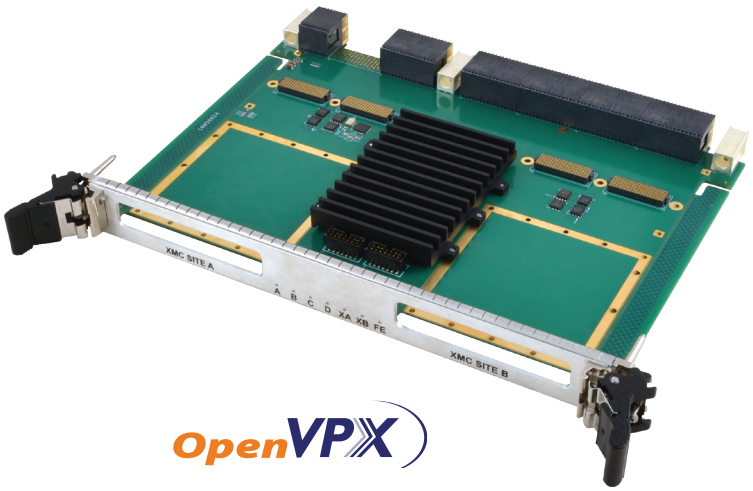
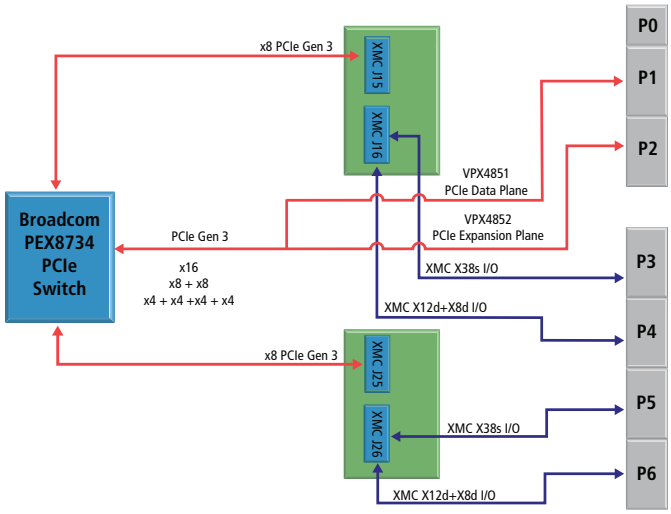
VPX Carrier Cards

VPX4850 Series 6U VPX Carrier Cards for XMC Modules

CE 2 YEAR WARRANTY RoHS Compliant





Two XMC slots ◆ PCIe x16 Gen 3 interface via Expansion or Data plane ◆ Air or Conduction-cooled

The VPX4850 carrier cards provide a simple and cost-effective solution for interfacing XMC modules to a VPX computer system. They offer host processors low latency access to the XMC modules through high-speed interconnects on the carrier card.

The XMC sites enable rapid data throughput with their use of a 16-lane PCIe Gen 3 interface. These sites support front or rear panel I/O. Two versions offer a choice of direct PCIe connection to the VPX backplane via the data or expansion plane.

By inserting XMC modules providing advanced signal processing, communication, GPU/FPGA computing and other capabilities, developers can leverage hundreds of available functions currently unavailable in a VPX platform. The carrier cards also support the use of a prXMC processor module.

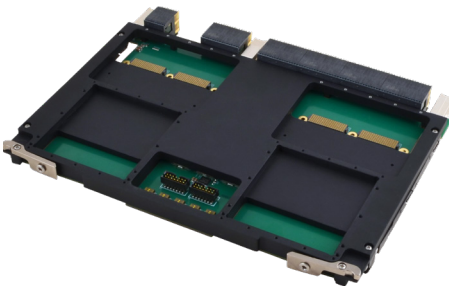
These carriers are ideal for high-performance aerospace, defense, scientific research, and industrial systems requiring high-speed I/O expansion. The VPX4850 is available in air-cooled and conduction-cooled versions.

Software support packages facilitate use with Microsoft Windows®, Linux®, and VxWorks™ operating systems.

Acromag has more than 60 years of experience working with defense, aerospace, scientific, and industrial applications. We are committed to providing embedded computing solutions with the best long-term value in the industry. These boards are designed and manufactured in the USA with a 2-year warranty and a life expectancy of at least 7 years.

Key Features & Benefits

- Hosts two VITA 42.0 compliant XMC modules
- Variants available supporting alternate XMC connectors defined in VITA 61 and VITA 88
- Supports XMC Front I/O (air-cooled only)
- Supports XMC Rear I/O with backplane mapping per VITA 46.9
- Supports full Jn6 rear I/O
- PCIe Gen3 x 16 interface on Data Plane (VPX4851) or Expansion Plane (VPX4852)
- Backplane PCIe interface can be configurable as 1x16, 2x8 or 4x4 ports
- Available in air-cooled or conduction-cooled variants compliant with VITA 48
- Supports the use of an XMC processor on either site



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VPX Carrier Cards

Performance Specifications

NOTE: Specifications below only for VPX4850 carriers. See XMC data sheet for additional specifications.

General

Form Factor
6U VPX module, air or conduction-cooled, 1.0 inch pitch.
Air-cooled metalwork compliant with VITA 48.1.
Conduction-cooled metalwork compliant with VITA 48.2.

Dimensions
Height: 233.35 mm (9.187 in).
Depth: 160.00 mm (6.299 in).
PCB Thickness: 1.68 mm (0.066 in).
Weight (Air-Cooled): 419 kg (0.9232 lb).
Weight (Conduction-Cooled): 0.60 kg (1.332 lb).

VPX Interface

OpenVPX
Compatible with VITA 65.

OpenVPX Slot Profile
VPX4851: SLT6-PER-4F-10.3.1.
VPX4852: SLT6-PER-1Q-10.3.5.

OpenVPX Module Profile
MOD6-PER-1Q-12.3.5-2.

I2C Bus
Connects FRU EEPROM and on-board temperature sensor to VPX backplane.

SMBus
Connected to VPX backplane per VITA 46.0.

PCIe Interface

PCIe switch
Broadcom PEX8734 connected to XMC Jn5.

Backplane
PCIe Gen 3 x16.
VPX4851: Data plane to P1.
VPX4852: Expansion plane to P2.

XMC Interface

XMC Expansion
Two XMC mezzanine module slots. Available with VITA 42, VITA 61, or VITA 88 connectors.

PCIe interface
XMC Jn5 ports connect 8-lane PCIe Gen 3 to PCIe Switch.

Processors
Supports prXMC modules on either XMC expansion site.

Rear I/O
Connections via Jn6 ports.
Signal Mapping: P3w3-X38s+P4w1-X12d+X8d+P5w3-X38s+P6w1-X12d+X8d.
VITA 46.9 compliant.

JTAG interface
JTAG debug ports provided for each XMC site.

Power Requirements

+12V (VS1) must be supplied from VPX backplane. All voltage rails (+3.3V_AUX, +VBAT) derived from +12V.

+12V (VS1): 0.9A typical, 1.5A max.

+3.3V Aux DC: 2mA typical, 6mA max.

Environmental

Air-Cooled Operating Temperature
Standard: 0 to 55°C (air flow > 200 LFM).
Extended: -40 to 70°C (air flow > 200 LFM).

Conduction-Cooled Operating Temperature Range
-40 to 85°C.

Storage Temperature Range
-55 to 100°C.

Relative Humidity
5 to 95% non-condensing.

Vibration, Random Operating
VITA 47 Class V1. Withstands vibration from 5 to 100Hz with Power Spectral Density (PSD) = 0.04g2/Hz, for 1 hour per axis. MIL-STD-810, Method 514, Procedure 1.

Shock, Operating
VITA 47 Class OS1. 20g, 11ms half sine and terminal sawtooth shock pulses. 3 shock pulses in each direction along 3 axes (36 shocks, total). MIL-STD-810, Method 516, Procedure 1.

Ordering Information

Models

Go to on-line ordering page >

Carrier Cards

VPX4851-42-20
VPX carrier card, two VITA 42 XMC slots, data plane PCIe, air-cooled.

VPX4851-42-30
VPX carrier card, two VITA 42 XMC slots, data plane PCIe, extended temperature air-cooled.

VPX4851-42-50
VPX carrier card, two VITA 42 XMC slots, data plane PCIe, conduction-cooled.

VPX4851-61-20
VPX carrier card, two VITA 61 XMC slots, data plane PCIe, air-cooled.

VPX4851-61-30
VPX carrier card, two VITA 61 XMC slots, data plane PCIe, extended temperature air-cooled.

VPX4851-61-50
VPX carrier card, two VITA 61 XMC slots, data plane PCIe, conduction-cooled.

VPX4852-42-20
VPX carrier card, two VITA 42 XMC slots, expansion plane PCIe, air-cooled.

VPX4852-42-30
VPX carrier card, two VITA 42 XMC slots, expansion plane PCIe, extended temperature air-cooled.

VPX4852-42-50
VPX carrier card, two VITA 42 XMC slots, expansion plane PCIe, conduction-cooled.

VPX4852-61-20
VPX carrier card, two VITA 61 XMC slots, expansion plane PCIe, air-cooled.

VPX4852-61-30
VPX carrier card, two VITA 61 XMC slots, expansion plane PCIe, extended temperature air-cooled.

VPX4852-61-50
VPX carrier card, two VITA 61 XMC slots, expansion plane PCIe, conduction-cooled.

Related Products

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