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ITX-P-3800

Tiny Pico-ITX Intel® E3800 Single Board Computer with Dual Ethernet, 4x Serial, 5x USB and Expansion

Features

Performance for Industrial IoT Applications

- Intel Atom™ (formerly Bay Trail-I) E3800 Series Processor
  - E3825 1.33GHz Dual-Core
  - E3845 1.91GHz Quad-Core
- Up to 4 GB DDR3L Onboard System RAM

Connectivity and I/O for Embedded Systems

- Dual Gigabit Ethernet
- 4x USB 2.0
- 1x USB 3.1 Gen 1
- 4x Serial Ports
- 4x Digital Inputs
- 4x Digital Outputs
- Audio with amplifier

Optimized for Small Form Factor Designs

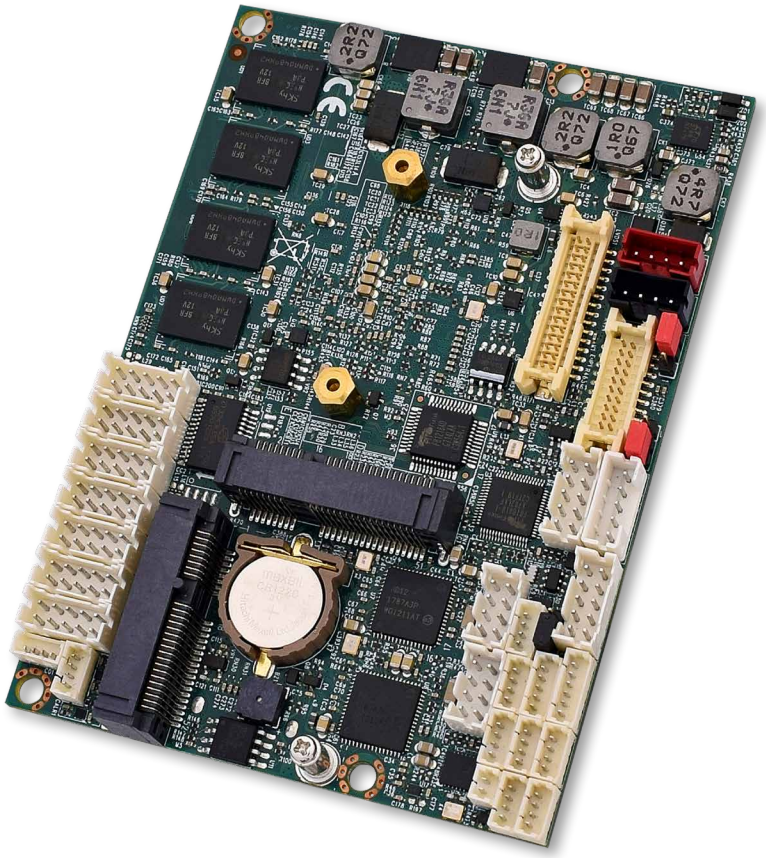
- -20°C to +70°C Operating Temperature Range
- Pico-ITX Form Factor (102 x 73 mm)
- Wide Range Power Input (+9 to +36V DC)

Fast Graphics at High Resolutions

- Intel Low Power Gen7 Graphics Engine
- Full-HD and 3D Graphics acceleration
- VGA and Dual Channel LVDS/eDP Outputs

Expansion Options

- One Full PCIe Mini Card/mSATA slot
- One Half PCIe Mini Card slot



Product Description

WinSystems' ITX-P-3800 Series single board computers pack an impressive feature set into a small form factor Pico-ITX design. The SBC's are based on the Intel E3800 processor family which provides CPU and graphics performance. The ITX-P-3800 is a perfect choice for applications requiring low power and Intel performance in a small form factor package with industrial connectors and I/O.

The integrated Bay Trail-I platform offers superb performance and product longevity. Available with either an Intel E3825 1.33 GHz Dual-Core CPU or an E3845 1.91GHz Quad-Core CPU, the integrated chipset and graphics engines provide the processing power and graphics capabilities for demanding embedded and IoT applications. The ITX-P-3800 includes either 2GB or 4GB DDR3L SDRAM soldered down to the board with a data transfer rate of 1066MHz when used with the E3825 CPU or 1333MHz with the E3845 CPU.

Intel's 7th generation (Gen 7) graphics and media encode/decode engine supports DirectX*11, OpenGL 3.0 (OGL 3.0), OpenCL 1.2 (OCL 1.2), OpenGLES 2.0 and multiple display support. The graphics engine along with LVDS (optional eDisplayPort) and on-board touch screen controller make the ITX-P-3800 a great choice for small Human Machine Interface (HMI) applications.

Considering the small size of the ITX-P-3800, it is packed with I/O features often lacking from larger single board computers. It includes dual 10/100/1000 Ethernet controllers based on the Intel i211 family with Wake On Lan and PXE capabilities, providing connectivity and control for network devices. Four USB 2.0 and one USB 3.1 Gen 1 enhanced host ports provide additional functionality and expansion options. Also on-board are four RS/232 serials ports.

Expansion options for the ITX-P-3800 series include one full size and one half size PCIe Mini Card slots along with the five USB ports. The full size PCIe Mini Card slot supports PCIe x1, mSATA and USB interfaces while the half size supports mSATA and USB interfaces.

The compact all-in-one ITX-P-3800 single board computer is fully compatible with industry standards featuring technical enhancements for industrial applications and high reliability. It can run Microsoft's Windows 10 variants including Windows 10 IoT Enterprise, Windows 10 IoT Core, Linux, and real-time operating systems (RTOS).

The ITX-P-3800 from WinSystems is a very compact, PC compatible single board computer which is a perfect fit for applications in UAV, energy, medical diagnostics, and industrial control.

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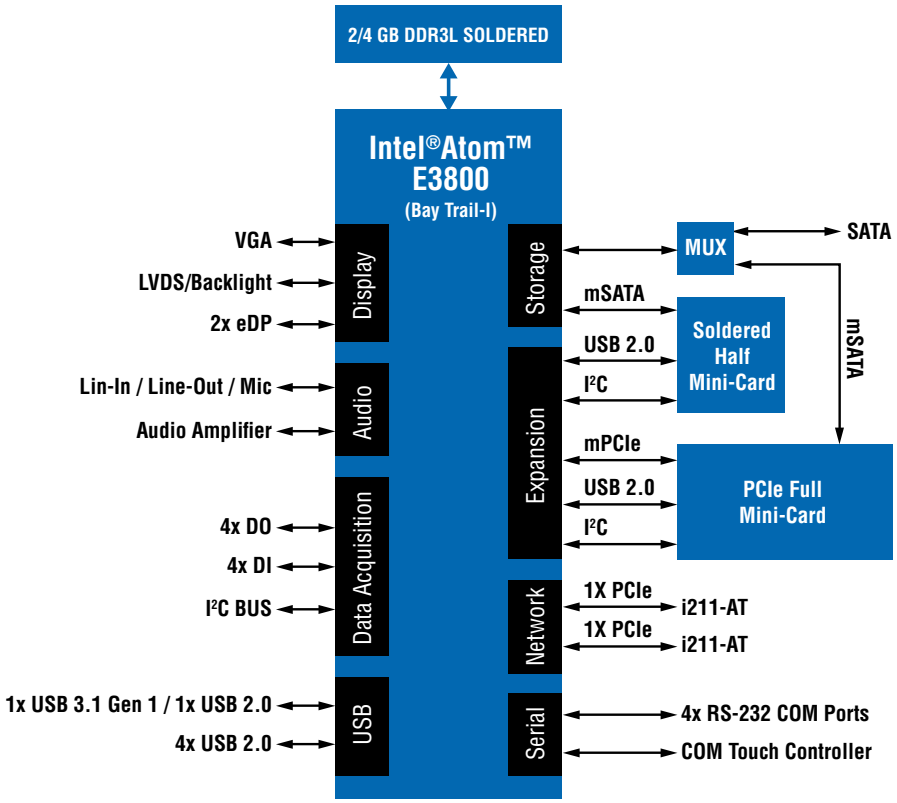
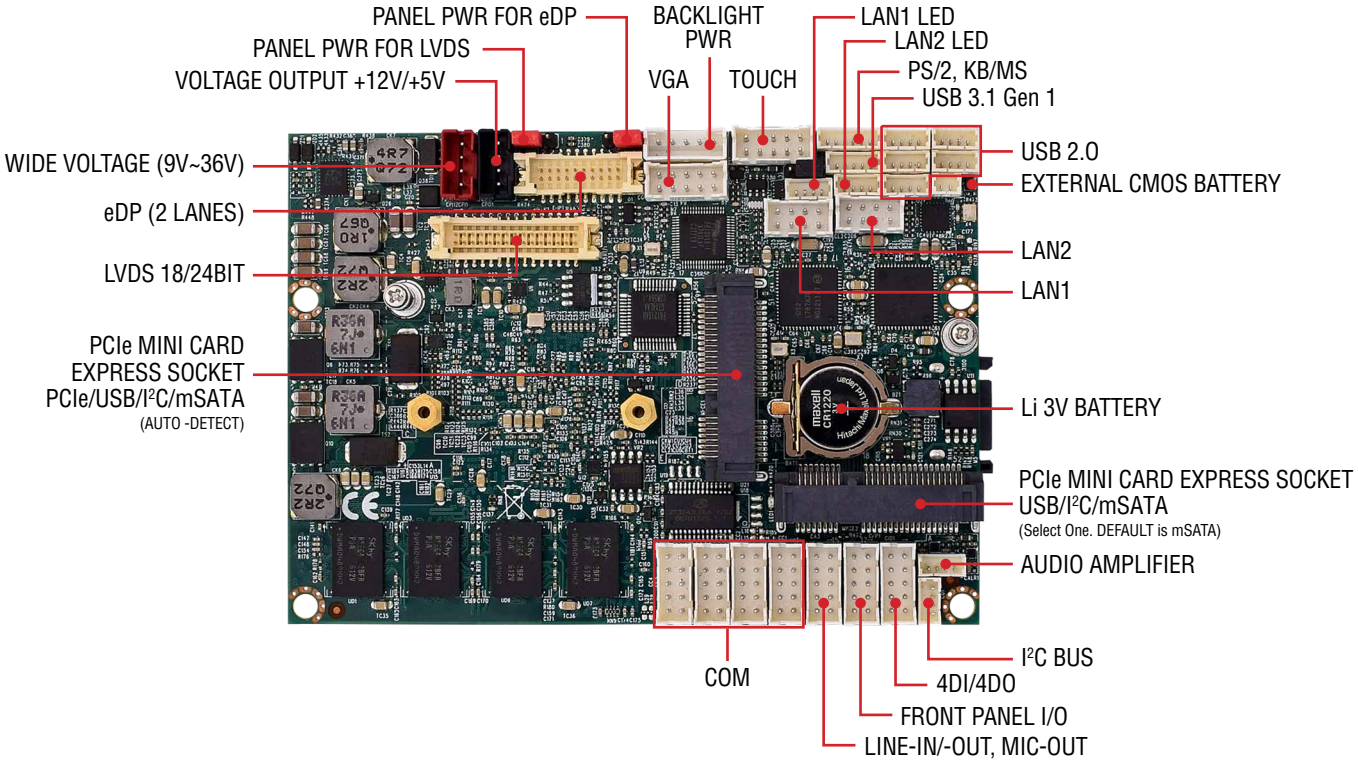
Block Diagram



Connectors



ITX-P-3800

Technical Specifications

PROCESSOR	**ITX-P-3825-m** Dual-Core Intel E3825 at 1.33 GHz	**ITX-P-3845-m** Quad-Core Intel E3845 at 1.91 GHz
MEMORY	• 2/4GB DDR3L 1066MHz	• 2/4GB DDR3L 1333MHz
STORAGE	• 1x SATA port 2.0: Data transfer rates up to 3.0 Gb/s (300 MB/s) (shared with PCIe Mini) • 1x mSATA Mini Card (Shared with SATA port) • 1x mSATA half Mini Card	
DISPLAY	• Intel's 7th generation (Gen 7) graphics and media encode/decode engine Supports DX*11, OpenGL 3.0 (OGL 3.0), OpenCL 1.2 (OCL 1.2), OpenGLES 2.0 • Dual, simultaneous video output support – VGA – LVDS (Supports 24bits / 2 channel LVDS up to 1920 x 1080 resolution; or eDP output) • Touch Screen: Onboard serial touch controller for 4/5/8 wire connections	
NETWORK INTERFACE	• 2x 10/100/1000 Mbps Intel i210-AT Ethernet controllers – Supports Wake on LAN on both channels – Status & Activity LEDs for both Ethernet controllers – PXE support through BIOS	
ONBOARD I/O	• 4x RS232 serial ports • 4x USB 2.0 internal headers • 1x USB 3.1 Gen 1 / USB 2.0 • PS/2 keyboard and mouse connections • 4x Digital inputs • 4x Digital outputs • Audio – High definition audio codec, supports line-out / mic-in – Two channel Class D audio amplifier; 2.57W/Ch (Typ.) into a 4ΩLoad,1.46 W/Ch (Typ.) into a 8ΩLoad • Watchdog timer adjustable from 1 second to 255 minutes	
EXPANSION BUS	• 1 x Full size Mini-Card slot with Auto detect PCIe, mSATA, and USB interface • 1x Half-size Mini-Card slot with mSATA, and USB Interface	
POWER	• Wide Range VDC-in +9~36V	
SOFTWARE	• Insyde UEFI BIOS • Supports Windows 10, Windows 10 IoT Enterprise, Windows 10 IoT Core, Linux and real-time operating systems	
ENVIRONMENTAL	• Operational temperature -20 to +70 C • Humidity 5 - 95%, non-condensing	
MECHANICAL	• Dimensions: Pico-ITX (2.5 inch) – Length: 4.02 in. (102mm) – Width: 2.87 in. (73mm)	

Order Information

SBC PART NUMBER	**ITX-P-3825-0** Dual-Core Intel Atom E3825 at 1.33 GHz	**ITX-P-3845-0** Quad-Core Intel Atom E3845 at 1.91 GHz
RAM	m=2 - 2GB DDR3L 1066MHz m=4 - 4GB DDR3L 1066MHz	m=2 - 2GB DDR3L 1333MHz m=4 - 4GB DDR3L 1333MHz

Expansion and Customization Options

WinSystems provides additional cables, expansion cards, power supplies, and solid state drives to complete your embedded computing solution including data acquisition, communications, location, and other features. Our Application Engineers are available to guide you through product selection and customized options.

Contact an Application Engineer or visit our website for more information.

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