**AIMB-286**

Intel® Core™ i7/i5/i3 LGA 1151 Mini-ITX with DP++/HDMI/LVDS(eDP), 6 COM,

Dual LAN, PCIe x4, M.2, DDR4, DC Input

**NEW**

RoHS

**COMPLIANT 2002/95/EC**

**Features**

* Supports Intel® 8th Gen Core™ i processor (LGA1151) with Intel H310 chipset
* Two 260-pin SO-DIMM up to 32GB DDR4 2666 MHz SDRAM
* Supports dual display of DP++/HDMI/LVDs (or eDP)
* Supports PCIe x4 (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 WISE-PaaS/RMM and Embedded Software APIs

**Software APIs:**

SMBus H/W Monitor Watchdog GPIO

**Utilities:**

BIOS flash Monitoring

Specifications

|  |  |  |
| --- | --- | --- |
| Processor System | CPU | i7-8700/i7-8700T i5-8500/i5-8500T i3-8100/i3-8100T Pentium G5400/G5400T Celeron G4900/G4900T |
| Core Number | 6/6 6/6 4/4 2/2 2/2 |
| Max Speed | 3.2/2.4 GHz 3.0/2.1 GHz 3.6/3.1 GHz 3.7/3.1 GHz 3.1/2.9 GHz |
| SmartCache | 12/12 MB 9/9 MB 6/6 MB 4/4 MB 2/2 MB |
| TDP | 65/35 W 65/35 W 65/35 W 54/35 W 54/35 W |
| 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 holder1 x E key for wireless (Type: 2230mm) |
| PCIe x4 (Gen3) | 4 GB/s per direction, 1 slot |
| Memory | Technology | Dual Channel DDR4 2666 MHz SDRAM |
| Max. Capacity | 32GB (up to 16GB per SO-DIMM) |
| Socket | 2 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 |
| Dual Display | DP+HDMI, DP+LVDS (or eDP), HDMI + LVDS (or eDP) |
| Ethernet | Interface | 10/100/1000 Mbps |
| Controller | GbE LAN1/2: Realtek 8111G GbE LAN3: Intel i211AT |
| 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 | 6 x RS-232 (COM1: RS-232, supports 5V/12V by jumper selection; COM2/3: RS-232/422/485 w/auto flow control, supports RS- 232 by default, RS-422/485 supports by BOM option; COM4/5/6: RS-232) |
| 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, 2pcs 16GB DDR4 2666MHz SDRAM, +12V @ 11.095A |
| Environment | Operating Non-Operating |
| Temperature | 0 ~ 60° C (32 ~ 140° F), depends on CPU speed and cooler solution -40 ~ 85° C (-40 ~ 185° F) |
| Physical Characteristics | Dimensions | 170 mm x 170 mm (6.69" x 6.69") |

 **Industrial Motherboards & Systems**

All product specifications are subject to change without notice. Last updated: 9-Jan-2019

AIMB-286

Ordering Information

LPC BUS

USB 2.0

SATA/ PCIex2

USB 3.0/2.0

HD Audio

PCIex1

USB 2.0

PCIe x1

USB 3.0

PCIe x1

SATA 3

PCIe x1

Display port

Channel B

Channel A

Display port

PCIe x 4

Display port

**Block Diagram**

3 x RS-232, 1 x RS-232/422/485

(RS-422/485 support by BOM optional)

1 RS-232, 1 x RS-232/422/485, PS/2, WDT, 16-bit GPIO

Inﬁneon

TPM 1.2/2.0 (Option)

NCT5114D

Super I/O Nuvuton NCT6776

BIOS

M.2 (B key, USB 3.0 colay with USB04)

Audio Codec Realtek ALC892

M.2 (E key)

4 USB 2.0 ports

GbE LAN3: Intel I211AT

4 USB 3.0 ports (USB04 3.0 colay with

M.2 B key)

GbE LAN2: Realtek 8111G

H310

3 SATA III Ports

GbE LAN1: Realtek 8111G

HDMI 1.4

DDR4 2666 MHz SO-DIMM

eDP (optional)

DDR4 2666 MHz SO-DIMM

LVDS 24/48 bits

PCIe x 4 (Gen 3)

Display Port 1.2

Intel 8th Gen Core i7/i5/i3/Pentium/

Celeron processor

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **P/N** | **Chipset** | **DP** | **LVDS/eDP** | **HDMI 1.4** | **GbE LAN** | **COM** | **SATAIII** | **USB3.0/2.0** | **M.2 B key** | **M.2 E key** | **PCIex4** | **TPM** | **AMP** |
| AIMB-286F-00A1E | H310 | 1 | 1 / (1) | 1 | 3 | 6 | 3 | 4/4 | 1 | 1 | 1 | (1) | (1) |
| AIMB-286G2-00A1E | H310 | 1 | 1 / (1) | 1 | 2 | 2 | 3 | 4/4 | 1 | 1 | 1 | (1) | (1) |
| AIMB-286L-00A1E | H310 | 1 | 0 | 1 | 1 | 2 | 2 | 4/0 | 1 | 1 | 0 | 0 | 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 |
| 1700029538-01 | 1-to-4 serial port cable, 35cm | 1 |
| 2046028600 | 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 |
| 96PSA-A120W12V1 | ADP A/D 100-240V 120W 12V C14 DC Plug 180ŁX |

Embedded OS/API

|  |  |  |  |
| --- | --- | --- | --- |
| **OS/API** | **Part No.** | **968 P/N** | **Description** |
| Windows 10 |  |  |  |

SPI

DMI x 4



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