

# AIMB-230

**Intel® Core™ i3-4010U/i5-4300U/  
i7-4650U/ Celeron 2980U Mini-ITX with  
eDP/DP/DP++, 2 COM, and Dual LAN**



iManager susiAccess CE FCC RoHS

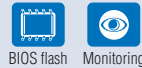
## Features

- Supports Intel® Core™ i3-4010U, i5-4300U, i7-4650U and Intel® Celeron 2980U processor (Dual core), 15W TDP, BGA 1168 (MCP) 22nm Processor
- Two 204-pin SO-DIMM up to 16 GB DDR3L 1600 MHz SDRAM
- Multiple display I/O supports versatile Tri display functions for eDP/LVDS, DP/HDMI, and DP++
- Realtek ALC892 supports 5.1 + 2 channel HD audio
- Dual Realtek RTL8111E Gigabit LAN
- 1 Full-sized Mini-PCIe, 1 Half-sized Mini-PCIe
- 2 COM, 3 SATA III, 1 mSATA
- 4 USB 3.0, 2 USB 2.0

### Software APIs:



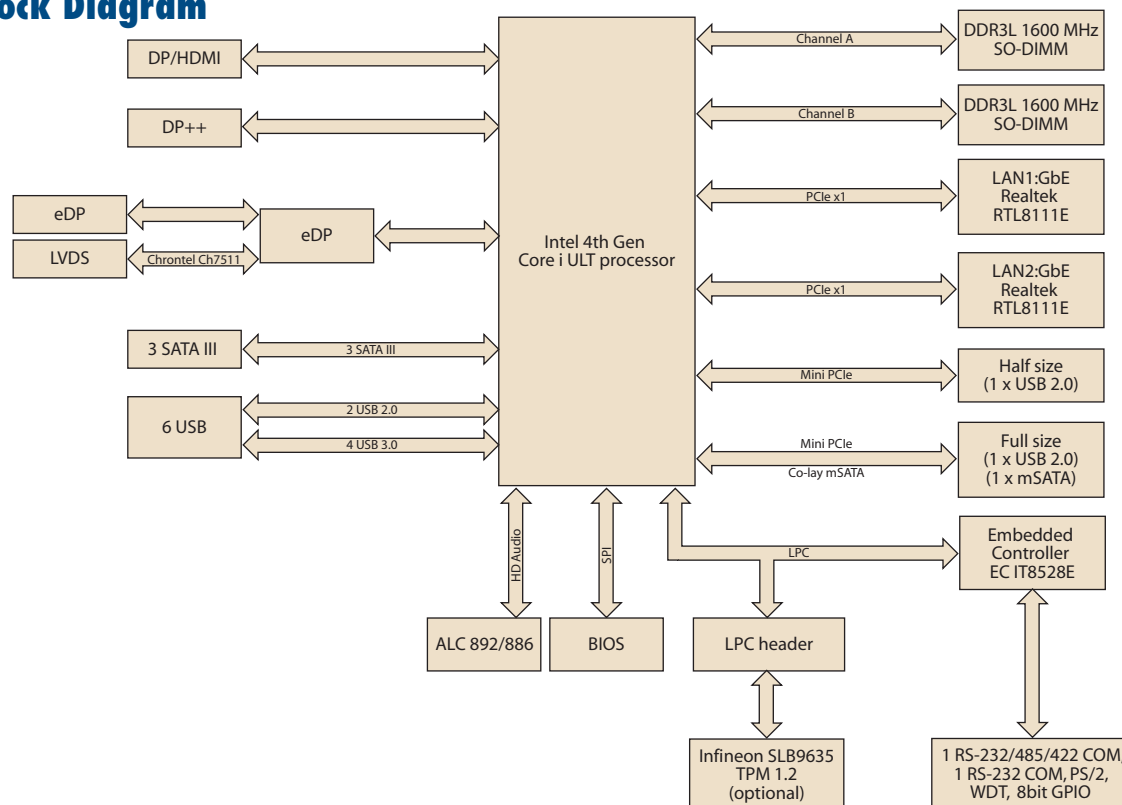
### Utilities:



## Specifications

|                          |                                      |                                                                                                                                                  |                                                                                |                                                              |                                            |
|--------------------------|--------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|--------------------------------------------------------------|--------------------------------------------|
| Processor System         | CPU                                  | Intel Core i5-4300U                                                                                                                              | Intel Celeron 2980U                                                            | Intel i3-4010U                                               | Intel i7-4650U                             |
|                          | Core Number                          | 2                                                                                                                                                | 2                                                                              | 2                                                            | 2                                          |
|                          | Max. Speed                           | 1.9 GHz                                                                                                                                          | 1.6 GHz                                                                        | 1.7 GHz                                                      | 3.3 GHz                                    |
|                          | L3 Cache                             | 3MB                                                                                                                                              | 2MB                                                                            | 3MB                                                          | 4MB                                        |
|                          | Chipset                              | 4th Generation Intel® Core™ ULT processors + Lynx Point-LP                                                                                       |                                                                                |                                                              |                                            |
|                          | BIOS                                 | AMI EFI 128 Mbit, SPI                                                                                                                            |                                                                                |                                                              |                                            |
| Expansion Slot           | Full-size Mini-PCIe                  | 1, Supports 1 x USB 2.0 and co-lay 1 x mSATA                                                                                                     |                                                                                |                                                              |                                            |
|                          | Half-size Mini-PCIe                  | 1, Supports 1 x USB 2.0                                                                                                                          |                                                                                |                                                              |                                            |
| Memory                   | Technology                           | Dual Channel DDR3L 1600 MHz                                                                                                                      |                                                                                |                                                              |                                            |
|                          | Max. Capacity                        | 16 GB/8 GB per SO-DIMM                                                                                                                           |                                                                                |                                                              |                                            |
|                          | Socket                               | 2 x 204-pin SO-DIMM (Non-ECC)                                                                                                                    |                                                                                |                                                              |                                            |
| Graphics                 | Controller                           | Intel® HD Graphics 5000 Supports DirectX 11.1, OpenGL 4.0, OpenCL 1.3, Full AVC, VC1, MPEG2 H/W encoder                                          |                                                                                |                                                              |                                            |
|                          | LVDS+Inverter / eDP                  | Supports dual channel 48-bit up to 1920 x 1200, co-lay eDP (by BOM option)                                                                       |                                                                                |                                                              |                                            |
|                          | DP/HDMI                              | 1, Supports HDMI 1.4 for HD Video playback<br>Max resolution up to 3200 x 2000 at 60 Hz on DisplayPort (GT2), 4096 x 2304 at 24 Hz on HDMI (GT2) |                                                                                |                                                              |                                            |
|                          | DP++                                 | 1, DP++ connector, available with DP-to-DVI (HDMI) cable (no transmitter) to connector to normal LCD monitor                                     |                                                                                |                                                              |                                            |
|                          | Dual Display                         | HDMI+LVDS (eDP), HDMI+DP++, LVDS( eDP)+DP++                                                                                                      |                                                                                |                                                              |                                            |
|                          | Tri Display                          | HDMI + HDMI + DP, DP + DP + eDP, HDMI + DP + eDP                                                                                                 |                                                                                |                                                              |                                            |
|                          | Dual Display Mode                    | Extended Mode, Clone Mode                                                                                                                        |                                                                                |                                                              |                                            |
| Ethernet                 | Interface                            | 10/100/1000 Mbps                                                                                                                                 |                                                                                |                                                              |                                            |
|                          | Controller                           | LAN1: Realtek RTL8111E-VB-GR<br>LAN2: Realtek RTL8111E-VB-GR                                                                                     |                                                                                |                                                              |                                            |
|                          | Connector                            | RJ-45 x 2                                                                                                                                        |                                                                                |                                                              |                                            |
| SATA                     | Max Data Transfer Rate               | 600 MB/s (SATA 3.0)/ mSATA                                                                                                                       |                                                                                |                                                              |                                            |
|                          | Channel                              | 3 / 1                                                                                                                                            |                                                                                |                                                              |                                            |
|                          | S/W RAID                             | 0,1,5                                                                                                                                            |                                                                                |                                                              |                                            |
| Rear I/O                 | DP/HDMI                              | 1                                                                                                                                                |                                                                                |                                                              |                                            |
|                          | DP++                                 | 1                                                                                                                                                |                                                                                |                                                              |                                            |
|                          | Ethernet                             | 2                                                                                                                                                |                                                                                |                                                              |                                            |
|                          | USB                                  | 4 x USB 3.0                                                                                                                                      |                                                                                |                                                              |                                            |
|                          | Audio                                | 2 single audio jack for Line-Out (Green), Mic-In (Red)                                                                                           |                                                                                |                                                              |                                            |
|                          | DC Jack                              | DC 12V Jack, single power                                                                                                                        |                                                                                |                                                              |                                            |
| Internal Connector       | LVDS & Inverter                      | 1                                                                                                                                                |                                                                                |                                                              |                                            |
|                          | eDP                                  | 1, by BOM optional                                                                                                                               |                                                                                |                                                              |                                            |
|                          | LVDS Inverter                        | 1 (5 pin support 5V and 12V)                                                                                                                     |                                                                                |                                                              |                                            |
|                          | LVDS Connector                       | 1 (3.3V / 5V / 12V) by jumper selected                                                                                                           |                                                                                |                                                              |                                            |
|                          | USB                                  | 2 ports USB 2.0 with 2.0mm pin-header                                                                                                            |                                                                                |                                                              |                                            |
|                          | Serial                               | COM 1: RS-232/422/485 supports +5V, +12V(without H/W auto flow control)<br>COM 2: RS-232                                                         |                                                                                |                                                              |                                            |
|                          | SATA                                 | 4 (3 x SATA 3.0, 1 x mSATA)                                                                                                                      |                                                                                |                                                              |                                            |
|                          | SATA Power                           | 3                                                                                                                                                |                                                                                |                                                              |                                            |
|                          | PS/2 K/B & M/S                       | Supports PS/2 K/S,M/S with 5-pin wafer                                                                                                           |                                                                                |                                                              |                                            |
|                          | CPU/System/Chassis Fan Connector     | 1 CPU fan with 4-pin wafer<br>1 System fan with 4-pin wafer                                                                                      |                                                                                |                                                              |                                            |
|                          | Power Connector                      | 4-pin ATX, DC12V                                                                                                                                 |                                                                                |                                                              |                                            |
|                          | GPIO                                 | 8-bit (4-bit DI and 4-bit DO)                                                                                                                    |                                                                                |                                                              |                                            |
| Watchdog Timer           | Output                               | System reset                                                                                                                                     |                                                                                |                                                              |                                            |
|                          | Interval                             | Programmable 1 ~ 255 sec/min                                                                                                                     |                                                                                |                                                              |                                            |
| Power Requirement        | Power Type                           | Single voltage 12 V DC input;1 x External DC jack;1 x Internal 4-pin (2 x 2) power connector, Supports AT/ATX mode                               |                                                                                |                                                              |                                            |
|                          | Power Consumption (Max, test in HCT) | i5-4300, 3.5" SATA HDD x 1+ 8G RAM x 1<br>12V<br>2.66A                                                                                           |                                                                                | Celeron-2980U, 3.5" SATA HDD x 1+ 8G RAM x 1<br>12V<br>2.53A |                                            |
|                          | Environment                          | Temperature                                                                                                                                      | Operating<br>0 ~ 60° C (32 ~ 140° F), depends on CPU speed and cooler solution |                                                              | Non-Operating<br>-20 ~ 70° C (-4 ~ 158° F) |
| Physical Characteristics | Dimensions                           | 170 x 170 mm (6.69" x 6.69")                                                                                                                     |                                                                                |                                                              |                                            |

## Block Diagram



## Ordering Information

| Order Number      | CPU           | Display                               | GbE | TPM | Storage                   | USB                        | PCIe / PCI                                         | Operating Temp. |
|-------------------|---------------|---------------------------------------|-----|-----|---------------------------|----------------------------|----------------------------------------------------|-----------------|
| AIMB-230G2-U5A1E  | i5-4300U      | DP/HDMI, DP++,<br>LVDS/eDP (optional) | 2   | (1) | 3 x SATA III<br>1 x mSATA | 4 x USB 3.0<br>2 x USB 2.0 | 1 x Full-size Mini-PCIe<br>1 x Half-size Mini-PCIe | 0 ~ 60° C       |
| AIMB-230G2-U0A1E  | Celeron 2980U |                                       |     |     |                           |                            |                                                    | 0 ~ 60° C       |
| AIMB-230G2-U3A1E  | i3-4010U      |                                       |     |     |                           |                            |                                                    | 0 ~ 60° C       |
| AIMB-230G2-U7A1E  | i7-4650U      |                                       |     |     |                           |                            |                                                    | 0 ~ 60° C       |
| AIMB-230G2Z-U3A1E | i3-4010U      |                                       |     |     |                           |                            |                                                    | -20 ~ 70° C     |

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

## Packing List

| Part Number    | Description       | Quantity |
|----------------|-------------------|----------|
| 1700003194     | SATA HDD cable    | 2        |
| 1700018785     | SATA Power cable  | 2        |
| 2006023010     | Startup manual    | 1        |
| 1960062823N011 | Fanless Heat Sink | 1        |
| 19Z0000757T000 | IO port bracket   | 1        |

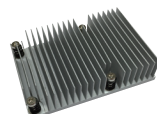
## I/O View



AIMB-230G2-U3A1E  
AIMB-230G2-U5A1E  
AIMB-230G2-U0A1E  
AIMB-230G2-U7A1E  
AIMB-230G2Z-U3A1E

## Optional Accessories

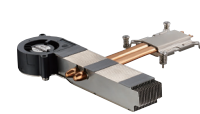
| Part Number      | Description                           |
|------------------|---------------------------------------|
| 96PSA-A84W12V1   | ADAPTER 100-240V 84W 12V 7A           |
| 96PSA-A60W12V1-1 | ADAPTER 100-240V 60W 12V 5A           |
| 1702002600       | Power cable 3-pin 180 cm, USA type    |
| 1702002605       | Power cable 3-pin 180 cm, Europe type |
| 1702031801       | Power cable 3-pin 180 cm, UK type     |
| 1700000237       | Power cable 3-pin PSE Mark 183 cm     |
| 1960061914N001   | Fan Cooler                            |
| AIMB-OCLR-0006E  | Heatpipe cooler solution              |



Fanless Heat Sink



Fan Cooler



Heat Pipe Cooling Module

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