Features

Compact LCD Panel
- 12.1-inch TN LCD panel with resistive touchscreen
- Brightness up to 500 nits (cd/m2)
- 1024 x 768 resolution

Performance for Industrial IoT Applications
- Intel® Atom™ E3800 Processor
- Up to 8 GB DDR3L System Memory
- Time Coordinated Computing

Rugged Design for Demanding Environments
- -30°C to +85°C Operating Temperature Range
- EBX Single Board Computer 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
- 2x Ethernet
- 7x USB 2.0
- 48x GPIO with Event Sense
- 4x Serial Ports (RS232/422/485)
- 1x LPT

Expansion Options
- PC/104-Plus (PC/104 and PCI-104)
- 2x MiniCard Sockets
- 1x mSATA Socket (shared with MiniCard)

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Product Description

The PPC3-12-413 from WINSYSTEMS utilizes the E3800 family of Atom™ processors from Intel® to provide low power and high performance in a compact 12.1-inch Panel PC. Designed for harsh environments and reliability, the design includes fanless operating temperature ranges from -30°C to +85°C.
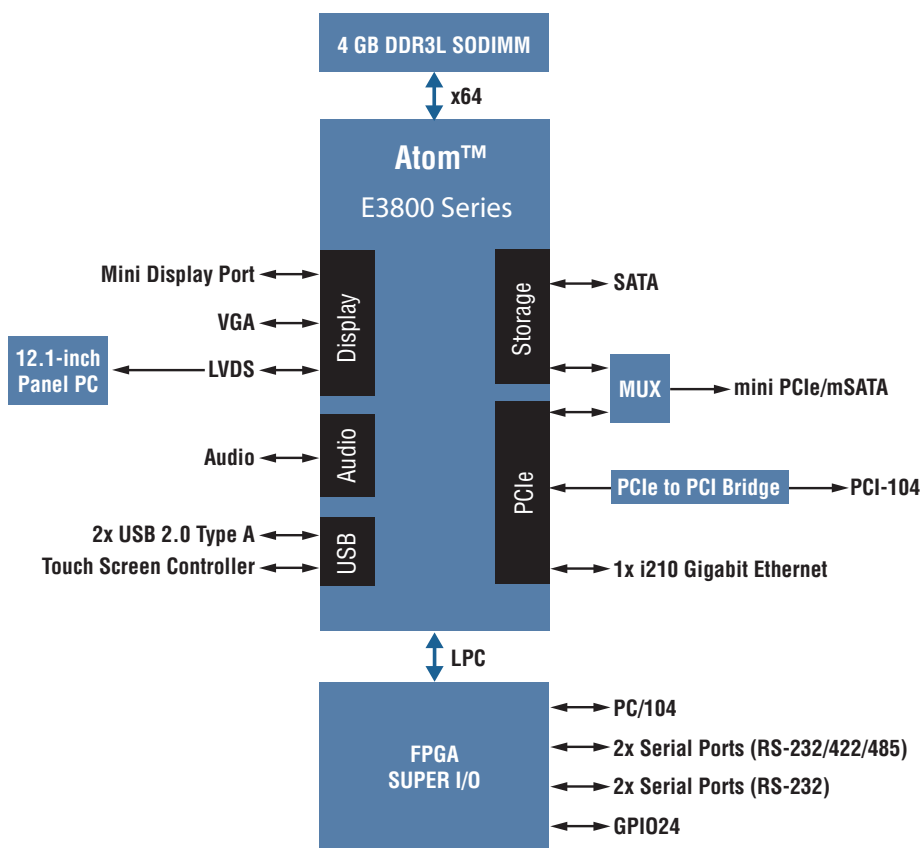
WINSYSTEMS offers the PPC3-12-413 in multi-core options to fit a variety of application requirements. Scalable performance includes a choice of dual or quad-core processors with up to 8GB of DDR3L memory and PC/104-Plus connectors.

This industrial Panel PC is a full-featured embedded system with a variety of on-board I/O options. Two additional display interfaces (MiniDisplayPort, and VGA) allow support for concurrent video output with the LVDS interface to the 12.1-inch LCD panel. Communication interfaces include dual Gigabit Ethernet ports, seven USB 2.0 ports, and four serial RS-232/422/485 channels. This Panel PC also features 48 digital I/O lines, HD audio, watchdog timer, PS/2 keyboard and mouse controllers, and LPT.
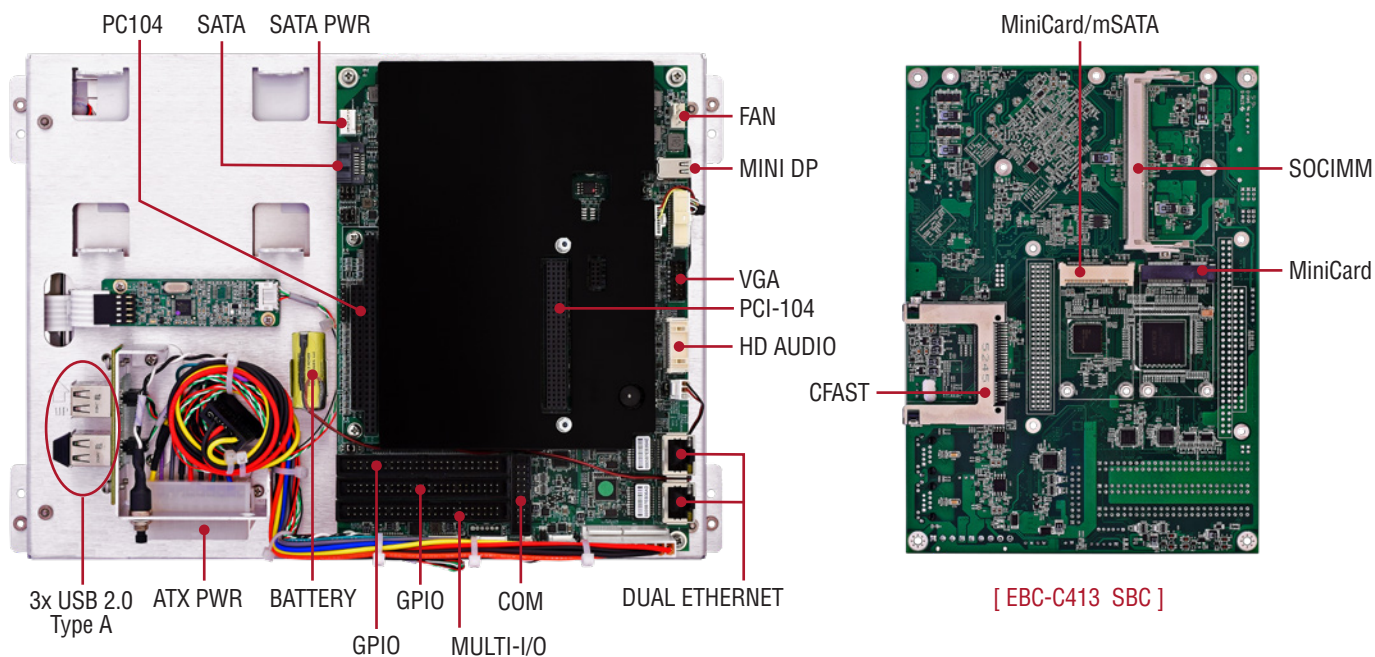
Two MiniCard sockets provide additional expansion as well as one MiniCard slot including mSATA support. The PPC3-12-413 supports Linux, Windows® 10 desktop, Windows 10 IoT, and other x86-compatible real-time operating systems.

Drivers are available from the WINSYSTEMS website.

Block Diagram

Connectors

[EBC-C413 SBC]

PPC3-12-413

Technical Specifications

PROCESSOR	Intel® Atom™ E3825 Dual-Core 1.33GHz, 1MB cache	Intel® Atom™ E3845 Quad-Core 1.91GHz, 2 MB cache
MEMORY	• Up to 8 GB of DDR3 SODIMM (Socketed)	
STORAGE	• SATA (2.0) channel • mSATA socket (Shared with MiniPCIe) • CFast Memory Socket	

DISPLAY	• Dual, simultaneous video output supports two active displays from the 3 different interfaces
	• LVDS with backlight and touch control output to 12.1-inch TFT-LCD panel PC
	  – 1024 x 768 at 60 Hz resolution, 4:3 aspect ratio
	  – LCD luminance = 500 cd/m2 (nits)
	• Analog VGA resolution up to 2560x1600
	• DisplayPort	

NETWORK INTERFACE	• Two 1000 Mbps using the Intel i210 LAN controller
	  – Supports Wake on LAN on both channels
	  – Status & Activity LEDs for both Ethernet controllers	

ONBOARD I/O	• Digital I/O: 48 Bidirectional GPIO; 24 with event sense
	• Serial I/O: 4 serial ports (RS-232/422/485)
	• PS/2 keyboard and mouse controller
	• Printer I/O: LPT interface with SPP/EPP support
	• Speaker output for beep tones
	• RTC with optional battery back up
	• 7 USB 2.0 Ports
	  – 3x USB 2.0 Type A
	  – 4x USB 2.0 via header
	• Watchdog Timer: Adjustable from 1 second to 255 minute reset
	• HD Audio supported Realtek ALC888S-VD2-GR	

EXPANSION BUS	• PC/104-Plus Expansion (includes PC/104 and PCI-104) • 2x Mini PCIe (1x shared mSATA or MiniPCIe)	
POWER	• +5V DC required	
SOFTWARE	• UEFI compliant BIOS in SPI Flash Device • Compatible with Linux, Windows, DOS, and other x86 operating systems	
ENVIRONMENTAL	• -30ºC to +85ºC Operational temperature • RoHS-compliant	
MECHANICAL	Dimensions - 12.25 x 8.60 x 1.90 inches (31.12 x 21.85 x 4.82 cm)	

Order Information

SBC PART NUMBER	PPC3-12-413-3825-4 12.1-inch Panel PC with E3825, 4GB RAM, heat spreader	PPC3-12-413-3845-4 12.1-inch Panel PC with E3845, 4GB RAM, heat spreader
	PPC3-12-413-3825-8 12.1-inch Panel PC with E3825, 8GB RAM, heat spreader	PPC3-12-413-3845-8 12.1-inch Panel PC with E3845, 8GB RAM, heat spreader

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.

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