

XPedite7670

Intel® Xeon® D Processor-Based 3U VPX-REDI Module with Dual 10GbE and an XMC Site

- ▶ Supports Intel® Xeon® D processors (formerly Broadwell-DE)
- ▶ Eight Xeon®-class cores in a single, power-efficient SoC package (available now)
- ▶ 12 or 16 Xeon®-class cores in a single, power-efficient SoC package (available Q1 2016)
- ▶ Extended temperature Intel® Xeon® D processors (available Q1 2016)
- ▶ 3U VPX (VITA 46) module
- ▶ VITA 46.11 Tier 1 and Tier 2 IPMI Controller (IPMC)
- ▶ Compatible with multiple VITA 65 OpenVPX™ slot profiles
- ▶ Ruggedized Enhanced Design Implementation (REDI) per VITA 48
- ▶ Conduction- or air-cooled
- ▶ Up to 16 GB of DDR4-2133 ECC SDRAM in two channels
- ▶ Contact factory for larger densities of DDR4-2133 ECC SDRAM
- ▶ Up to 64 GB of NAND flash
- ▶ XMC interface
- ▶ One x4 PCI Express backplane fabric interconnect
- ▶ Two 10 Gigabit Ethernet ports and four Gigabit Ethernet ports
- ▶ Four SATA ports
- ▶ One XMC (P16) SATA port for storage mezzanine
- ▶ coreboot firmware powered by Intel® FSP
- ▶ Wind River VxWorks BSP
- ▶ X-ES Enterprise Linux (XEL) BSP
- ▶ Contact factory for availability of Green Hills INTEGRITY, QNX Neutrino, and LynuxWorks LynxOS BSPs, as well as Microsoft Windows drivers



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The XPedite7670 is a high-performance, 3U VPX-REDI, single board computer based on the Xeon® D processor. The Intel® Xeon® D processor can provide up to 16 Xeon®-class cores in a single, power-efficient System-on-Chip (SoC) package (available Q1 2016, eight-core variations available now). The XPedite7670 maximizes network performance with two 10 Gigabit Ethernet interfaces and four Gigabit Ethernet interfaces. The 10 Gigabit Ethernet interfaces can be configured as XAUI or 10GBASE-KX4. The four Gigabit Ethernet interfaces are configured as two 1000BASE-BX/KX (SerDes) ports and two 10/100/1000BASE-T ports.

Up to four lanes of Gen3 PCI Express are routed to the backplane P1 connector, supporting a single x4 PCIe interface. This interface also supports Non-Transparent Bridging, enabling direct communication with other Intel® processors, and there is no need for a separate switch module in the system, further reducing SWaP-C for the system integrator.

The XPedite7670 provides superior growth and expansion capabilities by including an XMC site with full 10 mm I/O envelope support, while maintaining a 0.8 in. VPX slot pitch. This gives system integrators a plethora of COTS options for additional I/O, storage, or processing.

The XPedite7670 accommodates up to 16 GB of DDR4-2133 ECC SDRAM in two channels to support memory-intensive applications. The XPedite7670 also hosts numerous I/O ports, including USB, SATA, and RS-232/422/485 through the backplane connectors.

Wind River VxWorks and X-ES Enterprise Linux Support Packages (XEL) are available. The XPedite7670 uses coreboot, powered by Intel®'s Firmware Support Package (FSP), to provide fast boot times and significantly simplify code traceability over legacy BIOS implementations.

X-ES

Extreme Engineering Solutions

...Always Fast

Extreme Engineering Solutions

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Processor

- Intel® Xeon® D (formerly Broadwell-DE)
- Eight Xeon®-class cores in a single, power-efficient SoC package (available now)
- 12 or 16 Xeon®-class cores in a single, power-efficient SoC package (available Q1 2016)
- Extended temperature Intel® Xeon® D processors (available Q1 2016)

Memory

- Up to 16 GB of DDR4-2133 ECC SDRAM in two channels
- Up to 64 GB of NAND flash
- 32 MB NOR boot flash
- 64 kB EEPROM

VPX (VITA 46) P0 I/O

- I²C port

VPX (VITA 46) P1 I/O

- One 10GbE XAUI or 10GBASE-KX4
- x4 PCI Express Gen3-capable interface to P1.B
- Two 1000BASE-BX Gigabit Ethernet ports
- XMC P16 I/O, mapping P1w9-X12d per VITA 46.9

VPX (VITA 46) P2 I/O

- One 10GbE XAUI or 10GBASE-KX4
- Two 10/100/1000BASE-T Gigabit Ethernet ports
- Four SATA ports capable of 6 Gb/s
- Two USB 2.0 ports
- Up to four RS-232/422/485 serial ports
- 3.3 V GPIO signals

XMC Site

- x8 PCIe Express Gen3-capable port (XMC interface)
- One SATA port (XMC interface)

Additional Features

- Non-volatile memory write protection
- Optional Trusted Platform Module (TPM)
- IEEE 1588 support on four Gigabit Ethernet ports
- Optional VITA 46.11 Tier 1 and Tier 2 IPMI Controller (IPMC)

Software Support

- coreboot firmware powered by Intel® FSP
- Wind River VxWorks BSP
- X-ES Enterprise Linux (XEL) BSP
- Contact factory for availability of Green Hills INTEGRITY, QNX Neutrino, and LynuxWorks LynxOS BSPs, as well as Microsoft Windows drivers

Physical Characteristics

- 3U VPX-REDI conduction- or air-cooled form factor
- Dimensions: 100 mm x 160 mm
- 0.8 in. pitch without solder-side cover
- 1.0 in. pitch with Two-Level Maintenance (2LM) support (optional)

Environmental Requirements

Contact factory for appropriate board configuration based on environmental requirements.

- Supported ruggedization levels (see chart below): 1, 3, 5
- Conformal coating available as an ordering option
- Thermal performance will vary based on CPU frequency and application

Power Requirements

- Power will vary based on configuration and usage. Please consult factory.

Ruggedization Level	Level 1	Level 3	Level 5
Cooling Method	Standard Air-Cooled	Rugged Air-Cooled	Conduction-Cooled
Operating Temperature	0 to +55°C ambient (300 LFM)	-40 to +70°C (600 LFM)	-40 to +85°C (board rail surface)
Storage Temperature	-40 to +85°C ambient	-55 to +105°C ambient	-55 to +105°C ambient
Vibration	0.002 g ² /Hz, 5 to 2000 Hz	0.04 g ² /Hz (maximum), 5 to 2000 Hz	0.1 g ² /Hz (maximum), 5 to 2000 Hz
Shock	20 g, 11 ms sawtooth	30 g, 11 ms sawtooth	40 g, 11 ms sawtooth
Humidity	0% to 95% non-condensing	0% to 95% non-condensing	0% to 95% non-condensing

