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EPX-C380-S

EPIC SBC with Low Power Intel®Atom™ N450 and Dual Gigabit Ethernet

Features

- EPIC-compatible SBC with single core 1.66GHz Intel® Atom™ N450 processor
- Up to 2GB of DDR2 SODIMM system memory
- Optional 512MB to 2GB of on board SSD disk
- Optional 1MB of battery backed SRAM
- CompactFlash socket
- Supports simultaneous 18-bit LVDS and CRT video
- Full-featured I/O includes:
  - Two SATA channels
  - Eight USB 2.0 ports
  - Four serial RS-232/422/485 ports
  - Two Gigabit Ethernet channels
  - 48 lines of GPIO; 24 support event sense
  - MiniPCIe and PC/104-*Plus* expansion connectors
  - WDT, RTC, LPT, status LEDs, and beeper
  - Hi-definition audio
- Fanless: -40°C to +85°C temperature operation
- Runs Linux, Windows®, and other x86-compatible OS
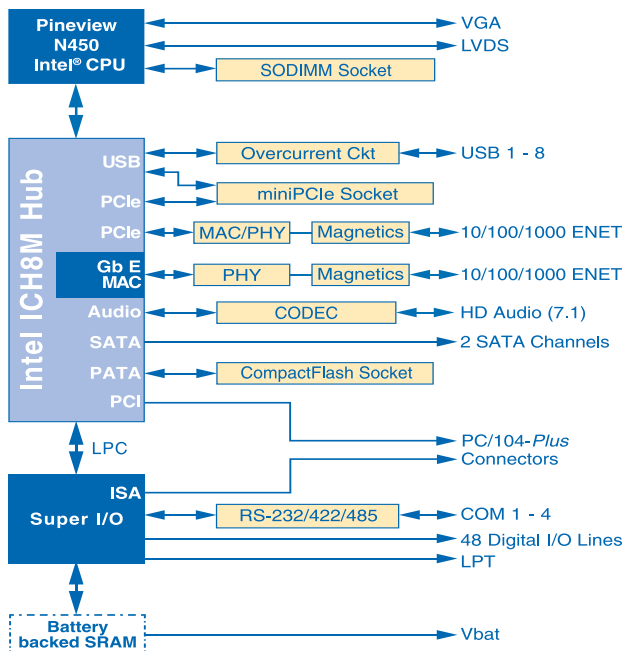
Product Description

WinSystems' EPX-C380-S is an EPIC-compatible Single Board Computer (SBC) which uses Intel's Atom N450 single core 1.66GHz processor paired with the ICH8M I/O controller hub.

This SBC is a full-featured unit with onboard I/O that supports CRT/LVDS video simultaneously, dual Gigabit Ethernet ports, eight USB 2.0 ports, four serial RS-232/422/485 COM channels, 48 digital I/O lines (24 with event sense), HD audio, watchdog timer, and LPT. Plus it has a PCIe MiniCard socket and PC/104-*Plus* connectors for additional I/O expansion.

The EPX-C380-S supports Linux, Windows, and other x86-compatible real-time operating systems. Drivers are available from the WinSystems' website.

Options include fan, 1MB battery backed SRAM, and 512MB to 2GB soldered-on flash SSD. Contact a WinSystems' Applications Engineer for details and custom OEM configurations.

This board replaces and is a performance upgrade to the EPX-855. It is well suited for high-performance industrial, medical, communications, and certain Mil/COTS applications.

EPX-C380-S Block Diagram

Pineview N450 Intel® CPU → VGA, LVDS, SODIMM Socket

Intel ICH8M Hub
- USB → Overcurrent Ckt → USB 1 - 8
- PCIe → miniPCIe Socket
- PCIe → MAC/PHY → Magnetics → 10/100/1000 ENET
- Gb E MAC → PHY → Magnetics → 10/100/1000 ENET
- Audio → CODEC → HD Audio (7.1)
- SATA → 2 SATA Channels
- PATA → CompactFlash Socket
- PCI
- LPC

ISA Super I/O
- RS-232/422/485 → COM 1 - 4
- 48 Digital I/O Lines
- LPT

PC/104-*Plus* Connectors

Battery backed SRAM → Vbat

Technical Specifications

Processor
Intel Atom N450 single core @ 1.66GHz

Memory
512KB of L2 cache
SODIMM memory socket for up to 2GB of DD2

Storage
Two SATA 2.0 channels
CompactFlash Type II memory socket
1MB soldered-on SRAM w/battery back up
Optional 512MB - 2GB of soldered-on flash SSD

Display
VGA supports up to SXGA 1400 x 1050 @ 60Hz
LVDS supports 18-bit single channel up to 1366 x 768 or
1280 x 800

Network Interface
One Intel ICH8M and 82567V (PHY) Gigabit Ethernet port
with Wake-on-LAN (WOL)
One Intel 82583V Gigabit Ethernet port

On board I/O
Eight USB 2.0 ports with overcurrent protection
Four 16C550-compatible RS-232/422/485 serial channels
with speeds up to 115.2kbps
48 lines of general purpose digital I/O
LPT interface with EPP support
Speaker output for beep tones
Status LEDs on Link, Activity, and Speed of
both Ethernet controllers
High definition audio (7.1)
RTC with optional battery back up
Watchdog timer adjustable from 1 second to 255 minutes

Expansion Bus
PC/104 and PC/104-*Plus* connectors
One miniPCIe connector

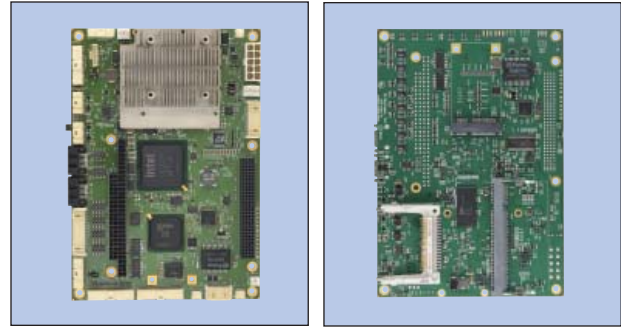| Power	Typical	Maximum	Standby (S3)
5V @	2.5A	2.94A	268mA

Software
Phoenix BIOS in SPI Flash device
Compatible with Linux, Windows and most x86 operating
systems as well as DOS

Environmental
Operational from -40° to +85°C
Random Vibration Testing   MIL-STD-202G, Method 214A,
Condition D, 0.1g/Hz (11.95g rms), 20 minutes per
axis, 3 axis
Mechanical Shock Testing   MIL-STD-202G, Method 213B,
Condition A, 50g half-sine, 11ms duration per axis, 3 axis
RoHS compliant

Mechanical
Dimensions   4.5 x 6.5 inches (115 x 165 mm)
Weight   9.6 oz (272.2 gm)
PC Board thickness 0.078 inches

Front and Back Picture of EPX-C380-S1-0

Ordering Information
(See website for complete ordering information and accessories.)

EPX-C380-S2-0	1.66GHz N450 EPIC SBC with 1MB SRAM without fan
EPX-C380-S2-1	1.66GHz N450 EPIC SBC with 1MB SRAM with fan
EPX-C380-S2-F-0	EPX-C380-S2-0 with 512MB Flash SSD
EPX-C380-S1-0	1.66GHz N450 EPIC SBC with reduced feature set excludes SRAM, four USB channels, MiniPCIe, one Ethernet interface; COM 3 and 4 are RS-232 only

Cables
CBL-SET-380-2	EPX-C380-S cable and accessories set, includes:
ADP-IO-G-EBC0364	Breakout PCB, dual RJ-45, and four USB
BAT-LTC-E-36-16-2	External 3.6V 1650 mAH battery with plug-in connector
CBL-265-G-2-1.5	DC power harness
CBL-ENET2-004-12	ENET cable with two connectors
CBL-SER4-002-12	Serial I/O cable with four, DB9 connectors
CBL-USB4-002-12	4x USB ports with two, 8-pin 2mm connectors
CBL-VGA-002-12	Video cable with DB15 connector

Optional Battery
BAT-LTC-E-36-16-2	External 3.6V, 1650 mAH
BAT-LTC-E-36-27-2	External 3.6V, 2700 mAH

CompactFlash (CF)
CF-DC-A-xxG-I	1 - 16GB High Speed CF cards
CFLASH-G-xxx-I	128MB - 8GB CF cards

Please visit www.IndustrialCompactFlash.com for details

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