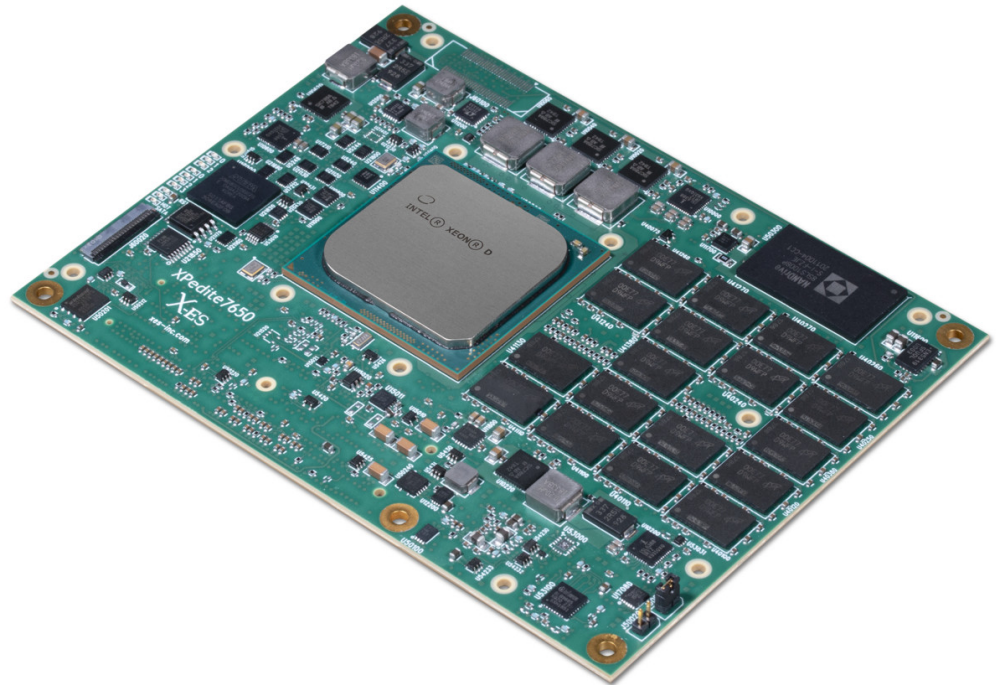


XPedite7650

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 ECC SDRAM in two channels
- ▶ 24 lanes of PCIe Gen3, available as one x8 PCIe interface and one x16 PCIe interface
- ▶ Up to eight lanes of PCIe Gen2 (eight x1 interfaces)
- ▶ Two 10GBASE-KR Ethernet ports
- ▶ One Gigabit Ethernet port
- ▶ Four USB 3.0 ports
- ▶ Two SATA ports
- ▶ Two LVTTTL 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 LynuxWorks LynxOS BSPs, as well as Microsoft Windows drivers



XPedite7650

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 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 LVTTTL serial.

Wind River VxWorks and X-ES Enterprise Linux Support Packages (XEL) are available. The XPedite7650 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”*

Extreme Engineering Solutions

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Phone: 608.833.1155 • Fax: 608.827.6171
sales@xes-inc.com • <https://www.xes-inc.com>

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 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

Additional Features

- Non-volatile memory write protection
- Trusted Platform Module (TPM)

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 optional management sideband signals (availability dependent on firmware and drivers)
- One 10/100/1000BASE-T Ethernet port
- One x16 PCI Express Gen3-capable interface
- One x8 PCI Express Gen3-capable interface
- Up to eight x1 PCI Express Gen2-capable interfaces
- Two LVTTTL serial ports
- LPC
- Four GPI and four GPO pins

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 LynuxWorks 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.

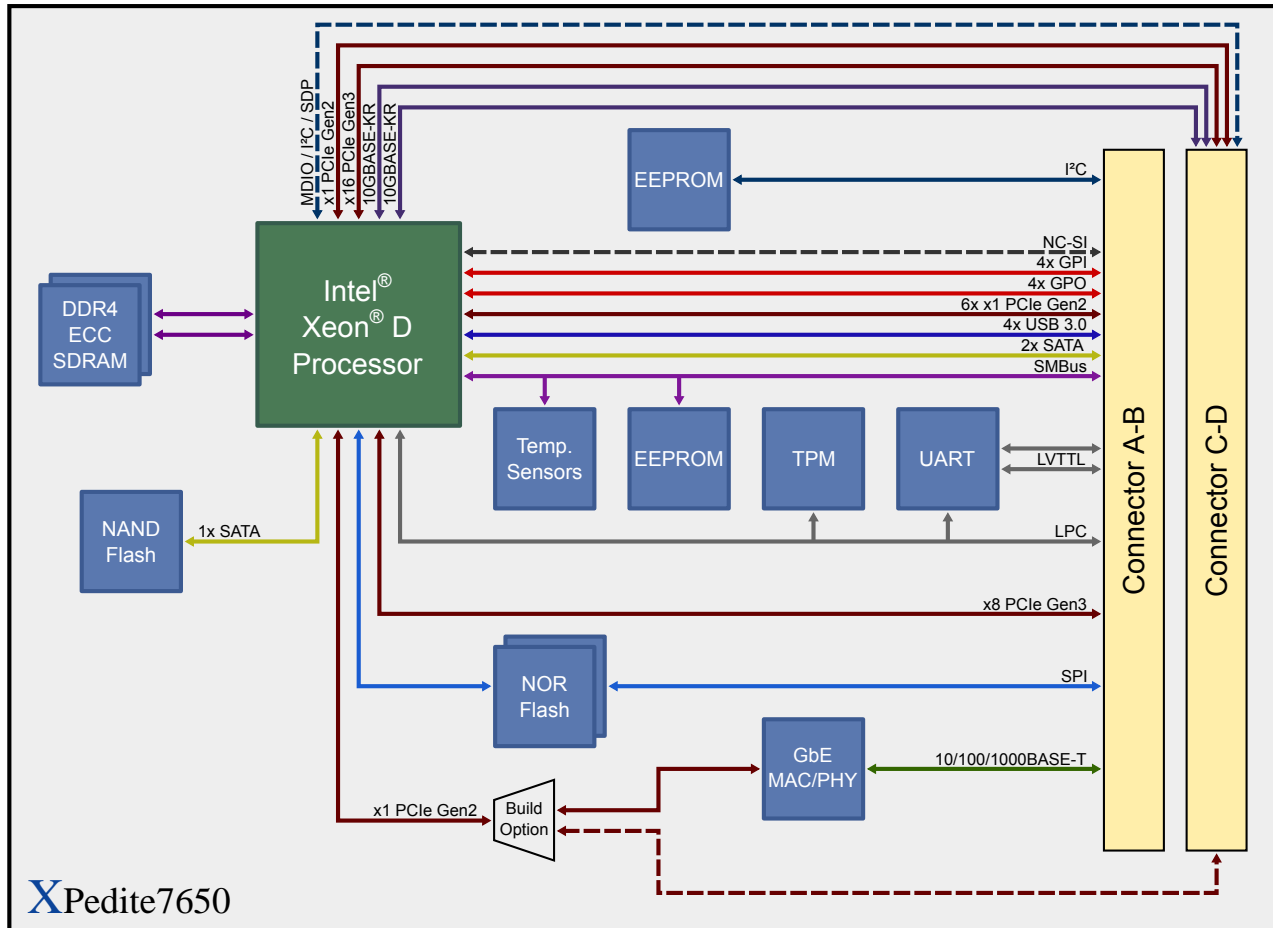
- Supported ruggedization levels (see chart below): 3, 5
- Conformal coating available as an ordering option

Power Requirements

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

Ruggedization Level	Level 3	Level 5
Cooling Method	Rugged Air-Cooled	Conduction-Cooled
Operating Temperature	-40 to +70°C ambient †	-40 to +85°C (board rail surface)
Storage Temperature	-55 to +105°C ambient	-55 to +105°C (maximum)
Vibration	0.04 g ² /Hz (maximum), 5 to 2000 Hz	0.1 g ² /Hz (maximum), 5 to 2000 Hz
Shock	30 g, 11 ms sawtooth	40 g, 11 ms sawtooth
Humidity	Up to 95% non-condensing	Up to 95% non-condensing

† Contact factory for airflow rate details.



XPedite7650