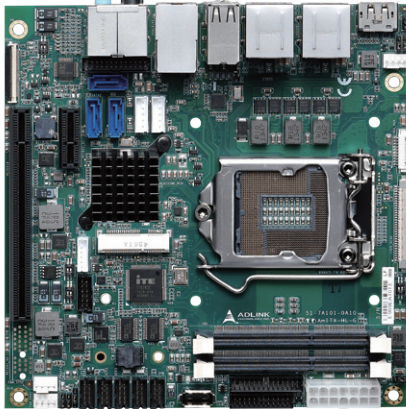


Mini-ITX Board with Intel® 4th Gen Core™ i7/i5/i3 Desktop Processor



Features

- 4th generation Intel® Core™ i7/i5/i3 Desktop Processor with Intel® Q87/H81 Chipset
- Dual SODIMM DDR3/DDR3L memory sockets supporting up to 16 GB
- PCIe x16, PCIe x1 and Mini PCIe expansion
- 3 DisplayPort outputs on rear IO



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 4C, 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 I ² C, 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

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|-------------|---|
| 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 |

Display

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|---------------|---|
| 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

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

Power

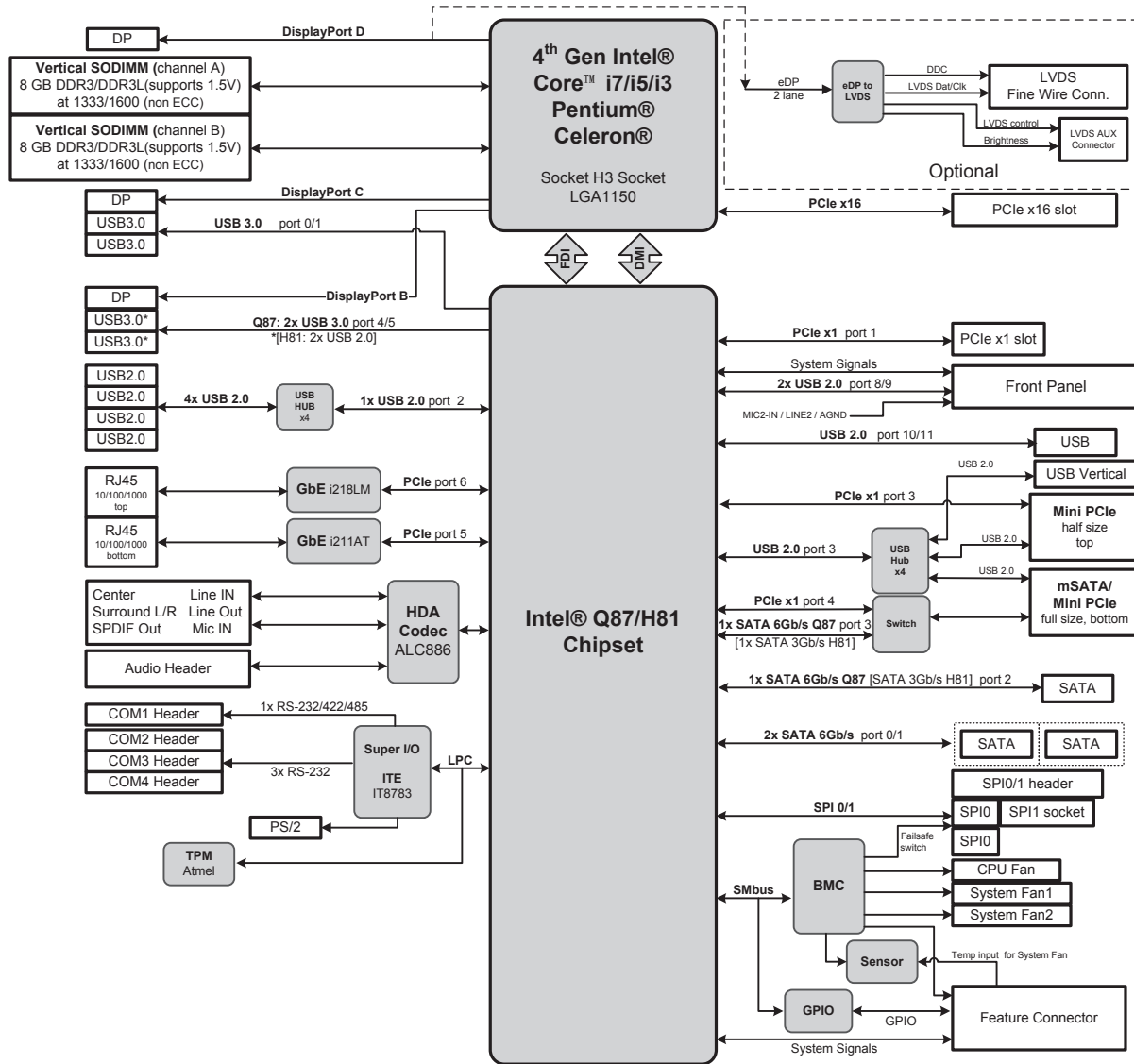
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|--------------------|--|
| Standard Input | ATX = 12V ±5% / 5Vsb ±5% from internal header AT = 12V ±5% from internal header |
| Peripherals output | Onboard headers for fan and SATA power |

Mechanical and Environmental

| | |
|-------------------|----------------------------|
| Form Factor | Mini-ITX |
| 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 |

Note: All specifications are subject to change without further notice.

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 |