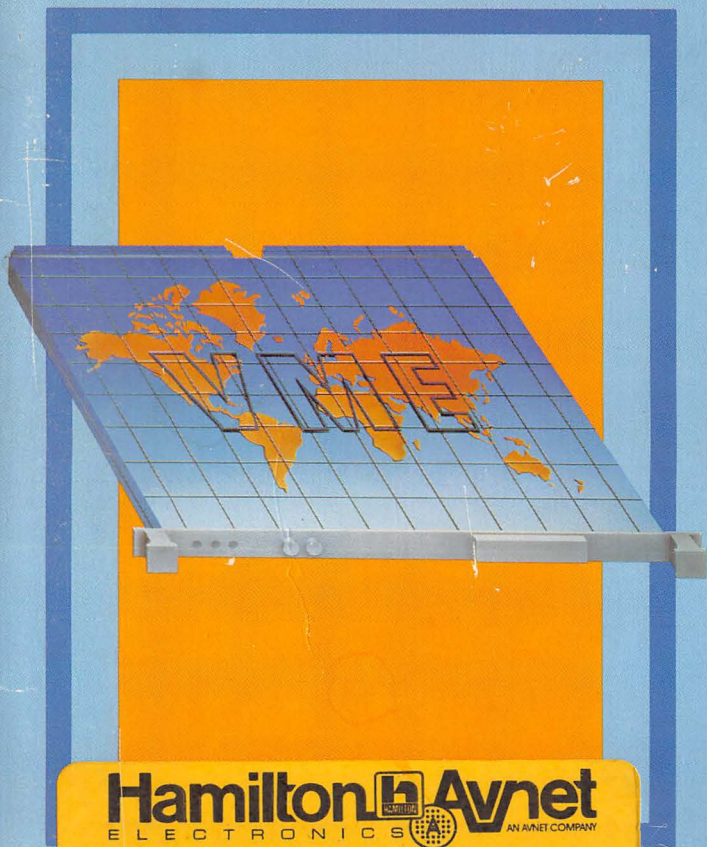


BR308
REV2

VMESystem Products



Hamilton  **Aynet**
ELECTRONICS  AN AINET COMPANY

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Cust. Service (408) 743-3325



MOTOROLA
Microcomputer Division

Motorola VMEsystem Products

Motorola's "open system" approach provides a high degree of system-level configurability by allowing users to choose from a wide selection of highly compatible, pretested building blocks. These modular subassemblies are headed by a series of 25 mono-board microcomputers/processor modules (including the MVME130/131/133/135 32-bit MC68020-based machine) and supported by a host of memories, intelligent peripheral controllers, networking interfaces, I/O Channel expansions, and a full complement of chassis, accessories, and software.

Motorola's VMEsystem products also offer the ability to intermix 8, 16, and/or 32-bit products within a single bus structure... multi-vendor support from over 250 vendors manufacturing over 1500 VMEbus-compatible products... and formal industry-wide standardization by both IEEE and IEC.

All VMEsystem products are based on the Eurocard standard for electronics hardware packaging. This widely accepted standard calls for both single-high boards (100mm x 160mm) and double-high boards (234mm x 160mm). The Eurocard standard also calls for the use of DIN pin and socket connectors, giving VMEsystem interconnects rigid and virtually gas-tight seals. These DIN connectors, together with mechanically stiffened front panels (for secure attachment to the card rack assembly), have made VMEsystem products the logical choice for harsh industrial applications where invulnerability to shock, vibration, and corrosion are basic requirements.

VMEsystem: the design solution that not only challenges today's technological limits, but anticipates tomorrow's progress as well.

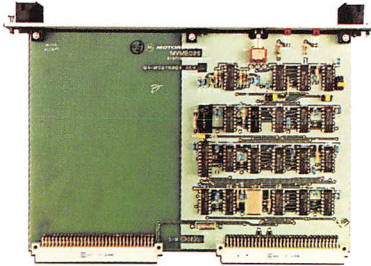
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VMEbus Modules

SYSTEM CONTROLLER MODULES

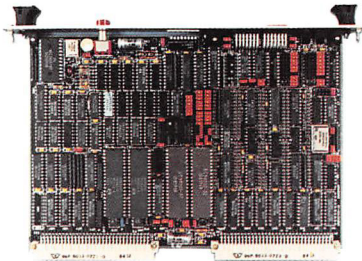
MVME025



System Controller Module

- VMEbus system clock
- System reset and test
- Round-robin and priority VMEbus arbitration
- Global bus arbitration
- Designed to be used with the MVME120 family

MVME050

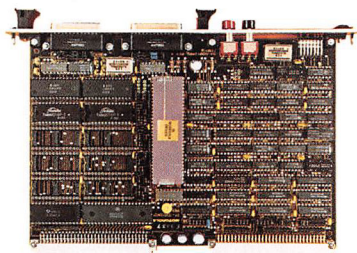


System Controller and Utility Module

- VMEbus system and serial clocks
- Priority VMEbus arbitration
- Two Async/Sync ports and one printer port
- Global bus interrupt generation
- Eight RAM/EPROM sockets
- Real-time clock/calendar and two digit diagnostic display
- Power-up system reset
- Serial and parallel port expansion provided by MVME701A (see pg 35)
- Designed to work with the MVME120 family

MONOBOARD MICROCOMPUTERS AND PROCESSOR MODULES

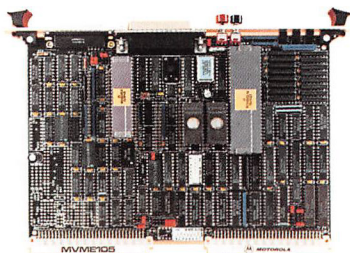
MVME101



16/32-bit Monoboard Microcomputer Module

- 8 Mhz MC68000 MPU-based
- Two serial and two parallel ports
- Eight sockets for 2K to 32Kb RAM/ROM devices (user-provided)
- Three 16-bit programmable counter/timers

MVME105



16/32-bit Monoboard Microcomputer

- 10 Mhz MC68010 MPU-based
- 512 Kb shared zero wait-state DRAM
- Dual multiprotocol serial ports — RS232C and RS485/422
- 8-bit parallel I/O with handshake and control
- Two sockets for EPROM
- Two sockets for EPROM/EEPROM/SRAM

VMEbus Modules

MVME104

- Same as MVME105 with the addition of I/O Channel interface

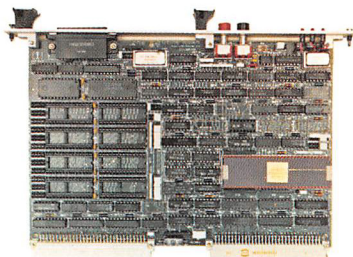
MVME106

- Same as MVME105 with the addition of a 5¼" floppy disk interface

MVME107

- Same as MVME105 with the addition of SCSI bus interface

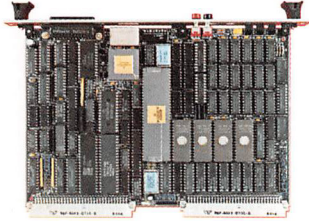
MVME110-1



16/32-bit Monoboard Microcomputer Module

- 8 Mhz MC68000 MPU-based
- One serial port
- One I/O Channel interface
- Eight sockets for 2K to 32Kb RAM/ROM devices (user-provided)
- Three 16-bit programmable counter/timers

MVME117-3



16/32-bit Monoboard Microcomputer Module

- 10 Mhz MC68010 MPU-based
- 512 Kb zero wait-state DRAM
- Battery backed-up clock/calendar
- Four RAM/ROM sockets
- Socket for MC68881 Floating Point Coprocessor
- SCSI bus interface
- Conversion from DIN to industry standard connectors for serial, parallel, and SCSI Bus interfaces provided by MVME708-1 (see pg 37)

MVME117-3FP

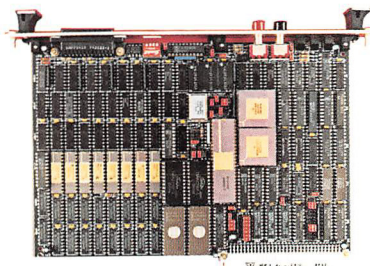
- Same as MVME117-3 with the addition of MC68881.

MVME117-4

- Same as MVME117-3 except no SCSI bus interface.

VMEbus Modules

MVME121



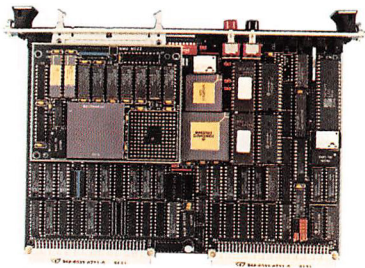
16/32-bit Processor Module

- 10 Mhz MC68010 MPU-based
- MC68451 MMU
- 4 Kb zero wait-state CACHE
- 512 Kb dual-ported DRAM with byte parity
- One serial port
- Easy eject handles
- Designed to be used with MVME025, MVME050, or other VMEbus system controller module (see pg 4)

MVME123

- Same as MVME121 except 12.5 Mhz MC68010 MPU, and no MC68451 MMU

MVME130



32-bit Monoboard Microcomputer Module

- 12.5 Mhz MC68020 MPU-based
- Sockets for MC68881 Floating Point Coprocessor and MC68851 Demand Paged Memory Management Unit (user-provided)
- MVMX32bus private high-speed memory bus interface
- Dual multiprotocol serial I/O ports
- Two twenty-eight pin sockets for up to 16 Kb RAM/ROM devices (user-provided)
- RS-232C serial I/O expansion provided by MVME707A (see pg 37)

MVME130COF

- Same as MVME130 with the addition of MC68881 Floating Point Coprocessor.

MVME130DON

- Same as MVME130 except 16.67 Mhz clock.

MVME130DOF

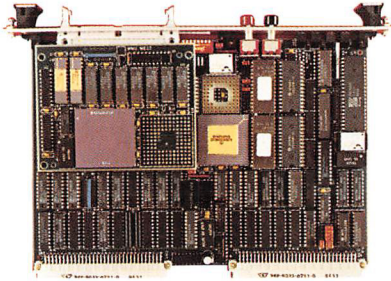
- Same as MVME130COF except 16.67 Mhz clock.

VMEbus Modules

MVME130XT

32-bit Monoboard Microcomputer

- Two board set
- Includes MVME130DOF
- 16 Kb instruction/data zero wait-state CACHE



32-bit Monoboard Microcomputer

- Same as MVME130 except Hardware Memory Management Unit provided (M68KVMMB851)

MVME131COF

- Same as MVME131 with the addition of MC68881 Floating Point Coprocessor.

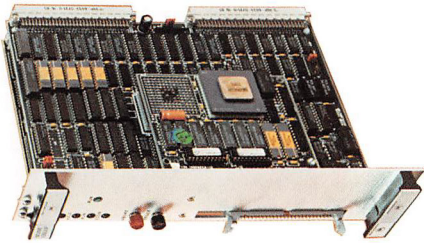
MVME131DON

- Same as MVME131 except 16.67 Mhz clock.

MVME131DOF

- Same as MVME131COF except 16.67 Mhz clock.

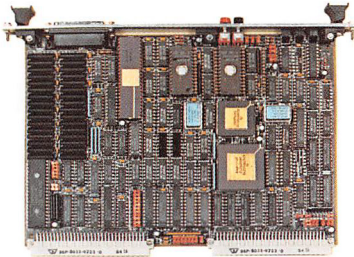
MVME131XT



32-bit Monoboard Microcomputer

- Two board set
- Includes MVME131DOF
- 16 Kb instruction/data zero wait-state CACHE

MVME133



32-bit Monoboard Microcomputer

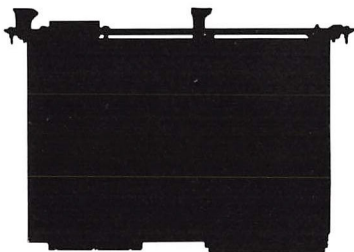
- 12.5 Mhz MC68020 MPU-based
- MC68881 Floating Point Coprocessor
- A24/D32 shared 1 Mb DRAM
- Dual Multiprotocol Serial Ports
 - RS232C drivers and receivers (1 port)
 - RS485/422 drivers and receivers (1 port)
- Sockets for 4 EPROM/ROM/EEPROM devices
- VMEbus System Controller Functions

MVME133-1

- Same as MVME133 except 16.67 Mhz MC68020 MPU.

VMEbus Modules

MVME135

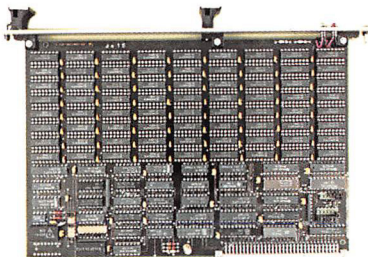


32-bit Monoboard Microcomputer Module

- 16.67 Mhz MC68020 MPU-based
- MC68881 Floating Point Coprocessor
- MC68851 Demand Paged Memory Management Unit
- 1 Mb Shared DRAM
- VME Subsystem Bus (VSB) Interface
- Two RS-232C serial ports
- Two twenty-eight pin sockets for ROM/EPROM devices
- VMEbus System Controller functions

DYNAMIC MEMORY MODULES

MVME202



512 Kb Interleaved DRAM Memory Module

- 250 ns read access time (no parity)
- 285 ns read access time (parity)
- 200 ns write access time
- 360 ns cycle time
- Byte parity checking
- A24/D16 user-selectable memory map assignment

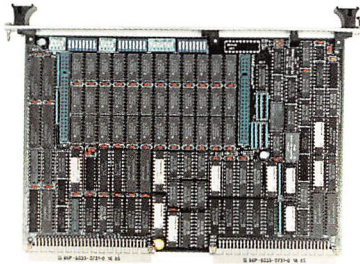
MVME222-1

- Same as MVME202 except 1024 Kb DRAM

MVME222-2

- Same as MVME202 except 2048 Kb DRAM

MVME204-1



1024 Kb Interleaved Dual-Ported DRAM Memory Module

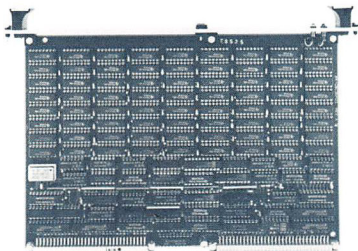
- VMEbus & MVMX32bus (high-speed private memory bus) interface
- Byte parity checking
- A32/D32 user-selectable memory map assignment
- Designed to be used with MVME130/131 (see pg 8)

MVME204-2F

- Same as MVME204-1 except faster 1 wait-state
2 Mb DRAM

VMEbus Modules

MVME225-1



A32/D32 Interleaved DRAM

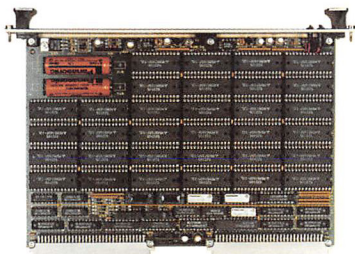
- VMEbus 1 Mb Dynamic RAM with byte parity and full A32/D32
- VMEbus interface with user selectable memory map

MVME225-2

- Same as MVME225-1 except 2 Mb DRAM

CMOS RAM MEMORY MODULES

MVME215-1



CMOS RAM Memory Module

- High speed 256 Kb CMOS RAM (230 ns typical)
- 8/16/32-bit data bus width
- 24/32-bit address bus width
- Programmable address modifier codes
- On-board battery backup and power monitor

MVME215-2

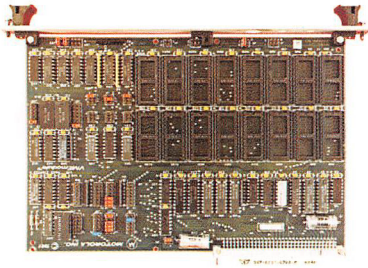
- Same as MVME215-1 except 512 Kb CMOS RAM

MVME215-3

- Same as MVME215-1 except 1 Mb CMOS RAM

STATIC RAM/ROM MODULES

MVME211

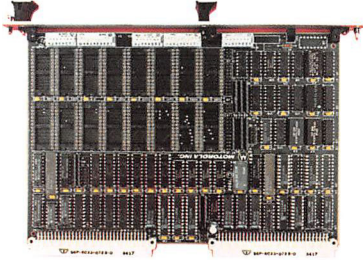


A24/D16 Static RAM/ROM Memory Module

- 16 sockets for user-provided SRAM/EPROM/ROM memory
- Up to 1 Mb EPROM/ROM and 128 Kb RAM capacity
- Device access time selectable from 35 to 510 ns

VMEbus Modules

MVME214

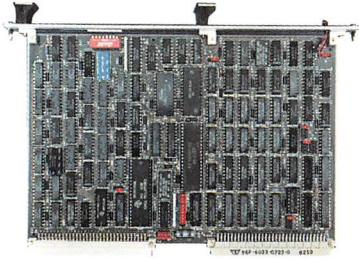


A32/D32 Static RAM/ROM Memory Module

- 16 sockets for user-provided SRAM/EPROM/ROM memory
- VMEbus & MVMX32bus (private memory bus) interface
- Up to 1 Mb EPROM/ROM and 128 Kb RAM capacity
- Device access time selectable from 100 to 400 ns
- Designed to work with MVME130/131

GPIB INTERFACE MODULE

MVME300

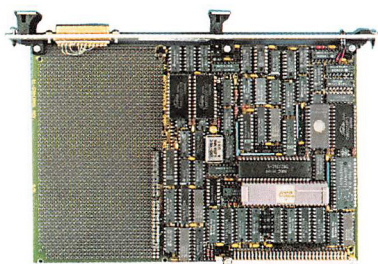


GPIB IEEE488 Listener/Talker/Controller Module

- DMA interface
- Burst or byte mode data transfers (up to 500 Kb/sec)
- Error checking and status display

CUSTOM PERIPHERAL INTERFACE MODULE

MVME310

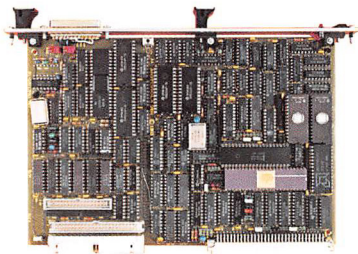


Custom Peripheral Interface Module

- Serial port
- MC68121 universal interface controller
- Four channel DMA
- Large wire wrap area
- 4 Kb dual-ported SRAM buffer (expandable up to 32 Kb user-provided)
- Up to 32 Kb user-provided RAM/ROM/EPROM user-provided

INTELLIGENT PERIPHERAL CONTROLLER MODULES

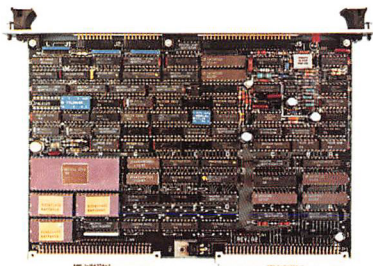
MVME319



Intelligent Floppy-Tape Controller and SASI/SCSI Interface Module

- Control of Cipher Floppy-Tape and/or floppy disk drives
- Supports up to eight mini-winchester disk drives via XEBEC or Adaptech SASI/SCSI controller
- Four-channel DMA
- 32 Kb dual-ported RAM

MVME320A



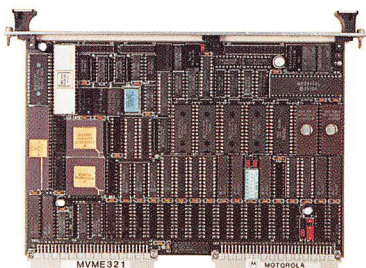
Winchester/Floppy Controller Module

- Provides high performance data channels between system and ST506 winchester and/or floppy drives
- Up to a combination of 2 winchester and 2 floppy drives or four floppy drives
- Interface functions provided by optional MVME702A (see pg 36)
- Front mount cables

MVME320A-1

- Same as MVME320A except for side mount cables

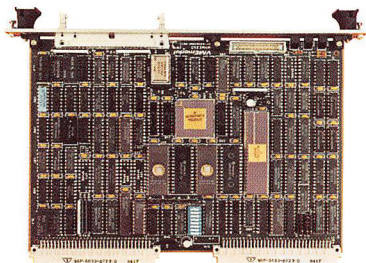
MVME321



Intelligent Winchester/Floppy Controller

- MC68010-based
- High speed DMA (8 Mbyte/sec)
- Multi-track CACHE memory (32 Kb static RAM)
- 1:1 interleave on Winchester

MVME350

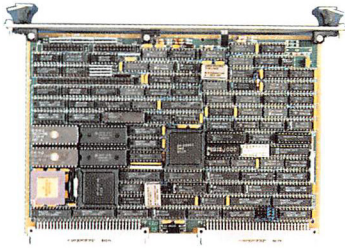


Intelligent Streaming Tape Controller Module

- QIC-02 Tape Controller
- MC68010 based
- 128 Kb buffer RAM
- Firmware supports buffered pipe system interface protocol

VMEbus Modules

MVME360



SMD Disk Controller

- MC68000 based
- One to one interleaving
- Supports 10 to 24 Mbit/sec drives
- Intelligent CACHE algorithm
- Ultra high speed DMA, A32:D32

MVME360-UX

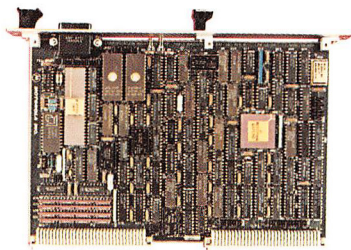
- Same as MVME360 except includes UNIX driver

MVME360-VX

- Same as MVME360 except includes VERSAdos driver

INTELLIGENT COMMUNICATION MODULES

MVME330/330-1



Ethernet Node Processor/LAN Controller Communication Module

- Based on MC68000 and AM7990 Lance Ethernet controller
- 10 Mbps Ethernet interface
- Kernel software for data transfer (rates up to 130 1-Kb packets/sec optional)
- 128 Kb DRAM (MVME330)/512 Kb DRAM (MVME330-1)

MVME330-2

- Same as MVME330-1 except based on MC68010

MVME330-VX/330-1VX/330-2VX

- Same as MVME330/330-1 with the addition of network software including XNS host-resident utilities, drivers, and protocol software for VERSAdos Operating System

MVME330-UX/330-1UX/330-2UX

- Same as MVME330/330-1 with the addition of network software including XNS host-resident utilities, drivers, and protocol software for SYSTEM V/68 Operating System

VMEbus Modules

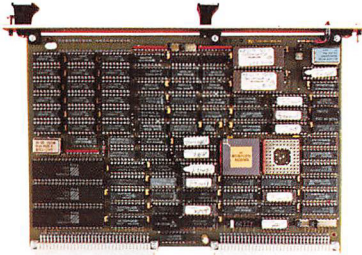
MVMESKIT-UX

- Ethernet LAN starter kit which includes:
 - SYSTEM V/68 CMS XNS software on 5¼" floppy
 - Two MVME330's
 - Two Ethernet transceivers
 - Two transceiver cables (5 meters)
 - Two coaxial terminators
 - Ethernet coax cable (24.6 meters)
 - Installation kit
 - Tap block

MVMESKIT-VX

- Same as MVMESKIT-UX except with VERSAdos CMS XNS on 5¼" floppy

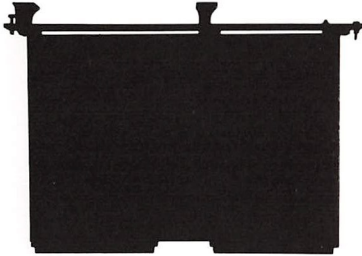
MVME331



Intelligent Communication Controller Module

- 10 Mhz MC68010 MPU-based
- Six serial I/O ports
- Either RS-232C or RS-422 protocols
- 128 Kb of DRAM for data buffering
- Up to 9600 baud bidirectional data transfers on all channels simultaneously
- Requires MVME705A I/O Transition Module (see pg 36)

MVME332



Intelligent Communications Controller Module

- 10 Mhz MC68010 MPU-based
- Eight serial I/O ports
- Requires no I/O transition module

MVME333

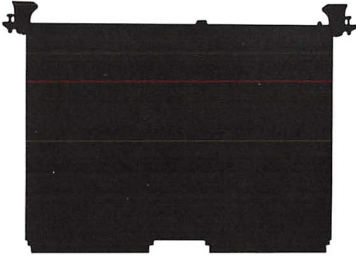
- Same as MVME331 with the addition of a high-speed four-channel DMA (up to 1 Mb/sec on one DMA-supported channel)

MVME333-2

- Same as MVME333 except 512 Kb DRAM

VMEbus Modules

MVME334*



X.25 Communication Controller

- MC68010-based
- Two channel X.25/four channel server
- VRTX kernal

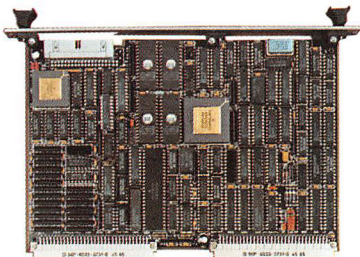
MVME334SW*

- Software support for X.25 from layer 1 – 3

*Note: To be introduced in 1987

MAP NETWORK

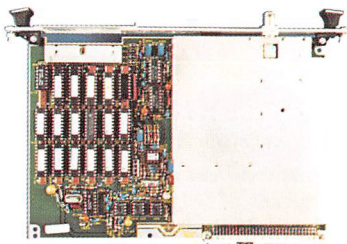
MVME372



MAP Network Interface

- MAP 2.1 Controller Board
- 32-bit MC68020 MPU-based
- 640 Kb DRAM — 128 Kb shared
- MC68824 Token Bus Controller
- Serial Debug Interface

MVME371FS-1



MAP Modem Module

- 10 MB/sec Broadband Modem
- For use with MVME372 MAP Controller
- Specific to MAP Data Channel Groups 3'/4'/P/Q

MVME371FS-2

- Same as MVME371FS-1 except specific to MAP Data Channel Groups 4A'/5'/R/S

VMEbus Modules

MVME371FS-3

- Same as MVME371FS-1 except specific to MAP Data Channel Groups 6'/FM1'/T/U

MVME372SET-1

- Two board set comprising MVME372 and MVME371FS-1 (3'/4'/P/Q)
- MicroMAP1-7O object software for MAP 2.1 layers 1 – 7

MVME372SET-2

- Same as MVME372SET-1 except includes MVME371FS-2 (4A'/5'/R/S)

MVME372SET-3

- Same as MVME372SET-1 except includes MVME371FS-3 (6'/FM1'/T/U)

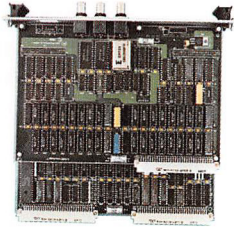
MVME372BBKIT

MAP Developers Kit

- Provides Support for Broadband MAP applications
- Three each MVME372 MAP Controller Modules
- Three each MVME371-1 10 MB/sec Broadband Modem
- Three copies of MicroMAP1-7O object software
- Headend Remodulator
- Broadband cable, taps, and filters

GRAPHICS CONTROLLER MODULE

MVME390A

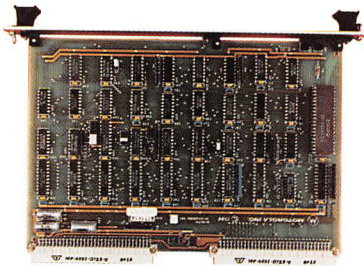


Color Graphics Controller Module

- 1 K x 1 K dual-ported display memory
- Eight colors from palette of 4096 (3 planes)
- TTL RS170/RS343A RGB output
- 60 Hz screen refresh, non-interlace

I/O CHANNEL INTERFACE MODULE

MVME316



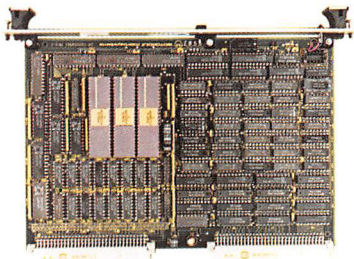
I/O Channel Interface

- Configures I/O Channel as a global resource

VMEbus Modules

VMEbus PARALLEL I/O MODULE

MVME340



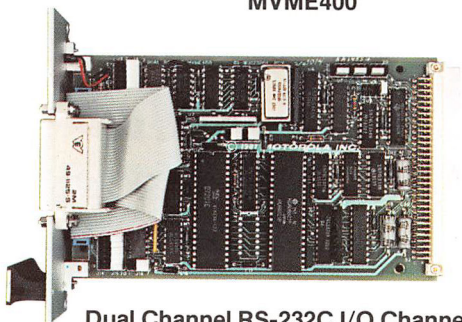
Parallel Interface Module

- 64 Parallel I/O lines (six eight-bit ports and handshake)
- Three 24-bit timers
- Three interrupters

I/O Channel Modules

SERIAL AND PARALLEL I/O MODULES

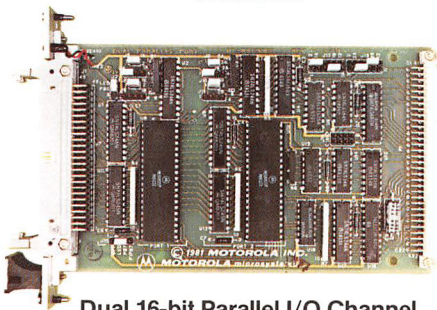
MVME400



Dual Channel RS-232C I/O Channel Bus Communication Modules

- Full duplex
- Sync/Async baud rates of 50 to 19.2 Kbits/sec
- Configurable for terminal or modem operation

MVME410

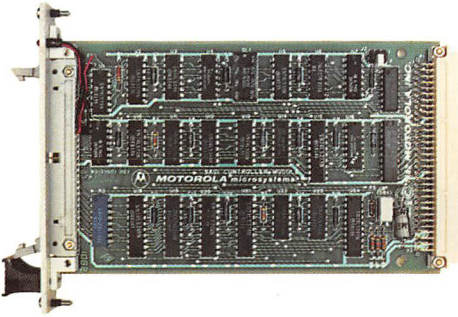


Dual 16-bit Parallel I/O Channel Bus Module

- CENTRONICS compatible interface for printer applications
- Four 8-bit/ 2 handshake bit (40 lines)

I/O Channel Modules

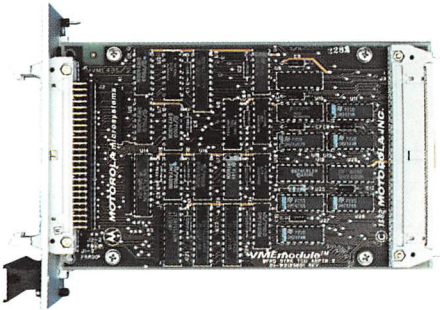
MVME420



SASI Bus I/O Channel Bus Peripheral Interface Adaptor Module

- SA400 disk controller interface

MVME435A

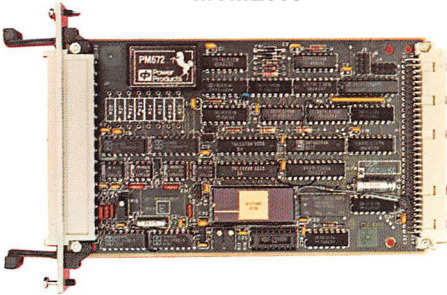


Magnetic Tape I/O Channel Bus Interface Adaptor Module

- Buffered 1/2" 9-track, 4 K bit FIFO buffer interface
- Interfaces to two industry standard PERTEC-compatible 9-track 800/1600 BPI mag tape formatters
- Controls four 25-/125ips tape drivers in start/stop mode

A/D & D/A CONVERSION I/O MODULES

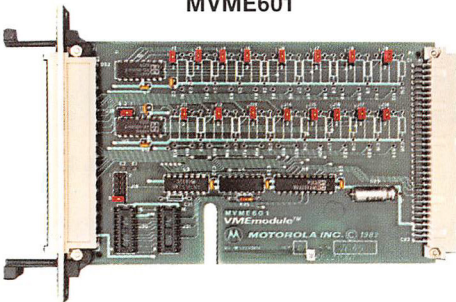
MVME600



12-bit A/D Conversion I/O Channel Bus Module

- 8/16 differential/single-ended channels
- Four full scale input ranges of 0.5, 1, 5, or 10 volts
- Accepts additional inputs of up to five MVME601 Expander Input Modules

MVME601

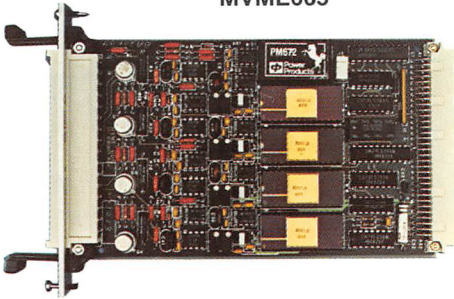


A/D Input Expansion I/O Channel Bus Module

- Provides 8/16 differential/single-end channels
- Designed to be used MVME600

I/O Channel Modules

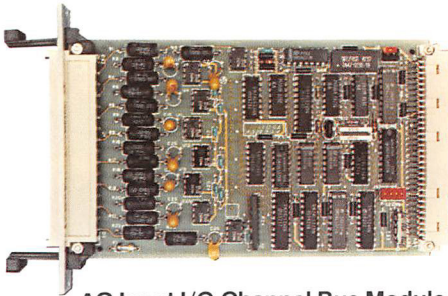
MVME605



12-bit D/A Conversion I/O Channel Bus Module

- Four channels of 12-bit D/A conversion
- Five voltage ranges 0-0.5, 0-10, ± 2.5 , ± 5 , ± 10 v
- Two current loop output ranges of 4 ma to 20 ma and 10 ma to 50 ma

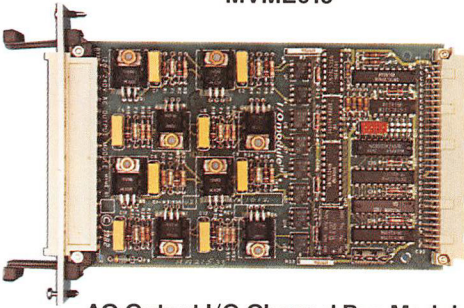
MVME610



AC Input I/O Channel Bus Module

- Monitors the status of up to eight 120/240 VAC sources
- Max input is 300 VAC
- Max isolation rating is 2500 VAC

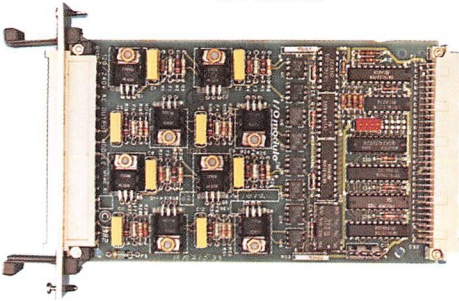
MVME615



AC Output I/O Channel Bus Module

- Zero crossover switching
- Switching eight independent outputs of 120/240 VAC
- Max current switching is 3 A RMS

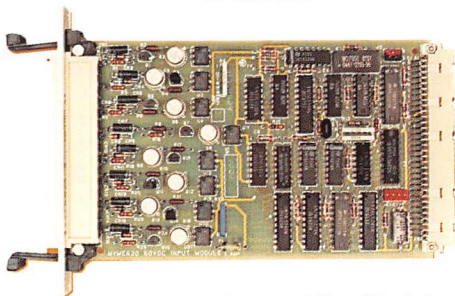
MVME616



- Same as MVME615 except without zero crossover switching

I/O Channel Modules

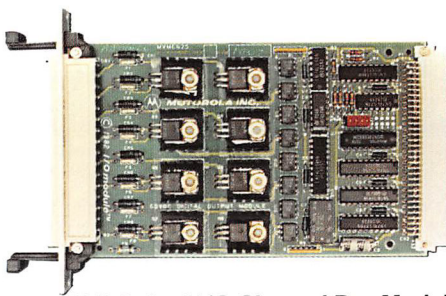
MVME620



DC Input I/O Channel Bus Module

- Eight input channels for 10 to 60 VDC signal monitoring
- 2500 V input isolation
- Input overvoltage and transient protection

MVME625

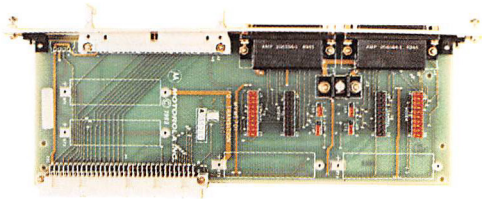


DC Output I/O Channel Bus Module

- Eight 10 to 60 VDC output channels
- 2500 V input isolation
- Inductive load transient suppression
- Overcurrent protection of 2 A max

I/O Transition Modules

MVME701A

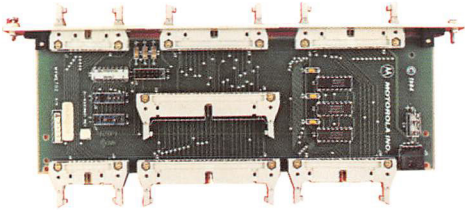


I/O Transition Expansion Module (for MVME050)

- Provides connector for MVME050 serial and parallel ports (see pg 4)
- Double-high 80 mm Eurocard form factor
- DIN to DB25 and 50-pin dual row header
- Connections for optional battery back-up MVME050 time-of-day clock

I/O Transition Modules

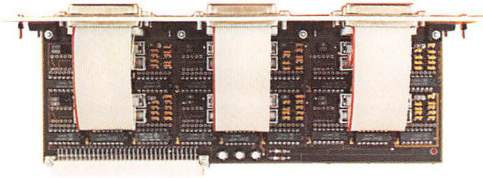
MVME702A



I/O Cable Transition & Distribution Module (for MVME320A or 320A-1)

- Designed to simplify cabling from MVME320A to winchester and floppy disk drives (see pg 18)
- Winchester cable termination logic provided

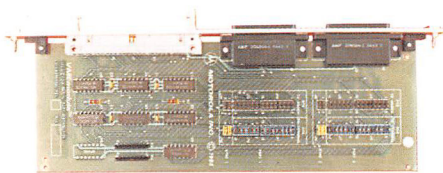
MVME705A



I/O Transition Communications Module (for MVME331/333)

- Double-high 80 mm Eurocard form factor
- Six channel serial transceiver (see pg 22)
- Sockets for RS-232C and RS-422 driver and receiver devices supplied, each channel configurable for RS-232C or RS-422
- Space for user-provided for slew-rate and noise filtering capacitors

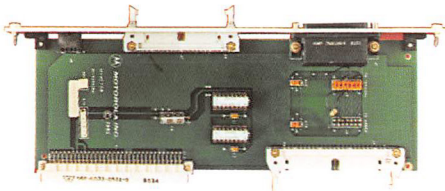
MVME707A



I/O Transition RS-232C Communications Module (For MVME130/131)

- Double-high 80 mm Eurocard form factor
- Dual RS-232C serial I/O transceiver/drivers (see pg 9, 10)
- Cable assembly included

MVME708-1

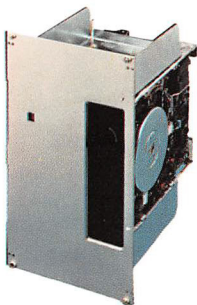


I/O Transition Module (for MVME117)

- Double-high 80 mm Eurocard form factor
- Conversion from DIN connector to industry standard connectors for serial, parallel, and SCSI bus interfaces (see pg 7)

MASS STORAGE MODULES

MVME820



Plug-in Mass Storage Module

- 15 Mb Winchester hard disk drive
- 655 Kb DS/DD 5¼" floppy disk drive
- Designed to be used with MVME943-1 chassis
- Requires Winchester/Floppy Controller Module such as MVME320A or 320A-1 (see pg 18)

MVME821



Plug-in Mass Storage Module

- Dual 655 Kb DS/DD 5¼" floppy disk drive
- Designed to be used with MVME943-1 chassis
- Requires Floppy Controller Module such as MVME320A or 320A-1 (see pg 18)

MVME822

Plug-in Mass Storage Module

- Same as MVME820 except 40 Mb Winchester hard disk drive

MVME833

Plug-in Mass Storage Module

- 70 Mb Winchester/655 Kb Floppy disk
- Works with MVME945-1 (see pg 44)

MVME834

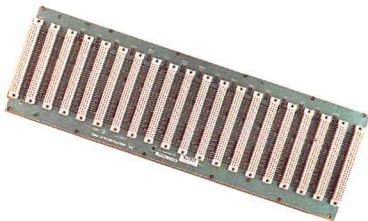


Plug-in Mass Storage Module

- 70 Mb Winchester/655 Kb Floppy disk and Streaming Tape Drive
- Works with MVME945-1 (see pg 44)

PACKAGING AND UTILITY MODULES

MVME920A



Advanced VMEbus Backplane

- 20 DIN 41612C 96-pin VMEbus sockets
- Handles signals up to 20 Mhz
- Power and ground connections
- Bus terminator with diode spike suppression logic

MVME921A

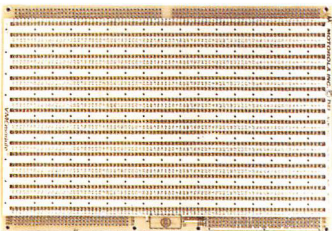
- Same as MVME920A except 9 DIN 41612C 96-pin VMEbus sockets

MVME922A

Advanced I/O Channel Backplane

- 5 DIN 41612C 96-pin I/O channel sockets
- Accepts five single-high I/O Channel Eurocard modules

MVME931-1



VMEbus Wirewrap Module

- Two 96-pin DIN bus connectors for user installation
- Double-high Eurocard form factor
- Ground plane

MVME932



VMEbus Extender Module

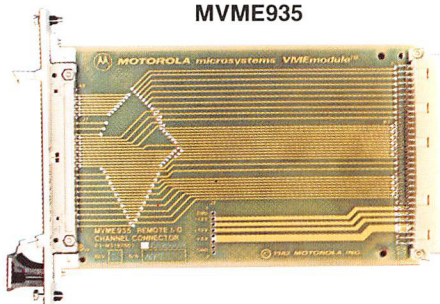
- Single-high Eurocard form factor
- Identification of each P1 trace with shorting jumpers

MVME933

VMEbus Wirewrap Module

- One 96-pin DIN bus connector for user installation
- Double-high Eurocard form factor
- Ground plane

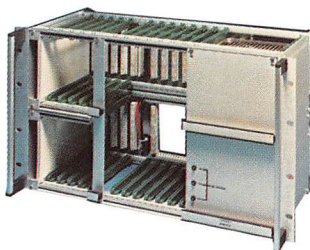
MVME935



I/O Channel 50-Pin Header Adaptor

- Connects I/O Channel to the front of Eurocard chassis

MVME940-1



VMEbus & I/O Channel Chassis

- 19" rack mount chassis
- 200 watt Power Supply Module
- Seven double-high VMEbus slots
- Two five-slot single-high I/O Channel backplanes

MVME941

VMEbus & I/O Channel Card Cage

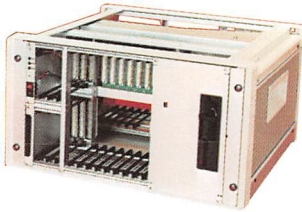
- Same as MVME940-1 except no power supply

MVME942

VMEbus Card Cage

- 19" card cage
- Twenty-slot double-high VMEbus backplane

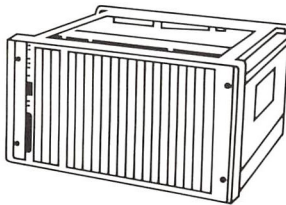
MVME943-1



VMEbus & I/O Channel Chassis

- 19" rack mount chassis
- Transverse 400 watt mid-chassis power supply
- Nine-slot double-high VMEbus backplane
- Two three-slot single high I/O Channel backplane
- Sixteen-slot backplane for 80mm I/O Transition Modules (see MVME700 series, pg 29)
- Accepts MVME820/821/822 Mass Storage Modules (see pg 38-39)

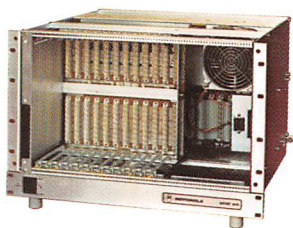
MVME944-1



VMEbus Chassis

- 19" rack mount chassis
- Transverse 400 watt mid-chassis power supply
- Twenty-slot double high VMEbus backplane
- Sixteen-slot backplane for 80mm I/O Transition Modules (see MVME700 series, pg 35-37)

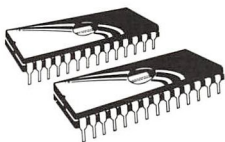
MVME945-1



VMEbus Chassis

- 19" rack mount chassis
- Transverse 400 watt mid-chassis power supply
- 12 slot double high VMEbus backplane
- Accepts MVME833 or MVME834 Mass Storage Modules (see pg 38-39)
- Sixteen-slot backplane for 80mm I/O Transition Modules (see MVME700 series, pg 35-37)

DEBUG MONITORS



MVMEBUG

MVME110-1 Debug Monitor

- Resident in two EPROMS
- Full speed execution and full access to all VME modules capabilities and Bus activity
- Single-line assemble/disassemble
- 30 commands for debug, up/download

MVME101BUG

MVME101 Debug Monitor

- Same features as MVMEBUG

MVME105BUG

MVME104, 105, 106 and 107 Debug Monitor

- Resident in two EPROMS
- Full access to all on-board capabilities and bus activity
- Single-line assembler/disassembler
- 41 powerful commands for debug, up/download
- Selectable power-up and Self Test capability
- Includes SCSI support for MVME107
- Bootload support

MVME117BUG

MVME117 Debug Monitor

- Resident in two EPROMS
- Full access to all MVME117 capabilities and bus activity
- Single-line assembler/disassembler
- 41 powerful commands for debug, up/download
- Selectable power-up and Self Test capability
- Includes SCSI/SASI support
- Bootload support for RWIN and several SASI/SCSI Disk Controllers

MVME120BUG

MVME120 Series Debug Monitor

- Same features as MVMEBUG

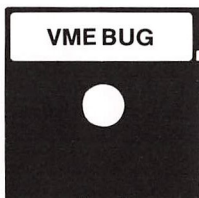
MVME130BUG

MVME130/131 Series Debug Monitor

- Same features as MVMEBUG

MVME133BUG

- Same features as MVMEBUG
- Includes Boot-Load support for MVME319/320A/360 Mass Media Controllers



M68VKXSVMEBUG

MVMEBUG Source and Object

- 5¼" diskette, VERSAdos format

M68V1XSBG117

MVME117BUG Source and Object

- 5¼" diskette, VERSAdos format

M68V1XSSCSI

MVME117 SCSI Source

- 5¼" diskette, VERSAdos format

M68V1XSBG120

MVME120BUG Source and Object

- 5¼" diskette, VERSAdos format

M68V2XSBG130

MVME130BUG Source and Object

- 5¼" diskette

M68V1XS331FW

MVME331 Firmware Source

- 5¼" diskette, VERSAdos format

M68V1XS333BUG

MVME333 and MVME333-2 Debug Monitor

- Object code resident in EPROM
- Source code on 5¼" diskette

OPERATING SYSTEMS

VERSAdos

M68VKXBVERDOS

M68000 VERSAdos Real-Time Multitasking Operating System

- Object code on 5¼" diskette
- Drivers for most VME and I/O Channel Modules
- Full complement of system utilities

M68VKXSVRDOS

M68000 VERSAdos Real-Time Multitasking Operating System

- Source code on 5¼" diskette
- Drivers for most VME and I/O Channel Modules
- Full complement of utilities
- Requires a 40Mb winchester disk

SYSTEM V/68

M68NNXBSV121B

System V/68 Operating System

- Object code on 5¼" diskette
- Driver for MVME121 Processor Module
- 1 - 8 users license

M68NNXBSV121C

- Same as M68NNXBSV121B except 1 - 16 users license

M68NNXSSV121-2

SYSTEM V/68 Operating System

- Source code on 5¼" diskette
- Drivers for MVME121 Processor Module

M68NNXBSV131B

System V/68 Operating System

- Object code on 5¼" diskette
- Driver for MVME131 Processor Module
- 1 - 8 users

M68NNXBSV131C

- Same as M68NNXBSV131B except 1 - 16 users license

M68NNXSSV131-2

System V/68 Operating System

- Source code on 5¼" diskette
- Driver for MVME131 Processor Module

ASSEMBLER AND COMPILER SOFTWARE

M68K2XBASM

VERSAdos MC68020 Assembler

- Object code on 5¼" diskette

M68K2XSASM

VERSAdos MC68020 Assembler

- Source code on 5¼" diskette

M68VVXBABSASM

VERSAdos ABSOFT Assembler

- Object code on 5¼" diskette
- Designed for MC68000/010/020/881 VMEbased systems
- Non-Motorola, Vendor supplied

M68VKXBCMMU

VERSAdos ALCYON 'C' Compiler

- Object code on 5¼" diskette
- Designed for MC68000/010 VMEbased systems with MMU

M68VKXBCNMMU

VERSAdos ALCYON 'C' Compiler

- Object code on 5¼" diskette
- Designed for MC68000/010 VMEbased systems without MMU

M68VVXBPASCAL

VERSAdos PASCAL Compiler

- Object code on 5¼" diskette
- Designed for MC68000 VMEbased systems

M68NNXBTLKT

VERSAdos Tool Kit

- Object code on 5¼" SYSTEM V/68 diskette
- Allows code developed under VERSAdos to be implemented in a SYSTEM V/68 based system.

M68NNXSTLKT

VERSAdos Tool Kit

- Source code on 5¼" SYSTEM V/68 diskette
- Allows code developed under VERSAdos to be implemented in a SYSTEM V/68 based system.

M68N2XBASM

SYSTEM V/68 MC68020 Assembler

- Object code on 5¼" diskette

M68N2XSASM

SYSTEM V/68 MC68020 Assembler

- Source code on 5¼" diskette

M68NNXBABSASM

SYSTEM V/68 ABSOFT Assembler

- Object code on 5¼" diskette
- Designed for MC68000/010/020/881 VMEbased systems
- Non-Motorola, Vendor supplied

M68NNXBCC20B

SYSTEM V/68 Cross 'C' Compiler for MC68020

- Object code on 5¼" diskette
- Licensed for 1 - 8 users

M68NNXBCC20C

SYSTEM V/68 Cross 'C' Compiler for MC68020

- Same as M68NNXBCC20B except licensed for 1 - 16 users

M68NNXSCC20-2

SYSTEM V/68 Cross 'C' Compiler for MC68020

- Source code on 5¼" diskette

M68NNXBPASMLK

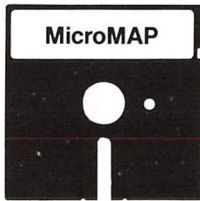
SYSTEM V/68 PAL Port

- Object code on 5¼" diskette
- Pascal Compiler, Linkage Editor, Macro Structured Assembler, and Run-time Libraries

M68NNXBABSFTN

SYSTEM V/68 ABSOFT FORTRAN

- Object code on 5¼" diskette
- Designed for MC68000/010/020/881 VME-based systems
- Non-Motorola, Vendor supplied



MicroMAP1-7S
MAP 2.1 LAN Software

- MicroMAP source code on 5¼" diskettes
- Supports all seven MAP layers per MAP 2.1 and ISO specifications
- Portable, modular, implemented in 'C'
- Each layer is implemented as separate, independent module
- Supports MC68824 Token Bus Controller chip for M680X0 MPU family-based design
- Operating System independent
- Certified by ITI

MicroMAP1-7O

- MicroMAP object code on 5¼" diskettes
- Same features as MicroMAP1-7S

MicroMAP1-4S

- Source code for MAP layers one through four on 5¼" diskettes
- Same features as MicroMAP1-7S

MicroMAP1-4O

- Object code for MAP layers one through four on 5¼" diskettes
- Same features as MicroMAP1-7S

MicroMAP5-7S

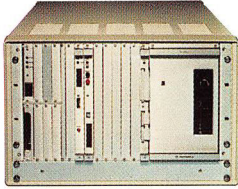
- Source code for MAP layers five through seven on 5¼" diskettes
- Same features as MicroMAP1-7S

MicroMAP5-7O

- Object code for MAP layers five through seven on 5¼" diskettes
- Same features as MicroMAP1-7S

VMESystem 1121

SYS1121UY221



VMESystem 1121 with SYSTEM V/68

- MVME121 10 Mhz 68010 based CPU Module
- MVME050 System Controller Module
- MVME202 512 Kb DRAM Module
- MVME320A-1 Winchester/Floppy Controller Module
- MVME701A I/O Transition Module
- MVME702A Disk Interface I/O Transition Module
- MVME822 40 Mb Winchester 655 Kb Floppy Mass Storage Module
- Five additional slots for VMEmodules
- Two three slot backplanes for I/O Channel Modules
- 16 additional slots for I/O Transition Modules
- SYSTEM V/68 Operating System is included
- Enclosed in chassis with 400 watt power supply

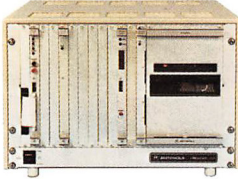
SYS1121VY221

VMESystem 1121 with VERSAdos

- MVME121 10 Mhz 68010 based CPU Module
- MVME050 System Controller Module
- MVME320A-1 Winchester/Floppy Controller Module
- MVME701A I/O Transition Module
- MVME702A Disk Interface I/O Transition Module
- MVME822 40 Mb Winchester 655 Kb Floppy Mass Storage Module
- Six additional slots for VMEmodules
- Two three slot backplanes for I/O Channel Modules
- 16 additional slots for I/O Transition Modules
- VERSAdos Operating System is included
- Enclosed in chassis with 400 watt power supply

VMESystem 1131

SYS1131UY331



VMESystem 1131 with SYSTEM V/68

- MVME131 12.5 Mhz 68020 based CPU Module
- MVME050 System Controller Module
- MVME204-2 2048 Kb DRAM Modules
- MVME320A-1 Winchester/Floppy Controller Module
- MVME701A I/O Transition Module
- MVME707A I/O Transition Module
- MVME833 70 Mb Winchester/655 Kb Floppy Mass Storage Module
- Eight slots for additional VMEmodules
- 15 slots for I/O Transition Modules
- SYSTEM V/68 Operating System is included
- Enclosed in a 400 watt chassis

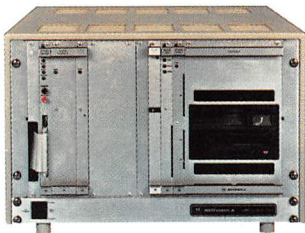
SYS1131VY331

VMESystem 1131 with VERSAdos

- MVME131 12.5 Mhz 68020 based CPU Module
- MVME050 System Controller Module
- MVME204-2 2048 Kb DRAM Modules
- MVME320A-1 Winchester/Floppy Controller Module
- MVME701A I/O Transition Module
- MVME707A I/O Transition Module
- MVME833 70 Mb Winchester/1 Mb Floppy Mass Storage Module
- Eight additional slots for VMEmodules
- Enclosed in a 400 watt chassis

VME System

SYS1131UY341



VMEsystem 1131 with SYSTEM V/68

- MVME131XT 16.67 Mhz 68020 based CPU Module
- MVME204-2 2048 Kb DRAM Modules
- MVME320-1 Winchester/Floppy Controller Module
- MVME350 Streaming Tape Controller
- MVME701A I/O Transition Module
- MVME707A I/O Transition Module
- MVME834 70 Mb Winchester/1 Mb Floppy/Streaming Tape Mass Storage Module
- Five slots for additional VMEmodules
- 15 slots for I/O Transition Modules
- SYSTEM V/68 Operating System is included
- Enclosed in a 400 watt chassis

Configuration Guide

VMEbus CPU Modules

Model	Clock Speed (Mhz)		Cap/Sup (Kb)		CACHE (Kb)	MMU	Parallel Port (Bits)		Serial Ports	Operating System	On-Board System Controller	I/O Channel	I/O Transition Module
	CPU	(Mhz)	RAM	ROM			Port	Port					
MVME 101	MC68000	8.0	64/NS	2048/NS	—	—	20	2	2	VERSAados	Yes	—	—
MVME 104	MC68010	10.0	512/512	256/NS	—	—	16	2	2	VERSAados	Yes	Yes	—
MVME 105	MC68010	10.0	512/512	256/NS	—	—	16	2	2	VERSAados	Yes	—	—
MVME 106	MC68010	10.0	512/512	256/NS	—	—	16	2	2	VERSAados	Yes	—	—
MVME 107	MC68010	10.0	512/512	256/NS	—	—	16	2	2	VERSAados	Yes	—	—
MVME 110-1	MC68000	8.0	64/NS	2048/NS	—	—	16	1	1	VERSAados	—	Yes	—
MVME 117-3	MC68010	10.0	512/512	256/NS	—	—	16	2	2	VERSAados	Yes	—	MVME708-1
MVME 117-3FP*	MC68010	10.0	512/512	256/NS	—	—	16	2	2	VERSAados	Yes	—	MVME708-1
MVME 121	MC68010	10.0	512/512	512/NS	4	MC68451	16	1	1	VERSAados SYSTEM V/68	—	—	—
MVME 123	MC68010	12.5	512/512	512/NS	4	—	16	1	1	VERSAados	—	—	—
MVME 130	MC68020	12.5	64/NS	512/NS	—	Socket	—	2	2	VERSAados	Yes	—	MVME707A

VMEbus CPU Modules

MVME 130COF*	MC68020	12.5	64/NS	512/NS	—	Socket	—	2	VERSAdos	Yes	—	MVME707A
MVME 130DON	MC68020	16.67	64/NS	512/NS	—	Socket	—	2	VERSAdos	Yes	—	MVME707A
MVME 130DOF*	MC68020	16.67	64/NS	512/NS	—	Socket	—	2	VERSAdos	Yes	—	MVME707A
MVME 130XT*	MC68020	16.67	64/NS	256/NS	16	Socket	—	2	VERSAdos	Yes	—	MVME707A
MVME 131	MC68020	12.5	64/NS	512/NS	—	M68KVM-MB851	—	2	VERSAdos SYSTEM V/68	Yes	—	MVME707A
MVME 131COF*	MC68020	12.5	64/NS	512/NS	—	M68KVM-MMB851	—	2	VERSAdos SYSTEM V/68	Yes	—	MVME707A
MVME 131DON	MC68020	16.67	64/NS	512/NS	—	M68KVM-MMB851	—	2	VERSAdos SYSTEM V/68	Yes	—	MVME707A
MVME 131DOF*	MC68020	16.67	64/NS	512/NS	—	M68KVM-MMB851	—	2	VERSAdos SYSTEM V/68	Yes	—	MVME707A
MVME 131XT*	MC68020	16.67	64/NS	256/NS	16	—	—	2	VERSAdos SYSTEM V/68	Yes	—	MVME707A
MVME 133*	MC68020	12.5	1024/1024	256/NS	—	—	—	3	VERSAdos	Yes	—	—
MVME 133-1*	MC68020	16.67	1024/1024	256/NS	—	—	—	3	VERSAdos	Yes	—	—
MVME 135*	MC68020	16.67	1024/1024	128/NS	—	Socket	—	2	VERSAdos SYSTEM V/68	Yes	—	—

NS = Not supplied

*MC68881 FPCP

Configuration Guide

System Controller Modules

Model	Designed for	I/O Transition Module	Clock		Arbitration	
			Serial	System	Round-Robin	Priority
MVME025	MVME120 Family			X	X	X
MVME050	MVME120 Family	MVME 701A	X	X		X

VMEbus RAM/ROM Modules

Model	CMOS		Static					
	DRAM	RAM	RAM/ROM	64Kb	256Kb	512Kb	1024Kb	2048Kb
MVME 202	X					X		
MVME 204-1*	X						X	
MVME 204-2F*	X							X
MVME 211			X					
MVME 214*			X					
MVME 215-1		X			X			
MVME 215-2		X				X		
MVME 215-3		X					X	
MVME 222-1	X						X	
MVME 222-2	X							X
MVME 225-1	X						X	
MVME 225-2	X							X

*Note: Includes MVMX32 (subset of VSB) Dual Port Bus

VMEbus Disk Interface Modules

Model	DMA	SASI	Floppy Disk	Hard Disk	I/O Transition Module	Comments
MVME319	X	X	X	X	—	ST506 Hard Disk Requires SASI/SCSI Controller. Also supports Cipher Floppy Tape
MVME 320A 320A-1	X	—	X	X	MVME 702A	ST506, ST512, ST406, ST412, SA600, RMS500, RMS506, RMS512, SA400, SA410, SA450, Compatible Disk Drives
MVME321	X	—	X	X	—	Intelligent ST506(2), SA400(4)

I/O Channel Disk Interface Modules

MVME420	—	X	X	X	—	Requires SASI Controller
---------	---	---	---	---	---	--------------------------

VMEbus Communication Modules

Model	CPU	Serial Ports	Number of Async Ports	Sync Ports	DMA	Line Driver	I/O Transition Module	Ethernet
MVME330, 330-1	MC68000	—	—	—	—	—	—	10 Mbit
MVME 330-2	MC68010	—	—	—	—	—	—	10 Mbit
MVME331	MC68010	6	6	6	—	Off-Board	MVME 705A	—
MVME332	MC68010	8	8	8	—	On-Board RS-232C	MVME 710	—
MVME333	MC68010	6	6	6	Yes 4-Ch	Off-Board	MVME 705A	—

Configuration Guide

VMEbus Communication Modules — MAP

Model	Memory	Modem	MAP 2.1 S/W Layers	Token Bus	Channel Groups
MVME372	640 Kb	MVME 371FS	1-7	Yes	N/A
MVME372SET-1	640 Kb	MVME 371FS	1-7	Yes	3'/4'/P/Q
MVME372SET-2	640 Kb	MVME 371FS	1-7	Yes	4A'/5'/R/S
MVME372SET-3	640 Kb	MVME 371FS	1-7	Yes	6'/FM1'/T/U

I/O Channel Serial Communication Modules

Model	CPU	Number of			DMA	Line Driver	I/O Transition Module	Ethernet
		Serial Ports	Async Ports	Sync Ports				
MVME400	—	2	2	2	—	RS-232C	—	—

I/O Channel Modules

Model	RS-232C	Parallel I/O	SASI Inter.	9-Track Mag Tape	A/D Conv.	D/A Conv.	AC or DC Conv.
MVME400	X						
MVME410		X					
MVME420			X				
MVME435A				X			
MVME600					X		
MVME601					X		
MVME605						X	
MVME610							X
MVME615							X
MVME616							X
MVME620							X
MVME625							X

Hardware

Model	Chassis (Power Supply)	Card Cage	Backplane		Wire Wrap		Extender Module		Disk Plug- in
			VME	I/O	VME	I/O	VME	I/O	
MVME 820									X
MVME 821									X
MVME 822									X
MVME 833									X
MVME 834									X Tape
MVME 920A			X						
MVME 921A			X						
MVME 922A				X					
MVME 931-1					X				
MVME 932								X	
MVME 933-1						X			
MVME 940-1	X								
MVME 941		X							
MVME 942		X							
MVME 943-1	X								
MVME 944-1	X								
MVME 945	X								

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Debug Monitors

Part Number	Designed to be used with										
	MVME 101	MVME 105	MVME 110-1	MVME 117	MVME 121	MVME 123	MVME 130	MVME 131	MVME 133	MVME 331	MVME 333/-2
MVMEBUG			X								
MVME101BUG	X										
MVME105BUG		X									
MVME117BUG				X							
MVME120BUG					X	X					
MVME130BUG							X	X			
MVME133BUG									X		

Debug Monitor Source

Part Number	Designed to be used with										
	MVME 101	MVME 105	MVME 110-1	MVME 117	MVME 121	MVME 123	MVME 130	MVME 131	MVME 133	MVME 331	MVME 333/-2
M68V1XSBG117				X							
M68V1XSBG120					X	X					
M68V2XSBG130							X	X			
M68V1XS331FW										X	
M68V1X333BUG											X
M68VKXSVMDEBUG			X								

Software Operating Systems

Part Number	VERSA ^{dos}		SYSTEM V/68		No. of Users*
	Object	Source	Object	Source	
M68VKXBVERDOS	X				
M68VKXSVRDOS		X			
M68NNXBSV121B			X		1-8
M68NNXBSV121C			X		1-16
M68NNXSSV121-2**				X	
M68NNXBSV131B			X		1-8
M68NNXBSV131C			X		1-16
M68NNXSSV131-2***				X	

*Pertains to object code only

**Supports only MVME121 module and systems

***Supports only MVME131 module and systems

Configuration Guide

Other Software

Part Number	Description	Operates under	
		VERSA Dos	SYSTEM V/68
M68NNXBPASMLK	Pascal Compiler, Linkage Editor, Macro Structured Assembler, and Run-time libraries		X
M68K2XBASM	MC68020 Assembler	X	
M68K2XSASM	MC68020 Assembler	X	
M68VVXBABSASM	ABSOFT Assembler	X	
M68VKXBCMMU	ALCYON C Compiler (MMU)	X	
M68VKXBCNMMU	ALCYON C Compiler (Non-MMU)	X	
M68VVXBPASCAL	PASCAL Compiler	X	
M68NNXBTLKT	Tool Kit		X
M68NNXSTLKT	Tool Kit		X
M68N2XBASM	MC68020 Assembler		X
M68N2XSASM	MC68020 Assembler		X
M68NNXBABSASM	ABSOFT Assembler		X
M68NNXBCC20B	Cross C Compiler		X
M68NNXBCC20C	Cross C Compiler		X
M68NNXSCC20-2	Cross C Compiler		X
M68VVXBABFTN	ABSOFT FORTRAN	X	
M68NNXBABFTN	ABSOFT FORTRAN		X

VMEsystems

Part Number	CPU	System Controller	Memory	Hard Disk	No. of Slots Available		Operating System
					VME	I/O Channel	
SYS1121UY221	MC68010 MVME121	MVME050	512 Kb* MVME202	40 Mb MVME822	5	6	SYSTEM V/68
SYS1121VY221	MC68010 MVME121	MVME050	—*	40 Mb MVME822	6	6	VERSA Dos
SYS1131UY331	MC68020 MVME131	MVME050	2048 Kb MVME204-2	70 Mb MVME833	8	—	SYSTEM V/68
SYS1131VY331	MC68010 MVME131	MVME050	2048 Kb MVME204-2	70 Mb MVME833	8	—	VERSA Dos
SYS1131UY341	MC68020 MVME131XT	—	2048 Kb MVME204-2	70 Mb MVME834	5	—	SYSTEM V/68

*Note: MVME121 provides 512 Kb DRAM on board.

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