

Features

Performance for Industrial IoT Applications

- Intel® Atom™ Processor (single, dual & quad-core)
- Up to 8 GB DDR3-LV System RAM
- Hardware-based Intel® Virtualization Technology
- Higher per-watt performance

Rugged Design for Demanding Environments

- -40°C to +80°C Operating Temperature Range
- NANO-ITX Form Factor

Fast Graphics at High Resolutions

- Intel Low Power Gen7 Graphics Engine
- Supports Multiple Displays

Memory

- One 204-pin SODIMM supports DDR3L up to 8GB

Connectivity and I/O for Embedded Systems

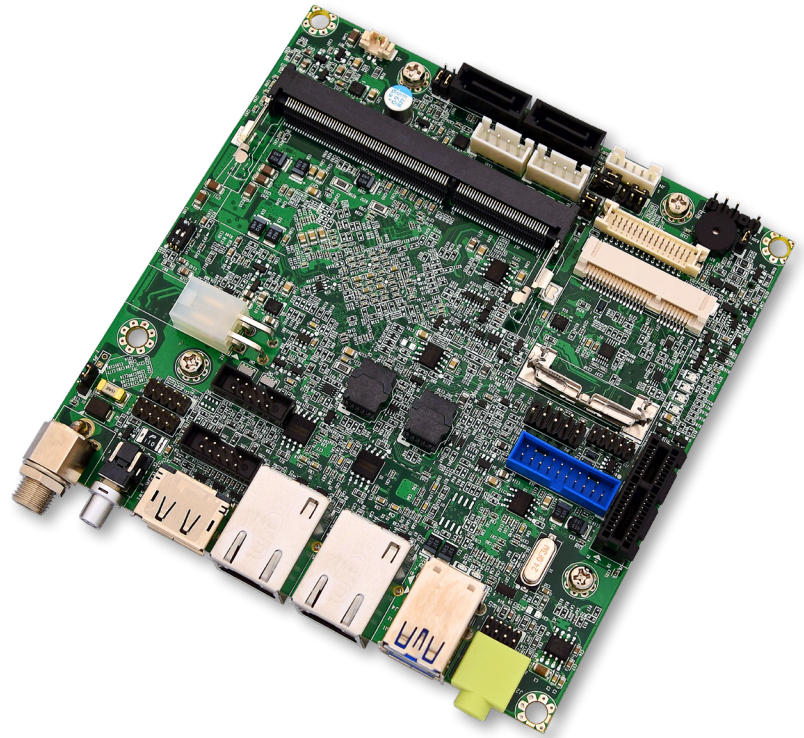
- Dual Gigabit Ethernet
- Supports two SATA 2.0 ports, one micro SD socket, and four USB 3.0 ports

Expansion Options

- One half-size Mini-PCIe socket and one full-size PCIe slot for expansion



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Product Description

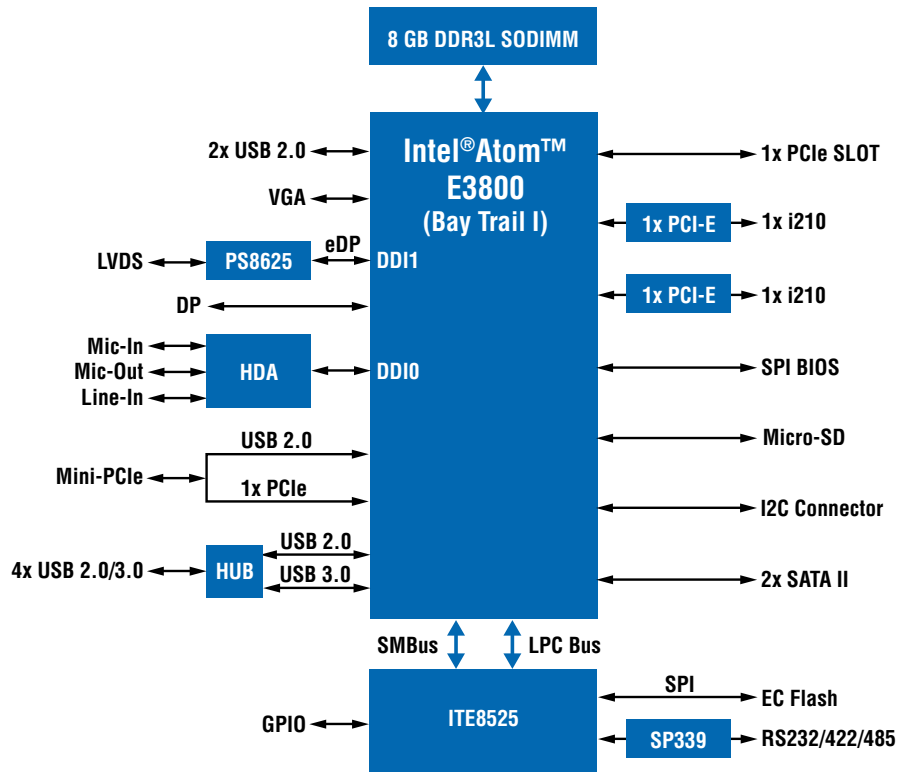
WinSystems' ITX-N-3800 is a NANO-ITX Single Board Computer (SBC) based on the Intel® Atom™ E3800 Bay Trail processor family. It uses less than 10 watts for fanless applications and performs reliably in industrial operating temperatures ranging from -40° to +80°C. It includes a SODIMM socket supporting up to 8 GB of DDR3 system memory and two high-speed SATA storage interfaces. Additional expansion is available through MiniPCIe and PCIe.

The ITX-N-3800 is a full-featured single board computer with onboard I/O that simultaneously supports CRT/DisplayPort/LVDS video, dual Gigabit Ethernet ports, four USB 3.0 ports, two USB 2.0 ports, one serial RS-232/422/485 port, eight general purpose input-output (GPIO) lines, audio, and watchdog timer. It also has a half-size MiniPCIe socket and a full-size PCIe connectors for additional I/O expansion.

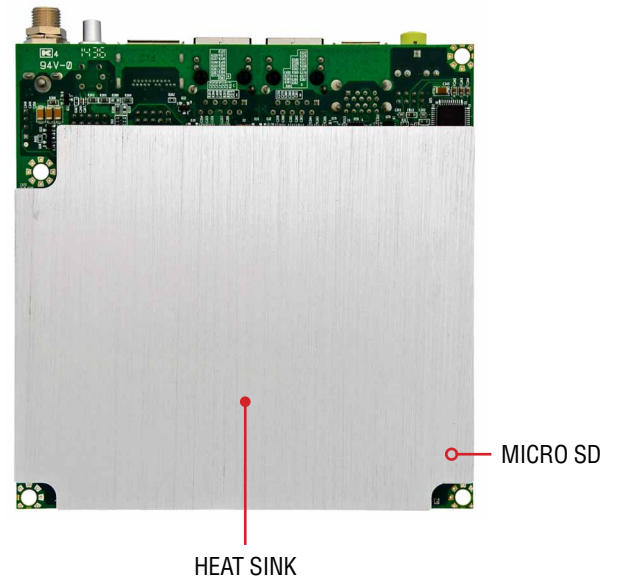
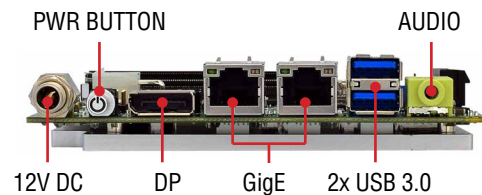
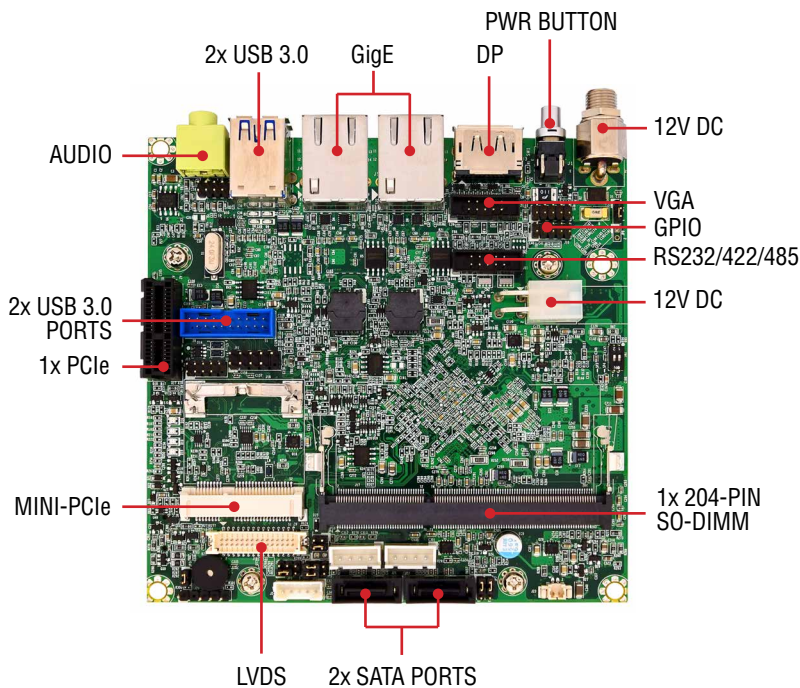
This single board computer supports Linux, Windows® 10 desktop, Windows 10 IoT, and other x86-compatible real-time operating systems. Drivers are available from the WinSystems website. The SBC is designed for long-term availability.

The ITX-N-3800 is FCC- and CE-certified, and designed for industrial IoT, medical, communications and digital signage applications.

Block Diagram



Connectors



Technical Specifications

PROCESSOR	Intel Atom E3815 Single Core 1.46GHz	Intel Atom E3827 Dual Core 1.75GHz	Intel Atom E3845 Quad Core 1.91GHz
	<ul style="list-style-type: none"> Cache up to 2MB (for Quad Core) Support Intel® VT-x technology 		
MEMORY	<ul style="list-style-type: none"> Up to 8GB DDR3L 1066/1333 SDRAM on 1x 204pin SODIMM 		
STORAGE	<ul style="list-style-type: none"> 2x SATA 2.0 1x Micro-SD socket 		
DISPLAY	<ul style="list-style-type: none"> Graphic Controller <ul style="list-style-type: none"> Intel® Gen 7 graphic engine supports DirectX 11, OpenGL 4.0 Video decode hardware acceleration supports for H.264, MPEG2, MVC, VC-1, WMV9 and VP8 formats Display Interface <ul style="list-style-type: none"> LVDS: Dual channel 24bit LVDS on board connector, resolution up to 1920x1200 @60Hz VGA: 1x on-board connector, resolution up to 1920x1200 (WUXGA) DP: 1x DP port on rear I/O, resolution up to 2560x1600 		
NETWORK INTERFACE	<ul style="list-style-type: none"> 1x Serial Port RS232/422/485 on-board connector 2x USB 3.0 ports on rear I/O 2x USB 2.0 and 2x USB 3.0 ports on board with 2.0mm pitch header GPIO: 8bit configurable controlled by embedded controller 		
	<ul style="list-style-type: none"> 1x Intel I210IT Gigabit Ethernet controller and 1x RJ45 connector on rear I/O 	<ul style="list-style-type: none"> Dual Intel I210IT Gigabit Ethernet controller 2x RJ45 connectors on rear I/O 	<ul style="list-style-type: none"> Dual Intel I210IT Gigabit Ethernet controller 2x RJ45 connectors on rear I/O
ONBOARD I/O	<ul style="list-style-type: none"> HDA controller integrated in Intel® SoC Realtek ALC892 HDA codec, audio jack on rear I/O with Line-out and onboard pin header with Line-in, Line-out and Mic-in Watchdog timer programmable by embedded controller 		
EXPANSION BUS	<ul style="list-style-type: none"> 1x PCI Express 1x half-size Mini-PCIe 		
POWER	<ul style="list-style-type: none"> Typical power +12V DC input, 7 Watts 		
SOFTWARE	<ul style="list-style-type: none"> Phoenix EFI BIOS 		
ENVIRONMENTAL	<ul style="list-style-type: none"> Operation temperature: -40 to +80°C Storage temperature: -40 to +80°C Relative humidity: 5 to 95%, non-condensing 		
MECHANICAL	<ul style="list-style-type: none"> Dimensions <ul style="list-style-type: none"> Length: 4.72 in. (120mm) Width: 4.72 in. (120mm) Weight: 0.60 lbs (0.272 kg) 		

Order Information

SBC PART NUMBER	ITX-N-3815-1-0 Intel Atom E3815 1.46GHz Single Core, DDR3L SDRAM, VGA, 24bit LVDS, DP, single GbE LAN, micro SD	ITX-N-3827-1-0 Intel Atom E3825 1.75GHz Dual Core, DDR3L SDRAM, VGA, 24bit LVDS, DP, dual GbE LAN, micro SD	ITX-N-3845-1-0 Intel Atom E3845 1.91GHz Quad Core, DDR3L SDRAM, VGA, 24bit LVDS, DP, dual GbE LAN, micro SD
RAM	<ul style="list-style-type: none"> 204-pin SODIMM supports DDR3L up to 8GB 		

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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