XPedite7680

Intel® Xeon® D-1500 Family Processor-Based 3U VPX-REDI Module with Dual 10 Gigabit Ethernet and XMC Site

- Supports Intel® Xeon® D-1500 family processors (formerly Broadwell-DE)

- Up to 16 Xeon®-class cores in a single, power-efficient SoC package

- 4, 8, or 12 core SKUs available with native extended temperature support

- 3U VPX (VITA 46) module

- Optional VITA 46.11 Tier 1 and Tier 2 IPMI Controller (IPMC)

- Compatible with multiple VITA 65 OpenVPX™ slot profiles (SOSA-aligned configurations available)

- Ruggedized Enhanced Design Implementation (REDI) per VITA 48

- Conduction- or air-cooled

- Up to 32 GB of DDR4 ECC SDRAM in two channels

- Up to 128 GB of SLC NAND flash

- XMC interface with a x8 PCIe interface and rear I/O support

- One x8 or two x4 PCI Express backplane fabric interconnects

- Two 10GBASE-KR Ethernet ports

- One 10/100/1000BASE-T Ethernet port

- Two USB 2.0 ports

- One RS-232/422/485 serial port

- Two SATA ports

- SOSA-aligned pinout compatible with backplane slot profile 1F1F2U1TU1T1U1T-14.2.16

- Wind River VxWorks BSP

- X-ES Enterprise Linux (XEL) BSP

- Contact factory for availability of Microsoft Windows drivers and other operating systems

XPedite7680

The XPedite7680 is a high-performance, 3U VPX-REDI, single board computer based on the Intel® Xeon® D-1500 family processors (formerly Broadwell-DE). The Intel® Xeon® D processor can provide up to 16 Xeon®-class cores in a single, power-efficient System-on-Chip (SoC) package. The XPedite7680 maximizes network performance with two 10GBASE-KR Ethernet ports and one 10/100/1000BASE-T Ethernet port.

Up to eight PCI Express Gen3 lanes are routed to the backplane P1 connector, supporting a single x8 PCIe interface or two x4 PCIe interfaces. 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 XPedite7680 provides superior growth and expansion capabilities through an XMC site, while maintaining a 0.8 in. VPX slot pitch (12-core processor configurations require 1.0 in. pitch). This gives system integrators a plethora of COTS options for additional I/O, storage, or processing. The XPedite7680 has orderable options supporting a SOSA-aligned pinout compatible with backplane slot profile 1F1F2U1TU1T1U1T-14.2.16.

The XPedite7680 accommodates up to 32 GB of DDR4 ECC SDRAM in two channels to support memory-intensive applications. The XPedite7680 also hosts numerous I/O ports, including USB, SATA, and RS-232/422/485 serial through the backplane connectors. Wind River VxWorks and X-ES Enterprise Linux Support Packages (XEL) are available.

X-ES

Extreme Engineering Solutions

"Fast, Flexible, Customer-Focused Embedded Solutions"

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DS90030580-F

Processor

- Intel® Xeon® D-1500 family processors (formerly Broadwell-DE)
- Up to 16 Xeon®-class cores in a single, power-efficient SoC package
- 4, 8, or 12 core SKUs available with native extended temperature support

Memory

- Up to 32 GB of DDR4 ECC SDRAM in two channels
- Up to 128 GB of SLC NAND flash
- 32 MB NOR boot flash
- 64 kB EEPROM

VPX (VITA 46) P0 I/O

- VITA 46.11 Tier 1 and Tier 2 IPMI Controller (IPMC)
- 1 Pulse Per Second (1PPS)

VPX (VITA 46) P1 I/O

- x4 PCI Express Gen3-capable interface to P1.A
- x4 PCI Express Gen3-capable interface to P1.B
- Two 10GBASE-KR Ethernet ports
- XMC P16 I/O, mapping P1w9-X12d per VITA 46.9
- 3.3 V GPIO signals

VPX (VITA 46) P2 I/O

- One 10/100/1000BASE-T Gigabit Ethernet port
- Two SATA ports capable of 6 Gb/s
- Two USB 2.0 ports
- One RS-232/422/485 serial port

XMC Site

- x8 PCI Express Gen3-capable interface
- X12d P16 I/O

Additional Features

- Non-volatile memory write protection
- Trusted Platform Module (TPM 2.0)
- IEEE 1588 support on one Gigabit Ethernet port

Software Support

- Wind River VxWorks BSP
- X-ES Enterprise Linux (XEL) BSP
- Contact factory for availability of Microsoft Windows drivers and other operating systems

Physical Characteristics

- 3U VPX-REDI conduction- or air-cooled form factor
- SOSA-aligned pinout compatible with backplane slot profile 1F1F2U1TU1T1U1T-14.2.16
- Dimensions: 100 mm x 160 mm
- 0.8 in. pitch without solder-side cover (optional)
- 1.0 in. pitch with Two-Level Maintenance (2LM) support
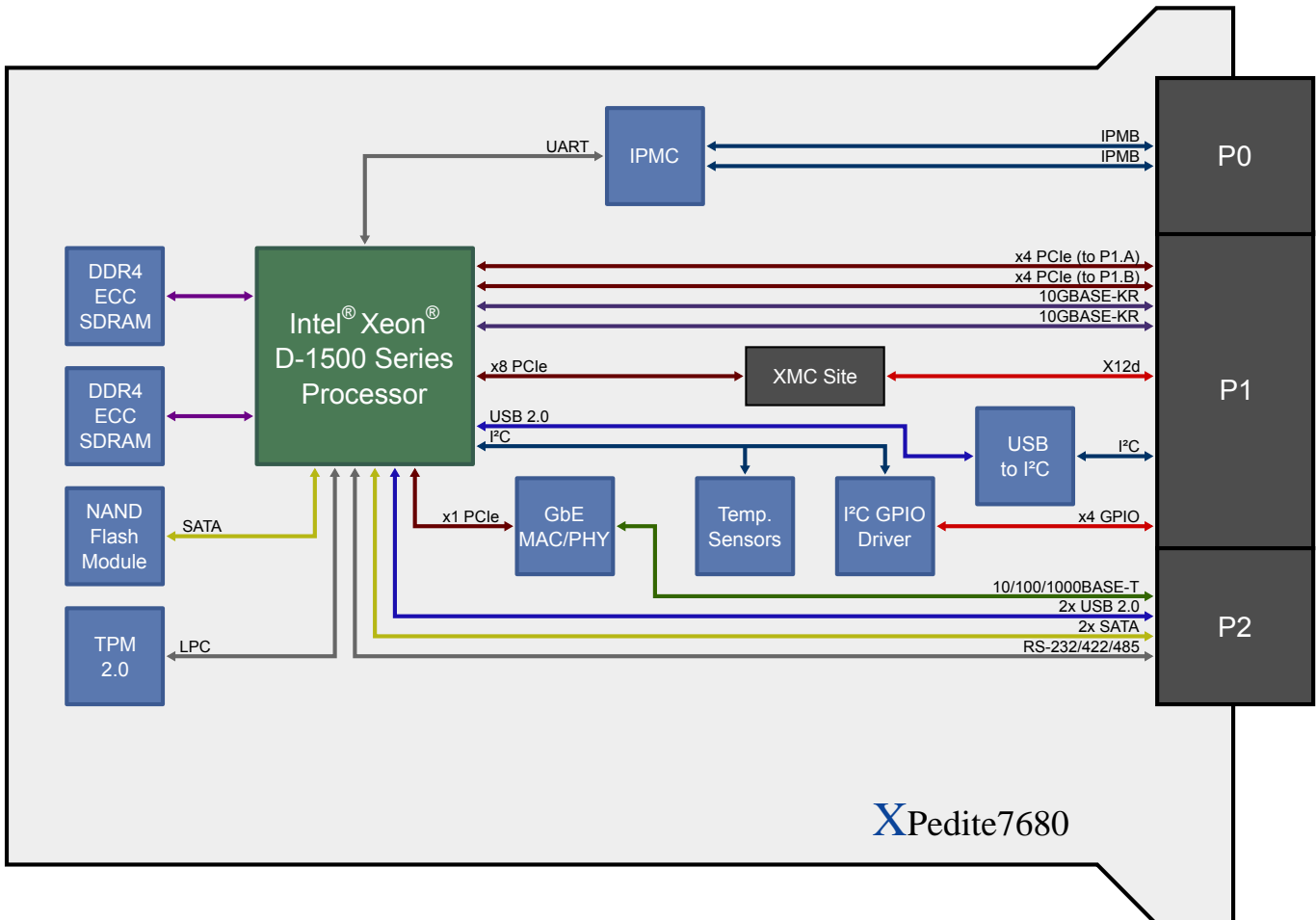
Environmental Requirements

Contact factory for appropriate board configuration based on environmental requirements.

- Supported ruggedization levels (see chart below): 5
- Conformal coating available as an ordering option
- Contact X-ES for air-cooled development options

Power Requirements

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

Ruggedization Level	Level 5
Cooling Method	Conduction-Cooled
Operating Temperature	-40 to +85°C (board rail surface)
Storage Temperature	-55 to +105°C (maximum)
Vibration	0.1 g²/Hz (maximum), 5 to 2000 Hz
Shock	40 g, 11 ms sawtooth
Humidity	Up to 95% non-condensing

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