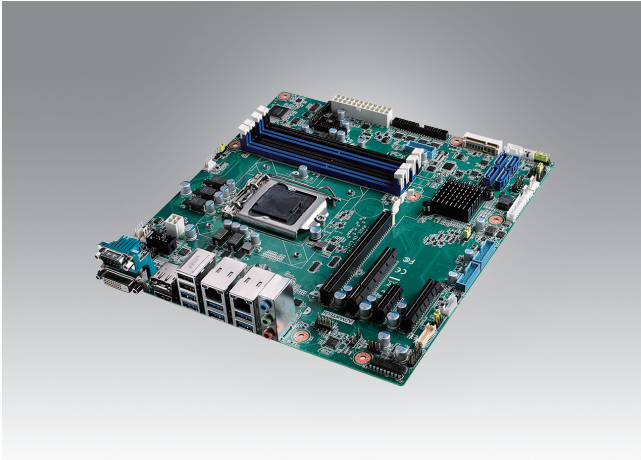


# AIMB-585

Intel® Xeon® E3/ Core™ i7/i5/i3 LGA1151  
MicroATX with DVI-D/HDMI/DP++/eDP/VGA,  
6 COM, Dual LAN, SATA III, 12 USB3.0



## Features

- Supports Intel® Xeon®/ 6th & 7th Gen Core™ i7/i5/i3 processor with Q170/ C236/H110 chipset
- Four DIMM sockets support up to 64 GB DDR4 2133 MHz SDRAM
- Supports DVI-D, HDMI, DP++, eDP, VGA (optional) display
- Supports Intel AMT 11.0 and Intel vPro competent
- Supports PCIe Gen3, upto 12 x USB 3.0, 4 x SATAIII and dual GbE LAN, mini-PCIe
- Supports Software RAID 0, 1, 5, 10, TPM 1.2/2.0 (optional)
- Supports WISE-PaaS and Embedded Software APIs

**Software APIs:**

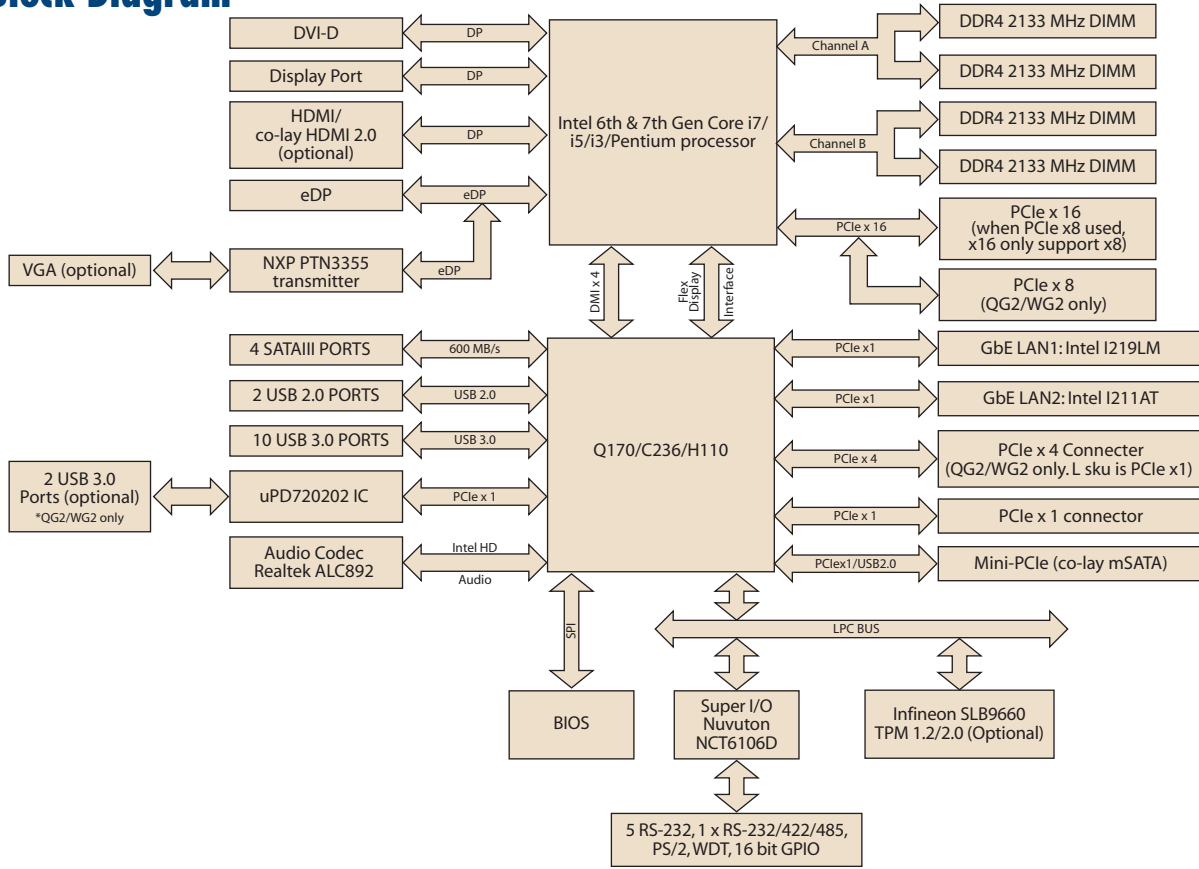
**Utilities:**



## Specifications

|                          | CPU   | E3-1275 v6  | E3-1275 v5 | E3-1225 v5 | E3-1268L v5 | I7-7700 / I7-7700T | i7-6700 / i7-6700TE | I5-7500 / I5-7500T | i5-6500 / i5-6500TE | I3-7101 / I3-7101TE | i3-6100 / i3-6100TE | Pentium G4400 / G4400TE | Celeron G3900 / G3900TE    |       |  |  |
|--------------------------|---|---|------------|------------|-------------|--------------------|---------------------|--------------------|---------------------|---------------------|---------------------|-------------------------|----------------------------|-------|--|--|
| Processor System         | Core Number   | 4   | 4          | 4          | 4           | 4/4                | 4 / 4               | 4/4                | 4 / 4               | 2/2                 | 2/2                 | 2/2                     | 2/2                        |       |  |  |
|                          | Max. Speed  | 3.8GHz  | 3.6GHz     | 3.3GHz     | 2.4GHz      | 3.6GHz / 2.9GHz    | 3.4GHz / 2.4GHz     | 3.4GHz / 2.7GHz    | 3.2GHz / 2.3GHz     | 3.9GHz / 3.4GHz     | 3.7 GHz / 2.7GHz    | 3.3GHz / 2.9GHz         | 2.8GHz / 2.6GHz            |       |  |  |
|                          | Integrated Graphics   | Yes   | Yes        | Yes        | Yes         | Yes                | Yes                 | Yes                | Yes                 | Yes                 | Yes                 | Yes                     | Yes                        |       |  |  |
|                          | L3 Cache  | 8M  | 8M         | 6M         | 8M          | 8M/8M              | 8M / 8M             | 6M/6M              | 6M / 6M             | 3M/3M               | 4M / 4M             | 3M / 3M                 | 2M / 2M                    |       |  |  |
|                          | TDP (W)   | 80W   | 80W        | 80W        | 35W         | 65W/35W            | 65W / 35W           | 65W/35W            | 65W / 35W           | 54W/35W             | 51W / 35W           | 54W / 35W               | 47W / 35W                  |       |  |  |
|                          | Supports Model  | WG2   | WG2        | WG2        | WG2         | QG2/L              | QG2 / L             | QG2/L              | QG2 / L             | QG2/WG2/L           | QG2 / WG2 / L       | QG2 / WG2 / L           | QG2 / WG2 / L              |       |  |  |
|                          | Chipset   | Q170/C236/H110  |            |            |             |                    |                     |                    |                     |                     |                     |                         |                            |       |  |  |
|                          | BIOS  | AMI EFI 128 Mbit SPI  |            |            |             |                    |                     |                    |                     |                     |                     |                         |                            |       |  |  |
| Expansion Slot           | PCIe x1 (Gen3)  | 1 GB/s per direction, 1 slot (H110 2*PICex1, Gen2 only)   |            |            |             |                    |                     |                    |                     |                     |                     |                         |                            |       |  |  |
|                          | PCIe x4 (Gen3)  | 4 GB/s per direction, 1 slot (Q170,C236 only)   |            |            |             |                    |                     |                    |                     |                     |                     |                         |                            |       |  |  |
|                          | PCIe x8 (Gen3)  | 8 GB/s per direction, 1 slot (Q170,C236 only)   |            |            |             |                    |                     |                    |                     |                     |                     |                         |                            |       |  |  |
|                          | PCIe x16 (Gen3)   | 16 GB/s per direction, 1 slot (When x8 slot is used, x16 slot only offers x8 bandwidth automatically) |            |            |             |                    |                     |                    |                     |                     |                     |                         |                            |       |  |  |
| Memory                   | Technology  | Dual Channel DDR4 2133 MHz SDRAM (L sku: 2 slot)  |            |            |             |                    |                     |                    |                     |                     |                     |                         |                            |       |  |  |
|                          | Max. Capacity   | 64 GB/16 GB per DIMM (L sku: 32GB)  |            |            |             |                    |                     |                    |                     |                     |                     |                         |                            |       |  |  |
|                          | Socket  | 4 x 288-pin DIMM (L sku: 2 x 288)   |            |            |             |                    |                     |                    |                     |                     |                     |                         |                            |       |  |  |
| Graphics                 | Controller  | Intel HD Graphics<br>Supports DirectX11.1, OpenGL 5.0 and OpenCL 2.1                                  |            |            |             |                    |                     |                    |                     |                     |                     |                         |                            |       |  |  |
|                          | VRAM  | 1 GB maximum shared memory with 2 GB and above system memory installed                                |            |            |             |                    |                     |                    |                     |                     |                     |                         |                            |       |  |  |
|                          | HDMI  | Supports max resolution HDMI 1.2 1920 x 1200 @ 60 Hz (Colay HDMI 2.0,4096 x 2160 @ 60 Hz, optional)   |            |            |             |                    |                     |                    |                     |                     |                     |                         |                            |       |  |  |
|                          | VGA   | Max resolution 1920 x 1200 @ 60 Hz (on board) (optional)  |            |            |             |                    |                     |                    |                     |                     |                     |                         |                            |       |  |  |
|                          | DVI-D   | Supports max. resolution 1920 x 1200 @ 60 Hz  |            |            |             |                    |                     |                    |                     |                     |                     |                         |                            |       |  |  |
|                          | eDP   | Internal pin header, supports max. resolution 3840 x 2160 @ 60 Hz (on board)                          |            |            |             |                    |                     |                    |                     |                     |                     |                         |                            |       |  |  |
|                          | Display Port  | Supports max resolution 4096 x 2304 @ 60 Hz   |            |            |             |                    |                     |                    |                     |                     |                     |                         |                            |       |  |  |
| Triple Display           | eDP/ VGA + DP++ + HDMI, eDP/ VGA + HDMI + DVI-D, DP++ + eDP/ VGA + DVI-D, DVI-D + DP++ + HDMI |   |            |            |             |                    |                     |                    |                     |                     |                     |                         |                            |       |  |  |
|                          | Dual Display  | DP++ + HDMI, DP++ + DVI-D, DP++ + eDP/ VGA, HDMI + DVI-D, HDMI + eDP/ VGA, eDP, VGA + DVI-D           |            |            |             |                    |                     |                    |                     |                     |                     |                         |                            |       |  |  |
| Ethernet                 | Interface   | 10/100/1000 Mbps  |            |            |             |                    |                     |                    |                     |                     |                     |                         |                            |       |  |  |
|                          | Controller  | GbE LAN1: Intel I219LM, GbE LAN2: Intel I211AT (L sku: only LAN1)                                     |            |            |             |                    |                     |                    |                     |                     |                     |                         |                            |       |  |  |
| SATA                     | Connector   | RJ-45 x 2   |            |            |             |                    |                     |                    |                     |                     |                     |                         |                            |       |  |  |
|                          | Max Data Transfer Rate  | 600 MB/s (SATA 3.0)   |            |            |             |                    |                     |                    |                     |                     |                     |                         |                            |       |  |  |
| Rear I/O                 | Channel   | 4   |            |            |             |                    |                     |                    |                     |                     |                     |                         |                            |       |  |  |
|                          | DVI-D   | 1   |            |            |             |                    |                     |                    |                     |                     |                     |                         |                            |       |  |  |
|                          | Display Port  | 1   |            |            |             |                    |                     |                    |                     |                     |                     |                         |                            |       |  |  |
|                          | HDMI  | 1   |            |            |             |                    |                     |                    |                     |                     |                     |                         |                            |       |  |  |
|                          | Ethernet  | 2 (L sku: only LAN1)  |            |            |             |                    |                     |                    |                     |                     |                     |                         |                            |       |  |  |
|                          | USB   | 8 (QG2,WG2: 6 x USB 3.0, 2 x USB 2.0; L: 4 x USB3.0, 4 x USB2.0)                                      |            |            |             |                    |                     |                    |                     |                     |                     |                         |                            |       |  |  |
|                          | Audio   | 2 (Mic-in/ Line-out) (Mic-in could be configured as "Line-in" under Win OS.)                          |            |            |             |                    |                     |                    |                     |                     |                     |                         |                            |       |  |  |
|                          | Serial  | 1 (RS-232)  |            |            |             |                    |                     |                    |                     |                     |                     |                         |                            |       |  |  |
|                          | USB 3.0   | 6 (Default is 4.BOM option add another controller IC to 2 x USB3.0, and QG2,WG2 sku only)             |            |            |             |                    |                     |                    |                     |                     |                     |                         |                            |       |  |  |
|                          | Serial  | 5 (4 x RS-232, 1 x RS-232/422/485 to support auto flow control)                                       |            |            |             |                    |                     |                    |                     |                     |                     |                         |                            |       |  |  |
| Internal Connector       | VGA   | 1 (optional)  |            |            |             |                    |                     |                    |                     |                     |                     |                         |                            |       |  |  |
|                          | SATA  | 4 (SATA 3.0)  |            |            |             |                    |                     |                    |                     |                     |                     |                         |                            |       |  |  |
|                          | Extended Display Port (eDP)   | 1   |            |            |             |                    |                     |                    |                     |                     |                     |                         |                            |       |  |  |
|                          | JTAG  | 1   |            |            |             |                    |                     |                    |                     |                     |                     |                         |                            |       |  |  |
|                          | mini-PCIe   | 1 Full-size colay mSATA   |            |            |             |                    |                     |                    |                     |                     |                     |                         |                            |       |  |  |
|                          | GPIO  | 16-bit GPIO   |            |            |             |                    |                     |                    |                     |                     |                     |                         |                            |       |  |  |
| Watchdog Timer           | Output  | System reset  |            |            |             |                    |                     |                    |                     |                     |                     |                         |                            |       |  |  |
|                          | Interval  | Programmable 1 ~ 255 sec/min  |            |            |             |                    |                     |                    |                     |                     |                     |                         |                            |       |  |  |
| Power Requirements       | Power On  | +5 V  |            |            | 3.3 V       |                    |                     | 12 V               |                     |                     | 5 Vsb               |                         |                            | -12 V |  |  |
|                          |   | 1.31A   |            |            | 0.35A       |                    |                     | 4.52A              |                     |                     | 0.06A               |                         |                            | 0A    |  |  |
| Environment              | Operating   | 0 ~ 60° C (14 ~ 158° F), depends on CPU speed and cooler solution                                     |            |            |             |                    |                     |                    |                     |                     |                     |                         | Normal                     |       |  |  |
|                          |   |   |            |            |             |                    |                     |                    |                     |                     |                     |                         | -40 ~ 85° C (-40 ~ 185° F) |       |  |  |
| Physical Characteristics | Dimensions  | 244 mm x 244 mm (9.6" x 9.6")   |            |            |             |                    |                     |                    |                     |                     |                     |                         |                            |       |  |  |
| Power                    | Input Mode  | ATX input (Default)   |            |            |             |                    |                     |                    |                     |                     |                     |                         |                            |       |  |  |

## Block Diagram



## Ordering Information

| Part Number       | Chipset | Memory      | USB 3.0   | USB 2.0 | VGA | DP | HDMI 1.2 | DVI-D | eDP | SATAIII | PCIe x16/<br>PCIex8 | PCIe x4 | PCIe x 1 | COM | TPM | GbE LAN | AMP |
|-------------------|---------|-------------|-----------|---------|-----|----|----------|-------|-----|---------|---------------------|---------|----------|-----|-----|---------|-----|
| AIMB-585QG2-00A1E | Q170    | Non-ECC     | 10+(2)*** | 2       | (1) | 1  | 1**      | 1     | 1   | 4       | 1/1                 | 1       | 1        | 6   | (1) | 2       | (1) |
| AIMB-585WG2-00A1E | C236    | ECC/Non-ECC | 10+(2)*** | 2       | (1) | 1  | 1**      | 1     | 1   | 4       | 1/1                 | 1       | 1        | 6   | (1) | 2       | (1) |
| AIMB-585L-00A1E   | H110    | Non-ECC     | 4         | 4       | (1) | 1  | 1        | 1     | 0   | 3       | 1/0                 | 0       | 2        | 6   | (1) | 1       | (1) |

\*( ) BOM options available on MP version.

\*\* HDMI 1.2 colay HDMI2.0(BOM option)

\*\*\* there is BOM option with added USB 3.0 from controller IC, only support in QG2,WG2 sku

## Riser Card

| Part Number      | Description                              |
|------------------|--|
| AIMB-RF10F-01A1E | 1U riser card with 1 PCIe16 expansion    |
| AIMB-R430P-03A2E | 2U PCIe x4 to 3 PCI                      |
| AIMB-R43PF-21A1E | 2U PCIe x16/PCIe x4 to 1PCIe x16 + 2 PCI |

## Packing List

| Part Number    | Description      | Quantity |
|----------------|------------------|----------|
| 1700003194     | SATA HDD cable   | 2        |
| 1700022749-13  | SATA power cable | 2        |
| 19Z0001200T000 | I/O port braket  | 1        |
| 2006058510     | Startup manual   | 1        |

## I/O View



## Optional Accessories

| Part Number    | Description   |
|----------------|---|
| 1700020277-01  | Dual port USB 3.0 cable 30cm with IO bracket  |
| 1960047669N001 | LGA1156 CPU cooler for 4U and wallmount chassis, for CPU TDP <= 84W, 4.72" (W) x 4.72" (L) x 3.03" (H)            |
| 1960047831N001 | LGA1156 CPU cooler for 2U and backplane version of chassis, for CPU TDP <= 65W, 3.27" (W) x 3.27" (L) x 2.17" (H) |
| 1960053207N001 | LGA1155 CPU cooler for 2U and wallmount chassis, for CPU TDP <= 45W, D=3.66"(W) x 3.66"(L) x 1.81"(H)             |
| 1703060191     | KBMS cable 1*6P-2.0/DIN-6P(F)*2, 22 cm  |
| 1700025715-01  | KBMS cable 1*6P WAFER/PS2*2 w/ BRAKET 35CM  |
| 1700000447     | 1-to-4 serial ports cable kit, 45cm   |
| 1701400181     | 1-to-4 serial ports cable kit, 18cm   |
| 1700025673-01  | A VGA CABLE 30CM (on board)   |
| 1700026163-01  | COM2, 1 to 1 COM cable 60cm (IDE 10P-2.0) w/ Braket   |

Note: Purchasing AIMB-585's proprietary CPU cooler from Advantech is a must, other CPU cooler are NOT compatible with AIMB-585.

The complete thermal solution is composed of CPU cooler and system fans for the CPU TDP as above.

## Embedded OS/API

| OS/API        | Part No.   |
|---------------|------------|
| WES7P         | 2070014308 |
| WE8.1         | 2070014247 |
| win10 IoT Ent | 2070014621 |