BODY ELECTRICAL

MULTIPLEX COMMUNICATION

■ DESCRIPTION

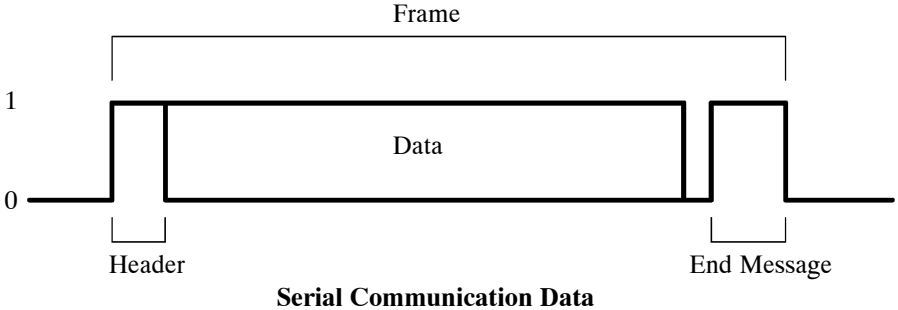
- The multiplex communication system of the new Land Cruiser (Station Wagon) uses the 3 communication protocols described below in order to achieve a streamlined wiring harness configuration.
  - CAN (Controller Area Network): A protocol is used for real-time control applications at high-speed communication rates. The CAN consists of 3 buses and is used for communication among 20 ECUs for power train, chassis and body electrical systems. ECUs with gateway functions (the network gateway ECU and main body ECU) are used to transmit data between the buses.
  - LIN (Local Interconnect Network): A protocol is used for local area networking, of which the system has a respective bus for each body electrical system.
  - AVC-LAN (Audio Visual Communication - Local Area Network): Used for communication only between the audio-visual systems.
  - Due to the introduction of the CAN system for the power train, chassis and body electrical systems, the BEAN (Body Electronics Area Network) that is used for the body electrical system of the previous Land Cruiser (Station Wagon) and some other TOYOTA models, but is not used on the new Land Cruiser (Station Wagon).
- A customized body electronics system is used, enabling the control functions of the ECUs to be set using an intelligent tester II. For details, see page BE-17.

— REFERENCE —

MPX communication uses serial communication data that consists of bits and frames in order to exchange information among the various ECUs. This allows a reduction of the amount of wiring on the vehicle.

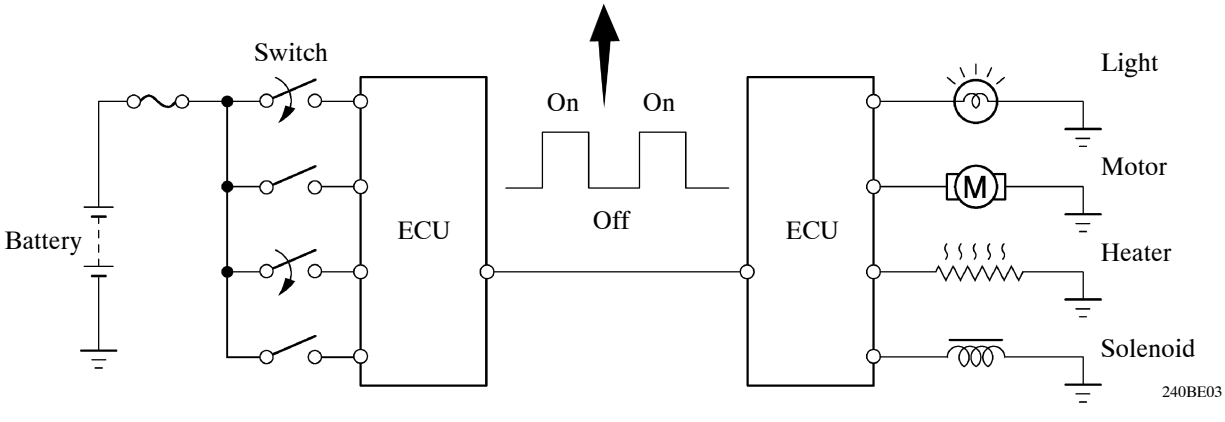
- *A bit is the basic unit of communication that is used to represent the information. A bit is represented by binary values of "0" or "1".*
- *A frame is a body of data that is transmitted together. A frame contains a header that indicates the beginning, and an end message that indicates the end.*

▶ Conceptual Drawing ◀



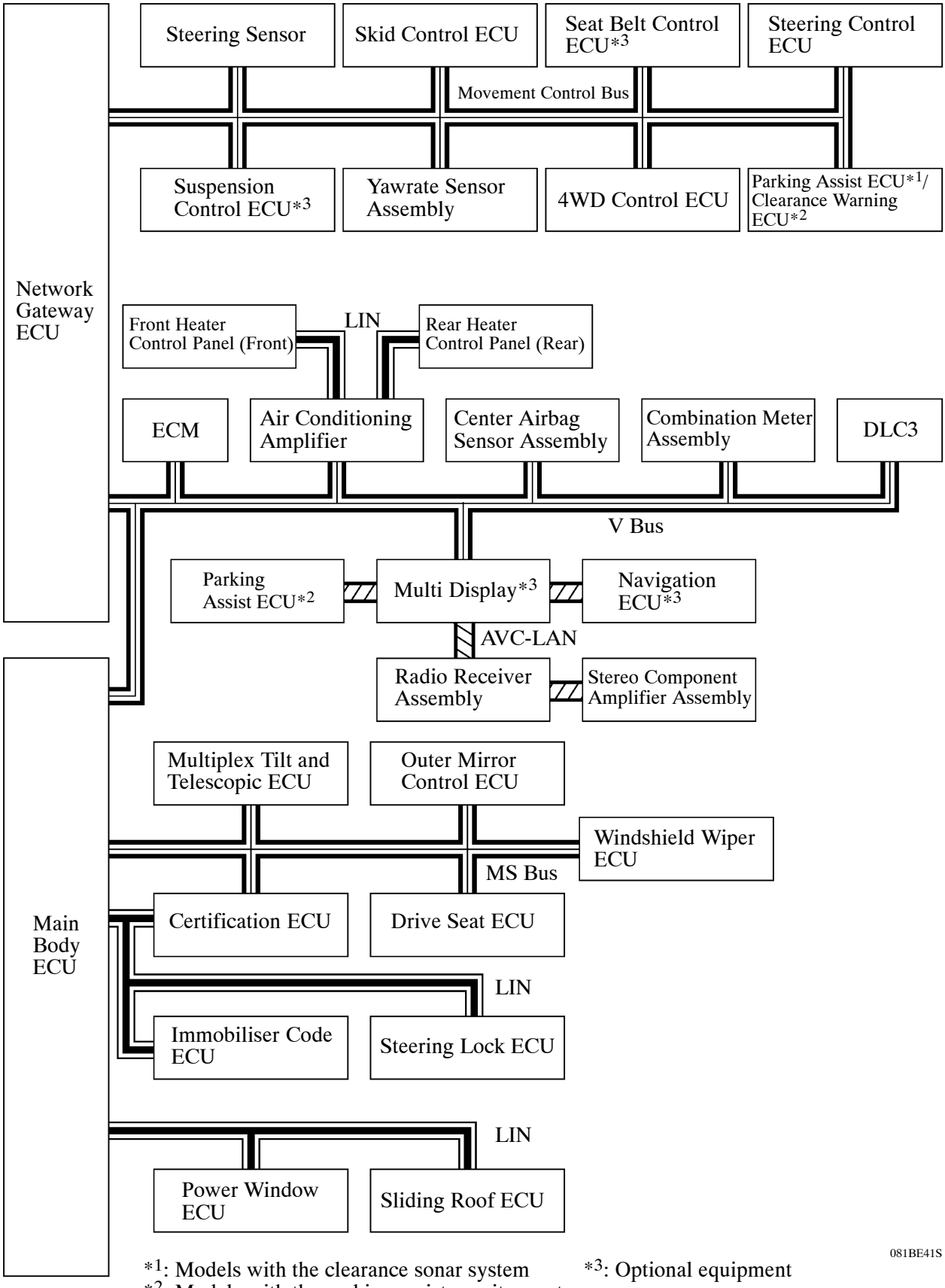
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Serial Communication Data



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▶ System Diagram ◀



081BE41S

*1: Models with the clearance sonar system
*2: Models with the parking assist monitor system
*3: Optional equipment

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