function actuator) module detects an invalid signal from bluetooth antenna #7
RFA (remote function actuator) B1593:45	Antenna #7: Program Memory Failure	Sets when the RFA (remote function actuator) module detects an invalid signal from bluetooth antenna #7
RFA (remote function actuator) B1593:49	Antenna #7: Internal Electronic Failure	Sets when the RFA (remote function actuator) module detects an invalid signal from bluetooth antenna #7
RFA (remote function actuator) B1593:57	Antenna #7: Invalid/Incompatible Software Component	Sets when the RFA (remote function actuator) module detects an invalid signal from bluetooth antenna #7

Possible Sources

- Wiring, terminals or connectors
- Bluetooth Antenna #5 Exterior Front Door Handle RH (right-hand)
- Bluetooth Antenna #6 Exterior Rear Door Handle LH (left-hand)
- Bluetooth Antenna #7 Bluetooth Rear Exterior
- RFA (remote function actuator) module
- BCM (body control module)

Visual Inspection and Pre-checks

- If the selection is available on the diagnostic scan tool Phone as a Key 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.

B1 VERIFY DTC (DIAGNOSTIC TROUBLE CODE) IS PRESENT

- Turn off mobile device bluetooth.
- Using a diagnostic scan tool, clear the RFA (remote function actuator) module DTC (diagnostic trouble code) s
- Using a diagnostic scan tool, carryout the RFA (remote function actuator) module self-test

Are Diagnostic Trouble Codes (DTCs) from the DTC (diagnostic trouble code) Fault Trigger Conditions Chart in this section present?

Is any voltage present?

Yes	REPAIR the circuit.
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No	GO to B3
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B3 CHECK THE BLUETOOTH ANTENNA VOLTAGE CIRCUIT FOR A SHORT TO GROUND

- Ignition OFF.
- Measure:

Bluetooth Antenna #5

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

Bluetooth Antenna #6

Positive Lead	Measurement / Action	Negative Lead
C729-2	Ω	Ground

Bluetooth Antenna #7

Positive Lead	Measurement / Action	Negative Lead
C4873-5	Ω	Ground

Is the resistance greater than 10,000 ohms?

Yes	GO to B4
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Bluetooth Antenna #6

Positive Lead	Measurement / Action	Negative Lead
C729-5	Ω	C2280D-20

Bluetooth Antenna #7

Positive Lead	Measurement / Action	Negative Lead
C4873-2	Ω	Ground

Is the resistance less than 3 ohms?

Yes	GO to B5
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No	REPAIR the circuit(s). If the concern is still present, GO to B8 for Antenna #7 or GO to B9 for Antenna #5 and Antenna #6
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B5 CHECK THE BLUETOOTH ANTENNA LIN (LOCAL INTERCONNECT NETWORK) CIRCUIT FOR A SHORT TO VOLTAGE

- Ignition ON.
- Measure the suspect antenna:

Bluetooth Antenna #5

Positive Lead	Measurement / Action	Negative Lead
C634-4	\bar{V}	Ground

Bluetooth Antenna #6

C729-4	Ω	Ground
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Bluetooth Antenna #7

Positive Lead	Measurement / Action	Negative Lead
C4873-3	Ω	Ground

Is the resistance greater than 10,000 ohms?

Yes	GO to B7
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No	REPAIR the circuit.
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B7 CHECK THE BLUETOOTH ANTENNA LIN (LOCAL INTERCONNECT NETWORK) CIRCUIT FOR AN OPEN

- Measure the suspect antenna:

Bluetooth Antenna #5

Positive Lead	Measurement / Action	Negative Lead
C634-4	Ω	C3860-1

Bluetooth Antenna #6

Positive Lead	Measurement / Action	Negative Lead
C729-4	Ω	C3860-11

Bluetooth Antenna #7