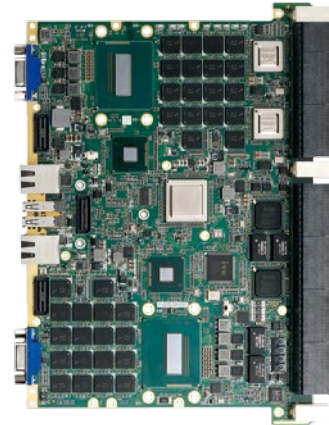


# VPX6000 Series

## 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 46.11 (draft) System Management on VPX

VITA 48.0 Ruggedized Enhanced Design Implementation

Mechanical Base Specification: VITA 65 OpenVPX Architecture Framework for VPX

##### Module Profile

MOD6-PAY-4F1Q2U2T-12.2.1-8

##### Slot Profile

SLT6-PAY-4F1Q2U2T-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

Intel® I217-LM PHY controller, one GbE with iAMT to P4 per CPU

##### 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

All graphics interfaces are independent channels

Supports three independent displays

##### 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, P5V 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**

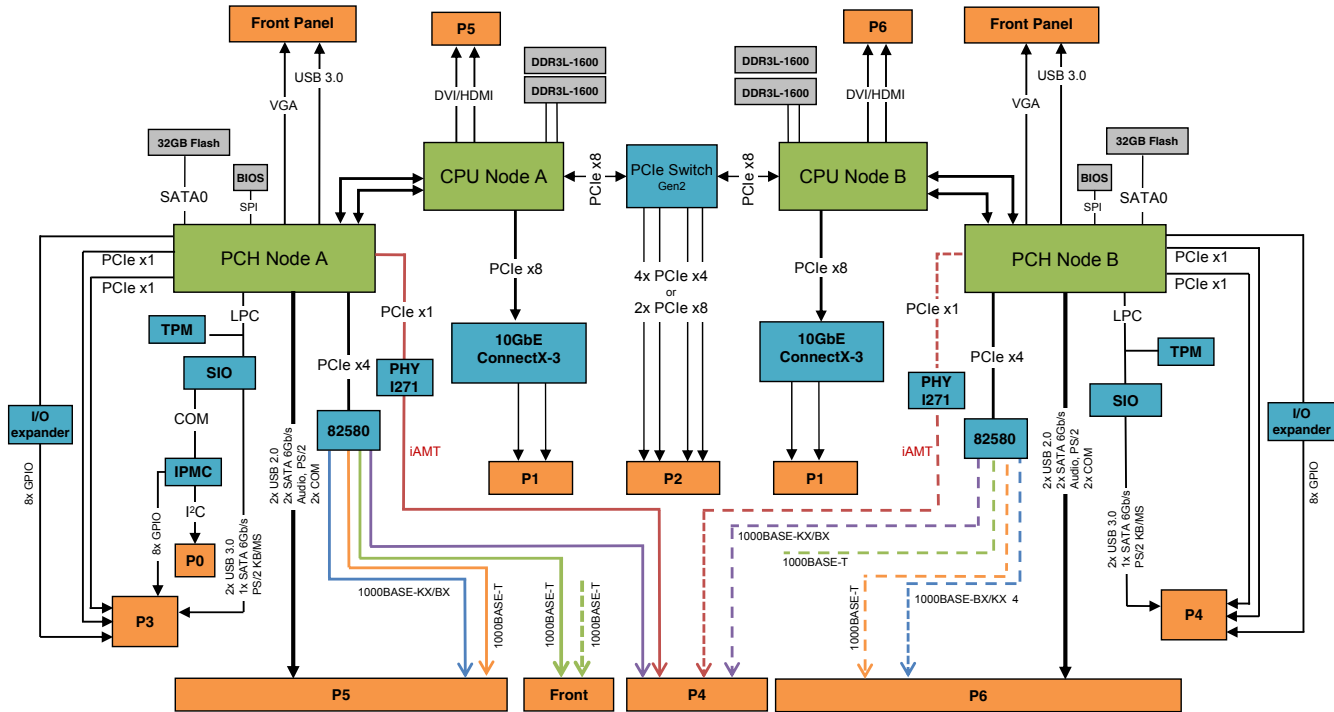
Conduction-cooled 1400g  
Air-cooled dual CPU 770g  
Air-cooled single CPU 620g

- **Safety & EMI**

**Certification**

CE/ FCC Class A

## VPX6000 Block Diagram



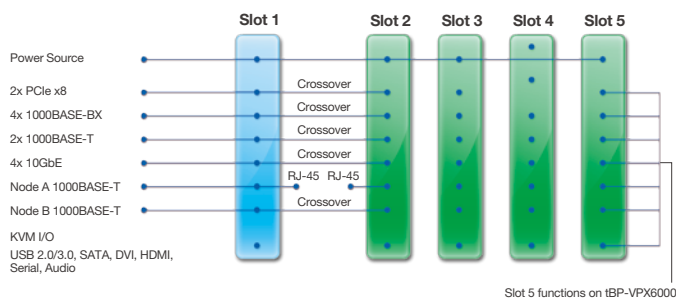
## VPX-R6000 6U RTM

Model		10G	1000 BASE-BX	1000 BASE-T	HDMI	USB	Mini UART	SATA	RS-232/422	Audio	KB/MS	GPIO	BIOS	JTAG
VPX-R6000	Faceplate	2	2	2	2	2x 3.0	1							
	Onboard	2				4x 2.0		6	2	2	2	1	2	1

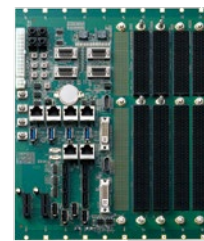
## tBP-VPX6000 6U Backplane

Model	Onboard Connectors	1000 BASE-BX/KX	1000 BASE-T	10G	DVI	HDMI	SATA	USB	RS-232/422	Audio (Line IN/OUT)	BIOS	Battery	GPIO (LED)	PCIe x1	ATX connector	Power Terminal
tBP-VPX6000	For Slot 5 only	4	6	4	2	2	6	4x 3.0 4x 2.0	4	2	2	1	16	2	Yes	Yes

## Block Diagram of tBP-VPX6000



tBP-VPX6000  
Top View



tBP-VPX6000  
Bottom View

# 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



VPX6000  
conduction cooled



VPX6000  
air cooled