

XPedite8150

Intel® Atom™ E3800 Series Processor-Based Rugged COM Express® Module

- › Supports Intel® Atom™ E3800 family processors (formerly Bay Trail-I)
- › COM Express® Mini form factor with ruggedization enhancements
- › COM Express® enhanced Type 10 pinout
- › Conduction- or air-cooled
- › Extended shock and vibration tolerance
- › Up to 4 GB of DDR3-1333 ECC SDRAM
- › One Dual-Mode DisplayPort interface and one Embedded DisplayPort interface
- › Two x1 PCI Express interfaces
- › Two Gigabit Ethernet ports
- › Two serial ports
- › Four USB 2.0 ports
- › One USB 3.0 port
- › Two SATA ports
- › Intel® Platform Trust Technology (PTT) providing optional Trusted Platform Module (TPM) support
- › coreboot bootloader, powered by Intel®'s Firmware Support Package (FSP)
- › Wind River VxWorks BSP
- › Linux BSP
- › Microsoft Windows drivers
- › Contact factory for availability of Green Hills INTEGRITY, QNX Neutrino, and LynuxWorks LynxOS BSPs



XPedite8150

The XPedite8150 is a Rugged COM Express® module based on the Intel® Atom™ E3800 series of processors. It is compliant with the COM Express® Mini form factor (55 mm x 84 mm) and provides up to 4 GB of DDR3 ECC SDRAM. The XPedite8150 also supports an enhanced Type 10 pinout with one Dual-Mode DisplayPort, one Embedded DisplayPort, and two Gigabit Ethernet interfaces.

With built-in test (BIT) support, true configuration and obsolescence management, Class III PCB fabrication and assembly, environmental qualification per MIL-STD-810, as well as many other features, the XPedite8150 is designed and tested for maximum reliability in the most demanding environments and applications that require long life cycles.

Wind River VxWorks and Linux Board Support Packages (BSPs), as well as Microsoft Windows drivers, are available for the XPedite8150. It also supports the open source coreboot bootloader, powered by Intel®'s Firmware Support Package (FSP), to enable ultra-fast boot times and drastically simplify system security.

The Intel® Atom™ E3800 series processors are low-power system-on-chip (SoC) processors with integrated graphics and support for up to four cores operating at up to 1.91 GHz. Along with best-in-class performance-per-watt, the E3800 family supports extremely low operating temperatures, and its power-efficient 22 nm technology enables operation in the most demanding high-temperature environments. The XPedite8150 supports the E3845 processor in standard configurations and can be built to support the E3827, E3826, E3825, E3815, and E3805. The E3800 series is the 4th generation Atom™ processor from Intel® and was formerly known as the Bay Trail-I platform and Valleyview processor.



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Processor

- Intel® Atom™ E3800 family processors (formerly Bay Trail-I)
- Standard configuration is E3845
- Up to four cores at up to 1.91 GHz

Memory

- Up to 4 GB of DDR3-1333 ECC SDRAM

COM Express®

- Enhanced Type 10 pinout
- Mini form factor (55 mm x 84 mm)

Ruggedization and Reliability

- Class III PCB fabrication and assembly
- Soldered DDR3 ECC SDRAM
- Tin whisker mitigation
- Designed and tested for extended solder joint reliability
- Additional mounting holes for rugged and conduction-cooled environments
- OS-level BIT support

I/O Interfaces

- One Dual-Mode DisplayPort interface
- One Embedded DisplayPort interface
- Two 10/100/1000BASE-T ports
- Two SATA ports capable of 3 Gb/s
- Two PCIe x1 links
- Four USB 2.0 ports
- One USB 3.0 port
- Two I²C interfaces
- Two serial ports
- One Serial Peripheral Interface (SPI)

Additional Features

- Non-volatile memory write protection
- Intel® Platform Trust Technology (PTT) providing optional Trusted Platform Module (TPM) support

Software Support

- coreboot bootloader, powered by Intel®'s FSP
- Wind River VxWorks BSP
- Linux BSP
- Microsoft Windows drivers
- Contact factory for availability of Green Hills INTEGRITY, QNX Neutrino, and LynxWorks BSPs

Environmental Requirements

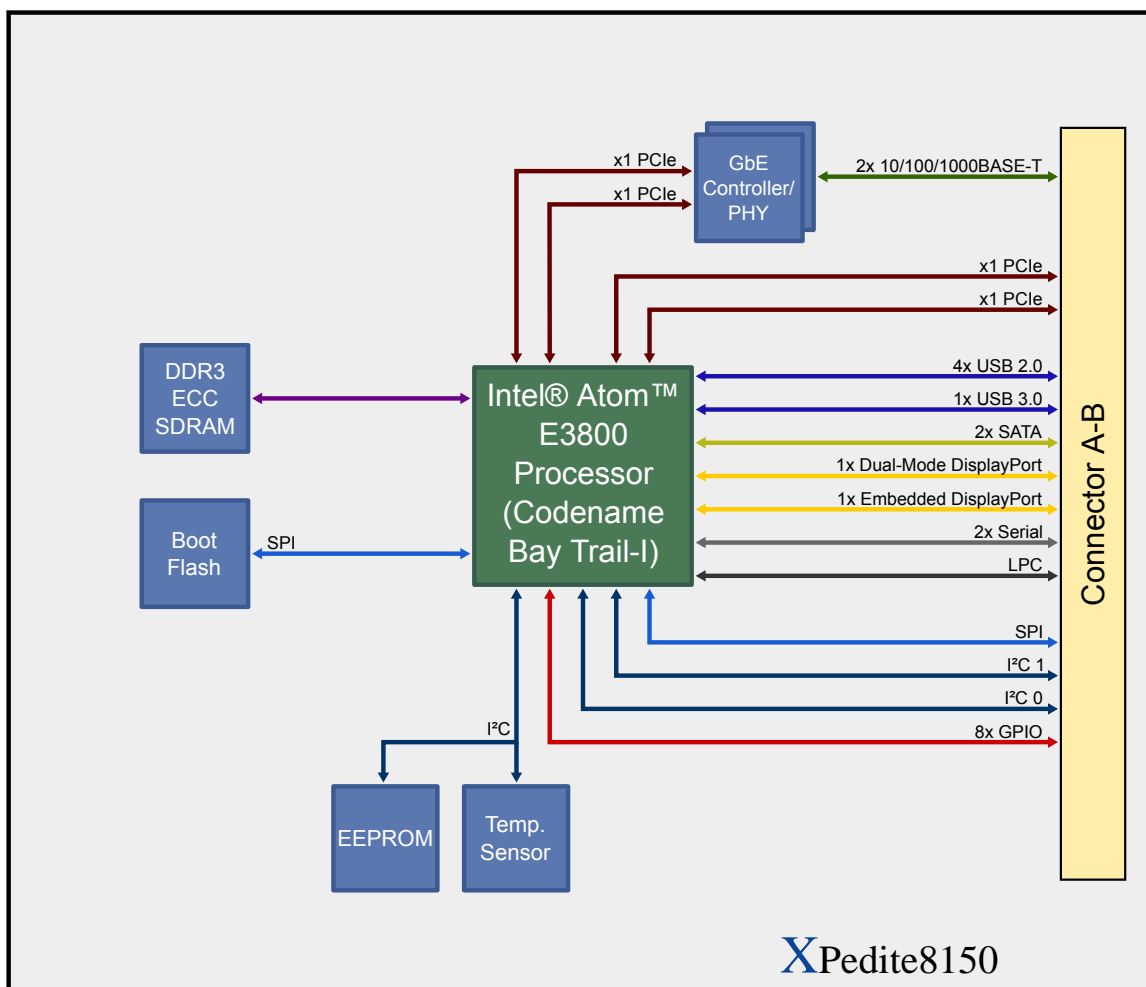
Contact factory for appropriate board configuration based on environmental requirements.

- Supported ruggedization levels (see chart below): 1, 3, 5
- Conformal coating available as an ordering option
- Thermal performance will vary based on CPU frequency and application

Power Requirements

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

Ruggedization Level	Level 1	Level 3	Level 5
Cooling Method	Standard Air-Cooled	Rugged Air-Cooled	Conduction-Cooled
Operating Temperature	0 to +55°C ambient (300 LFM)	-40 to +70°C (600 LFM)	-40 to +85°C (board rail surface)
Storage Temperature	-40 to +85°C ambient	-55 to +105°C ambient	-55 to +105°C ambient
Vibration	0.002 g²/Hz, 5 to 2000 Hz	0.04 g²/Hz (maximum), 5 to 2000 Hz	0.1 g²/Hz (maximum), 5 to 2000 Hz
Shock	20 g, 11 ms sawtooth	30 g, 11 ms sawtooth	40 g, 11 ms sawtooth
Humidity	0% to 95% non-condensing	0% to 95% non-condensing	0% to 95% non-condensing



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