VPX6000 Series
Rugged 6U VPX 4th Generation Intel® Core™ i7 Processor Blade

Features
- Dual quad-core 4th Generation Intel® Core™ i7 processor with ECC
- Dual channel DDR3L ECC memory soldered, 16GB per CPU
- Supports PCIe non-transparent bridge (NTB) and 10GbE
- Supports storage upgrade via mezzanine card with scalable onboard SSD option
- Remote management with iAMT

Specifications
- **Processor & System**
  - **CPU**: Single or dual μFC-BGA quad-core Intel® Core™ i7-4700EQ processors, 2.4/1.7GHz, 6MB L3 cache, 47/37W TDP
  - **Chipset**: Intel® QM87 Express Chipset
  - **Memory**: Dual channel DDR3L-1600 SDRAM with ECC, 16GB per CPU
  - **BIOS**: AMI® EFI BIOS, 16MB SPI flash memory
  - **VITA Standards**
    - VITA 46.0 VPX Base Standard
    - VITA 46.4 PCI Express on VPX Fabric Connector
    - VITA 46.6 Gigabit Ethernet Control Plane on VPX
    - VITA 46.9 PMC/XMC/Ethernet Signal Mapping to 3U/6U VPX
    - VITA 46.10 Rear Transition Module on VPX
    - VITA 48.0 Ruggedized Enhanced Design Implementation
    - MECHANICAL BASE SPECIFICATION: VITA 65 OpenVPX Architecture Framework for VPX
- **Module Profile**: MOD6-PAY-4FQ2U2T-12.2.1-8
- **Slot Profile**: SLT6-PAY-4FQ2U2T-10.2.1
- **Connectivity**
  - **Ethernet**: Four Fat Pipes 10GbE with RDMA to P1 for Data Plane by Mellanox ConnectX-3
    - Intel® 82580EB Quad GbE controller on PCIe 2.0 x4
    - Two 1000BASE-T to P4/P5 for CPU-A, two to P4/P6 for CPU-B
    - Two 1000BASE-BX/KX to P5 for CPU-A, two to P6 for CPU-B for Control Plane
  - **PCI Express**: PCIe x8 or 2x PCIe 2.0 x4 (Gen2) with DMA to P2 data plane from IDT 32-lane Gen2 switch per CPU
  - **Graphics**: Integrated in Intel® processor with DX11.1 and OCL1.2
    - One VGA port on front panel (air cooled version only)
    - Two DVI/HDMI routed to rear per CPU
  - **USB**: One USB 3.0 port on front panel (air cooled version only)
    - Two USB 3.0 and two USB 2.0 routed to rear per CPU
  - **PS/2**: PS/2 Keyboard Mouse to rear per CPU
  - **Serial Port**: One RJ-45 RS-232 port on front panel
    - One RS-232/422 serial port routed to rear per CPU
  - **Audio**: High Definition Audio Line-in and Line-out signals routed to rear per CPU
Specifications

● Storage
  SBC
  One SATA 6 Gb/s 32GB SLC NAND flash (removable), 64GB optional
  Three SATA 6 Gb/s routed to rear per CPU

● Operating System
  OS
  Microsoft Windows 7 32/64-bit
  Red Hat Enterprise Linux 6.5
  Wind River VxWorks 6.9.3
  (Please contact ADLINK for other OS support)

● Miscellaneous
  LEDs
  CPU, PCH, RAM, Port 80, P12V, PSV power good

  Watchdog Timer
  System Reset and NMI, with programmable interval, 1-65535 seconds or minutes

  Hardware Monitor
  Monitors CPU temperature, system temperature, Vcore and DC voltages

● Mechanical & Environmental
  Form Factor
  6U VPX, 0.85”
  233.35mm x 160mm (L x W)

  Operating Temperature
  Conduction-cooled -40°C to +75°C (at wedge-lock)
  Air-cooled 0°C to +75°C (ambient temperature)

  Storage Temperature
  -50°C to +100°C

  RH Humidity
  95% non-condensing

  Shock
  Sawtooth 40G, 11ms, each axis, operating (conduction cooled)
  Sawtooth 20G, 11ms, each axis, operating (air cooled)

  Vibration
  15Hz-2KHz, 12Grms, random, each axis, operating (conduction cooled)
  10Hz-2KHz, random, sine: 2G, 5 to 500Hz (air cooled)

  Power Consumption: Max 158W

  Weight
  Conduction-cooled 1400g
  Air-cooled dual CPU 770g
  Air-cooled single CPU 620g

● Safety & EMI
  Certification
  CE/ FCC Class A
VPX6000 Block Diagram

VPX-R6000 6U RTM

<table>
<thead>
<tr>
<th>Model</th>
<th>10G</th>
<th>1000 BASE-BX</th>
<th>1000 BASE-T</th>
<th>HDMI</th>
<th>USB</th>
<th>Mini UART</th>
<th>SATA</th>
<th>RS-232/422</th>
<th>Audio</th>
<th>KB/MS</th>
<th>GPIO</th>
<th>BIOS</th>
<th>JTAG</th>
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<tbody>
<tr>
<td>VPX-R6000</td>
<td>Faceplate</td>
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<td>2</td>
<td>2x 3.0</td>
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Block Diagram of tBP-VPX6000
### Ordering Information

**Processor Blades**

- **VPX6000/D4700/M32/S64-R1**
  Dual Intel® Core™ i7-4700EQ processor and 32GB DDR3L-1600 ECC soldered memory and 64GB SSD with card edge operating temp. -40°C to +75°C, conduction cooled

- **VPX6000/S4700/M16/S32-A1**
  Single Intel® Core™ i7-4700EQ processor and 16GB DDR3L-1600 ECC soldered memory and 32GB SSD, air cooled, 0°C to +75°C ambient temp.

- **VPX6000/D4700/M32/S64-A1**
  Dual Intel® Core™ i7-4700EQ processor and 32GB DDR3L-1600 ECC soldered memory and 64GB SSD, air cooled, 0°C to +75°C ambient temp.

- **tBP-VPX6000**
  4x 1000BASE-BX/KX, each self loopback
  6x RJ45 jack 1000BASE-T
  6x SATA
  4x USB 2.0; 4x USB 3.0
  2x DVI; 2x HDMI
  2x Audio jack (LI/LO)
  4x RS-232/422 (PIN header)
  16x GPIO status LED
  4x 10G (Infiniband connector)
  2x PCIe x1 slot

- **VPX-R6000**
  VPX RTM for VPX6000 with 2x 10G (InfiniBand connectors), 2x USB 3.0, 2x 1000BASE-T, 2x 1000BASE-BX, 2x micro HDMI, mini UART on front panel; and Line-in, Line-out, RS-232, 6x SATA 3.0 onboard