

VPX770

Intel® Ice Lake-D Processor
Xeon® D-1746TER with 10/40GbE
and PCIe

Key Features

- Processor VPX Intel® Ice Lake-D Processor Xeon® D-1746TER (Ice Lake-D)
- Dual 40GbE and/or 8x 10GbE on P1
- Dual GbE on P1
- PCIe x16 on P2
- 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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VPX770

The VPX770 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 VPX770 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 P2, dual 40GbE and/or octal 10GbE and GbE on P1. The Module also provides 10GbE-T in the front panel. The PCIe x16 can bifurcate to quad x4 and/or dual x8.

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 VPX770, consult VadaTech for other options.

Block Diagram

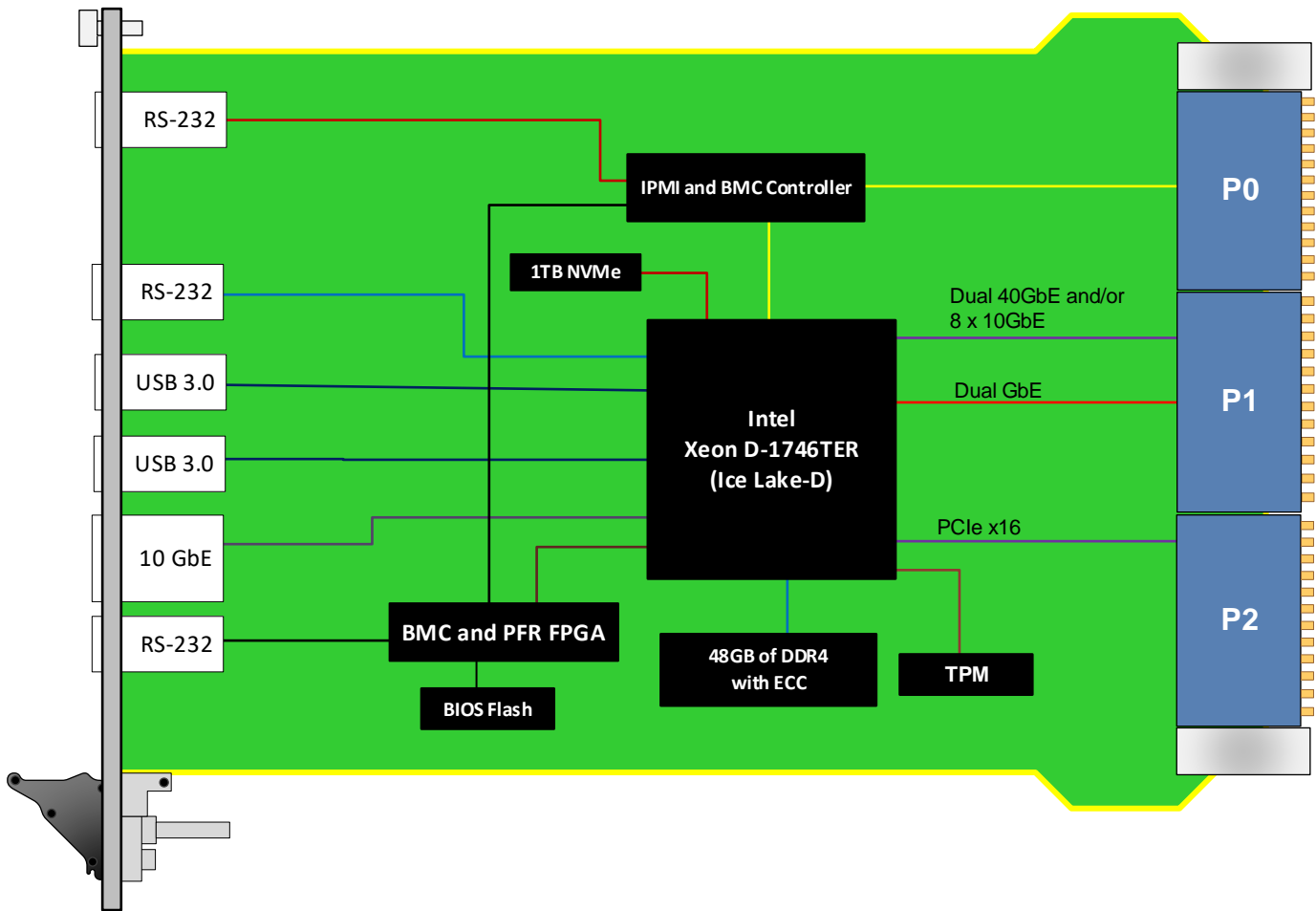


Figure 1: VPX770 Functional Block Diagram

Pinout Block Diagram

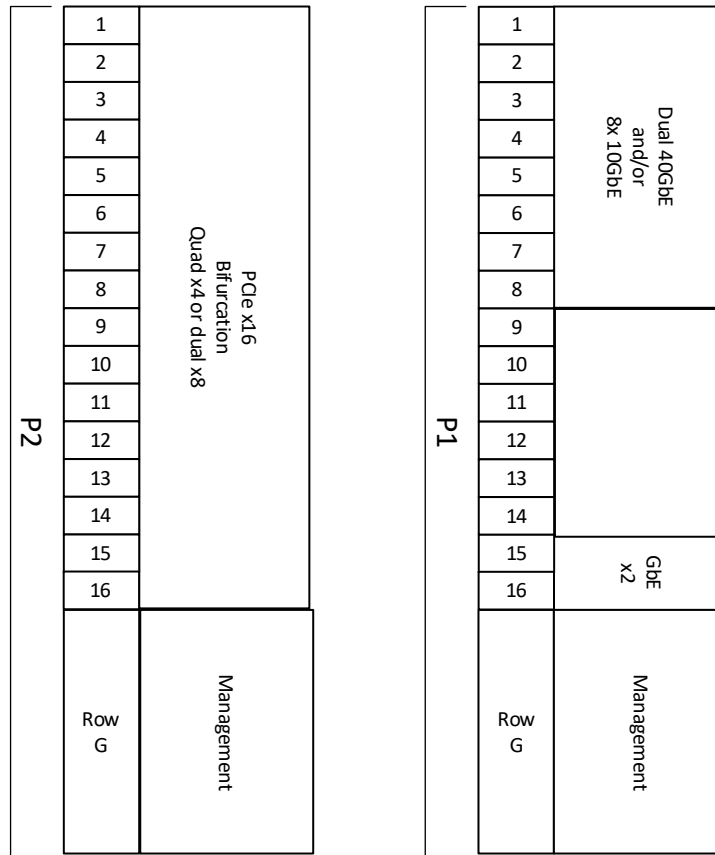


Figure 2: VPX770 Pinout Block Diagram

Specifications

Architecture	
Physical	Dimensions 3U, 1" Pitch
Configuration	
Power	VPX770 ~75W
Processor	CPU Intel® Ice Lake-D Processor Xeon® D-1746TER
	Memory DDR4 48GbE with ECC
	Storage 1TB NVMe
VPX Interfaces	Lanes Dual 40GBase-KR4 and/or octal 10GbE with dual GbE on P1 and PCIe x16 on P2
	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

VPX770 – ABC-D00-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 = NVMe Storage 0 = 1TB 1 = Reserved		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

Environmental Specification

Option H	Air Cooled		Conduction Cooled		
	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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