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CHAPTER 1
GENERAL INFORMATION

Introduction

This manual provides general information, preparation and installation instructions, operating instructions, and functional description for the MVME337 I/O Engine modules.

Model Designations

The MVME337 is available in several configurations which are summarized in the following table. The main differences between the versions are processor speed and memory size.

MVME337 Model Designations

MODEL NUMBER	CLOCK SPEED	ONBOARD MEMORY
MVME337-1	20.00	1Mb
MVME337A	16.67	4Mb

Features

The features of the MVME337 include:

- MC68020 virtual memory microprocessor with 32-bit address and data at 16.67 MHz or 20.00 MHz.
- 1Mb of shared local DRAM with no wait cycles, 32-bit wide; accessible from the VMEbus with optional parity (MVME337 version only).
- 4Mb of shared local DRAM with one wait cycle, 32-bit wide; accessible from the VMEbus with optional parity (MVME337A version only).
- Multimaster VME Subsystem Bus (VSBbus) interface; 32-bit secondary bus support.
- VMEbus interface; 32-bit address and data.

Table 1-1. MVME337 Specifications (cont'd)

CHARACTERISTICS	SPECIFICATIONS
MVME337-1	+5 Vdc, 7.00 A maximum (5.8 A typical) +12 Vdc, 50 mA maximum (10 mA typical) -12 Vdc, 90 mA maximum (30 mA typical) **NOTE:** Backplane Connectors: The P2 backplane is not only necessary for 32-bit operation but is also used to connect +5 V to the MVME337 module for current distribution. The module draws 5.6 A under typical operation and should not be operated without a P2 backplane.
Addressing	
System Size (Total on-/off-board)	32-bits = 4Gb linear address space
ROM/EPROM	Two EPROM/ROM sockets for 16Kb or 32Kb devices using +5 Vdc only (JEDEC standard 28-pin devices; user supplied).
Serial I/O ports	Two multi-protocol serial communications channels with RS-232C interface (connection made via two DB-9 connectors from the front panel).
Timer	A Z8036A programmable timer module with three independent 16-bit timers.
Interrupts	Any seven possible VMEbus interrupts can be received by the MVME337. VSBbus has interrupt capability, as do most onboard devices.
On-board memory	
MVME337-1	1Mb, 0 wait state without parity and 1 wait state with parity.
MVME337A	4Mb, 1 wait state with or without parity.

Table 1-1. MVME337 Specifications (cont'd)

CHARACTERISTICS	SPECIFICATIONS
Temperatures	
Operating	0 to 50 degrees C (inlet air temperature with forced air cooling)
Storage	-40 to 85 degrees C
Relative humidity	5% to 95% (noncondensing)
Physical size (PCB):	(not including the front panel)
Height	9.187 inches (233.35 mm)
Depth	6.299 inches (160.0 mm)
Thickness	0.063 inches (1.6 mm)
Connectors:	
VMEbus/VSBbus	DIN triple row, 96-pin male (P1, P2)
RS-232C	DB-9, 9-pin female (J9, J10)

Cooling Requirements

VMEmodules are specified, designed, and tested to operate reliably with an incoming air temperature range from 0 degrees C to 50 degrees C (32 degrees F to 122 degrees F) with forced air cooling. Temperature qualification is performed in a standard chassis. Twenty-five watt load boards are inserted in the two card slots, one on each side, adjacent to the board under test to simulate a high power density system configuration. An assembly of three axial fans, rated at 100 CFM per fan, is placed directly under the MVME card cage. The incoming air temperature is measured between the fan assembly and the card cage where the incoming airstream first encounters the board under test. Test software is executed as the module is subjected to ambient temperature variations. Case temperatures of critical, high power density integrated circuits are monitored to ensure component vendors specifications are not exceeded.

While the exact amount of airflow required for cooling depends on the ambient air temperature and the type, number, and location of boards and other heat sources, adequate cooling can usually be achieved with 10 CFM flowing over the module. Less air flow is required to cool the module in environments having lower maximum ambients. Under more favorable thermal conditions it may be possible to operate the module reliably at higher than 50 degrees C with increased air flow. It is important to note that there are several factors, in addition to the rated CFM of the air mover, which determine the actual volume of air flowing over a module.

FCC Compliance

The MVME337 module is tested in an FCC-compliant chassis, and meets the requirements for Class A equipment. FCC compliance was achieved under the following conditions:

1. Shielded cables on all external I/O ports.
2. Cable shields connected to earth ground via metal shell connectors bonded to a conductive module front panel.
3. Conductive chassis rails connected to earth ground. This provides the path for connecting shields to earth ground.
4. Front panel screws properly tightened.

For minimum RF emissions, it is essential that the conditions above be implemented; failure to do so could compromise the FCC compliance of the equipment containing the modules.

General Description

The MVME337 is a high performance MC68020 microprocessor-based module implemented on a VME double-high, single-wide form-factor. The MVME337 incorporates an MC68020, a 32-bit address and data microprocessor, a high level multiprocessor CSR, and 1Mb or 4Mb of fast DRAM. Other main features provided include interfaces to the VMEbus and the VSBbus.

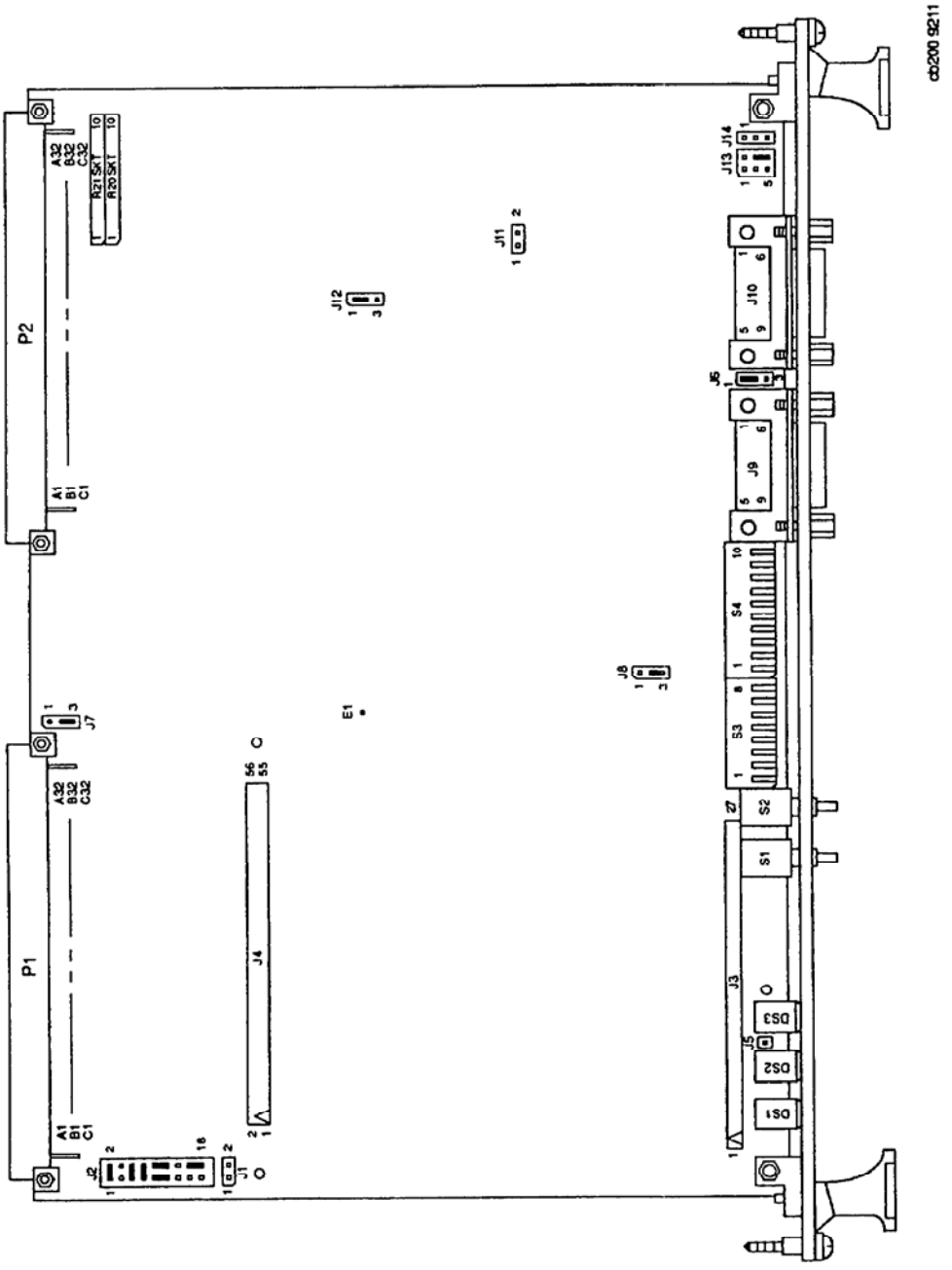

Figure 2-1. MVME337 Header Locations

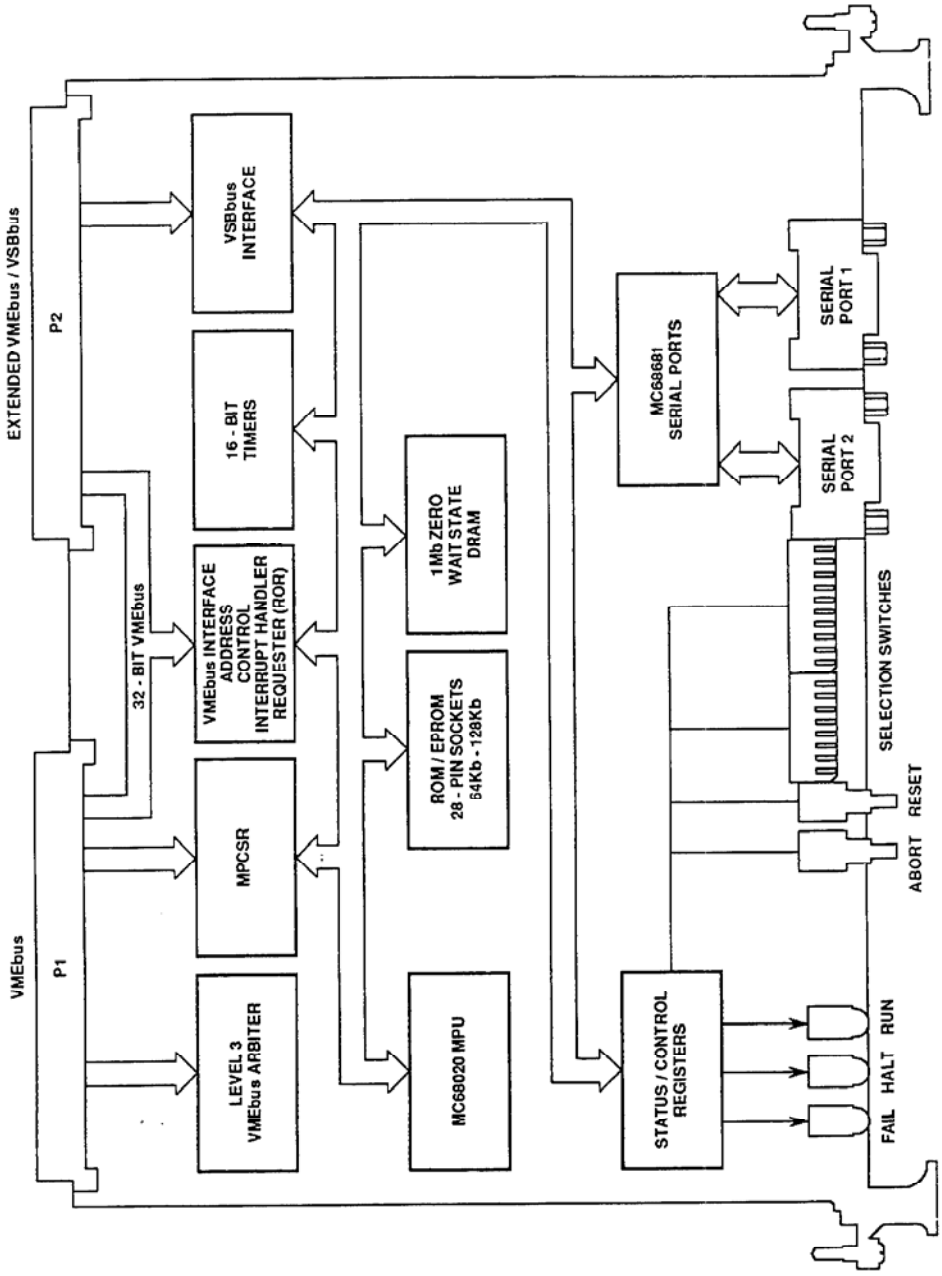

Figure 4-1. MVME337-1 Block Diagram