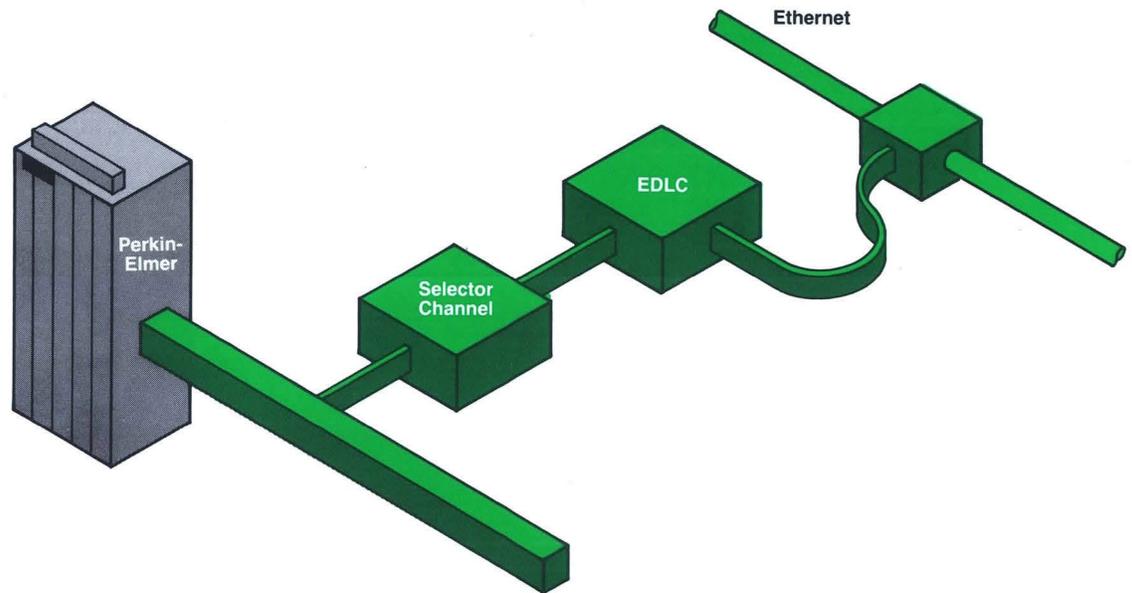


ETHERNET

Data Link Controller



Product Description

The Ethernet Data Link Controller (EDLC) provides processor-to-processor serial communication over a 10 megabits per second, Ethernet coaxial cable. The EDLC is compatible with Ethernet Version 2 and the IEEE-802.3 draft specification for Carrier Sense Multiple Access with Collision Detection (CSMA/CD) on local area networks which carry baseband serial communications.

Other Ethernet-compatible equipment, including terminal concentrators, can operate with the EDLC up to the data link level. A data communications software driver is provided to the EDLC for direct user access to the Ethernet. Functions such as frame acknowledgement, flow control, and inter-networking are the responsibility of the user software, when this driver is used.

Perkin-Elmer also supports the interconnection of Series 3200 computer

systems via the EDLC and Ethernet local area network by PENnet Plus, a general-purpose network system based on the ISO-Open Systems Interconnection reference model.

The Ethernet Data Link Controller consists of the hardware interface and transceiver required to connect a Perkin-Elmer 32-bit CPU to an Ethernet coaxial cable. A standard three-meter transceiver cable connects the CPU cabinet with the transceiver, which attaches directly to the Ethernet cable. Optional transceiver cables are also available in 15 meter and 45 meter lengths.

The Ethernet cable is available in various lengths which can be joined to form cable segments of up to 500 meters. Repeaters and point-to-point links may be obtained to interconnect up to 5 cable segments to form a maximum bus length of 2500 meters.

Features

- Coaxial cable segments up to 500 meters in length
- Up to 100 transceiver connections per coaxial cable segment
- Up to 45 meters of transceiver cable between the hardware interface and its transceiver
- Up to 2500 meters maximum station separation
- Up to 1024 stations per network
- On-board, self-test capability

Operational Characteristics

Ethernet provides equally distributed local area network access through use of the CSMA/CD access protocol. Communication sequences over the half-duplex 10 megabit/second channel are divided into packets with frame sizes ranging from 64 to 1518 bytes, complete with two 6-byte address fields and a 32-bit CRC frame check sequence for error detection.

Data to be transmitted to Ethernet is divided into packets by the network software. The

packet is then sent to the EDLC which builds a frame by adding the header and CRC information. The EDLC then transmits the frame on the Ethernet local area network.

Each transceiver receives all frames on the Ethernet. However, only those frames with the appropriate destination address are kept and passed to the CPU. After checking the frame against the CRC, the header and CRC are discarded and the data is passed to the CPU.

Specifications

Network Medium: 50 ohm coaxial cable
Network Bandwidth: 10 megabits/second
Maximum Station Separation: 2500 meters
Maximum Nodes/Network: 1024
Network Access Protocol: CSMA/CD
Maximum Station Throughput: 2 megabits/second

Interface Power Requirement: 5.8 amperes @ 5 volts DC

Operating Environment: 0 to 50 degrees C, 10-90% relative humidity (non-condensing)
EDLC Board Weight: 0.9 Kg (2 pounds)
EDLC Board Dimensions: 38.1 cm x 38.1 cm (15 in. x 15 in.)

System Requirements

Minimum Software Requirement

OS/32 Revision 7.2 or higher with ITAM support. The EDLC driver supports ITAM SVC 15 calls. For full general-purpose network support, PENnet Plus is required.

Minimum Hardware Requirement

The EDLC board must operate under a Selector Channel.

Product Numbers

M47-160 Ethernet Data Link Controller. Includes interface, internal cable, three-meter transceiver cable, transceiver unit, and user manual.
M47-161 Optional transceiver cable, 15 meters in length.
M47-162 Optional transceiver cable, 45 meters in length.

M47-163 Ethernet Local Area Network Coaxial Cable. 25 meters. Includes two segment terminators and one barrel connector.
M47-164 Same as M47-163, except length is 50 meters.
M47-165 Same as M47-163, except length is 100 meters.

Documentation

47-062 Ethernet Data Link Controller Installation and Theory of Operations Manual

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The information contained herein is intended to be a general description and is subject to change with product enhancement.

EVERYWARE... EVERYWARE... EVERYWARE... EVERYWARE...

PERKIN-ELMER

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