

## Features

### Compact LCD Panel

- 6.5-inch TN LCD panel
- Brightness up to 700 nits (cd/m<sup>2</sup>)
- 640 x 480 resolution

### Performance for Industrial IoT Applications

- Intel® Atom™ E3800 PC/104-Plus Processor
- Up to 4 GB Soldered Down DDR3L System RAM
- Time Coordinated Computing

### Rugged Design for Demanding Environments

- -10°C to +70°C Operating Temperature Range
- PC/104-Plus Small Form Factor

### Fast Graphics at High Resolutions

- Intel® Gen7 Graphics Engine
- Multiple Displays Supported
- Full-HD and 3D Graphics Acceleration

### Secure and Trusted Data

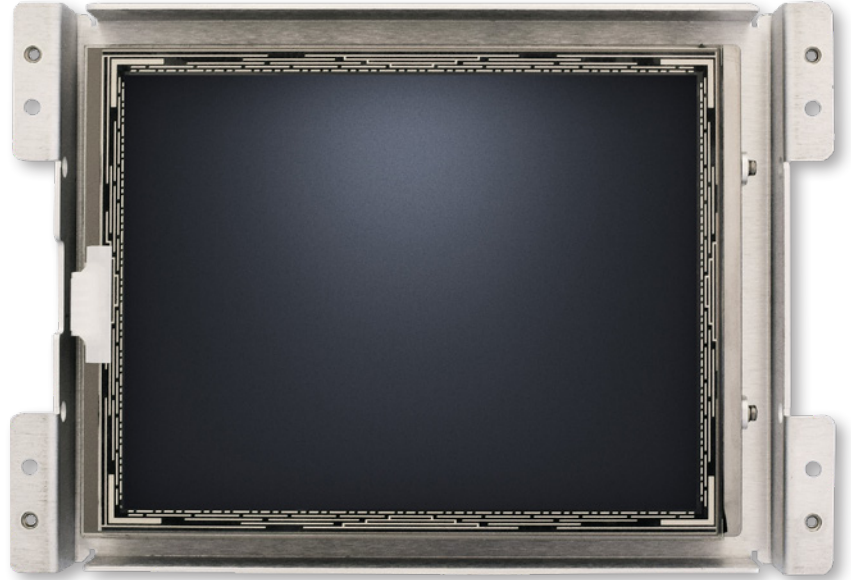
- Intel Security Engine
- Cryptographic Acceleration

### Connectivity and I/O for Embedded Systems

- Ethernet
- 2x USB 2.0
- 24 GPIO with Event Sense
- Four Serial Ports

### Expansion Options

- PC/104-Plus (PC/104 and PCI-104)
- MiniPCIe/mSATA Socket



## Product Description

The PPC3-6.5-407 from WINSYSTEMS utilizes the E3800 family of Atom™ processors from Intel® to provide low power and high performance in a compact 6.5-inch Panel PC. Designed for harsh environments and reliability, the design includes soldered RAM for added shock and vibration resistance with operating temperature ranges available from -10°C to +70°C.

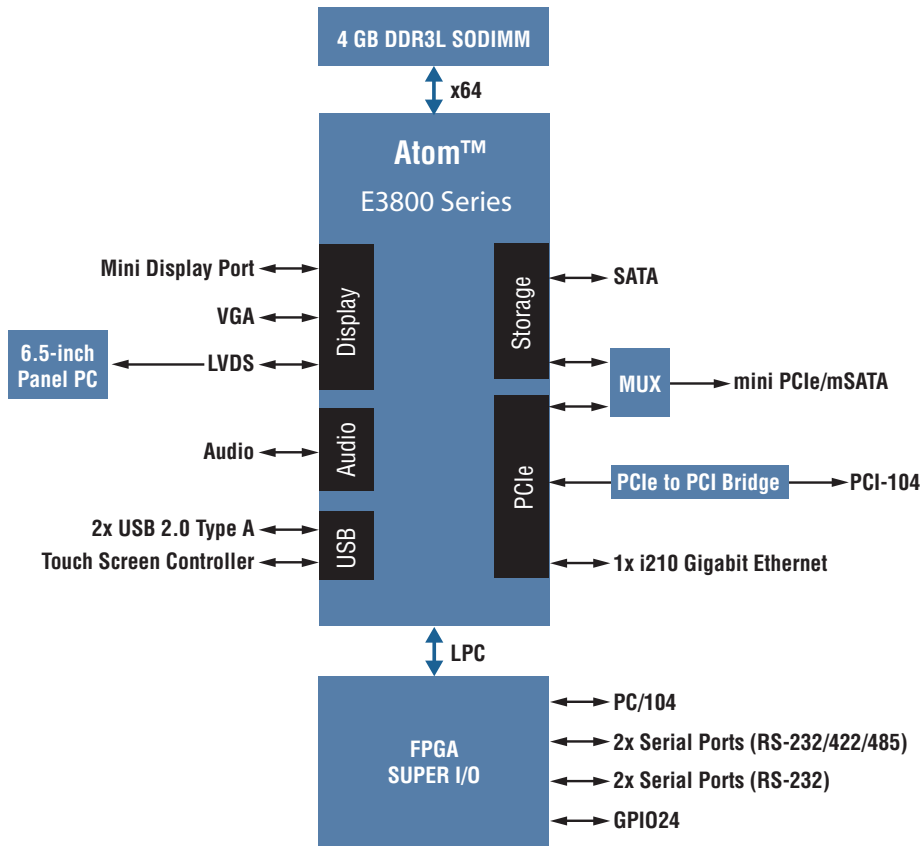
WINSYSTEMS is offering the PPC3-6.5-407 in multi-core options to fit a variety of application requirements. Scalable performance allows choices between single, dual or quad-core processing. Each processor option is available with 2G or 4G of soldered DDR3 memory and PC/104-Plus connectors.

This industrial Panel PC is a full-featured embedded system with a variety of onboard I/O options. Two additional display interfaces (MiniDisplayPort, and VGA) allow support for concurrent video output with the LVDS interface to the LCD panel, along with stereo audio. Communication interfaces include Gigabit Ethernet, two USB 2.0 ports, two serial RS-232/422/485 channels and two serial RS-232 channels. 24 digital I/O lines with event sense can be programmed individually for input, output or interrupt driven applications. For additional flexibility, the I/O lines can be paired with external isolation and relay modules.

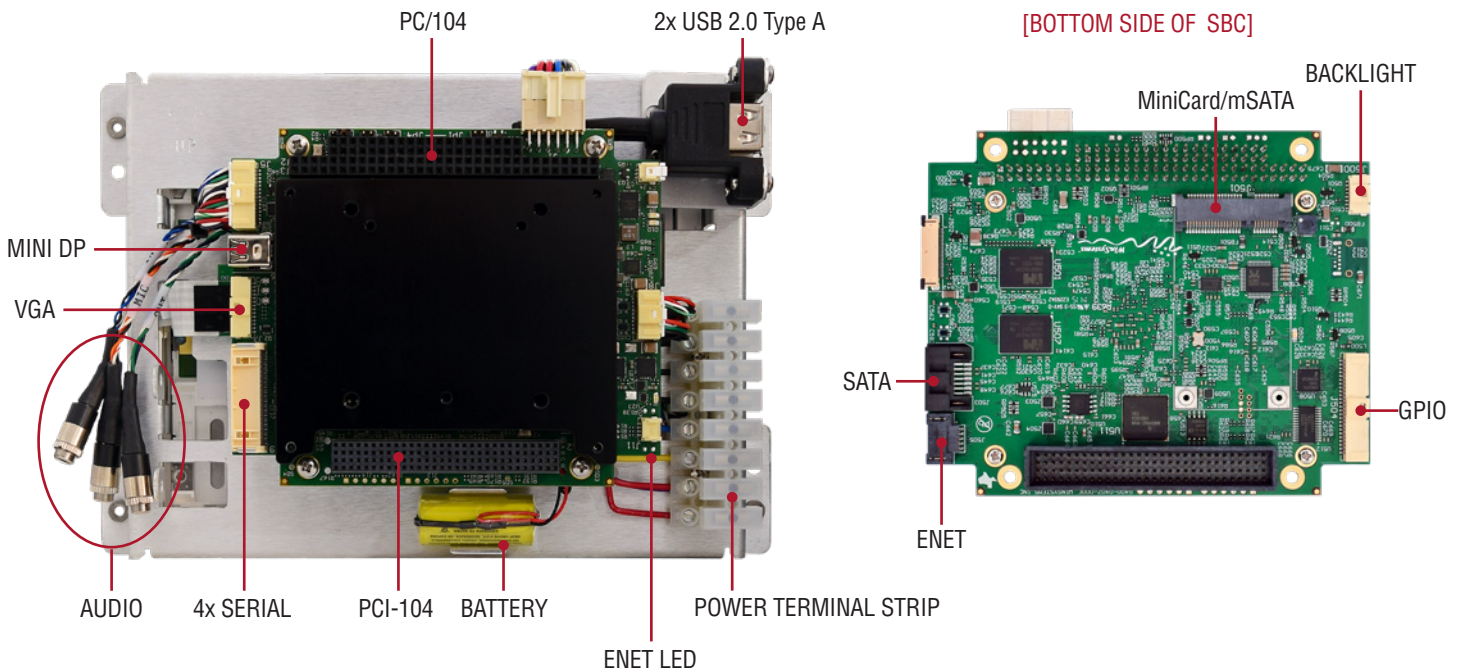
Linux, Windows and other x86 operating systems can be booted from the SATA, mSATA, or USB interfaces, providing flexible data storage options.

Drivers are available from the WINSYSTEMS website.

## Block Diagram



## Connectors



# PPC3-6.5-407

## Technical Specifications

<b>PROCESSOR</b>	<b>Intel® Atom™ E3815</b> Single-Core 1.46GHz, 512K cache (MOQ req.)	<b>Intel® Atom™ E3825</b> Dual-Core 1.33GHz, 1MB cache	<b>Intel® Atom™ E3845</b> Quad-Core 1.91GHz, 2 MB cache
<b>MEMORY</b>	<ul style="list-style-type: none"> <li>2GB DDR3L Soldered RAM</li> <li>4GB DDR3L Soldered RAM</li> </ul>		
<b>STORAGE</b>	<ul style="list-style-type: none"> <li>SATA 2.0 channel</li> <li>mSATA socket (Shared with miniPCIe)</li> </ul>		
<b>DISPLAY</b>	<ul style="list-style-type: none"> <li>Intel® Gen7 Graphics</li> <li>Up to Two Simultaneous Active Displays               <ul style="list-style-type: none"> <li>VGA up to 2560x1536</li> <li>LVDS 18 or 24bpp</li> <li>DisplayPort Version 1.1</li> </ul> </li> </ul>		
<b>NETWORK INTERFACE</b>	<ul style="list-style-type: none"> <li>One Intel® i210 Gigabit Ethernet port with surge suppression</li> </ul>		
<b>ONBOARD I/O</b>	<ul style="list-style-type: none"> <li>Two USB 2.0 Type A ports with surge protection</li> <li>One USB 2.0 port for touch controller</li> <li>Two 16C550-compatible RS-232/422/485 serial channels with speeds up to 500Kbps</li> <li>Two 16C550-compatible RS-232 serial channels with speeds up to 250Kbps</li> <li>24 lines of general purpose digital I/O (5V tolerant)</li> <li>Speaker output for beep tones</li> <li>Status LEDs for Ethernet, 3.3V Stand-By, and one software controlled</li> <li>Stereo audio output, mic, and line input</li> <li>Realtime clock with optional battery back up</li> <li>Watchdog timer adjustable from 1 second to 255 minutes</li> </ul>		
<b>EXPANSION BUS</b>	<ul style="list-style-type: none"> <li>PC/104-Plus Expansion (includes PC/104 and PCI-104)</li> <li>MiniPCIe Expansion slot (shared with mSATA)</li> </ul>		
<b>POWER</b>	<ul style="list-style-type: none"> <li>+5V DC required (Power consumption estimates are for the PPM-C407 only and exclude any external devices)</li> </ul>		
<b>SOFTWARE</b>	<ul style="list-style-type: none"> <li>UEFI compliant BIOS in SPI Flash Device</li> <li>Compatible with Linux, Windows, and other x86 operating systems</li> </ul>		
<b>ENVIRONMENTAL</b>	<ul style="list-style-type: none"> <li>-10°C to +70°C Operational temperature</li> <li>RoHS-compliant</li> </ul>		
<b>MECHANICAL</b>	Dimensions - 7.75 x 5.375 x 2.25 inches (196.85 x 136.53 x 57.15 mm)		

## Order Information

<b>SBC PART NUMBER</b>	<b>PPC3-6.5-407-3815-R Single-Core options</b> <i>Build-to-Order</i>	<b>PPC3-6.5-407-3825-2</b> 6.5-inch Panel PC with E3825, 2GB RAM, heat spreader  <b>PPC3-6.5-407-3825-4</b> 6.5-inch Panel PC with E3825, 4GB RAM, heat spreader	<b>PPC3-6.5-407-3845-2</b> 6.5-inch Panel PC with E3845, 2GB RAM, heat spreader  <b>PPC3-6.5-407-3845-4</b> 6.5-inch Panel PC with E3845, 4GB RAM, heat spreader
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## 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 via PCIe/104 and M.2 interfaces. 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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