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Racal Instruments
http://www.racalinstruments.com

PRODUCT INFORMATION

This product is manufactured by C&H Technologies, Inc.
and exclusively distributed by Racal Instruments, Inc.

Intelligent PXI/cPCI Carrier
Model VX407C

The VX407 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.



(VXI top shield included, but not shown in picture)

SPECIFICATIONS

The Model 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.

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. For a complete listing of available PMC modules, see www.mezzanines.org.
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.

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

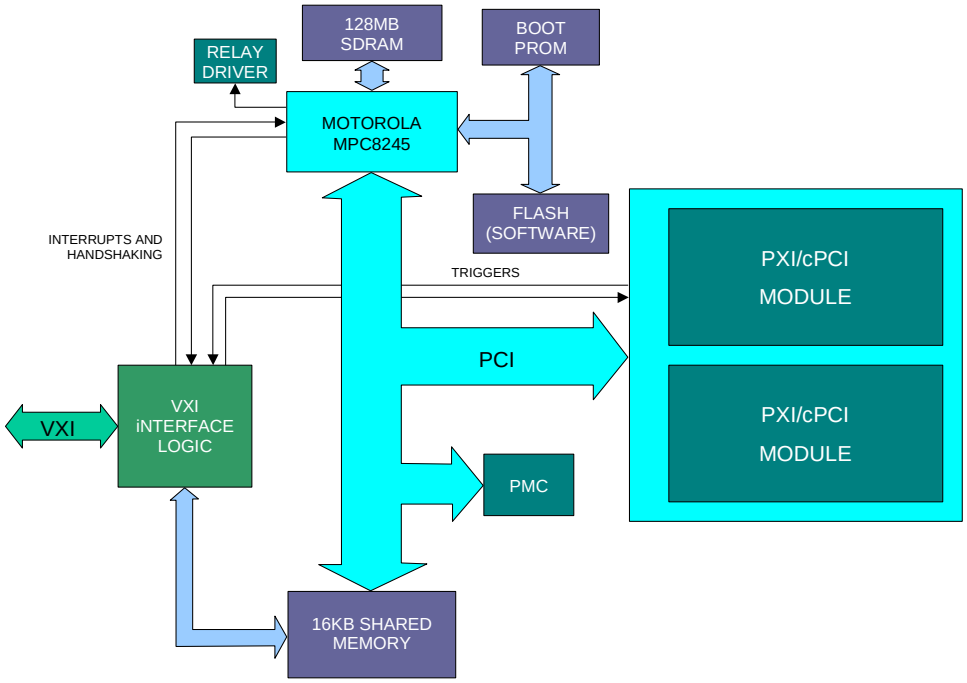
Complies with PCI Spec. 2.2 and PXI Spec. 2.0 for cPCI and PXI 3U or 6U modules
Data: 32-bit
Speed: 33 MHz
Voltage: 5 V
PXI Triggers: Supported

Applications

Legacy instrument replacement
Data acquisition and analysis
Control processing

Ordering Information

Single-wide: 11028560-0001
Double-wide: 11028560-0002
Triple-wide: 11028560-0003



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

Interrupts
PCI 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
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.

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The Racal Instruments and C&H Technologies policy is one of continuous development and consequently the equipment may vary in detail from the description and specification in this publication.
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