**Features**

<table>
<thead>
<tr>
<th>MEMORY</th>
<th>2 DDR3L SODIMM up to 16GB</th>
</tr>
</thead>
<tbody>
<tr>
<td>EXPANSION</td>
<td>1 PCIe x16, 7 PCIe x1</td>
</tr>
<tr>
<td></td>
<td>1 LPC, 1 I²C, 1 SMBus, 2 serial</td>
</tr>
<tr>
<td></td>
<td>1 VGA, 1 LVDS, 3 DDI (HDMI/DVI/DP)</td>
</tr>
<tr>
<td></td>
<td>12 USB: 4 USB 3.0, 8 USB 2.0</td>
</tr>
<tr>
<td></td>
<td>4 SATA 3.0</td>
</tr>
<tr>
<td>SSD (optional)</td>
<td>4-bit input and 4-bit output GPIO</td>
</tr>
<tr>
<td>LAN</td>
<td>1 LAN</td>
</tr>
<tr>
<td>DIMENSIONS</td>
<td>COM Express® R2.1 Basic, Type 6</td>
</tr>
<tr>
<td></td>
<td>95mm x 125mm (3.74&quot; x 4.9&quot;)</td>
</tr>
</tbody>
</table>

**Mechanical Drawing**

**Block Diagram**
Specifications

**PROCESSOR**
- 4th generation Intel® Core™ processors
- BGA 1364 packaging technology
- 22nm process technology

**CHIPSET**
- Intel® QM87 Express Chipset

**SYSTEM MEMORY**
- Two 204-pin DDR3L SODIMM sockets
- Supports DDR3L 1333/1600MHz SODIMM
- Supports up to 16GB system memory
- DDR3L DRAM device technologies: 1Gb, 2Gb and 4Gb
- DDR3L DRAM technologies are supported for x8 and x16 devices, unbuffered, non-ECC

**ONBOARD GRAPHICS FEATURES**
- Intel® HD Graphics 4600
- Supports 1 VGA, 1 LVDS and 3 DDI
- VGA: resolution up to 2048x1536 @ 75Hz
- LVDS: NXP PTN3460, 24-bit, dual channel, resolution up to 1920x1200 @ 60Hz
- Digital Display Interface: HDMI, DVI and DP
- HDMI: resolution up to 4096x2304 @ 24Hz or 2560x1600 @ 60Hz
- DVI: resolution up to 1920x1200 @ 60Hz
- DP: resolution up to 3840x2160 @ 60Hz
- Intel® Clear Video Technology
- Intel® Advanced Vector Extensions (Intel® AVX) Instructions
- Supports DirectX 11.1, OpenGL 3.2, OpenCL 1.2

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

**ONBOARD AUDIO FEATURES**
- Supports High Definition Audio interface

**ONBOARD LAN FEATURES**
- Intel® 1217LM with IAM9.0 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 SATA 3.0 with data transfer rate up to 6Gb/s
- Integrated Advanced Host Controller Interface (AHCI) controller
- Supports RAID 0/1/5/10
- Supports Intel® Smart Response Technology

**OS SUPPORT**
- Windows XP Professional x64 & SP2 (64-bit)
- Windows XP Professional x86 & SP3 (32-bit)
- Windows 7 Ultimate x64 & SP1 (64-bit)
- Windows 7 Ultimate x86 & SP1 (32-bit)
- Windows 8 Enterprise x64 (64-bit)
- Windows 8 Enterprise x86 (32-bit)

**PCB**
- Dimensions
  - COM Express® Basic
  - 95mm (3.74”) x 125mm (4.9”)
- Compliance
  - PICMG COM Express® R2.1, Type 6

**POWER**
- Input: 12V, VCC_RTC, 5VSB (option)
- Software programmable from 1 to 255 seconds

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

**EXPRESSION INTERFACES**
- Supports 4 USB 3.0 interfaces
- Supports 8 USB 2.0 interfaces
- Supports 1 PCIe x16 Gen 3 interface
- Supports 7 PCIe x1 interfaces
- Supports LPC interface
- Supports SMBus interface
- Supports I²C interface
- Supports 2 serial interfaces (TX/RX)
- Supports 4-bit input and 4-bit output GPIO

**BIOS**
- AMI BIOS
  - 64Mbit SPI BIOS

**WATCHDOG TIMER**
- Software programmable from 1 to 255 seconds

**HUMIDITY**
- 5% to 90%

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

**POWER CONSUMPTION**
- TBD

**DAMAGE FREE INTELLIGENCE**
- Monitors CPU temperature and overheat alarm
- Monitors CPU fan speed and failure alarm
- Monitors Vcore/1.05V/DDR voltages and failure alarm

**SOFTWARE**
- Windows 8.1/10 Enterprise with all latest service packs

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

**EXPANSION INTERFACES**
- Supports 4 USB 3.0 interfaces
- Supports 8 USB 2.0 interfaces
- Supports 1 PCIe x16 Gen 3 interface
- Supports 7 PCIe x1 interfaces
- Supports LPC interface
- Supports SMBus interface
- Supports I²C interface
- Supports 2 serial interfaces (TX/RX)
- Supports 4-bit input and 4-bit output GPIO

**BIOS**
- AMI BIOS
  - 64Mbit SPI BIOS

**WATCHDOG TIMER**
- Software programmable from 1 to 255 seconds

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

**POWER CONSUMPTION**
- TBD

**SOFTWARE**
- Windows 8.1/10 Enterprise with all latest service packs

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

**EXPANSION INTERFACES**
- Supports 4 USB 3.0 interfaces
- Supports 8 USB 2.0 interfaces
- Supports 1 PCIe x16 Gen 3 interface
- Supports 7 PCIe x1 interfaces
- Supports LPC interface
- Supports SMBus interface
- Supports I²C interface
- Supports 2 serial interfaces (TX/RX)
- Supports 4-bit input and 4-bit output GPIO

**BIOS**
- AMI BIOS
  - 64Mbit SPI BIOS

**WATCHDOG TIMER**
- Software programmable from 1 to 255 seconds

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

**POWER CONSUMPTION**
- TBD

**SOFTWARE**
- Windows 8.1/10 Enterprise with all latest service packs

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

**EXPANSION INTERFACES**
- Supports 4 USB 3.0 interfaces
- Supports 8 USB 2.0 interfaces
- Supports 1 PCIe x16 Gen 3 interface
- Supports 7 PCIe x1 interfaces
- Supports LPC interface
- Supports SMBus interface
- Supports I²C interface
- Supports 2 serial interfaces (TX/RX)
- Supports 4-bit input and 4-bit output GPIO

**BIOS**
- AMI BIOS
  - 64Mbit SPI BIOS

**WATCHDOG TIMER**
- Software programmable from 1 to 255 seconds

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

**POWER CONSUMPTION**
- TBD

**SOFTWARE**
- Windows 8.1/10 Enterprise with all latest service packs

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

**EXPANSION INTERFACES**
- Supports 4 USB 3.0 interfaces
- Supports 8 USB 2.0 interfaces
- Supports 1 PCIe x16 Gen 3 interface
- Supports 7 PCIe x1 interfaces
- Supports LPC interface
- Supports SMBus interface
- Supports I²C interface
- Supports 2 serial interfaces (TX/RX)
- Supports 4-bit input and 4-bit output GPIO

**BIOS**
- AMI BIOS
  - 64Mbit SPI BIOS

**WATCHDOG TIMER**
- Software programmable from 1 to 255 seconds

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

**POWER CONSUMPTION**
- TBD

**SOFTWARE**
- Windows 8.1/10 Enterprise with all latest service packs

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

**EXPANSION INTERFACES**
- Supports 4 USB 3.0 interfaces
- Supports 8 USB 2.0 interfaces
- Supports 1 PCIe x16 Gen 3 interface
- Supports 7 PCIe x1 interfaces
- Supports LPC interface
- Supports SMBus interface
- Supports I²C interface
- Supports 2 serial interfaces (TX/RX)
- Supports 4-bit input and 4-bit output GPIO

**BIOS**
- AMI BIOS
  - 64Mbit SPI BIOS

**WATCHDOG TIMER**
- Software programmable from 1 to 255 seconds

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

**POWER CONSUMPTION**
- TBD

**SOFTWARE**
- Windows 8.1/10 Enterprise with all latest service packs