



**Features**

PROCESSOR	4th Generation Intel® Core™	LAN	2 LAN
CHIPSET	Intel® H81	COM	6 COM
MEMORY	2 DDR3 DIMM up to 16GB	USB	8 USB: 2 USB 3.0, 6 USB 2.0
EXPANSION	1 PCIe x16	PARALLEL	1 Parallel
	1 PCIe x4 (x1 signal)	STORAGE	4 SATA: 2 SATA 3.0, 2 SATA 2.0
	1 PCIe x1	DIO	8-bit DIO
	4 PCI		
	1 Mini PCIe		
DISPLAY OUTPUTS	1 HDMI, 1 DVI-I		

**Product available until Q3 2020**

**Specification**

**PROCESSOR**

- LGA 1150 socket for:
- 4th Generation Intel® Core™ processors (22nm process technology)
- : Intel® Core™ i7-4790S (8M Cache, up to 4.0 GHz); 65W
- : Intel® Core™ i7-4770S (8M Cache, up to 3.9 GHz); 65W
- : Intel® Core™ i7-4770TE (8M Cache, up to 3.3 GHz); 45W
- : Intel® Core™ i5-4590S (6M Cache, up to 3.7 GHz); 65W
- : Intel® Core™ i5-4590T (6M Cache, up to 3.0 GHz); 35W
- : Intel® Core™ i5-4570S (6M Cache, up to 3.6 GHz); 65W
- : Intel® Core™ i5-4570TE (4M Cache, up to 3.3 GHz); 35W
- : Intel® Core™ i3-4360 (4M Cache, 3.7 GHz); 54W
- : Intel® Core™ i3-4350T (4M Cache, 3.1 GHz); 35W
- : Intel® Core™ i3-4340TE (4M Cache, 2.6 GHz); 35W
- : Intel® Core™ i3-4330 (4M Cache, 3.5 GHz); 54W
- : Intel® Core™ i3-4330TE (4M Cache, 2.4 GHz); 35W
- : Intel® Pentium® G3420 (3M Cache, 3.2 GHz); 53W
- : Intel® Pentium® G3320TE (3M Cache, 2.3 GHz); 35W
- : Intel® Celeron® G1820 (2M Cache, 2.7 GHz); 53W
- : Intel® Celeron® G1820TE (2M Cache, 2.2 GHz); 35W

**CHIPSET**

- Intel® H81 Express Chipset

**SYSTEM MEMORY**

- Two 240-pin DDR3 DIMM sockets
- Supports DDR3 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 3 slot (PCIe 3.0)
- 1 PCIe x4 Gen 2 slot (PCIe 2.0) - x1 signal
- 1 PCIe x1 Gen 2 slot (PCIe 2.0)
- 4 PCI slots (PCI 2.3)
- 1 Mini PCIe slot
- Supports USB and PCIe signals
- Supports mSATA
- Supports half size and/or full size Mini PCIe card

**ONBOARD GRAPHICS FEATURES**

- Intel® HD Graphics
- Display ports: 1 HDMI, 1 DVI-I
- DVI-I: resolution up to 1920x1200 @ 60Hz
- HDMI: resolution up to 4096x2304 @ 24Hz or 2560x1600 @ 60Hz
- VGA: 24-bit, resolution up to 1920x1200 @ 60Hz
- 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**

- Intel® I210 PCI Express Gigabit Ethernet controller
- Intel® I217LM Gigabit Ethernet Phy
- 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
- SATA port 5 provides adequate space for SATA DOM
- Integrated Advanced Host Controller Interface (AHCI) controller

**TRUSTED PLATFORM MODULE (TPM)\***

- Provides a Trusted PC for secure transactions
- Provides software license protection, enforcement and password protection

**USB INTERFACE**

- XHCI Host Controller supports up to 2 super speed USB 3.0 ports

**REAR PANEL I/O PORTS**

- 1 mini-DIN-6 port for PS/2 mouse/keyboard
- 2 DB-9 RS232/422/485 serial ports (RS232 and/or Power)
- 1 HDMI port
- 1 DVI-I 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 or 1 vertical USB 2.0/1.1 port\*
- 4 connectors for 4 external RS232 serial ports (2.0mm pitch)
- 1 8-bit Digital I/O connector
- 1 front audio connector for line-out and mic-in jacks
- 1 S/PDIF connector
- 1 LPC 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\*
- 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**

- 49.85W with i7-4770S at 3.10GHz and 2x 2GB DDR3 DIMM

**OS SUPPORT**

- Windows XP Professional x86 & SP3 (32-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)
- (based on Intel's Windows XP support list)

**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")

**Motherboards integrated into Rackmount, Wallmount, Desktop or Tower Solution. Contact Sales for further information**