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VLAN-E2 - VME LAN CONTROLLER

- Introduction
- Key Features
- Solutions
- Technical Specifications

Ethernet Communications Controller

The VLAN-E2 is an intelligent, high performance Ethernet communications controller for interfacing VME systems to IEEE 802.3 LANs. The VLAN-E3 offers block mode transfers for improved data throughput, a user-configurable Ethernet port available via the front panel or P2 connector and a 16 MHz 68020 microprocessor for on-board protocol processing or link-level support. The board features 1Mbyte DRAM, 256Kbytes EPROM, two asynchronous serial I/O ports and optional on-board TCP/IP software. The VLAN-E2 provides an Ethernet interface for any 6U VME system, including mini/super-minicomputers and data communications equipment, such as routers and gateways. It is also ideal for cost-effective, high speed, point-to-point data transfers between nodes in Ethernet networks. The VLAN-E2 provides an inexpensive way to add Ethernet capabilities to VMEbus systems.

Key Features

- VMEbus (6U) board rated for commercial environments, 0 to 70C
- Ethernet interface connection available at front or rear P2 connector
- 32-bit 68020 CPU, 1Mbyte no wait state, with parity DRAM
- Power Up Self Test (PUTS) software provided on-board
- Provides an interface suited for high-speed cost effective point to point data transfer applications

Solutions

- Used in commercial and custom built systems to off-load the host processor from high volume Ethernet traffic and complex protocol processing
- Provides efficient connectivity in large multiple LAN networks, for concentrators, and large custom implementations.

Technical Specifications

CPU Operation Processor:

68020 CPU: 16MHz
VMEbus System Clock
16MHz ±0.01% with 50% duty cycle
On-Board Memory Dynamic RAM

1 Mbyte of parity-protected, hardware-refreshed dynamic RAM shared between CPU, LANCE and other VMEbus masters
EPROM
Up to 256Kbytes in two sockets
NVRAM
2Kbytes of NVRAM with time-of-day clock installed, or up to 8KBytes of EEPROM or SRAM
VMEBUS COMPLIANCE
Master/Slave
A32, A24, A16: D32, D16, D08(E0),
UAT:D32
BLT: D32, D16 or D08(E0) (processor assisted)
RMW: D32, D16, or D08(E0) (adapted)
Address Pipelining (slave only)
4-Level System Arbiter (Slot 1)
BR3-BR0
Priority Schemes
SGL, PR1, RRS, PRRS (Priority round robin)
Bus Timer
BTO (16), BTO(32), BTO(64), BTO(128)
Interrupt Handler
IH(1-7), D08(0)
Interrupter
I(1-7), DO8()), ROAK
Requester
RWD, ROR, Fair
Location Monitor
Monitors VMEbus address range from 2 bytes to 64Kbytes and any AM code. Programmable frequency of interrupts to on-board CPU.

Input/Output

LANCE/SIA

The Local Area Network Controller for Ethernet (LANCE)

and Serial Interface Adaptor (SIA) provide the LAN interface. This chip set supports the IEEE 802.3 Ethernet protocol. A transformer provides isolation between the VLAN-E2 and the external transceiver. The Ethernet connection is available via a 9-pin D connection on the front panel or through P2.

Serial I/O
Two independently configurable, asynchronous serial channels using 68681 DUART
Asynchronous Operation
50baud to 38.4K baud
5- to 8-bit characters
Error detection on framing, overrun and parity
Link Drivers/Receivers
RS-232-C standard Timer
VBIC Millisecond Marker: Programmable timer for interrupting every 1 or
10 milliseconds
Front Panel Indicators RUN, HALT, SYSFAIL indicators 8 red software-controlled status LEDs
6 front-panel, software-readable switches
Push Buttons ABORT and RESET
Physical Characteristics
Board Dimensions
The VLAN-E2 complies with the VMEbus specification for a double-height board (6U size): 160mm X 233.35mm (6.299 in X 9.187 in.)

Operating Requirements

Temperature: 0º TO 70º C (at board surface)
Relative Humidity: 0 to 95% (noncondensing)

Power

+5V:	± 5% at 3A typical (w/o SCI modules)
+12V:	± 5% at 200mA typical
+12V:	3A fused, if external Ethernet transceiver is powered by VLAN-E2

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