

# VPX768

Intel® Xeon™ W-11865MRE (Tiger Lake-H), PCIe Gen4, Dual XMC carrier, 6U VPX

VPX768



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## Key Features

- 6U VPX module Xeon W-11865MRE SoC (Tiger Lake-H) 11<sup>th</sup>-Generation (8 core @ 2.1 GHz Turbo 4.7 GHz)
- Dual PCIe Gen4 x16 to P1/P2 (capable of bifurcating down to x1 lanes)
- Up to 64GB of DDR4 with ECC
- Dual XMC sites with I/O expansion per VITA46.9 P3w3-X38s+P4w1-X12d+X8d and P5w1-P64s+P6w1-X12d+X8d pin field definition
- Dual 10GBASE-KR and dual 10GBASE-T
- Onboard 1TB NVMe SSD
- Audio, Video, SATA, USB and Serial ports to rear
- Front-panel DP++, GbE, USB 3.2 and RS-232
- Configuration port RS-232 via front
- Trusted Platform Management (TPM)
- Health Management through dedicated onboard Processor

## Benefits

- Unprecedented performances in 6U VPX: high-density, high-processing power, high-speed interface
- Dual XMC sites for flexibility of I/O and/or additional processing
- 2 channels of DDR4 with Error Correction Code (ECC) for enhanced reliability, availability and serviceability
- Electrical, mechanical, software, and system-level expertise in house
- Full system supply from industry leader
- AS9100 and ISO9001 certified company

OpenVPX™



# VPX768

The VPX768 is a 6U processor module (VITA 46) for general purpose processing in demanding applications. Based on the Intel Xeon W-11865MRE processor, the efficient SoC design has high-bandwidth, high-speed I/Os for expansion and peripherals, supports real-time workloads and brings functional safety solutions to market faster (Intel® FSED).

The module provides dual PCIe Gen4 x16 on P1/P2. The x16 lanes could be bifurcated down to x1 lanes to eliminate a PCIe switch in the overall system architecture.

In the rear it provides four SATA Ports, dual Ethernet 10GBASE-KR, dual Ethernet 10GBASE-T, 3x USB ports, dual Display Port (DP), RS-232 and Audio. The module provides GbE (1000-BaseT), Video (DP++), USB 3.2 and RS-232 to the front panel.

There are two XMC sites on the VPX768 with each mating to the CPU via PCIe Gen4 x8 lanes. Each XMC rear I/O follows the VITA 46.9 per P3w3-X38s+P4w1-X12d+X8d and P5w1-P64s+P6w1-X12d+X8d pin field definition.

The VPX768 provides dual channel DDR4 (up to 64GB total) with Error Correction Code (ECC), Flash for the OS, and an optional 1TB SSD NVMe module. The BIOS allows booting from onboard Flash, offboard SATA, PXE boot or USB.

The onboard Health Management running on a dedicated processor is one of the most sophisticated offered on the market with Server Management capabilities. It allows for Remote Management via Ethernet, redirect of the video over IP to monitor the boot process remotely, Serial Over LAN (SOL), etc. It also meets Tier two support per VITA specification. The modules come with Trusted Platform Management (TPM).

Linux or Windows OS are supported by default on the VPX768, consult VadaTech for other options.

The unit is available in a range of temperature and shock/vib specifications per ANSI/VITA 47, up to V3 and OS2.

*Figure 1: VPX768*

# Block Diagram

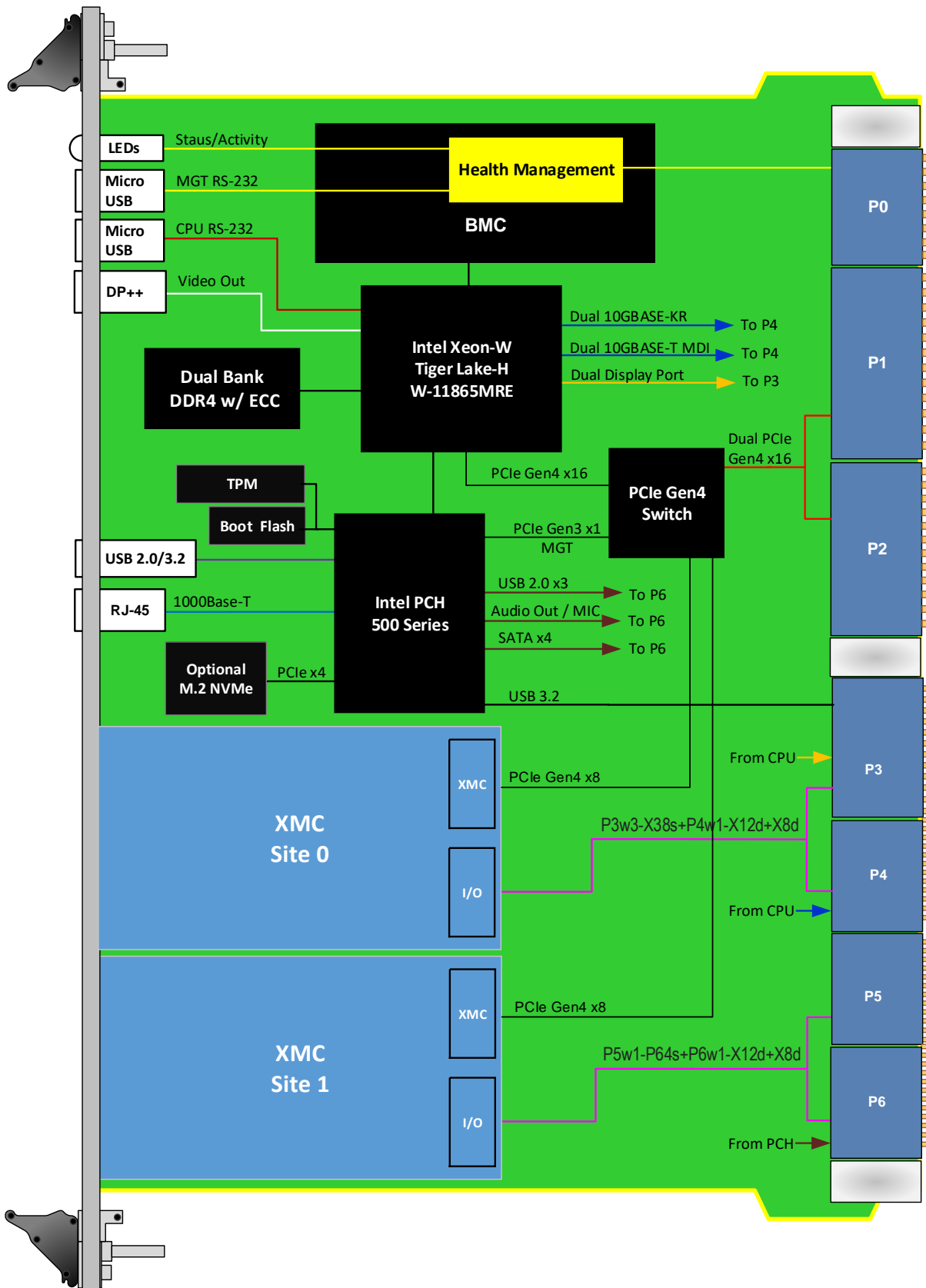


Figure 2: VPX768 Functional Block Diagram

# Pinout Block diagram

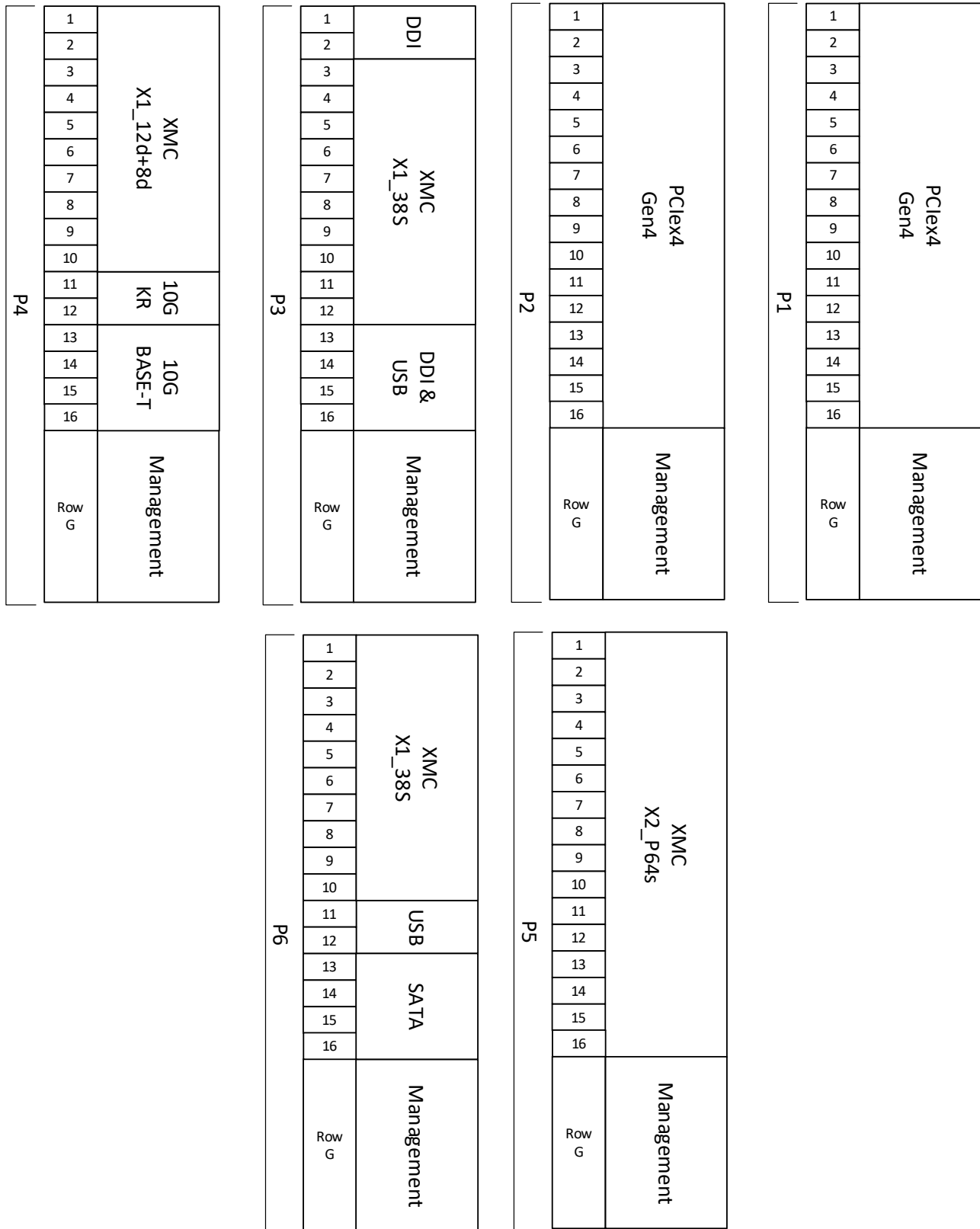


Figure 3: VPX768 Pinout Block Diagram to P1/P2

# Specifications

Architecture		
<b>Physical</b>	<b>Dimensions</b>	6U, 1" pitch
Configuration		
<b>Power</b>	<b>VPX768</b>	~80W with no XMC installed (XMC dependent load)
<b>Processor</b>	<b>CPU</b>	Intel 11th Generation Xeon D-SoC
	<b>Memory</b>	DDR4 with ECC
<b>PCIe</b>	<b>Lanes</b>	Dual Gen4 x16 to rear
<b>PCH</b>		Intel 500 series
	<b>Memory</b>	BIOS flash
<b>Front Panel</b>	<b>GbE</b>	1000Base-T
	<b>Video</b>	DP++
	<b>Serial</b>	CPU RS-232 via micro USB
		Health Management RS-232 via micro-USB
	<b>USB</b>	USB 2.0/3.2
	<b>LEDs</b>	User defined by Health Management
<b>On-board Interfaces</b>	<b>XMC VITA 46.9</b>	Dual XMC site: P3w3-X38s+P4w1-X12d+X8d and P5w1-P64s+P6w1-X12d+X8d
<b>VPX Interfaces</b>	<b>Slot Profiles</b>	See <a href="#">Ordering Options</a>
	<b>Rear IO</b>	SATA (x4 Ports), 2x 10GBASE-KR, 2x 10GBASE-T, Display Ports, RS-232, Audio PCIe x16 (bifurcation dual x8 or quad x4) on P1/P2
	<b>Power Supplies</b>	Power +12V; XMC VPWR = +12V
<b>Software</b>	<b>OS Support</b>	Linux or Windows supported (Linux loaded by default)
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 ISO9001:2015 and AS9100D standards
<b>Warranty</b>		Two (2) years, see <a href="#">VadaTech Terms and Conditions</a>

OpenVPX allows for a wide range of pin assignments and use cases. Prior to purchasing VadaTech products as standalone items (i.e. not part of an integrated platform) please consult with VadaTech on the system architecture to ensure compatibility.

## 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

## VPX768 – A0C-DEF-GHJ

<b>A = Processor</b> 0 = Xeon W-11865MRE 1 = Reserved	<b>D = Memory (Dual banks)</b> 0 = Reserved 1 = 16 GB/bank (32 GB total) 2 = 32 GB/bank (64 GB total, MOQ 5 pieces)	<b>G = Applicable Slot Profile</b> 0 = 5 HP VITA 48.1
	<b>E = NVMe</b> 0 = No NVMe 1 = 1TB NVMe 2 = Reserved 3 = Reserved	<b>H = Environmental</b> See <a href="#">Environmental Specification</a>
<b>C = XMC Connectors (both sites)</b> 0 = VITA 42 1 = VITA 61	<b>F = VPX Connector Type</b> 0 = Standard 50u Gold Rugged 1 = KVPX Connectors	<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

VPX551



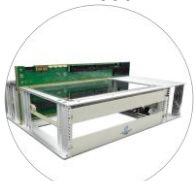
- Dual Kintex UltraScale™ XCKU115
- 16 GB of 64-bit wide DDR4 Memory to each FPGA
- Rear fibre I/O via VITA 66.5

VPX980



- Quad Core ARM Freescale processor @ 1 GHz per core
- One GB DDR3 memory with FRAM for log messages
- 32 GB of Flash, 8 GB of NAND Flash

VTX990



- One slot benchtop 6U VPX development platform
- P0 to P6 connectors are installed
- Variable fan speed control for front and rear

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