AdTEC
Electronics Inc.

- **3U compactPCI carrier for one PMC card or 1 XMC card (PCIe 4 Lane Interface and I/O's)**
- **Transparent Operation**
- **64 bit/66 MHz without user IO or 32 bit /33 MHz/66 MHz with User IO**
- **Supports 3.3V signaling**

- **Rear and front panel I/O access (depending on style)**
- **Rear IO JTAG connectivity**
- **Air- cooled and Conduction-cooled (depending on style)**
- **Extended temperature -40°C to +85°C**
- **Optional conformal coating**

OVERVIEW

This card is XMC or alternatively PMC extension Card for 3U cPCI computer systems. This card provides an easy and low cost solution that enables use of a PMC mezzanine I/O card or an XMC card in a Standard 3U cPCI computer system. The carrier card acts either as an adapter to route PCI bus signals to and from the PMC card through the cPCI card slot connector or an XMC.3 card adapter, which allows up to 4 lanes PCI Express XMC card to be used in a cPCI card slot connector. The XMC card is VITA 42.3 compatible and supports X4 PCI Express lanes. The PCI Express interface supports 1 or 4 lanes to the XMC card XMC cards add two high-density, high-speed connectors designated J15 (primary) and J16 (secondary). Each connector contains 114 pins. On the J15 primary connector, high-speed differential Tx/Rx signals, along with 3.3V power, ground, I2C, JTAG, reset and presence signals. On the J16 secondary connector, 20 high-speed differential pairs are defined, along with grounds and 38 user-defined pins for additional I/O.

The XMC Card is completely transparent to all cPCI operations through a PCI to PCI express bridge (PLX-PEX8114). The bridge enumerates as a standard PCI device and provides direct transparent accesses to the XMC card. The simple two port device is equipped with a standard PCI Express port that scales X1, X2, or X4 lanes in width giving an effective bit rate scaling from 2.5 to 10Gbps. LED lane indicators provide lane status during operation. The XMC card supports PCI Express link with 4 lanes on primary XMC connector and IO's on secondary XMC Connector. The board detects automatically whether an XMC or a PMC is plugged through present LED indicators. The PMC slot can be used for 32/64 bit and 33/66 MHz PMC cards. The combination carrier plus PMC card enables the integrator to build modular systems based on a variety of off-the-shelf standard PMC boards. Field I/O signals are routed through the carrier card's rear J2 connector. Refer to the Rear and front panel options for PMC card. The voltage keying for cPCI carrier and its PMC site is 3.3V.

This card is available in Air-Cooled and Conduction-Cooled version. The conduction-cooled version of the cPCI carrier card addresses the needs of aerospace, military and rugged applications. It contains a thermal heat frame. An aluminum ring or plate can be fit together with conduction-cooled PMC cards. Conduction cooling conducts heat away from the hot spots of the board and transfers the heat to the card edges and to the system chassis. No active ventilation is necessary inside the system, which means the boards are sealed from the environmental influences found outside of the chassis. This unit is ideal for airborne systems, deployment in battleground equipment, and other situations with advanced thermal management requirements. This conduction-cooled carrier card interfaces a PMC card to a cPCI computer system. The conduction-cooled version does not include a standard front panel. Only air-cooled version includes a standard front panel. The carrier is optionally available with a conformal coating layer.

AT-cPCI-PMC/XMC-CAR
3U cPCI based PMC/XMC Carrier Card

PRODUCT SPECIFICATIONS

Mezzanine Slots

- One PMC Slot
- 32bit, 33 MHz or 66MHz
- 64bit, 33 MHz or 66 MHz

XMC Slots

- PCI Express link upto 4 lanes (X4, X2, X1)
- Compliant with XMC standard VITA 42.3-2006
- PCI Express link upto 4 lanes on J15 Connector (Primary)
- 64 I/O's on J16 connector (Secondary)

cPCI Bus

- Compliance to cPCI Core Specification PICMG 2.3 R1.0
- Peripheral Slot
- V(I/O): +3.3V

cPCI coding key

- Complies with IEC 61076-4-101
- Default No key
- 3.3V keying

PMC Voltage Key

- Complies with PMC standard keying P1386
- Default no key
- 3.3V keying

Rear and Front Panel I/O Options

Front Panel	Rear I/O	64bit PCI
YES	No	No
YES	J14/J2	No
YES	No	J13/J2

The options depend on styles
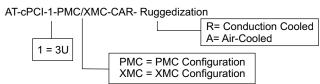
Styles

	A	C
Front Panel	Y	N
Front Stiffener	N	Y
Middle Stiffener	N	Y
Parts soldered	Y	Y
Extended Temperature	Y	Y
Conformal Coating	N	Y
Conduction-cooled	N	Y

ORDERING INFORMATION

Hardware Selection

AT-cPCI-1-PMC/XMC-CAR- Ruggedization

1 = 3U

PMC = PMC Configuration
XMC = XMC Configuration

R= Conduction Cooled
A= Air-Cooled

LED's & Test Points

- Power indicator LED's
- Green PCIe lane indicator LED's and Card present indicator LED's
- Test points for 5V, 3.3V, +12V, -12V and VIO plus two test points for ground

Power Requirements

- Determined by PMC/XMC card used

Electrical Specifications

- Supply voltage/power consumption:
  - \> +12V (-5%/+5%) for XMC and PMC
  - \> +5V (-5%/+5%) for XMC and PMC
  - \> +3.3V (-5%/+5%) for XMC and PMC
  - \> -12V (-10%/+10%) for XMC and PMC
- Power supply must be provided from the back plane via the cPCI J1 connector

Physical

- Physical configuration: 3U cPCI Card 100 x 160mm.
- Rear cPCI connectors: 2mm J1 & J2 connectors.
- PMC connectors: Four 1mm (Stacking Height of 10mm) connectors.
- Conduction-cooled model uses conduction-cooled frame with Wedge locks and Thermo Bars
- Air-cooled model uses the standard front panel assembly with PMC bezel cutout

Mechanical Specifications

- 3U, 1 slot wide (100 x 160 x 20 mm)

Environmental Specifications Temperature

	Air-Cooled	Conduction-Cooled
Operating Temperature	0ºC to + 60ºC	-40ºC to + 85ºC

- American National Standard for 2mm Connector Equipment Practice on Conduction-cooled Euro boards: ANSI/VITA 30.1-2002
- American National Standard for Conduction-cooled PMC: ANSI/VITA 20-2001(R2005)
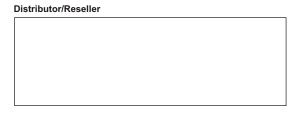
Humidity

- Operating: 5% to 95% (non-condensing)

Warranty

- 1 year limited warranty

- Contact sales for support for other Operating Systems
- Contact sales for configuration of front and rear I/O configuration
- Contact sales for environmental options

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