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<b>Model Year Start:</b> 2023	<b>Model:</b> Prius Prime	<b>Prod Date Range:</b> [03/2023 - ]
<b>Title:</b> M20A-FXS (ENGINE CONTROL): SFI SYSTEM: U016487; Lost Communication with HVAC Control Module Missing Message; 2023 - 2024 MY Prius Prius Prime [03/2023 - ]		

<b>DTC</b>	<b>U016487</b>	<b>Lost Communication with HVAC Control Module Missing Message</b>
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## MONITOR DESCRIPTION

The ECM and HVAC control module send and receive signals via CAN communication.

If a communication error occurs between the ECM and HVAC control module, the ECM illuminates the MIL and stores this DTC.

DTC NO.	DETECTION ITEM	DTC DETECTION CONDITION	TROUBLE AREA	MIL	DTC OUTPUT FROM	PRIORITY	NOTE
U016487	Lost Communication with HVAC Control Module Missing Message	<p>All of the following conditions are met for 10.6 seconds or more (1 trip detection logic):</p> <ul style="list-style-type: none"> <li>Ignition switch ON</li> <li>Auxiliary battery voltage is 10 V or higher</li> <li>No communication between ECM and HVAC control module</li> </ul>	<ul style="list-style-type: none"> <li>CAN communication system</li> <li>HVAC control module</li> <li>ECM</li> </ul>	Comes on	Engine	B	SAE Code: U0164

## MONITOR STRATEGY

Related DTCs	U0164: Lost communication with hybrid/EV HVAC control module
Required Sensors/Components (Main)	ECM
Required Sensors/Components (Related)	-
Frequency of Operation	Continuous
Duration	10.6 seconds or more
MIL Operation	Immediate
Sequence of Operation	None

## TYPICAL ENABLING CONDITIONS

Monitor runs whenever the following DTCs are not stored	None
Both of the following conditions are met	-
Auxiliary battery Voltage	10 V or higher
Ignition switch	On

## TYPICAL MALFUNCTION THRESHOLDS

Communication signal	Lost communication with HVAC control module
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## CONFIRMATION DRIVING PATTERN

### HINT:

- After repair has been completed, clear the DTC and then check that the vehicle has returned to normal by performing the following All Readiness check procedure.

[Click here](#) INFO

- When clearing the permanent DTCs, refer to the "CLEAR PERMANENT DTC" procedure.

[Click here](#) INFO

- Connect the GTS to the DLC3.
- Turn the ignition switch to ON.
- Turn the GTS on.
- Clear the DTCs (even if no DTCs are stored, perform the clear DTC procedure).
- Turn the ignition switch off and wait for at least 30 seconds.
- Turn the ignition switch to ON [A].
- Turn the GTS on.
- Wait 6 seconds or more.
- Enter the following menus: Powertrain / Engine / Trouble Codes [B].
- Read the pending DTCs.

### HINT:

- If a pending DTC is output, the system is malfunctioning.
- If a pending DTC is not output, perform the following procedure.

- Enter the following menus: Powertrain / Engine / Utility / All Readiness.
- Input the DTC: U016487.
- Check the DTC judgment result.

GTS DISPLAY	DESCRIPTION
NORMAL	<ul style="list-style-type: none"> <li>DTC judgment completed</li> <li>System normal</li> </ul>
ABNORMAL	<ul style="list-style-type: none"> <li>DTC judgment completed</li> <li>System abnormal</li> </ul>
INCOMPLETE	<ul style="list-style-type: none"> <li>DTC judgment not completed</li> <li>Perform driving pattern after confirming DTC enabling conditions</li> </ul>

### HINT:

- If the judgment result shows NORMAL, the system is normal.

- If the judgment result shows **ABNORMAL**, the system is malfunctioning.
- [A] to [B]: Normal judgment procedure.

The normal judgment procedure is used to complete DTC judgment and also used when clearing permanent DTCs.

- When clearing the permanent DTCs, do not disconnect the cable from the auxiliary battery terminal or attempt to clear the DTCs during this procedure, as doing so will clear the universal trip and normal judgment histories.

## **CAUTION / NOTICE / HINT**

### **NOTICE:**

- Vehicle Control History may be stored in the hybrid vehicle control ECU assembly if the engine is malfunctioning. Certain vehicle condition information is recorded when Vehicle Control History is stored. Reading the vehicle conditions recorded in both the freeze frame data and Vehicle Control History can be useful for troubleshooting.

Click here 

(Select Powertrain in Health Check and then check the time stamp data.)

- If any "Engine Malfunction" Vehicle Control History item has been stored in the hybrid vehicle control ECU assembly, make sure to clear it. However, as all Vehicle Control History items are cleared simultaneously, if any Vehicle Control History items other than "Engine Malfunction" are stored, make sure to perform any troubleshooting for them before clearing Vehicle Control History.

Click here 

### **HINT:**

Read freeze frame data using the GTS. The ECM records vehicle and driving condition information as freeze frame data the moment a DTC is stored. When troubleshooting, freeze frame data can help determine if the vehicle was moving or stationary, if the engine was warmed up or not, if the air fuel ratio was lean or rich, and other data from the time the malfunction occurred.

## **PROCEDURE**

<b>1.</b>	<b>GO TO CAN COMMUNICATION SYSTEM</b>
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### **HINT:**

Click here 

**NEXT**  **END**

