AmITX-HL-G

Mini-ITX Embedded Board with Intel® 4th Gen Core™ i7/i5/i3 Desktop Processor

Features

- 4th generation Intel® Core™ i7/i5/i3 Desktop Processor with Intel® Q87/H81 Chipset
- Up to 16 GB dual SODIMM DDR3/DDR3L at 1666/1333 MHz
- PCIe x16, PCIe x1 and Mini PCIe expansion
- 3 DisplayPort outputs on rear IO
- Supports Smart Embedded Management Agent (SEMA®) functions



Specifications

Processor & System

CPU

Socket H3 LGA1150 supporting 4th generation Intel® Core™ i7/i5/i3 and Intel® Pentium®/Celeron® processors up to 65W

Intel® Core™ i7-4770S Processor 3.1 GHz 4C, 65W
Intel® Core™ i7-4770TE Processor 2.3 4C, 45W
Intel® Core™ i5-4570S Processor 2.9 GHz 4C, 65W
Intel® Core™ i5-4570TE Processor 2.7 GHz 2C, 35W
Intel® Core™ i3-4330 Processor 3.5 GHz 2C, 54W
Intel® Core™ i3-4330TE Processor 2.4 GHz 2C, 35W
Intel® Pentium® G3420 3.2GHz, 2C, 3M, 54W
Intel® Pentium® G3320TE 2.3GHz, 2C, 3M, 35W
Intel® Celeron® G1820 2.7GHz, 2M, 2C, 2M, 54W
Intel® Celeron® G1820TE 2.2GHz, 2C, 2M, 35W
Intel® Core™ i7-4790S Processor, 3.2GHz, 4C, 8M, 65W
Intel® Core™ i5-4590S Processor, 3.0GHz, 4C, 4M, 65W
Intel® Core™ i3-4360 Processor, 3.7GHz, 2C, 4M, 54W
Intel® Core™ i3-4350T Processor, 3.1GHz, 2C, 4M, 35W

Supports Intel® VT, Intel® TXT, Intel® SSE4.2, Intel® HT Technology, Intel® 64 Architecture, Execute Disable Bit, Intel® Turbo Boost Technology 2.0, Intel® AVX2, Intel® AES-NI, PCLMULQDQ Instruction, Intel® Secure Key and Intel® TSX

System Chipset

Intel® Q87 or H81 Chipset

Memory

Dual channel non-ECC 1333/1666 MHz DDR3/DDR3L memory up to 16 GB in dual vertical SODIMM sockets

BIOS

AMI EFI with CMOS backup in 8MB SPI BIOS with Intel® AMT 9.0 support (Q87 only)
BIOS socket onboard and SPI header for external BIOS
Optional TPM module soldered onboard

SEMA® Support

Supports: voltage/current monitoring, power sequence debug support, AT/ATX mode control, logistics and forensic information, Flat panel control, general purpose I²C, failsafe BIOS (dual BIOS), watchdog timer and triple Smart Fan control

Debug Header

40-pin multipurpose flat cable connector for use in combination with DB-40 debug module providing BIOS POST code LEDs, BMC access, SPI BIOS flashing, power testpoints, debug LEDs

I/O Interfaces

Expansion Slots

1 PCIe x16 Gen3 slot (PCIe 3.0)
1 PCIe x1 Gen2 slot (PCIe 2.0)
1 full size Mini PCIe slot supporting PCIe+USB or mSATA by jumper setting (on the bottom side)
1 half size Mini PCIe slot supporting PCIe and USB (on the top side)
1 SPI header for external BIOS

Serial ATA:3x SATA 6 Gbps ports (H81: 2x SATA 6 Gbps and 1x SATA 3 Gbps)
USB: 4x USB 3.0 and 4x USB 2.0 on rear I/O (H81: 2x USB 3.0 and 6x USB 2.0)
2x USB 2.0 on front panel header
2x USB 2.0 on standard header
1x USB 2.0 on vertical connector with keep out area for dongle
1x USB 2.0 on Mini PCIe(top) and 1x USB 2.0 on mSATA /Mini PCIe (bottom) slot
KB/MS: 1x PS/2 internal header
Serial Ports: 1x RS-232/422/485 on internal header
3x RS-232 on internal headers
Digital IO: 10 GPIO on internal feature connector

Audio

Audio Codec

Realtek® ALC886

Interfaces

7.1 channel audio via 5 jacks and S/PDIF output on rear I/O
7.1 channel audio signals and S/PDIF output on internal header

Specifications

Display

Graphics core

Intel® Generation 7.5 graphics core architecture, supporting 3 independent, simultaneous displays

DP

3 ports with resolution up to 4096 x 2160 @ 30Hz

LVDS

Optional single/dual channel 24-bit LVDS up to 1920x1200 @ 60 Hz (occupies one DP port)

Ethernet

Controller: 1x Intel® i218LM Ethernet controller
1x Intel® i211AT Ethernet controller
Interface: 2x PCI Express x1 Bus
Wake On LAN: Yes

Power

Standard Input: ATX = 12V ±5% / 5Vsb ±5% from internal header
AT = 12V ±5% from internal header
Peripherals output: Onboard headers for fan and SATA power

Mechanical and Environmental

Dimensions: 170 mm x 170 mm (L x W)

Operating Temperature

Standard: 0˚C to +60˚C
Storage Temperature: -20˚C to +80˚C

Certifications

CE, FCC Class A

Relative Humidity

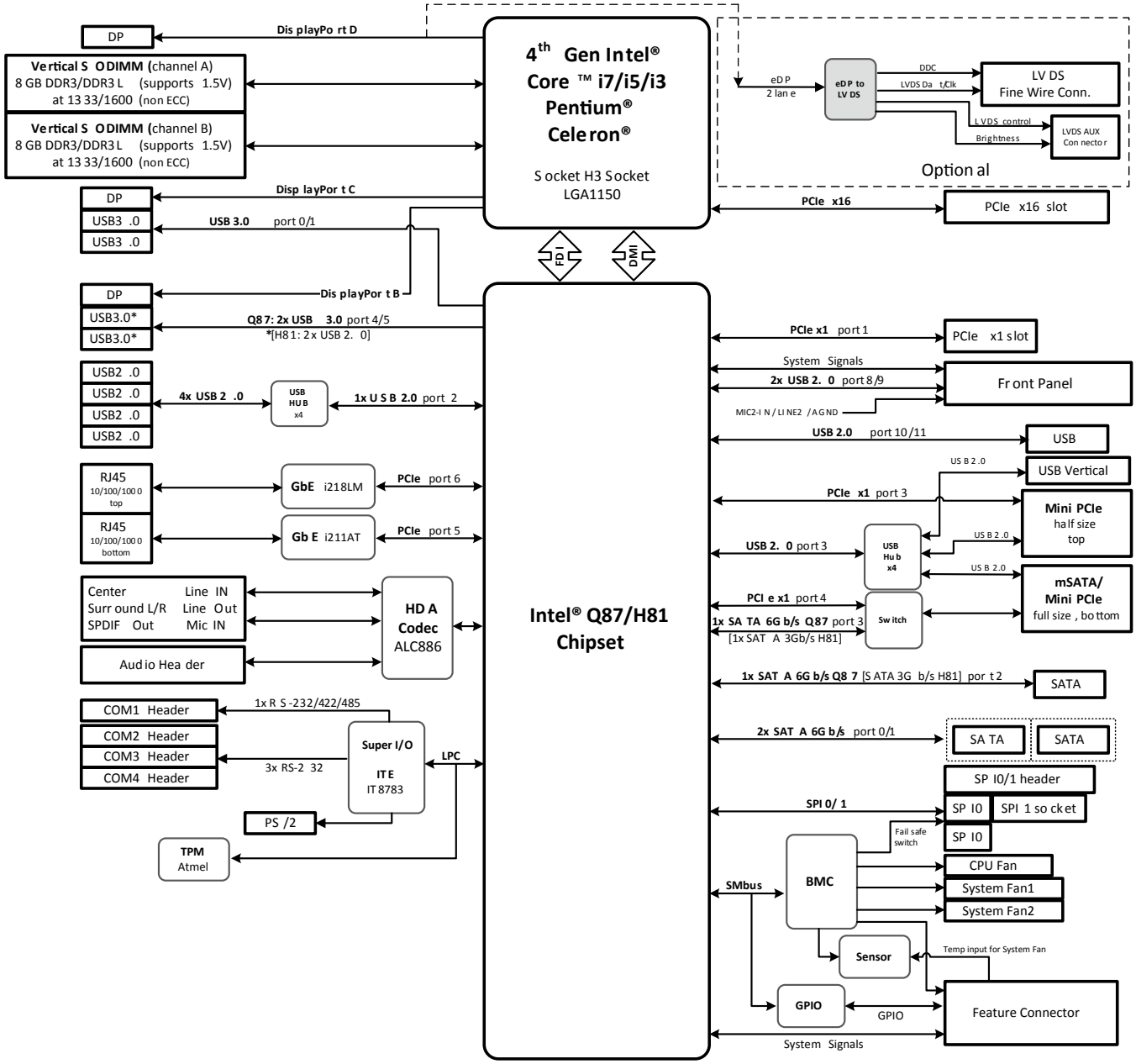
10% to 90%, non-condensing

Intelligent Middleware

SEMA®

Local management, control of embedded computer systems
Extended EAPI for monitoring, controlling and analytics applications
Multiple OS support and across platforms (x86, ARM)

Functional Diagram



Ordering Information

- **AmITX-HL-G-Q87**
  Mini-ITX for 4th generation Intel® Core™ i7/i5/i3 Desktop Processor with Q87 Chipset
- **AmITX-HL-G-H81**
  Mini-ITX for 4th generation Intel® Core™ i7/i5/i3 Desktop Processor with H81 Chipset

Packing List

- **30-20872-0000**
  ATX/AT Power Cable
- **30-20875-0000**
  SATA Dual Power Cable
- **30-10057-0600**
  SATA Cable
- **34-25314-0000**
  Rear I/O Shield

Optional Accessories

- **30-20876-0000**
  COM Port Cable, 1 Port, 25cm
- **30-20873-0000**
  PS/2 KB/MS Cable, 40cm
- **30-20874-1000**
  USB 2.0 Cable, 2 ports, 20cm
- **32-20513-0000**
  LGA1150 CPU Cooler, H=30.0mm, 45W
- **32-20512-0000**
  LGA1150 CPU Cooler, H=46.05mm, 45W
- **32-20113-0000**
  LGA1150 CPU Cooler, H=50.2mm, 95W
- **32-20495-0000**
  LGA1150 CPU Cooler, H=61.4mm, 95W

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