

AIMB-506

Intel® 8th 9th Gen Core™ i7/i5/i3
LGA1151 MicroATX with VGA/DP/DVI-D/
eDP(LVDS), 14 COM, 8 USB 3.0,
12 USB 2.0, Dual LAN

Preliminary



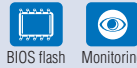
Features

- Supports Intel® 8th/9th Gen Core i7/i5/i3 processor with H310 chipset
- Supports up to 14 COM, 8 USB 3.0, 12 USB 2.0, TPM 1.2/2.0 (optional)
- Supports Dual display of VGA, DP, DVI, eDP, LVDS (optional) and two GbE LAN
- Two DIMM sockets support up to 64 GB DDR4 2666 MHz SDRAM
- Supports WISE PaaS/Device-On, McAfee, Acronis and Embedded Software APIs

Software APIs:



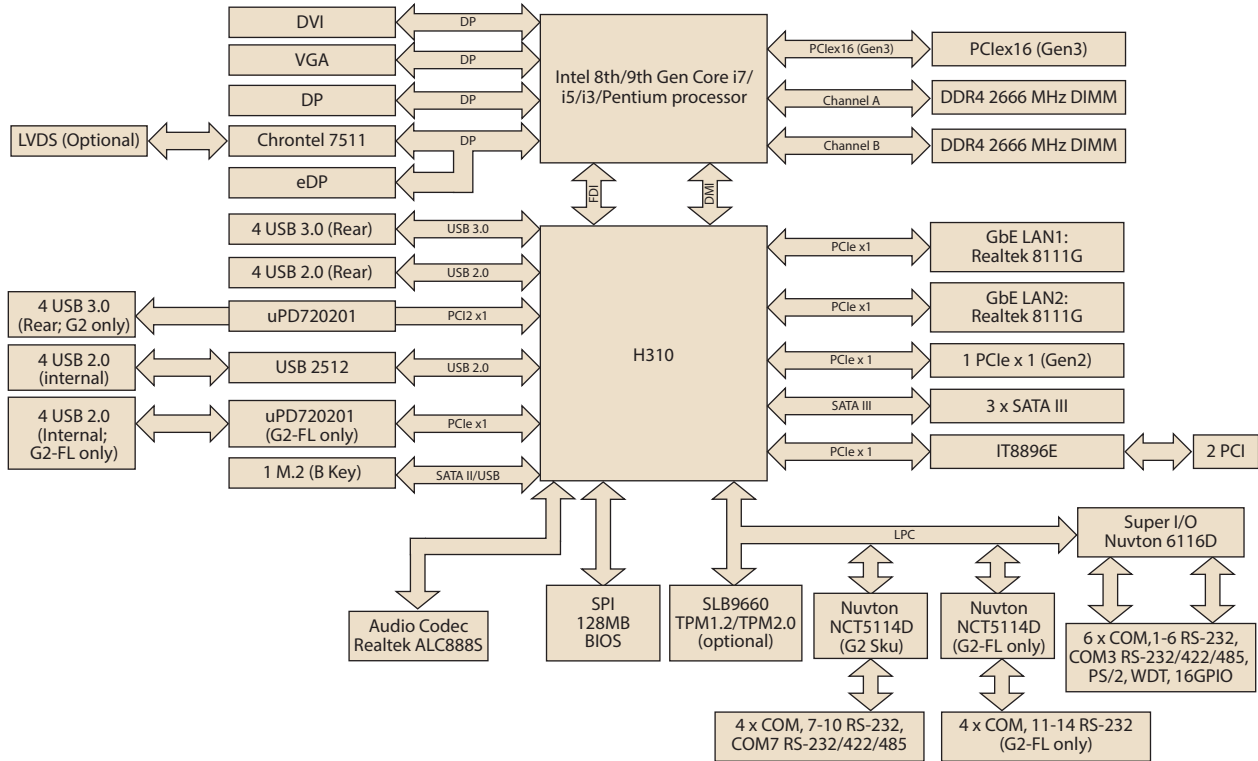
Utilities:



Specifications

| | CPU | I7-9700E/ I7-9700TE | I7-8700/ I7-8700T | I5-9500E/ I5-9500TE | I5-8500/ I5-8500T | I3-9100E/ I3-9100TE | I3-8100/ I3-8100T | Pentium G4400/G4400TE | Celeron G4900/G4900T | | |
|--------------------------|--|--|------------------------------|------------------------|----------------------|------------------------|----------------------|--------------------------|-------------------------|--|--|
| Processor System | Core Number | 8/8 | 6/6 | 6/6 | 6/6 | 4/4 | 4/4 | 2/2 | 2/2 | | |
| | Max. Speed | 2.6GHz/ 1.8GHz | 3.2 GHz/ 2.4 GHz | 3.0GHz/ 2.2GHz | 3.0 GHz/ 2.1 GHz | 3.1GHz/ 2.2GHz | 3.6GHz/ 3.1GHz | 3.7GHz/ 3.1GHz | 3.1GHz/ 2.9GHz | | |
| | L3 Cache | 12M/12M | 12M/12M | 9M/9M | 9M/9M | 6M/6M | 6M/6M | 2M/2M | 2M/2M | | |
| | TDP (W) | 65W/35W | 65W/35W | 65W/35W | 65W/35W | 65W/35W | 65W/35W | 65W/35W | 65W/35W | | |
| | Chipset | H310 | | | | | | | | | |
| BIOS | AMI EFI 128 Mbit SPI | | | | | | | | | | |
| Expansion Slot | PCI | 32-bit/33 MHz, 2 slot (G2) | | | | | | | | | |
| | PCIe x1 (Gen2) | 0.5 GB/s per direction, 1 slot | | | | | | | | | |
| | PCIe x16 (Gen3) | 16 GB/s per direction, 1 slot | | | | | | | | | |
| Memory | Technology | Dual Channel DDR4 2666 MHz SDRAM | | | | | | | | | |
| | Max. Capacity | 64 GB/32 GB per DIMM | | | | | | | | | |
| | Socket | 2 x 288-pin DIMM (Non-ECC) | | | | | | | | | |
| Graphics | Controller | Intel HD Graphics | | | | | | | | | |
| | LVDS | Supports dual channel 48 bit and up to 1920 x 1200 (optional) | | | | | | | | | |
| | eDP | Internal pin header, supports max. resolution 3840 x 2160 @ 60 Hz (on board) | | | | | | | | | |
| | VGA | Yes, Max resolution 1920 x 1200 @ 60 Hz | | | | | | | | | |
| | DP | Supports max resolution 4096 x 2304 @ 60 Hz | | | | | | | | | |
| | DVI-D | Up to 1920 x 1200 @ 60Hz refresh rate | | | | | | | | | |
| Dual Display | DP+DVI-D, DP+VGA, DVI-D+VGA, DP+eDP (LVDS), DVI-D+eDP (LVDS), VGA+eDP (LVDS) | | | | | | | | | | |
| Ethernet | Interface | 10/100/1000 Mbps | | | | | | | | | |
| | Controller | GbE LAN1:Realtek RTL8111G GbE LAN2:Realtek RTL8111G | | | | | | | | | |
| | Connector | RJ-45 x 2 | | | | | | | | | |
| SATA | Max Data Transfer Rate | 600 MB/s (SATA 3.0) | | | | | | | | | |
| | Channel | 3 | | | | | | | | | |
| Rear I/O | VGA | 1 | | | | | | | | | |
| | DVI-D | 1 | | | | | | | | | |
| | Ethernet | 2 (G2 x 2, L x 1) | | | | | | | | | |
| | USB | 12 (8 USB 3.0, 4 USB 2.0 on G2) 8 (4 USB 3.0, 4 USB 2.0 on L) | | | | | | | | | |
| | Display port | 1 | | | | | | | | | |
| Internal Connector | Audio | 2 (Mic-In, Line-out) | | | | | | | | | |
| | USB | 8 (G2-FL: USB 2.0 x 8; G2-00: USB 2.0 x 4; L: USB 2.0 x 4) | | | | | | | | | |
| | Serial | 14 (G2-FL sku: 12 x RS-232, 2 x RS-232/422/485; COM 3 and COM 7 support RS-232/422/485 auto flow control; COM1 and COM 2 support 5V/12V by jumper selection) 10 (G2-00 sku: 8 x RS-232, 2 x RS-232/422/485; COM 3 and COM 7 support RS-232/422/485 auto flow control; COM1 and COM 2 support 5V/12V by jumper selection) 6 (L sku: 5 x RS-232, 1 x RS-232/422/485; COM 3 supports RS-232/422/485 auto flow control; COM1 and COM 2 support 5V/12V by jumper selection) | | | | | | | | | |
| | M.2 (B Key) | 1 (2242/3042 with SIM card holder) | | | | | | | | | |
| | SATA | 3 x 600 MB/s (SATA 3.0) | | | | | | | | | |
| | Extended Display Port (eDP)/ LVDS | 1 (Default: eDP) | | | | | | | | | |
| | GPIO | 16-bit GPIO | | | | | | | | | |
| | PS/2 (KBMS1) | 1 | | | | | | | | | |
| | Watchdog Timer | Output | System reset | | | | | | | | |
| | | Interval | Programmable 1 ~ 255 sec/min | | | | | | | | |
| Power Requirements | Power On | 5V | +3.3V | 12V | -12V | 5VSB | | | | | |
| | | TBD | TBD | TBD | TBD | TBD | | | | | |
| Environment | Operating | | | | | | | | | | |
| | Temperature | 0 ~ 60° C (32 ~ 140° F), depends on CPU speed and cooler solution | | | | | | | | | |
| Physical Characteristics | Dimensions | 244 mm x 244 mm (9.6" x 9.6") | | | | | | | | | |

Block Diagram



Ordering Information

| Part Number | PCH | Memory | VGA | DVI | DP | eDP/LVDS | USB 3.0/2.0 | COM | SATA | LAN | PCIe x 16 | PCIe x 1 | M.2 B-Key | PCI slot | AMP |
|------------------|------|---------|-----|-----|----|----------|-------------|-----|------|-----|-----------|----------|-----------|----------|-----|
| AIMB-506G2-FLA1E | H310 | Non ECC | 1 | 1 | 1 | 1(1) | 12/8 | 14 | 3 | 2 | 1 | 1 | 1 | 2 | 1 |
| AIMB-506G2-00A1E | H310 | Non ECC | 1 | 1 | 1 | 1/(1) | 8/8 | 10 | 3 | 2 | 1 | 1 | 1 | 2 | 1 |
| AIMB-506L-00A1E | H310 | Non ECC | 1 | 1 | 1 | -/- | 4/8 | 6 | 3 | 1 | 1 | 1 | 1 | 0 | (1) |

*() BOM options available on MP version.

Riser Card

| Part Number | Description |
|------------------|---|
| AIMB-RP10P-01A1E | 1U riser card with 1 PCI expansion |
| AIMB-RP30P-03A1E | 2U riser card with 3 PCI expansion |
| AIMB-RF10F-01A1E | 1U riser card with 1 PCIe x16 expansion |

Packing List

| Part Number | Description | Quantity |
|--------------------|---|----------|
| 1700003194 | Serial ATA HDD data cable | 2 |
| 17AD14GS1400013V04 | 4 in 1 COM cable 500mm (IDE 40-pin 2.0mm) | 1 |
| 1701200220 | 1-to-2 serial port cable, 22cm | 1 |
| TBD | I/O port bracket | 1 |
| TBD | Startup manual | 1 |

Optional Accessories

| Part Number | Description |
|----------------|---|
| 1960053207N001 | LGA1150 CPU cooler for CPU TDP 65W, 92.9 (W) x 92.9 (L) x 46 (H) mm |
| 1960060732N001 | LGA1150 CPU cooler for CPU TDP 45W, 80 (W) x 80 (L) x 32.2 (H) mm |
| 1700000447 | 1-to-4 serial ports cable kit, 45cm |
| 1701400181 | 1-to-4 serial ports cable kit, 18cm |
| 1700002204 | Dual port USB 2.0 cable 27cm with bracket |
| 1703060191 | KBMS cable 1*6P-2.0/DIN-6P(F)*2, 22 cm |
| 1700025715-01 | KBMS cable 1*6P WAFER/PS2*2 w/ BRACKET 35CM |
| 1700008809 | Printer port cable kit, 25cm W/BNK |
| TBD | 1U IO bracket for chassis ACP-1010MB & HPC-7120S (should order screws separately) |
| 1700027017-01 | USB 2.0 transfer cable pin size from 2.0mm to 2.54mm |

Note: Purchasing AIMB-506's proprietary CPU cooler from Advantech is a must; other brands of CPU coolers are NOT compatible with AIMB-506.

I/O View



Embedded OS/API

| OS/API | Part No | Description |
|--------|---------|-------------|
| Win 10 | TBD | image W10 |