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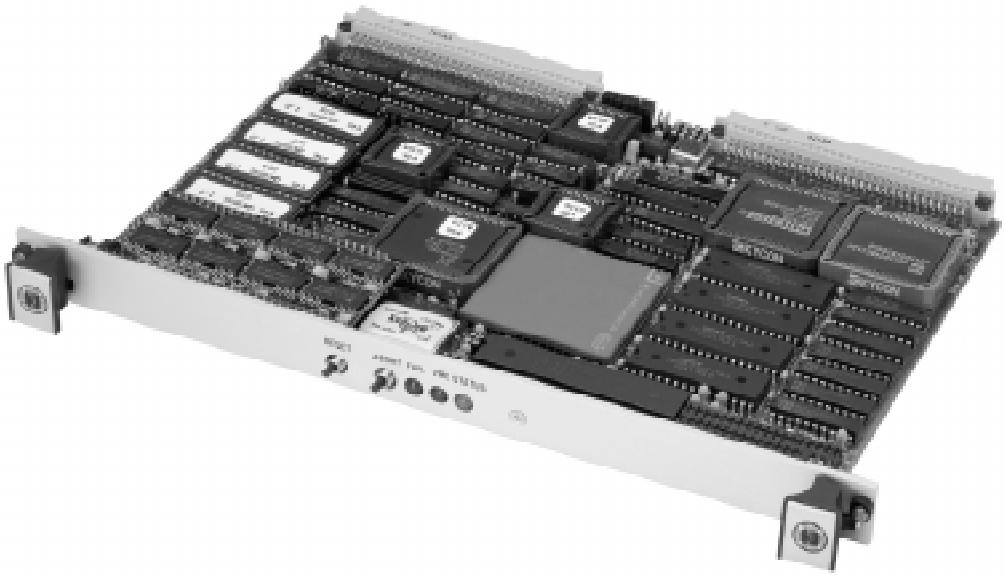
REDEFINING EMBEDDED REAL-TIME COMPUTER DESIGN



# V46 OEM Family

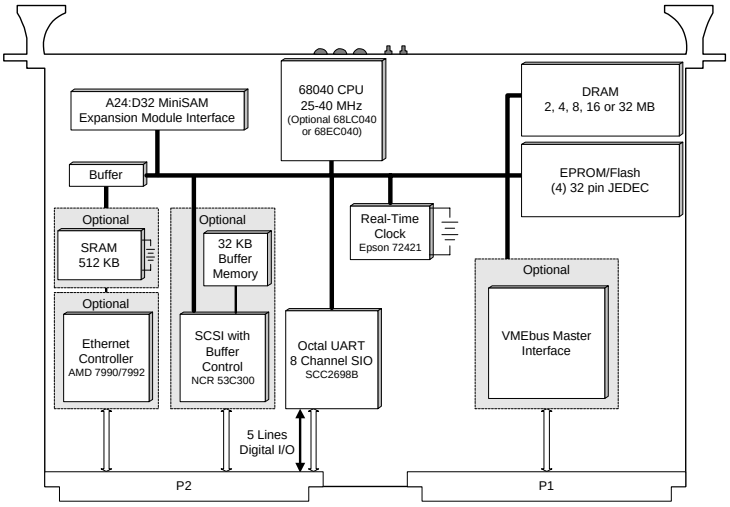
## 68040 Based VME Single Board Computer

# DESIGNED FOR EMBEDDED CONTROL AND REAL-TIME APPLICATIONS



| | |
|---|---|
| **PROCESSORS:** | 68040, 68LC040 or 68EC040 at 25, 33 or 40 MHz |
| **MEMORY:** | 2, 4, 8, 16 or 32 MB DRAM |
| **VMEBUS:** | VME A32:D32 Master Interface with System Controller Functions and 7 Level Interrupt Handler |
| **STANDARD I/O:** | SCSI, Ethernet and 8 Asynchronous Serial Channels |
| **OPTIONAL:** | Removable Ethernet, SCSI and VME Interfaces for Application Specific Customization |
| **I/O FLEXIBILITY:** | MiniSAM Expansion Interface supports non-standard I/O requirements. |
| **100% CMOS:** | Low power consumption and high reliability |
| **REAL-TIME O/S:** | Supports VxWorks, OS-9, pSOS+, and PDOS |

GENERAL MICRO SYSTEMS
INCORPORATED




**68040 Expandable Memory and Modular I/O**

## Single Board Solution

The V46 is designed for real-time applications requiring a high performance single board computer with system control capabilities and extensive I/O flexibility.

Based upon the 68040, 68LC040 or 68EC040 CPU at 25, 33 or 40 MHz, the V46 features Ethernet, SCSI, battery-backed Real-Time Clock, VME Master Interface and 8 channels of asynchronous RS-232 or RS-422 serial I/O with 5 lines of optically isolated digital I/O. The Ethernet, SCSI and VME Interfaces are optionally removable, allowing designers to choose the features that best meet their application needs without paying for unnecessary components.

The V46 is available with 2, 4, 8, 16 or 32 MB of DRAM. The 2, 8 and 32 MB configurations are two-way interleaved, providing high speed burst transfers to the CPU cache. Non-volatile memory support includes 512 KB of battery-backed SRAM, dual accessed between the Ethernet Controller and the CPU, and (4) 32 pin JEDEC sockets allowing up to 4 MB of EPROM or 2 MB of Flash.

A variety of custom and off-the-shelf I/O functions can be added to the V46 via the A24:D32 MiniSAM (Special Application Module) Expansion Interface. Additional serial I/O requirements are supported by replacing the SCSI Interface with an additional 8 channels of asynchronous serial, or 2 channels of synchronous serial.

To better facilitate embedded design, all I/O functions on the V46 are routed through the P2 connector, allowing cabling to be attached to a break-out board on the back side of the card cage. Because there is no cabling attached to the front panel, the V46 is easy to remove during development and upgrades.

The V46 P2 I/O is plug compatible with the remaining members of the OEM family of boards, the V36, V39 and V49. The V3X and V4X family members are based on the 68030 and 68040 processors, respectively, while the VX9 members provide extensive VME capability via the VIC64 VME Interface Controller, including an A32:D64 Master/Slave Interface. The VX6 members provide a Master Only Interface for cost sensitive applications.

Through the use of buffers and independent local buses, the CPU, Ethernet and SCSI can operate simultaneously and independently, without monopolizing the CPU bus. Component level DMA allows the Ethernet and SCSI Controllers to transmit and receive data to/from their respective SRAM buffers, which are dual ported to the CPU. This configuration lets all three channels (CPU, Ethernet and SCSI) operate concurrently for maximum performance and collision free operation.

Extensive use of CMOS components guarantees low overall power consumption and reduced thermal stress, thereby providing a higher MTBF (Mean-Time Between Failure) rate.

Designed and manufactured in the U.S.A., all GMS products carry a one year warranty with extended warranties available.

## Software Support

Software support is available for all major real-time operating systems, including VxWorks, OS-9, pSOS+, RTMX and PDOS, with POSIX compliance available. A debugger/monitor is also available, providing complete diagnostic capabilities in software, including a single line assembler/disassembler.

## Standard Features

- ❒ 68040, 68LC040 or 68EC040 CPU at 25, 33 or 40 MHz
- ❒ 2, 4, 8, 16 or 32 MB DRAM (2, 8 and 32 two-way interleaved)
- ❒ (4) 32 pin JEDEC Sockets for EPROM/Flash
- ❒ A32:D32 VME Master Interface
- ❒ A24:D32 Local Expansion Bus (MiniSAM)
- ❒ Ethernet Controller
- ❒ SCSI with dual ported, 32 KB buffer
- ❒ 512 KB SRAM
- ❒ 8 independent, asynchronous channels of Serial I/O (RS-232/422)
- ❒ 5 lines of optically isolated Digital I/O
- ❒ Epson 72421 battery-backed Real-Time Clock

## Optional Features

- ❒ Fast/Wide SCSI 2 (AIO Module)
- ❒ Removable Ethernet, SCSI and VME Interfaces
- ❒ 1024 x 768 SVGA Controller Card
- ❒ Seriplex Controller

| Performance | 25 MHz | 33 MHz | 40 MHz |
|---|---|---|---|
| MIPS | 48 | 57 | 66 |
| MFLOPS | 3.5 | 4.6 | 5.6 |

| Specification | Typical | Maximum |
|---|---|---|
| Power Consumption | 2A | 2.4A |
| Operational Temperature | 0 - 60°C | |
| Storage Temperature | -55 - +150°C | |
| Supply Voltage | 5.0V DC | 5.25V DC |

GENERAL MICRO SYSTEMS

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