

ACCESSORIES & EQUIPMENT

Wireless Door Lock Control System (w/ Smart Key System) (Diagnostic Codes & Symptom Tests) - Sienna

WIRELESS DOOR LOCK CONTROL SYSTEM (W/ SMART KEY SYSTEM)

DTC B1242: WIRELESS DOOR LOCK TUNER CIRCUIT MALFUNCTION

DESCRIPTION

The door control receiver is used to receive electrical waves relating to the entry functions of the smart key system. The certification ECU (smart key ECU assembly) decodes the requested smart key system operation by identifying a key code based on the electric waves received via the door control receiver. The door control receiver receives a signal from the door control transmitter and sends signals to the main body ECU through the certification ECU (smart key ECU assembly). The certification ECU (smart key ECU assembly) then sends a command, according to the requested operation, to each ECU (ex. if door lock operation is requested, the certification ECU (smart key ECU assembly) sends a door lock command to the main body ECU).

DTC No.	DTC Detection Condition	Trouble Area
B1242	• Short in RDA or RSSI to ground between the certification ECU (smart key ECU assembly) and the door control receiver. • Short in RDA or RSSI to ground when RC0 (5 V) output from the ECU is off.	• Wire harness or connector • Door control receiver • Certification ECU (Smart key ECU assembly)

WIRING DIAGRAM

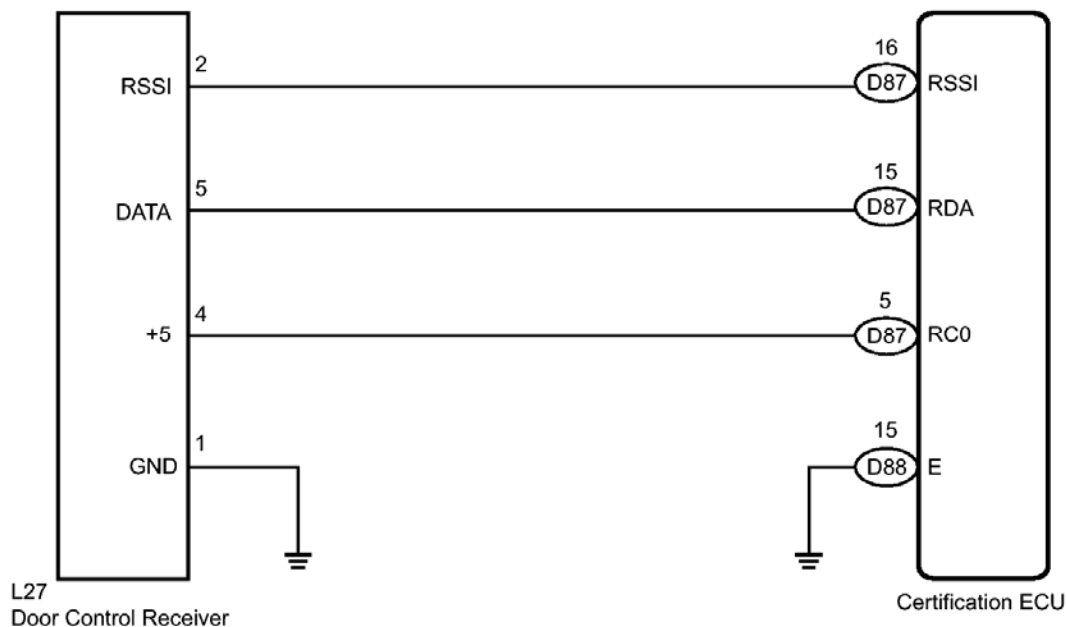


Fig. 1: Wireless Door Lock Tuner Circuit - Wiring Diagram

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

NOTE:

- When replacing or inspecting the door control receiver and wire harness, do not change the position or length of the wire harness. If the wire harness is too close to the door control receiver, entry and wireless function performance may be affected.
- Before performing the inspection, check that there are no problems related to the CAN communication system and LIN communication system.

PROCEDURE

1. CHECK HARNESS AND CONNECTOR (DOOR CONTROL RECEIVER - CERTIFICATION ECU AND BODY GROUND)

- Disconnect the D87 and D88 certification ECU (smart key ECU assembly) connectors.
- Disconnect the L27 door control receiver connector.
- Measure the resistance according to the value(s) in the table below.

Standard Resistance

Tester Connection	Condition	Specified Condition

D87-16 (RSSI) - L27-2 (RSSI)	Always	Below 1 ohms
D87-15 (RDA) - L27-5 (DATA)	Always	Below 1 ohms
D87-5 (RC0) - L27-4 (+5)	Always	Below 1 ohms
D88-15 (E) - Body ground	Always	Below 1 ohms
L27-1 (GND) - Body ground	Always	Below 1 ohms
D87-16 (RSSI) or L27-2 (RSSI) - Body ground	Always	10 kohms or higher
D87-15 (RDA) or L27-5 (DATA) - Body ground	Always	10 kohms or higher
D87-5 (RC0) or L27-4 (+5) - Body ground	Always	10 kohms or higher

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK: Go to next step

2. CHECK CERTIFICATION ECU (SMART KEY ECU ASSEMBLY)

- a. Reconnect the D87 and D88 certification ECU (smart key ECU assembly) connectors.

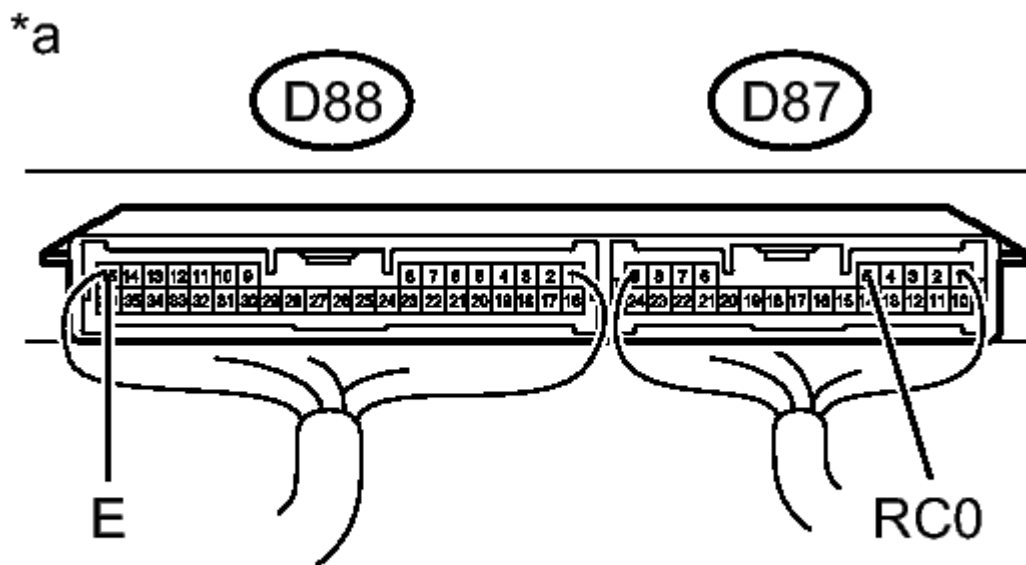


Fig. 2: Checking Certification ECU (Smart Key ECU Assembly)
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- b. Measure the voltage according to the value(s) in the table below.

Standard Voltage

Tester Connection	Condition	Specified Condition
D87-5 (RC0) - D88-15 (E)	Engine switch off, all doors closed and transmitter switch pressed	4.5 to 5.5 V

TEXT IN ILLUSTRATION

*a	Component with harness connected (Certification ECU (Smart Key ECU Assembly))
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NG --> See step 5

OK: Go to next step

3. REPLACE DOOR CONTROL RECEIVER

- a. Temporarily replace the door control receiver with a new one. Refer to **REMOVAL** .

NEXT: Go to next step

4. CHECK FOR DTC

- a. Clear the DTC. Refer to **DTC CHECK / CLEAR** .
- b. Recheck for DTCs.

OK

DTC B1242 is not output.

NG --> See step 5

OK --> END (DOOR CONTROL RECEIVER WAS DEFECTIVE)

5. REPLACE CERTIFICATION ECU (SMART KEY ECU ASSEMBLY). Refer to **REMOVAL**

SYMPTOM TESTS

No Answer-Back

DESCRIPTION

In some cases, wireless door lock control functions are normal but the hazard warning lights and/or wireless door lock buzzer answer-back function(s) do not operate. In such cases, the main body ECU's hazard warning lights and wireless door lock buzzer signal outputs may be malfunctioning.

NOTE: Troubleshooting should be started after confirming that the customize status of the answer-back function has been switched ON.

WIRING DIAGRAM

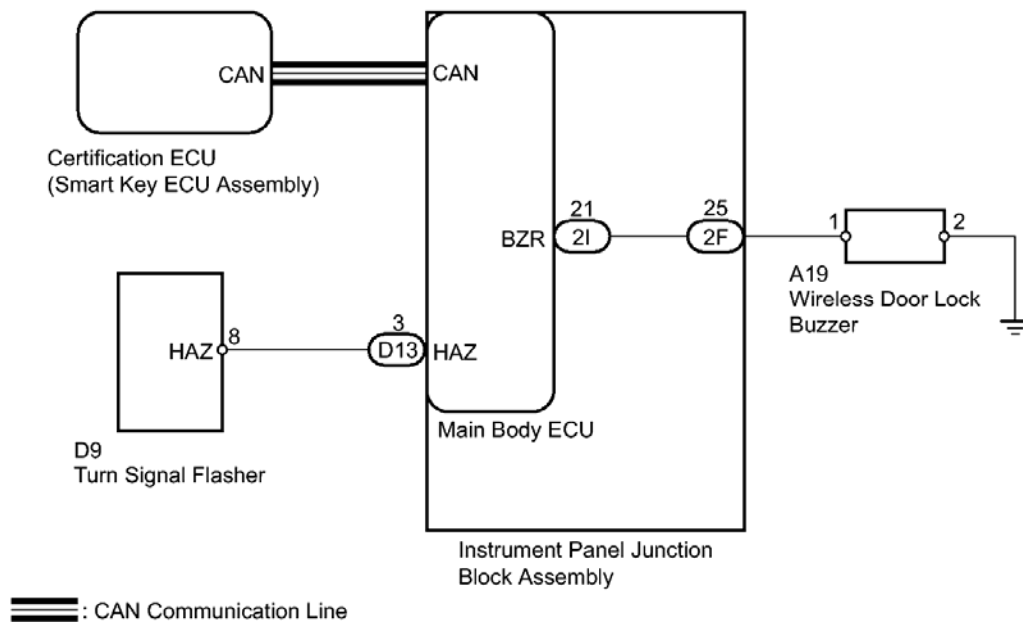


Fig. 3: Wireless Door Lock Buzzer - Wiring Diagram

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

NOTE: Before performing the inspection, check that there are no problems related to the CAN communication system.

PROCEDURE

1. READ VALUE USING TECHSTREAM (DOOR LOCK POSITION SWITCH)

- Connect the Techstream to the DLC3.
- Turn the engine switch on (IG).
- Turn the Techstream on.
- Enter the following menus: Body Electrical / Main Body / Data List.
- Read the Data List according to the display on the Techstream.

MAIN BODY (MAIN BODY ECU)

Tester Display	Measurement Item/Range	Normal Condition	Diagnostic Note
FR Door	Front RH side door lock position	UNLOCK: Front RH side door unlocked	-

Lock Pos	switch signal / UNLOCK or LOCK	LOCK: Front RH side door locked	
FL Door Lock Pos	Front LH side door lock position switch signal / UNLOCK or LOCK	UNLOCK: Front LH side door unlocked LOCK: Front LH side door locked	-
RR-Door Lock Pos SW	Rear RH side door lock position switch signal / ON or OFF	ON: Rear RH side rear door unlocked OFF: Rear RH side rear door locked	-
RL-Door Lock Pos SW	Rear LH side door lock position switch signal / ON or OFF	ON: Rear LH side rear door unlocked OFF: Rear LH side rear door locked	-

OK

The Techstream should display as shown in the table according to door lock operation.

NG --> See step 10

OK: Go to next step

2. CHECK WIRELESS DOOR LOCK CONTROL FUNCTION

- Check the wireless door lock control functions by operating the transmitter switch.

RESULT

Result	Proceed to
Wireless door lock functions	

are normal but hazard warning lights answer- back does not occur	A
Wireless door lock functions are normal but wireless door lock buzzer answer- back does not occur	B
Doors cannot be locked and unlocked with transmitter	C

B --> See step 4

C --> See step 11

A: Go to next step

3. **PERFORM ACTIVE TEST USING TECHSTREAM (FLASHER RELAY)**

- Select the Active Test, use the Techstream to generate a control command, and then check that the hazard warning lights flash.

MAIN BODY

Tester Display	Test Part	Control Range	Diagnostic Note
Hazard	Turn Signal Flasher	ON/OFF	-

OK

Hazard warning lights are turned ON/OFF.

NG --> See step 9

OK --> See step 12

4. PERFORM ACTIVE TEST USING TECHSTREAM (WIRELESS DOOR LOCK BUZZER)

- a. Select the Active Test, use the Techstream to generate a control command, and then check that the wireless buzzer operates normally.

MAIN BODY

Tester Display	Test Part	Control Range	Diagnostic Note
Wireless Buzzer	Wireless Door Lock Buzzer	ON/OFF	-

OK

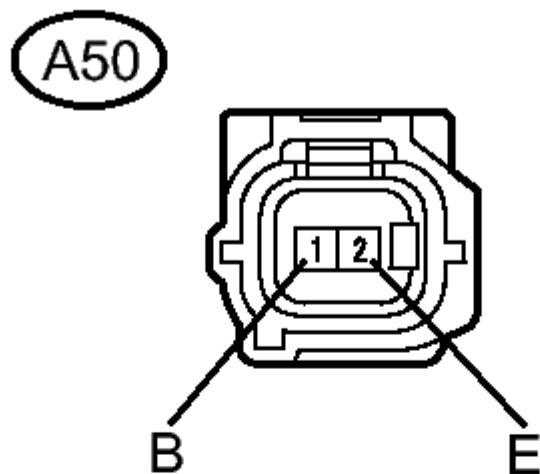
Wireless buzzer turns ON/OFF.

NG --> See step 5

OK --> See step 12

5. CHECK HARNESS AND CONNECTOR (WIRELESS DOOR LOCK BUZZER - INSTRUMENT PANEL JUNCTION BLOCK ASSEMBLY AND BODY GROUND)

*1



*2

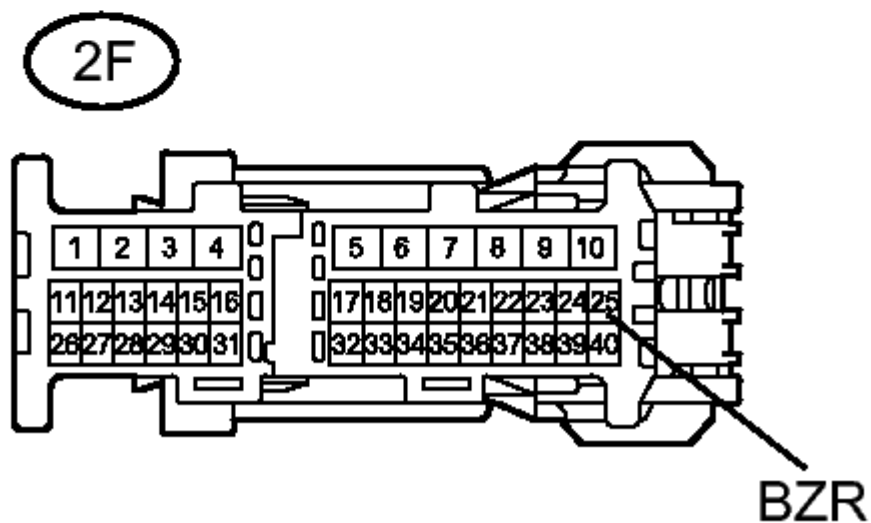


Fig. 4: Checking Harness And Connector (Wireless Door Lock Buzzer - Instrument Panel Junction Block Assembly And Body Ground)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- a. Disconnect the A19 wireless door lock buzzer connector.

- b. Disconnect the 2F instrument panel junction block assembly connector.
- c. Measure the resistance according to the value(s) in the table below.

Standard Resistance

Tester Connection	Condition	Specified Condition
A19-1 - 2F-25 (BZR)	Always	Below 1 ohms
A19-2 - Body ground	Always	
A19-1 or 2F-25 (BZR) - Body ground	Always	10 kohms or higher

TEXT IN ILLUSTRATION

*a	Front view of wire harness connector (to Wireless Door Lock Buzzer)
*b	Front view of wire harness connector (to Instrument Panel Junction Block Assembly)

- d. Reconnect the wireless door lock buzzer and instrument panel junction block assembly connector.

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK: Go to next step

6. CHECK INSTRUMENT PANEL JUNCTION BLOCK ASSEMBLY

- a. Remove the instrument panel junction block assembly. Refer to **REMOVAL** .

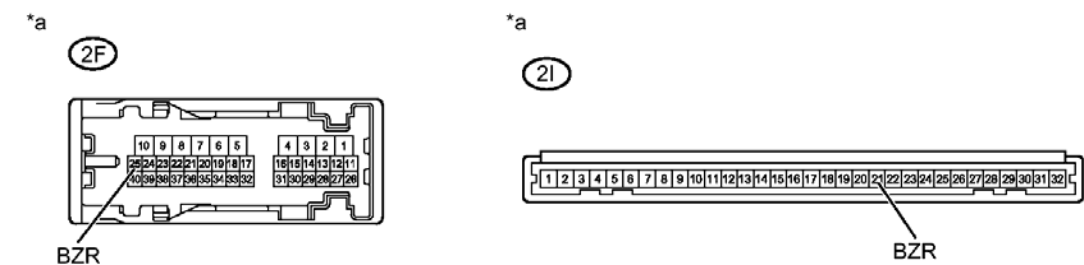


Fig. 5: Checking Instrument Panel Junction Block Assembly
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

TEXT IN ILLUSTRATION

Component without harness connected	
*a (Instrument Panel Junction Block Assembly)	--

- b. Measure the resistance according to the value(s) in the table below.

Standard Resistance

Tester Connection	Condition	Specified Condition
2F-25 (BZR) - 2I-21 (BZR)	Always	Below 1 ohms

NG --> See step 13

OK: Go to next step

7. REPLACE WIRELESS DOOR LOCK BUZZER

- a. Temporarily replace the wireless door lock buzzer with a new or normally functioning one. Refer to **REMOVAL** .

NEXT: Go to next step

8. INSPECT WIRELESS DOOR LOCK BUZZER OPERATION

- a. Check the operation of the wireless answer-back function.

OK

Wireless answer-back function operation normally.

NG --> See step 12

OK --> END (WIRELESS DOOR LOCK BUZZER IS DEFECTIVE)

9. CHECK HARNESS AND CONNECTOR (WIRELESS TURN SIGNAL FLASHER - MAIN BODY ECU)

- a. Disconnect the D9 turn signal flasher connector.
- b. Disconnect the D13 main body ECU connector.
- c. Measure the resistance according to the value(s) in the table below.

Standard Resistance

Tester Connection	Condition	Specified Condition
D9-8 (HAZ) - D13-3 (HAZ)	Always	Below 1 ohms
D9-8 (HAZ) or D13-3 (HAZ) - Body ground	Always	10 kohms or higher

- d. Reconnect the turn signal flasher and main body ECU connector.

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK --> See step 14

10. **GO TO LIGHTING SYSTEM (Proceed to Door Unlock Detection Switch Circuit). Refer to Door Unlock Detection Switch Circuit**
11. **GO TO PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**
12. **REPLACE MAIN BODY ECU. Refer to REMOVAL**
13. **REPLACE INSTRUMENT PANEL JUNCTION BLOCK ASSEMBLY. Refer to REMOVAL - Step 2**
14. **GO TO LIGHTING SYSTEM. Refer to HOW TO PROCEED WITH TROUBLESHOOTING**