

## VX406C Intelligent M-Module Carrier

The VX406C is an intelligent VXI carrier that supports four industry standard M-modules and one PMC module. It has an on-board PowerPC® processor that can perform command translation, data analysis, and many other data processing or process control functions.

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### Overview:

The VX406C is powered by a highly integrated MPC8245 micro-processor with a PowerPC 603e core, a built-in peripheral component interconnect (PCI) interface, and an advanced memory controller. Dual-ported shared memory and a complete register and interrupt-based interface allows fast VXI communication with the PowerPC application software.

The carrier supports both VXI register-based and word serial modes of operation. Attached M-modules can be directly accessed from VXI and the PowerPC.

The electrical and mechanical interface allows the multitude of functions available on industry standard M-modules to be easily integrated into a VXI system. For a complete listing of available M-modules, visit [www.mezzanines.org](http://www.mezzanines.org).

In addition to M-module support, the carrier provides one PMC position that allows additional functionality to be added, such as mass storage or communication interfaces. The position has a 64-pin header directly connected to the PMC I/O (P4) signals. This header allows I/O connection for PMC modules that do not support front panel I/O. For a complete listing of available PMC modules, visit [www.mezzanines.org](http://www.mezzanines.org).

Triggers are supported between M-modules and the VXI backplane.

External digital input connectors and relay driver logic allows special control hardware to be easily added to the overall integrated instrument.

### Ordering Information

Part Number 11028550-0001

### VXIbus Compliance

Complies with ANSI/IEEE Std. 1014-1987, IEC821, and VXIbus Rev. 1.4 for C-Size VXI Modules

Addressing	A16/24/32
Data	D16/32, slave
Interrupts	ROAK, prog. levels
TTL Triggers	SYNC protocol

### M-Module Compliance

Complies with ANSI/VITA Std. 12-1996 for M and MA module carriers

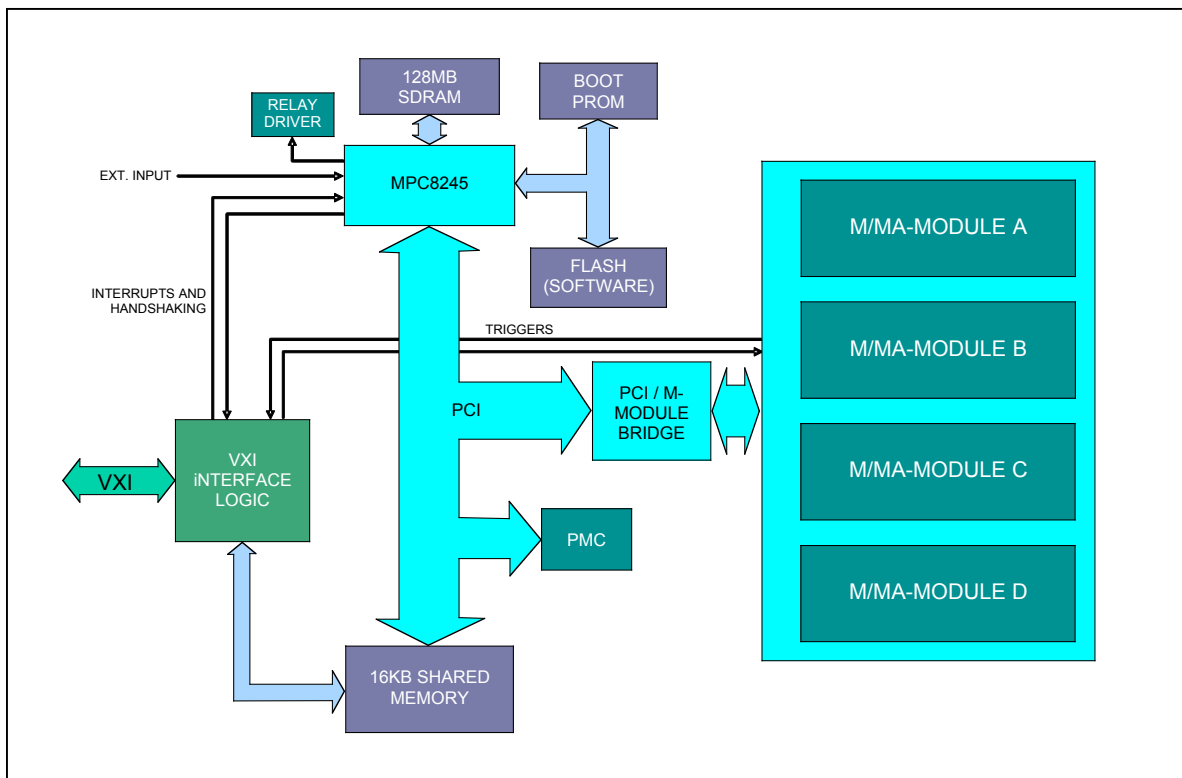
Addressing	A8
Data	8/16/32-bit
Burst Access	Supported
Triggers	TRIGA & TRIGB
Interrupts	INTA, INTB, & INTC

### Applications

- Legacy Instrument Replacement
- Data Acquisition and Analysis
- Control Processing

### Additional Information

User Manuals for this carrier and C&H M-modules can be found on our website at [www.chtech.com](http://www.chtech.com).



## Specifications:

### Processor:

- MPC8245 300MHZ (MPC603e core)
- 16KB/16KB L1 Integrated Cache

### Local PCI Bus:

- 33MHZ 32-bit

### Main Memory:

- 128MB SDRAM
- 8MB Flash, VXI programmable
- 32KB Boot ROM, socketed

### Shared Memory:

- 16 KB Dual-ported SRAM
- Four 32 deep 32-bit FIFO's
- DMA/Burst support
- Internal arbitration
- Fully accessible by both VXI and PowerPC

### M-Module Interface:

- Support for four M or MA-modules
- ANSI/VITA Std. 12-1996
- M-Module triggers map to VXI TTL triggers
- M-Module interrupt to PowerPC

### PMC Interface:

- Support for one PMC module
- IEEE P1386.1 32-bit compliant
- 33MHz 32-bit
- PMC I/O connected to 64-pin header
- 3.3V/5V signaling level is jumper selectable

### External Relay Control:

- Darlington relay driver, 7-channels, 50V, 350ma
- Internal +5V supply or external power can be used

### External Input:

- Four TTL inputs
- Allows direct external control of application software

### Interrupts:

- M-Module to PowerPC interrupt support
- PowerPC to VXI interrupt level 1-7 (programmable)
- VXI Host to PowerPC interrupt support

### Temperature:

Operating: 0°C to 50°C  
Storage: -40°C to 70°C

## Software:

### C&H Intelligent Carrier Operating System (ICOS):

- Boot-up, initialization, and PCI bus enumeration
- VXI word serial protocol support
- Firmware download to Flash memory via VXI
- Math Library

### Direct Access:

- Direct VXI access of M-modules
- Up to 8K of local PCI address space can be directly mapped to VXI A24 or A32 space

### Debugging Interface:

- Common On-Chip Processor (COP)/JTAG
- Standard COP header
- Third-party development tools supported

### RTOS Support:

Architecture supports common real-time operating systems, such as VxWorks, OS-9, Linux, and others.