VPX640

NVMe HBA, with Quad M.2 NVMe Solid State Drives, 3U VPX

VPX640

Key Features

- 3U VPX NVMe Host Bus Adapter with quad M.2 NVMe type SSD
- Allows for M.2 Type 2280 and/or 22110
- PCIe Gen3 x8 or dual x4 to the backplane
- PCIe x4 Gen3 to each M.2 Socket
- Health Management through dedicated Processor

Benefits

- Multi-Terabit storage capacity in a 3U VPX form factor
- Electrical, mechanical, software, and system-level expertise in house
- Full system supply from industry leader
- AS9100 and ISO9001 certified company

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The VPX640 is an M.2 Host Bus Adapter (HBA) which supports up to four M.2 type 2280 and/or 22110 style storage devices. The NVMe storage provides high speed and low latency read/write to the SSD devices.

The unit has PCIe Gen3 x8 or dual x4 routed to the P1 connector. Flexible user configuration allows each M.2 to be routed to Ports 0-3, 4-7 or 0-7 (as PCIe x8) on P1. The user can configure and route Ports 0-3 or 4-7 on P1 to any combination of the M.2 modules or to none (e.g. Ports 0-3 to one M.2 and 4-7 to P1 to three more M.2). When not used, Ports 0-3 or 4-7 on P1 can be disabled to avoid clashing with other fabrics in the system.

The VPX640 is available in both air-cooled and rugged conduction-cooled versions. Please contact sales for details.

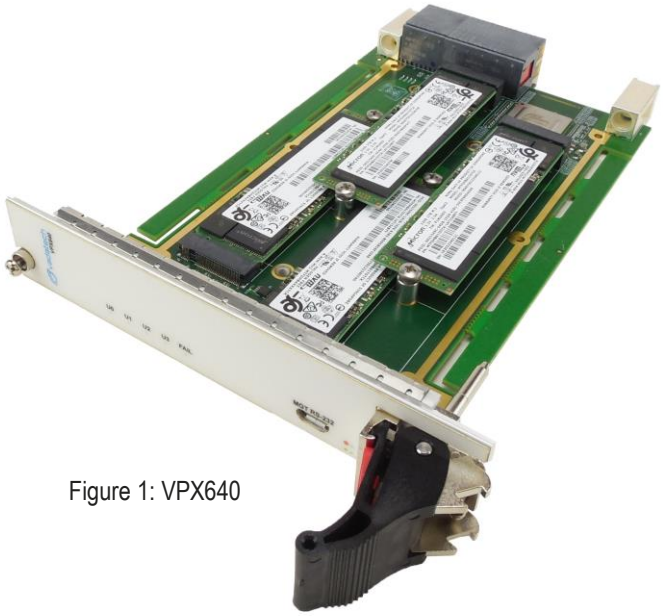

Figure 1: VPX640

Block Diagram

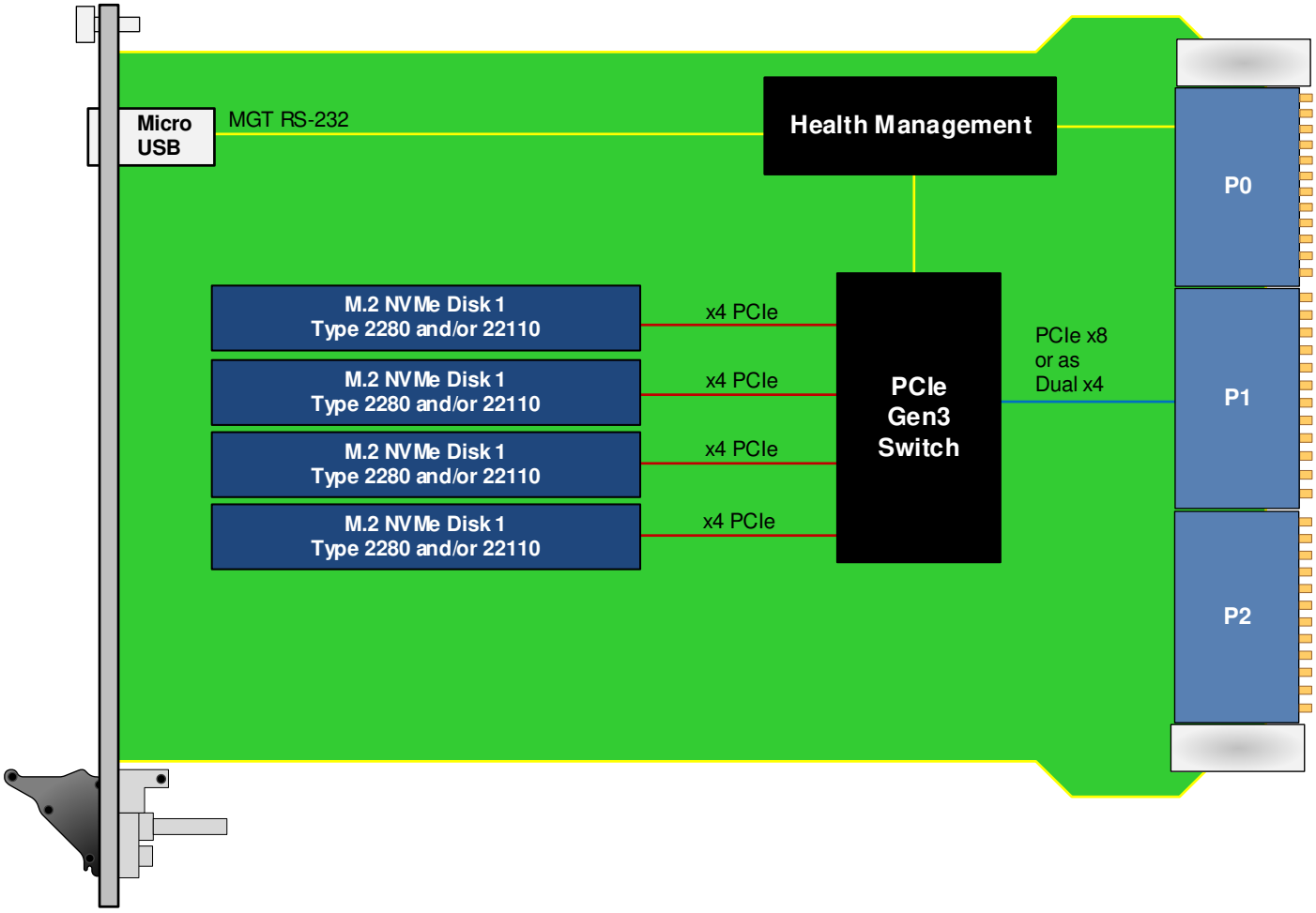

Figure 2: VPX640 Functional Block Diagram

Front Panel

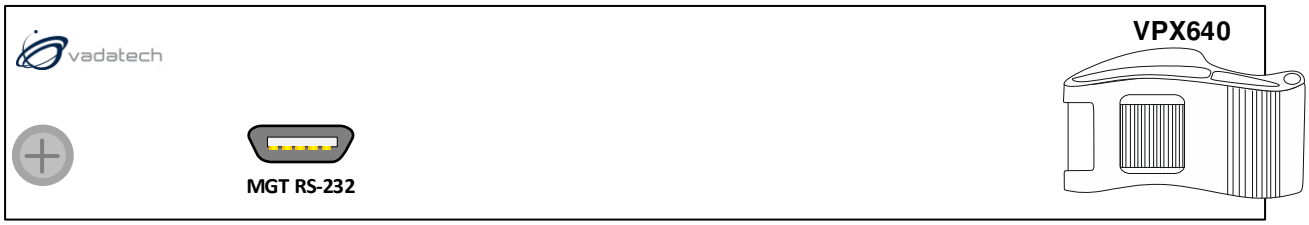

Figure 3: VPX640 Front Panel

Backplane Pinout

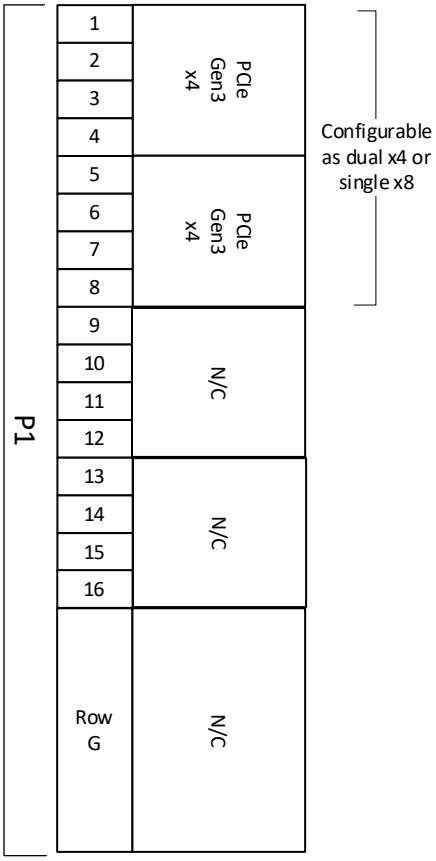

Figure 4: VPX640 Backplane Pinout

Figure 5: VPX640 with the clam shell

Specifications

Architecture		
Physical	**Dimensions**	3U, 1” Pitch
Type	**VPX Storage**	M.2 NVMe SSD
Standards		
VPX	**Type**	VITA 46.x
VPX	**Type**	VITA 65 OpenVPX
Module Management	**IPMI**	IPMI v2.0
PCIe	**Lanes**	Dual x4 or single x8 as PCIe
Storage	**SSD**	Up to four M.2 NVMe SSD
Configuration		
Power	**VPX640**	4W without SSD (with four 2 TB SSD: 25W)
Front Panel	**Micro USB**	RS-232 from Health Management
VPX Interfaces	**Slot Profiles**	See Ordering Options
	Rear IO	PCIe Gen3 x8 or (optional x4)
Software Support	**Operating System**	Linux, Windows, Solaris and VxWorks
Other		
MTBF	MIL Hand book 217-F@ TBD hrs	
Certifications	Designed to meet FCC, CE and UL certifications, where applicable	
Standards	VadaTech is certified to both the ISO9001:2015 and AS9100D standards	
Warranty	Two (2) years, see VadaTech Terms and Conditions	

INTEGRATION SERVICES AND APPLICATION-READY PLATFORMS

VadaTech has a full ecosystem of OpenVPX, ATCA and MTCA products including chassis platforms, shelf managers, AMC modules, Switch and Payload Boards, Rear Transition Modules (RTMs), Power Modules, and more. The company also offers integration services as well as pre-configured Application-Ready Platforms. Please contact VadaTech Sales for more information.

Ordering Options

VPX640 – ABC-DEF-0HJ

A = M2 NVMe SSD 1	D = M.2 NVMe SSD 3	G = Applicable Slot Profiles
0 = No SSD 1 1 = 512 GB 2 = 1 TB 3 = 2 TB 4 = 4TB 5 = 8TB	0 = No SSD 3 1 = 512 GB 2 = 1 TB 3 = 2 TB 4 = 4TB 5 = 8TB	0 = 5 HP, IEEE 1101 1 = 5HP, VITA 48.1
B = M.2 NVMe SSD 2	**E = M.2 NVMe SSD 4**	**H = Environmental**
0 = No SSD 2 1 = 512 GB 2 = 1 TB 3 = 2 TB 4 = 4TB 5 = 8TB	0 = No SSD 4 1 = 512 GB 2 = 1 TB 3 = 2 TB 4 = 4TB 5 = 8TB	See Environmental Specification
C = VPX Connector Type	**F = PCIe Interface**	**J = Conformal Coating**
0 = Standard 50u Gold Rugged 1 = KVPX Connectors	0 = x4 1 = Dual x4 2 = Single x8	0 = No coating 1 = Humiseal 1A33 Polyurethane 2 = Humiseal 1B31 Acrylic

Environmental Specification

	Air Cooled		Conduction Cooled		
Option H	**H = 0**	**H = 1**	**H = 2**	**H = 3**	**H = 4**
Operating Temperature	AC1* (0°C to +55°C)	AC3* (-40°C to +70°C)	CC1* (0°C to +55°C)	CC3* (-40°C to +70°C)	CC4* (-40°C to +85°C)
Storage Temperature	C1* (-40°C to +85°C)	C3* (-50°C to +100°C)	C1* (-40°C to +85°C)	C3* (-50°C to +100°C)	C3* (-50°C to +100°C)
Operating Vibration	V2* (0.04 g2/Hz max)	V2* (0.04 g2/Hz max)	V3* (0.1 g2/Hz max)	V3* (0.1 g2/Hz max)	V3 (0.1 g2/Hz max)
Storage Vibration	OS1* (20g)	OS1* (20g)	OS2* (40g)	OS2* (40g)	OS2* (40g)
Humidity	95% non-condensing	95% non-condensing	95% non-condensing	95% non-condensing	95% non-condensing

Notes: *Nomenclature per ANSI/VITA 47. Contact local sales office for conduction cooled (H = 2, 3, 4)

Related Products

VPX004

- Unified 1 GHz quad-core CPU for, Shelf Manager, and Fabric management
- 1GbE base switch with dual 100/1000/10G uplink
- Full Layer 3 managed Ethernet switch

VPX754

- 3U VPX module Intel 5th Generation Xeon D-1577, D-1548 or D-1520 (Broadwell) SoC
- PCIe Gen3 dual x4 or single x8
- Front-panel video out via micro HDMI

VTX870

- OpenVPX benchtop development platform
- Up to five 3U VPX payload slots
- Compatible with 0.8-inch, 0.85-inch and 1.0-inch modules

Contact

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