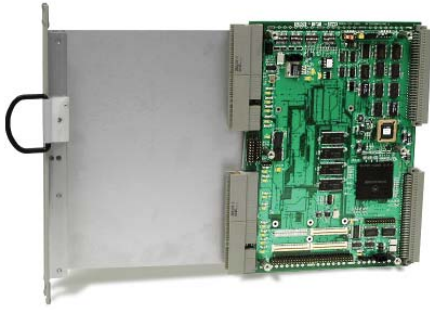


Racal Instruments™ VX407C

Intelligent PXI/cPCI Carrier



The Racal Instruments™ VX407C is an intelligent VXI carrier that allows PXI and cPCI modules to be used in VXI systems. The carrier supports two 3U PXI or cPCI modules or one 6U PXI or cPCI module. It has an on-board PowerPC processor that can perform command translation, data analysis, and many other data processing or process control functions. Data can be transferred to/from a PXI or PMC device and on-board memory at a sustained rate of 132 Mbytes/s.

Key Features

- **Embedded PowerPC® micro-processor to facilitate additional functionality**
- **Adapts 3U or 6U PXI/cPCI modules to VXI**
- **Supports both register-based and message-based communication**
- **PMC port for peripherals, such as mass storage**

Product Information

The VX407C Intelligent Carrier supports both VXI register-based and word serial modes of operation. Attached cPCI/PXI modules can be directly accessed from VXI and the PowerPC® microprocessor.

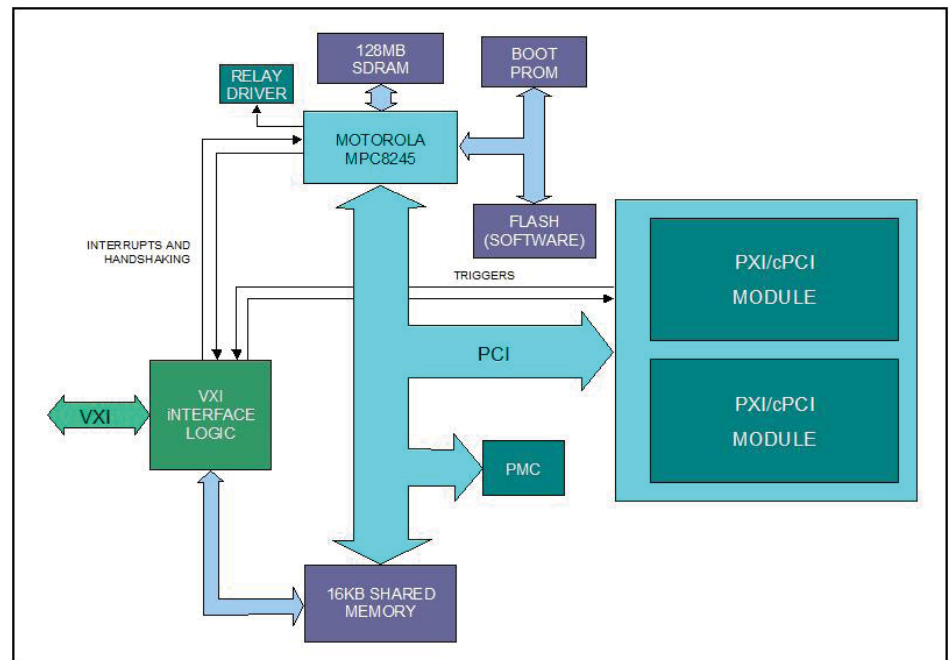
The electrical and mechanical interface allows cPCI or PXI modules to be easily integrated into a VXI system. Modules mount with front panels flush with other VXI modules in the system. Single, double, and triple wide cPCI/PXI modules are supported.

In addition to cPCI/PXI support, the carrier provides one PMC position that allows additional functionality to be added, such as

mass storage or communication interfaces. A mating connector is provided for I/O access.

Relay driver logic allows special control hardware to be easily added to the overall integrated system.

The VX407C is powered by a highly integrated PowerPC® 8245 microprocessor with a PowerPC 603e™ core, a built-in peripheral interface 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.



Specifications

Note: The Astronics Test Systems policy is one of continuous development and improvement. Consequently, the equipment may vary in detail from the description and specifications in this publication.

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
- Block Transfers: Supported
- Interrupts: ROAK, prog. levels
- TTL Triggers: SYNC protocol

cPCI/PXIbus Compliance

- Complies with PCI Spec. 2.2 and PXI Spec. 2.0 for cPCI and PXI 3U or 6U modules
- Data: 32-bit
- Speed: 33 MHz
- Voltage: 5 V
- PXI Triggers: Supported

Processor

- Motorola 300 MHz MPC8245
- MPC603e core
- 16 kB/16 kB L1 Integrated Cache

Local PCI Bus

- 33 MHz 32-bit

Main Memory

- 128 MB SDRAM
- 8 MB Flash, VXI programmable
- 64 k Boot ROM, socketed

Shared Memory

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

cPCI/PXI Interface

- Support for two 3U modules or one 6U module
- 33 MHz 32-bit
- PXI triggers map to VXI TTL triggers
- cPCI/PXI interrupt to PowerPC® supported
- On-board PXI CLK10 source

PMC Interface

- Support for one PMC module
- IEEE P1386.1 32-bit compliant
- 33 MHz 32-bit
- PMC I/O connected to 64-pin header

VXIbus Interface

- 32-bit Block Transfer: 20 Mbytes/s

External Relay Control

- Darlington relay driver, 8-channels
- Controlled by PowerPC®
- 50 V 500 mA (single channel)
- 16-pin header

Power (max)

- +5 V and +3 V: 24 W total with +3.3 V limited to 4.4 A max
- +12 V: 18 W
- 12 V: 18 W

External Power

- 5 V: An additional 2.5 A (12.5 W) may be provided

Temperature

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

Interrupts

- PCI to PowerPC® interrupt support
- PowerPC® to VXI interrupt level 1-7 (programmable)
- VXI Host to PowerPC® interrupt support

Software

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

Debugging Interface

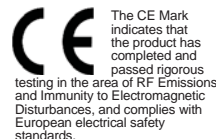
- Common On-Chip Processor (COP)/JTAG
- Standard COP header
- Third-party development tools supported

On-Board System Utilities

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

RTOS Support

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



Ordering Information

408216-0001 : Racal Instruments™ VX407C-1

Single-wide Intelligent PXI/cPCI Carrier

408216-0002 : Racal Instruments™ VX407C-2 (Mature)

Double-wide Intelligent PXI/cPCI Carrier

408216-0003 : Racal Instruments™ VX407C-3 (Mature)

Triple-wide Intelligent PXI/cPCI Carrier



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