

# AIMB-505

**Intel® Core™ i7/i5/i3 LGA1151 MicroATX with VGA/DP/DVI-D/LVDS, 10 COM, 8 USB 3.0, 6 USB 2.0, Dual LAN**

**NEW**



**Quiet susiAccess**



**CE FCC**

## Specifications

|                          | CPU                    | i7-6700                                                                                                                                | i7-6700TE | i5-6500 | i5-6500TE | i3-6100 | i3-6100TE                  | Pentium G4400/<br>G4400TE | Celeron G3900/<br>G3900TE |
|--------------------------|------------------------|----------------------------------------------------------------------------------------------------------------------------------------|-----------|---------|-----------|---------|----------------------------|---------------------------|---------------------------|
| Processor System         | Core Number            | 4                                                                                                                                      | 4         | 4       | 4         | 2       | 2                          | 2                         | 2                         |
|                          | Max. Speed             | 3.4 GHz                                                                                                                                | 2.4 GHz   | 3.2 GHz | 2.3 GHz   | 3.7GHz  | 2.7 GHz                    | 3.3GHz /<br>2.9GHz        | 2.8GHz / 2.6GHz           |
|                          | L3 Cache               | 8M                                                                                                                                     | 8M        | 6M      | 6M        | 4M      | 4M                         | 3M/3M                     | 2M/2M                     |
|                          | TDP (W)                | 65W                                                                                                                                    | 35W       | 65W     | 35W       | 51W     | 35W                        | 65W/35W                   | 65W/35W                   |
|                          | Chipset                | H110                                                                                                                                   |           |         |           |         |                            |                           |                           |
|                          | BIOS                   | AMI EFI 128 Mbit SPI                                                                                                                   |           |         |           |         |                            |                           |                           |
| Expansion Slot           | PCI                    | 32-bit/33 MHz, 1 slot (G2)                                                                                                             |           |         |           |         |                            |                           |                           |
|                          | PCIe x 1 (Gen3)        | 2 GB/s per direction, 2 slot                                                                                                           |           |         |           |         |                            |                           |                           |
|                          | PCIe x16 (Gen3)        | 16 GB/s per direction, 1 slot                                                                                                          |           |         |           |         |                            |                           |                           |
|                          | Full-size Mini-PCIe    | 1, F/S support mSATA (co-lay with onboard USB 3.0) (G2)                                                                                |           |         |           |         |                            |                           |                           |
| Memory                   | Technology             | Dual Channel DDR4 2133 MHz SDRAM                                                                                                       |           |         |           |         |                            |                           |                           |
|                          | Max. Capacity          | 32 GB/16 GB per DIMM                                                                                                                   |           |         |           |         |                            |                           |                           |
|                          | Socket                 | 2 x 288-pin DIMM (Non-ECC)                                                                                                             |           |         |           |         |                            |                           |                           |
| Graphics                 | Controller             | Intel HD Graphics                                                                                                                      |           |         |           |         |                            |                           |                           |
|                          | LVDS                   | Supports dual channel 48 bit and up to 1920 x 1200 (optional)                                                                          |           |         |           |         |                            |                           |                           |
|                          | eDP                    | Internal pin header, supports max. resolution 3840 x 2160 @ 60 Hz (on board)                                                           |           |         |           |         |                            |                           |                           |
|                          | VGA                    | Yes, Max resolution 1920 x 1200 @ 60 Hz                                                                                                |           |         |           |         |                            |                           |                           |
|                          | DP                     | Supports max resolution 4096 x 2304 @ 60 Hz                                                                                            |           |         |           |         |                            |                           |                           |
|                          | DVI-D                  | Up to 1920 x 1200 @ 60Hz refresh rate                                                                                                  |           |         |           |         |                            |                           |                           |
|                          | Dual Display           | DP+DVI-D, DP+VGA, DVI-D+VGA, DP+EDP, EDP+DVI-D, EDP+VGA                                                                                |           |         |           |         |                            |                           |                           |
| Ethernet                 | Interface              | 10/100/1000 Mbps                                                                                                                       |           |         |           |         |                            |                           |                           |
|                          | Controller             | GbE LAN1: Realtek RTL8111G<br>GbE LAN2: Realtek RTL8111G                                                                               |           |         |           |         |                            |                           |                           |
|                          | Connector              | RJ-45 x 2                                                                                                                              |           |         |           |         |                            |                           |                           |
| SATA                     | Max Data Transfer Rate | 600 MB/s (SATA 3.0)                                                                                                                    |           |         |           |         |                            |                           |                           |
| Rear I/O                 | Channel                | 3                                                                                                                                      |           |         |           |         |                            |                           |                           |
|                          | VGA                    | 1                                                                                                                                      |           |         |           |         |                            |                           |                           |
|                          | DVI-D                  | 1 (G2)                                                                                                                                 |           |         |           |         |                            |                           |                           |
|                          | Ethernet               | 2 (G2 x 2, L x 1)                                                                                                                      |           |         |           |         |                            |                           |                           |
|                          | USB                    | 8 (G2/L: USB 3.0 x 4, USB 2.0 x 4)                                                                                                     |           |         |           |         |                            |                           |                           |
|                          | Display port           | 1                                                                                                                                      |           |         |           |         |                            |                           |                           |
|                          | Audio                  | 2 (Mic-In, Line-out)                                                                                                                   |           |         |           |         |                            |                           |                           |
|                          | Serial                 | 1 (RS-232, COM1 support 5V/12V )                                                                                                       |           |         |           |         |                            |                           |                           |
| Internal Connector       | USB                    | 6 (G2: USB 3.0 x 4, USB 2.0 x 2; L: USB 2.0 x 2)                                                                                       |           |         |           |         |                            |                           |                           |
|                          | Serial                 | 9 (7 x RS-232, 2 x RS-232/422/485; COM 3 and COM 7 support RS-232/422/485 auto flow control; COM 2 support 5V/12V by jumper selection) |           |         |           |         |                            |                           |                           |
|                          | IDE                    | -                                                                                                                                      |           |         |           |         |                            |                           |                           |
|                          | SATA                   | 3 x 600 MB/s (SATA 3.0)                                                                                                                |           |         |           |         |                            |                           |                           |
|                          | eDP/LVDS & Inverter    | 1/1 (LVDS optional)                                                                                                                    |           |         |           |         |                            |                           |                           |
|                          | GPIO                   | 8-bit GPIO                                                                                                                             |           |         |           |         |                            |                           |                           |
|                          | LPT                    | 1 (G2)                                                                                                                                 |           |         |           |         |                            |                           |                           |
| Watchdog Timer           | Output                 | System reset                                                                                                                           |           |         |           |         |                            |                           |                           |
|                          | Interval               | Programmable 1 ~ 255 sec/min                                                                                                           |           |         |           |         |                            |                           |                           |
| Power Requirements       |                        | Intel® Core™ i7-6700 CPU @ 3.4GHz                                                                                                      |           |         |           |         |                            |                           |                           |
|                          | Power On               | 5V                                                                                                                                     | +3.3V     | 12V     | -12V      | 5VSB    |                            |                           |                           |
|                          |                        | TBD                                                                                                                                    |           |         |           |         |                            |                           |                           |
| 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             | 244 mm x 244 mm (9.6" x 9.6")                                                                                                          |           |         |           |         |                            |                           |                           |

## Features

- Supports Intel® Core™ i7/i5/i3 processor with H110 chipset
- Two DIMM sockets support up to 32 GB DDR4 2133 MHz SDRAM
- Supports Dual display of VGA, DP, DVI, eDP, LVDS (optional) and two GbE LAN
- Supports 10 COM, 8 USB 3.0, 6 USB 2.0, TPM 1.2 (optional)
- Supports SUSIAccess, McAfee, Acronis and Embedded Software APIs

### Software APIs:



SMBus



H/W Monitor



Watchdog



GPIO

### Utilities:

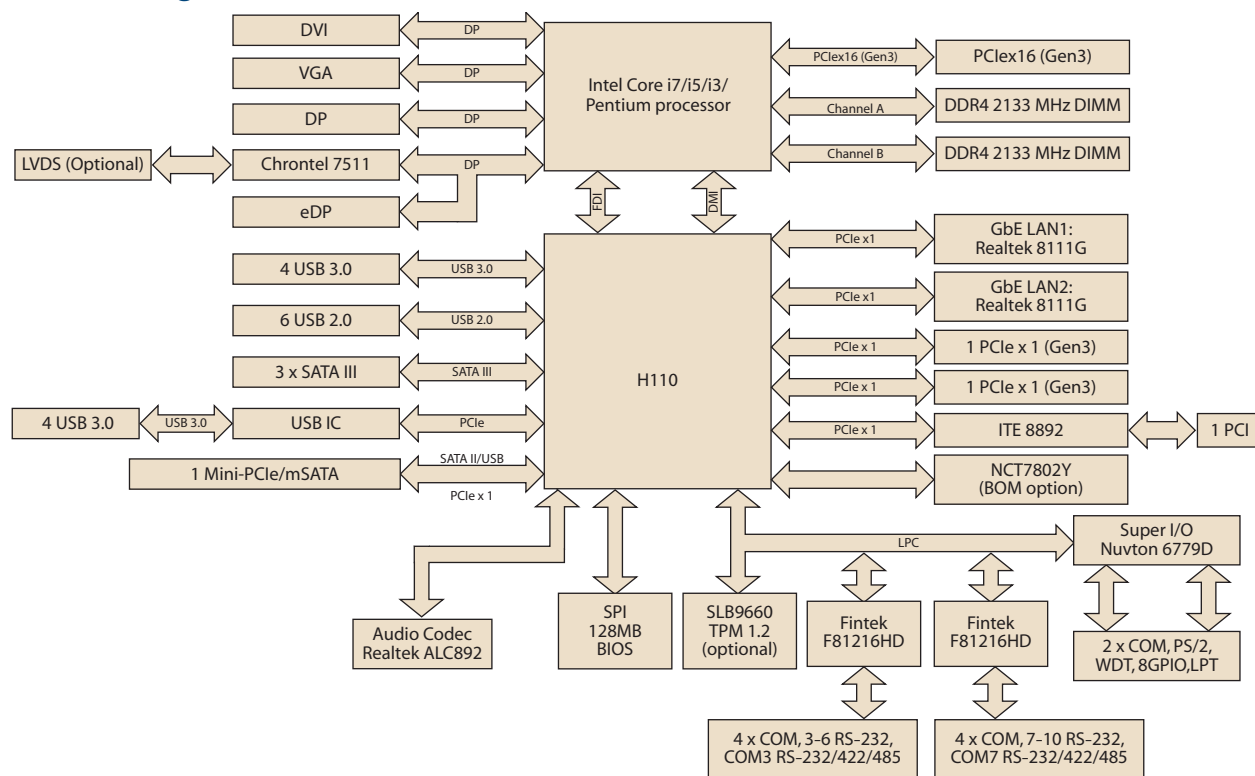


BIOS flash



Monitoring

## Block Diagram



## Ordering Information

| Part Number      | PCH  | Memory  | VGA | DVI | DP | eDP/LVDS | USB 3.0/2.0 | COM | SATA | LAN | PCIe x 16 | PCIe x 1 | mini-PCIe | PCI slot | AMP |
|------------------|------|---------|-----|-----|----|----------|-------------|-----|------|-----|-----------|----------|-----------|----------|-----|
| AiMB-505G2-00A1E | H110 | Non ECC | 1   | 1   | 1  | 1/(1)    | 8/6         | 10  | 3    | 2   | 1         | 2        | 1         | 1        | 1   |
| AiMB-505I-00A1E  | H110 | Non ECC | 1   | -   | 1  | 1/(1)    | 4/6         | 6   | 3    | 1   | 1         | 2        | 0         | 0        | (1) |

\*() BOM options available on MP version.

\*\* MiniPCle is co-layout with the additional USB Port (port 11-14). So, miniPCle is available only when 10 USB Ports populated.

## 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-RP3PF-21A1E | 2U riser card with 1 PCIe x16 and 2 PCI expansion |
| AIMB-RF10F-01A1E | 1U riser card with 1 PCIe x16 expansion           |

## Packing List

| Part Number        | Description                               | Quantity |
|--------------------|-------------------------------------------|----------|
| 1700003194         | Serial ATA HDD data cable                 | 2        |
| 17AD14GS1400013V04 | 4 in 1 COM cable 500mm (IDE 40-pin 2.0mm) | 2        |
| 1700100250         | DB 9P/M to IDC 10P cable 600mm            | 1        |
| TBD                | I/O port bracket                          | 1        |
| TRD                | Startup manual                            | 1        |

## I/O View



## Optional Accessories

| Part Number    | Description                                                            |
|----------------|------------------------------------------------------------------------|
| 1700002204     | USB 2.0 cable with dual ports, 27 cm                                   |
| 1960053207N001 | LGA1150 CPU cooler for CPU TDP 65W,<br>92.9 (W) x 92.9 (L) x 46 (H) mm |
| 1960060732N001 | LGA1150 CPU cooler for CPU TDP 45W,<br>80 (W) x 80 (L) x 32.2 (H) mm   |
| 1700000447     | 1-to-4 serial ports cable kit, 45cm                                    |
| 1701400181     | 1-to-4 serial ports cable kit, 18cm                                    |
| 1700020277-01  | Dual port USB 3.0 cable 30cm with I/O bracket                          |

Note: Purchasing AIMB-505's proprietary CPU cooler from Advantech is a must; other brands of CPU coolers are NOT compatible with AIMB-505.

## Embedded OS/API

| OS/API | Part No | Description |
|--------|---------|-------------|
| WES7   | TBD     | Image WES7E |