XPedite7650

Intel® Xeon® D-1500 Family Processor-Based Rugged COM Express® Basic (Type 7) Module with Dual 10 Gigabit Ethernet

- 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
- Standard COM Express® Basic form factor with ruggedization enhancements
- COM Express® enhanced Type 7 pinout
- Up to 32 GB of DDR4-2133 ECC SDRAM in two channels
- 24 lanes of PCIe Gen3, available as one x8 PCIe interface and one x16 PCIe interface
- Up to 8 lanes of PCIe Gen2 (eight x1 interfaces)
- Two 10GBASE-KR Ethernet ports
- One Gigabit Ethernet port (optional)
- Four USB 3.0 ports
- Two SATA ports
- Two LVTTL serial ports
- Wind River VxWorks BSP
- X-ES Enterprise Linux (XEL) BSP
- coreboot firmware powered by Intel® FSP
- Contact factory for availability of Green Hills INTEGRITY, QNX Neutrino, and LynxWorks LynxOS BSPs, as well as Microsoft Windows drivers

The XPedite7650 is an enhanced, Type 7 COM Express® module based on the Intel® Xeon® D-1500 family processors (formerly Broadwell-DE). COM Express® provides a standards-based form factor to bring PC processing to a wide range of applications. The XPedite7650 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 XPedite7650 perfect for portable and rugged environments, while providing an upgrade path for the future.

The XPedite7650 accommodates up to 32 GB of DDR4-2133 ECC SDRAM in two channels to support memory-intensive applications. The XPedite7650 also hosts numerous I/O ports and interfaces, including 10 Gigabit Ethernet, Gigabit Ethernet, PCI Express, SATA, USB 3.0, LPC, SMB, I²C, and LVTTL serial.

Wind River VxWorks and X-ES Enterprise Linux Support Packages (XEL) are available. The XPedite7670 uses coreboot, powered by Intel®'s Firmware Support Package (FSP), to provide fast boot times and significantly simplify code traceability over legacy BIOS implementations.
**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 DDR4-2133 ECC SDRAM in two channels
- Up to 32 GB of SLC NAND flash
- 32 MB NOR boot flash
- 64 kB EEPROM

**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

**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

**Interface**
- Four USB 3.0 ports
- Two SATA ports capable of 6 Gb/s
- Two 10GBASE-KR Ethernet ports with management sideband signals
- One 10/100/1000BASE-T Ethernet port (optional)
- One x16 PCIe Express Gen3-capable interface
- One x8 PCI Express Gen3-capable interface
- Up to eight x1 PCIe Express Gen2-capable interfaces
- Two LVTTL serial ports
- LPC
- Eight GPIO interfaces

**Additional Features**
- Non-volatile memory write protection
- Optional Trusted Platform Module (TPM)

**Software Support**
- coreboot firmware powered by Intel® FSP
- Wind River VxWorks BSP
- X-ES Enterprise Linux (XEL) BSP
- Contact factory for availability of Green Hills INTEGRITY, QNX Neutrino, and LynxWorks LynxOS BSPs, as well as Microsoft Windows drivers

**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): 1, 3, 5
- Conformal coating available as an ordering option

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