

XPedite7774

Intel® Xeon® D-1700 Processor-Based 3U VPX-REDI Module with 48 GB of DDR4, 100 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™ SoC FPGA with 256 MB SPI flash
- 3U VPX (VITA 46) module
- Ruggedized Enhanced Design Implementation (REDI) per VITA 48
- Compatible with multiple VITA 65 OpenVPX™ slot profiles
- 48 GB of DDR4 ECC SDRAM in three channels
- 256 GB NAND flash
- XMC site with x8 PCIe Express interface and rear I/O support
- One 100GBASE-KR4 Ethernet port
- One 10GBASE-KR port (dependent on Ethernet configuration)
- One 10/100/1000BASE-T Ethernet port
- Two x4 Gen3 and one x2 Gen2 PCI Express interfaces
- Two RS-232/422/485 serial ports
- RDMA over Converged Ethernet (RoCE) v2 internet layer protocol support
- SOSA-aligned pinout compatible with backplane slot profile 1F1F2U1TU1T1U1T-14.2.16
- SOSA-aligned to AMPS profile MODA3-16.2.15-1-F2C-(E18)(P3F)(2E7-E3)(N-N-N-N-M3/M4/M5-N)<XA0> (I/O limitations apply, contact factory for details)
- Wind River VxWorks BSP
- X-ES Enterprise Linux (XEL) BSP
- Contact factory for availability of Microsoft Windows drivers and other operating systems



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The XPedite7774 is a secure, high-performance single board computer based on the Intel® Xeon® D-1700 series (formerly Ice Lake-D) of processors, making it an optimal choice for computationally heavy applications requiring maximum data and information protection.

This 3U VPX-REDI module integrates SecureCOTS™ technology with a Microsemi® PolarFire™ System-on-Chip (SoC) 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 XPedite7774 provides incredible speed with 100GBASE-KR4, 10GBASE-KR, and 10/100/1000BASE-T Ethernet ports. It accommodates up to 48 GB of DDR4 ECC SDRAM in three channels and up to 256 GB of onboard NAND flash in addition to numerous I/O ports, including USB 2.0, PCI Express, and RS-232/422/485 serial through the backplane connectors. An integrated XMC site provides additional expansion capabilities, including a x8 PCI Express connection to the Intel® Xeon® D processor and X16s+X12d+X8d I/O mapped directly to the VPX backplane connectors.

The XPedite7774 offers a SOSA-aligned pinout compatible with backplane slot profile 1F1F2U1TU1T1U1T-14.2.16. The AMPS profile is MODA3-16.2.15-1-F2C-(E18)(P3F)(2E7-E3)(N-N-N-N-M3/M4/M5-N)<XA0>, although limitations apply. Contact factory for details.

Wind River VxWorks and X-ES Enterprise Linux (XEL) Board Support Packages (BSPs) are available.



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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
- 256 GB NAND flash
- 64 MB NOR boot flash
- 64 kB EEPROM

Security and Management

- Microsemi® PolarFire™ SoC FPGA with 256 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 100GBASE-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 x2 PCI Express Gen2-capable interface
- Two RS-232/422/485 serial ports
- XMC X8d I/O
- XMC X16s I/O

Software Support

- RDMA over Converged Ethernet (RoCE) v2 internet layer protocol support
- UEFI firmware
- Wind River VxWorks BSP
- X-ES Enterprise Linux (XEL) BSP
- Contact factory for availability of Microsoft Windows drivers and other operating systems

XMC Site

- One x8 PCI Express Gen3-capable interface

Physical Characteristics

- 3U VPX-REDI conduction- or air-cooled form factor
- SOSA-aligned pinout compatible with backplane slot profile 1F1F2U1TU1T1U1T-14.2.16
- SOSA-aligned to AMPS profile MODA3-16.2.15-1-F2C-(E18)(P3F)(2E7-E3) (N-N-N-N-M3/M4/M5-N)<XA0> (I/O limitations apply, contact factory for details)
- 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

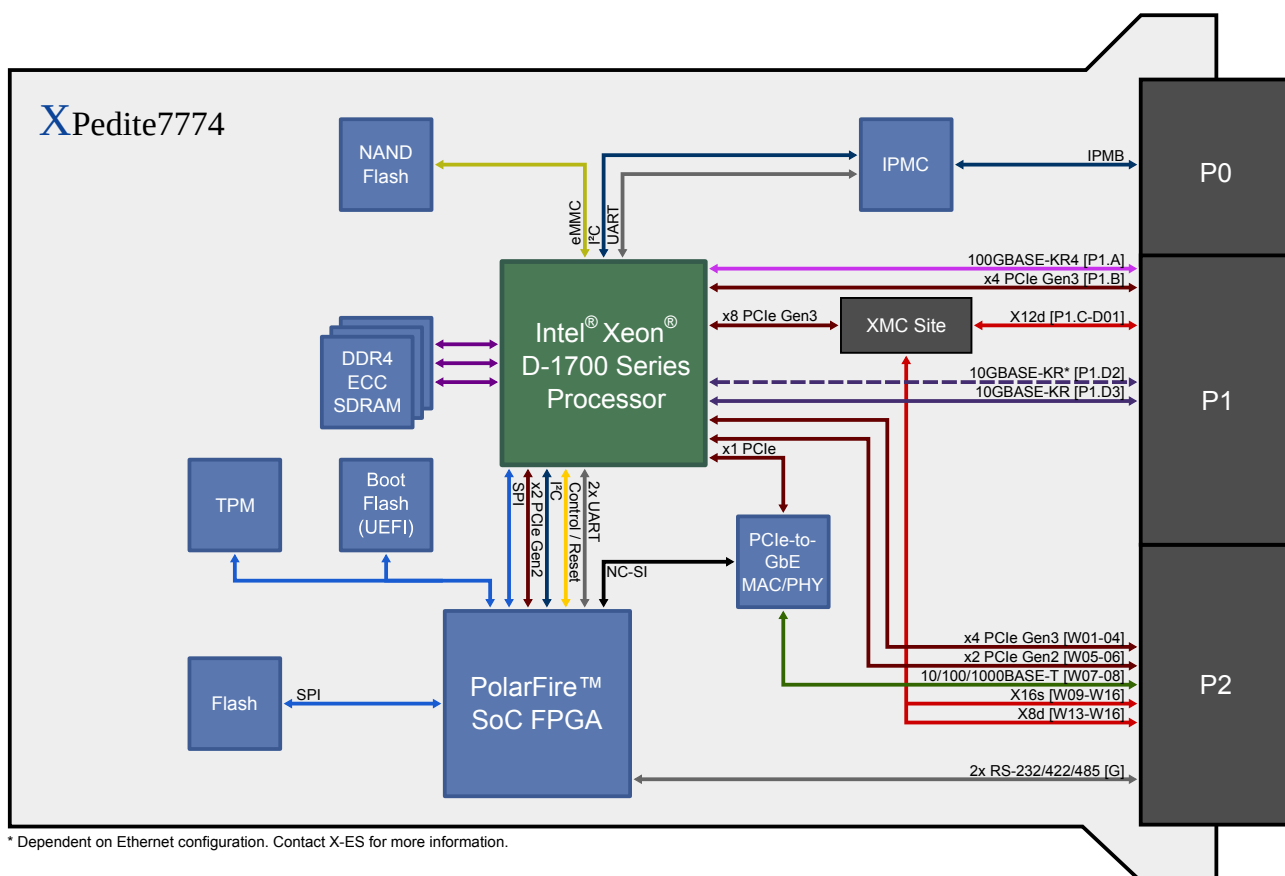
Contact factory for appropriate board configuration based on environmental requirements

- 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 g ² /Hz (maximum), 5 to 2000 Hz
Shock	40 g, 11 ms sawtooth
Humidity	Up to 95% non-condensing



* Dependent on Ethernet configuration. Contact X-ES for more information.