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Model Year Start: 2023	**Model:** Prius Prime	**Prod Date Range:** [12/2022 -]
Title: THEFT DETERRENT / KEYLESS ENTRY: SMART KEY SYSTEM (for Entry Function): All Door Entry Lock/Unlock Functions do not Operate, but Wireless Functions Operate; 2023 - 2024 MY Prius Prius Prime [12/2022 -]		

All Door Entry Lock/Unlock Functions do not Operate, but Wireless Functions Operate

DESCRIPTION

When the wireless operation can be used to lock and unlock the doors, communication between the electrical key and tire pressure monitoring system receiver assembly and certification ECU (smart key ECU assembly) is normal. If the entry lock and unlock functions do not operate, the entry cancel function may be set through the customize function, there may be communication problems between the electrical key transmitter sub-assembly and vehicle, or there may be wave interference.

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 Entry Function) uses the CAN communication system. Inspect the communication function by following How to Proceed with Troubleshooting. Troubleshoot the smart key system (for Entry Function) after confirming that the communication systems are functioning properly.

  Click here INFO
- Before replacing the certification ECU (smart key ECU assembly) or electrical key transmitter sub-assembly, refer to Precaution.

  Click here INFO
- Check that there are no electrical key transmitter sub-assemblies in the vehicle.
- After repair, confirm that no DTCs are output.
- Before performing the inspection, check that DTC B124296 (wireless door lock control) is not output.

PROCEDURE

1.	**CHECK WIRELESS DOOR LOCK CONTROL SYSTEM**

(a) Check that the wireless function operates normally.

Click here INFO

RESULT	PROCEED TO
Wireless door lock function operates normally	A

RESULT	PROCEED TO
Wireless door lock function does not operate normally	B

B ▶ **GO TO OTHER PROBLEM**

A

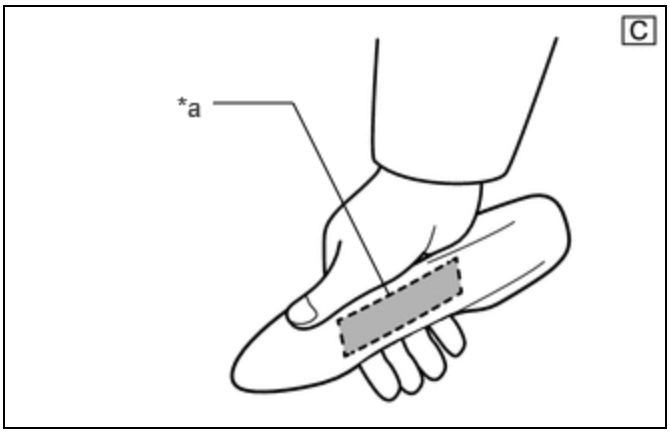
2.	**CHECK ENTRY OPERATION**

(a) Check the operation of the entry lock and unlock functions.

(1) Check the entry unlock function.

1. Turn the ignition switch off.
2. Open and close the driver door.
3. With the electrical key transmitter sub-assembly outside of the vehicle, press the lock switch of the electrical key transmitter sub-assembly to lock all of the doors.
4. Hold the electrical key transmitter sub-assembly at the same height as the door outside handle assembly and approximately 0.3 m (0.984 ft.) from the driver door.
5. Check that the LED of the electrical key transmitter sub-assembly blinks.
6. Touch the unlock sensor on the backside of the front door outside handle assembly (for driver door) for 2 seconds or more.

*: Perform this step 3 seconds or more after performing step (3).



*a	Unlock Sensor (Backside)

HINT:

- When checking the operation of the unlock sensor again, make sure to perform the procedure from step (1).
- Inspect the front passenger door using the same procedure.*

  *: w/ Front Passenger Door Entry Function

(2) Check the entry lock function.

1. Turn the ignition switch off.
2. Open and close the driver door.
3. Hold the electrical key transmitter sub-assembly at the same height as the door

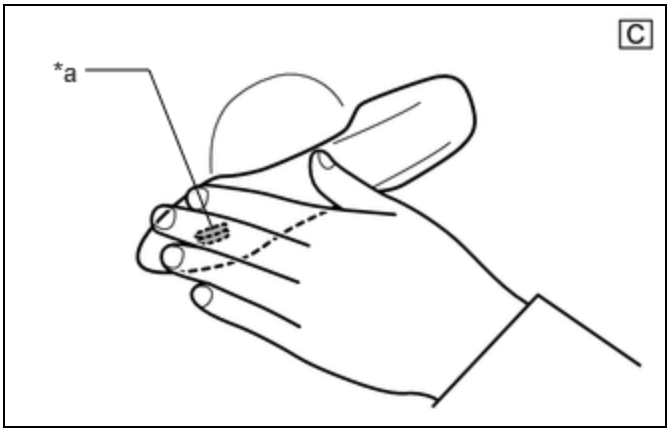
outside handle assembly and approximately 0.3 m (0.984 ft.) from the driver door.

4. Touch the lock sensor of the front door outside handle assembly (groove on the front door outside handle) with 2 or more fingers for 2 seconds or more.

HINT:

- If the door does not lock even when touching the lock sensor for 2 seconds or more, touch it with your palm.
- When checking the operation of the lock sensor again, make sure to perform the procedure from step (1).
- When checking the operation of the entry lock function several times, it can be operated up to 2 times consecutively. To operate the function 3 times or more consecutively, the doors need to be unlocked once. However, this is only for the entry lock function, other door lock operations, such as a wireless door lock operation can be performed consecutively.
- Inspect the front passenger door using the same procedure.*

  *: w/ Front Passenger Door Entry Function

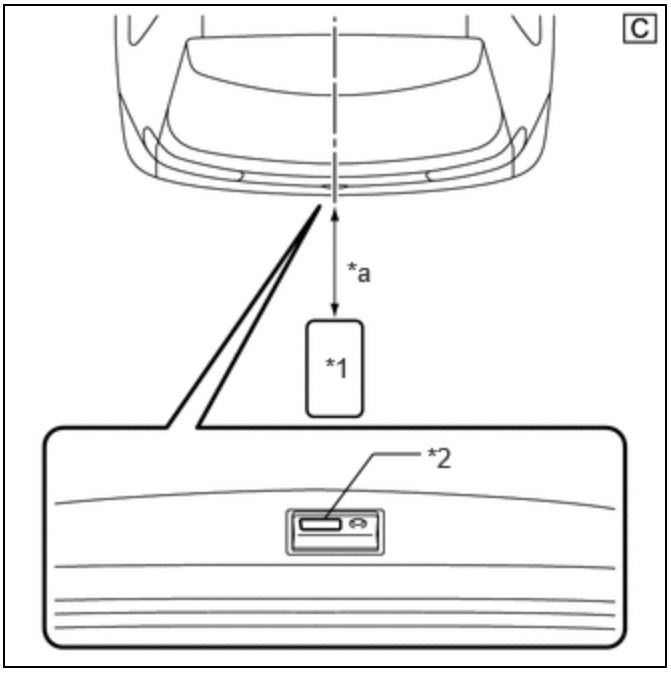


*a	Lock Sensor

(3) w/ Front Passenger Door Entry Function:

Check the entry back door open function.

1. With the back door closed and locked, press the open switch of the back door opener switch assembly while carrying the electrical key transmitter sub-assembly and check that the back door opens.

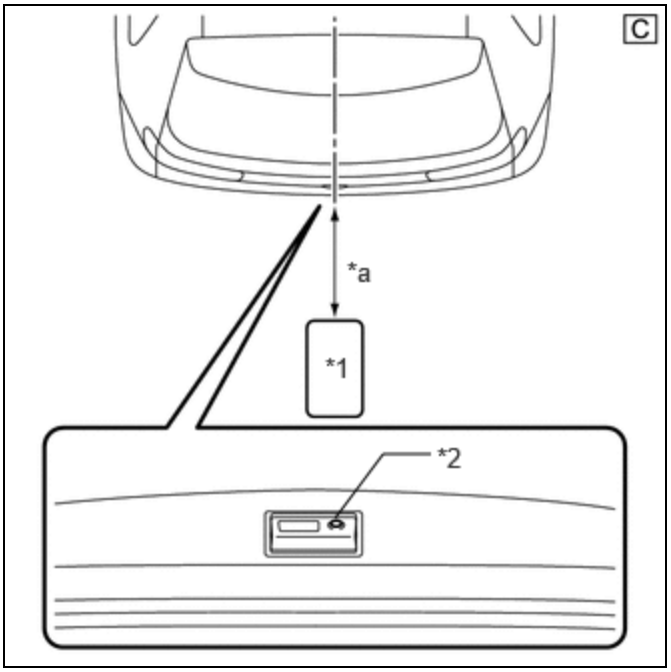


*1	Electrical Key Transmitter Sub-assembly
*2	Back Door Opener Switch Assembly (Open Switch)
*a	0.7 to 1 m (2.30 to 3.28 ft.)

(4) w/ Front Passenger Door Entry Function:

Check the entry back door lock function.

1. With the back door closed and unlocked, press the lock switch of the back door opener switch assembly while carrying the electrical key transmitter sub-assembly outside of the vehicle and check that the back door locks.



*1	Electrical Key Transmitter Sub-assembly
*2	Back Door Opener Switch Assembly (Lock Switch)
*a	Approximately 0.3 m (0.984 ft.)

RESULT	PROCEED TO
Entry function does not operate normally	A
Entry function operates normally	B

B ▶ **GO TO CHECK FOR INTERMITTENT PROBLEMS (VEHICLE CONTROL HISTORY (ROB))**

A ▼

3.	**CHECK WAVE ENVIRONMENT**

(a) Move the electrical key transmitter sub-assembly as described below and perform the operation inspection.

HINT:

- When the electrical key transmitter sub-assembly is brought near the door outside handle or electrical key antenna (outside luggage compartment)*, the possibility of wave interference decreases, and it can be determined if wave interference is causing the problem symptom.

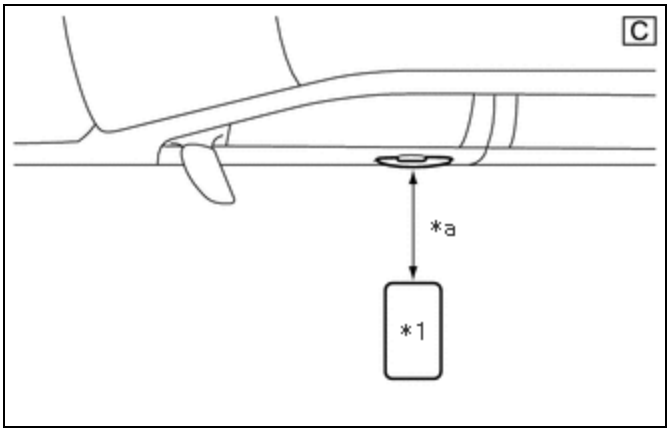
*: w/ Front Passenger Door Entry Function

- If the inspection result is that the problem only occurs in certain locations or at certain times of day, the possibility of wave interference is high. Also, added vehicle components may cause wave interference. If installed, remove them and perform the operation check.
- There may be wave interference if the vehicle is near broadcasting antennas, large video displays, wireless garage door opener systems, wireless security cameras, home security systems, etc. In this case, move the vehicle to a different location and check if there is any improvement.
- If a tool for checking radio waves, such as a signal strength meter, is available, move around the area while observing both the LF band (used by the vehicle antenna to form the detection area) and RF band (used by the electrical key transmitter sub-assembly for transmission) to check for locations where there is wave interference.
- The transmitting wave of the wireless function and entry function are the same, but the wave logic is different. As a result, it is possible that only the wireless function or only the entry function is affected by wave interference.

(1) Bring the electrical key transmitter sub-assembly approximately 0.3 m (0.984 ft.) from the front door outside handle assembly (for driver door) and perform a driver door entry lock and unlock operation check.

HINT:

Communication may not be possible if the electrical key transmitter sub-assembly is within 0.2 m (0.656 ft.) of the door handle.



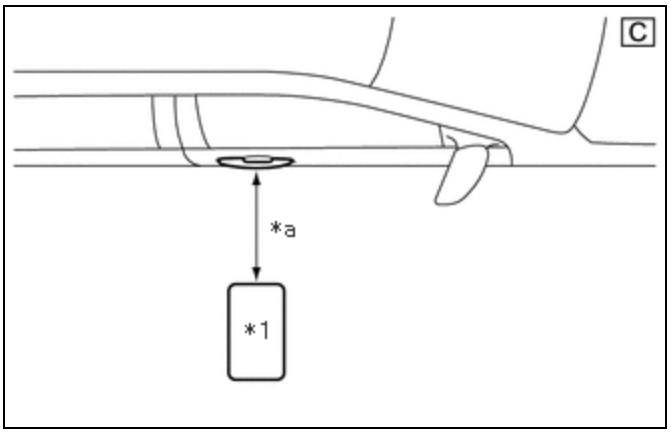
*1	Electrical Key Transmitter Sub-assembly
*a	Approximately 0.3 m (0.984 ft.)

(2) w/ Front Passenger Door Entry Function:

Bring the electrical key transmitter sub-assembly approximately 0.3 m (0.984 ft.) from the front door outside handle assembly (for front passenger door) and perform a front passenger door entry lock and unlock operation check.

HINT:

Communication may not be possible if the electrical key transmitter sub-assembly is within 0.2 m (0.656 ft.) of the door handle.



*1	Electrical Key Transmitter Sub-assembly
*a	Approximately 0.3 m (0.984 ft.)

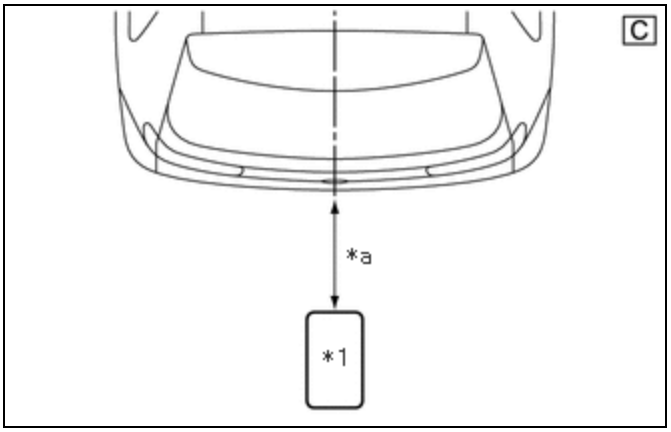
(3) w/ Front Passenger Door Entry Function:

Bring the electrical key transmitter sub-assembly approximately 0.3 m (0.984 ft.) from the electrical key

antenna (outside luggage compartment) and perform a back door open and lock function check.

HINT:

Communication may not be possible if the electrical key transmitter sub-assembly is within 0.2 m (0.656 ft.) of the rear bumper.



*1	Electrical Key Transmitter Sub-assembly
*a	Approximately 0.3 m (0.984 ft.)

RESULT	PROCEED TO
All operation checks fail	A
All operation checks are normal	B
Some operation checks are normal	C

B ▶ **AFFECTED BY WAVE INTERFERENCE**

C ▶ **GO TO OTHER PROBLEM**

A

4.	**CHECK KEY DIAGNOSTIC MODE**

(a) Check the following antennas in key diagnostic mode.

Body Electrical > Smart Key > Utility

TESTER DISPLAY
Communication Check(Key Diag Mode)

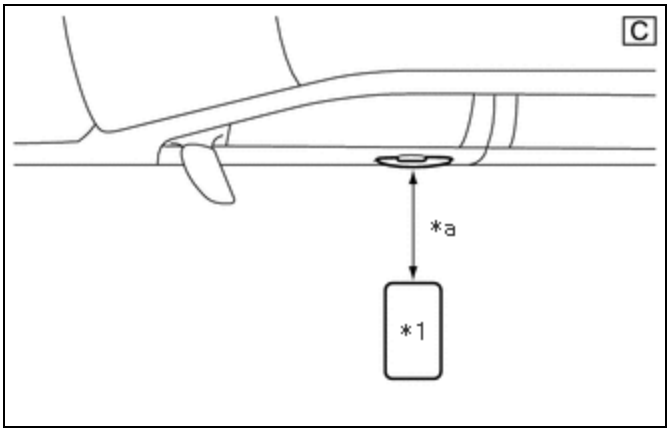
(b) Select either channel 1 or channel 2 and perform key diagnostic mode inspection for each channel.

(1) Check the electrical key antenna (for driver door):

When the electrical key transmitter sub-assembly is brought within 0.7 to 1 m (2.30 to 3.28 ft.) of the front door outside handle assembly (for driver door), check that the wireless buzzer sounds.

HINT:

- Select either channel 1 or channel 2 and perform the key diagnostic mode inspection for each channel.
- If the buzzer sounds with [CH1] displayed but not with [CH2], the electrical key transmitter sub-assembly cannot be detected by channel 2 due to a malfunction, such as wave interference.



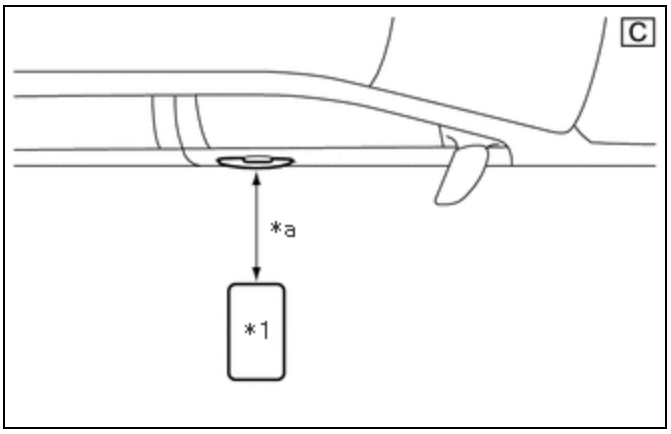
*1	Electrical Key Transmitter Sub-assembly
*a	0.7 to 1 m (2.30 to 3.28 ft.)

(2) Check the electrical key antenna (for front passenger door) (w/ Front Passenger Door Entry Function):

When the electrical key transmitter sub-assembly is brought within 0.7 to 1 m (2.30 to 3.28 ft.) of the front door outside handle assembly (for front passenger door), check that the wireless buzzer sounds.

HINT:

- Select either channel 1 or channel 2 and perform the key diagnostic mode inspection for each channel.
- If the buzzer sounds with [CH1] displayed but not with [CH2], the electrical key transmitter sub-assembly cannot be detected by channel 2 due to a malfunction, such as wave interference.



*1	Electrical Key Transmitter Sub-assembly
*a	0.7 to 1 m (2.30 to 3.28 ft.)

(3) Check the electrical key antenna (outside luggage compartment) (w/ Front Passenger Door Entry Function):

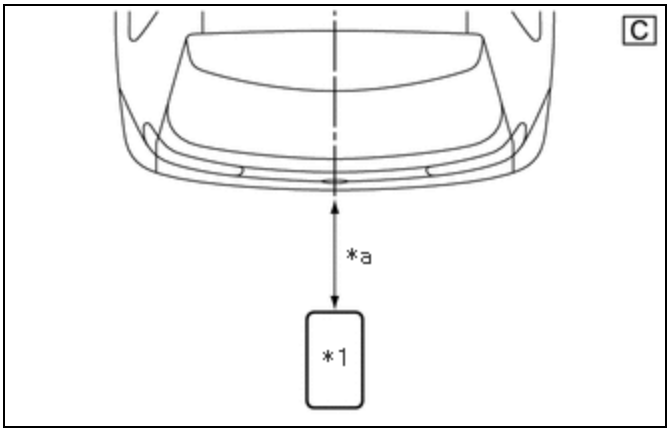
When the electrical key transmitter sub-assembly is brought within 0.7 to 1 m (2.30 to 3.28 ft.) of the electrical key antenna (outside luggage compartment), check that the wireless buzzer sounds.

HINT:

- Select either channel 1 or channel 2 and perform the key diagnostic mode inspection for each channel.
- If the buzzer sounds with [CH1] displayed but not with [CH2], the electrical key transmitter sub-assembly cannot be detected by channel 2 due to a malfunction, such as wave interference.

OK:

Wireless buzzer sounds.



*1	Electrical Key Transmitter Sub-assembly
*a	0.7 to 1 m (2.30 to 3.28 ft.)

RESULT	PROCEED TO
All diagnostic mode inspections fail	A
Some diagnostic mode inspections fail (door)	B
Some diagnostic mode inspections fail (outside luggage compartment)	C
All diagnostic mode inspections are normal	D

B ▶ **GO TO OTHER PROBLEM**

C ▶ **GO TO OTHER PROBLEM**

D ▶ **REPLACE CERTIFICATION ECU (SMART KEY ECU ASSEMBLY)**

Click here INFO

A ▼

5.	**CHECK ELECTRICAL KEY TRANSMITTER SUB-ASSEMBLY**

(a) Check if there is another electrical key transmitter sub-assembly available that is already registered to the vehicle.

RESULT	PROCEED TO
Another registered electrical key transmitter sub-assembly is not available	A
Another registered electrical key transmitter sub-assembly is available	B

B ▶ **GO TO STEP 7**

A

6.	**ELECTRICAL KEY TRANSMITTER SUB-ASSEMBLY REGISTRATION (NEW ELECTRICAL KEY TRANSMITTER SUB-ASSEMBLY)**

(a) Register a new electrical key transmitter sub-assembly.

HINT:

Refer to registration.

Click here INFO

NEXT

7.	**CHECK ENTRY OPERATION**

(a) Using another registered electrical key transmitter sub-assembly, check that the entry function operates normally.

Click here INFO

RESULT	PROCEED TO
Entry function operates normally	A
Entry function does not operate normally	B

A ▶ **END (ELECTRICAL KEY TRANSMITTER SUB-ASSEMBLY WAS DEFECTIVE)**

B ▶ **REPLACE CERTIFICATION ECU (SMART KEY ECU ASSEMBLY)**