XPedite7770

Intel® Xeon® D-1700 Processor-Based 3U VPX-REDI Module with 48 GB of DDR4, 40 Gigabit Ethernet, and SecureCOTS™

- Supports Intel® Xeon® D-1700 series (formerly Ice Lake-D) processors
- Up to 10 Xeon®-class cores in a single, power-efficient SoC package
- SKUs available with native extended temperature support
- Designed with SecureCOTS™ technology to support enhanced security and trusted computing
- Microsemi® PolarFire™ FPGA with 128 MB SPI flash
- 3U VPX (VITA 46) module
- Compatible with multiple VITA 65 OpenVPX™ slot profiles
- Ruggedized Enhanced Design Implementation (REDI) per VITA 48
- 48 GB of DDR4 ECC SDRAM in three channels
- 32 GB of SLC NAND flash
- XMC site with x8 PCIe interface and rear I/O support
- One 40GBASE-KR4 Ethernet port
- One 10/100/1000BASE-T Ethernet port
- Two x4 Gen3, one x4 Gen2, and two x2 Gen2 PCIe interfaces
- One 10GBASE-KR port (with additional port available in some board configurations)
- Two USB 2.0 ports
- Two RS-232/422/485 serial ports
- Wind River VxWorks BSP
- X-ES Enterprise Linux (XEL) BSP
- Contact factory for SATA or PCIe Gen4 availability
- Contact factory for availability of Green Hills INTEGRITY, QNX Neutrino, and LynxWorks LynxOS BSPs, as well as Microsoft Windows drivers

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The XPedite7770 is a secure, high-performance, 3U VPX-REDI, single board computer based on the Intel® Xeon® D-1700 series (formerly Ice Lake-D) of processors. The XPedite7770 is an optimal choice for computationally heavy applications requiring maximum data and information protection.

The XPedite7770 integrates SecureCOTS™ technology with a Microsemi® PolarFire™ 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 XPedite7770 provides incredible speed with a 40GBASE-KR4, up to two 10GBASE-KR, and one 10/100/1000BASE-T Ethernet ports. It accommodates up to 48 GB of DDR4 ECC SDRAM in three channels and up to 32 GB of onboard SLC NAND flash in addition to numerous I/O ports, including USB 2.0, PCIe, and RS-232/422/485 serial through the backplane connectors. The XPedite7770 provides additional expansion capabilities by including an integrated 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 and X-ES Enterprise Linux (XEL) Board Support Packages (BSPs) are available.

Processor

- Intel® Xeon® D-1700 series (formerly Ice Lake-D) processor
- Up to 10 Xeon®-class cores in a single, power-efficient SoC package
- SKUs available with native extended temperature support

Memory

- 48 GB of DDR4 ECC SDRAM in three channels
- 32 GB of SLC NAND flash
- 64 MB NOR boot flash
- 64 kB EEPROM

Security and Management

- Microsemi® PolarFire™ FPGA with 128 MB SPI flash
- Designed with SecureCOTS™ technology to support enhanced security and trusted computing
- System voltage monitor, power-on/reset control, non-volatile write-protection control
- Trusted Platform Module (TPM)

VPX (VITA 46) P0 I/O

- Two IPMB connections to an IPMI Controller

VPX (VITA 46) P1 I/O

- One 40GBASE-KR4 Ethernet port to P1.A
- One x4 PCI Express Gen3-capable interface to P1.B
- XMC P16 I/O, mapping P1w9-X12d per VITA 46.9
- One 10GBASE-KR Ethernet port
- One 10GBASE-KR Ethernet port (optional)

VPX (VITA 46) P2 I/O

- One 10/100/1000BASE-T Ethernet port
- One x4 PCI Express Gen3-capable interface
- One x4 PCI Express Gen2-capable interface
- Two x2 PCI Express Gen2-capable interfaces
- Two USB 2.0 ports
- Two RS-232/422/485 serial ports
- Four single-ended FPGA GPIOs

Software Support

- UEFI firmware
- 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

XMC Site

- One x8 PCI Express Gen3-capable interface

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

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
- 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
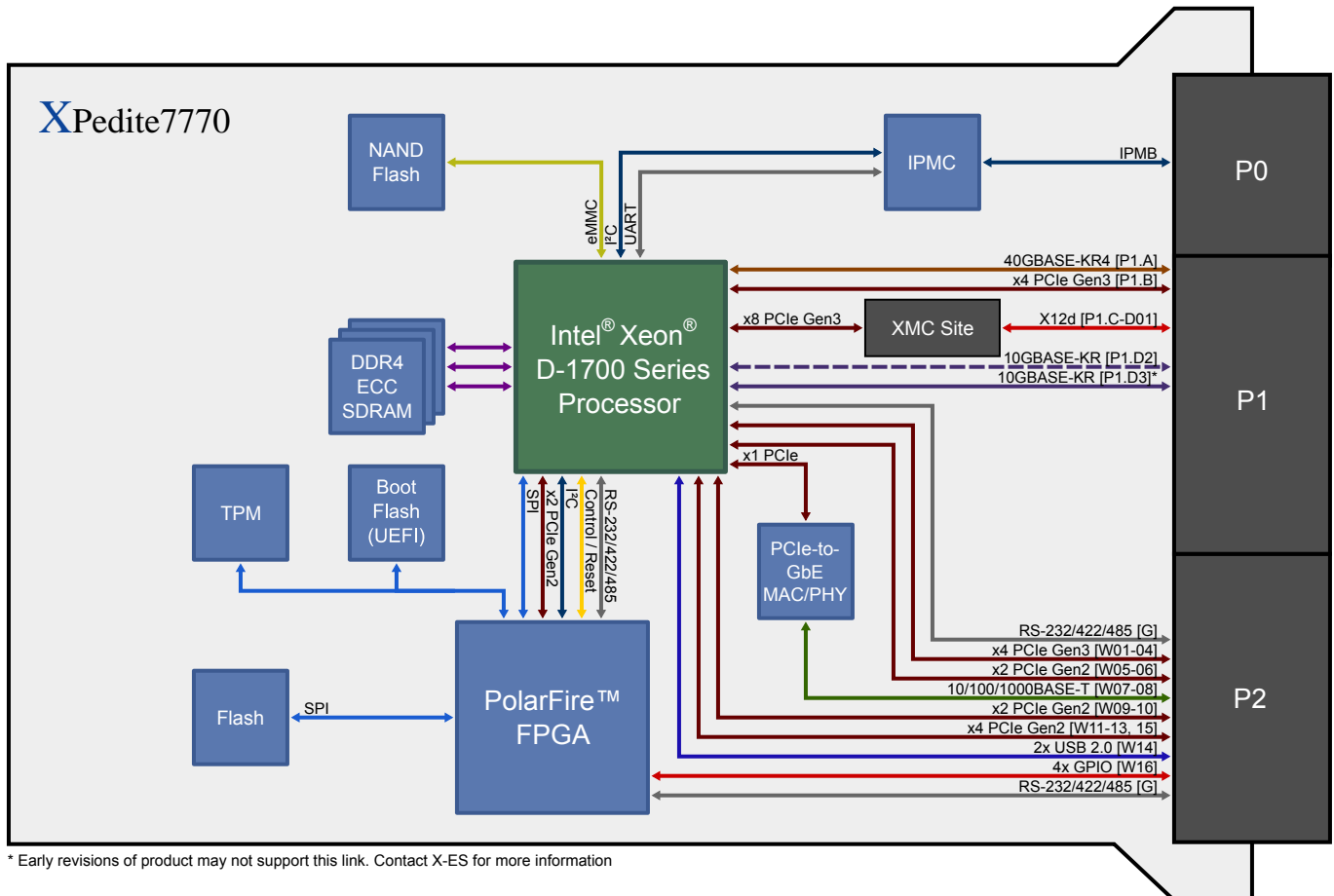
* Early revisions of product may not support this link. Contact X-ES for more information