

AIMB-286EF

Intel® Core™ i7/i5/i3 LGA 1151 Mini-ITX
with DP++/HDMI/LVDS(eDP), 2 COM,
Dual LAN, PCIe x16, M.2, DDR4, DC Input



WISE-DeviceOn 

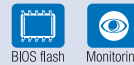
Features

- Supports Intel® 8th/9th Gen Core™ i processor (LGA1151) with Intel H310 chipset
- One 260-pin SO-DIMM up to 32GB DDR4 2666 MHz SDRAM
- Supports dual display of DP++/HDMI/LVDS (or eDP)
- Supports PCIe x16 (Gen 3), 1 M.2 B key & 1 M.2 E key, 4 USB 3.0 & 4 USB 2.0 and 3 SATA III
- Supports 12V DC Input and low profile height
- Supports TPM 1.2 / 2.0 (optional)
- Supports DeviceOn and Embedded Software APIs

Software APIs:



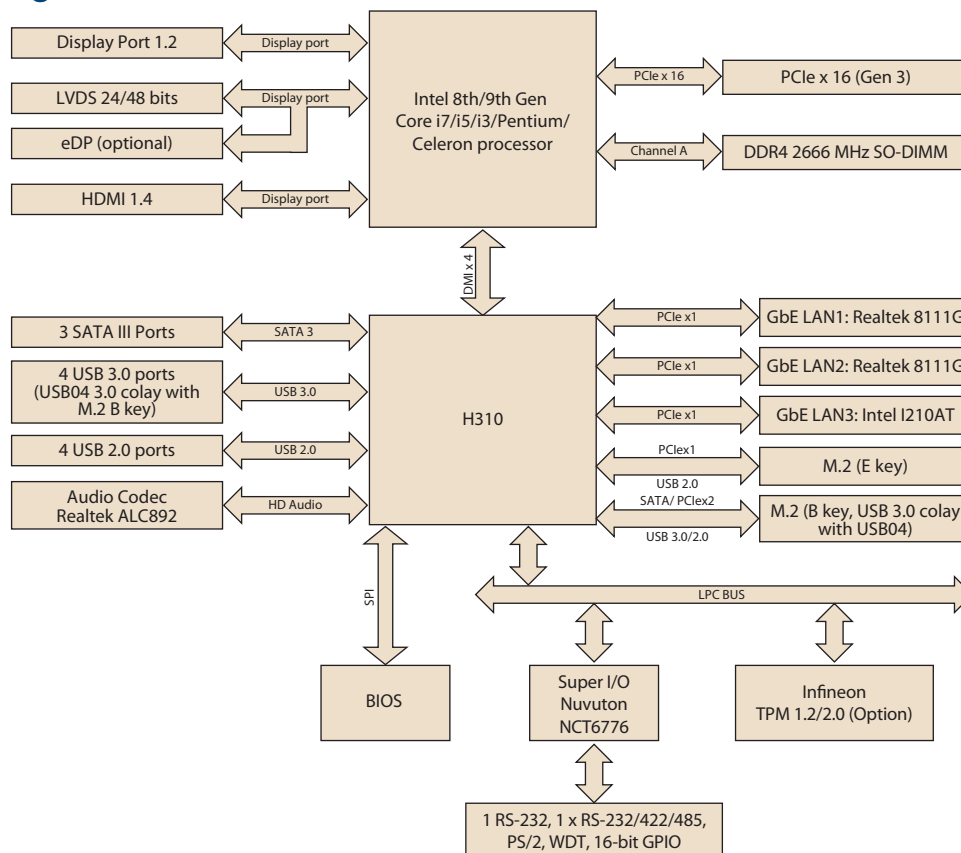
Utilities:



Specifications

| | | | | | | | | | | |
|--------------------------|------------------------|---|----------------------|------------------------|----------------------|------------------------|----------------------------|-------------------|-------------------|--|
| Processor System | 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 | G5400/ G5400T | G4900/ G4900T | |
| | Core Number | 8/8 | 6/6 | 6/6 | 6/6 | 4/4 | 4/4 | 2/2 | 2/2 | |
| | Max Speed | 2.6GHz/ 1.8GHz | 3.2GHz/ 2.4GHz | 3.0GHz/ 2.2GHz | 3.0GHz/ 2.2GHz | 3.1GHz/ 2.2GHz | 3.6GHz/ 3.1GHz | 3.7GHz/ 3.1GHz | 3.1GHz/ 2.9GHz | |
| | SmartCache | 12MB/ 12MB | 12MB/ 12MB | 9MB/9MB | 9MB/9MB | 6MB/6MB | 6MB/6MB | 2MB/2MB | 2MB/2MB | |
| | TDP | 65W/35W | 65W/35W | 65W/35W | 65W/35W | 65W/35W | 65W/35W | 58W/35W | 54W/35W | |
| | Chipset | H310 | | | | | | | | |
| | BIOS | AMI EFI 128 Mbit SPI | | | | | | | | |
| Expansion Slot | M.2 | 2, 1 x B key for SSD and 3G/4G (Type: 2242, 3042mm); with SIM card holder 1 x E key for wireless (Type: 2230mm) | | | | | | | | |
| | PCIe x16 (Gen3) | 16 GB/s per direction, 1 slot | | | | | | | | |
| Memory | Technology | Single Channel DDR4 2666 MHz SDRAM | | | | | | | | |
| | Max. Capacity | 32GB (up to 32GB per SO-DIMM) | | | | | | | | |
| | Socket | 1 x 260 PIN DDR4 SO-DIMM (Non-ECC) | | | | | | | | |
| Graphics | Controller | Intel HD Graphics | | | | | | | | |
| | LVDS | Supports dual channel 24-bit up to 1920 x 1200 (colay with eDP) | | | | | | | | |
| | HDMI 1.4 | Yes, supports max. resolution 4096 x 2160 @ 24 Hz | | | | | | | | |
| | eDP | Yes, with internal pin header, supports max. resolution 4096 x 2304 @ 60 Hz (BOM optional) | | | | | | | | |
| | Display Port 1.2 | Yes, supports 1 x DP++ with max resolution 4096 x 2304 @ 60 Hz | | | | | | | | |
| Ethernet | Dual Display | DP+HDMI, DP+LVDS (or eDP), HDMI + LVDS (or eDP) | | | | | | | | |
| | Interface | 10/100/1000 Mbps | | | | | | | | |
| | Controller | GbE LAN1/2: Realtek 8111G GbE LAN3: Intel i210AT | | | | | | | | |
| | Connector | RJ-45 x 3 | | | | | | | | |
| SATA | Max Data Transfer Rate | 600 MB/s (SATA 3.0) | | | | | | | | |
| | Channel | 3 (SATA III) | | | | | | | | |
| Rear I/O | HDMI | 1 (HDMI 1.4) | | | | | | | | |
| | Display Port 1.2 | 1 | | | | | | | | |
| | Ethernet | 3 | | | | | | | | |
| | USB | 4 USB 3.0 (USB04 colay with M.2 B key for USB 3.0) | | | | | | | | |
| | Audio | 2 (Mic-in, Line-out) | | | | | | | | |
| | DC Jack | 1 | | | | | | | | |
| Internal Connector | USB | 4 (USB 2.0) | | | | | | | | |
| | LVDS/inverter | 1 | | | | | | | | |
| | Serial | 2 x RS-232 (COM1: RS-232, supports 5V/12V by jumper selection; COM2: RS-232/422/485 w/auto flow control, supports RS-232 by default, RS-422/485 supports by BOM option) | | | | | | | | |
| | SATA | 3 (SATA 3.0) | | | | | | | | |
| | M.2 | 2, 1 x B key for SSD and 3G/4G (M.2 B key USB 3.0 colay with USB04), Type: 2242, 3042mm; 1 x E key for wireless, Type: 2230mm | | | | | | | | |
| | IrDA | - | | | | | | | | |
| | GPIO | 16-bit | | | | | | | | |
| Watchdog Timer | Output | System reset | | | | | | | | |
| | Interval | Programmable 1 ~ 255 sec/min | | | | | | | | |
| Power Requirements | Input power | 12V DC Input Intel Core i7-8700 3.2GHz, 1pcs 16GB DDR4 2666MHz SDRAM, +12V @ 17.095A | | | | | | | | |
| | Environment | Operating | | | | | | Non-Operating | | |
| Physical Characteristics | Temperature | 0 ~ 60 °C (32 ~ 140 °F), depends on CPU speed and cooler solution | | | | | -40 ~ 85 °C (-40 ~ 185 °F) | | | |
| | Dimensions | 170 mm x 170 mm (6.69" x 6.69") | | | | | | | | |

Block Diagram



Ordering Information

| P/N | Chipset | SO-DIMM | DP | LVDS/eDP | HDMI 1.4 | GbE LAN | COM | SATAIII | USB3.0/2.0 | M.2 B key | M.2 E key | PCIex16 | TPM | AMP |
|-----------------|---------|---------|----|----------|----------|---------|-----|---------|------------|-----------|-----------|---------|-----|-----|
| AIMB-286F-EFA1E | H310 | 1 | 1 | 1 / (1) | 1 | 3 | 2 | 3 | 4/4 | 1 | 1 | 1 | (1) | 0 |

*() BOM options available on MP version.

Packing List

| Part Number | Description | Quantity |
|----------------|----------------------------------|----------|
| 1700003194 | SATA HDD cable | 1 |
| 1700018785 | SATA power cable (1 port, 25cm) | 1 |
| 1701200220 | 1-to-2 serial port cable, 22cm | 1 |
| 1960090424T001 | I/O port bracket | 1 |
| 2046286E00 | Startup manual | 1 |
| 1700023082-11 | ATX 2*10P to 1*3P-2.0 25cm cable | 1 |

Optional Chassis

| Part Number | Description |
|-----------------|--|
| AIMB-B2000-15ZE | Mini-ITX chassis with 150W ATX power supply |
| AIMB-B2000-00YE | Mini-ITX chassis (Optional external AC-DC 60W/84W Adaptor) |

I/O View



Optional Accessories

| Part Number | Description |
|-------------------|---|
| 1700029428-01 | M cable USB-A 4P(F)*2/2*4P-2.0 25cm |
| 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 |
| 1970004515T000 | C.L R3 Sunflower LGA115X KabyLake 35W, 90 (W) x 90 (L) x 25 (H) mm |
| 96PSA-A120W12V1-3 | ADP A/D 100-240V 120W 12V C14 DC Plug |
| 96PSA-A150W12W7-3 | ADP A/D 100-240V 150W 12V LOCKABLE DC JACK |

Embedded OS/API

| OS/API | Part No. | 968 P/N | Description |
|------------|----------------|------------|---|
| Windows 10 | 20706WX9ES0000 | 968QW19ELE | img W10 19EL AIMB-286 64b 1809 ENU |
| Windows 10 | 20706WX9HS0001 | 968QW19HLE | Win 10 IoT Ent 2019 LTSC MultiLang ORY OEI High |
| Windows 10 | 20706WX9VS0001 | 968QW19VLE | img W10 19VL AIMB-286 64b 1809 ENU |