VPX771

Intel® Ice Lake-D Processor Xeon® D-1746TER with PCIe

Key Features

- Processor VPX Intel® Ice Lake-D Processor Xeon® D-1746TER (Ice Lake-D)
- PCIe x16 on P1 (bifurcation by quad x4 or dual x8)
- Triple PCIe x4 on P2 (12 lanes total)
- Serial Over LAN (SOL)
- 48GB of DDR4 memory with ECC
- 1TB of NVMe 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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VPX771

The VPX771 is a Processor VPX (PrVPX) in a 3U 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 VPX771 comes with 48GB of DDR4 memory with ECC and 1TB of NVMe storage. The BIOS allows booting from onboard Flash, PXE, and/or USB.

The Module provides PCIe x16 on P1 which can bifurcate to quad x4 or dual x8. The Module has triple PCIe x4 on P2.

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.

There are dual USB 3.0 type C connectors for extended storage, peripherals and/or for external Display port.

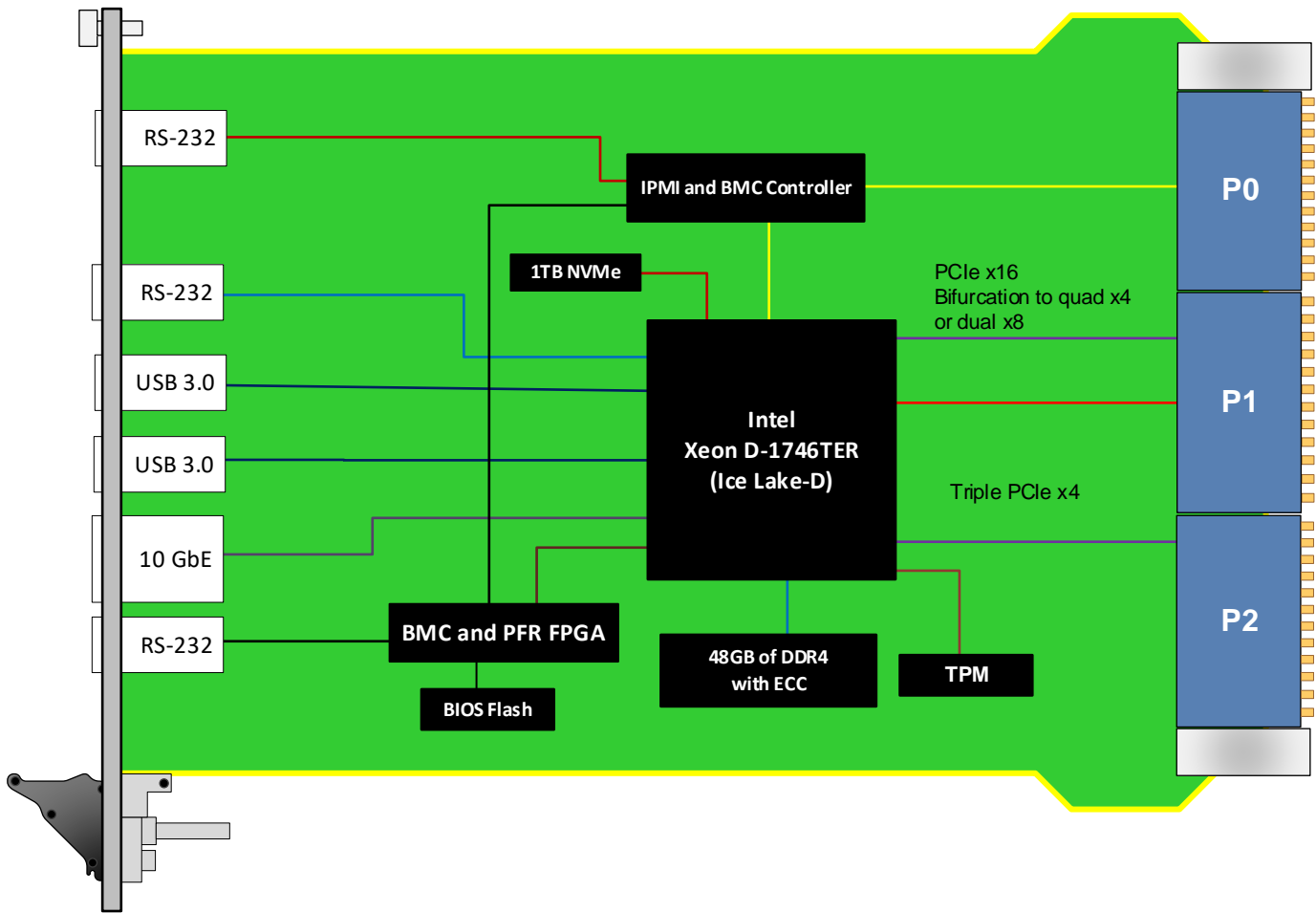Linux OS is standard on the VPX771, consult VadaTech for other options.

Block Diagram

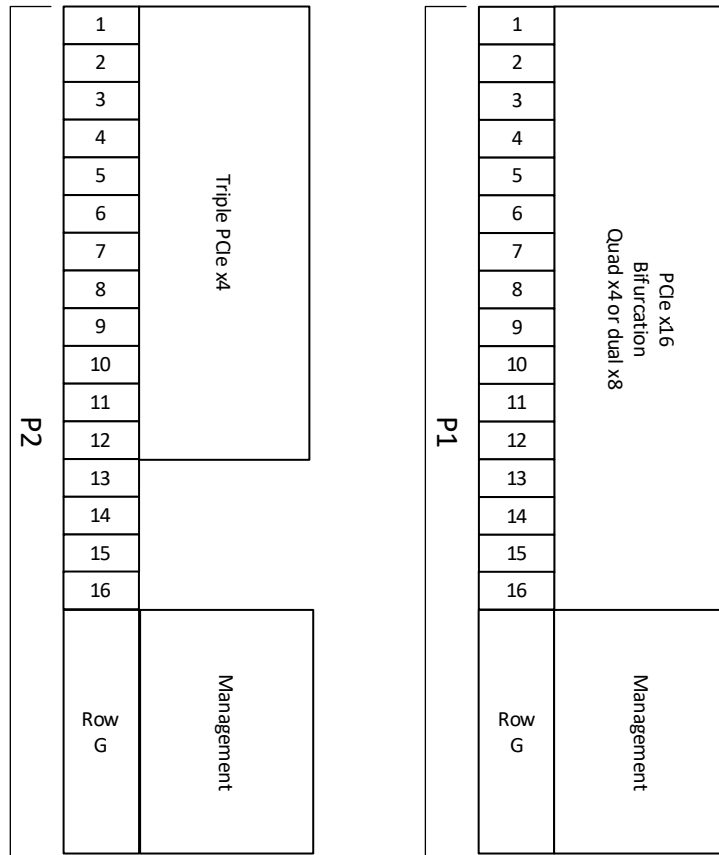*Figure 1: VPX771 Functional Block Diagram*

Pinout Block Diagram

Figure 2: VPX771 Pinout Block Diagram

Specifications

Architecture		
Physical	**Dimensions**	3U, 1" Pitch
Configuration		
Power	**VPX771**	~75W
Processor	**CPU**	Intel® Ice Lake-D Processor Xeon® D-1746TER
	Memory	DDR4 48GbE with ECC
	Storage	1TB NVMe
	Lanes	PCIe x16 on P1 and Triple PCIe x4 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**	10GbE-T via RJ-45
		2x USB type C connectors for USB 2.0/3.0
		3x Micro USB for RS-232 for each sub-system
	LEDs	IPMI, activity and user defined
	Mechanical	3U 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

VPX771 – ABC-D00-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 = NVMe Storage		**H = Environmental**
0 = 1TB 1 = Reserved		See Environmental Specification
C = VPX Connector Type		**J = Conformal Coating**
0 = 50u Gold Rugged High Speed 1 = KVPX		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

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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