VPX775

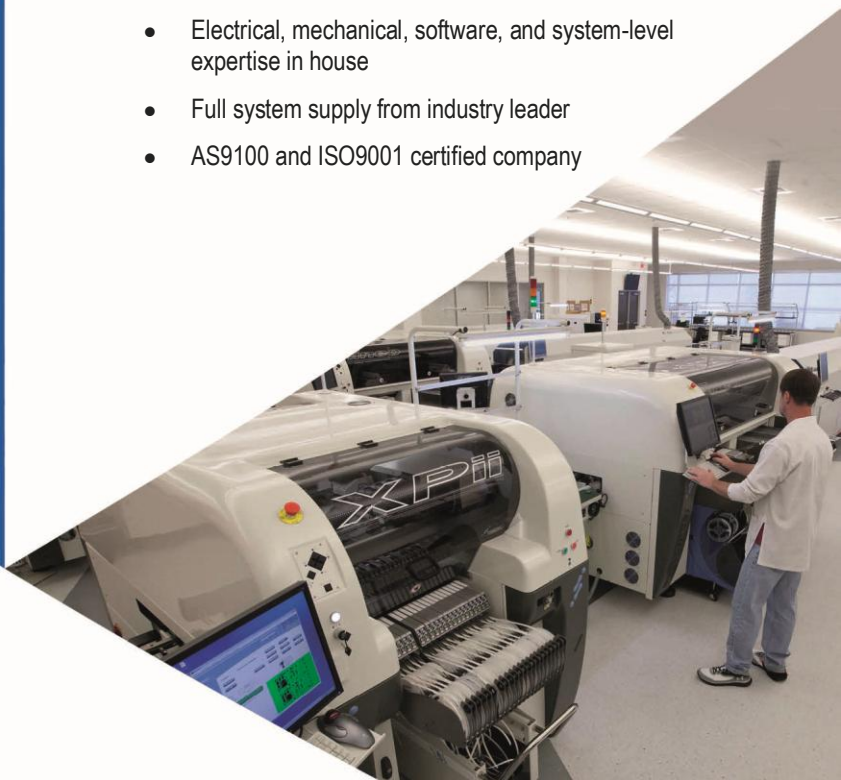
Intel® Ice Lake-D Processor Xeon® D-1746TER with 1/10/40/100GbE and PCIe 6U VPX

Key Features

- VPX Intel® Ice Lake-D Processor Xeon® D-1746TER (Ice Lake-D) in 6U VPX form factor
- Dual 40/100GbE or octal 10/1GbE on P1
- Additional quad GbE on P1(dual 1000Base-T and dual 1000BASE-KX)
- PCIe x16 Gen4 on P2 (bifurcation by quad x4 or dual x8)
- Front panel 10GbE, dual USB 3.0, Display Port (DP) and USB 2.0 as RS-232 to USB
- Dual XMC slot with PCIe x4 Gen3, I/O per VITA46.9
    - P3w1-P64s+P4w1-X12d+X8d
    - P5w1-P64s+P6w1-X12d+X8d
- Serial Over LAN (SOL)
- 48GB of DDR4 memory with ECC
- 128GB SSD Storage
- Platform Firmware Resilience (PFR) via on board FPGA for security
- Trusted Platform Management (TPM)

Benefits

- Ice Lake-D embedded hardware security features, AI capability, enhanced connectivity and fast boot
- Low power for balanced performance and power
- Ideal upgrade for Broadwell-DE (such as VPX754)
- Electrical, mechanical, software, and system-level expertise in house
- Full system supply from industry leader
- AS9100 and ISO9001 certified company



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VPX775

The VPX775 is a Processor VPX (PrVPX) in a 6U VPX form factor based on the Intel® Processor Xeon® D-1746TER (Ice Lake-D) for general purpose processing in demanding embedded applications. The D-1746TER has 10 cores with three channels of DDR4 memory.

The VPX775 comes with 48GB of DDR4 memory with ECC and a 128GB of SSD. The BIOS allows booting from onboard SSD, PXE, and/or USB.

The Module has dual 40/100GbE or octal 10/1GbE with additional dual GbE on P1. The Module provides PCIe x16 Gen4 on P2 which can bifurcate to quad x4 or dual x8.

On the front panel the VPX775 has 2x USB 3.0 type C connectors for extended storage, peripherals, etc., native Display Port (DP), 10GbE as well as USB 2.0 for RS-232 to USB.

The VPX775 has dual XMC slot for additional I/O expansion. The XMC I/O is routed to the backplane per VITA 46.9 P3w1-P64s+P4w1-X12d+X8d and P5w1-P64s+P6w1-X12d+X8d.

The module utilizes the Intel Bootguard PFR via on board FPGA and Trusted Platform Management (TPM). The FPGA can be reprogrammed by the customer to meet their security beyond what is provided by the PFR.

Linux OS is standard on the VPX775, consult VadaTech for other options.

Block Diagram

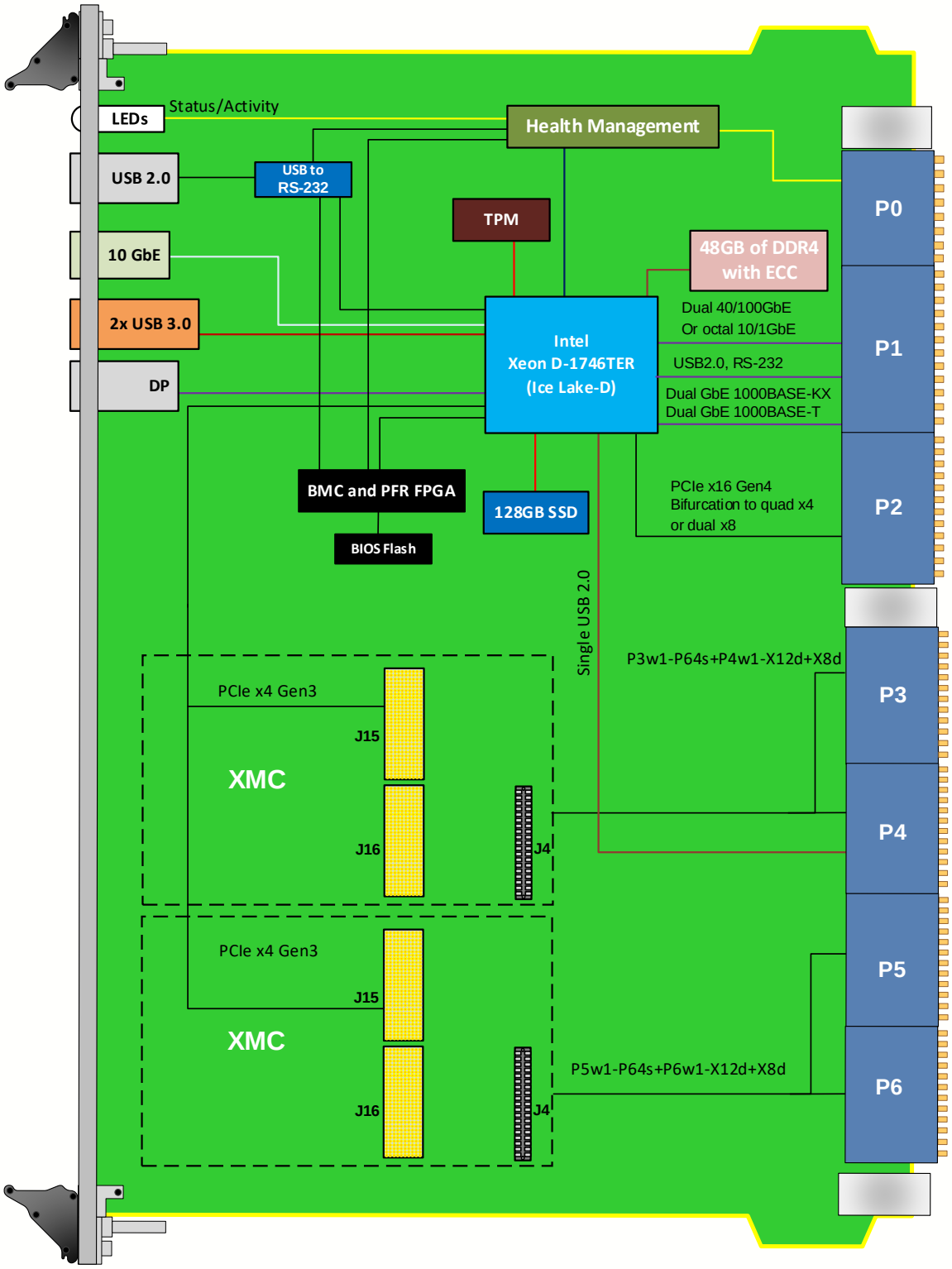

Figure 1: VPX775 Functional Block Diagram

Pinout Block Diagram

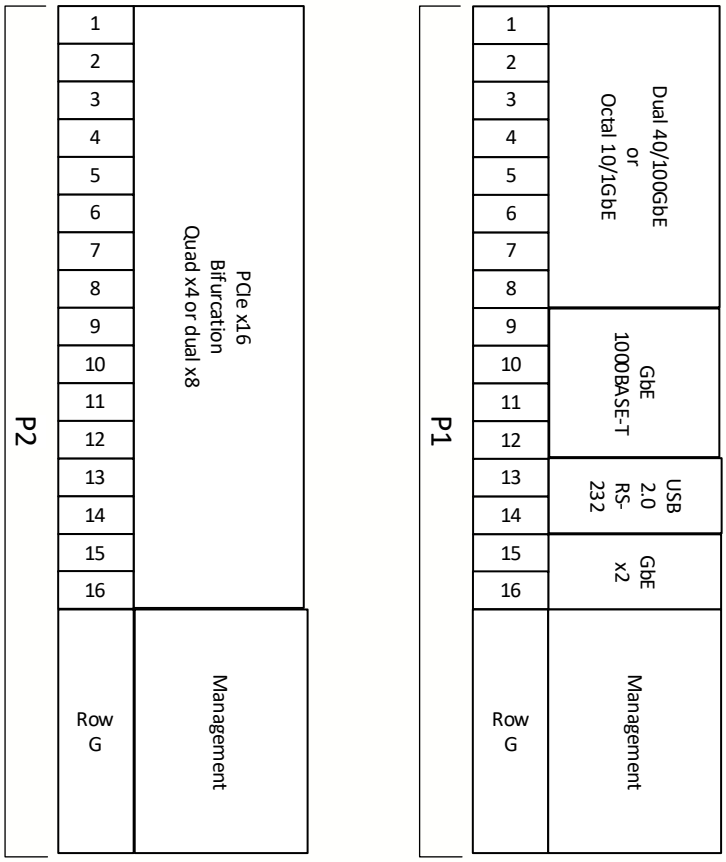

Figure 2: VPX775 Pinout Block Diagram

Specifications

Architecture		
Physical	**Dimensions**	6U, 1” Pitch
Configuration		
Power	**VPX775**	~75W without any XMC
Processor	**CPU**	Intel® Ice Lake-D Processor Xeon® D-1746TER
	Memory	DDR4 48GbE with ECC
	Storage	128GB SSD
	Lanes	Dual 40/100GbE or octal 10/1GbE on P1 and PCIe x16 Gen4 on P2
VPX Interfaces	**Slot Profiles**	See Ordering Options
	Payload Profile	See Figure 2
	Power Supplies	On P0: +12V and +3.3V_AUX
Front Panel	**Interface Connectors**	10BASE-T and GbE
		2x USB 3.0 type C connector and Display Port (DP)
		USB 2.0 to RS-232 for each sub-system
	LEDs	IPMI, activity and user defined
	Mechanical	6U VPX
Software Support	**Operating System**	Linux (consult VadaTech for other options)
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

VPX775 – ABC-DEF-GHJ

A = DDR4 Memory	D = CPU	G = Applicable Slot Profile
0 = 48GB 1 = Reserved	0 = D-1746TER 1 = Reserved 2 = Reserved	0 = 5HP, VITA 48.1 1 = Reserved
B = XMC Connector	**E = XMC I/O per VITA 46.9**	**H = Environmental**
0 = VITA 42 1 = VITA 61	0 = P3w1-P64s+P4w1-X12d+X8d P5w1-P64s+P6w1-X12d+X8d 1 = Reserved 2 = Reserved	See Environmental Specification
C = VPX Connector Type	**F = Storage**	**J = Conformal Coating**
0 = 50u Gold Rugged High Speed 1 = KVPX	0 = None 1 = 128 GB SSD 2 = Reserved	0 = No coating 1 = Humiseal 1A33 Polyurethane 2= Humiseal 1B31 Acrylic 3 = Parylene

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

VPX516

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

VPX592

- 3U FPGA carrier for 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 12-bit @ 6.4 GSPS
- Dual DAC 16-bit @ 12 GSPS (AD9162 or AD9164)

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