

# VPX645

NVMe HBA with RAID (0, 1, 5, 6, 10, 50 and 60), 3U VPX

## Key Features

- 3U VPX NVMe Host Bus Adapter with Full support for RAID
- Dual Core ARM A15 RAID On Chip (ROC)
- On board 8 GB of DDR4 Memory with ECC
- Hardware Engine for RAID 5 and RAID 6 acceleration
- PCIe Gen3 x8 or x4
- Health Management through dedicated Processor

## Benefits

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

**OpenVPX**™



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# VPX645

The VPX645 is full ROC Host Bus Adapter (HBA) which supports RAID level 0, 1, 5, 6, 10, 50 and 60. The module supports End-to-End CRC (ECRC) and Advanced Error Reporting (AER). The NVMe storage provides high speed and low latency read/write to the SSD devices.

The module has up to 16 NVMe storage devices and an additional 8 GB of DDR4 with ECC.

The VPX645 has PCIe Gen3 x8 or single x4 routed to the P1 connector.

The VPX645 is available in both air-cooled and rugged conduction-cooled versions. Please contact sales for details.

# Block Diagram

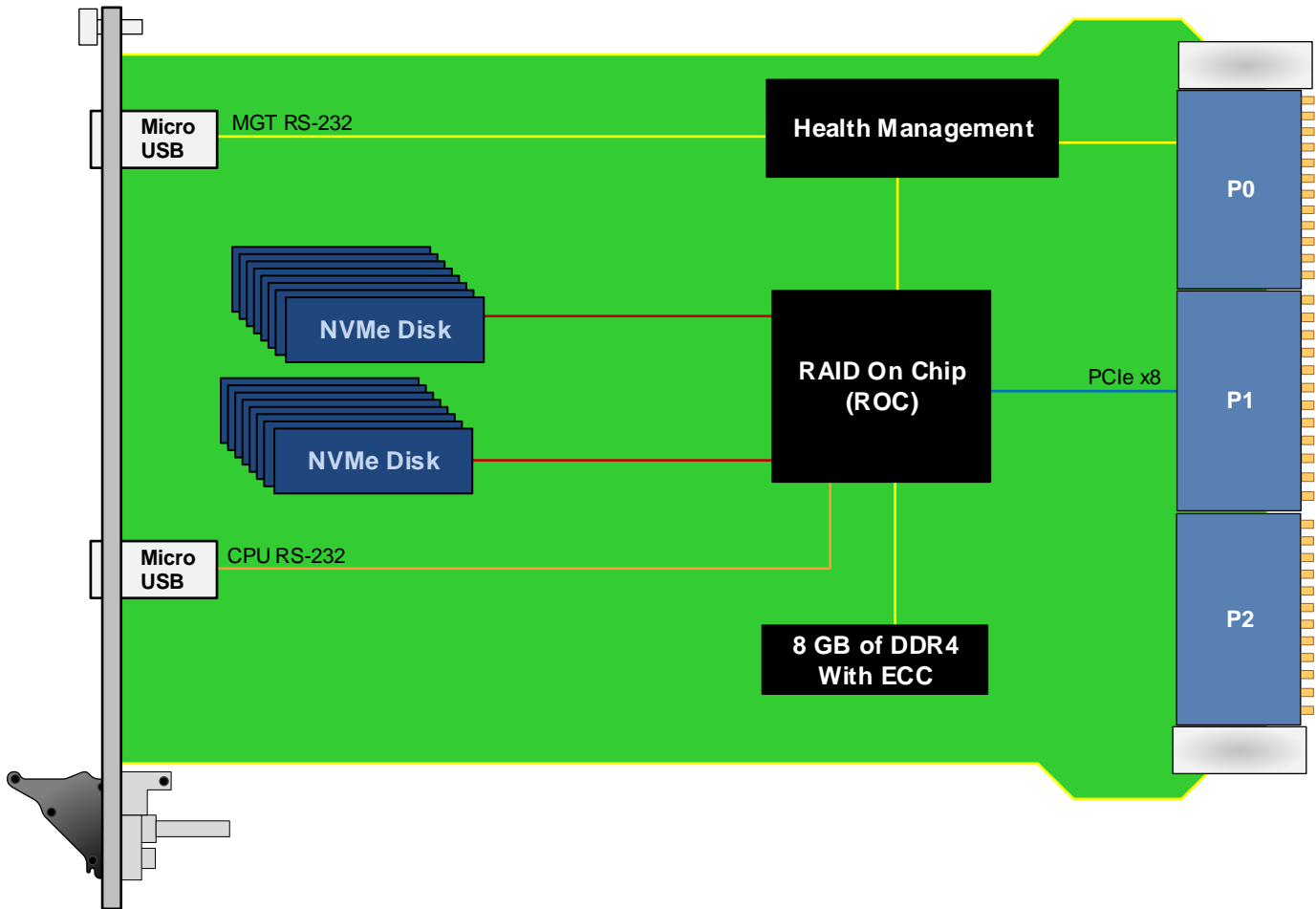


Figure 1: VPX645 Functional Block Diagram

# Front Panel



Figure 2: VPX645 Front Panel

# Specifications

Architecture	
<b>Physical</b>	<b>Dimensions</b> 3U, 1" Pitch
<b>Type</b>	<b>VPX Storage</b> NVMe SSD
Standards	
<b>PCIe</b>	<b>Lanes</b> Single x8 or single x4
<b>Storage</b>	<b>SSD</b> Up to 16 NVMe SSD
Configuration	
<b>Power</b>	<b>VPX645</b> 40 W with 8 TB of Storage
<b>Front Panel</b>	<b>Micro USB</b> RS-232 from CPU and RS-232 from Health Management
<b>VPX Interfaces</b>	<b>Slot Profiles</b> See ordering options
	<b>Rear IO</b> Dual Core ARM A15 RAID On Chip (ROC) PCIe Gen3 x8 or (optional x4)
<b>Software Support</b>	<b>Operating System</b> Linux, Windows, Solaris and VxWorks
Other	
<b>MTBF</b>	MIL Hand book 217-F@ TBD hrs
<b>Certifications</b>	Designed to meet FCC, CE and UL certifications, where applicable
<b>Standards</b>	VadaTech is certified to both the ISO9001:2000 and AS9100B:2004 standards
<b>Warranty</b>	Two (2) years

## 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

## VPX645 – AB0-000-GHJ

<b>A = NVMe Storage capacity</b>		<b>G = Applicable Slot Profiles</b>
0 = 4TB 1 = 8TB 2 = 16TB 3 = Reserved 4 = Reserved		0 = 5 HP
<b>B = PCIe Interface</b>		<b>H = Environmental</b>
0 = x4 to P1 1 = x8 to P1		See Environmental Specification Table below
		<b>J = Conformal Coating</b>
		0 = No coating 1 = Humiseal 1A33 Polyurethane 2 = Humiseal 1B31 Acrylic

## Environmental Specification

Option H	Air Cooled		Conduction Cooled		
	H = 0	H = 1	H = 2	H = 3	H = 4
<b>Operating Temperature</b>	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)
<b>Storage Temperature</b>	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)
<b>Operating Vibration</b>	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)
<b>Storage Vibration</b>	OS1* (20g)	OS1* (20g)	OS2* (40g)	OS2* (40g)	OS2* (40g)
<b>Humidity</b>	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

VPX592



- 3U FPGA carrier for FPGA Mezzanine Card (FMC) per VITA 46 and VITA 57
- Xilinx Kintex UltraScale™ XCKU115 FPGA
- High-performance clock jitter cleaner

VPX599



- Xilinx Kintex UltraScale™ XCKU115 FPGA
- Dual ADC @ 6.4 GSPS 12-bits
- Dual DAC @ 12 GSPS 16-bits (AD9162 or AD9164)

VPX516



- 3U FPGA carrier for FMC per VITA 46 and VITA 57
- Xilinx Virtex-7 690T FPGA in FFG-1761 package
- High-performance clock jitter cleaner

# Contact

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