VPX AcroPack® Carrier Cards

VPX4500 Series  VPX Carrier Cards for AcroPack® Modules

Description

Models
VPX4500E-LF: Air-cooled
VPX4500-CC-LF: Conduction-cooled

The VPX4500 is a 3U VPX carrier for Acromag AcroPack (AP) mezzanine board modules. The carrier board provides a modular approach to system assembly since each carrier can be populated with any combination of analog input/output, digital input/output, communication, AP modules. The modularity allows the user to create a board which is customized to the application. This saves money and space; a single carrier board populated with AP modules may replace several dedicated function VPX boards. The VPX4500 carrier board provides impressive functionality at low cost.

Model VPX4500E-LF is an air-cooled product that supports three AcroPack sites. Two of the sites provide field I/O connections through front panel mounted 50 pin shielded connectors. The third site provides field I/O connections through the VPX backplane.

Model VPX4500-CC-LF is a conduction-cooled product that supports three AcroPack sites. Two of the sites provide field I/O connections through 50 pin ribbon cable connectors. The third site provides field I/O connections to the VPX backplane.

Key Features & Benefits

- Three AcroPack or mini-PCIe module slots support any combination of I/O functions.
- PCI Express version 2.1 compliant.
- Fused +1.5V, +3.3V, +5V, +12V, and -12V DC power is provided. A fuse is present on each supply line serving each AcroPack module.
- Front panel SCSI-2 connectors for the field I/O signals using VPX4500E-LF.
- Extended temperature range.
- Standard 14-pin Xilinx JTAG programming header.
- Software development tools for VxWorks, Linux, and Windows environments.

Bulletin #8400-900b
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### Performance Specifications

**PCI Express Bus Compliance**  
This device meets or exceeds all written PCI Express specifications per revision 2.1.  
Includes a PCIe Gen 2 switch to expand the single host PCIe port to three ports, one to each device (AcroPack or mini-PCIe).  
The host port consists of four PCIe lanes, each of the mini-PCIe sites have one lane each.

**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 two AcroPack modules are daisy-chained.

**General**  
**Form Factor**  
3U VPX bus 6.299” (160mm) x 3.937” (100.0mm).

**Pitch**  
VPX4500-LF (air-cooled): 1” pitch.  
VPX4500-CC-LF (conduction-cooled): 1” pitch.

**VPX Carrier Interface**  
Compatible VITA 65 module / slot profiles:  
FRU EEPROM with temperature monitor.

**AcroPack Interface**  
One AcroPack module in single VPX slot.  
3.3V, 5V and ±12V provided for AcroPack modules via the VPX backplane.

### Power Requirements

**Power**  
3.3 Volts (±10%): 0.55mA typical  
+12 Volts (±5%): 25mA Typical

The VPX4500 has two DC/DC converters to provide the power supply voltages to the AcroPack modules that are not present at the host interface. The +1.5 Volt supply is sourced from the 5 Volt host power. The +12 Volt supply is sourced from +12 Volt host power.

### Physical

**Physical Configuration**  
PCle x4 lane.

**Field I/O Connector**  
VPX4500-CC-LF: Two 50-pin male headers.  
VPX4500-LF: Two 50-pin Champ 0.8mm connectors.

### Environmental

**Operating temperature**  
VPX4500-LF: -40 to +85°C.  
VPX4500-CC-LF: -40 to +85°C.  
VPX4500-RTM-LF: -40 to +85°C.

**Storage Temperature Range**  
-55 to 125°C.

**Relative Humidity**  
5 to 95% non-condensing.

**Vibration**  
0.05g RMS (20 - 2000Hz) random, operating 6g RMS per Hz spectrum.

**Shock**  
30g each axis, 11ms.

### Ordering Information

**Carrier Cards**  
- **VPX4500-LF**: VPX carrier card, 3U, three AcroPack slots.  
- **VPX4500-CC-LF**: Conduction-cooled version of VPX-4500.


**Accessories**  
- **VPX4500-RTM-LF**: Rear transition module
- **5028-372**: Round cable, shielded, SCSI-2 to CHAMP. 0.8mm, 2 meters long.
- **5028-378**: Termination panel, SCSI-2 connector, 50 screw terminals.
- **5025-552**: Termination panel, DIN-rail mountable panel
- **5025-550-3**: Non-shielded cable, 3 feet long
- **5025-550-7**: Non-shielded cable, 7 feet long
- **5025-550-10**: Non-shielded cable, 10 feet long
- **5025-551-3**: Shielded cable, 3 feet long
- **5025-551-4**: Shielded cable, 4 feet long
- **5025-551-7**: Shielded cable, 7 feet long
- **5025-551-10**: Shielded cable, 10 feet long

**Software** (see software documentation for details)  
- **APSW-API-VXW**: VxWorks® software support package  
- **APSW-API-WIN**: Windows® DLL driver software support package  
- **APSW-API-LNX**: Linux® support (website download only)