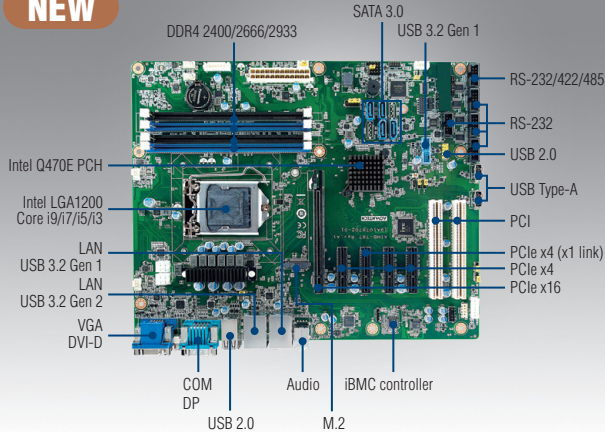


# AIMB-787

**LGA1200 10th Generation Intel® Core™ i9/i7/i5/i3 & Pentium®/Celeron® ATX with DP/DVI/VGA, DDR4, USB 3.2, M.2**

**NEW**



## Features

- Intel® 10th generation Core™ i9/i7/i5/i3 & Pentium®/Celeron® processor with Q470E chipset
- Four DIMM sockets up to 128 GB DDR4 2933
- Triple display DP/DVI-D/VGA and dual GbE LAN
- M.2, SATA RAID 0, 1, 5, 10, USB 3.2
- Supports Intel vPro, AMT & TPM technologies
- Advantech iBMC remote out-of-band power management solution on DeviceOn

Note 1: TPM module is required to enable Intel vPro and TPM technologies.

Note 2: Legacy platform is not supported.

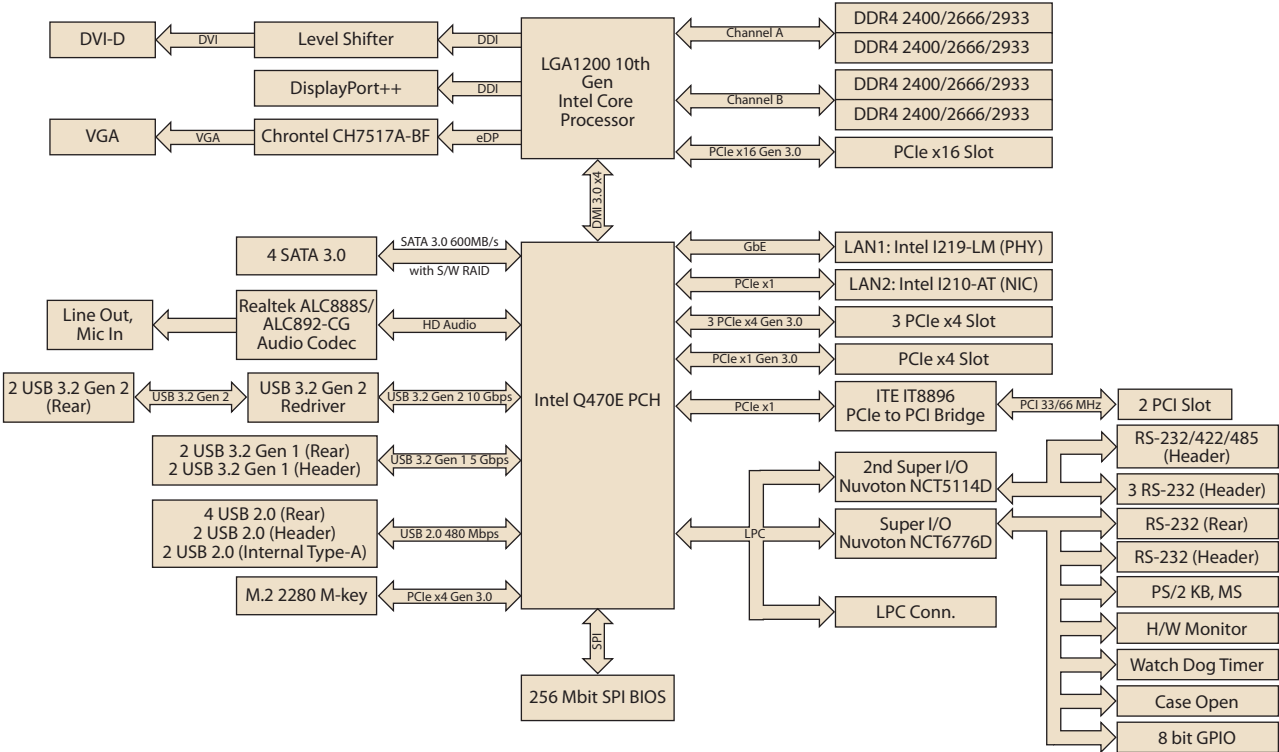
## Quiet Specifications

CE FCC

|                          |                               |  |                              |            |           |            |           |            |           |            |                               |                            |         |         |  |
|--------------------------|-------------------------------|--|------------------------------|------------|-----------|------------|-----------|------------|-----------|------------|-------------------------------|----------------------------|---------|---------|--|
| Processor System         | CPU                           | i9-10900K  | i9-10900E                    | i9-10900TE | i7-10700E | i7-10700TE | i5-10500E | i5-10500TE | i3-10100E | i3-10100TE | G6400E                        | G6400TE                    | G5900E  | G5900TE |  |
|                          | Base Frequency                | 3.7 GHz  | 2.8 GHz                      | 1.8 GHz    | 2.9 GHz   | 2.0 GHz    | 3.1 GHz   | 2.3 GHz    | 3.2 GHz   | 2.3 GHz    | 3.8 GHz                       | 3.2 GHz                    | 3.2 GHz | 3.0 GHz |  |
|                          | L3 Cache                      | 20 MB  | 20 MB                        | 20 MB      | 16 MB     | 16 MB      | 12 MB     | 12 MB      | 6 MB      | 6 MB       | 4 MB                          | 4 MB                       | 2 MB    | 2 MB    |  |
|                          | Cores                         | 10   | 10                           | 10         | 8         | 8          | 6         | 6          | 4         | 4          | 2                             | 2                          | 2       | 2       |  |
|                          | TDP                           | 125W   | 65 W                         | 35 W       | 65 W      | 35 W       | 65 W      | 35 W       | 65 W      | 35 W       | 65 W                          | 35 W                       | 65 W    | 35 W    |  |
|                          | Socket                        | LGA1200  |                              |            |           |            |           |            |           |            |                               |                            |         |         |  |
|                          | Chipset                       | Q470E  |                              |            |           |            |           |            |           |            |                               |                            |         |         |  |
|                          | BIOS                          | AMI 256 Mbit SPI   |                              |            |           |            |           |            |           |            |                               |                            |         |         |  |
|                          | Expansion Slot                | PCI  | 2 (32-bit/33 MHz)            |            |           |            |           |            |           |            |                               |                            |         |         |  |
|                          |                               | PCIe x4 (Gen 3)  | 4 (3 x link x4, 1 x link x1) |            |           |            |           |            |           |            |                               |                            |         |         |  |
| PCIe x16 (Gen 3)         |                               | 1  |                              |            |           |            |           |            |           |            |                               |                            |         |         |  |
| Memory                   | Technology                    | Dual Channel (Non-ECC) DDR4 2400/2666/2933   |                              |            |           |            |           |            |           |            |                               |                            |         |         |  |
|                          | Max. Capacity                 | 128 GB   |                              |            |           |            |           |            |           |            |                               |                            |         |         |  |
|                          | Socket                        | 4 x 288-pin DIMM   |                              |            |           |            |           |            |           |            |                               |                            |         |         |  |
| Graphics                 | Controller                    | Intel HD Graphics  |                              |            |           |            |           |            |           |            |                               |                            |         |         |  |
|                          | VRAM                          | 1 GB maximum shared memory with 2 GB and above system memory installed                 |                              |            |           |            |           |            |           |            |                               |                            |         |         |  |
| Ethernet                 | Interface                     | 10/100/1000 Mbps   |                              |            |           |            |           |            |           |            |                               |                            |         |         |  |
|                          | Controller                    | GbE LAN1: Intel I219-LM, GbE LAN2: Intel I210-AT (iBMC supported)                      |                              |            |           |            |           |            |           |            |                               |                            |         |         |  |
|                          | Connector                     | 2 x RJ-45  |                              |            |           |            |           |            |           |            |                               |                            |         |         |  |
| SATA                     | Max Data Transfer Rate        | 600 MB/s   |                              |            |           |            |           |            |           |            |                               |                            |         |         |  |
|                          | Channel                       | 4  |                              |            |           |            |           |            |           |            |                               |                            |         |         |  |
|                          | RAID                          | 0,1,5,10   |                              |            |           |            |           |            |           |            |                               |                            |         |         |  |
| Rear I/O                 | VGA                           | 1 (Resolution up to 1920 x 1200 @ 60 Hz)   |                              |            |           |            |           |            |           |            |                               |                            |         |         |  |
|                          | DVI-D                         | 1 (Resolution up to 1920 x 1200 @ 60 Hz)   |                              |            |           |            |           |            |           |            |                               |                            |         |         |  |
|                          | DisplayPort                   | 1 (Resolution up to 4096 x 2304 @ 60 Hz)   |                              |            |           |            |           |            |           |            |                               |                            |         |         |  |
|                          | Ethernet                      | 2  |                              |            |           |            |           |            |           |            |                               |                            |         |         |  |
|                          | USB                           | 8 (2 x USB 3.2 Gen 2, 2 x USB 3.2 Gen 1, 4 x USB 2.0)                                  |                              |            |           |            |           |            |           |            |                               |                            |         |         |  |
|                          | Audio                         | 2 (Line-out, Mic-in)   |                              |            |           |            |           |            |           |            |                               |                            |         |         |  |
|                          | Serial                        | 1 (RS-232)   |                              |            |           |            |           |            |           |            |                               |                            |         |         |  |
| Internal Connectors      | USB                           | 6 (2 x USB 3.2 Gen 1 via header, 2 x USB 2.0 via header, 2 x USB 2.0 Type-A connector) |                              |            |           |            |           |            |           |            |                               |                            |         |         |  |
|                          | Serial                        | 5 (4 x RS-232, 1 x RS-232/422/485)   |                              |            |           |            |           |            |           |            |                               |                            |         |         |  |
|                          | SATA                          | 4  |                              |            |           |            |           |            |           |            |                               |                            |         |         |  |
|                          | M.2                           | 1 (PCIe x4 M-key 2280 type)  |                              |            |           |            |           |            |           |            |                               |                            |         |         |  |
|                          | GPIO                          | 8-bit  |                              |            |           |            |           |            |           |            |                               |                            |         |         |  |
| Watchdog Timer           | PS/2 KB/Mouse                 | 1 (Optional PS/2 KB/Mouse Cable is required)   |                              |            |           |            |           |            |           |            |                               |                            |         |         |  |
|                          | Output                        | System reset   |                              |            |           |            |           |            |           |            |                               |                            |         |         |  |
| Power Requirement        | Interval                      | Programmable 1 ~ 255 sec   |                              |            |           |            |           |            |           |            |                               |                            |         |         |  |
|                          | Power On                      | Intel Core i5-10500E; DDR4 32 GB x 4   |                              |            |           |            |           |            |           |            |                               |                            |         |         |  |
|                          | Voltage                       | +12V   |                              | +5V        |           | +3.3V      |           | +5Vsb      |           | -12V       |                               |                            |         |         |  |
| Current                  | 7.58A                         |  | 1.92A                        |            | 0.87A     |            | 0.14A     |            | 0.08A     |            |                               |                            |         |         |  |
| Environment              | Operating                     | 0 ~ 60 °C (32 ~ 140 °F), depends on CPU speed and system thermal solution              |                              |            |           |            |           |            |           |            |                               | Non-Operating              |         |         |  |
|                          | Temperature                   |  |                              |            |           |            |           |            |           |            |                               | -40 ~ 85 °C (-40 ~ 185 °F) |         |         |  |
| Humidity                 | 40 °C @ 95% RH Non-condensing |  |                              |            |           |            |           |            |           |            | 60 °C @ 95% RH Non-condensing |                            |         |         |  |
| Physical Characteristics | Dimensions (L x H)            | 304.8 x 244 mm (12" x 9.6")  |                              |            |           |            |           |            |           |            |                               |                            |         |         |  |

Note: A 8-pin 12V CPU power plug connected to MB's CPU 12V connector is required to support i9-10900K CPU. Core i9-10900K has no long life time due to not belong to embedded segment.

### Block Diagram



### Ordering Information

| Part Number     | Chipset | Memory                                   | Display          | USB 3.2 Gen 2 | USB 3.2 Gen 1 | USB 2.0 | COM | GbE LAN | AMT | M.2 | SATA 3.0 | SW RAID |
|-----------------|---------|--|------------------|---------------|---------------|---------|-----|---------|-----|-----|----------|---------|
| AIMB-787G2-00A2 | Q470E   | Non-ECC DDR4 2400/2666/2933 up to 128 GB | VGA + DVI-D + DP | 2             | 4             | 8       | 6   | 2       | Yes | 1   | 4        | Yes     |

### Packing List

| Part Number    | Description      | Quantity |
|----------------|------------------|----------|
| 1700003194     | SATA HDD cable   | x 2      |
| 1960086615T001 | I/O port bracket | x 1      |
| 2041078710     | Startup manual   | x 1      |

Note: Driver CD is not provided. Please visit Advantech support website for driver download.

### I/O View



AIMB-787G2-00A2

### Optional Accessories

| Part Number                                       | Description  |
|---|--|
| 1700002204  | 2-port USB 2.0 cable w/ BKT(27 cm)                               |
| 1700028292-01                                     | 2-port USB 3.0 cable w/ BKT(30 cm)                               |
| 1960052651N021                                    | CPU cooler for 2U, 4U and wallmount chassis (for CPU TDP=35-65W) |
| 1960067860N001                                    | CPU cooler for 4U chassis (for CPU TDP=95-125W)                  |
| 1701090401  | Single COM port cable(40 cm)                                     |
| 1701092300  | Dual COM port cable(28.5 cm)                                     |
| 1700022749-11/<br>1700022749-12/<br>1700022749-13 | SATA power cable   |
| 1700019268-11                                     | PS/2 KB/Mouse cable  |
| 1960063434N000                                    | IO bracket for PS/2 KB/Mouse cable                               |
| PCA-TPM-00B1E                                     | TPM2.0 module to enable TPM and vPro technologies                |

Note 1: Purchasing AIMB-787's proprietary CPU cooler from Advantech is a must. Other brands' CPU coolers are NOT compatible with AIMB-787.  
 Note 2: 1960067860N001 cooler for 95-125W CPU is tested with ACP-4000/IPC-610H chassis.

### Riser Card

| Part Number      | Description                                     |
|------------------|---|
| AIMB-R430P-03A2E | 2U riser card with 3 PCI expansion              |
| AIMB-R431F-21A1E | 2U riser card with 1 PCIe16 & 1 PCIe1 expansion |
| AIMB-R43PF-21A1E | 2U riser card with 1 PCIe16 & 2 PCI expansion   |
| AIMB-R4301-03A2E | 2U riser card with 1 PCIe1 expansion            |

Note: AIMB-787 is not compatible with 1U chassis.