

## 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
- 4x Serial Ports

### Optimized for Small Form Factor Designs

- -20°C to +70°C Operating Temperature Range
- Compact Enclosure: 145mm x 88mm x 35mm

### Fast Graphics at High Resolutions

- Intel Low Power Gen7 Graphics Engine
- Full-HD and 3D Graphics acceleration
- VGA Output

### Expansion Options

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



## Product Description

WINSYSTEMS' SYS-ITX-P-3800 Series embedded 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 SYS-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 SYS-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), and OpenGLES 2.0.

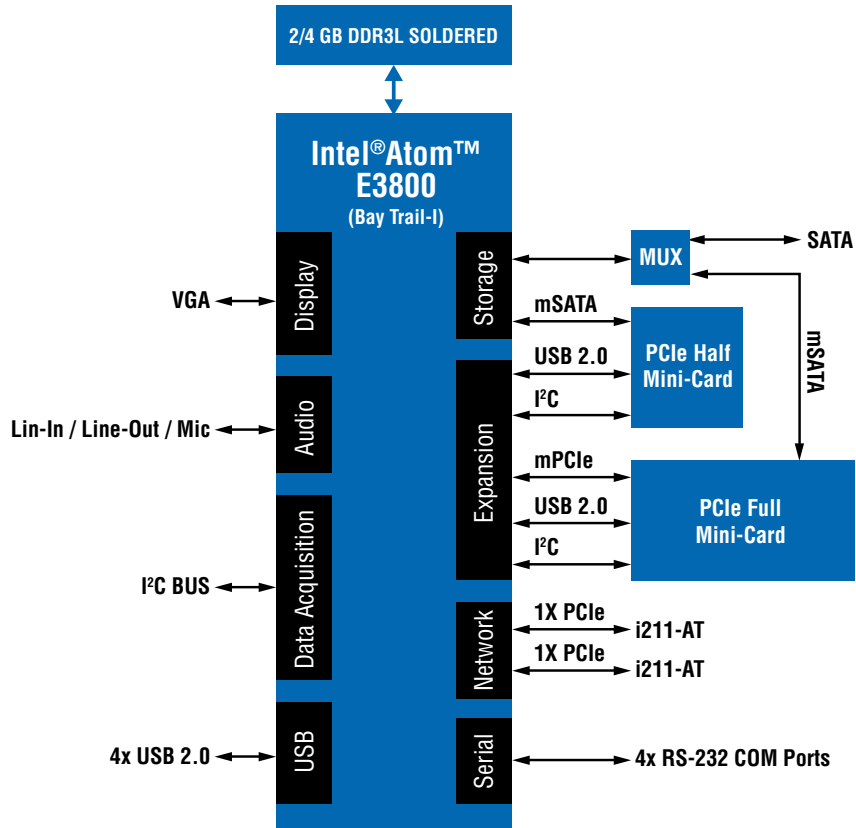
Considering the small size of the SYS-ITX-P-3800, it is packed with I/O features often lacking from larger single board computers. It includes dual 10/100/1000 Ethernet controllers based on the Intel i211 family with Wake On Lan and PXE capabilities, providing connectivity and control for network devices.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

Expansion options for the SYS-ITX-P-3800 series include one full size and one half size PCIe Mini Card slots along with the four 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.

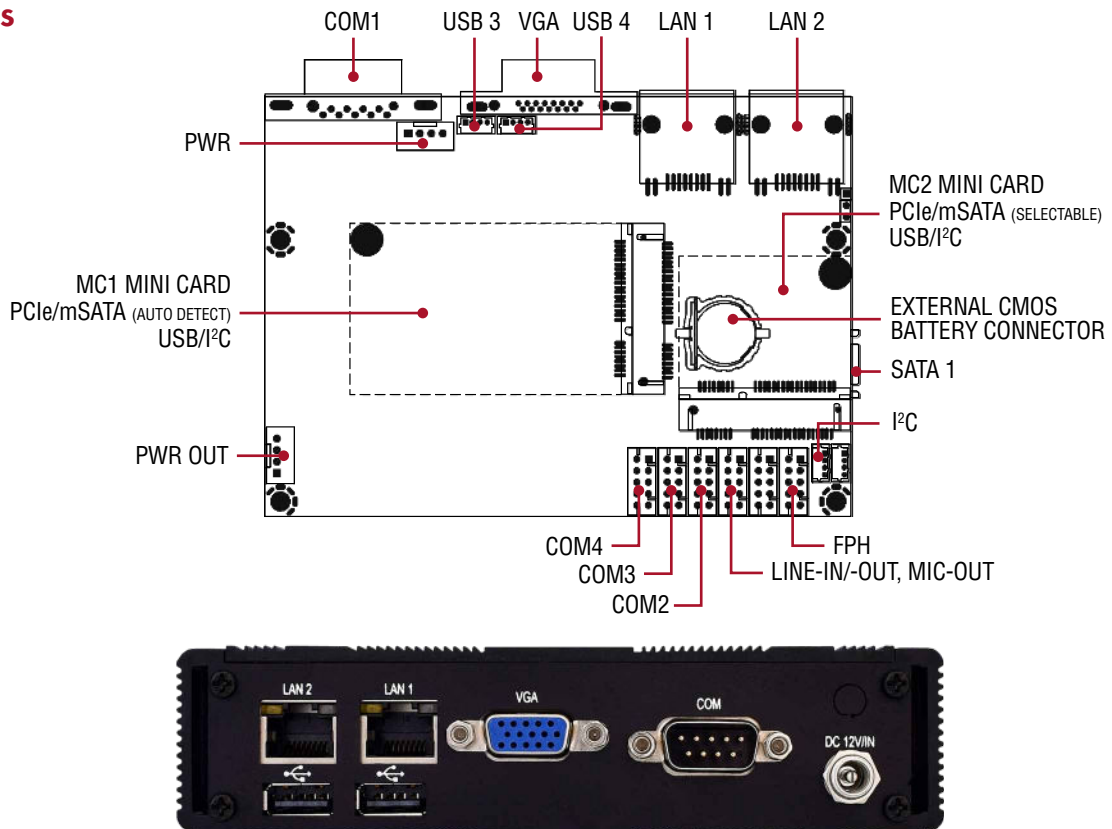
The compact all-in-one SYS-ITX-P-3800 single board computer is fully compatible with industry standards featuring technical enhancements for industrial applications and high reliability. It can run Microsoft's Windows 10 variants including Windows 10 IoT Enterprise and Windows 10 IoT Core, as well as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

The SYS-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.

**Block Diagram**



**Connectors**



# SYS-ITX-P-3800

## Technical Specifications

<b>PROCESSOR</b>	<b>SYS-ITX-P-3825-m-0</b> Dual-Core Intel E3825 at 1.33 GHz	<b>SYS-ITX-P-3845-m-0</b> Quad-Core Intel E3845 at 1.91 GHz
<b>MEMORY</b>	• 2/4GB DDR3L 1066MHz	• 2/4GB DDR3L 1333MHz
<b>STORAGE</b>	• 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	
<b>DISPLAY</b>	• Intel's 7th generation (Gen 7) graphics and media encode/decode engine • Supports DX <sup>®</sup> 11, OpenGL 3.0 (OGL 3.0), OpenCL 1.2 (OCL 1.2), OpenGLES 2.0 • 1x VGA output on DE-15 connector	
<b>NETWORK INTERFACE</b>	• 2x 10/100/1000 Mbps Intel i210-AT Ethernet controllers <ul style="list-style-type: none"><li>– Supports Wake on LAN on both channels</li><li>– Status &amp; Activity LEDs for both Ethernet controllers</li><li>– PXE support through BIOS</li></ul>	
<b>ONBOARD I/O</b>	• 1x RS232 serial port on external DB9 connector • 3x RS232 serial port on internal headers • 2x USB 2.0 external Type-A connectors • 2x USB 2.0 internal headers • High definition audio codec, supports line-out / mic-in on internal header • Watchdog timer adjustable from 1 second to 255 minutes	
<b>EXPANSION BUS</b>	• 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	
<b>POWER</b>	• +12V DC	
<b>SOFTWARE</b>	• Insyde UEFI BIOS • Supports Windows 10, Windows 10 IoT Enterprise, Windows 10 IoT Core, Linux and real-time operating systems	
<b>ENVIRONMENTAL</b>	• Operational temperature -20 to +70 C • Humidity 5 - 95%, non-condensing	
<b>MECHANICAL</b>	• Dimensions: <ul style="list-style-type: none"><li>– Length: 5.71 in. (145mm)</li><li>– Width: 3.46 in. (88mm)</li><li>– Height: 1.38 in. (35mm)</li></ul>	

## Order Information

<b>SBC PART NUMBER</b>	<b>SYS-ITX-P-3825-m-0</b> Dual-Core Intel Atom E3825 at 1.33 GHz	<b>SYS-ITX-P-3845-m-0</b> Quad-Core Intel Atom E3845 at 1.91 GHz
<b>RAM</b>	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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