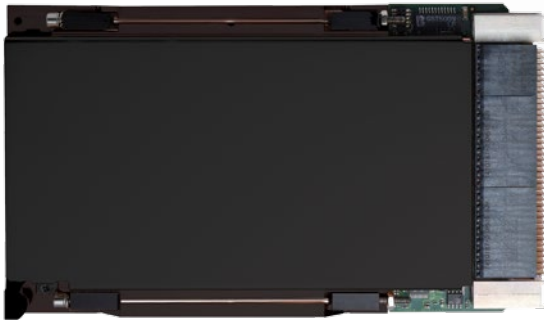


# VPX3000 Series

## Rugged 3U VPX 3rd Generation Intel® Core™ i7 Processor Blade



### Features

- Quad-core 35w 3rd Generation Intel® Core™ i7 processor with QM77 Express chipset
- DDR3-1333 soldered ECC SDRAM
- Two PCIe x4 Gen2 data plane with NTB
- Two 1000BASE-BX and one 1000BASE-T
- One XMC.3 PCIe x8 Gen2 with Rear I/O



### Specifications

#### Processor & System

|                |                                                                                                                                                                                                                                                                                                                                                                                                                            |
|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CPU            | Quad-core Intel® Core™ i7-3612QE 2.1GHz, 6MB LLC cache, TDP=35w                                                                                                                                                                                                                                                                                                                                                            |
| Chipset        | Mobile Intel® QM77 Express Chipset                                                                                                                                                                                                                                                                                                                                                                                         |
| Memory         | Dual channel DDR3-1333 ECC soldered SDRAM, up to 8GB                                                                                                                                                                                                                                                                                                                                                                       |
| BIOS           | AMI EFI on 64Mbit SPI flash                                                                                                                                                                                                                                                                                                                                                                                                |
| VITA standards | VITA 46.0 VPX Base Standard<br>VITA 46.4 PCI Express on VPX Fabric Connector<br>VITA 46.6 Gigabit Ethernet Control Plane on VPX<br>VITA 46.9 PMC/XMC/Ethernet Signal Mapping to 3U/6U VPX<br>VITA 46.10 Rear transition module on VPX<br>VITA 46.11(draft) System Management on VPX<br>VITA 48.0 Ruggedized Enhanced Design Implementation Mechanical Base Specification<br>VITA 65 OpenVPX Architecture Framework for VPX |
| Module Profile | MOD3-PAY-2F2U-16.2.3-3<br>MOD3-PAY-1F1F2U-16.2.4-4                                                                                                                                                                                                                                                                                                                                                                         |
| Slot Profile   | SLT3-PAY-2F2U-14.2.3<br>SLT3-PAY-1F1F2U-14.2.4                                                                                                                                                                                                                                                                                                                                                                             |

#### Connectivity

|             |                                                                                                                                 |
|-------------|---------------------------------------------------------------------------------------------------------------------------------|
| XMC         | PCIe x8 Gen2 with RIO to P2-X8d+X12d                                                                                            |
| Ethernet    | Two 1000BASE-BX to P1<br>One 10/100/1000BASE-T to P1                                                                            |
| Graphics    | Single channel DVI+RGB to P2                                                                                                    |
| USB         | One USB 3.0 and one USB 2.0 to P1                                                                                               |
| Serial Port | One RS-232 (RTS#,CTS#, SIN, SOUT) and one RS-422 to P2                                                                          |
| Audio       | Intel® HDA Line-in, Line-out to P2                                                                                              |
| PCI Express | 2x PCIe x4 Gen2 to P1, configurable to 1x8 or 1x4+4x1<br>Supports DMA and Non Transparent Bridge for peer to peer communication |

#### Storage

|     |                                                                                                 |
|-----|-------------------------------------------------------------------------------------------------|
| SBC | Soldered 32GB SATA 3Gb/s boot flash<br>Two SATA 6Gb/s ports to P1 and one SATA 3Gb/s port to P2 |
|-----|-------------------------------------------------------------------------------------------------|

#### Operating System

|    |                                                                                                                                                                        |
|----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| OS | Red Hat Enterprise Linux 6.2<br>Wind River VxWorks 6.9<br>Microsoft Windows 7 32/64bit<br>Microsoft Windows 7 Embedded<br>(Please contact ADLINK for other OS support) |
|----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

#### Miscellaneous

|                |                                                |
|----------------|------------------------------------------------|
| GPIO           | Four PCH controlled GPIO to P1/P2              |
| HW monitor     | CPU temperature and Power rails                |
| Watchdog Timer | System reset or NMI with programmable interval |
| LED            | Power LED (green)                              |
| Reset Button   | Board reset button on front panel              |

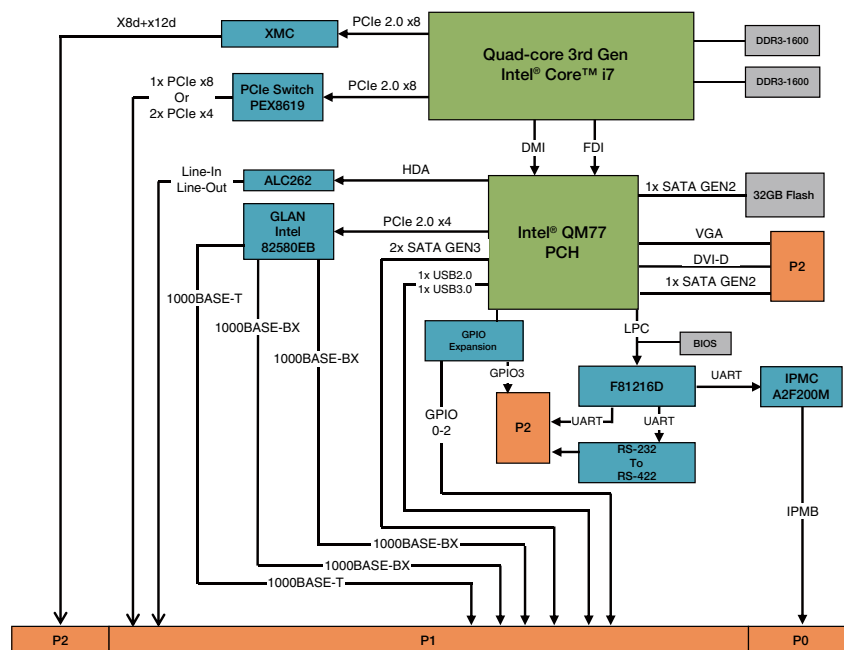
#### Mechanical & Environmental

|                       |                                                                                                         |
|-----------------------|---------------------------------------------------------------------------------------------------------|
| Form Factor           | 3U VPX 0.8"<br>100mm x 160mm x 20.3mm                                                                   |
| Operating Temperature | -40°C to +75°C (at wedge lock)                                                                          |
| Vibration             | 5Hz-2KHz, 12Grms, random, each axis, operating                                                          |
| Shock                 | Sawtooth 40G, 11ms, each axis, operating                                                                |
| Altitude              | 60,000 feet, operating                                                                                  |
| Power Consumption     | 100% CPU, memory, VGA, SSD stress<br>3612QE/M8G 41.7W<br>VS1 (12) 1.9A, VS2 (3.3): 0.8A, VS3 (5V): 3.2A |
| Weight                | 515g                                                                                                    |
| EMI/EMC               | CE, FCC Class A                                                                                         |

### Ordering Information

| Model Number            | Description/Configuration                                                                                                                                                            |
|-------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Processor Blades</b> |                                                                                                                                                                                      |
| VPX3000/3612/M8/S32-R1  | Quad-core i7-3612QE 35W with 8GB DDR3 ECC and 16GB SATA SSD soldered, card edge operating temp. -40°C to 75°C                                                                        |
| VPX-R300                | RTM for VPX3000 with DVI-I, USB 2.0, USB 3.0, 1000BASE-T on front panel and Line-in, Line-out, RS-232, RS-422, 2x SATA 3.0, GPIO pin headers, XMC port onboard                       |
| tBP-VPX3000             | 3-slot testbed for VPX-3000; SLT1-2: VITA65 SLT3-PAY-2F2U-14.2.3, BKP3-DIS02-15.2.8-1 SLT3 I/O: 2x COM-RJ45, 1x GbE-RJ45, 1x DVI-I, 2x USB, 2x SATA 6G, 2x PClex4, Line-in/out Jacks |
| VPX3G10-R               | VPX3G10-R 3U VPX NVIDIA GT745M GPU card, conduction cooled                                                                                                                           |
| XMC-G745-R              | XMC NVIDIA GT745M GPGPU card, conduction cooled                                                                                                                                      |
| 3U Test Frame           | 3U VPX test frame with tBP-VPX3000 backplane for users to validate VPX3000 functionality                                                                                             |

## VPX3000 Block Diagram



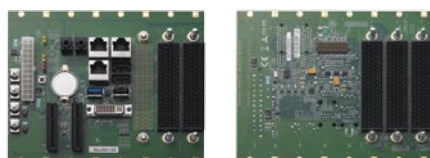
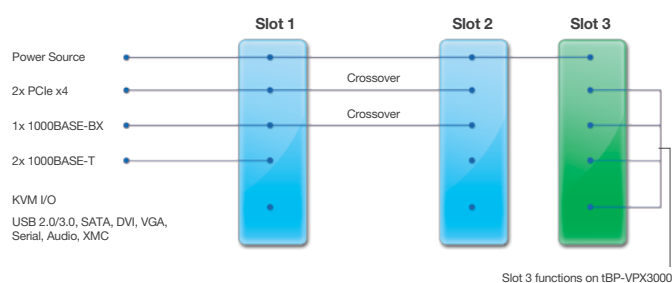
## VPX-R300 RTM

| Model Name | Location | GbE           | Display | USB 3.0 | USB 2.0 | SATA | XMC | COM                    | GPIO | Audio       |
|------------|----------|---------------|---------|---------|---------|------|-----|------------------------|------|-------------|
| VPX-R300   | Rear I/O | 1x 1000BASE-T | DVI-I   | 1       | 1       | -    | -   | -                      | -    | -           |
|            | On Board | 1x 1000BASE-T | -       | -       | -       | 2    | 1   | 1x RS-232<br>1x RS-422 | 4    | Line-In/Out |

## tBP-VPX3000 3U Backplane

| Model Name  | Onboard Connectors | GbE           | PCIe       | Display  | USB 3.0 | USB 2.0 | SATA | XMC                     | COM                    | Audio                     | Power                                           |
|-------------|--------------------|---------------|------------|----------|---------|---------|------|-------------------------|------------------------|---------------------------|-------------------------------------------------|
| tBP-VPX3000 | For Slot 3 only    | 1x 1000BASE-T | 2x PCIe x4 | 1x DVI-I | 1       | 1       | 2    | 1x XMC<br>I/Ox8d + x12d | 1x RS-232<br>1x RS-422 | 1x Line-In<br>1x Line-Out | 1x 24 pin ATX<br>12V/5V/3.3V<br>power terminals |

## Block Diagram of tBP-VPX3000



### 3U VPX Test Frame

|                   |                                          |
|-------------------|------------------------------------------|
| Product Type      | Test Frame                               |
| Form Factor       | VPX 3U                                   |
| Dimensions        | 142.6mm (H) x 209.9mm (W) x 276.28mm (D) |
| Blade support     | Conduction cooled                        |
| Backplane support | Up to 9 slots with VPX 3U Blade          |
| RTM Support       | Yes                                      |
| Cooling           | Passive Fin                              |
| Power             | User define                              |

