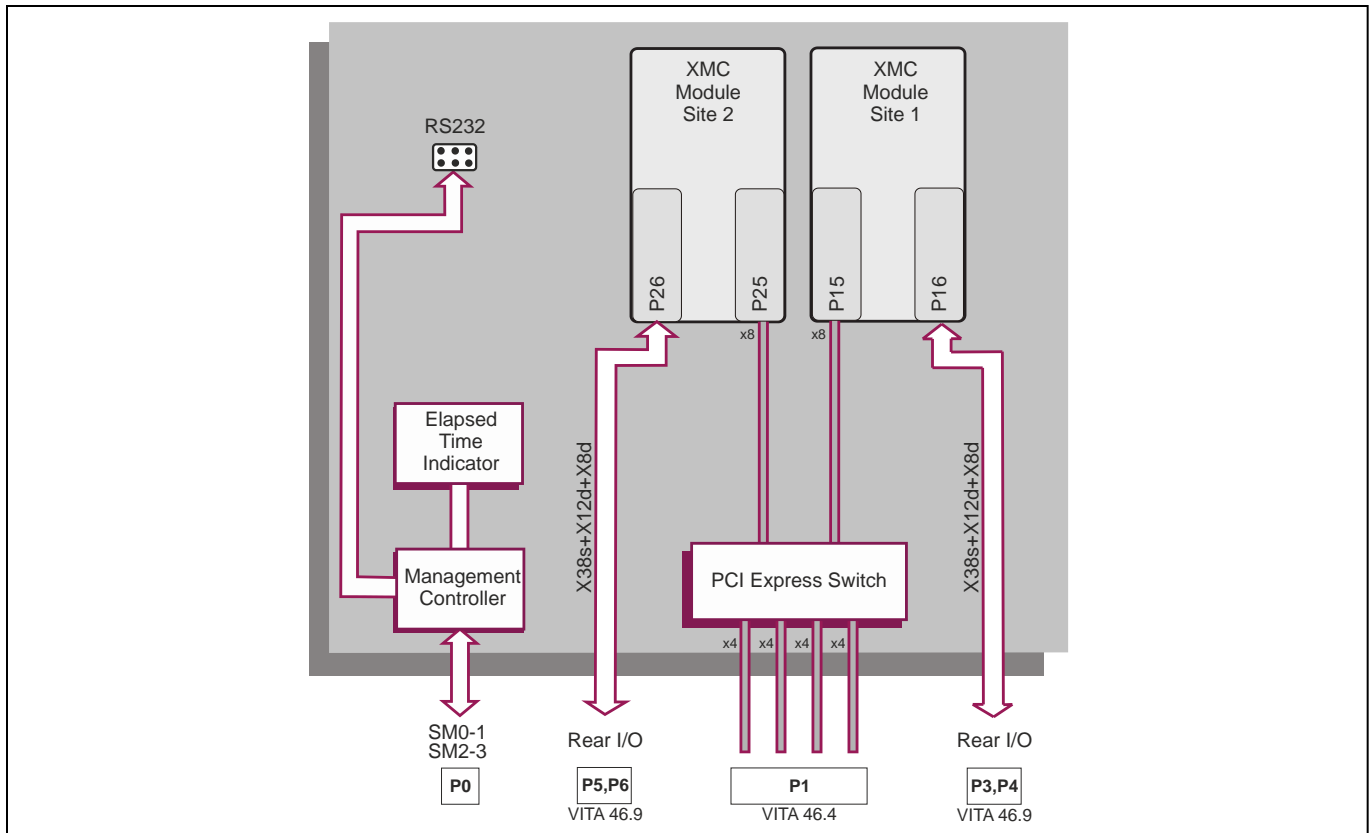# Rugged Conduction-cooled 6U VPX Dual XMC Carrier

Key Features

VR XMC/001-RCx provides a flexible solution for adding XMC I/O functionality to a conduction-cooled 6U VPX-REDI™ system.

- Dual XMC carrier

- PCI Express® Gen 3 capable for high bandwidth connection to controller board

- This carrier is designed for rugged conduction-cooled applications and is also available as a non-rugged air-cooled variant

CONCURRENT TECHNOLOGIES

6U VPX-REDI Dual XMC Carrier

- conduction-cooled 6U VPX-REDI™ dual XMC carrier supports:
  - → 2 single width XMC modules
  - → up to 40 Watts per XMC module
  - → supports single end-point PrXMC modules
  - → PCI Express® fabric backplane operation
- compatible with OpenVPX™ (VITA 65)
- air-cooled VPX versions available:
  - → see VR XMC/x01 datasheet

XMC Interfaces

- complies with XMC (Switched Mezzanine Card) VITA 42 standard
- dual XMC interfaces support:
  - → x1, x2, x4 or x8 PCI Express on site 1 and site 2
  - → VPWR +5V or +12V (build option)
- XMC connector type (build option) determines the maximum PCIe operational speed:
  - → up to Gen 2, VITA 42 XMC (color black)
  - → up to Gen 3, VITA 61 XMC 2.0 (color white)
- XMC rear I/O configuration:
  - → site 1 rear I/O: P16 = X38s +X12d+X8d
  - → site 2 rear I/O: P26 = X38s + X12d+X8d
  - → XMC I/O complies with VITA 46.9

System Management

- Elapsed Time Indicator for Scheduled Maintenance:
  - → logs accumulated mission duration
  - → records number of system power cycles
- System Management on VPX:
  - → implements the SM0-1 and SM2-3 interface
  - → IPMI Version 1.5 via SM0-1 and SM2-3
- on-board Baseboard Management Controller
- monitors board voltages and status indicators
- supports 512 Kbytes of non-volatile memory
- RS232 Management port for board management:
  - → available via on-board header

VPX Backplane Interface

- PCI Express (PCIe®) backplane fabric interface supports:
  - → 4 x4 PCIe ports, 2 x4 & 1 x8 PCIe ports, 2 x8 PCIe ports or 1 x16 PCIe ports
  - → Gen 1, Gen 2 and Gen 3
- any two ports can be configured as non-transparent
- compatible with OpenVPX module profiles:
  - → MOD6-PER-4F-12.3.1-2,
  - → MOD6-PER-4F-12.3.1-3,
  - → MOD6-PER-2F-12.3.2-1,
  - → MOD6-PER-2F-12.3.2-2,
  - → MOD6-PER-1F-12.3.4-1
  - → MOD6-PER-1F-12.3.4-2
- option to work with PCIe clock (25MHz or 100MHz) from backplane (common reference clock)
- 4-channel DMA engine for fast data block moves

Compatible Processor Boards

- compatible with Concurrent Technologies 6U VPX-REDI processor boards supporting a PCIe data plane
- supported operating systems depend on the processor board used
- contact your local sales office for further information

Electrical Specification

- all current figures are typical (without XMC modules fitted)
- +5V (VS3) @ 2.1A; voltage +5%/-2.5%
- +3.3V (AUX) @ 0.1A; voltage +5%/-5%
- +12V and -12V not used on-board (routed to XMC sites)

Safety

- PCB (PWB) manufactured with flammability rating of UL94V-0

Environmental Specification

- conduction-cooled (VITA 48.2)
- conformally coated
- operating temperature at card edge :
  - → VITA 47 Class CC4, -40°C to +85°C
- non-operating temperature:
  - → VITA 47 Class C4, -55°C to +105°C
- operating altitude:
  - → -1,000 to 50,000 feet (-305 to 15,240 meters)
  - → 5% to 95% Relative Humidity, non-condensing

Mechanical Specification

- 6U VPX form-factor (VITA 46.0, VITA 48.0)
- 9.2 inches x 6.3 inches (233mm x 160mm)
- slot widths (VITA 48.0):
  - → 0.8 inches VPX-REDI Type 2, RCT-Series
  - → 0.85 inches VPX-REDI Type 1, RCS-Series
- connectors to VITA 46.0: P0, P3 through to P6
- operating mechanical:
  - → shock - VITA 47 Class OS2, 40g
  - → random vibration - VITA 47 Class V3, 0.1g²/Hz

Please contact your local Concurrent Technologies sales office for further details on board build options and accessories.