Intel® Core™ i7/i5/i3 LGA1155 MicroATX with CRT/DVI/LVDS, 10 COM, 10 USB 2.0, Dual LAN

**AIMB-501**

**Features**

* Supports Intel® Core™ i7/i5/i3 processor with H61 chipset
* Two DIMM sockets support up to 16 GB DDR3 1600/1333 MHz SDRAM
* Supports dual display of VGA, DVI, LVDS and two GbE LAN
* Supports 10 COM, LPT, TPM 1.2 (Optional)
* Supports 10 USB 2.0 or 2 USB 3.0 and 8 USB 2.0
* Supports SUSIAccess, McAfee, Acronis and Embedded Software APIs

**Software APIs:**

SMBus H/W Monitor Watchdog GPIO

**Utilities:**

BIOS flash Monitoring

Standard 7

Specifications

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Processor System | CPU | Intel Core i7-3770 | Intel Core i5-3550S | Intel Core i3-3220 | Intel Core i7-2600 | Intel Core i5-2400 | Intel Core i3-2120 | Pentium G850 | Celeron G540 |
| Core Number | 4 | 4 | 2 | 4 | 4 | 2 | 2 | 2 |
| Max. Speed | 3.4 GHz | 3.0 GHz | 3.3 GHz | 3.4 GHz | 3.1 GHz | 3.3 GHz | 2.9 GHz | 2.50 GHz |
| Integrated Graphics | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| L3 Cache | 8 MB | 6 MB | 3 MB | 8 MB | 6 MB | 3 MB | 3 MB | 2 MB |
| Chipset | H61 |  |  |  |  |  |  |  |
| BIOS | AMI EFI 64 Mbit SPI |  |  |  |  |  |  |
| Expansion Slot | PCI | 32-bit/33 MHz, 2 slots |  |  |  |  |  |  |
| PCIe x 1 (Gen2) | 500MB/s per direction, 1 slot |  |  |  |  |  |  |
| PCIe x16 (Gen3) | 16 GB/s per direction, 1 slot |  |  |  |  |  |  |
| Memory | Technology | Dual Channel DDR3 1600/1333 MHz SDRAM |  |  |  |  |
| Max. Capacity | 16 GB/8 GB per DIMM |  |  |  |  |  |  |
| Socket | 2 x 240-pin DIMM (Non-ECC) |  |  |  |  |  |
| Graphics | Controller | Intel HD Graphics |  |  |  |  |  |  |
| VRAM | 1GB maximum shared memory with 2GB and above system memory installed |  |  |
| LVDS | Supports dual channel 48 bit up to 1920 x 1200 |  |  |  |  |
| CRT | Yes, supports max. resolution 2048 x 1536 |  |  |  |  |  |
| DVI | 1 (A2E sku) |  |  |  |  |  |  |  |
| Dual Display | CRT1+LVDS, CRT1+DVI; CRT1+CRT2 |  |  |  |  |  |
| Ethernet | Interface | 10/100/1000 Mbps |  |  |  |  |  |  |
| Controller | GbE LAN: Realtek 8111E |  |  |  |  |  |  |
| Connector | RJ-45 X 2 |  |  |  |  |  |  |  |
| SATA | Max Data Transfer Rate | 300 MB/s (SATA 2.0) |  |  |  |  |  |  |
| Channel | 4 |  |  |  |  |  |  |  |
| Rear I/O | CRT | 2 |  |  |  |  |  |  |  |
| DVI | 1 (A2E sku) |  |  |  |  |  |  |  |
| Ethernet | 2 |  |  |  |  |  |  |  |
| USB | 4 (A1E: USB 2.0 x 4. A2E: USB 2.0 x 2 /USB 3.0 x 2) |  |  |  |  |
| Parallel | 1 |  |  |  |  |  |  |  |
| Audio | 2 (Mic-in, Line-out) |  |  |  |  |  |  |
| Serial | - |  |  |  |  |  |  |  |
| PS/2 | 2 (1 x keyboard and 1 x mouse) |  |  |  |  |  |
| Internal Connector | USB | 6 (USB 2.0) |  |  |  |  |  |  |  |
| Serial | 10(8 x RS-232, 2 x RS-232/422/485; COM 3 and COM 7 support RS-232/422/485 auto flow control; COM 1 and COM 2 supported 5V/12V by jumper selection) |
| IDE | - |  |  |  |  |  |  |  |
| SATA | 4 (SATA 2.0) |  |  |  |  |  |  |  |
| LVDS & Inverter | 1 |  |  |  |  |  |  |  |
| IrDA | - |  |  |  |  |  |  |  |
| GPIO | 8-bit GPIO |  |  |  |  |  |  |  |
| Watchdog Timer | Output | System reset |  |  |  |  |  |  |  |
| Interval | Programmable 1 ~ 255 sec/min |  |  |  |  |  |
| Power Requirements | Intel Core i7-2600 3.4GHz, 4GB DDR3 1333MHz x 2pcs |
| Power On | +3.3 V | +12 V | -12 V | 5 VSB | 5 V |  |  |  |
|  | 1.05 A | 6.66 A | 0.13 A | 0.49 A | 2.25 A |  |  |  |
| 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") |  |  |  |  |  |

 **Industrial Motherboards & Systems**

All product specifications are subject to change without notice Last updated : 15-Jan-2014

AIMB-501

Direct Media

Interface

Flex Display

Interface

Ordering Information

LPC BUS

(A2E sku only)

PCIe

300MB/s

(A2E sku: 8 USB 2.0 Ports)

PCI2 connector

USB 2.0

32 bit/33 MHz PCI Bus

PCIex1

(A2E sku)

PCI1 connector

DVI

1 PCIex1

(A1E sku)

SDVO

PCIex1

CRT

PCIex1

SDVO

Dual Channel

LVDS

24 bit/Channel

Channel B

PCIEx16

Channel A

**Block Diagram**

Amplifier (6W)

2 x RS-232,

PS/2, Parallel, GPIO, WDT

4 RS-232

(1 w/RS-422/485)

4 RS-232

(1 w/RS-422/485)

TDA 1517

Super I/O Nuvuton 6776F

Fintek 81216AD

Fintek 81216AD

TPM

(Optional)

BIOS

Audio Codec Realtek ALC892

NEC7202

2 USB 3.0

4 SATA2 Ports

10 USB 2.0

IT8892F

DVI

PCIex1 connector

Chrontel 7317

CRT2

GbE LAN2: RTL 8111E-VL

CRT 1

GbE LAN1: RTL 8111E-VL

Chrontel 7308B

LVDS

H61

DDR3 1333/1600 MHz DIMM

PCIex16

DDR3 1333/1600 MHz DIMM

Intel Core i7/i5/i3 processor

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Part Number** | **PCH** | **Memory** | **VGA** | **DVI** | **LVDS** | **USB 3.0/2.0** | **SATA 2.0** | **COM** | **TPM** | **LAN** | **PCIe x 16** | **PCIe****x 1** | **PCI****slot** | **AMP** |
| AIMB-501G2-KSA1E | H61 | Non ECC | 2 | (1) | 1 | 0 /10 | 4 | 10 | (1) | 2 | 1 | 1 | 2 | Yes (6W) |
| AIMB-501VG-KSA1E | H61 | Non ECC | 1 | (1) | 0 | 0 /10 | 4 | 10 | (1) | 1 | 1 | 1 | 0 | Yes (6W) |
| AIMB-501L-KSA1E | H61 | Non ECC | 1 | 0 | 0 | 0 /10 | 4 | 2 | (1) | 1 | 1 | 1 | 0 | No |
| AIMB-501G2-KSA2E | H61 | Non ECC | 1 | 1 | 1 | 2 / 8 | 4 | 10 | (1) | 2 | 1 | 1 | 2 | Yes (6W) |

\*() 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-RP3PF-21A1E | 2U riser card with 1 PCIe x16 and 2 PCI expansion |
| AIMB-RF10F-01A1E | 1U riser card with 1 PCI e x 16 expansion |

Packing List

|  |  |
| --- | --- |
| **Description** | **Quantity** |
| Serial ATA HDD data cable | 2 |
| Com port cable kit | 3 |
| I/O port bracket | 1 |
| Startup manual | 1 |
| Driver CD | 1 |

I/O View

 

AIMB-501G2-KSA1E AIMB-501VG/L-KSA1E AIMB-501G2-KSA2E

Optional Accessories

|  |  |
| --- | --- |
| **Part Number** | **Description** |
| 1700002204 | USB cable with dual ports, 27 cm |
| 1700008822 | DVI cable |
| 1960047669N001 | LGA1156 CPU cooler for 4U and wallmount chassis |
| 1700018699 | KBMS cable 1\*6P-2.5/DIN-6P(F)\*2, 25 cm |
| 1700000447 | 1-to-4 serial ports cable kit, 45cm |
| 1701400181 | 1-to-4 serial ports cable kit, 18cm |

Note: Purchasing AIMB-501's proprietary CPU cooler from Advantech is a must; other brands of CPU coolers are NOT compatible with AIMB-501

Embedded OS/API

|  |  |  |
| --- | --- | --- |
| **OS/API** | **Part No** | **Description** |
| WIN XPE | 2070011383 | Image XPE WES2009 AIMB-501KS V4.3 ENG |
| WES7 | 2070011384 | Image WES7E AIMB-501KS V5.1.2 ENG |

Intel HD

Audio

SPI

 **Online Download** [www.advantech.com/product](http://www.advantech.com/product)

s