

VPX771

Intel® Ice Lake-D Processor
Xeon® D-1746TER with
1/10/40/100GbE and PCIe 3U VPX



VPX771

Key Features

- Intel® Ice Lake-D Processor Xeon® D-1746TER
- PCIe x16 Gen3 on P1 (bifurcation by quad x4 or dual x8)
- Dual PCIe x4 Gen3 on P2
- Dual 40/100GbE or octal 10/1GbE on P2
- Serial Over LAN (SOL)
- Front panel with 10GbE, Display Port (DP), dual USB3.0 and USB2.0 as RS-232 to USB
- 48GB of DDR4 memory with ECC
- M.2 NVMe Storage socket
- 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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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 a M.2 NVMe storage socket. The BIOS allows booting from onboard M.2, PXE, and/or USB.

The Module provides PCIe x16 Gen3 on P1 which can bifurcate to quad x4 or dual x8. The Module has dual PCIe x4 Gen3, dual 40/100GbE or octal 10/1GbE on P2.

On the front panel the VPX771 has 2x USB 3.0 type C connectors for extended storage, peripherals, etc., native Display Port (DP), 10GBASE-T as well as an USB to RS-232 port for each sub-system.

The module utilizes the Intel Bootguard PFR via onboard 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 VPX771, consult VadaTech for other options.



Figure 1: VPX771



Figure 2: VPX771 Front View



Figure 3: VPX771 Top View

Block Diagram

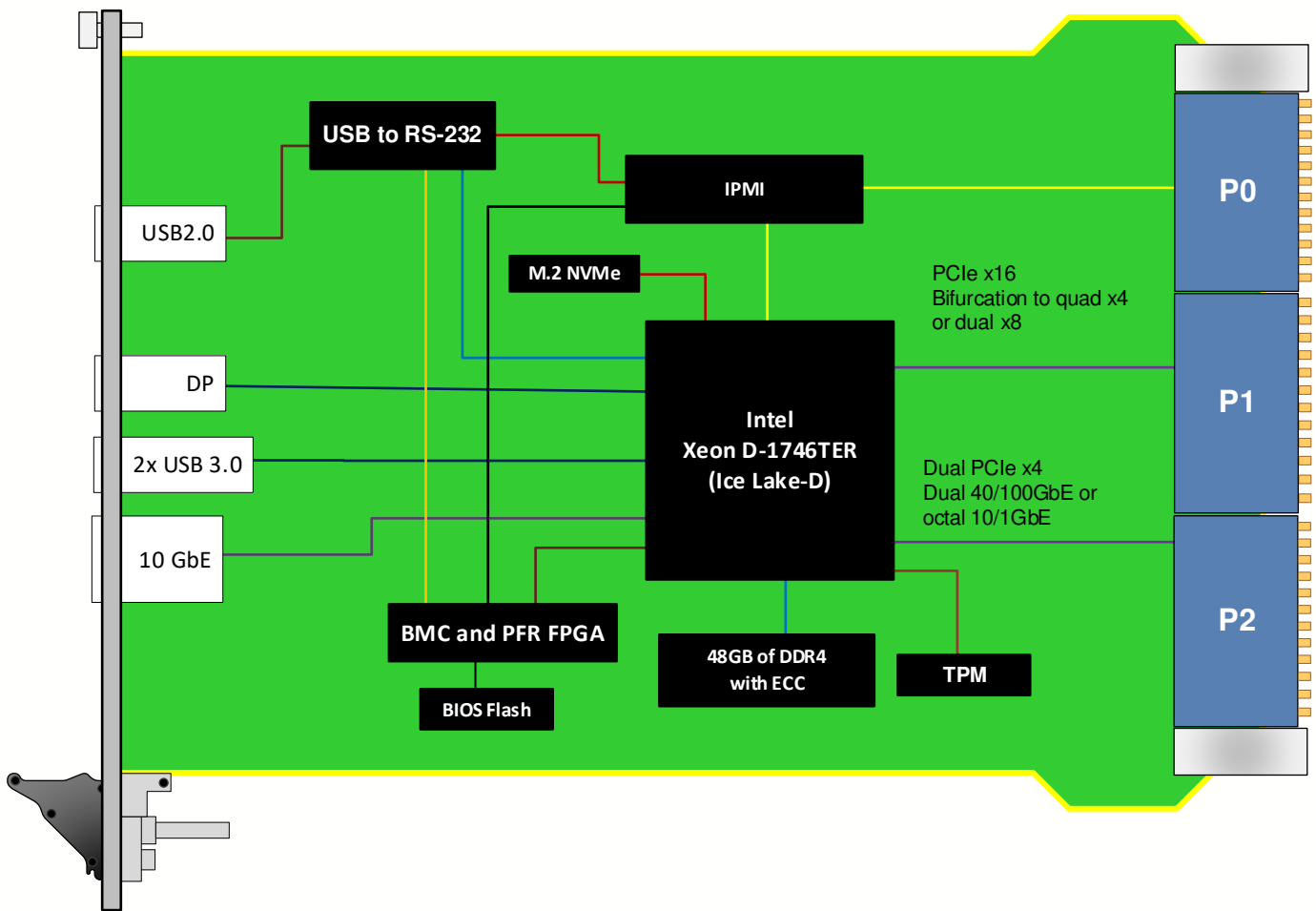


Figure 4: VPX771 Functional Block Diagram

Pinout Block Diagram

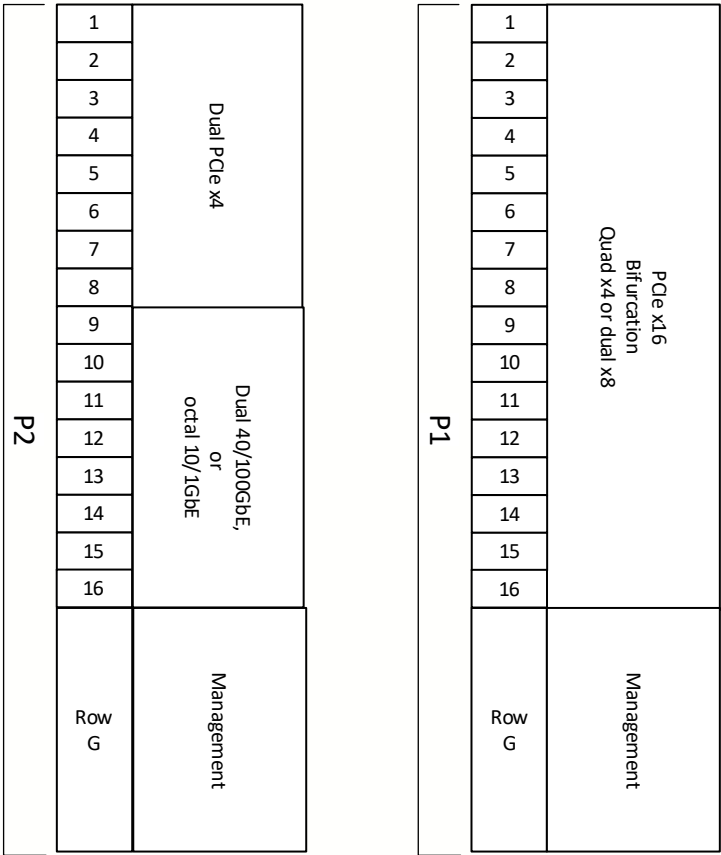


Figure 5: VPX771 Pinout Block Diagram

Specifications

Architecture	
Physical	Dimensions 3U, 1" Pitch
Configuration	
Power	VPX771 ~75W
Processor	CPU Intel® Ice Lake-D Processor Xeon® D-1746TER
	Memory DDR4 48GB with ECC
	Storage M.2 Socket NVMe
VPX Interfaces	Lanes PCIe x16 Gen3 on P1 and on P2 with Dual PCIe x4 Gen3 with 100/40GbE, 10/1GbE
	Slot Profiles See Ordering Options
	Payload Profile See Figure 5
	Power Supplies On P0: +12V and +3.3V_AUX
Front Panel	Interface Connectors 10GBASE-T via RJ-45
	2x USB 3.0 Type C Connectors and Mini Display Port (DP)
	USB2.0 to 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-DE0-GHJ

A = DDR4 Memory 0 = 48GB 1 = Reserved	D = CPU 0 = D-1746TER 1 = Reserved 2 = Reserved	G = Applicable Slot Profile 0 = 5HP, VITA 48.1 1 = Reserved
B = M.2 NVMe Storage 0 = None 1 = 1TB 2 = 2TB 3 = Reserved	E = 3x RS-232 Ports 0 = USB 2.0 in the front 1 = P2 Connector with no level shifting	H = Environmental See Environmental Specification
C = VPX Connector Type 0 = 50u Gold Rugged High Speed 1 = KVPX		J = Conformal Coating 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)

Contact

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