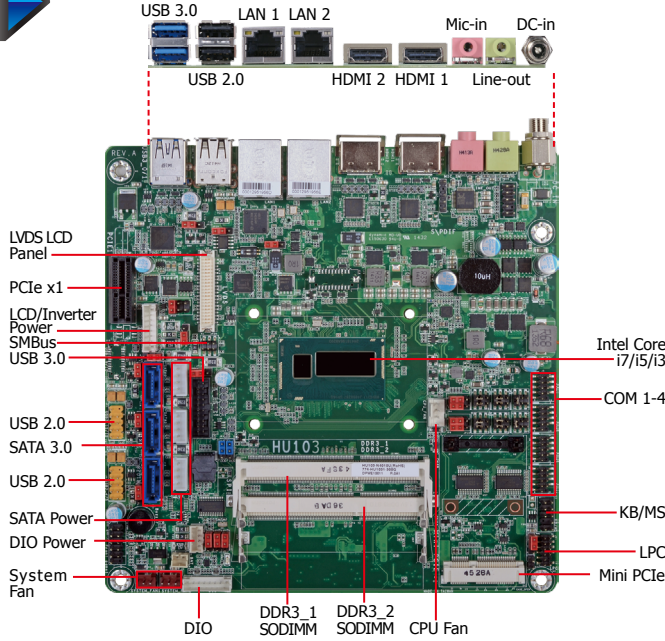




# HU101/HU103

ULT



\* The photos above refer to HU103.



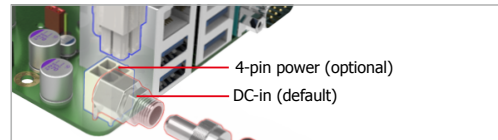
Model Name	Power
HU101	12V DC-in
HU103	19~24V DC-in

## Features

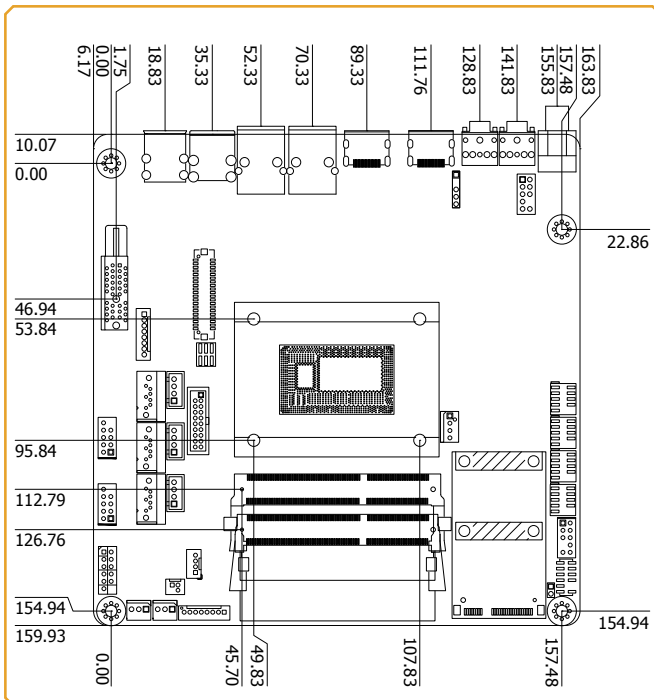
MEMORY	2 DDR3L SODIMM up to 16GB
EXPANSION	1 PCIe x1 1 Mini PCIe
DISPLAY OUTPUTS	2 HDMI, 1 LVDS or 1 eDP
LAN	2 LAN
COM	4 COM
USB	10 USB: 4 USB 3.0, 6 USB 2.0
STORAGE	3 SATA 3.0
DIO	8-bit DIO



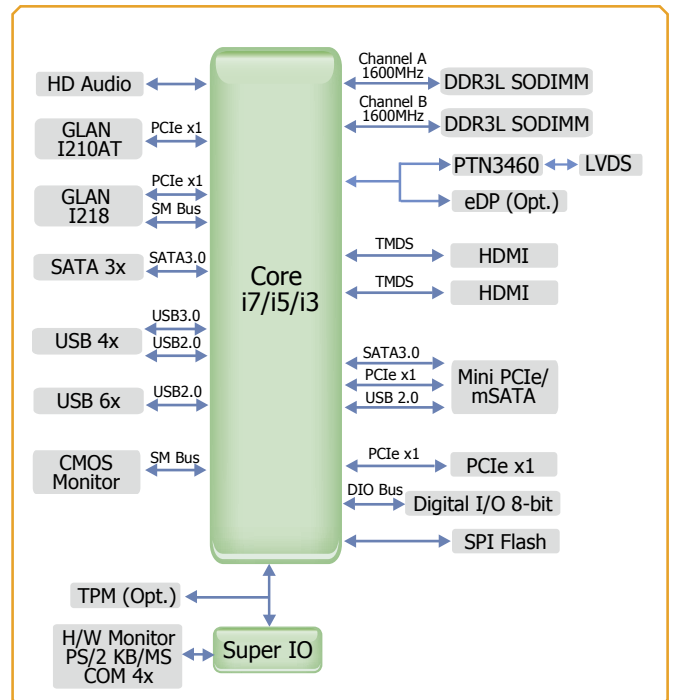
## Power Connector



## Mechanical Drawing



## Block Diagram



# HU101/HU103

**► Specifications** \* Optional and is not supported in standard model. Please contact your sales representative for more information.

**PROCESSOR**

- 4th generation Intel® Core™ processors
- BGA 1168 packaging technology
- 22nm process technology
- Please refer to the Ordering Information below*

**SYSTEM MEMORY**

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

**EXPANSION SLOTS**

- 1 PCIe x1 slot
- 1 Mini PCIe slot
  - Supports USB and PCIe signals
  - Supports mSATA
  - Supports full size Mini PCIe card

**ONBOARD GRAPHICS FEATURES**

- Intel® HD Graphics GT series
- Display ports: 2 HDMI, 1 LVDS (default) or 1 eDP\*
- HDMI: resolution up to 4096x2304 @ 24Hz or 2560x1600 @ 60Hz
- LVDS: NXP PTN3460, 24-bit, dual channel, resolution up to 1920x1200 @ 60Hz
- eDP: resolution up to 3200 x 2000 @ 60Hz
- Intel® Clear Video Technology
- Intel® Advanced Vector Extensions 2.0 (Intel® AVX 2.0) Instructions
- Supports DirectX 11.1, OpenGL 4.0, OpenCL 1.2

**ONBOARD AUDIO FEATURES**

- Realtek ALC888 5.1-channel High Definition Audio
- S/PDIF audio interface

**ONBOARD LAN FEATURES**

- Intel® I210 PCI Express Gigabit Ethernet controller
- Intel® I218 with iAMT9.5 Gigabit Ethernet Phy
- Integrated 10/100/1000 transceiver
- Fully compliant with IEEE 802.3, IEEE 802.3u, IEEE 802.3ab

**SERIAL ATA INTERFACE**

- 3 SATA 3.0 ports with data transfer rate up to 6Gb/s
  - SATA port 0 provides adequate space for SATA DOM
- Integrated Advanced Host Controller Interface (AHCI) controller
- Supports RAID 0/1/5
- Supports Intel® Smart Response Technology

**INTEL ACTIVE MANAGEMENT TECHNOLOGY (AMT)**

- Supports iAMT9.5
- Out-of-band system access
- Remote troubleshooting and recovery
- Hardware-based agent presence checking
- Proactive alerting
- Remote hardware and software asset tracking

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

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

**WATCHDOG TIMER**

- Watchdog timeout programmable via software from 1 to 255 seconds

**REAR PANEL I/O PORTS**

- 1 12V (HU101) or 19~24V (HU103) DC-in jack or 4-pin power connector\*
- 2 HDMI ports
- 2 RJ45 LAN ports
- 2 USB 2.0 ports
- 2 USB 3.0 ports
- Line-out and mic-in jacks

**► Ordering Information**

Model Name	Processor	SODIMM	RS232	RS232/422/485	Power	Thermal	Temperature
<b>HU101-N4650U</b>	Intel® Core™ i7-4650U, 4M Cache, 1.7GHz (3.3GHz), 15W	2 (16GB)	2	2	12V DC-in	Cooler	0°C to 60°C
<b>HU101-N4300U</b>	Intel® Core™ i5-4300U, 3M Cache, 1.9GHz (2.9GHz), 15W	2 (16GB)	2	2	12V DC-in	Cooler	0°C to 60°C
<b>HU101-N4010U</b>	Intel® Core™ i3-4010U, 3M Cache, 1.7GHz, 15W	2 (16GB)	2	2	12V DC-in	Cooler	0°C to 60°C
<b>HU101-N2980U</b>	Intel® Celeron® 2980U, 2M Cache, 1.6GHz, 15W	2 (16GB)	2	2	12V DC-in	Cooler	0°C to 60°C
<b>HU103-N4650U</b>	Intel® Core™ i7-4650U, 4M Cache, 1.7GHz (3.3GHz), 15W	2 (16GB)	2	2	19~24V DC-in	Cooler	0°C to 60°C
<b>HU103-N4300U</b>	Intel® Core™ i5-4300U, 3M Cache, 1.9GHz (2.9GHz), 15W	2 (16GB)	2	2	19~24V DC-in	Cooler	0°C to 60°C
<b>HU103-N4010U</b>	Intel® Core™ i3-4010U, 3M Cache, 1.7GHz, 15W	2 (16GB)	2	2	19~24V DC-in	Cooler	0°C to 60°C
<b>HU103-N2980U</b>	Intel® Celeron® 2980U, 2M Cache, 1.6GHz, 15W	2 (16GB)	2	2	19~24V DC-in	Cooler	0°C to 60°C

**► Packing List**

- 1 HU101/HU103 motherboard
- 1 Serial ATA data with power cable: A81-002013-000G
- 1 DVD
- 1 Heat sink with fan: A71-114001-000G

**I/O CONNECTORS**

- 2 connectors for 4 external USB 2.0 ports; or
- 3 connectors for 6 external USB 2.0 ports\*
- 1 connector for 2 external USB 3.0 ports
- 1 vertical USB 2.0/1.1 port\*
- 4 connectors for 4 external serial ports (2.0mm pitch)
  - 2 RS232/422/485 (RS232 and/or power)
  - 2 RS232
- 1 LVDS LCD panel connector
- 1 LCD/inverter power connector
- 1 eDP connector\*
  - EXT-DP riser card supports 1 external DP port\*
- 1 8-bit DIO connector
- 1 DIO power connector
- 1 front audio connector for line-out and mic-in jacks
- 1 S/PDIF connector
- 1 PS/2 connector for keyboard/mouse port
- 1 LPC connector
- 1 SMBus connector
- 3 Serial ATA connectors
- 3 Serial ATA power connectors
- 1 front panel connector
- 1 chassis intrusion connector
- 3 fan connectors

**BIOS**

- AMI BIOS
- 64Mbit SPI BIOS

**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
- AC power failure recovery

**DAMAGE FREE INTELLIGENCE**

- Monitors CPU/system temperature and overheat alarm
- Monitors VCore/12V/5V/DDR voltages and failure alarm
- Monitors CPU/system fan speed and failure alarm
- Read back capability that displays temperature, voltage and fan speed

**POWER CONSUMPTION**

- HU101-N4650U: 35.42W with i7-4650U at 1.7GHz and 2x 2GB DDR3L SODIMM

**OS SUPPORT**

- 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)
- Windows 8.1 Enterprise x86 (32-bit)
- Windows 8.1 Enterprise x64 (64-bit)

**TEMPERATURE**

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

**HUMIDITY**

- 5% to 90%

**DIMENSIONS**

- Mini-ITX form factor
- 170mm (6.7") x 170mm (6.7")

**CERTIFICATION**

- CE, FCC Class B, RoHS, UL

**► Optional Items**

- USB port cable: 332-253010-026G
- COM port cable: A81-015001-001G
- Serial ATA data with power cable: A81-002013-001G
- Power adapter (100W, 12V, Level 6) : 671-110002-100G
- Power adapter (120W, 19V, Level 6) : 671-110003-100G
- EXT-DP riser card: 770-EXTDP1-000G
- I/O Shield: A49-HU1011-000G