

VPX776

Intel® Ice Lake-D Processor
Xeon® D-2896TER with
1/10/40/100GbE and PCIe 6U VPX



AMC770

Key Features

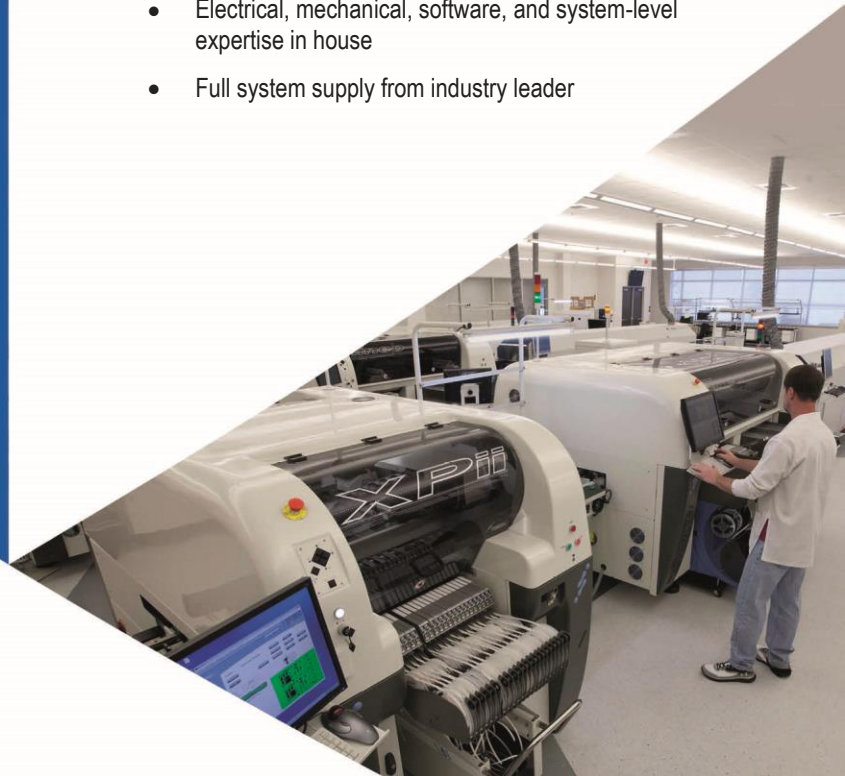
- VPX Intel® Ice Lake-D Processor Xeon® D-2896TER (Ice Lake-D) in 6U VPX form factor
- Dual 40/100GbE or octal 1/10GbE on P1
- Additional quad GbE on P1 (dual 1000BASE-KX and dual 1000BASE-T)
- PCIe x16 Gen4 on P2 and P3 (bifurcation by quad x4 or dual x8)
- Front panel 10GbE, dual USB 3.0, Display Port (DP) and USB 2.0 for RS-232
- XMC slot with PCIe x4 Gen3
 - I/O per VITA46.9 P5w1-P64s+P6w1-X12d+X8d
- Serial Over LAN (SOL)
- Four banks of DDR-4 with 128GB of memory with ECC
- Dual 128GB of SDD
- 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



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VPX776

The VPX776 is a Processor VPX (PrVPX) in a 6U VPX form factor based on the Intel® Processor Xeon® D-2896TER (Ice Lake-D) for general purpose processing in demanding embedded applications. The D-2896TER has 20 cores with four channels of DDR4 memory.

The VPX776 comes with four channels of DDR-4 for total of 128GB of memory with ECC and dual 128GB of SSD Storage. The BIOS allows booting from onboard SSD, PXE, and/or USB.

The Module has dual 40/100GbE or octal 10/1GbE with additional quad GbE on P1. The Module provides PCIe x16 Gen4 on P2/P3 which can bifurcate to quad x4 or dual x8.

On the front panel the VPX776 has a dual 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 VPX776 has dual XMC slot for additional I/O expansion. The XMC I/O is routed to the backplane per VITA 46.9 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 VPX776, consult VadaTech for other options.

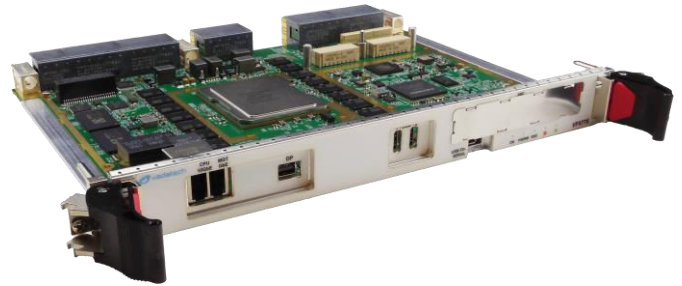


Figure A: VPX776



Figure B: VPX776 Front View



Figure C: VPX776 Top View

Block Diagram

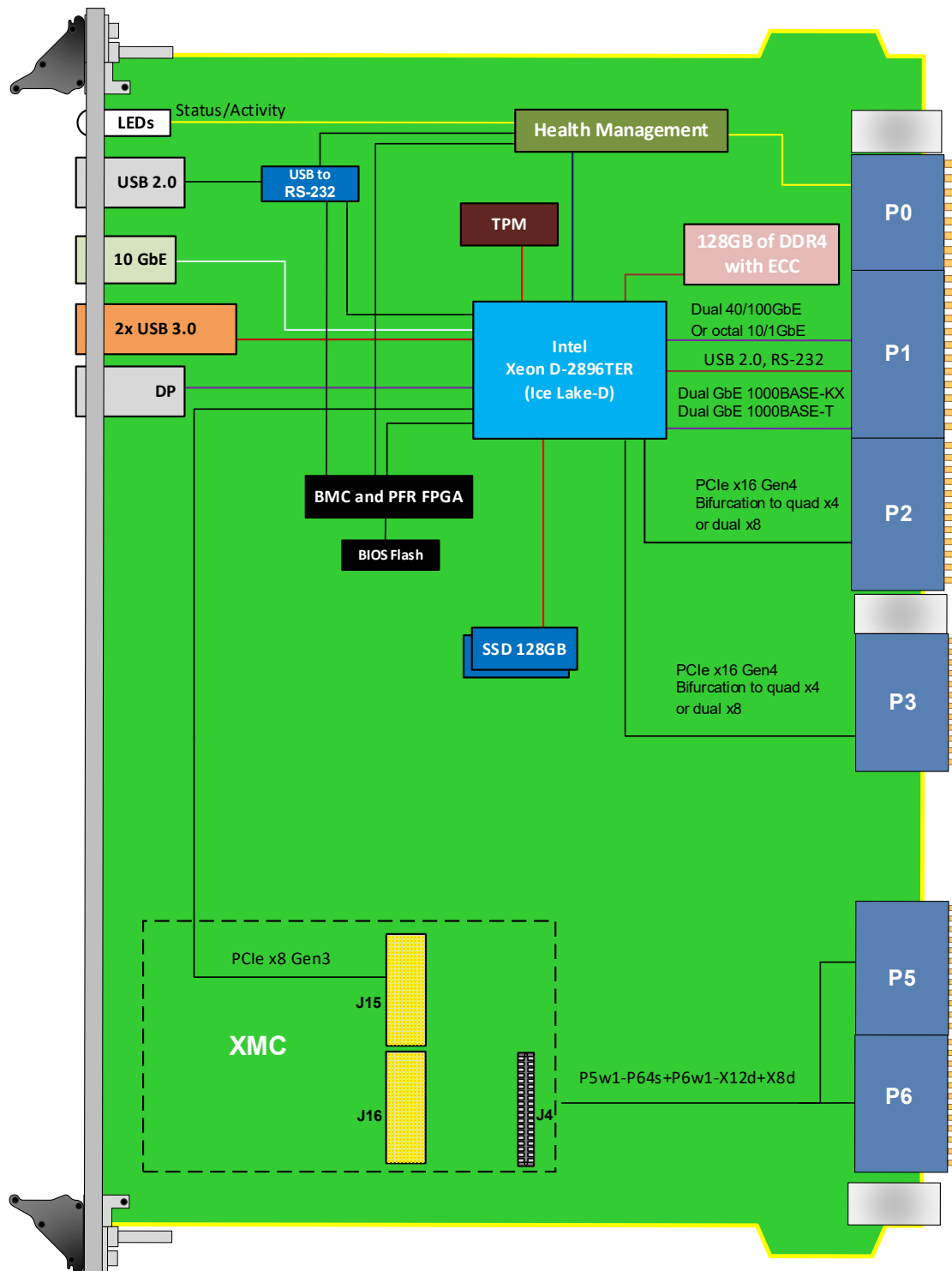


Figure 1: VPX776 Functional Block Diagram

Pinout Block Diagram

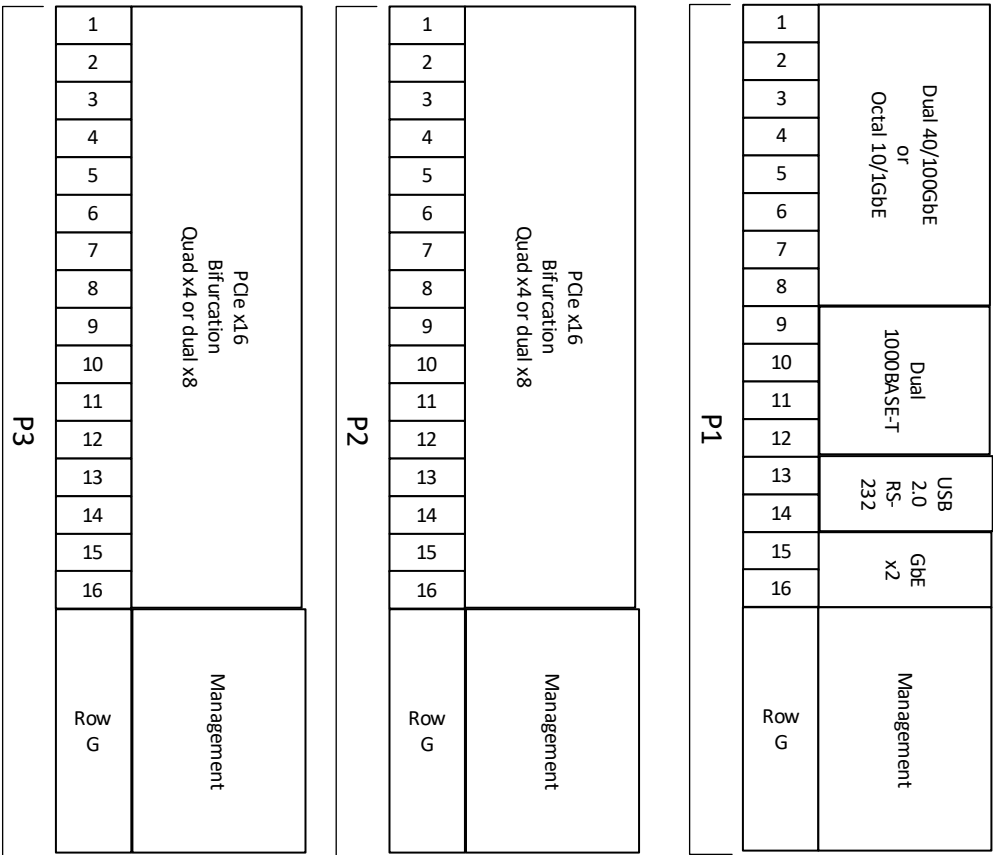


Figure 2: VPX776 Pinout Block Diagram

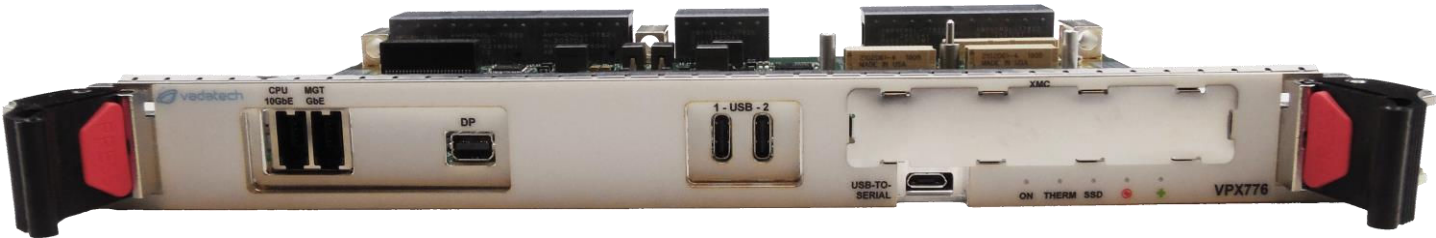


Figure D: VPX776 Front Panel View

Specifications

Architecture	
Physical	Dimensions 6U, 1" Pitch
Configuration	
Power	VPX776 ~140W without any XMC
Processor	CPU Intel® Ice Lake-D Processor Xeon® D-2796TER
	Memory DDR4 128GbE with ECC
	Storage Dual 128GB SSD
VPX Interfaces	Lanes Dual 40/100GbE or octal 10/1GbE on P1 PCIe x16 Gen4 on P2/P3
	Slot Profiles See Ordering Options
	Payload Profile See Figure 2
	Power Supplies On P0: +12V and +3.3V_AUX
Front Panel	Interface Connectors 10GBASE-T and GbE
	2x USB 3.0 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

VPX776 – ABC-DEF-GHJ

A = DDR4 Memory	D = CPU	G = Applicable Slot Profile
0 = 128GB 1 = Reserved	0 = D-2896TER 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 = 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 = Dual 128GB SSD 2 = Reserved	0 = No coating 1 = Humiseal 1A33 Polyurethane 2 = Humiseal 1B31 Acrylic 3 = Parylene

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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