Last Modified: 12-04-2024	6.11:8.1.0	**Doc ID:** RM100000002908H
Model Year Start: 2023	**Model:** Prius Prime	**Prod Date Range:** [12/2022 -]
Title: THEFT DETERRENT / KEYLESS ENTRY: SMART KEY SYSTEM (for Entry Function): DATA LIST / ACTIVE TEST; 2023 - 2024 MY Prius Prius Prime [12/2022 -]		

DATA LIST / ACTIVE TEST

NOTICE:

- In the table below, the values listed under "Normal Condition" are reference values. Do not depend solely on these reference values when deciding whether a part is faulty or not.
- 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.
- When performing an inspection, make sure that "ACC Customize" is set to "ON" using the multi-display.

  Click here INFO
- When "ACC Customize" is set to "ON" (ACC supply power enabled), the certification ECU (smart key ECU assembly) controls the ACC relay on and off. When "ACC Customize" is set to "OFF" (ACC supply power disabled), the certification ECU (smart key ECU assembly) and radio and display receiver assembly control the ACC relay on and off.

  Therefore, inspection conditions and results may differ depending on whether "ACC customize" is set to ON or OFF when inspecting the Data List.

DATA LIST

(a) Connect the GTS to the DLC3.

(b) Turn the ignition switch to ON.

(c) Turn the GTS on.

(d) Enter the following menus: Body Electrical / Smart Key, Main Body, Power Source Control or Back Door* / Data List.

*: w/ Power Back Door System

(e) Read the Data List according to the display on the GTS.

Body Electrical > Smart Key > Data List

TESTER DISPLAY	MEASUREMENT ITEM	RANGE	NORMAL CONDITION	DIAGNOSTIC NOTE
Driver Side Unlock Sensor	Driver door touch sensor (unlock sensor)*1	OFF or ON	OFF: Driver door touch sensor (unlock sensor) not touched ON: Driver door touch sensor (unlock sensor) touched	• Displays whether the unlock sensor is on or off (even if the sensor is touched and contact is maintained, "ON" is displayed only momentarily). • Use this Data List item to help determine if there is an unlock sensor malfunction when the entry unlock function does not operate.

TESTER DISPLAY	MEASUREMENT ITEM	RANGE	NORMAL CONDITION	DIAGNOSTIC NOTE
Passenger Side Unlock Sensor	Front passenger door touch sensor (unlock sensor)*1,*2	OFF or ON	OFF: Front passenger door touch sensor (unlock sensor) not touched ON: Front passenger door touch sensor (unlock sensor) touched	• Displays whether the unlock sensor is on or off (even if the sensor is touched and contact is maintained, "ON" is displayed only momentarily). • Use this Data List item to help determine if there is an unlock sensor malfunction when the entry unlock function does not operate.
Driver Side Lock Sensor	Driver door touch sensor (lock sensor)*1	OFF or ON	OFF: Driver door touch sensor (lock sensor) not touched ON: Driver door touch sensor (lock sensor) touched	• Displays whether the lock sensor is on or off (even if the sensor is touched and contact is maintained, "ON" is displayed only momentarily). • Use this Data List item to help determine if there is a lock sensor malfunction when the entry lock function does not operate.
Passenger Side Lock Sensor	Front passenger door touch sensor (lock sensor)*1,*2	OFF or ON	OFF: Front passenger door touch sensor (lock sensor) not touched ON: Front passenger door touch sensor (lock sensor) touched	• Displays whether the lock sensor is on or off (even if the sensor is touched and contact is maintained, "ON" is displayed only momentarily). • Use this Data List item to help determine if there is a lock sensor malfunction when the entry lock function does not operate.
Trunk Lid/Back Door Lock Switch	Back door opener switch assembly (lock switch)*2	OFF or ON	OFF: Back door opener switch assembly (lock switch) not pressed ON: Back door opener switch assembly (lock switch) pressed	• Displays whether the back door opener switch assembly (lock switch) is on or off. • Use this Data List item to help determine if there is a switch malfunction when the back door lock function does not operate.
Trunk Lid/Back Door Unlock Switch	Back door opener switch assembly (open switch)	OFF or ON	OFF: Back door opener switch assembly (open switch) not pressed	• Displays whether the back door opener switch assembly (unlock switch) is on or off. • Use this Data List item to help determine if there is a switch

TESTER DISPLAY	MEASUREMENT ITEM	RANGE	NORMAL CONDITION	DIAGNOSTIC NOTE
			ON: Back door opener switch assembly (open switch) pressed	malfunction when the entry back door open function does not operate.*2
Unmatched Vehicle ID	**Type A:** Key No. (incorrect or correct)	No or Yes	No: Communication normal Yes: Communication malfunction	The vehicle ID registered in the vehicle and the vehicle ID registered in the electrical key transmitter sub-assembly are different (if a key from another vehicle is brought into the vehicle exterior detection area while the doors are locked, "Yes" is displayed for "Unmatched Vehicle ID" in the Data List). Other potential causes: • An electrical key transmitter sub-assembly from a different vehicle is being used. • A communication error due to wave interference. • The electrical key transmitter sub-assembly or certification ECU (smart key ECU assembly) is malfunctioning.
Electronic Key No Response	Communication response	No or Yes	No: Communication normal Yes: Communication malfunction	If there is wave interference in the LF band that the vehicle uses for transmission or the RF band that the electrical key transmitter sub-assembly uses for transmission, "Yes" may be displayed for "Electronic Key No Response" in the Data List.) Other potential causes: • An electrical key transmitter sub-assembly from a different vehicle is being used. • The electrical key transmitter sub-assembly or certification ECU (smart key ECU assembly) is malfunctioning.
Unmatched Response Code or Form	Code format (incorrect or correct)	No or Yes	No: Communication normal Yes: Communication malfunction	There is an error in the data sent from the electrical key transmitter sub-assembly (if there is wave interference in the RF band that the electrical key transmitter sub-assembly uses for transmission, "Yes" may be displayed for "Unmatched Response Code or Form", "Electronic Key No

TESTER DISPLAY	MEASUREMENT ITEM	RANGE	NORMAL CONDITION	DIAGNOSTIC NOTE
				Response", "ID Code Difference" and "C Code Difference" in the Data List). Other potential causes: • An electrical key transmitter sub-assembly from a different manufacturer is being used. • The electrical key transmitter sub-assembly or certification ECU (smart key ECU assembly) is malfunctioning.
Key Low Battery	Transmitter battery depleted	No or Yes	No: Transmitter battery not depleted Yes: Transmitter battery depleted	The electrical key transmitter sub-assembly sends voltage information to the certification ECU (smart key ECU assembly) when it is transmitting. "Yes" is displayed for the Data List item "Key Low Battery" when this voltage information indicates 2.2 V or less. This Data List item should be checked when the electrical key transmitter sub-assembly is at room temperature (example: at -20°C (-4°F), "Yes" may be displayed even if the transmitter battery is new).
Response ID Code Difference	**Type A:** ID code difference	No or Yes	No: Communication normal Yes: Communication malfunction	The ID code registered to the vehicle and the ID code registered to the electrical key transmitter sub-assembly differ. (If wave interference in the RF band affects the signal transmitted from the electrical key transmitter sub-assembly, the value of Data List items "Unmatched Response Code or Form", "Electronic Key No Response", "Response ID Code Difference" and "C Code Difference" may be "Yes".) Other potential causes: • An electrical key transmitter sub-assembly from a different vehicle is being used. • The electrical key transmitter sub-assembly or certification ECU (smart key ECU assembly) is malfunctioning. • A communication error due to wave interference.
C Code Difference	Challenge code (incorrect or correct)	No or Yes	No: Communication	The electrical key transmitter sub-assembly sends a response code in

TESTER DISPLAY	MEASUREMENT ITEM	RANGE	NORMAL CONDITION	DIAGNOSTIC NOTE
			normal Yes: Communication malfunction	response to the challenge code from the vehicle, but the response code is incorrect (if there is wave interference in the RF band that the electrical key transmitter sub-assembly uses for transmission, "Yes" may be displayed for "Unmatched Response Code or Form", "Electronic Key No Response", "ID Code Difference" and "C Code Difference" in the Data List). Other potential causes: • The electrical key transmitter sub-assembly or certification ECU (smart key ECU assembly) is malfunctioning.
Out of Collation Area	Detection area (incorrect or correct)	No or Yes	No: Communication normal Yes: Communication malfunction	-
LF Wave Change	LF wave change (incorrect or correct)	No or Yes	No: Communication normal Yes: Communication malfunction	-
B Code Difference	ECU code mismatch	No or Yes	No: Communication normal Yes: Communication malfunction	-
B Code Registered	ECU code registration status	No or Yes	No: ECU code is not registered properly Yes: ECU code is registered properly	-

TESTER DISPLAY	MEASUREMENT ITEM	RANGE	NORMAL CONDITION	DIAGNOSTIC NOTE
Vehicle ID Difference (Key Registration)	Status of vehicle ID (key registration)	No or Yes	No: Vehicle ID normal (key registration) Yes: Vehicle ID malfunction (key registration)	-
Electrical Key 7 Low Battery History	**Type A:** Low battery transmission history (electronic key 7)	OFF or ON	OFF: Transmitter battery not depleted ON: Transmitter battery depleted	-
Electrical Key 6 Low Battery History	**Type A:** Low battery transmission history (electronic key 6)	OFF or ON	OFF: Transmitter battery not depleted ON: Transmitter battery depleted	-
Electrical Key 5 Low Battery History	**Type A:** Low battery transmission history (electronic key 5)	OFF or ON	OFF: Transmitter battery not depleted ON: Transmitter battery depleted	-
Electrical Key 4 Low Battery History	Low battery transmission history (electronic key 4)	OFF or ON	OFF: Transmitter battery not depleted ON: Transmitter battery depleted	-
Electrical Key 3 Low Battery History	Low battery transmission history (electronic key 3)	OFF or ON	OFF: Transmitter battery not depleted ON: Transmitter battery depleted	-
Electrical Key 2 Low Battery History	Low battery transmission history (electronic key 2)	OFF or ON	OFF: Transmitter battery not depleted ON: Transmitter battery depleted	-

TESTER DISPLAY	MEASUREMENT ITEM	RANGE	NORMAL CONDITION	DIAGNOSTIC NOTE
Electrical Key 1 Low Battery History	Low battery transmission history (electronic key 1)	OFF or ON	OFF: Transmitter battery not depleted ON: Transmitter battery depleted	-
10 Minutes Power Save Counter	Number of times power saving control is activated due to electrical key transmitter sub-assembly being in detection area for 10 minutes or more	0 to 255	Within range of 0 to 255	If the electrical key transmitter sub-assembly is in a vehicle exterior detection area, communication is frequently performed between the vehicle and electrical key transmitter sub-assembly, resulting in an increase in transmitter battery power consumption. To prevent the transmitter battery from becoming fully depleted, if the electrical key transmitter sub-assembly is left in the detection area for 10 minutes or more, the smart key system automatically deactivates the exterior detection area the electrical key transmitter sub-assembly is in. If the doors are locked/unlocked with a wireless operation or by the mechanical key, the system resumes operation.
5 Days Power Save Counter	Number of times power saving control 1 (vehicle exterior periodic signal transmission stop) is activated due to hybrid control system not being started for 5 days or more	0 to 255	Within range of 0 to 255	-
14 Days Power Save Counter	Number of times power saving control 2 (lock/unlock sensor of door outside handle other than driver door disabled) is activated due to hybrid control system not being started for 14 days or more	0 to 255	Within range of 0 to 255	-
ID Code Difference	Wireless ID code (incorrect or correct)	No or Yes	No: Communication normal	The ID code registered in the vehicle and the ID code registered in the electrical key transmitter sub-assembly are different. (If

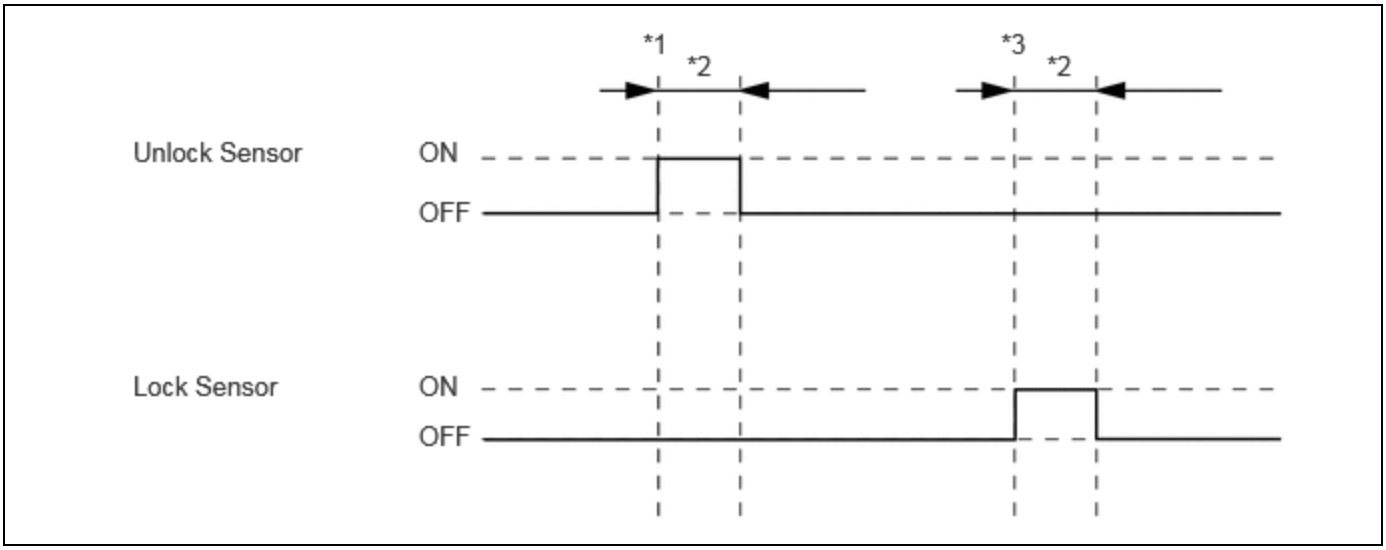
TESTER DISPLAY	MEASUREMENT ITEM	RANGE	NORMAL CONDITION	DIAGNOSTIC NOTE
			Yes: Communication malfunction	a wireless ID other than those for any of the registered electrical key transmitter sub-assemblies is detected, "Yes" is displayed for "ID Code Difference" in the Data List. If a wireless signal from the electrical key transmitter sub-assembly of another vehicle is detected, "Yes" is displayed for "Response ID Code Difference" in the Data List.) Other potential causes: • An electrical key transmitter sub-assembly from a different vehicle is being used. • A communication error due to external noise (RF). • The electrical key transmitter sub-assembly or certification ECU (smart key ECU assembly) is malfunctioning.
Rolling Code Difference	Rolling code (incorrect or correct)	No or Yes	No: Communication normal Yes: Communication malfunction	The rolling code registered in the vehicle and the rolling code registered in the electrical key transmitter sub-assembly are different Other potential causes: • An electrical key transmitter sub-assembly switch is pressed 100 times or more in a location where the radio waves cannot reach the vehicle. • A communication error due to external noise (RF). • The electrical key transmitter sub-assembly or certification ECU (smart key ECU assembly) is malfunctioning.
Wireless Certification Signal Encryption	Wireless signal encryption support	Without or With	Without: Wireless signal encryption not supported With: Wireless signal encryption supported	-
Driver Side Door	Short in driver door electrical key antenna	OFF or ON	OFF: Driver door electrical key	-

TESTER DISPLAY	MEASUREMENT ITEM	RANGE	NORMAL CONDITION	DIAGNOSTIC NOTE
Oscillators Circuit Short	circuit		antenna circuit is normal ON: Driver door electrical key antenna circuit is abnormal	
Front P Side Door Oscillators Circuit Short	Short in front passenger door electrical key antenna circuit*2	OFF or ON	OFF: Front passenger door electrical key antenna circuit is normal ON: Front passenger door electrical key antenna circuit is abnormal	-
D Side Door Oscillators Circuit Short History	Short in driver door electrical key antenna circuit (history)	OFF or ON	OFF: Driver door electrical key antenna circuit was normal ON: Driver door electrical key antenna circuit was abnormal	-
Fr P Side Door Oscillators Circuit Short History	Short in front passenger door electrical key antenna circuit (history)*2	OFF or ON	OFF: Front passenger door electrical key antenna circuit was normal ON: Front passenger door electrical key antenna circuit was abnormal	-
Back Door Oscillators Circuit Short	Short in electrical key antenna (outside luggage compartment) circuit*2	OFF or ON	OFF: Electrical key antenna (outside luggage compartment) circuit is normal ON: Electrical key antenna (outside luggage compartment)	-

TESTER DISPLAY	MEASUREMENT ITEM	RANGE	NORMAL CONDITION	DIAGNOSTIC NOTE
			circuit is abnormal	
Back Door Oscillators Circuit Short History	Short in electrical key antenna (outside luggage compartment) circuit (history)*2	OFF or ON	OFF: Electrical key antenna (outside luggage compartment) circuit was normal ON: Electrical key antenna (outside luggage compartment) circuit was abnormal	-
B Code Registration Error History	ECU code registration status (history)	OFF or ON	OFF: ECU code is registered properly ON: ECU code is not registered properly	-
Number of Registered Key Codes	Number of registered electrical key transmitter sub-assemblies	**Type A:** 0 to 7 **Type B:** 0 to 4	Number of registered electrical key transmitter sub-assemblies	**Type A:** Up to 7 electrical key transmitter sub-assemblies can be registered. **Type B:** Up to 4 electrical key transmitter sub-assemblies can be registered.
Ignition Available Area Setting (Back Door Type)	Ignition available area	Fr+Rr+BD	Customize setting displayed	-
Park Wait Time Adjust	Parking wait time	0.5sec, 1.5sec, 2.5sec or 5sec	Customize setting displayed	-
Door Unlock Sensor Touch Time Adjust	Function that sets the length of time the unlock sensor on the door outside handle assembly (for driver door) must be touched	OFF, Short, Middle or Long	Customize setting displayed	-

TESTER DISPLAY	MEASUREMENT ITEM	RANGE	NORMAL CONDITION	DIAGNOSTIC NOTE
	to unlock all of the doors state			
Key Low Battery Warning Function	Low transmitter battery warning	OFF or ON	Customize setting displayed	-
Key Left in Vehicle Alarm Function	Key left in vehicle buzzer	OFF or ON	Customize setting displayed	-
Forget to Turn IG OFF Alarm Function	Forget to turn ignition switch off alarm	OFF or ON	Customize setting displayed	-
Start Indicator Function	Key indicator display	OFF or ON	Customize setting displayed	-
Touch Activation Over Threshold	Consecutive entry lock operation	Active or Not Active	Customize setting displayed	-
Start Switch Light Function	Power switch blink function	OFF or ON	Customize setting displayed	-
Power Saving Wait Time (Out of Entry Range)	**Type B:** Length of time before detection area enters power saving mode	Normal or Short	Customize setting displayed	-
Auto Entry Cancel 2 Setting	2 touch entry unlock function	OFF or ON	Customize setting displayed	-

- *1: Data from an actual vehicle provided for reference.
- *2: w/ Front Passenger Door Entry Function



HINT:

- *1: With ignition switch off, all doors closed, electrical key transmitter sub-assembly not inside vehicle and all doors locked, the unlock sensor of the front door outside handle assembly is touched.
- *2: Approximately 150 ms.
- *3: With ignition switch off, all doors closed, electrical key transmitter sub-assembly not inside vehicle and all doors unlocked, the lock sensor of the front door outside handle assembly is touched.

Body Electrical > Main Body > Data List

TESTER DISPLAY	MEASUREMENT ITEM	RANGE	NORMAL CONDITION	DIAGNOSTIC NOTE
FR Door Lock Position Switch Status	Front door RH unlock detection switch signal	Lock or Unlock	Lock: Front door RH locked Unlock: Front door RH unlocked	-
FL Door Lock Position Switch Status	Front door LH unlock detection switch signal	Lock or Unlock	Lock: Front door LH locked Unlock: Front door LH unlocked	-
RR Door Lock Position Switch Status	Rear door RH unlock detection switch signal	Lock or Unlock	Lock: Rear door RH locked Unlock: Rear door RH unlocked	-
RL Door Lock Position Switch Status	Rear door LH unlock detection switch signal	Lock or Unlock	Lock: Rear door LH locked Unlock: Rear door LH unlocked	-
FR Door Courtesy Switch Status	Front door RH courtesy light switch signal	Close or Open	Close: Front door RH closed	-

TESTER DISPLAY	MEASUREMENT ITEM	RANGE	NORMAL CONDITION	DIAGNOSTIC NOTE
			Open: Front door RH open	
FL Door Courtesy Switch Status	Front door LH courtesy light switch signal	Close or Open	Close: Front door LH closed Open: Front door LH open	-
RR Door Courtesy Switch Status	Rear door RH courtesy light switch	Close or Open	Close: Rear door RH closed Open: Rear door RH open	-
RL Door Courtesy Switch Status	Rear door LH courtesy light switch	Close or Open	Close: Rear door LH closed Open: Rear door LH open	-
Back Door Courtesy Switch Status	Back door courtesy light switch	Close or Open	Close: Back door closed Open: Back door open	-
IGR Power	Ignition switch status	OFF or ON	OFF: Ignition switch off ON: Ignition switch ON	-
Wireless Buzzer Response Function	Buzzer answer-back of entry function	Enable or Disable	Customize setting displayed	-

Body Electrical > Power Source Control > Data List

TESTER DISPLAY	MEASUREMENT ITEM	RANGE	NORMAL CONDITION	DIAGNOSTIC NOTE
Power Supply Condition	Power supply state	OFF, ACC ON, IGR ON, IGP ON or Starter ON	OFF: Ignition switch off ACC ON: Ignition switch ACC IGR ON: Ignition switch ON IGP ON: Ignition switch ON Starter ON: Sending hybrid control system start request signal	-

Body Electrical > Back Door > Data List

TESTER DISPLAY	MEASUREMENT ITEM	RANGE	NORMAL CONDITION	DIAGNOSTIC NOTE
Courtesy Switch	Back door courtesy switch signal	OFF or ON	OFF: Back door closed ON: Back door open	w/ Power Back Door System

ACTIVE TEST

HINT:

Using the GTS to perform Active Tests allows relays, VSVs, actuators and other items to be operated without removing any parts. This non-intrusive functional inspection can be very useful because intermittent operation may be discovered before parts or wiring is disturbed. Performing Active Tests early in troubleshooting is one way to save diagnostic time. Data List information can be displayed while performing Active Tests.

(a) Connect the GTS to the DLC3.

(b) Turn the ignition switch to ON.

(c) Turn the GTS on.

(d) Enter the following menus: Body Electrical / Smart Key or Main Body / Active Test.

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

Body Electrical > Smart Key > Active Test

TESTER DISPLAY	MEASUREMENT ITEM	CONTROL RANGE	DIAGNOSTIC NOTE
Overhead Tuner Power Supply	Electrical key and tire pressure monitoring system receiver assembly	OFF/ON	-
Driver Seat Sensor Power Supply	Front door outside handle (for driver door)	OFF/ON	-
Passenger Seat Sensor Power Supply	Front door outside handle (for front passenger door)	OFF/ON	w/ Front Passenger Door Entry Function-

Body Electrical > Main Body > Active Test

TESTER DISPLAY	MEASUREMENT ITEM	CONTROL RANGE	DIAGNOSTIC NOTE
Door Lock	Door lock motor	OFF/ON	-
Door Unlock	Door lock motor	OFF/ON	-