

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	<p>Socket H3 LGA1150 supporting 4th generation Intel® Core™ i7/i5/i3 and Intel® Pentium®/Celeron® processors up to 65W</p> <p>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</p> <p>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</p>
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	<p>AMI EFI with CMOS backup in 8MB SPI BIOS with Intel® AMT 9.0 support (Q87 only)</p> <p>BIOS socket onboard and SPI header for external BIOS Optional TPM module soldered onboard</p>
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	<p>1 PCIe x16 Gen3 slot (PCIe 3.0)</p> <p>1 PCIe x1 Gen2 slot (PCIe 2.0)</p> <p>1 full size Mini PCIe slot supporting PCIe+USB or mSATA by jumper setting (on the bottom side)</p> <p>1 half size Mini PCIe slot supporting PCIe and USB (on the top side)</p> <p>1 SPI header for external BIOS</p>
Serial ATA	3x SATA 6 Gbps ports (H81: 2x SATA 6 Gbps and 1x SATA 3 Gbps)
USB	<p>4x USB 3.0 and 4x USB 2.0 on rear I/O (H81: 2x USB 3.0 and 6x USB 2.0)</p> <p>2x USB 2.0 on front panel header</p> <p>2x USB 2.0 on standard header</p> <p>1x USB 2.0 on vertical connector with keep out area for dongle</p> <p>1x USB 2.0 on Mini PCIe(top) and 1x USB 2.0 on mSATA / Mini PCIe (bottom)slot</p>
KB/MS	1x PS/2 internal header
Serial Ports	1x RS-232/422/485 on internal header
Digital IO	<p>3x RS-232 on internal headers</p> <p>10 GPIO on internal feature connector</p>
Audio	
Audio Codec	Realtek® ALC886
Interfaces	<p>7.1 channel audio via 5 jacks and S/PDIF output on rear I/O</p> <p>7.1 channel audio signals and S/PDIF output on internal header</p>
Display	
Graphics core	<p>Intel® Generation 7.5 graphics core architecture, supporting</p> <p>3 independent, simultaneous displays</p> <p>3 ports with resolution up to 4096 x 2160 @ 30Hz</p>
DP	Optional single/dual channel 24-bit LVDS up to 1920x1200 @ 60 Hz (occupies one DP port)
LVDS	

Specifications

Ethernet

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

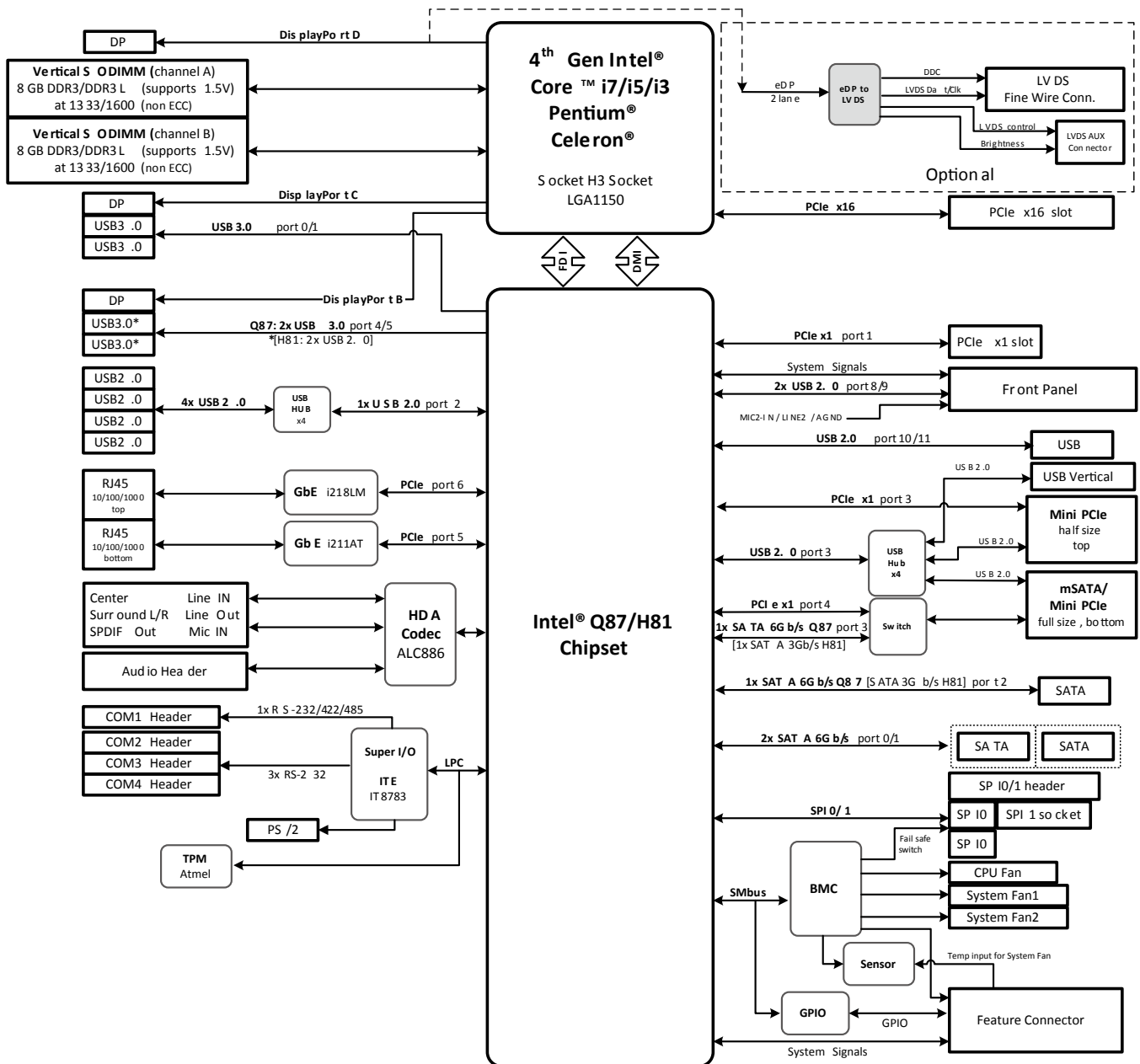
Power

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 Temp.	0°C to +60°C
Storage Temp.	-20°C to +80°C
Certifications	CE, FCC Class A
Relative Humidity	10% to 90%, non-condensing

Functional Diagram



Ordering Information

Modules

Model Number	Description/Configuration
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

Model Number	Description
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

Model Number	Description
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