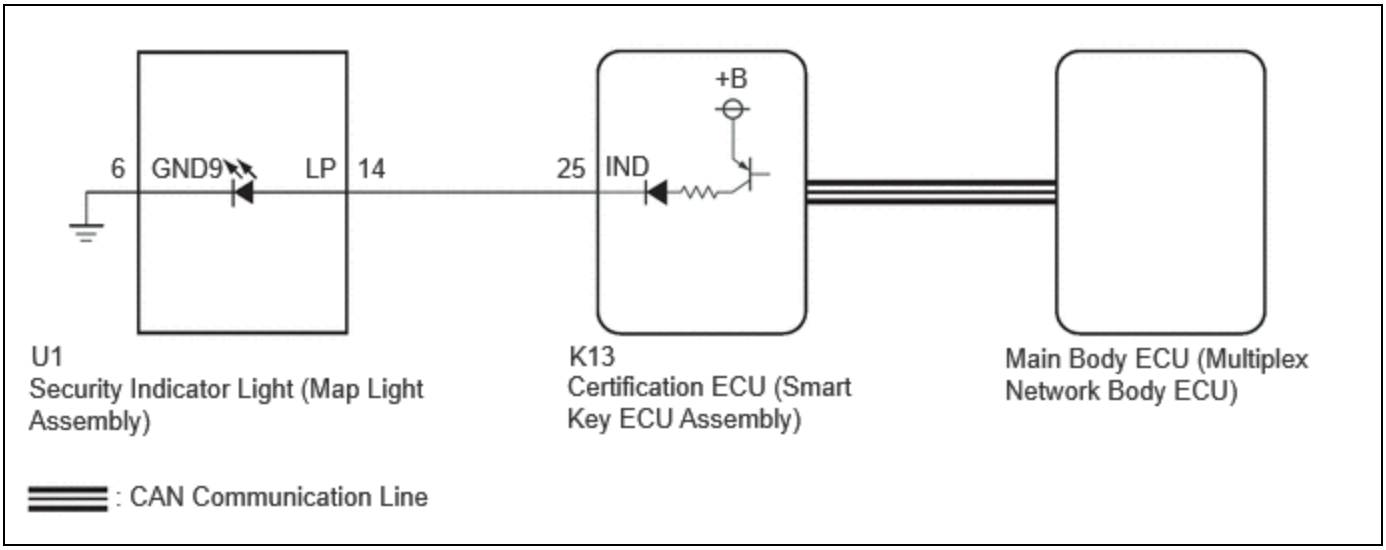
Last Modified: 12-04-2024	6.11:8.1.0	**Doc ID:** RM100000002909A
Model Year Start: 2023	**Model:** Prius Prime	**Prod Date Range:** [12/2022 -]
Title: THEFT DETERRENT / KEYLESS ENTRY: SMART KEY SYSTEM (for Start Function): Security Indicator Light Does not Blink; 2023 - 2024 MY Prius Prius Prime [12/2022 -]		

Security Indicator Light Does not Blink

DESCRIPTION

- The certification ECU (smart key ECU assembly) blinks the security indicator light (map light assembly) when the immobiliser is set (ignition switch off).
- The certification ECU (smart key ECU assembly) receives the security indicator light signal from the main body ECU (multiplex network body ECU) via CAN communication when the theft deterrent system is in the arming preparation state or alarm sounding state. Then, the certification ECU (smart key ECU assembly) blinks the security indicator light (map light assembly).

WIRING DIAGRAM



CAUTION / NOTICE / HINT

NOTICE:

- When using the GTS with the ignition switch off, perform lock and unlock operations using the door control switch of the multiplex network master switch assembly at intervals of 1.5 seconds or less until communication between the GTS and the vehicle begins, and then select the vehicle model manually.

  Then select Model Code "KEY REGIST" under manual mode and enter the following menus: Body Electrical / Smart Key(CAN). While using the GTS, periodically perform lock and unlock operations using the door control switch of the multiplex network master switch assembly at intervals of 1.5 seconds or less to maintain communication between the GTS and the vehicle.
- The smart key system (for Start Function) uses the LIN communication system and CAN communication system. Inspect the communication function by following How to Proceed with Troubleshooting. Troubleshoot the smart key system (for Start Function) after confirming that the communication systems are functioning properly.

  Click here INFO
- Before replacing the certification ECU (smart key ECU assembly) or main body ECU (multiplex network body ECU), refer to Registration.

Click here INFO

- Make sure that no DTCs are output. If any DTCs are output, proceed to the Diagnostic Trouble Code Chart.
- After completing repairs, confirm that the problem does not recur.
- After repair, confirm that no DTCs are output by performing "DTC Output Confirmation Operation".

PROCEDURE

1.	**CHECK FOR DTC**

(a) Check for DTCs.

Body Electrical > Smart Key > Trouble Codes

Powertrain > Hybrid Control > Trouble Codes

OK:

DTCs are not output.

NG ▶ **GO TO DIAGNOSTIC TROUBLE CODE CHART** INFO

OK ▼

2.	**PERFORM ACTIVE TEST USING GTS (IMMOBILISER INDICATOR)**

(a) Perform the Active Test according to the display on the GTS.

Body Electrical > Smart Key > Active Test

TESTER DISPLAY	MEASUREMENT ITEM	CONTROL RANGE	DIAGNOSTIC NOTE
Immobiliser Indicator	Security indicator light	OFF/ON	-

Body Electrical > Smart Key > Active Test

TESTER DISPLAY
Immobiliser Indicator

OK:

The security indicator light (map light assembly) operates normally.

NG ▶ **GO TO STEP 4**

OK ▼

3.	CHECK SECURITY INDICATOR LIGHT (MAP LIGHT ASSEMBLY) OPERATION

(a) When the immobiliser is set, check that the security indicator light (map light assembly) blinks.*1

OK:

The security indicator light (map light assembly) blinks normally.

(b) When the theft deterrent system is in the arming preparation state, check that the security indicator light (map light assembly) illuminates.*2

OK:

The security indicator light (map light assembly) illuminates normally.

RESULT	PROCEED TO
*1 is NG (*2 is OK)	A
*2 is NG (*1 is OK)	B

A ▶ **REPLACE CERTIFICATION ECU (SMART KEY ECU ASSEMBLY)** INFO

B ▶ **REPLACE MAIN BODY ECU (MULTIPLEX NETWORK BODY ECU)** INFO

4.	CHECK HARNESS AND CONNECTOR (CERTIFICATION ECU (SMART KEY ECU ASSEMBLY) - SECURITY INDICATOR LIGHT (MAP LIGHT ASSEMBLY))

(a) Disconnect the K13 certification ECU (smart key ECU assembly) connector.

(b) Disconnect the U1 security indicator light (map light assembly) connector.

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

Standard Resistance:

EWD INFO

Click Location & Routing(K13,U1)
Click Connector(K13)
Click Connector(U1)

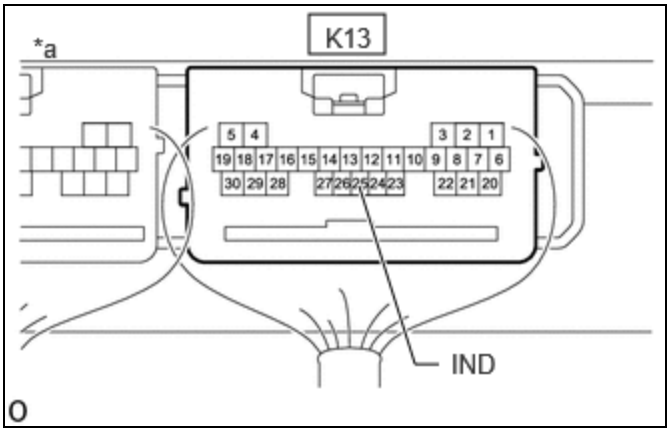
TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
K13-25 (IND) - U1-14 (LP)	Always	Below 1 Ω
K13-25 (IND) or U1-14 (LP) - Other terminals and body ground	Always	10 kΩ or higher

NG ▶ **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK

5.	**CHECK CERTIFICATION ECU (SMART KEY ECU ASSEMBLY)**

(a) Connect the K13 certification ECU (smart key ECU assembly) connector.



*a	Component with harness connected (Certification ECU (Smart Key ECU Assembly))

(b) Connect the U1 security indicator light (map light assembly) connector.

(c) Using an oscilloscope, check the waveform.

Measurement Condition:

EWD INFO

Click Location & Routing(K13)
Click Connector(K13)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
K13-25 (IND) - Body ground	Ignition switch off → ON	Pulse generation → Below 2 V

OK ▶ **REPLACE SECURITY INDICATOR LIGHT (MAP LIGHT ASSEMBLY)**

NG ▶ **REPLACE CERTIFICATION ECU (SMART KEY ECU ASSEMBLY)** INFO