Features

CHIPSET
- Intel® QM77

CPU
- 3rd Generation Intel® Core™ processors
- 2nd Generation Intel® Core™ processors

MEMORY
- 2 DDR3/DDR3L SODIMM up to 16GB
- 1 PCi e x16, 7 PCIe x1

EXPANSION
- 1 LPC
- 1 VGA, 1 LVDS, DDI
- 12 USB: 4 USB 3.0, 8 USB 2.0
- 4 SATA: 2 SATA 3.0, 2 SATA 2.0
- 4-bit input and 4-bit output GPIO

LAN
- 1 Gigabit LAN interface

DIMENSIONS
- 95mm x 125mm (3.74" x 4.9")

Mechanical Drawing

Block Diagram

CPU Fan

Socket G2

988B

DDR3_2 SODIMM

DDR3_1 SODIMM

Intel QM77

CPU Fan

Module PCB

Carrier Board

Standoff

3.50

2.00

1.60

5.0 or 8.0 mm

Cooler

Module PCB

The height of the highest parts

Carrier Board

2.70 (*7 pcs)
Specifications

PROCESSOR
- Socket G2 988B for:
  - 3rd Generation Intel® Core™ processors (22nm process technology)
    : Intel® Core™ i7-3610QE (6M Cache, up to 3.3 GHz); 45W
    : Intel® Core™ i5-3610ME (3M Cache, up to 3.3 GHz); 35W
    : Intel® Core™ i3-3120ME (3M Cache, 2.4 GHz); 35W
  - 2nd Generation Intel® Core™ processors (32nm process technology)
    : Intel® Core™ i7-2710QE (6M Cache, up to 3.0 GHz); 45W
    : Intel® Core™ i5-2510E (3M Cache, up to 3.1 GHz); 35W
    : Intel® Core™ i3-2330E (3M Cache, 2.2 GHz); 35W
    : Intel® Celeron® B810 (2M Cache, 1.6 GHz); 35W

CHIPSET
- Intel® QM77 Express chipset

SYSTEM MEMORY
- Two 204-pin SODIMM sockets
- Supports DDR3 SODIMM

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<th>3rd Generation Processors</th>
<th>2nd Generation Processors</th>
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<td>DDR3 1066/1333/1600MHz</td>
<td>DDR3 1066/1333MHz (i5/i3/Celeron)</td>
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- Supports DDR3L SODIMM
  - 1066/1333/1600MHz when operating at 1.35V
  - 1066/1333/1600MHz when operating at 1.5V
- Supports dual channel memory interface
- Supports up to 16GB system memory
- DRAM device technologies: 1Gb, 2Gb and 4Gb DDR3 DRAM technologies are supported for x8 and x16 devices, unbuffered, non-ECC

ONBOARD GRAPHICS FEATURES
- Intel® HD Graphics 4000
- Supports LVDS and VGA interfaces
- Display resolution up to 1920x1200
- LVDS: Single Channel - 18/24-bit; Dual Channel - 36/48-bit
- Intel® Clear Video Technology
- DirectX Video Acceleration (DXVA) for accelerating video processing
- Full AVC/VVC/HEVC HW Decode
- Supports DirectX 11/10/11/9 and OpenGL 3.0

ONBOARD AUDIO FEATURES
- Supports High Definition Audio interface

ONBOARD LAN FEATURES
- Intel® 82579LM Gigabit Ethernet PHY
- Integrated 10/100/1000 transceiver
- Fully compliant with IEEE 802.3, IEEE 802.3u, IEEE 802.3ab

SERIAL ATA (SATA) INTERFACE
- Supports 4 Serial ATA Interfaces
- 2 SATA 3.0 with data transfer rate up to 6Gb/s
- 2 SATA 2.0 with data transfer rate up to 3Gb/s
- Integrated Advanced Host Controller Interface (AHCI) controller
- Supports RAID 0/1/5/10

USB INTERFACE
- XHCI Host Controller supports up to 4 super speed USB 3.0 ports

DIGITAL DISPLAY INTERFACE (DDI)
- Digital Display Interfaces: HDMI, DVI, DisplayPort, and SDVO

WATCHDOG TIMER
- Watchdog timeout programmable via software from 1 to 255 seconds

SSD (optional)
- 4GB/8GB/16GB/32GB
- Write: 30MB/sec (max), Read: 70MB/sec (max)
- SATA to SSD onboard

TRUSTED PLATFORM MODULE (TPM) - optional
- Provides a Trusted PC for secure transactions
- Provides software license protection, enforcement and password protection

EXPANSION INTERFACES
- Supports 12 USB interfaces
  - 4 USB 3.0
  - 8 USB 2.0
- Supports 1 PCIe x16 interface
- Supports Gen 3.0 (3rd generation processors)
- Supports Gen 2.0 (2nd generation processors)
- Configurations (supported only via a riser card):
  : One x8 (GFX) and two x4 (I/O)
  : Two x8 (GFX, I/O)
  : One x16 (GFX, I/O)
- Supports 1 PCIe x4 and 3 PCIe x1 interfaces
- Supports Digital Display Interfaces: HDMI, DVI, DisplayPort, and SDVO
- Supports LPC interface
- Supports 4-bit input and 4-bit output GPIO

DAMAGE FREE INTELLIGENCE
- Detects CPU temperature
- Detects CPU fan speed
- Detects Vcore/VGFX/DDR voltages
- Watchdog timer function

BIOS
- 64Mbit SPI BIOS

POWER CONSUMPTION
- 63.06 W with i7-3610QE at 2.30GHz and 2x 2GHz DDR3 SODIMM

TEMPERATURE
- Operating: 0°C to 60°C
- Storage: -20°C to 85°C

HUMIDITY
- 10% to 90%

POWER
- Input: 5VSB (option), 12V, VCC_RTC

PCB
- Dimensions
  - COM Express® Basic
  - 95mm (3.74”) x 125mm (4.9”)
- Compliance
  - PIcMG COM Express® R2.1 basic form factor, Type 6

CERTIFICATIONS
- CE
- FCC Class B
- RoHS
- UL

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Packing List
- 1 CR901-B board
- 1 Heat sink kit
- 1 QR (Quick Reference)
- 1 DVD

Optional Items
- COM331-B carrier board kit
- Cable kit for carrier board

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