

AcroPack® Carriers

VPX4500 Series VPX Carrier Cards for XMC and AcroPack Modules



PCIe x16 Gen 3 interface via Data plane ◆ One XMC and Four AcroPack slots ◆ 6U form factor

Description

Models

VPX4521-42-20: Vita 42, Air-cooled.

VPX4521-42-30: Vita 42, Air-cooled, Ext. temp.

VPX4521-42-50: Vita 42, Conduction-cooled.

VPX4521-61-20: Vita 61, Air-cooled.

VPX4521-61-30: Vita 61, Air-cooled, Ext. temp.

VPX4521-61-50: Vita 61, Conduction-cooled.

The VPX4521 carrier card provides a simple and cost-effective solution for interfacing one XMC and four AcroPack modules to a VPX computer system.

Connect to the OpenVPX™ compatible system via Data plane for a direct PCIe connection over the VPX backplane. This allows host processors access to a high-performance, low latency interconnect to the AcroPack and XMC modules on the carrier card.

By inserting AcroPack or XMC industrial I/O and configurable FPGA modules, developers can now leverage hundreds of available functions currently unavailable in a VPX platform.

These carriers are ideal for high-performance industrial, defense, scientific research, and telephony systems requiring high-speed I/O expansion. The VPX4521 is available in two versions: air-cooled and conduction-cooled.

The VPX4521 is a member of a 6U OpenVPX mezzanine carrier card family that supports a simple and cost-effective solution for interfacing XMC or AcroPack modules to OpenVPX computer systems.

Key Features & Benefits

- OpenVPX™ compatible Data plane connection
- Support for upstream/downstream PCIe links
- Supports use of prXMC single board computers
- Optional backplane configuration for one 16-lane port, two 8-lane ports, or four 4-lane ports
- Supports standard VITA 42 and rugged VITA 61 XMC modules on 25W mezzanine site
- XMC site supports PCIe x8 Gen 3 interface
- 68 pin HD CHAMP front I/O connectors
- Supports 78-bits (39 pairs) of XMC I/O to backplane per pattern X38s+X8d+X12d of VITA 46.9
- Conforms to VITA 42.0, 42.3, 46.0, 46.4, 48, 65
- Supports front or rear panel XMC I/O
- Supports front or rear panel AcroPack I/O
- ±12V AUX power to XMC site



Tel: 844-878-2352 ■ solutions@acromag.com ■ www.acromag.com ■ 30765 Wixom Rd, Wixom, MI 48393 USA

Performance Specifications

NOTE: Specifications below only for VPX4521 carrier. See AcroPack and XMC data sheets for additional specifications.

■ PCI Express Bus Compliance

This device meets or exceeds all written PCI Express Base specifications per revision 3.1.

Includes a PCIe Gen 3 capable PCIe switch used to expand backplane PCIe port to multiple ports supporting various expansion cards. (AcroPack or mini-PCIe).

Downstream PCIe switch used to provide four one-lane PCIe ports to AcroPack devices.

■ Ease of Use

A unique carrier and site number is set via slot address. This provides the capability to distinguish a particular AcroPack module from others when multiple instances of the same module are used in a system.

A standard 14-pin Xilinx JTAG programming header is provided for programming and debugging the FPGA on some AcroPack modules. The JTAG ports of the four AcroPack modules are daisy-chained together.

There is a separate 14-pin Xilinx JTAG header provided for accessing devices on an XMC mezzanine module.

■ General

Form Factor

6U VPX bus 6.299" (160mm) x 9.173" (233.0mm).

Pitch

1".

VPX Carrier Interface

Compatible VITA 65 module / slot profiles:
MOD6-PER-4F-12.3.1-n Data Plane PCIe Gen1/2/3.

FRU EEPROM with temperature monitor.

Mezzanine Sites

One VITA 42 or VITA 61 XMC module.

XMC site is PCIe Gen 3 and 8 lanes wide.

Front panel I/O support for each AcroPack site with 68-pin CHAMP connector (air-cooled only).

Front panel I/O support for XMC module (air-cooled only).

Rear I/O support for the AcroPack site with 50 I/O lines. (conduction-cooled only).

XMC rear I/O compliance is P3w3-X38s+P4w1-X12d+x8d.

■ Power Requirements

Power For Carrier Board Only

+12V (VS1) - 0.9A typical, 1.5A maximum.

■ Environmental

Air-Cooled Operating Temperature

Standard models: 0 to 70°C.

Extended temperature models: -40 to 85°C.

Conduction-Cooled Operating Temperature Range

-40 to 85°C (board must operate in a fully-installed conduction-cooled rack).

Storage Temperature Range

-55 to 125°C.

Relative Humidity

5 to 95% non-condensing.

Vibration

Designed to comply with VITA 47 Class V1.

Shock

Designed to comply with VITA 47 Class OS1.

Ordering Information

Carrier Cards

[VPX4521-42-20](#)

VPX 6U carrier, data plane, hosts four AcroPacks and one Vita 42 XMC, air-cooled.

[VPX4521-42-30](#)

VPX 6U carrier, data plane, hosts four AcroPacks and one Vita 42 XMC, extended temp.

[VPX4521-42-50](#)

VPX 6U carrier, data plane, hosts four AcroPacks and one Vita 42 XMC, conduction-cooled.

[VPX4521-61-20](#)

VPX 6U carrier, data plane, hosts four AcroPacks and one Vita 61 XMC, air-cooled.

[VPX4521-61-30](#)

VPX 6U carrier, data plane, hosts four AcroPacks and one Vita 61 XMC, extended temp.

[VPX4521-61-50](#)

VPX 6U carrier, data plane, hosts four AcroPacks and one Vita 61 XMC, conduction-cooled.

See Acromag.com/AcroPacks for a full list of I/O modules.

Accessories

[5025-288](#)

Termination panels, DIN-rail mountable, SCSI-3 connector, 68 screw terminals

[5028-420](#)

Round cable, shielded, male SCSI-3 connector to 68-pin CHAMP 0.8mm, 2 meters long.

