

# AIMB-216

**Intel Pentium & Celeron, Quad Core & Dual core, N3710/N3160/N3010, and Atom Quad Core x5-E8000 Mini-ITX with DVI-D/DP/HDMI, 6 COM, and Dual LAN**

**NEW**



**WISE-PaaS/RMM**   

## Features

- Supports Intel Pentium, Celeron Quad Core & Dual Core N3710/N3160 & N3010, and Atom Quad Core x5-E8000 processor
- Two 204-pin SO-DIMM up to 8 GB DDR3L 1600 MHz SDRAM
- Supports DVI-D/DP1.1a/HDMI 1.4b
- Supports 1 PCIe x1 and 1 M.2 (B key) + 1 MiniPCIe, 6 COMs, 4 USB 3.0 and 6 USB 2.0 (USB7/8/9/10 is BOM optional)
- Lower total cost of ownership with DC12V support and onboard TPM1.2/2.0 (optional)
- Supports WISE-PaaS/RMM and Embedded Software APIs

### Software APIs:



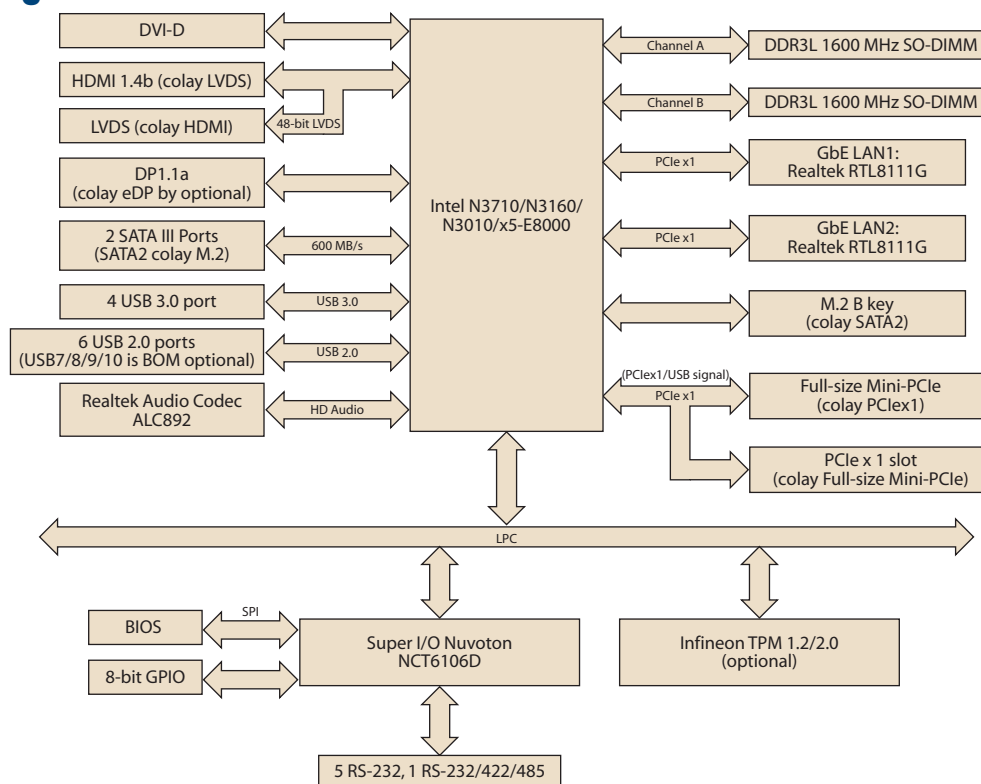
### Utilities:



## Specifications

|                          |                           | Intel N3710                                                                                                                  | Intel N3160         | Intel N3010          | Intel x5-E8000       |
|--------------------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------|---------------------|----------------------|----------------------|
| Processor System         | CPU (14nm)                | Intel N3710                                                                                                                  | Intel N3160         | Intel N3010          | Intel x5-E8000       |
|                          | Max. Speed                | 1.6 GHz (Quad core)                                                                                                          | 1.6 GHz (Quad core) | 1.04 GHz (Dual core) | 1.04 GHz (Quad core) |
|                          | L2 Cache                  | 2 MB                                                                                                                         | 2 MB                | 2 MB                 | 2 MB                 |
| Expansion Slot           | BIOS                      | AMI 64 Mbit SPI                                                                                                              |                     |                      |                      |
|                          | M.2                       | B key for SSD and 3G supported (Type: 2242, 2280)                                                                            |                     |                      |                      |
|                          | Mini-PCIe                 | 1 (F/S)                                                                                                                      |                     |                      |                      |
| Memory                   | PCIe                      | PCI Express x1 (Gen2), colay MiniPCIe                                                                                        |                     |                      |                      |
|                          | Technology                | Dual channel DDR3L 1600 MHz SDRAM                                                                                            |                     |                      |                      |
|                          | Max. Capacity             | 8 GB/8 GB per SO-DIMM                                                                                                        |                     |                      |                      |
| Graphics                 | Socket                    | 2 x 204-pin SO-DIMM (Non-ECC)                                                                                                |                     |                      |                      |
|                          | Controller                | Intel Gen 8 Graphics Engines and media encode/decode engine; GPU Frequency: 400 MHz for N3710; 320 MHz for N3160 & N3010     |                     |                      |                      |
|                          | DVI-D                     | Supports up to 3840 x 2160 @ 30Hz                                                                                            |                     |                      |                      |
| Ethernet                 | HDMI/LVDS                 | HDMI co-lay with LVDS, HDMI supports up to 3840 x 2160 @ 30Hz; LVDS supports up to 1920 x 1200                               |                     |                      |                      |
|                          | DP1.1a                    | 1, Supports up to 3840 x 2160 @ 30Hz; colay eDP supports up to 2560 x 1440 @ 60Hz                                            |                     |                      |                      |
|                          | Triple display            | DVI-D+DP+LVDS, DVI-D+DP+HDMI, DVI-D+EDP+LVDS, DVI-D+EDP+HDMI                                                                 |                     |                      |                      |
| SATA                     | Interface                 | 10/100/1000 Mbps                                                                                                             |                     |                      |                      |
|                          | Controller                | GbE LAN1: Realtek 8111G<br>GbE LAN2: Realtek 8111G                                                                           |                     |                      |                      |
|                          | Connector                 | RJ-45 x 2                                                                                                                    |                     |                      |                      |
| Rear I/O                 | Max Data Transfer Rate    | 600 MB/s (SATA 3.0)                                                                                                          |                     |                      |                      |
|                          | Channel                   | 2, SATA 2 colay M.2; SATA 1 support SATA-DOM device                                                                          |                     |                      |                      |
|                          | DVI-D                     | 1                                                                                                                            |                     |                      |                      |
| Internal Connector       | DP 1.1a                   | 1                                                                                                                            |                     |                      |                      |
|                          | HDMI 1.4b                 | 1                                                                                                                            |                     |                      |                      |
|                          | Ethernet                  | 2                                                                                                                            |                     |                      |                      |
| Watchdog Timer           | USB                       | 4 (USB 3.0)                                                                                                                  |                     |                      |                      |
|                          | Audio                     | 1 (supports Line out, converts to Mic in or Line in)                                                                         |                     |                      |                      |
|                          | DC jack                   | 1 (2.5 mm)                                                                                                                   |                     |                      |                      |
| Power                    | LVDS & Inverter           | 1/1                                                                                                                          |                     |                      |                      |
|                          | eDP                       | 1 (optional)                                                                                                                 |                     |                      |                      |
|                          | USB                       | 6 (USB2.0), USB7/8/9/10 is BOM optional                                                                                      |                     |                      |                      |
| Environment              | Serial                    | 6 (5 x RS-232, 1 x RS-232/422/485; COM 3 support RS-232/422/485 auto flow control; COM 6 support 5V/12V by jumper selection) |                     |                      |                      |
|                          | IDE                       | None                                                                                                                         |                     |                      |                      |
|                          | SATA                      | 2                                                                                                                            |                     |                      |                      |
| Physical Characteristics | SATA PWR Connector        | 2                                                                                                                            |                     |                      |                      |
|                          | Parallel                  | None                                                                                                                         |                     |                      |                      |
|                          | Mini-PCIe                 | 1 (F/S)                                                                                                                      |                     |                      |                      |
| Power                    | M.2                       | 1 (B Key for SSD and 3G supported)                                                                                           |                     |                      |                      |
|                          | GPIO                      | 8-bit                                                                                                                        |                     |                      |                      |
|                          | PS/2 KB & MS              | 1                                                                                                                            |                     |                      |                      |
| Power                    | Output                    | System reset                                                                                                                 |                     |                      |                      |
|                          | Interval                  | Programmable 1 ~ 255 sec/min                                                                                                 |                     |                      |                      |
|                          | Power Type                | Single voltage 12V DC input; 1 x External DC jack; 1 x Internal 4-pin (2x2) power connector; Supports AT/ATX mode            |                     |                      |                      |
| Environment              | Typical Power Consumption | Windows Idle mode: 12.6W (Intel N3710 1.6GHz processor/DDR3L 1600MHz 4GB x 2pcs)                                             |                     |                      |                      |
|                          | Operating                 | Non-Operating                                                                                                                |                     |                      |                      |
|                          | Temperature               | 0 ~ 60° C (32 ~ 140° F) with 0.7m/s air flow                                                                                 |                     |                      |                      |
| Physical Characteristics | Dimensions                | -40 ~ 85° C (-40 ~ 185° F)                                                                                                   |                     |                      |                      |
|                          |                           | 170 x 170 mm (6.69" x 6.69")                                                                                                 |                     |                      |                      |
|                          |                           |                                                                                                                              |                     |                      |                      |

## Block Diagram



## Ordering Information

| Part Number     | CPU      | Memory | DP/eDP  | DVI-D | HDMI/LVDS | GbE LAN | COM | SATA III  | USB3.0/2.0 | MiniPCle | M.2 | TPM | AMP      | PCle x1 | Thermal Solution | Operating Temp. |
|-----------------|----------|--------|---------|-------|-----------|---------|-----|-----------|------------|----------|-----|-----|----------|---------|------------------|-----------------|
| AIMB-216D-S6A1E | N3710    | 2      | 1 / (1) | 1     | 1         | 2       | 6   | 2         | 4/2+(4)    | 1        | 1   | (1) | (2 x 6W) | 1       | Passive          | 0 ~ 60° C       |
| AIMB-216N-S6A1E | N3160    | 2      | 1 / (1) | 1     | 1         | 2       | 6   | 2         | 4/2+(4)    | 1        | 1   | (1) | (2 x 6W) | 1       | Passive          | 0 ~ 60° C       |
| AIMB-216U-S6A1E | N3010    | 2      | 1 / (1) | 1     | 1         | 2       | 6   | 2         | 4/2+(4)    | 1        | 1   | (1) | (2 x 6W) | 1       | Passive          | 0 ~ 60° C       |
| AIMB-216L-S6A1E | N3160    | 2      | 0       | 1     | LVDS only | 1       | 2   | 1 (SATA1) | 4/0        | 1        | 0   | (1) | (2 x 6W) | 1       | Passive          | 0 ~ 60° C       |
| AIMB-216E-S6A1E | x5-E8000 | 1      | 0       | 1     | HDMI only | 1       | 2   | 1 (SATA1) | 4/0        | 1        | 1   | 0   | 0        | 0       | Passive          | 0 ~ 60° C       |

Note: Passive = fanless

\* ( ) BOM options available on MP version

## Packing List

| Part Number    | Description                                               | Quantity |
|----------------|-----------------------------------------------------------|----------|
| 1700003194     | SATA HDD cable                                            | 1        |
| 1700018785     | SATA power cable                                          | 1        |
| 1700008876     | 1-to-4 serial ports cable kit, 35 cm (only for D/N/U sku) | 1        |
| 1700100250     | 1-to-1 serial port cable, 25 cm                           | 2        |
| 19Z0001230T000 | I/O port bracket                                          | 1        |
| 2007021610     | Startup manual                                            | 1        |
| 1960073060T001 | Fanless heatsink for AIMB-216U/E                          | 1        |
| 1960064228N001 | Fanless heatsink for AIMB-216U                            | 1        |

## Optional Chassis

| Part Number     | Description                               |
|-----------------|-------------------------------------------|
| AIMB-B2000-00YE | Mini-ITX chassis with optional DC Adaptor |

## Optional Accessories

| Part Number      | Description                                |
|------------------|--------------------------------------------|
| 96PSA-A60W12V1-1 | Adapter AC100-240V 60W +12V/5A             |
| 96PSA-A84W12V1   | Adaptor AC100-240V 84W, 12V/7A             |
| 1703060191       | KBMS cable 1*6P-2.5/DIN-6P(F)*2, 25 cm     |
| 1700023474-01    | A Cable USB-A 4P(F)*2/2*5P-2.0 34.5CM F/10 |
| 1700024790-01    | A Cable USB-A 4P(F)*2/2*5P-2.0 20CM F/10   |

## Embedded OS/API

| OS/API     | Part No.   | Description                                |
|------------|------------|--------------------------------------------|
| Windows 10 | 2070015014 | img W10 16EL AIMB-216 64bit 1701 ENU (all) |
| WE8.1      | 2070014774 | img W8.1 IDTP AIMB-216 x64 1609 10MUI      |
| WES7       | 2070014888 | img WES7E AIMB-216 32bit 1609 4MUI         |
| WES7       | 2070014954 | img WES7E AIMB-216 64bit 1701 4MUI         |