

## Features

|                 |   |
|-----------------|---|
| CHIPSET         | <b>Intel® H81</b>                             |
| CPU             | <b>4th Generation Intel® Core™ processors</b> |
| MEMORY          | <b>2 DDR3/DDR3L DIMM up to 16GB</b>           |
| EXPANSION       | <b>1 PCIe x16<br/>1 PCIe x4<br/>5 PCI</b>     |
| DISPLAY OUTPUTS | <b>1 VGA, 1 DVI-D</b>                         |
| LAN             | <b>2 Gigabit LAN ports</b>                    |
| COM             | <b>10 COM</b>                                 |
| USB             | <b>9 USB: 2 USB 3.0, 7 USB 2.0</b>            |
| STORAGE         | <b>4 SATA: 2 SATA 3.0, 2 SATA 2.0</b>         |
| PARALLEL        | <b>1 Parallel</b>                             |
| DIO             | <b>8-bit DIO</b>                              |



**Vertical USB port for securing USB flash drive**

## Specifications

### 4th Generation Intel® Core™ Processors

**PROCESSOR**  
 • LGA 1150 socket for:  
 - 4th Generation Intel® Core™ processors (22nm process technology)  
 : Intel® Core™ i3-4330 (3M Cache, 3.5 GHz); 54W  
 : Intel® Core™ i3-4330TE (3M Cache, up to 2.4 GHz); 35W  
 : Intel® Pentium® G3420 (3M Cache, 3.2 GHz); 54W  
 : Intel® Pentium® G3320TE (3M Cache, 2.3 GHz); 35W

**CHIPSET**  
 • Intel® H81 Express Chipset

**SYSTEM MEMORY**  
 • Two 240-pin DDR3/DDR3L DIMM sockets  
 • Supports DDR3/DDR3L 1066/1333/1600MHz  
 • 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

**EXPANSION SLOTS**  
 • 1 PCIe x16 Gen 2 slot (PCIe 2.0)  
 • 1 PCIe x4 Gen 2 slot (PCIe 2.0)  
 • 5 PCI slots (PCI 2.3)

**ONBOARD GRAPHICS FEATURES**  
 • Intel® HD Graphics  
 • Display ports: VGA and DVI-D  
 • VGA and DVI-D supports up to 1920x1200 @ 60Hz resolution  
 • Supports 6 Graphics Execution Units (EUs)  
 • Intel® Clear Video Technology  
 • DirectX Video Acceleration (DXVA) support for accelerating video processing

**ONBOARD AUDIO FEATURES**  
 • Realtek ALC886 5.1-channel High Definition Audio  
 • Audio outputs: Mic-in/Center+Subwoofer, line-in/surround and line out  
 • S/PDIF audio interface

**ONBOARD LAN FEATURES**  
 • 2 Intel® I210 PCI Express Gigabit Ethernet controllers  
 • Integrated 10/100/1000 transceiver  
 • Fully compliant with IEEE 802.3, IEEE 802.3u, IEEE 802.3ab

**SERIAL ATA (SATA) INTERFACE**  
 • 2 SATA 3.0 ports with data transfer rate up to 6Gb/s  
 • 2 SATA 2.0 ports with data transfer rate up to 3Gb/s  
 • Integrated Advanced Host Controller Interface (AHCI) controller

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

**REAR PANEL I/O PORTS**  
 • 1 mini-DIN-6 port for PS/2 mouse/keyboard  
 • 2 DB-9 RS232 serial ports (RS232 and/or power)  
 • 1 DVI-D port  
 • 1 DVI-D port  
 • 2 RJ45 LAN ports  
 • 2 USB 3.0/2.0/1.1 ports  
 • 4 USB 2.0/1.1 ports  
 • Line-in/Surround, Line out, Mic-in/Center+Subwoofer jacks

**I/O CONNECTORS**  
 • 1 connector for 2 external USB 2.0/1.1 ports  
 • 1 vertical USB 2.0/1.1 port  
 • 1 8-bit Digital I/O connector  
 • 8 connectors for 8 external serial ports  
 - 7 RS232 (4 are optional)  
 - 1 RS422/485  
 • 1 front audio connector for line-out and mic-in jacks  
 • 1 S/PDIF connector  
 • 1 parallel port  
 • 4 Serial ATA ports  
 • 1 24-pin ATX power connector  
 • 1 8-pin 12V power connector  
 • 1 chassis intrusion connector  
 • 1 front panel connector  
 • 3 fan connectors

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

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

**ENERGY EFFICIENT DESIGN**  
 • Supports ErP Lot6 power saving (optional)  
 • Supports ACPI  
 • System Power Management  
 • Wake-On-Events include:  
 - Wake-On-PS/2 KB/Mouse  
 - Wake-On-USB KB/Mouse  
 - Wake-On-LAN  
 - RTC timer to power-on the system  
 • CPU stopped clock control  
 • AC power failure recovery

**DAMAGE FREE INTELLIGENCE**  
 • Monitors CPU/system temperature and overheat alarm  
 • Monitors Vcore/5V/3.3V/V\_DIMM/12V/5VSB voltages and failure alarm  
 • Monitors CPU/system fan speed and failure alarm  
 • Read back capability that displays temperature, voltage and fan speed

**POWER CONSUMPTION**  
 • TBD

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

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

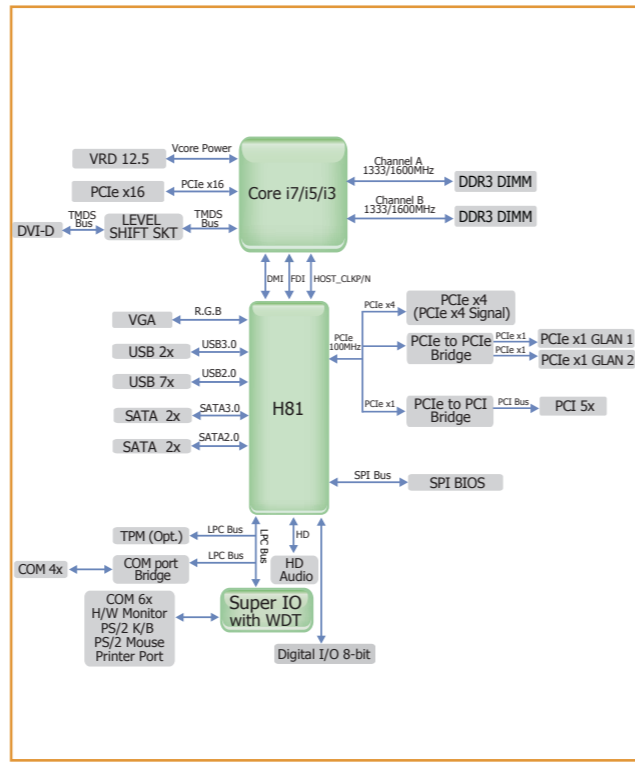
**HUMIDITY**  
 • 5% to 90%

**DIMENSIONS**  
 • ATX form factor  
 • 305mm (12") x 244mm (9.6")

## Mechanical Drawing



## Block Diagram



## Packing List

- 1 HD632 motherboard
- 1 Serial ATA data cable
- 1 I/O shield
- 1 DVD
- 1 QR (Quick Reference)

## Optional Items

- USB port cable
- COM port cable
- Serial ATA data cable
- Serial ATA power cable
- I/O shield