XPedite7750

Intel® Xeon® D-1700 Processor-Based Rugged COM Express® Basic (Type 7) Module with Quad 10 Gigabit Ethernet

- 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

- Standard COM Express® Basic form factor with ruggedization enhancements

- COM Express® enhanced Type 7 pinout

- 32 GB of DDR4 ECC SDRAM in two channels

- 32 GB of SLC NAND flash

- 16 lanes of PCIe Gen3, available as one x16 PCIe interface

- 16 lanes of PCIe Gen2, available as two x8 PCIe interfaces

- Four 10GBASE-KR Ethernet ports (can be configured as one 40GBASE-KR4 Ethernet port)

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

- Four USB 3.0 ports

- Two LVTTL serial ports

- Wind River VxWorks BSP

- X-ES Enterprise Linux (XEL) BSP

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

XPedite7750

The XPedite7750 is an enhanced, Type 7 COM Express® module based on the Intel® Xeon® D-1700 series (formerly Ice Lake-D) of processors. COM Express® provides a standards-based form factor to bring PC processing to a wide range of applications. The XPedite7750 is ideal for the high-bandwidth and processing-intensive requirements of today's commercial, industrial, and military applications. The small footprint and standards-based form factor make the XPedite7750 perfect for portable and rugged environments, while providing an upgrade path for the future.

This module 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 XPedite7750 accommodates 32 GB of DDR4 ECC SDRAM in two channels to support memory-intensive applications. The XPedite7750 also hosts numerous I/O ports and interfaces, including 10 Gigabit Ethernet, Gigabit Ethernet, PCI Express, USB 3.0, and LVTTL serial.

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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Processor

- 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

Memory

- 32 GB of DDR4 ECC SDRAM in two channels
- 32 GB of SLC NAND flash
- 32 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)

COM Express®

- Basic form factor (95 mm x 125 mm)
- Enhanced Type 7 pinout
- Adds non-volatile write protect
- Adds two external interrupts
- Adds boot flash select

Interface

- Four USB 3.0 ports
- Four 10GBASE-KR Ethernet ports with optional management sideband signals (availability dependent on firmware and drivers); can be configured as one 40GBASE-KR4 Ethernet port
- One 10/100/1000BASE-T Ethernet port
- One x16 PCI Express Gen3-capable interface
- Two x8 PCI Express Gen2-capable interfaces
- Two LVTTL serial ports
- Four GPI and four GPO pins

Software Support

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

Ruggedization and Reliability

- Class III PCB fabrication and assembly
- Soldered DDR4 ECC SDRAM
- Tin whisker mitigation
- Designed and tested for extended solder joint reliability
- Additional mounting holes for rugged and conduction-cooled environments
- BIT support

Physical Characteristics

- COM Express® Basic (Type 7) form factor
- Dimensions: 95 mm x 125 mm

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