

### Features

- SUMIT-ISM compatible SBC with single core 1.66GHz Intel® Atom™ N455 processor
- Up to 2GB of DDR3 SODIMM system memory
- SUMIT connector supports three PCIe x1, two USB, LPC, and SMBus in a stack
- CompactFlash socket
- Supports simultaneous LVDS and CRT video
- Full-featured I/O includes:
  - One SATA channel
  - Eight USB 2.0 ports
  - Four serial ports (two RS-232/422/485 and two RS-232)
  - One Gigabit Ethernet channel
  - 24 lines of GPIO with event sense
  - WDT, RTC, status LEDs, and beeper
  - Stereo audio
- PC/104 expansion connector
- -40°C to +85°C operation with heat sink
- Runs Linux, Windows®, and other x86-compatible operating systems



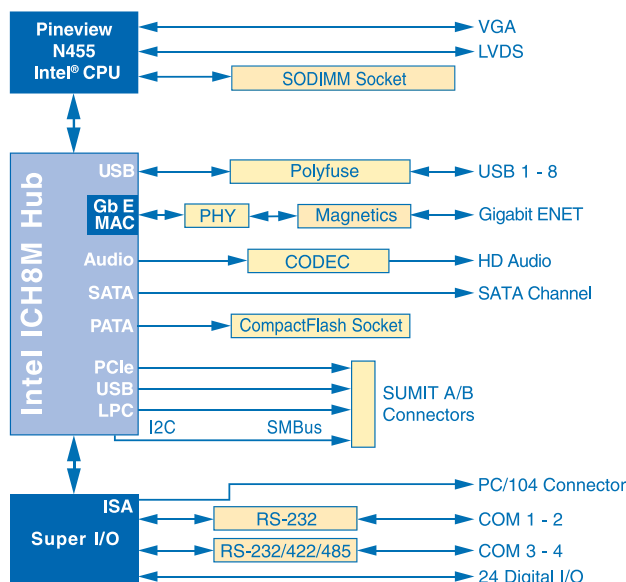
### Product Description

WinSystems' PXM-C388-S is a Single Board Computer (SBC) with PC/104 and SUMIT AB expansion that uses Intel's Atom N455 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, a Gigabit Ethernet port, eight USB 2.0 ports, two serial RS-232 COM channels, 24 digital I/O lines with event sense, audio, and a watchdog timer. Plus it has PC/104 and SUMIT A/B connectors for additional I/O expansion.

The PXM-C388-S is well suited for directly upgrading existing PC/104-based designs with Intel's Atom processor family. It blends high-speed serial bus expansion with legacy PC/104 I/O module migration to strike a balance of high-integration computing power for existing cost-effective applications requiring relays, digital I/O, and low-to-moderate speed analog I/O.

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



PXM-C388-S Block Diagram

# PXM-C388-S: SUMIT and PC/104 Expandable N455 SBC

## Technical Specifications

### Processor

Intel Atom N455 single core @ 1.66GHz

### Memory

512KB of L2 cache  
SODIMM memory socket for up to 2GB of DDR3

### Storage

SATA 2.0 channel  
CompactFlash Type II socket

### 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)

### On board I/O

Eight USB 2.0 ports with polyfuse protection  
Two 16C550-compatible RS-232/422/485 serial channels  
with speeds up to 115.2kbps  
Two 16C550-compatible RS-232 serial channels with  
speeds up to 115.2kbps  
24 lines of general purpose digital I/O  
Speaker output for beep tones  
Status LEDs for Ethernet, 3.3VSB, and one software controlled  
Stereo audio output, mic, and line input  
Realtime clock with optional battery back up  
Watchdog timer adjustable from 1 second to 255 minutes

### Expansion Bus Connectors

PC/104 and SUMIT AB

### Power

Prel. 5V @

Typical	Maximum	Standby (S3)
2.5A	2.94A	268mA

### Software

Phoenix BIOS  
Compatible with Linux, Windows, and most x86 operating  
systems as well as DOS

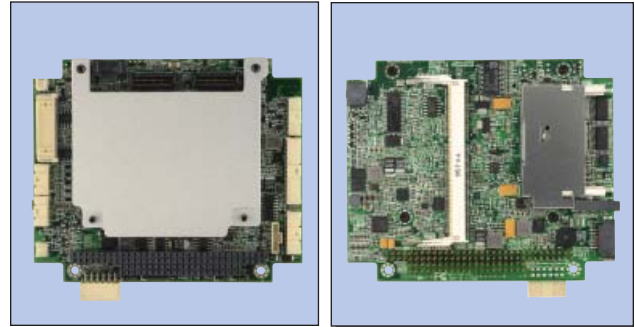
### Environmental

Operational from -40°to +85°C, PXM-C388-S1-0-1  
Non-condensing relative humidity 5% to 95%  
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 4.6 x 3.8 inches (116 x 96mm)  
Weight 7.2 oz (204 gm), PXM-C388-S1-0-0  
PC Board thickness 0.078"

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Front and Back Picture of PXM-C388-S1-0-0

## Ordering Information

PXM-C388-S1-0-0	1.66GHz N455 SUMIT-ISM SBC with PC/104 expansion and heat spreader
PXM-C388-S1-0-0-ST	Stackthrough version
PXM-C388-S1-0-1	1.66GHz N455 SUMIT-ISM SBC with PC/104 expansion and heat sink
PXM-C388-S1-0-1-ST	Stackthrough version

### Cables

CBL-SET-388-1 PXM-C388 cables and accessories set,  
visit website's product page for details

### Optional Batteries

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

### CompactFlash (details [www.industrialcompactflash.com](http://www.industrialcompactflash.com))

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

## SUMIT Resources

Form Factor: SUMIT-ISM

	SUMIT A	SUMIT B
PCIe x1	1	2
PCIe x4	-	-
USB	2	-
ExpressCard	-	-
LPC	1	-
SPI / uWire	1	-
SMBus/ I <sup>2</sup> C	1	-
+12V	-	-
+5V	√	√
+5Vsb	√	√
+3.3V	-	-

