



## Main Features

- 3rd generation Intel® Core™ processor family
- Intel® HM76 chipset (QM77 option)
- Two 204-pin SO-DIMM socket supports up to 16GB DDR3 1333/1600 MHz SDRAM
- Display: DVI-I/HDMI/Dual 48bit LVDS (Option LVDS2)
- 1 x Mini-PCIe support mSATA or 3G/SIM, and option TPM
- 4 x SATA with RAID 0,1,5,10
- 2 x Intel® Gbe Ethernet
- 10 x USB, 4-in/4-out GPIO, Mic-in, Line-out
- Serial port: 5 x RS232, 1 x RS232/422/485 port
- Support AT/ATX mode and Dual +12VDC/+24VDC input
- 1 x PCIe16 slot 2 x PCIe1 on edge golden finger

## Product Overview

The NEX 609 is a Mini-ITX board with 3rd generation Intel® Core™ processor family, which supports DDR3 1333/1600 memory, along with Integrated graphics controller, Intel® HD Graphics 4000, along with integrated graphics for large display application to support Multiple Display. Intel® HM76/QM77 chipset provides Four SATA, Six serial ports, Ten USB2.0 ports, two Gigabit Ethernet LAN port, One PCIe16 slot, One Mini-PCIe with 3G/Wi-Fi/MSATA interface, dual 12V/24V input for Kiosk/digital signage/gamming/applications.

## Specifications

### CPU Support

- 3rd generation Intel® Core™ processor

### Main Memory

- Two 204-pin SO-DIMM socket supports up to 16 GB DDR3 1333/1600MHz SDRAM

### Chipset

- Intel® HM76/QM77 chipset (option)

### BIOS

- AMI BIOS
- Plug and play support
- Advanced Power Management
- Advanced Configuration & Power Interface

### On-board LAN

- 2 x Intel® PCI Express Gigabit Ethernet
- Support Boot From LAN (PXE)
- 2 x RJ45 with LED

### Display

- 3rd generation Intel® Core™ processor integrated Intel® HD Graphics 4000 engine, Intel® HD Graphics integrates high-performance graphics and media processing right on the processor ,delivers sophisticated graphics for large display application, three independent display support.
- DVI-I interface: Analog VGA support
- HDMI interface:
  - Resolution:

Up to 2560 x 1600 @60Hz for 1st display port  
Up to 1920 x 1600 @60Hz for 2st display port  
Up to 1920 x 1200 @60Hz for 3st display port

- LVDS1 interface: 48bit LVDS interface, 2 x DF13 20-pin LVDS connector for internal connection. LVDS2 interface (option, Through SDVO w/ CH7308). 48bit LVDS interface, 2 x DF13 20-pin LVDS connector for internal connection.
- CCFL interface: 2 x CCFL for LCD Panel Backlight Inverter with Analog & PWM dimming control.
- Analog VGA interface: 1 x DB15 VGA port, support up to 2048 x 1563 @ 60Hz

### Audio

- Realtek ALC886 CODEC for High Definition
  - 1 x Phone Jack for Mic-in
  - 1 x Phone Jack for Line-out
  - 1 x phone jack for Line-in
  - 1 x 5 pin 2.0 pitch pin header for speak-out

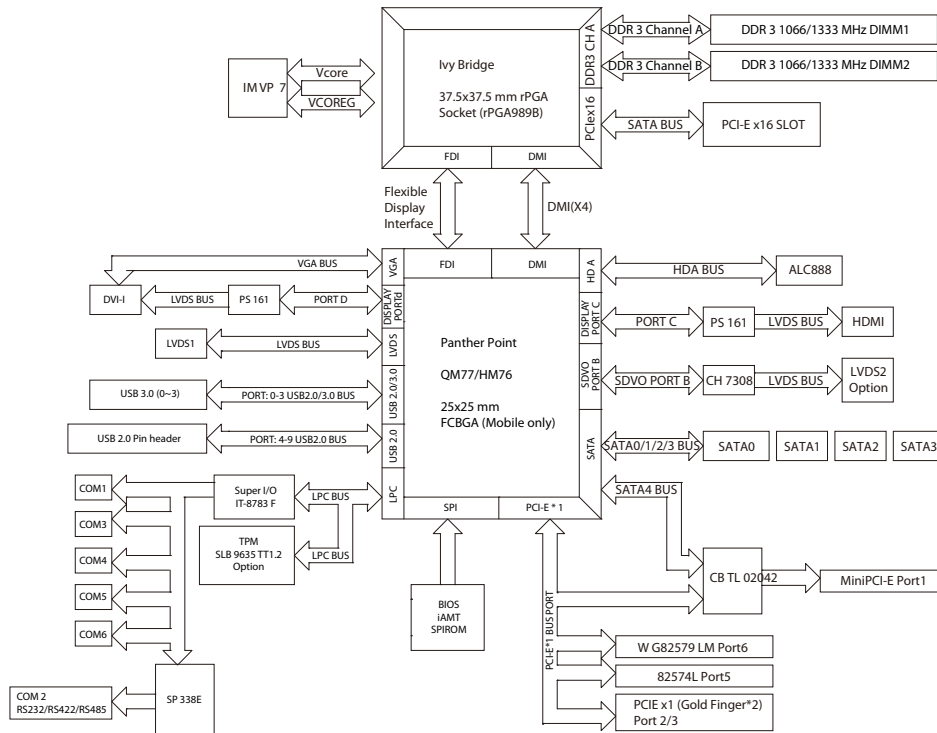
### Expansion

- 1 x Mini-PCIe
- 1 x PCIe16
- 2 x PCIe1 golden finger

### I/O Interface

- Serial port: 6 port

## Block Diagram



- COM1,6: RS232 DB-9 male connector on edge I/O
- COM2: RS232/422/485 DB-9 male connector on edge I/O
- COM3,4,5: RS232 1 x 6 2.0mm JST connector
- USB2.0/3.0: 10 ports
- USB3.0 x4 ports edge connector
- USB2.0 x6 ports by 2.0mm pin connector
- 8 GPIO lines via header (GPI 0 ~ 3 and GP00 ~ 3) TTL Level (0/5 V)
- Onboard Power LED and HDD Active LED Pin Header
- 1 x 4-pin fan connector (for CPU)
- 1 x 3-pin fan connector (for System)
- 1 x Keyboard/Mouse pin header
- On board Buzzer/SMBus2.0/Reset SW/on & Off switch button

### Edge I/O Interface

- 1 x dual stack DB9 male + DB9 male for COM1 & COM2
- 1 x HDMI
- 1 x DVI-I + DB9 male FOR COM6
- 2 x RJ45 + dual stack USB
- 1 x Line-out/Mic-in/Line-in

### 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

- 4 x SATA port with RAID 0, 1, 5, 10 function. (option)

### System Monitor

- Monitoring of 4 voltages and 2 temperatures and 2 Fans speed detection
- 4 Voltage (Vcore, +12V, +3.3V, 5V)
- 2 Temperatures (CPU, System)
- 2 Fan Speed detection

### On-board RTC

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

### Power Input

- Support AT and ATX mode

### Power Requirements

- Power requirement: Dual +12V & 24V DC Input
- One 4-pin power connector

### Dimensions

- Mini-ITX M/B form factor
- 170mm (L) x 170mm (W)

### Environment

- Operating temperatures: 0°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 609 (P/N: 10G00060900X0) RoHS Compliant**  
Mini ITX, Intel® 3rd generation Intel® Core™ processor family with DVI-I/HDMI/Two 48-bit LVDS interface/2 x Gigabit LAN/10 x USB/6 x COMs/TPM (option)/MSATA/Dual 12 & 24 Power input)
- CPU Cooler For NEX 609 (P/N: 5050300544X00)**  
Optional CPU cooler for NEX 609 rPGA 988 socket