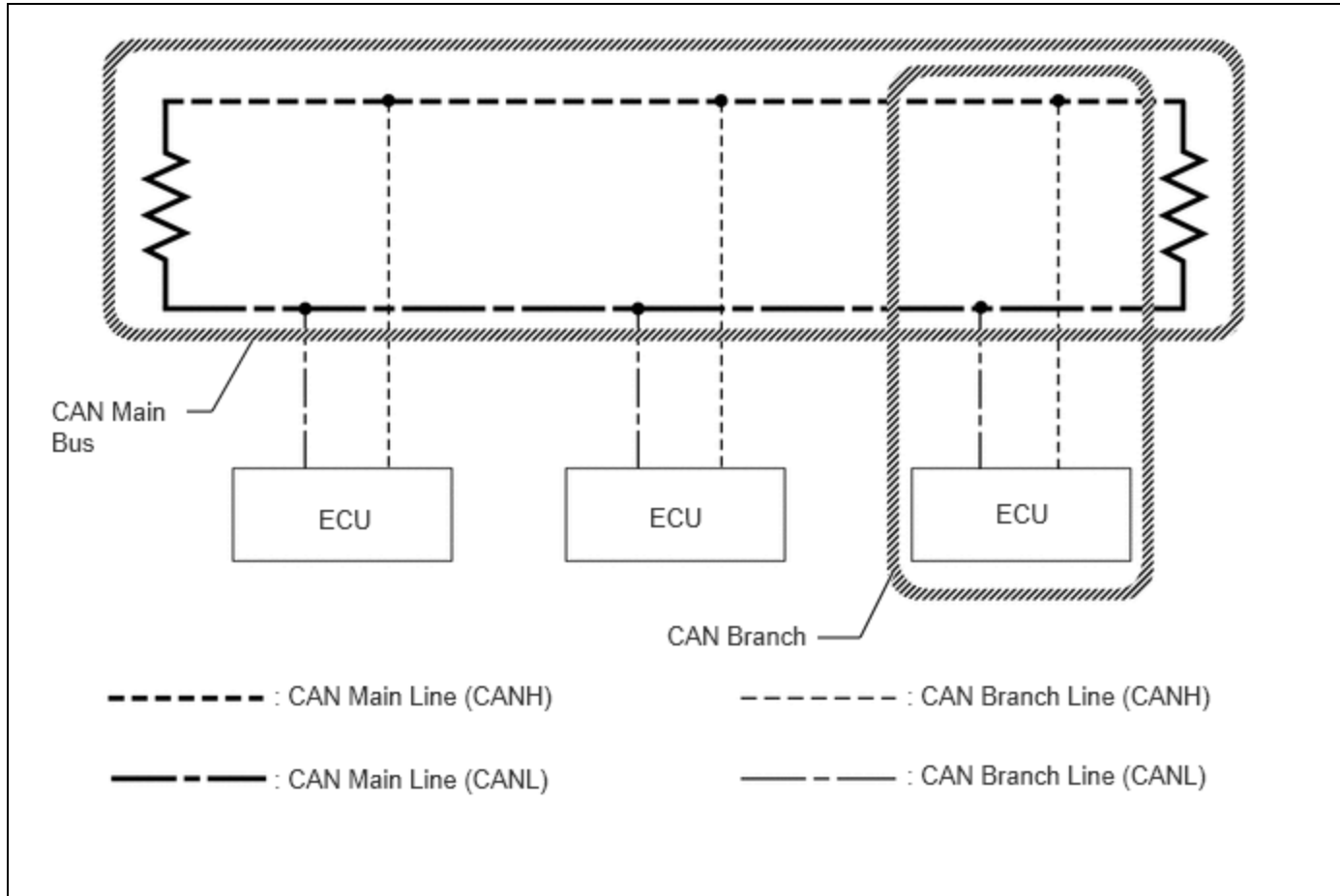


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<b>Model Year Start:</b> 2023	<b>Model:</b> Prius	<b>Prod Date Range:</b> [12/2022 - ]
<b>Title:</b> NETWORKING: CAN COMMUNICATION SYSTEM (for HEV Model): SYSTEM DESCRIPTION; 2023 - 2024 MY Prius [12/2022 - ]		

## SYSTEM DESCRIPTION

### BRIEF DESCRIPTION

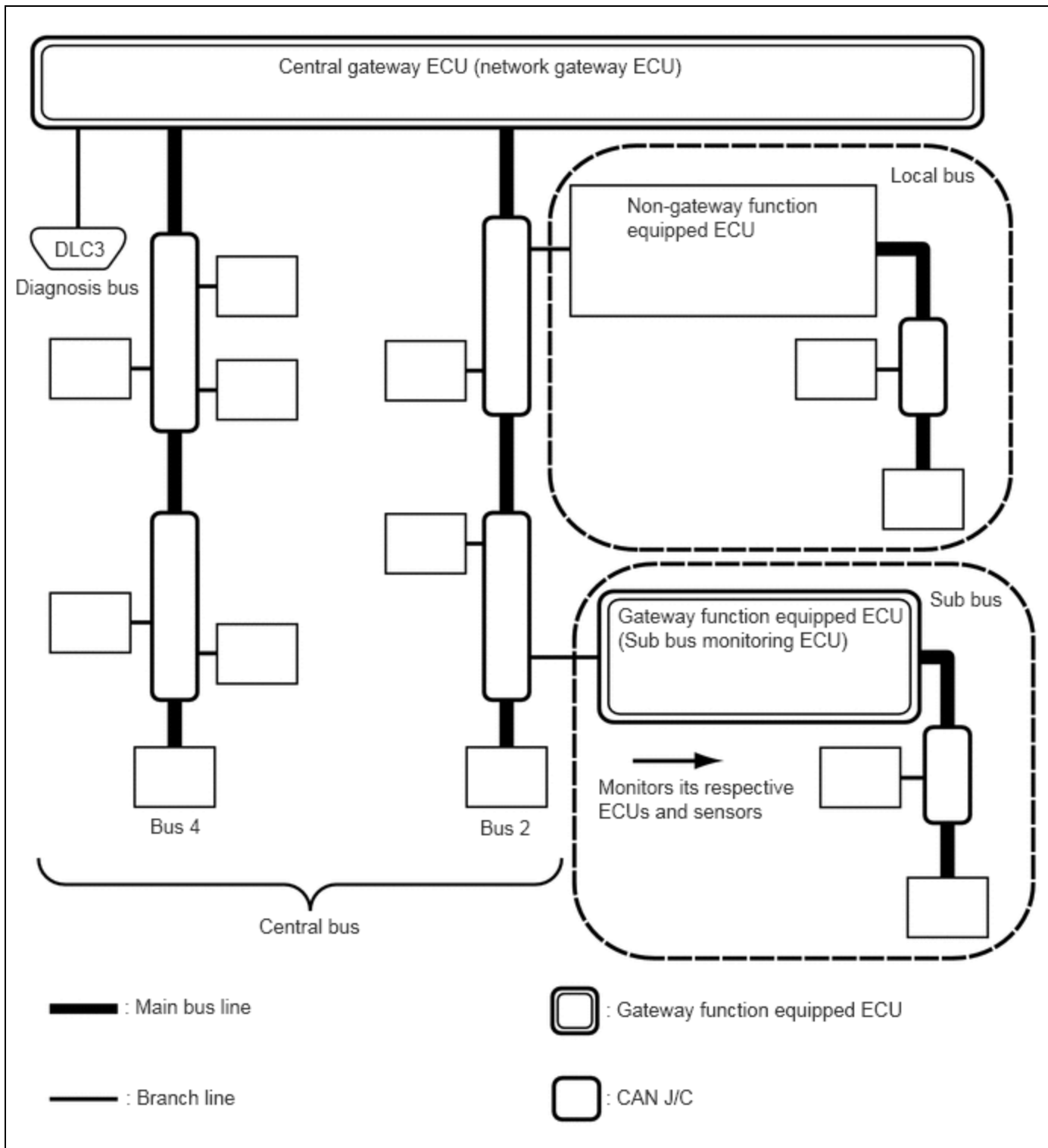
(a) The Controller Area Network (CAN) is a serial data communication system for real time application. It is a vehicle multiplex communication system which has a high communication speed and the ability to detect malfunctions.



(b) Using the CANH and CANL bus lines as a pair, CAN communication is performed using a voltage differential. (A base voltage is applied to the pair of lines and a voltage differential is created when communicating.)

(c) Many ECUs or sensors installed to the vehicle operate by sharing information and communicating with each other.

(d) 2 resistors which are necessary for communication are used in a CAN bus main line.



**DEFINITION OF TERMS**

(a) Central bus

(1) The central bus is a term used to describe all buses directly connected to the central gateway ECU (network gateway ECU).

**HINT:**

A bus is displayed as Bus on the "Communication Bus Check" screen of the GTS.

(b) Sub bus

- (1) A sub bus is a bus that has a gateway function equipped ECU in order to communicate with the central bus and other sub buses.

**HINT:**

- A sub bus is displayed as Sub bus on the "Communication Bus Check" screen of the GTS.
- When Sub bus is selected on the "Communication Bus Check" screen, ECUs and sensors connected to non-CAN networks such as LIN may also be displayed in addition to the ECUs and sensors connected to sub buses in the CAN network.

(c) Local bus

- (1) A local bus is a bus that does not have the ability to communicate with other buses. ECUs and sensors on a local bus can only communicate with other ECUs and sensors on the same bus.

**NOTICE:**

Gateway function not equipped ECU is a generic name for ECUs not connected to the central gateway ECU (network gateway ECU) with a gateway function.

(d) CAN J/C

- (1) A CAN junction connector is a connector that connects branch lines to a main bus.

(e) Main bus

- (1) A main bus line is the wire harness that runs between the 2 terminating resistors of a bus.

(f) Branch

- (1) A branch line is a wire harness that connects an ECU or sensor to a main bus line.

(g) Terminating resistors

- (1) Terminating resistors which maintain a stable signal inside the CAN bus are installed. 2 resistors of 120  $\Omega$  each located at each end of the bus are necessary.

