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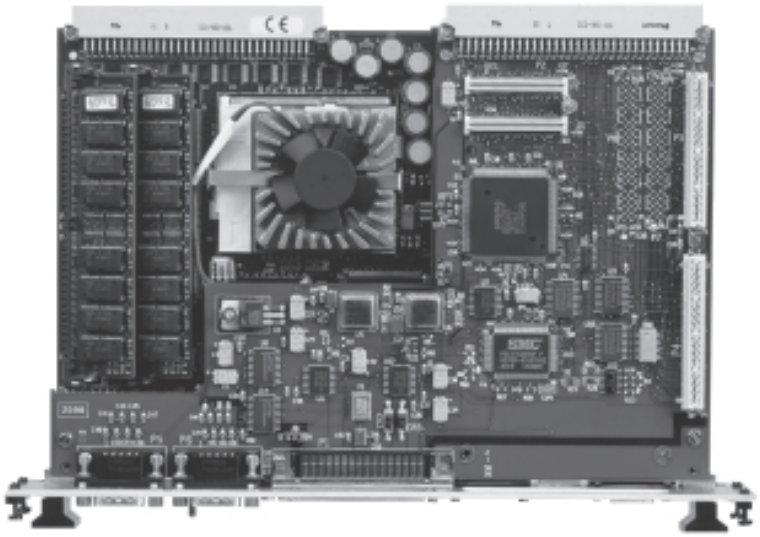
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XVME-656
VMEbus Pentium® Processor Module



Features

- 233 MHz Pentium® processor with MMX™ technology
- Supports up to 256 MB of fast-page or EDO DRAM in 72-pin SIMM sites, with ECC or parity
- 512K of synchronous Level 2 pipeline cache
- High-performance PCI local bus SVGA controller with 2 MB of VRAM
- PCI Enhanced IDE controller with DMA
- Secondary IDE controller
- 10/100 Mbit PCI Ethernet controller with front RJ-45 connector
- Up to 72 MB of optional flash disk storage
- PCI-to-VMEbus interface with DMA
- UltraSCSI PCI host adapter
- PCI Mezzanine Card (PMC) expansion site
- Four high-speed 16550-compatible serial ports
- Two Universal Serial Bus (USB) ports
- EPP or ECP parallel port
- PS/2-style keyboard and mouse ports
- Configurable hardware byte-swapping logic

Overview

The XVME-656 is a powerful VMEbus PC compatible processor module from Xycom Automation, the pioneer and leader in VMEbus PC technology. This powerful two-slot VMEbus processor integrates a 233 MHz MMX Pentium CPU with a PCI-to-VMEbus interface and allows users to take advantage of the powerful multiprocessing capability of the VMEbus while utilizing standard off-the-shelf PC software and operating systems.

At the core of the XVME-656 module is the Intel 233MHz MMX CPU combined with 512K of synchronous Level 2 pipeline cache and up to 256 MB of fast-page or EDO DRAM.

The XVME-656 module contains a wide breadth of I/O including PCI Graphics, EIDE, Ultra SCSI and Ethernet controllers, two Universal Serial Bus (USB) Ports, four high-speed serial ports, one EPP/ECP parallel port, and PS/2 style keyboard and mouse ports. The module also has one onboard PCI Mezzanine Card (PMC) site, and additional I/O expansion is available using Xycom Automation's modular I/O carrier modules (XVME-976), which provide a mechanism to expand your system using additional PMC or PC/104 modules.

The XVME-656 module is an unbeatable solution for power and I/O for VMEbus systems.

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The XVME-656 features a high-performance, highly integrated Intel chipset that incorporates a host-to-PCI bus interface and PCI-to-ISA bridge with Universal Serial Bus host controller.

Display Support

Graphics support is provided by a highly integrated SVGA controller with an internal 2 MB 83 MHz frame buffer. Resolutions of up to 1280 × 1024 with 256 colors are supported. The device uses a 64-bit internal graphics engine with hardware BitBLT to enhance Windows GUI performance. SVGA output is available at the module front panel in standard 15-pin D shell connector.

Network Support

The XVME-656 contains a state-of-the-art Intel 82558 10/100 Mbit Ethernet controller with a 32-bit PCI bus mastering interface to support bus transfers of 100 Mbits per second. The RJ-45 connector on the module's front panel provides autosensing for 10 BaseT and 100 BaseTX connections.

VMEbus Interface

The PCI-to-VMEbus bridge device provides users with a flexible mapping architecture to allow configurations that will support virtually all user applications. The bridge supports multiple VME master and slave images with BLT and DMA capability for high-performance block data operations.

The XVME-656 also contains onboard hardware byte-swapping.

Expansion

Two expansion modules are available for use with the XVME-656. The XVME-976/1 allows for one additional PMC module and one PC/104 module and the XVME-976/104 provides for two PC/104 modules.

Ultra SCSI Support

SCSI support is enabled by an UltraSCSI host adapter with a 32-bit bus mastering PCI interface. This highly integrated UltraSCSI controller contains a SCSI phase engine which provides auto-execution of SCSI commands freeing up the host CPU to perform other tasks.

Mass Storage

Floppy and hard drive functions are supported by bus mastering EIDE and PC-compatible controllers. Signals for both the floppy and EIDE interfaces are routed to the A and C rows of the module's P2 connector, allowing the XVME-656 to access a variety of mass-storage options. These options include single-slot hard and floppy disk modules (XVME-977), or other externally mounted mass storage devices using the XVME-973 drive adaptor module.

Nonvolatile Storage

An onboard 32-pin socket provides nonvolatile storage with zero-power SRAM or an M-Systems DiskOnChip® flash disk. The DiskOnChip® flash disk (XVME-992) will provide up to 72 MB of solid-state disk storage for embedded applications.

I/O Support

The PCI to ISA bridge device contains a high speed bus mastering EIDE controller and two Universal Serial bus (USB) channels with connections on the module's front panel for connecting the next generation of PC-compatible peripheral devices.

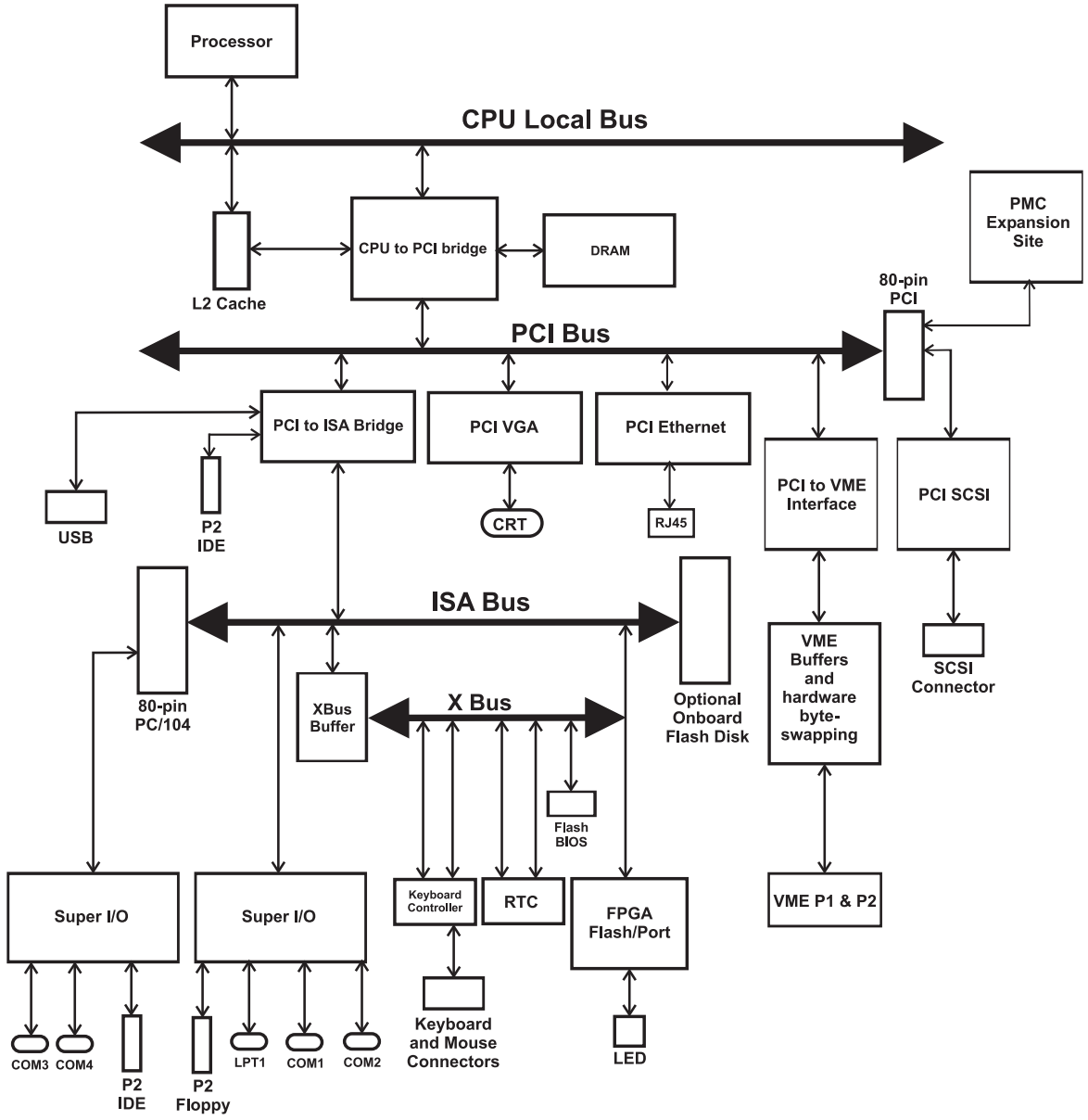
Other functions provided on the XVME-656 include four 16550-compatible RS-232C serial ports, one ECP/EPP parallel port, and PS/2-style keyboard and mouse ports. All connections to these ports are available on the front panel.

Software Support

Although the XVME-656 is fully PC-compatible and will run "off-the-shelf" PC software, most packages will not be able to access the features of the VMEbus. To solve this problem, Xycom Automation has developed extensive Board Support Packages (BSPs) that simplify the integration of VMEbus data into PC software applications. Xycom Automation's BSPs provide users with an efficient high-level interface between their applications and the VMEbus-to-PCI bridge device. Board Support Packages are available for MS-DOS®, Windows NT®, QNX®, Lynx, Solaris™, and VxWorks®.

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XVME-656 Block Diagram



Hardware Specifications

CPU

233 MHz Pentium Processor with MMX technology

PCI Super VGA Graphics Controller

1280 × 1024; 256 colors
2 MB VRAM

PCI Ethernet Controller

Intel 82558 Controller
10/100 Mbps Fast Ethernet
RJ-45 Connector on module front panel

Serial Ports

Four RS-232C-compatible
Two Universal Serial Bus ports

PCI Ultra SCSI Controller

32-bit bus mastering PCI interface

Parallel Interface

One EPP/ECP-compatible

Onboard Memory

Fast-page or EDO DRAM, 32 MB to 256 MB

Cache

512K pipeline burst cache standard

Power Specifications[a]

11.82 amps (max.), 5.87 amps (typical)

[a]Requires VME P2 Backplane

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Environmental Specifications

Temperature

Operating	0-50° C with 100 CFM airflow
Nonoperating	-40 to 85° C

Vibration

Frequency	5 to 2000 Hz
Operating	.015" (.38 mm) peak-to-peak displacement
	2.5 g (maximum) acceleration
Nonoperating	.030" (.76 mm) peak-to-peak displacement
	5.0 g (maximum) acceleration

Shock

Operating	30 g peak acceleration 11 msec duration
Nonoperating	50 g peak acceleration 11 msec duration

Humidity

Operating	20% to 80% RH, noncondensing
Nonoperating	20% to 80% RH, noncondensing

VMEbus Compliance

- Complies with VMEbus Specification, ANSI/VITA 1-1994
- A32/A24/A16:D64/D32/D16/D08(EO) DTB Master
- A32/A24:D64/D32/D16/D08(EO) DTB Slave
- R(0-3) Bus Requester
- Interrupter I(1)-I(7) DYN
- IH(1)-IH(7) Interrupt Handler
- SYSCLK and SYSRESET Driver
- PRI, SGL, RRS Arbiter
- RWD, ROR bus release
- Form Factor: DOUBLE
  233 mm × 160 mm (9.2" × 6.3")

Ordering Information

XVME-656/31*x*	233 MHz MMX Pentium VMEbus PC Processor with 512K cache, configurable hardware byte-swapping
where: *x* = 0	No DRAM
x = 3	32 MB DRAM
x = 4	64 MB DRAM
x = 5	128 MB DRAM
x = 6	256 MB DRAM
XVME-973/1	Drive Adapter Module
XVME-976/1	PMC/PC/104 Expansion Module
XVME-976/104	Dual PC/104 Expansion Module
XVME-977	Single-slot Mass Storage Module
XVME-992/8	8 MB DiskOnChip®
XVME-992/24	24 MB DiskOnChip®
XVME-992/40	40 MB DiskOnChip®
XVME-992/72	72 MB DiskOnChip®

Warranty

The XVME-656 carries a two-year parts and labor warranty.

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