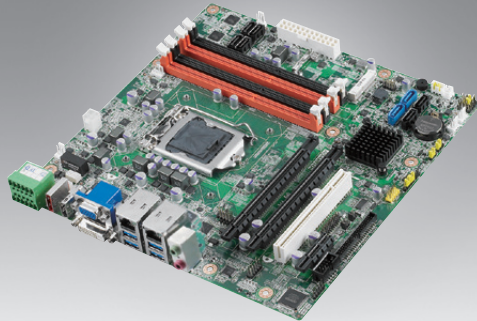


# AIMB-502

**Intel® Xeon® E3/ Core™ i7/i5/i3 LGA1155**  
**MicroATX with CRT/DVI/HDMI, 6 COM,**  
**Dual LAN, SATAIII**

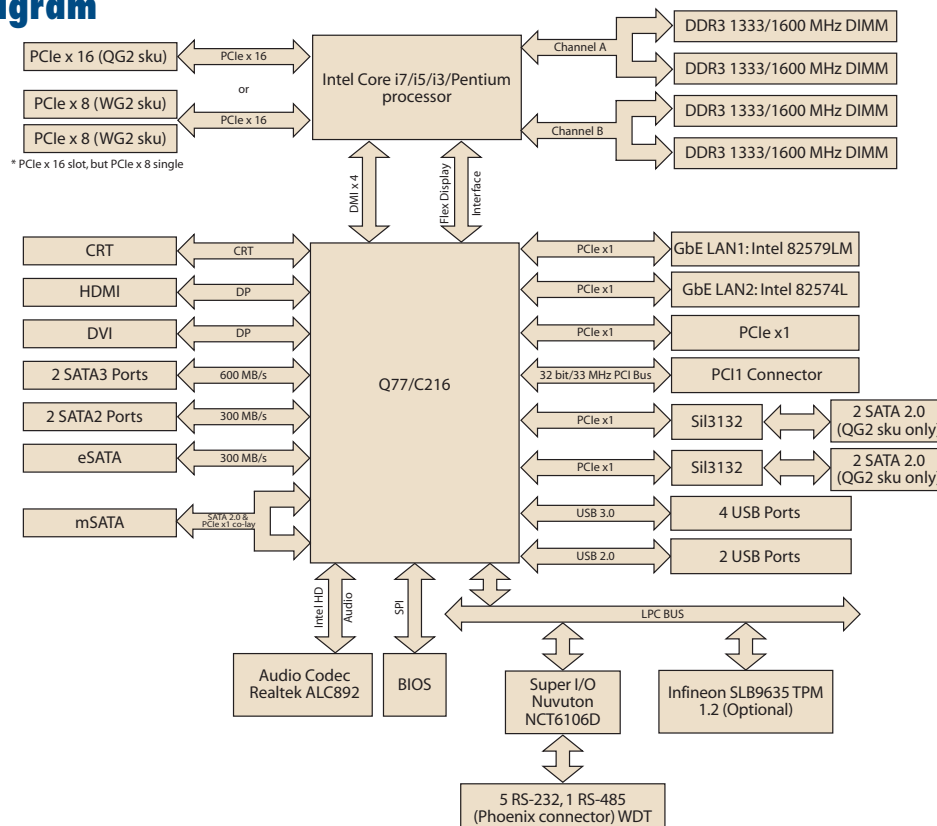
**NEW**



## Specifications

|                          | CPU                    | Intel Xeon E3-1275v2                                                                                                            | Intel Xeon E3-1275 | Intel Xeon E3-1225v2 | Intel Xeon E3-1225 | Intel Core i3-2120 | Intel Pentium G850 | Intel Core i7-3770 | Intel Core i7-2600 | Intel Core i5-3550S | Intel Core i3-3220 | Intel Core i5-2400 | Intel Celeron G540 |
|--------------------------|------------------------|---------------------------------------------------------------------------------------------------------------------------------|--------------------|----------------------|--------------------|--------------------|--------------------|--------------------|--------------------|---------------------|--------------------|--------------------|--------------------|
| Processor System         | Core Number            | 4                                                                                                                               | 4                  | 4                    | 4                  | 2                  | 2                  | 4                  | 4                  | 4                   | 2                  | 4                  | 2                  |
|                          | Max. Speed             | 3.5 GHz                                                                                                                         | 3.4 GHz            | 3.2 GHz              | 3.1 GHz            | 3.3 GHz            | 2.9 GHz            | 3.4GHz             | 3.4 GHz            | 3.0GHz              | 3.3 GHz            | 3.1 GHz            | 2.5 GHz            |
|                          | Integrated Graphics    | Yes                                                                                                                             | Yes                | Yes                  | Yes                | Yes                | Yes                | Yes                | Yes                | Yes                 | Yes                | Yes                | Yes                |
|                          | L3 Cache               | 8 MB                                                                                                                            | 8 MB               | 8 MB                 | 6 MB               | 3 MB               | 3 MB               | 8 MB               | 8 MB               | 6 MB                | 3 MB               | 6 MB               | 2 MB               |
|                          | Supports Model         | WG2                                                                                                                             | WG2                | WG2                  | WG2                | WG2/QG2            | WG2/QG2            | QG2                | QG2                | QG2                 | QG2                | QG2                | QG2                |
| Expansion Slot           | Chipset                | Q77/C216                                                                                                                        |                    |                      |                    |                    |                    |                    |                    |                     |                    |                    |                    |
|                          | BIOS                   | AMI EFI 64 Mbit SPI                                                                                                             |                    |                      |                    |                    |                    |                    |                    |                     |                    |                    |                    |
|                          | PCI                    | 32-bit/33 MHz, 1 slot                                                                                                           |                    |                      |                    |                    |                    |                    |                    |                     |                    |                    |                    |
| Memory                   | PCIe x1 (Gen2)         | 500MB/s per direction, 1 slot                                                                                                   |                    |                      |                    |                    |                    |                    |                    |                     |                    |                    |                    |
|                          | PCIe x16 (Gen3)        | 16GB/s per direction, 1 slot (QG2), 2 slot (WG2: PCIe x8 single per slot only)                                                  |                    |                      |                    |                    |                    |                    |                    |                     |                    |                    |                    |
|                          | Technology             | Dual Channel DDR3 1333/1600 MHz SDRAM                                                                                           |                    |                      |                    |                    |                    |                    |                    |                     |                    |                    |                    |
| Graphics                 | Max. Capacity          | 32 GB/8 GB per DIMM                                                                                                             |                    |                      |                    |                    |                    |                    |                    |                     |                    |                    |                    |
|                          | Socket                 | 4 x 240-pin DIMM (Non-ECC)                                                                                                      |                    |                      |                    |                    |                    |                    |                    |                     |                    |                    |                    |
|                          | Controller             | Intel HD Graphics                                                                                                               |                    |                      |                    |                    |                    |                    |                    |                     |                    |                    |                    |
|                          | VRAM                   | 1 GB maximum shared memory with 2 GB and above system memory installed                                                          |                    |                      |                    |                    |                    |                    |                    |                     |                    |                    |                    |
|                          | HDMI                   | Supports max resolution 1920 x 1200 (1080P)                                                                                     |                    |                      |                    |                    |                    |                    |                    |                     |                    |                    |                    |
| Ethernet                 | CRT                    | Supports max resolution 2048 x 1536 at 60 Hz                                                                                    |                    |                      |                    |                    |                    |                    |                    |                     |                    |                    |                    |
|                          | DVI                    | Supports max. resolution 1920 x 1200 at 60 Hz                                                                                   |                    |                      |                    |                    |                    |                    |                    |                     |                    |                    |                    |
|                          | Triple Display         | CRT+DVI+HDMI                                                                                                                    |                    |                      |                    |                    |                    |                    |                    |                     |                    |                    |                    |
|                          | Dual Display           | CRT+DVI, CRT+HDMI, DVI+HDMI                                                                                                     |                    |                      |                    |                    |                    |                    |                    |                     |                    |                    |                    |
|                          | Interface              | 10/100/1000 Mbps                                                                                                                |                    |                      |                    |                    |                    |                    |                    |                     |                    |                    |                    |
| SATA                     | Controller             | GbE LAN1: Intel 82579LM, GbE LAN2: Intel 82574L                                                                                 |                    |                      |                    |                    |                    |                    |                    |                     |                    |                    |                    |
|                          | Connector              | RJ-45 x 2                                                                                                                       |                    |                      |                    |                    |                    |                    |                    |                     |                    |                    |                    |
|                          | Max Data Transfer Rate | 600 MB/s (SATA 3.0)/ 300 MB/s (SATA 2.0) / eSATA / mSATA                                                                        |                    |                      |                    |                    |                    |                    |                    |                     |                    |                    |                    |
| Rear I/O                 | Channel                | 2/6/1/1                                                                                                                         |                    |                      |                    |                    |                    |                    |                    |                     |                    |                    |                    |
|                          | CRT                    | 1                                                                                                                               |                    |                      |                    |                    |                    |                    |                    |                     |                    |                    |                    |
|                          | DVI                    | 1                                                                                                                               |                    |                      |                    |                    |                    |                    |                    |                     |                    |                    |                    |
|                          | HDMI                   | 1                                                                                                                               |                    |                      |                    |                    |                    |                    |                    |                     |                    |                    |                    |
|                          | Ethernet               | 2                                                                                                                               |                    |                      |                    |                    |                    |                    |                    |                     |                    |                    |                    |
|                          | USB                    | 4 (4 USB 3.0)                                                                                                                   |                    |                      |                    |                    |                    |                    |                    |                     |                    |                    |                    |
|                          | Audio                  | 2 (Mic-in, Line-out)                                                                                                            |                    |                      |                    |                    |                    |                    |                    |                     |                    |                    |                    |
|                          | Serial                 | 1 (RS-485 from Phoenix connector)                                                                                               |                    |                      |                    |                    |                    |                    |                    |                     |                    |                    |                    |
|                          | Phoenix                | 1 (1 RS-485 + 6 bit GPIO: fixed 4 in, 2 out, can't programmable)                                                                |                    |                      |                    |                    |                    |                    |                    |                     |                    |                    |                    |
|                          | eSATA                  | 1                                                                                                                               |                    |                      |                    |                    |                    |                    |                    |                     |                    |                    |                    |
| Internal Connector       | USB                    | 2 (USB 2.0)                                                                                                                     |                    |                      |                    |                    |                    |                    |                    |                     |                    |                    |                    |
|                          | Serial                 | 5 (RS-232)                                                                                                                      |                    |                      |                    |                    |                    |                    |                    |                     |                    |                    |                    |
|                          | IDE                    | -                                                                                                                               |                    |                      |                    |                    |                    |                    |                    |                     |                    |                    |                    |
|                          | SATA                   | 2 x 600 MB/s (SATA 3.0)/6 x 300 MBs (SATA 2.0) / 1 x eSATA / 1 x mSATA                                                          |                    |                      |                    |                    |                    |                    |                    |                     |                    |                    |                    |
|                          | IrDA                   | -                                                                                                                               |                    |                      |                    |                    |                    |                    |                    |                     |                    |                    |                    |
| Watchdog Timer           | GPIO                   | 14 bit GPIO (6 bit non-programmable GPIO via Phoenix connector on rear side and 8 bit programmable GPIO by pin header on board) |                    |                      |                    |                    |                    |                    |                    |                     |                    |                    |                    |
|                          | Output                 | System reset                                                                                                                    |                    |                      |                    |                    |                    |                    |                    |                     |                    |                    |                    |
| Power Requirements       | Interval               | Programmable 1 ~ 255 sec/min                                                                                                    |                    |                      |                    |                    |                    |                    |                    |                     |                    |                    |                    |
|                          | Power On               | Intel Core i7-3770 3.4 GHz, 8 GB DDR3 1600 MHz x 4pcs                                                                           |                    |                      |                    |                    |                    |                    |                    |                     |                    |                    |                    |
|                          |                        | +5 V                                                                                                                            | 3.3 V              | 12 V                 | 5 Vsb              | -12 V              |                    |                    |                    |                     |                    |                    |                    |
| Environment              |                        | 2.69 A                                                                                                                          | 0.93 A             | 5.3 A                | 0.0 A              | 0.52 A             |                    |                    |                    |                     |                    |                    |                    |
|                          | Operating              | 0 ~ 60° C (32 ~ 140° F), depends on CPU speed and cooler solution                                                               |                    |                      |                    |                    |                    |                    |                    |                     |                    |                    |                    |
| Physical Characteristics | Temperature            |                                                                                                                                 |                    |                      |                    |                    |                    |                    |                    |                     |                    |                    |                    |
|                          | Dimensions             | 244 mm x 244 mm (9.6" x 9.6")                                                                                                   |                    |                      |                    |                    |                    |                    |                    |                     |                    |                    |                    |

## Block Diagram



## Ordering Information

| Part Number       | Chipset | Memory      | USB 2.0/ 3.0 | CRT | HDMI | DVI | SATA 3.0/ 2.0 | eSATA/ mSATA | COM | TPM | GbE LAN | PCIe                                                          | Mini PCIe             |
|-------------------|---------|-------------|--------------|-----|------|-----|---------------|--------------|-----|-----|---------|---------------------------------------------------------------|-----------------------|
| AIMB-502QG2-00A1E | Q77     | Non-ECC     | 2/4          | Yes | 1    | 1   | 2/6           | 1/1          | 6   | (1) | 2       | PCIe 16 x 1 (Gen 3)<br>PCIe 1 x 1 (Gen 2)                     | 1 (co-lay with mSATA) |
| AIMB-502WG2-00A1E | C216    | ECC/Non-ECC | 2/4          | Yes | 1    | 1   | 2/2           | 1/1          | 6   | (1) | 2       | PCIe 8 x 2 (Gen 3)<br>PCIe 16 connector<br>PCIe 1 x 1 (Gen 2) | 1 (co-lay with mSATA) |

\*(1) BOM options available on MP version.

## Riser Card

| Part Number      | Description                             |
|------------------|-----------------------------------------|
| AIMB-RP10P-01A1E | 1U riser card with 1 PCI expansion      |
| AIMB-RP30P-03A1E | 2U riser card with 3 PCI expansion      |
| AIMB-RF10F-01A1E | 1U riser card with 1 PCIe x16 expansion |

## Packing List

| Part Number    | Description             | Quantity |
|----------------|-------------------------|----------|
| 1700003194     | SATA HDD cable          | 2        |
| 1703150102     | SATA power cable        | 2        |
| 1960059180T000 | IO Bracket for AIMB-502 | 1        |
| 2002050200     | Startup manual          | 1        |
| 2062050200     | Driver CD               | 1        |

## I/O View



AIMB-502QG2-00A1E  
AIMB-502WG2-00A1E

## Optional Accessories

| Part Number    | Description                                                                                                      |
|----------------|------------------------------------------------------------------------------------------------------------------|
| 1700002204     | Dual port USB cable (27 cm) with bracket                                                                         |
| 1960047669N001 | LGA1156 CPU cooler for 4U and wallmount chassis, for CPU TDP ≤ 95W, 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) |
| 1960049408N001 | LGA1156 CPU cooler for 1U and wallmount chassis, for CPU TDP ≤ 65W, 3.35" (W) x 3.35" (L) x 1.02" (H)            |
| 1700000447     | 1-to-4 serial ports cable kit, 45cm                                                                              |
| 1701400181     | 1-to-4 serial ports cable kit, 18cm                                                                              |

Note: Purchasing AIMB-502's proprietary CPU cooler from Advantech is a must, other brand's CPU cooler are NOT compatible with AIMB-502.

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

## Embedded OS/API

| OS/API | Part No. | Description                                                                            |
|--------|----------|----------------------------------------------------------------------------------------|
| WES 7  |          | Image WES7E 32 bit AIMB-502 ENG/TC/SC/JPN<br>Image WES7E 64 bit AIMB-502 ENG/TC/SC/JPN |

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