XPedite7674

Not Recommended for New Designs

Intel® Xeon® D-1500 Family Processor-Based 3U VPX-REDI Module with Dual 10GbE and Kintex® UltraScale™ FPGA

Please contact X-ES Sales

- 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
- Designed with SecureCOTS™ technology to support enhanced security and trusted computing
- Xilinx Kintex® UltraScale™ XCKU060 or XCKU095 FPGA with up to 8 GB DDR4 ECC SDRAM and 1 Gb synchronous configuration BPI flash
- 3U VPX (VITA 46) module
- Compatible with multiple VITA 65 OpenVPX™ slot profiles
- Ruggedized Enhanced Design Implementation (REDI) per VITA 48
- Up to 16 GB of DDR4 ECC SDRAM in two channels
- Up to 32 GB of SLC NAND flash
- XMC site with a x8 PCIe interface and rear I/O support
- Two x4 PCI Express backplane fabric interconnects
- Two 10 Gigabit Ethernet ports and one 1000BASE-X Ethernet port
- One SATA port and two USB 2.0 ports
- Support for DeepCover Security Manager secure supervisor (optional)
- coreboot firmware powered by Intel® FSP
- Wind River VxWorks BSP
- X-ES Enterprise Linux (XEL) BSP
- LynxSecure Safety Bundle (LSB)
- Contact factory for availability of Green Hills INTEGRITY and QNX Neutrino BSPs, as well as Microsoft Windows drivers

XPedite7674

The XPedite7674 is a high-performance, 3U VPX-REDI, multiprocessing, single board computer that is ideal for ruggedized systems requiring high-bandwidth processing and low power consumption. Featuring Intel® Xeon® D-1500 family processors coupled with the Xilinx Kintex® UltraScale™ FPGA, the XPedite7674 delivers enhanced performance and efficiency for today's embedded computing applications.

The XPedite7674 integrates SecureCOTS™ technology with the Xilinx Kintex® UltraScale™ FPGA for hosting custom functions to protect data from being modified or observed and provides an ideal solution when stringent security capabilities are required. The XPedite7674 provides secure network interfaces by providing one 1000BASE-X Gigabit Ethernet interface from the FPGA and two CPU 10 Gigabit 10GBASE-KR Ethernet interfaces.

It accommodates up to 16 GB of DDR4 ECC SDRAM in two channels and up to 32 GB of onboard SATA NAND flash in addition to numerous I/O ports, including USB, SATA, and RS-232/422/485 serial through the backplane connectors. The XPedite7674 provides additional expansion capabilities by including an XMC site. This XMC site includes a x8 PCIe connection to the Intel® Xeon® D processor and X12d I/O mapped directly to the VPX backplane connectors.

Wind River VxWorks, X-ES Enterprise Linux (XEL), and LynxSecure Safety Bundle (LSB) are available for board support. The XPedite7674 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

"Fast, Flexible, Customer-Focused Embedded Solutions"

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

Security and Management

- Xilinx Kintex® Ultrascale™ XCKU060 or XCKU095 FPGA
- Designed with SecureCOTS™ technology to support enhanced security and trusted computing
- 1 Gb synchronous configuration BPI flash
- Up to 8 GB of DDR4 ECC SDRAM
- Two x4 PCI Express Gen3-capable interfaces
- One x4 PCI Express Gen2-capable interface
- Support for DeepCover Security Manager secure supervisor (optional)

VPX (VITA 46) P0 I/O

- One IPMB port
- VITA 46.11 Tier 1 and Tier 2 IPMI Controller (IPMC)

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

VPX (VITA 46) P2 I/O

- One SATA port capable of 6 Gb/s
- Two USB 2.0 ports
- Four RS-232/422/485 serial ports
- One 1000BASE-X Ethernet port from FPGA (optional)
- Four High-Speed Serial ports from FPGA
- GPIO from FPGA

XMC Site

- x8 PCI Express Gen3-capable port
- One SATA port

Software Support

- coreboot firmware powered by Intel® FSP
- Wind River VxWorks BSP
- X-ES Enterprise Linux (XEL) BSP
- LynxSecure Safety Bundle (LSB)
- Contact factory for availability of Green Hills INTEGRITY and QNX Neutrino 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

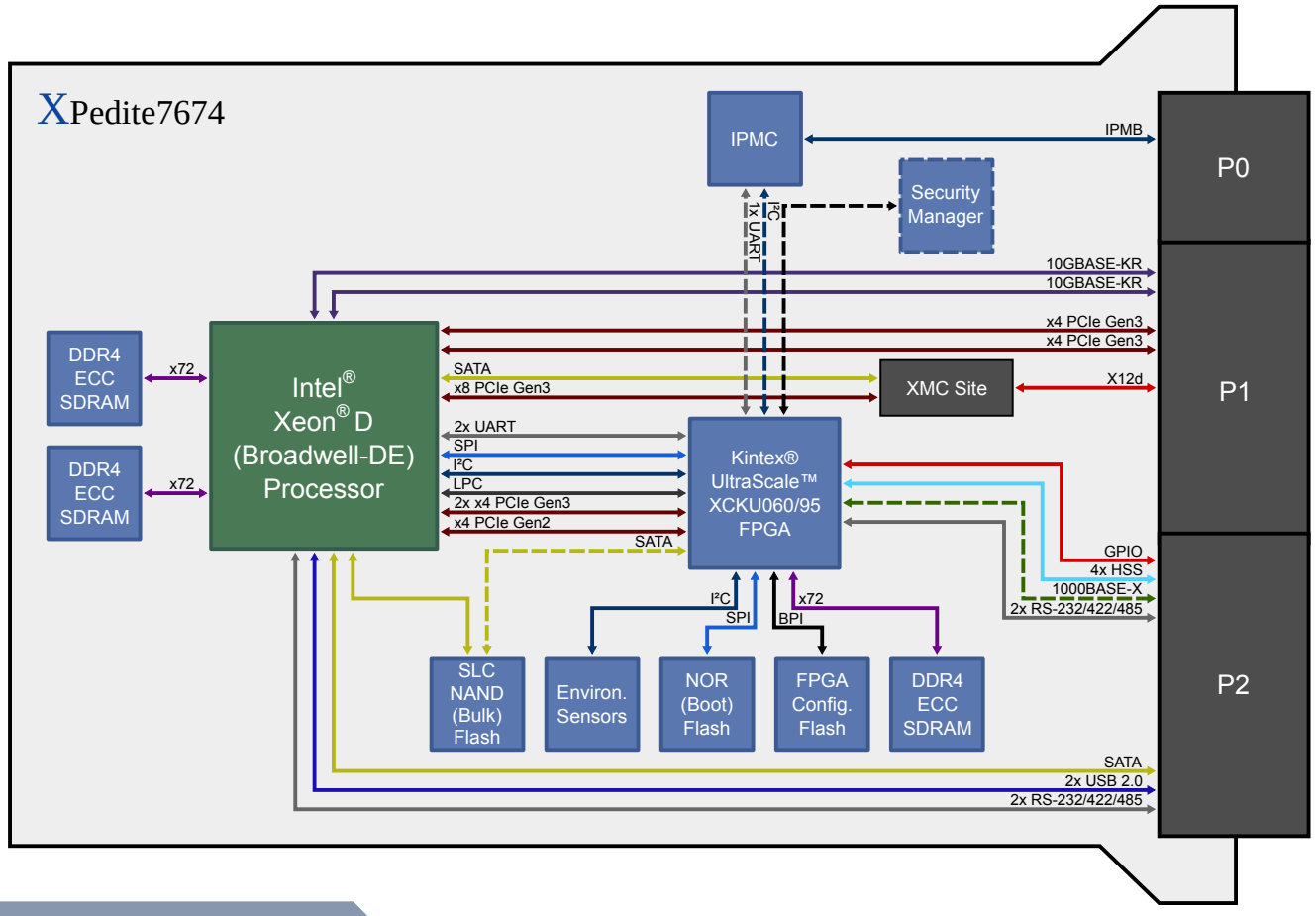
Contact factory for appropriate board configuration based on environmental requirements.

- Supported ruggedization levels (see chart below): 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 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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