

# AIMB-285 A2

Intel® Core™ i7/i5/i3 LGA 1151 Mini-ITX with DP<sup>++</sup>/HDMI/VGA, 2 COM, Dual LAN, PCIe x4, miniPCle, DDR4, DC Input



WISE-PaaS/RMM

## Features

- Supports Intel® 7th & 6th Gen Core™ i processor (LGA1151) with Intel H110 chipset
- Two 260-pin SO-DIMM up to 32GB DDR4 2400/2133 MHz SDRAM
- Supports Dual display of DP/HDMI/VGA
- Supports PCIe x4 (Gen 3), 1 F/S miniPCle and 1 H/S miniPCle
- Support 12V DC Input and low profile height
- Supports 4 USB 3.0, 4 USB 2.0, 3 SATAIII, TPM 1.2 / 2.0 (optional)
- Supports WISE-PaaS/RMM and Embedded Software APIs

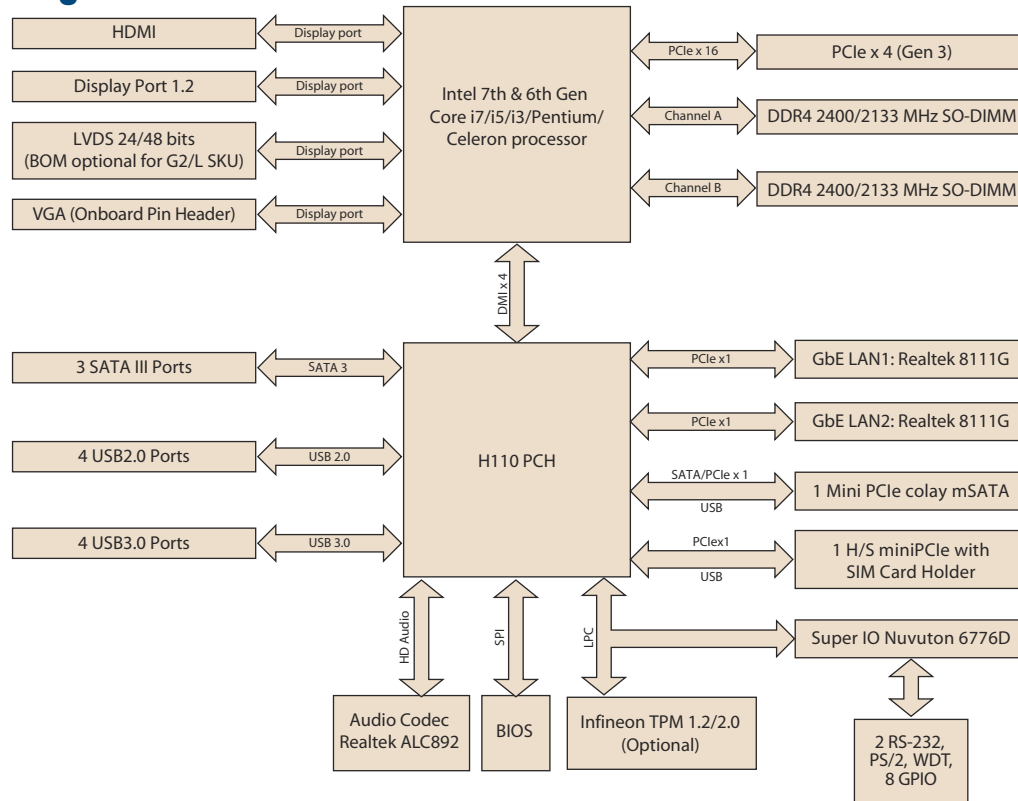
Software APIs:

Utilities:

## Specifications

|                          | CPU                    | KBL-S<br>SKL-S   | i7-7700<br>i7-6700   | i7-7700T<br>i7-6700TE | i5-7500<br>i5-6500 | i5-7500T<br>i5-6500TE | i3-7101E<br>i3-6100 | i3-7101TE<br>i3-6100TE | -<br>Pentium<br>G4400/4400TE | -<br>Pentium<br>G3900/3900TE |  |
|--------------------------|------------------------|--|----------------------|-----------------------|--------------------|-----------------------|---------------------|------------------------|------------------------------|------------------------------|--|
| Processor System         | Core Number            |  | 4                    | 4                     | 4                  | 4                     | 2                   | 2                      | 2 / 2                        | 2 / 2                        |  |
|                          | Max Speed              | KBL-S<br>SKL-S   | 3.6GHz<br>3.4GHz     | 2.9GHz<br>2.4GHz      | 3.4GHz<br>3.2GHz   | 2.7GHz<br>2.3GHz      | 3.9GHz<br>3.7GHz    | 3.4GHz<br>2.7GHz       | 3.3GHz /<br>2.9GHz           | 2.8GHz /<br>2.6GHz           |  |
|                          | L3 Cache               |  | 8M                   | 8M                    | 6M                 | 6M                    | 4M                  | 4M                     | 3M / 3M                      | 2M / 2M                      |  |
|                          | TDP                    |  | 65W                  | 35W                   | 65W                | 35W                   | 54W / 51W           | 35W                    | 54W / 35W                    | 51W / 35W                    |  |
|                          | Chipset                |  | H110                 |                       |                    |                       |                     |                        |                              |                              |  |
|                          | BIOS                   |  | AMI EFI 128 Mbit SPI |                       |                    |                       |                     |                        |                              |                              |  |
| Expansion Slot           | Mini-PCle              | 1 F/S miniPCle slot support mSATA; 1 H/S miniPCle slot with SIM card holder                |                      |                       |                    |                       |                     |                        |                              |                              |  |
|                          | PCIe x4 (Gen3)         | 4 GB/s per direction, 1 slot   |                      |                       |                    |                       |                     |                        |                              |                              |  |
| Memory                   | Technology             | Dual Channel DDR4 2400/2133 MHz SDRAM  |                      |                       |                    |                       |                     |                        |                              |                              |  |
|                          | Max. Capacity          | 32GB (up to 16GB per SO-DIMM)  |                      |                       |                    |                       |                     |                        |                              |                              |  |
|                          | Socket                 | 2 x 260 PIN DDR4 SO-DIMM (Non-ECC)   |                      |                       |                    |                       |                     |                        |                              |                              |  |
| Graphics                 | Controller             | Supports OpenGL 5.x, DirectX12, OpenCL 2.X   |                      |                       |                    |                       |                     |                        |                              |                              |  |
|                          | VRAM                   | Shared system memory, 2 GB and above, total system memory shared 1 GB maximum video memory |                      |                       |                    |                       |                     |                        |                              |                              |  |
|                          | VGA                    | Yes, supports max. resolution 1920 x 1200 @ 60 Hz  |                      |                       |                    |                       |                     |                        |                              |                              |  |
|                          | LVDS                   | Supports dual channel 48-bit up to 1920 x 1200 (BOM optional for G2/L sku)                 |                      |                       |                    |                       |                     |                        |                              |                              |  |
|                          | HDMI                   | Yes, supports max. resolution 4096 x 2160 @ 24 Hz (HDMI 1.4)                               |                      |                       |                    |                       |                     |                        |                              |                              |  |
|                          | Display Port 1.2       | Yes, supports max. resolution 4096 x 2160 @ 60Hz   |                      |                       |                    |                       |                     |                        |                              |                              |  |
| Ethernet                 | Dual Display           | DP+HDMI, DP+VGA, HDMI+VGA,DP+LVDS, HDMI+LVDS, VGA+ LVDS                                    |                      |                       |                    |                       |                     |                        |                              |                              |  |
|                          | Interface              | 10/100/1000 Mbps   |                      |                       |                    |                       |                     |                        |                              |                              |  |
|                          | Controller             | GbE LAN: Realtek 8111G x2  |                      |                       |                    |                       |                     |                        |                              |                              |  |
| SATA                     | Connector              | RJ-45 x 2  |                      |                       |                    |                       |                     |                        |                              |                              |  |
|                          | Max Data Transfer Rate | 600 MB/s (SATA 3.0)  |                      |                       |                    |                       |                     |                        |                              |                              |  |
| Rear I/O                 | Channel                | 3 (SATA III)   |                      |                       |                    |                       |                     |                        |                              |                              |  |
|                          | HDMI                   | 1 (HDMI 1.4)   |                      |                       |                    |                       |                     |                        |                              |                              |  |
|                          | Display Port 1.2       | 1  |                      |                       |                    |                       |                     |                        |                              |                              |  |
|                          | Ethernet               | 2  |                      |                       |                    |                       |                     |                        |                              |                              |  |
| Internal Connector       | USB                    | 4 (USB 3.0)  |                      |                       |                    |                       |                     |                        |                              |                              |  |
|                          | Audio                  | 2 (Mac-in, Line-out) (*"Mic-in" could be configured as "Line-in" under Win OS.)            |                      |                       |                    |                       |                     |                        |                              |                              |  |
|                          | DC Jack                | 1  |                      |                       |                    |                       |                     |                        |                              |                              |  |
|                          | USB                    | 4 (USB 2.0)  |                      |                       |                    |                       |                     |                        |                              |                              |  |
|                          | LVDS/inverter          | 1 (BOM optional for G2/L sku)  |                      |                       |                    |                       |                     |                        |                              |                              |  |
| Watchdog Timer           | Serial                 | 2 (one support RS-232/422/485 and one support 5V/12V)                                      |                      |                       |                    |                       |                     |                        |                              |                              |  |
|                          | SATA                   | 3 (SATA III)   |                      |                       |                    |                       |                     |                        |                              |                              |  |
|                          | Mini-PCle              | 2 (1 F/S and 1 H/S)  |                      |                       |                    |                       |                     |                        |                              |                              |  |
|                          | GPIO                   | 8-bit  |                      |                       |                    |                       |                     |                        |                              |                              |  |
| Power Requirements       | Output                 | System reset   |                      |                       |                    |                       |                     |                        |                              |                              |  |
|                          | Interval               | Programmable 1 ~ 255 sec/min   |                      |                       |                    |                       |                     |                        |                              |                              |  |
| Environment              | Input power            | ATX  |                      |                       |                    |                       |                     |                        |                              |                              |  |
|                          | Operating              | Win Idle 9.3W (Intel core i7-7700 3.6GHz / DDR4 2133 MHz 16G x 2)                          |                      |                       |                    |                       |                     |                        | 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 | DP | VGA            | LVDS | HDMI         | GbE LAN | COM | SATA | USB 3.0/2.0 | MiniPCle          | TPM | AMP | PClex4 |
|------------------|---------|----|----------------|------|--------------|---------|-----|------|-------------|-------------------|-----|-----|--------|
| AIMB-285G2-00A2E | H110    | 1  | 1 (pin header) | (1)  | 1 (HDMI 1.4) | 2       | 2   | 3    | 4/4         | 2 (1 F/S & 1 H/S) | (1) | (1) | 1      |
| AIMB-285L-00A2E  | H110    | 1  | 0              | (1)  | 1 (HDMI 1.4) | 1       | 1   | 2    | 4/0         | 1(F/S)            | (1) | 0   | 0      |
| AIMB-285G2-LVA2E | H110    | 1  | 1 (pin header) | 1    | 1 (HDMI 1.4) | 2       | 2   | 3    | 4/4         | 2 (1 F/S & 1 H/S) | (1) | (1) | 1      |

\*( ) BOM options available on MP version.

## Packing List

| Part Number    | Description                      | Quantity |
|----------------|----------------------------------|----------|
| 1700003194     | SATA HDD cable                   | 1        |
| 1700018785     | SATA power cable                 | 1        |
| 1700100250     | Serial port cable (1 port, 25cm) | 2        |
| 19Z0001209T000 | I/O port bracket                 | 1        |
| 2006028510     | Startup manual                   | 1        |

## Optional Chassis

| Part Number     | Description   |
|-----------------|---|
| AIMB-B2000-00YE | Mini-ITX chassis (Optional external AC-DC 84W/120W Adaptor) |
| EPC-T2000       | Mini-ITX chassis (optional external AC-DC 120W adapter)     |

## Rear I/O



## Optional Accessories

| Part Number     | Description   |
|-----------------|---|
| 1700026162-01   | USB 2.0 cable with two ports, 30 cm with bracket                    |
| 1703060191      | KB/MS cable 1*6P-2.0/M-DIN 6P(F)*2, 19cm                            |
| 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 ≤ 35W, 80 (W) x 80 (L) x 32.2 (H) mm |
| 96PSA-A120W12V1 | ADP A/D 100-240V 120W 12V C14 DC Plug 180°                          |
| 1700023082-11   | A cable 2*10P-4.2/1*3P-2.0 15cm                                     |
| 1700025816-01   | VGA cable (M cable 2*5P-2.0/D-SUB 15P(F) 35cm)                      |

## Embedded OS/API

| OS/API     | Part No.       | 968 P/N    | Description                                     |
|------------|----------------|------------|---|
| windows 10 | 2070014483     | 968QW10LTE | Win10 IoT Enterprise x64 multi-language (SKL-S) |
| WE8.1      | 2070014246     | 968QWE8IP1 | WE8.1 Industry Pro x64 multi-language (SKL-S)   |
| Win10      | 20706WX6HS0000 | 968QW16HLE | img W10 16HL AIMB-285 64b 1709 ENU (KBL-S)      |
| Win10      | 20706WX6VS0003 | 968QW16HLE | img W10 16VL AIMB-285 64b 1709 ENU (KBL-S)      |