VPX761

Intel® Xeon® Processor E-2176M or E-2276ME 10GbE / 40GbE / PCIe, VPX 3U

Key Features
- 3U VPX Processor Intel® Xeon® Processor E-2176M or E-2276ME (Coffee Lake)
- Dual 40GbE (configurable as 4x 10GbE) and PCIe Gen3 x4 on P1
- Dual GbE Ports and Dual SATA on P1
- PCIe Gen3 x8 on P2 and PCIe Gen2 x4 on P1
- Front-panel video and dual USB 3.0 connectors
- Dual Display Port and dual USB 3.0 on P2
- 32 GB of DDR4 with ECC and 64 GB of Flash
- TPM (Trusted Platform Management)
- Health Management through dedicated Processor

Benefits
- High performance Xeon® Processor E-2176M or E-2276ME with CM246 PCH
- Availability of chassis supporting 40G-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
VPX761

The VPX761 is a processor module (VITA 46) for general purpose processing in demanding applications. Based on the Intel® Xeon® Processor E-2176M or E-2276ME (Coffee Lake) with CM246 PCH. The processor base frequency is 2.7 GHz with max turbo frequency of 4.4 GHz.

The unit provides dual 40GbE reconfigurable as 4x10GbE, PCIe Gen3 x4, dual GbE and Dual SATA Gen3 on P1. There is PCIe Gen3 x8 (or dual x4) on P2 and PCIe Gen2 x4 to P1.

It also provides GbE via RJ45, video via mini display and dual USB3.0 type C connectors for extended storage or peripherals on the front panel. Additional video display output and dual USB3.0 are also routed to P2.

The VPX761 has up to 32 GB of DDR4 memory with ECC and 64 GB of Flash for OS. The BIOS allows booting from onboard NAND, offboard SATA, PXE boot as well as USB.

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

Linux OS is standard on the VPX761, consult VadaTech for other options.

The unit is available in a range of temperature and shock/vib specifications per ANSI/VITA 47, up to V3 and OS2.
Block Diagram

Figure 2: VPX761 Functional Block Diagram

Front Panel

Figure 2: VPX761 Front Panel (preliminary)
Pinout Block Diagram

Figure 3 VPX761 Pinout Block Diagram
# Specifications

## Architecture

| **Physical Dimensions** | 3U, 1" pitch |

## Configuration

| **Power** | VPX761 | ~58W |
| **Processor** | Intel® Xeon® Processor E-2176M or E-2276ME |
| **Memory** | DDR4 32GB with ECC |
| **Storage** | BIOS NAND Flash |
| **10G/40G Lanes** | Dual x4 |
| **Platform Control Hub (PCH)** | CM246 |
| **VPX Interfaces** | See Ordering Options |
| **Payload Profile** | See Figure 3 |
| **Power Supplies** | On P0: +12V; +5V and +3.3V |

## Platform Control Hub (PCH)

- **CM246**

## VPX Interfaces

- **Slot Profiles**

## Front Panel Interface Connectors

- **1x RJ-45 for GbE**
- **2x USB type C connectors for USB 3.0**
- **2x Micro USB for IPMI RS-232 and PCH RS-232**
- **1x Mini Display Port for graphics**

## Software Support

- **Operating System**
  - Linux default, contact Sales for VxWorks and Windows support requirements

## Other

- **MTBF**
  - MIL Handbook 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

**VPX761 – ABC-D00-GHJ**

<table>
<thead>
<tr>
<th>A = DDR4 Memory</th>
<th>D = CPU</th>
<th>G = Applicable Slot Profiles</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 = Reserved</td>
<td>0 = E-2176M</td>
<td></td>
</tr>
<tr>
<td>1 = 16 GB</td>
<td>1 = E-2276ME</td>
<td></td>
</tr>
<tr>
<td>2 = 32 GB</td>
<td>2 = Reserved</td>
<td></td>
</tr>
<tr>
<td>0 = 5 HP, IEEE 1101</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 = 5 HP, VITA 48.1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Environmental Specification**

<table>
<thead>
<tr>
<th>Air Cooled</th>
<th>Conduction Cooled</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Option H</strong></td>
<td><strong>H = 0</strong></td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>AC1* (0°C to +55°C)</td>
</tr>
<tr>
<td>Storage Temperature</td>
<td>C1* (-40°C to +85°C)</td>
</tr>
<tr>
<td>Operating Vibration</td>
<td>V2* (0.04 g²/Hz max)</td>
</tr>
<tr>
<td>Storage Vibration</td>
<td>OS1* (20g)</td>
</tr>
<tr>
<td>Humidity</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)
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