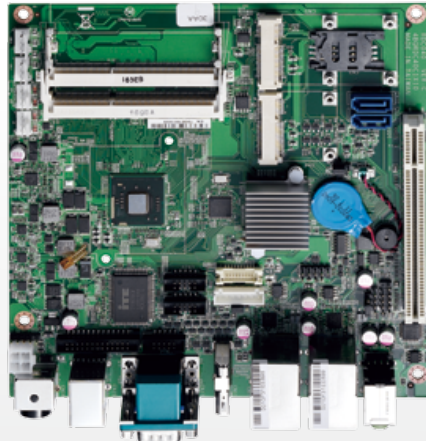# NEX 604

Mini-ITX, Intel® Atom™ Dual-Core D2550 1.86GHz, 2x DDR3,
VGA/ LVDS/ HDMI, 2x GbE, 2x SATA, 4x COM, 6x USB, 2x mPCIe, PCI

Main Features

- Intel® Atom™ Dual-Core D2550/ 1.86GHz processor
- Intel® NM10 Express chipset
- Dual 204-pins DDR3 SO-DIMMs support max. 4GB SDRAM memory
- Support VGA/ HDMI, VGA/ LVDS or HDMI/ LVDS dual displays

- 6x USB, 4x COM, 2x GbE, 2x SATA, 1x LPT
- Audio Mic-in/ Line- out, (internal Line-in)
- 2x Mini-PCIe (1x full/ SIM tray, 1x half-size), 1x PCI
- Single +12VDC input by AT/ ATX mode

Product Overview

NEX 604 is a Mini-ITX industrial MB embedded Intel® Atom™ D2550 1.86GHz dual-core processor, which integrated Intel® HD graphic controller SGX545 to support 640MHz/ DX9 NEX 604 supports VGA, LVDS (1x ch. 24-bit up to 1440 x 900 @ 60Hz) and HDMI (1080p) by dual displays interface as standard along with two DDR3 SO-DIMMs for max 4GB memory.

NEX 604 is equipped with Intel® NM10 Express chipset to provide two SATA 2.0 for SSD, six USB 2.0 (2 x USB to 2 x mPCIe slots), two GbE by Realtek RTL8111E PCIe LAN controllers, two Mini-PCIe slots for one support full-size card with SIM tray and one half-size slot for standard add-on I/O application. The HDMI and full I/O function supports make NEX 604 well fit for data logging, mobile communication, networking, gateway and embedded focus applications.

Specifications

Embedded Support
- Intel® Atom™ processor D2550 1.86GHz CPU

Main Memory
- Dual 204-pin SO-DIMMs support DDR3 up to 4GB SDRAM 800/1066MHz

Chipset
- Intel® NM10 Express chipset

BIOS
- AMI BIOS
- Plug & Play support
- Advanced power management
- Advanced configuration & power interface
- 16M bits SPI ROM

On-board LAN
- 2x Realtek 8111E PCI Express Gigabit Ethernet
- Support boot from LAN (PXE)
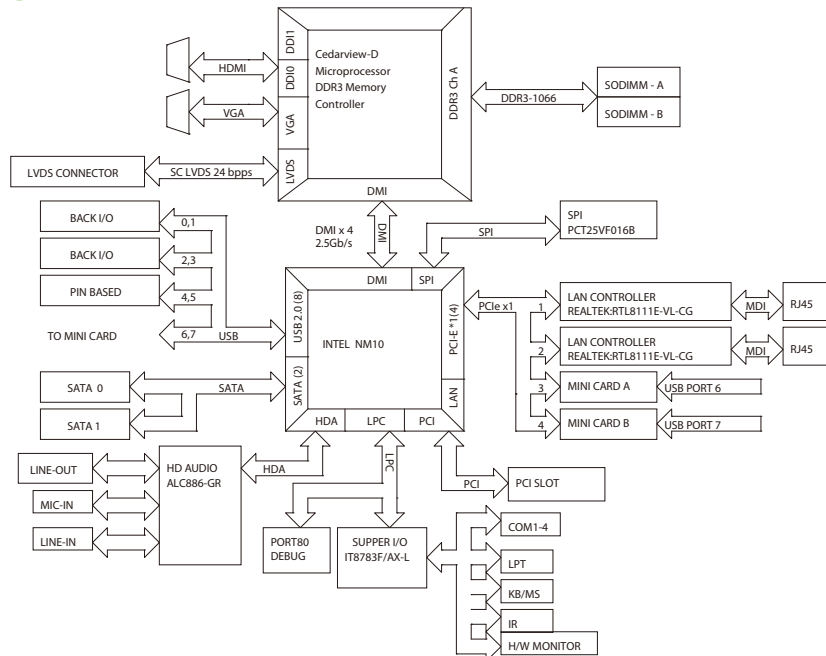- 2x RJ45 with LEDs built-in 2 x dual stackable USB type A connectors on edge I/O

Display
- New 2-chips solution 32nm package Intel® Atom™ processor D2550 integrated 3D graphics engine SGX545, to support up to 640MHz/ DX9, and provides multi-options for high-resolution displays
- Analog VGA interface:
  1x VGA by DB15 connector
  Resolution up to 1920 x 1200 75Hz
- HDMI interface:
  1x HDMI connector
  Resolution up to 1920 x1200
- LVDS interface:
- Single (24-bit) LVDS panel, resolution up to 1440 x 900 by DF13 20-pin LVDS connector
- Inverter (LVDS panel backlight) interface:
  1x 7-pins CCFL for LCD panel backlight inverter
- Audio:
  Realtek ALC886-GR High Definition codec
  1x Mic-in/ 1x Line-out by audio jack on edge I/O and 1x Line-in by internal 4-pins header
- Expansions:
  2x Mini-PCIe (1x full-size/ SIM tray and 1x half-size slots)
  1x PCI slot (32bit/ 33Mhz)

Indutrial Mother Board

NEXCOM

Block Diagram

I/O Interfaces-Front
- Serial port: 4 ports
  COM1, RS232 by DB-9 male on edge I/O
  COM2, 3, 4 ports support 3 x RS232 by three 2x 5-pins box-headers
- USB 2.0: 8 ports
  4x ports by 2 x dual stack USB2.0 on edge I/O (port 0 ~ 3)
  2x ports by 2 x 5-pins header pitch 2.54mm (port 4 ~ 5)
  2x ports to Mini-PCIe slots (port 6, 7)
- 2x 5-pins header for power LED and HDD active LED/ reset/ power on-off
- 2x 4-pins fan connector (for CPU and system)
- 1x 5-pins pin-headers IrDA (Tx/ Rx) and 1 x 4-pins pin-header for SMbus
- 2x 13-pins box-header for legacy parallel port/ LPT

I/O Interfaces- Rare
- 1x 5-pins AT power connectors for DC + 12V input
- 1x dual stack PS2 for keyboard/ mouse
- 1x dual stack DB9 male for COM1 + DB15 female VGA
- 1x HDMI connector
- 2x RJ45 LAN + dual stack USB connectors
- 1x Mic-in/ 1 x Line-out Jack

Watchdog Timer
- Watchdog timeout can be programmable by Software from 1 second to 255 seconds and from 1 minute to 255 minutes (Tolerance 15% under room temperature 25°C)

Storage
- 2x SATA 2.0 ports
- 2x 4-pins power connectors for SATA/ HDD

System Monitor
- Monitoring of 4 voltages and 2 temperatures
- 4 voltage (Vcore, +12V , +3.3V , 5V)
- 2 temperatures (CPU, System)
- 2 fans speed detection

On-board RTC
- On-chip RTC with battery backup
- 1x External Li-Ion battery

Power Input
- Support AT and ATX mode (1 x 3pins) by jumper setting

Power Requirements
- Power requirement: DC +12V Input
- 1x 4-pins Mini-DIN AT power connector on edge I/O,
- One 2 x 2-pins ATX power connector

Dimensions
- Mini-ITX form factor/ 170mm (L) x 170mm (W) (6.7" x 6.7")

Environment
- Operating temperature: -15°C to 60°C
- Storage temperature: -20°C to 85°C
- Relative humidity: Operating 10% to 90%, non-condensing

Certifications
- CE approval
- FCC Class A

Ordering Information

- **NEX 604-2550 (P/N: 10G00060403X0) RoHS Compliant**
  Mini-ITX, embedded Intel® Atom™ Dual-Core D2550/ NM10, 2x DDR3, VGA/ LVDS/ HDMI, 2GbE, 2SATA, 4COM, 6USB, 2mPCIe, PCI and +12VDC input

- **NEX 604/ NEX 605 CPU Cooler (P/N: 5050300517X00)**
  Optional CPU cooler for NEX 604/ NEX 605

Assured Systems

Assured Systems is a leading technology company with over 1,500 regular clients in 80 countries, deploying over 85,000 systems to a diverse customer base in 12 years of business. We offer high-quality and innovative rugged computing, display, networking and data collection solutions to the embedded, industrial, and digital-out-of-home market sectors.

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