Features

Performance for Industrial IoT Applications
- Intel® Atom™ Processor (dual & quad-core)
- Up to 8 GB DDR3L System RAM
- Hardware-based Intel® Virtualization Technology
- Higher per-watt performance

Rugged Design for Demanding Environments
- -25°C to +60°C Operating Temperature Range
- NANO-ITX Form Factor
- Multiple mounting options:
  Desk, Wall/Panel, DIN rail

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 one 2.5" SATA HDD/SSD, one Micro SD socket, and two USB 3.0 ports

Expansion Options
- One half-size Mini-PCIe socket
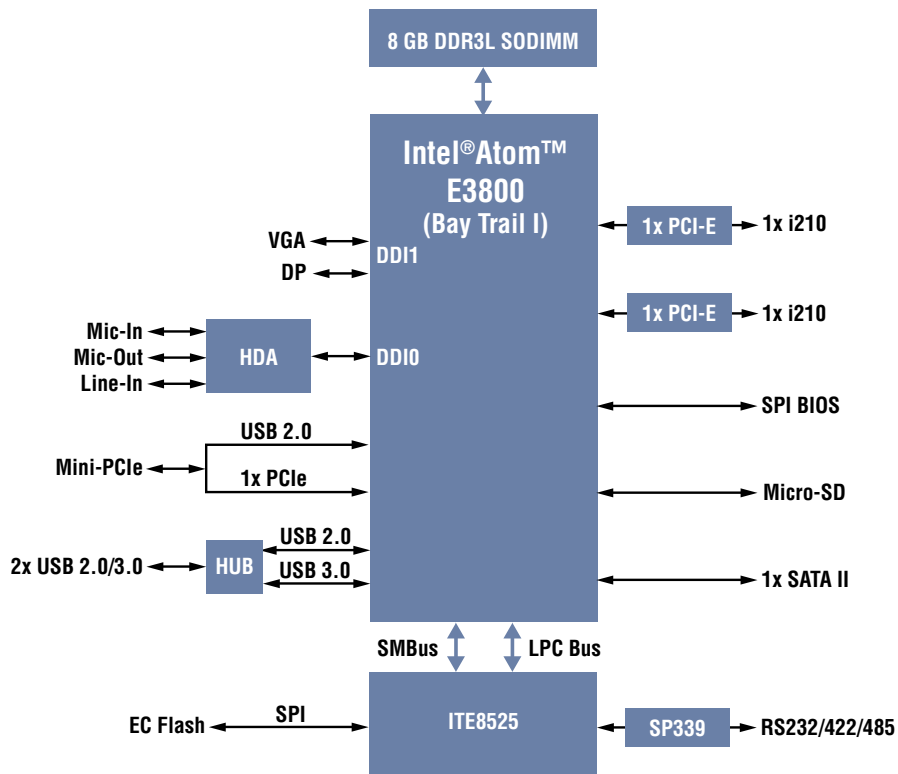
Product Description

WINSYSTEMS' SYS-ITX-N-3800 is a NANO-ITX Industrial 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 -25° to +60°C. It includes a SODIMM socket supporting up to 8 GB of DDR3 system memory and internal mounting support for one 2.5" SATA HDD/SSD. Additional expansion is available through MiniPCIe.

The SYS-ITX-N-3800 is a full-featured fanless embedded computer with onboard I/O that simultaneously supports VGA and DisplayPort video, dual Gigabit Ethernet ports, two USB 3.0 ports, one serial RS-232/422/485 port, audio, and watchdog timer. It also has a half-size Mini-PCIe socket and an antenna hole for WiFi or 3G/GPS module.
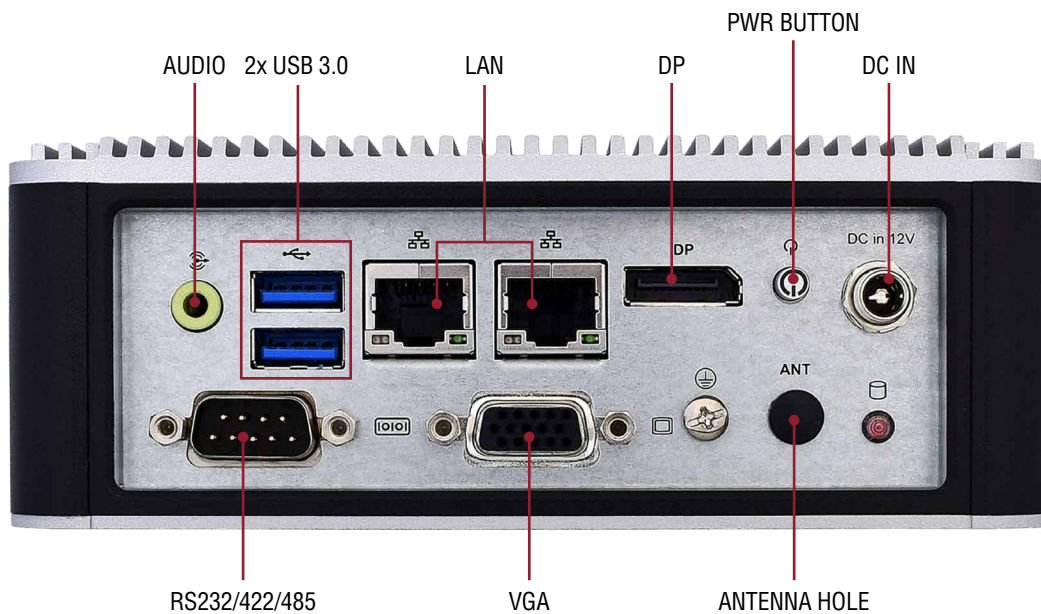
This single board computer supports Linux, Windows® 10 desktop, Windows 10 IoT, and other x86-compatible real-time operating systems. Drivers are available from the WinSystems website. The SYS-ITX-N-3800 is designed for long-term availability.

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

Block Diagram

8 GB DDR3L SODIMM

Intel®Atom™
E3800
(Bay Trail I)

VGA — DDI1
DP — DDI1

1x PCI-E → 1x i210
1x PCI-E → 1x i210

Mic-In
Mic-Out — HDA — DDI0
Line-In

SPI BIOS

USB 2.0
Mini-PCIe — 1x PCIe

Micro-SD

2x USB 2.0/3.0 — HUB — USB 2.0 / USB 3.0

1x SATA II

SMBus | LPC Bus

EC Flash — SPI — ITE8525 — SP339 → RS232/422/485

Connectors

AUDIO 2x USB 3.0 LAN DP PWR BUTTON DC IN

DP DC in 12V ANT

RS232/422/485 VGA ANTENNA HOLE

SYS-ITX-N-3800

Technical Specifications

PROCESSOR	Intel Atom E3827 Dual Core 1.75GHz	Intel Atom E3845 Quad Core 1.91GHz
	• Cache up to 2MB (for Quad Core) • Support Intel® VT-x techology	
MEMORY	• Up to 8GB DDR3L 1066/1333 SDRAM on 1x 204pin SODIMM	
STORAGE	• 1x SATA 2.0 • 1x Micro-SD socket	

DISPLAY	• Graphic Controller
	  – 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
	  – VGA: 1x VGA connector, resolution up to 1920x1200 (WUXGA)
	  – DP: 1x DP connector, resolution up to 2560x1600	

SERIAL INTERFACE	• 1x Serial Port RS232/422/485 • 2x USB 3.0 ports	
NETWORK INTERFACE	• Dual Intel I210IT Gigabit Ethernet controller • 2x RJ45 connectors on rear I/O	
ONBOARD I/O	• HDA controller integrated in Intel® SoC • Realtek ALC892 HDA codec, audio jack on rear I/O with Line-out • Watchdog timer programmable by embedded controller	
EXPANSION BUS	• 1x half-size Mini-PCIe	
POWER	• Typical power +12V DC input, 7 Watts	
SOFTWARE	• Phoenix EFI BIOS	
ENVIRONMENTAL	• Operation temperature: -25 to +60°C • Storage temperature: -40 to +80°C • Relative humidity: 5 to 95%, non-condensing	
MECHANICAL	• Dimensions: Length: 5.9 in. (150mm), Width: 5.9 in. (150mm), Height: 2.1 in. (53mm) • Weight: 2.86 lbs (1.3 kg) • Mounting Options: Desk, Wall/ Panel, DIN rail	

Order Information

SBC PART NUMBER	SYS-ITX-N-3827-m-0 Intel Atom E3827 1.75GHz Dual Core, DDR3L SDRAM, VGA, DP, dual GbE LAN, micro SD	SYS-ITX-N-3845-m-0 Intel Atom E3845 1.91GHz Quad Core, DDR3L SDRAM, VGA, DP, dual GbE LAN, micro SD
MEMORY	m = RAM installed 2 = 2GB DDR3L SDRAM 4 = 4GB DDR3L SDRAM 8 = 8GB DDR3L SDRAM	

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.

Parhelia B.V.
www.parhelia-bv.com
☎+31(0)10 741 00 28

PARHELIA

WINSYSTEMS®

WINSYSTEMS reserves the right to make changes to products and/or documentation without further notification. Product names of other companies may be trademarks of their respective companies.