**AIMB-216 A2**

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**

**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:**

H/W Monitor Brightness Watchdog GPIO

**Utilities:**

BIOS flash Monitoring

Specifications

|  |  |  |
| --- | --- | --- |
| 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 |
| BIOS | AMI 64 Mbit SPI |
| Expansion Slot | M.2 B key for SSD and 3G supported (Type: 2242, 2280) |
| Mini-PCIe | 1 (F/S) |
| PCIe | PCI Express x1 (Gen2), colay MiniPCIe |
| Memory | Technology | Dual channel DDR3L 1600 MHz SDRAM |
| Max. Capacity | 8 GB/8 GB per SO-DIMM |
| Socket | 2 x 204-pin SO-DIMM (Non-ECC) |
| Graphics | 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 |
| 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 |
| Ethernet | Interface | 10/100/1000 Mbps |
| Controller | GbE LAN1: Realtek 8111G GbE LAN2: Realtek 8111G |
| Connector | RJ-45 x 2 |
| SATA | Max Data Transfer Rate | 600 MB/s (SATA 3.0) |
| Channel | 2, SATA 2 colay M.2; SATA 1 support SATA-DOM device |
| Rear I/O | DVI-D | 1 |
| DP 1.1a | 1 |
| HDMI 1.4b | 1 |
| Ethernet | 2 |
| USB | 4 (USB 3.0) |
| Audio | 1 (supports Line out, converts to Mic in or Line in) |
| DC jack | 1 (2.5 mm) |
| Internal Connector | LVDS & Inverter | 1/1 |
| eDP | 1 (optional) |
| USB | 6 (USB2.0), USB7/8/9/10 is BOM optional |
| 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 |
| SATA PWR Connector | 2 |
| Parallel | None |
| Mini-PCIe | 1 (F/S) |
| M.2 1 (B Key for SSD and 3G supported) |
| GPIO | 8-bit |
| PS/2 KB & MS | 1 |
| Watchdog Timer | Output | System reset |
| Interval | Programmable 1 ~ 255 sec/min |
| Power | Power Type | Single voltage 12V DC input; 1 x External DC jack; 1 x Internal 4-pin (2x2) power connector; Supports AT/ATX mode |
| Typical Power Consumption | Windows Idle mode: 12.6W (Intel N3710 1.6GHz processor/DDR3L 1600MHz 4GB x 2pcs) |
| Environment | Operating Non-Operating |
| Temperature | 0 ~ 60° C (32 ~ 140° F) with 0.7m/s air flow -40 ~ 85° C (-40 ~ 185° F) |
| Physical Characteristics | Dimensions | 170 x 170 mm (6.69" x 6.69") |

 **Industrial Motherboards & Systems**

All product specifications are subject to change without notice. Last updated: 20-Dec-2017

AIMB-216 A2

SPI

LPC

HD Audio

(PCIex1/USB signal)

PCIe x1

Realtek Audio Codec ALC892

USB 2.0

6 USB 2.0 ports (USB7/8/9/10 is BOM optional)

USB 3.0

PCIe x1

600 MB/s

PCIe x1

48-bit LVDS

Channel A

Channel B

**Block Diagram**

5 RS-232, 1 RS-232/422/485

8-bit GPIO

Infineon TPM 1.2/2.0 (optional)

Super I/O Nuvoton NCT6106D

BIOS

PCIe x 1 slot

(colay Full-size Mini-PCIe)

Full-size Mini-PCIe (colay PCIex1)

M.2 B key (colay SATA2)

4 USB 3.0 port

2 SATA III Ports (SATA2 colay M.2)

GbE LAN2:

Realtek RTL8111G

DP1.1a

(colay eDP by optional)

GbE LAN1:

Realtek RTL8111G

LVDS (colay HDMI)

DDR3L 1600 MHz SO-DIMM

HDMI 1.4b (colay LVDS)

DDR3L 1600 MHz SO-DIMM

Intel N3710/N3160/ N3010/x5-E8000

DVI-D

Ordering Information

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Part Number** | **CPU** | **Memory** | **DP/eDP** | **DVI-D** | **HDMI/ LVDS** | **GbE LAN** | **COM** | **SATA III** | **USB3.0/2.0** | **MiniPCIe** | **M.2** | **TPM** | **AMP** | **PCIex1** | **Thermal Solution** | **Operating Temp.** |
| AIMB-216D-S6A2E | 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-S6A2E | 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-S6A2E | 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-S6A2E | 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-S6A2E | 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

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 |

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

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