

BuiltSAFE™ CB3P-6231

3U OpenVPX PCIe Switch Board Carrier for XMC/PMC

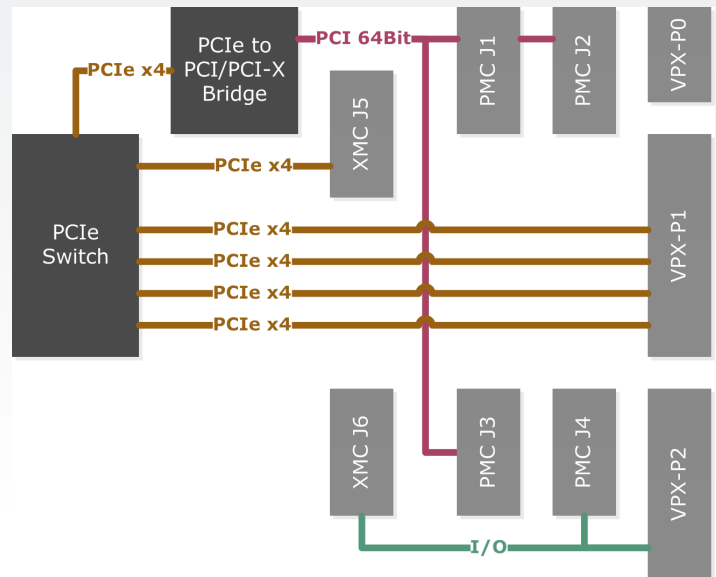
- 1x XMC site and 1x PMC site
- 1x PCIe switch, 32-lanes
- Configurable PCIe upstream port
- Commercial air-cooled and rugged conduction-cooled packaging

Mercury's BuiltSAFE™ products bring the highest level of flight safety assurance to aerospace and defense applications. Our proven, reusable Design Assurance Level (DAL) certified artifacts for mission computing, avionics, networking and datalink comms processing save time and cost while decreasing risk.

The BuiltSAFE CB3P-6231 is a 3U OpenVPX™ PCIe switch PMC/XMC carrier board (VITA 46.9) for use with Mercury's ROCK-2 chassis and backplanes. The carrier offers PCIe Gen1/Gen2/Gen3 lane switching capability, between PMC or XMC connectors and the backplane. The BuiltSAFE CB3P-6231 is packaged for commercial air-cooled and rugged conduction-cooled applications.

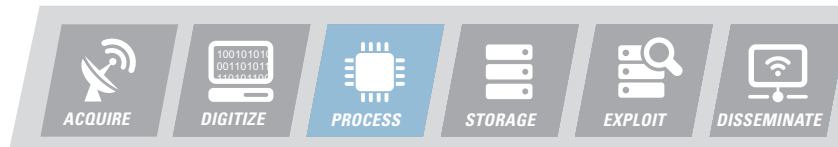
The carrier supports PMC (in monarch and non-monarch modes) or XMC mezzanines. PMC-J4 and XMC-J6 signal mapping to the OpenVPX-P2 connectors complies with VITA 46.9 P2w1 profiles: P2w1-P64s and P2w1-X24s+X8d+X12d respectively. PMC-J1/J2/J3 are connected to the PCIe switch through a PCIe to PCI/PCI-X bridge.

Additionally, the BuiltSAFE CB3P-6231 is available in air-cooled format for laboratory development purpose.



BuiltSAFE CB3P-6231B2 Carrier Board

Mercury Systems is a leading commercial provider of secure sensor and mission processing subsystems. Optimized for customer and mission success, Mercury's solutions power a wide variety of critical defense and intelligence programs.



Technical Specifications

Compliance

3U OpenVPX VITA 65

Backplane switch profile SLT3-SWH-4F-14.4.4 ^(B2)

VPX-REDI VITA 48

XMC VITA 42 (XMC VITA 61 on request)

XMC PCIe VITA 42.3

PMC IEEE.1386

PrPMC VITA 32

PCI-X for PMCs and PrPMCs VITA 39

PMC/XMC Signal Mapping to OpenVPX to VITA 46.9

P2w1-Ps on PMC-J4

P2w1-X24s+X8d+X12d on XMC-J6

Power Consumption

Minimum	typical	maximum	units
-	7	12	Watts

Input/Output

Access to XMC-J6 I/O to VPX-P2 compliant with 46.9 P2w1-X24s+X8d+X12d

Access to all I PMC-J4 I/O to VPX-P2 compliant with VITA 46.9 P2w1-P64s

Switch/Bridges

1x PCIe Gen1/Gen2/Gen3 switch, 32-lanes

1x PCIe x4 to PCI/PCI-X bridge

High-Speed Links/Connections

4x PCIe x4 on OpenVPX connector ^(B2)

1x PCIx4 on XMC-J5

1x PCIe x4 on PCIe to PCI bridge (for PMC)

Sites ⁽¹⁾

1x XMC site

1x PMC site

Ruggedization Levels

Level	Description	Cooling Type	Operating Temperature	Vibration (1 hour per axis)	Operating Shocks
A1	Commercial AC	Forced Air*	0°C to 55°C [AC1]	5-100 Hz: increase at 3 dB/octave, 100-1000 Hz: 0.04 g ² /Hz, 1000-2000Hz: decrease at 6 dB/octave	20g, 11ms saw-tooth, three axes
C4	Extended range CC	Conduction	-40°C to 85°C [CC4]	5-100 Hz: increase at 3 dB/octave, 100-1000 Hz: 0.1 g ² /Hz, 1000-2000Hz: decrease at 6 dB/octave	40g, 11ms saw-tooth, three axes

* The required air-flow is defined separately for each product

Environmental Specifications

Condition	Limits, standards	Comments
Non-operating temperature	-55°C to 105°C [C4]	
Humidity	95%	
Altitude	-1,500 to 60,000 feet	May require conformal coating
Fungus resistance	No nutrient materials	
Workmanship	IPC-A-160 class 3	
Soldering	IPC J-STD-001 class 3	
PCB Manufacturing	IPC-A-600 class 3	
Conformal coating	IPC-CC-830	Optional
Materials	REACH compliant	ROHS variants as an option
Flammability	UL 94 Class V-0	
Quality	EN 9100:2008	

Product Ordering

CB3P-6231A244LN 3U OpenVPX PMC/XMC carrier board, ROCK-2 compatible, extended range conduction-cooled packaging, 0.8" pitch, XMC site VITA 42 (10mm stacking)

CB3P-6231B214LN 3U OpenVPX PMC/XMC carrier board, switch profile SLT3-SWH- 4F-14.4.4, commercial air-cooled packaging, 0.8" pitch, XMC site VITA 42 (10mm stacking)

CB3P-6231B244LN: 3U OpenVPX PMC/XMC carrier board, switch profile SLT3-SWH- 4F-14.4.4, extended range conduction-cooled packaging, 0.8" pitch, XMC site VITA 42 (10mm stacking)

Related BuiltSAFE Hardware Products

FDISK-8432 Flash disk storage XMC

RSL-5222 Serial I/O PMC

VCP-8162 Dual channel XMC frame grabber ⁽²⁾

VCP-8166 H.264/AVC Codec PMC/XMC ⁽²⁾

VCP-8166MA MPEG-2 Codec PMC/XMC with optional H.264/AVC support ⁽²⁾

ROCK-2 3U OpenVPX, SWaP-optimized, rugged, modular, pre-qualified, COTS chassis

(B2) Applies to "B2" model

(1) User I/O connector of XMC and PMC sites are mutually exclusive

(2) Contact Mercury for more information

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