Last Modified: 12-04-2024	6.11:8.1.0	**Doc ID:** RM1000000029C1Z
Model Year Start: 2023	**Model:** Prius Prime	**Prod Date Range:** [12/2022 -]
Title: ADVANCED PARK: ADVANCED PARK: U117987; Lost Communication with Image Processing Module "B" (ch2); 2023 - 2024 MY Prius Prius Prime [12/2022 -]		

DTC	**U117987**	**Lost Communication with Image Processing Module "B" (ch2)**

DESCRIPTION

This DTC is output when the clearance warning ECU assembly detects lost communication with the parking assist ECU.

DTC NO.	DETECTION ITEM	DTC DETECTION CONDITION	TROUBLE AREA	DTC OUTPUT FROM	PRIORITY
U117987	Lost Communication with Image Processing Module "B" (ch2)	The clearance warning ECU assembly is unable to receive communication from the parking assist ECU	• Harness or connector • Clearance warning ECU assembly • Parking assist ECU • Forward recognition camera • Millimeter wave radar sensor assembly	Clearance Warning	A

PATTERN	DTC OUTPUT PART NAME (DISPLAY ON GTS)				SUSPECTED AREA (MALFUNCTION STATUS)
	CLEARANCE WARNING ECU ASSEMBLY	PARKING ASSIST ECU	FORWARD RECOGNITION CAMERA	MILLIMETER WAVE RADAR SENSOR ASSEMBLY	
	CLEARANCE WARNING	CIRCUMFERENCE MONITORING CAMERA CONTROL MODULE	FRONT RECOGNITION CAMERA		
	U117987	U11B687	U023587	U010487	
Pattern 1	○	○	○	○	Harness or connector (Open or short) Millimeter wave radar sensor assembly

○: DTC is output

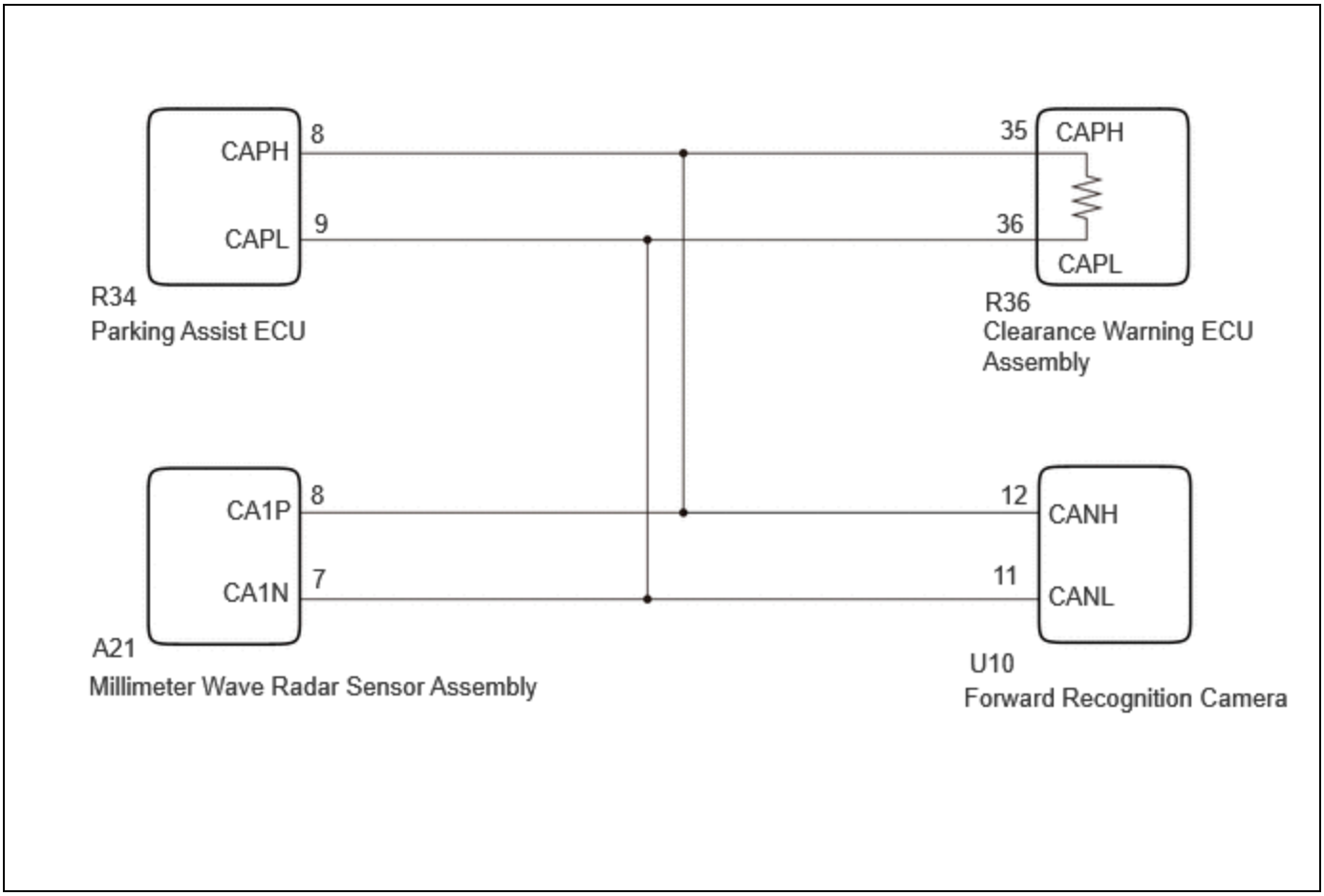
-: DTC is not output

PATTERN	DTC OUTPUT PART NAME (DISPLAY ON GTS)				SUSPECTED AREA (MALFUNCTION STATUS)
	CLEARANCE WARNING ECU ASSEMBLY	PARKING ASSIST ECU	FORWARD RECOGNITION CAMERA	MILLIMETER WAVE RADAR SENSOR ASSEMBLY	
	CLEARANCE WARNING	CIRCUMFERENCE MONITORING CAMERA CONTROL MODULE	FRONT RECOGNITION CAMERA		
	U117987	U11B687	U023587	U010487	
					(Internal malfunction)
					Clearance warning ECU assembly (Internal malfunction)
					Parking assist ECU (Internal malfunction)
					Forward recognition camera (Internal malfunction)
Pattern 2	○	○	-	-	Harness or connector (Open or short)
					Parking assist ECU (Internal malfunction)
					Clearance warning ECU assembly (Internal malfunction)
Pattern 3	○	-	-	-	Clearance warning ECU assembly (Internal malfunction)
					Parking assist ECU (Internal malfunction)

○: DTC is output

-: DTC is not output

WIRING DIAGRAM



CAUTION / NOTICE / HINT

NOTICE:

- Before measuring the resistance of the CAN bus, turn the ignition switch off and leave the vehicle for 1 minute or more without operating the key or any switches, or opening or closing the doors. After that, disconnect the cable from the negative (-) auxiliary battery terminal and leave the vehicle for 1 minute or more before measuring the resistance.
- After the ignition switch is turned off, there may be a waiting time before disconnecting the negative (-) auxiliary battery terminal.

  Click here INFO
- When disconnecting and reconnecting the auxiliary battery

  HINT:

  When disconnecting and reconnecting the auxiliary battery, there is an automatic learning function that completes learning when the respective system is used.

  Click here INFO

HINT:

- Operating the ignition switch, any other switches or a door triggers related ECU and sensor communication on the CAN. This communication will cause the resistance value to change.
- Even after DTCs are cleared, if a DTC is stored again after driving the vehicle for a while, the malfunction may be occurring due to vibration of the vehicle. In such a case, wiggling the ECUs or wire harness while performing the inspection below may help determine the cause of the malfunction.

PROCEDURE

1.	**CHECK FOR DTCs**

(a) Read each DTC and check the diagnosis pattern using the table below.

Chassis > Circumference Monitoring Camera Control Module > Trouble Codes
Body Electrical > Clearance Warning > Trouble Codes
Chassis > Front Recognition Camera > Trouble Codes
Body Electrical > Front Radar Sensor > Trouble Codes

PATTERN	DTC OUTPUT PART NAME (DISPLAY ON GTS)			
	CLEARANCE WARNING	CIRCUMFERENCE MONITORING CAMERA CONTROL MODULE	FRONT RECOGNITION CAMERA	FRONT RADAR SENSOR
Pattern 1	U117987	U11B687	U023587	U010487
Pattern 2	U117987	U11B687	-	-
Pattern 3	U117987	-	-	-

RESULT	PROCEED TO
Pattern 1	A
Pattern 2	B
Pattern 3	C

A ▶ **GO TO FRONT CAMERA SYSTEM** INFO

C ▶ **GO TO STEP 4**

B
▼

2.	**CHECK CAN BUS MAIN WIRE (CLEARANCE WARNING ECU ASSEMBLY)**

Pre-procedure1

(a) Disconnect the cable from the negative (-) auxiliary battery terminal.

(b) Disconnect the R36 clearance warning ECU connector.

Procedure1

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

Standard Resistance:

EWD INFO

Click Location & Routing(R36)
Click Connector(R36)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION	RESULT
R36-35 (CAPH) - R36-36 (CAPL)	Cable disconnected from negative (-) auxiliary battery terminal	54 to 69 Ω	Ω

Post-procedure1

(d) None

OK ▶ **REPLACE CLEARANCE WARNING ECU ASSEMBLY**

NG ▼

3.	**CHECK CAN BUS MAIN WIRE (PARKING ASSIST ECU)**

Pre-procedure1

(a) Reconnect the R36 clearance warning ECU connector.

(b) Disconnect the R34 parking assist ECU connector.

Procedure1

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

Standard Resistance:

EWD INFO

Click Location & Routing(R34)
Click Connector(R34)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION	RESULT
R34-8 (CAPH) - R34-9 (CAPL)	Cable disconnected from negative (-) auxiliary battery terminal	54 to 69 Ω	Ω

Post-procedure1

(d) None

OK ▶ **REPLACE PARKING ASSIST ECU**

NG ▶ **REPAIR OR REPLACE CAN MAIN WIRE OR CONNECTOR**

4.	**CHECK PARKING ASSIST ECU**

Pre-procedure1

(a) Disconnect the U10 forward recognition camera connector.

(b) Disconnect the A21 millimeter wave radar sensor assembly connector.

(c) Disconnect the R36 Clearance warning ECU assembly connector.

Procedure1

(d) Using an oscilloscope, check the waveform.

OK:

Click Location & Routing(R36)
Click Connector(R36)

TESTER CONNECTION	CONDITION	TOOL SETTING	SPECIFIED CONDITION
R36-35 (CAPH) - R36-36 (CAPL)	Ignition switch ON	1V/DIV., 100μs./DIV.	Pulse generation

Post-procedure1

(e) None

OK ▶ **REPLACE CLEARANCE WARNING ECU ASSEMBLY**

NG ▶ **REPLACE PARKING ASSIST ECU**