

XPedite8101

Intel® Atom™ E3800 Series Processor-Based Conduction- or Air-Cooled XMC/PMC Module

- › Intel® Atom™ E3800 family processors (formerly Bay Trail-I)
- › XMC (VITA 42) module
- › Conduction or air cooling
- › Up to 8 GB of DDR3L-1333 ECC SDRAM
- › Up to 32 GB of SLC NAND flash
- › One x1 PCI Express Gen2-capable P15 XMC interface
- › One x1 PCI Express Gen2-capable P16 XMC interface
- › PCI PrPMC (VITA 32) interface
- › Two Gigabit Ethernet ports
- › Four USB 2.0 high-speed ports
- › One SATA port (or two with removal of onboard SLC NAND flash)
- › Two RS-232/422/485 serial ports
- › Dual-Mode DisplayPort interface
- › 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



XPedite8101

The XPedite8101 is an Intel® Atom™ E3800-based XMC/PMC available in conduction- and air-cooled configurations. The Atom™ E3800 processors provide excellent computational performance and I/O functionality for their power profile and size. They 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 XPedite8101 supports up to 8 GB of DDR3 ECC SDRAM and up to 32 GB of SLC NAND flash, as well as a Dual-Mode DisplayPort video interface and two Gigabit Ethernet ports. Four USB 2.0 ports, two RS-232/422/485 serial ports, and up to two SATA interfaces are also available through the P14 and P16 connectors.

Wind River VxWorks and Linux Board Support Packages, as well as Microsoft Windows drivers, are available for the XPedite8101. 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 XPedite8101 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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3225 Deming Way, Suite 120 • Middleton, WI 53562
 Phone: 608.833.1155 • Fax: 608.827.6171
 sales@xes-inc.com • <http://www.xes-inc.com>

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 8 GB of DDR3L-1333 ECC SDRAM

PrPMC Interface

- 66/33 MHz PCI
- 32-bit bus interface

P14 PMC Interface

- Two USB 2.0 ports
- Two RS-232/422/485 ports
- Two 10/100/1000BASE-T Ethernet ports
- Four GPIO signals

P15 XMC Interface

- One x1 PCI Express Gen2-capable link per VITA 42.3
- Four GPIO signals

P16 XMC Interface

- Dual-Mode DisplayPort interface
- Two USB 2.0 ports
- One SATA port capable of 3 Gb/s (or two with removal of onboard SLC NAND flash)
- One x1 PCI Express Gen2-capable link

Additional Features

- Non-volatile memory write protection
- IEEE 1588 support
- 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 LynuxWorks LynxOS BSPs

Physical Characteristics

- PrPMC/XMC form factor
- Dimensions: 149 mm x 74 mm, 10 mm stacking height

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
- 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 g ² /Hz, 5 to 2000 Hz	0.04 g ² /Hz (maximum), 5 to 2000 Hz	0.1 g ² /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

