VPX765

Intel® Core™ Processor i7-1185GRE, VPX 3U (11th Generation Intel Core i7)

Key Features

- 3U VPX Processor Intel® Core™ Processor i7-1185GRE (Tiger Lake)
- PCIe x4 Gen4 and PCIe x4 Gen3 to P1
- XMC with PCIe x4 Gen3
- XMC I/O routed to P2 as X24s +X8d + X12d Mapping per VITA 46.9
- Dual GbE, DP and USB 3.2 to P1
- 32GB of DDR4 with in-band ECC
- 64GB of SSD
- TPM (Trusted Platform Management)
- Health Management through dedicated Processor

Benefits

- 11th Gen i7 Intel® Core™ Processor
- Availability of chassis supporting PCIe Gen3/4-capable backplanes
- Design utilizes proven VadaTech subcomponents and engineering techniques
- Electrical, mechanical, software, and system-level expertise in house
- Full system supply from industry leader
- RoHS compliant, AS9100 and ISO9001 certified company
VPX765

The VPX765 is a processor module (VITA 46) for general purpose processing in embedded applications. The CPU is based on the 11th Generation of Intel® Core™ i-7 Processor i7-1185GRE (Tiger Lake). The processor base frequency is a quad core 1.8 GHz with max turbo frequency of 4.4 GHz. VadaTech can support i5 and i3 with minimum order quantity conditions.

The VPX765 provides PCIe x4 Gen4, PCIe x4 Gen3, dual GbE, Display Port (DP), USB 3.2 and RS-232 to P1. The PCIe x4 Gen3 could be bifurcated to dual x2 or quad x1.

The module accepts an XMC slot and routes the XMC I/O per VITA 46.9 (X24s +X8d +X12d) to the P2 connector.

The VPX765 comes with 32GB of DDR4 memory with in-band ECC and 64GB of SSD for OS. The BIOS allows booting from onboard Flash, PXE, and/or USB.

The module provides TPM (Trust Management Platform) for secure boot.

The unit is available in a range of temperature and shock/vib specifications per ANSI/VITA 47, up to V3 and OS2.
Figure 3: VPX765 Functional Block Diagram
Figure 4: VPX765 Pinout Block Diagram
## Specifications

<table>
<thead>
<tr>
<th>Architecture</th>
<th>Dimensions</th>
<th>3U, 1” pitch VITA 48.1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power</td>
<td>VPX765</td>
<td>~35W without the XMC module installed</td>
</tr>
<tr>
<td>Processor</td>
<td>CPU</td>
<td>Intel® Core™ Processor i7-1185GRE (Tiger Lake); See option D</td>
</tr>
<tr>
<td>Memory</td>
<td>DDR4 32GB with in-band ECC</td>
<td></td>
</tr>
<tr>
<td>Storage</td>
<td>BIOS Flash; 64GB Flash;</td>
<td></td>
</tr>
<tr>
<td>PCIe Lanes</td>
<td>PCIe x4 Gen4 and PCIe x4 Gen3</td>
<td></td>
</tr>
<tr>
<td>VPX Interfaces Slot Profiles</td>
<td>See option G</td>
<td></td>
</tr>
<tr>
<td>XMC VITA 46.9 (X24s +X8d + X12d)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power Supplies</td>
<td>On P0: +12V; +5V and +3.3V</td>
<td></td>
</tr>
<tr>
<td>Rear P1</td>
<td>PCIe/GbE/DP/USB3.2/RS-232</td>
<td></td>
</tr>
<tr>
<td>Rear P2</td>
<td>XMC I/O</td>
<td></td>
</tr>
<tr>
<td>LEDs</td>
<td>IPMI, activity and user defined</td>
<td></td>
</tr>
<tr>
<td>Software Support</td>
<td>Operating System</td>
<td>Linux default, contact Sales for VxWorks and Windows support requirements</td>
</tr>
<tr>
<td>Other MTBF</td>
<td>MIL Hand book 217-F@ TBD hrs</td>
<td></td>
</tr>
<tr>
<td>Certifications</td>
<td>Designed to meet FCC, CE and UL certifications, where applicable</td>
<td></td>
</tr>
<tr>
<td>Standards</td>
<td>VadaTech is certified to both the ISO9001:2015 and AS9100D standards</td>
<td></td>
</tr>
<tr>
<td>Warranty</td>
<td>Two (2) years, see VadaTech Terms and Conditions</td>
<td></td>
</tr>
</tbody>
</table>

### 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

VPX765 – ABC-DE0-GHJ

A = DDR4 Memory       D = CPU       G = Applicable Slot Profiles
0 = Reserved          0 = i7-1185GRE (*)  0 = 5HP, VITA48.1
1 = Reserved          1 = i5-1145GRE (*)  1 = Reserved
2 = 32 GB             2 = i3-1115GRE (*)

B = Flash Storage     E = RTC Battery   H = Environmental
0 = Reserved          0 = Installed     See Environmental Specification
1 = 64 GB             1 = Not Installed

C = VPX Connector Type J = Conformal Coating
0 = Standard 50u Gold Rugged
1 = KVXP Connectors
0 = Standard 50u Gold Rugged
1 = KVXP Connectors

(*) MOQ 10 units

Environmental Specification

<table>
<thead>
<tr>
<th></th>
<th>Air Cooled</th>
<th>Conduction Cooled</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>H = 0</td>
<td>H = 1</td>
</tr>
<tr>
<td></td>
<td>H = 2 (**)</td>
<td>H = 3 (**)</td>
</tr>
<tr>
<td></td>
<td>H = 4 (**)</td>
<td></td>
</tr>
<tr>
<td><strong>Operating Temperature</strong></td>
<td>AC1* (0°C to +55°C)</td>
<td>AC3* (-40°C to +70°C)</td>
</tr>
<tr>
<td></td>
<td>H = 0</td>
<td>H = 1</td>
</tr>
<tr>
<td></td>
<td>H = 2 (**</td>
<td></td>
</tr>
<tr>
<td></td>
<td>H = 3 (**)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>H = 4 (**)</td>
<td></td>
</tr>
<tr>
<td><strong>Storage Temperature</strong></td>
<td>C1* (-40°C to +85°C)</td>
<td>C3* (0°C to +55°C)</td>
</tr>
<tr>
<td></td>
<td>C1* (-40°C to +85°C)</td>
<td>CC1* (0°C to +55°C)</td>
</tr>
<tr>
<td></td>
<td>CC3* (-40°C to +70°C)</td>
<td>CC4* (-40°C to +85°C)</td>
</tr>
<tr>
<td><strong>Operating Vibration</strong></td>
<td>V2* (0.04 g2/Hz max)</td>
<td>V3* (0.1 g2/Hz max)</td>
</tr>
<tr>
<td></td>
<td>V2* (0.04 g2/Hz max)</td>
<td>V3* (0.1 g2/Hz max)</td>
</tr>
<tr>
<td></td>
<td>V3* (0.1 g2/Hz max)</td>
<td>V3* (0.1 g2/Hz max)</td>
</tr>
<tr>
<td><strong>Storage Vibration</strong></td>
<td>OS1* (20g)</td>
<td>OS1* (20g)</td>
</tr>
<tr>
<td></td>
<td>OS2* (40g)</td>
<td>OS2* (40g)</td>
</tr>
<tr>
<td></td>
<td>OS2* (40g)</td>
<td>OS2* (40g)</td>
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<tr>
<td><strong>Humidity</strong></td>
<td>95% non-condensing</td>
<td>95% non-condensing</td>
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<tr>
<td></td>
<td>95% non-condensing</td>
<td>95% non-condensing</td>
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<tr>
<td></td>
<td>95% non-condensing</td>
<td>95% non-condensing</td>
</tr>
</tbody>
</table>

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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