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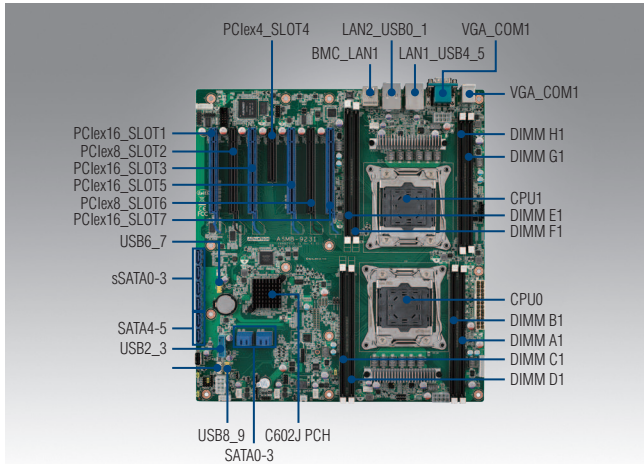Tel: +86-755-8981 8866 Fax: +86-755-8427 6832
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# ASMB-923

**Dual LGA 2011-R3 Intel® Xeon® E5-2600 v3/v4 EATX Server Board with 8 DDR4, 4 PCIe x16+ 2 PCIe x8, 4 USB 3.0, IPMI**



PCIex4_SLOT4  LAN2_USB0_1  VGA_COM1
BMC_LAN1  LAN1_USB4_5
VGA_COM1
PCIex16_SLOT1
PCIex8_SLOT2
PCIex16_SLOT3
PCIex16_SLOT5
PCIex8_SLOT6
PCIex16_SLOT7
USB6_7
sSATA0-3
SATA4-5
USB2_3
DIMM H1
DIMM G1
CPU1
DIMM E1
DIMM F1
CPU0
DIMM B1
DIMM A1
DIMM C1
DIMM D1
USB8_9  C602J PCH
SATA0-3
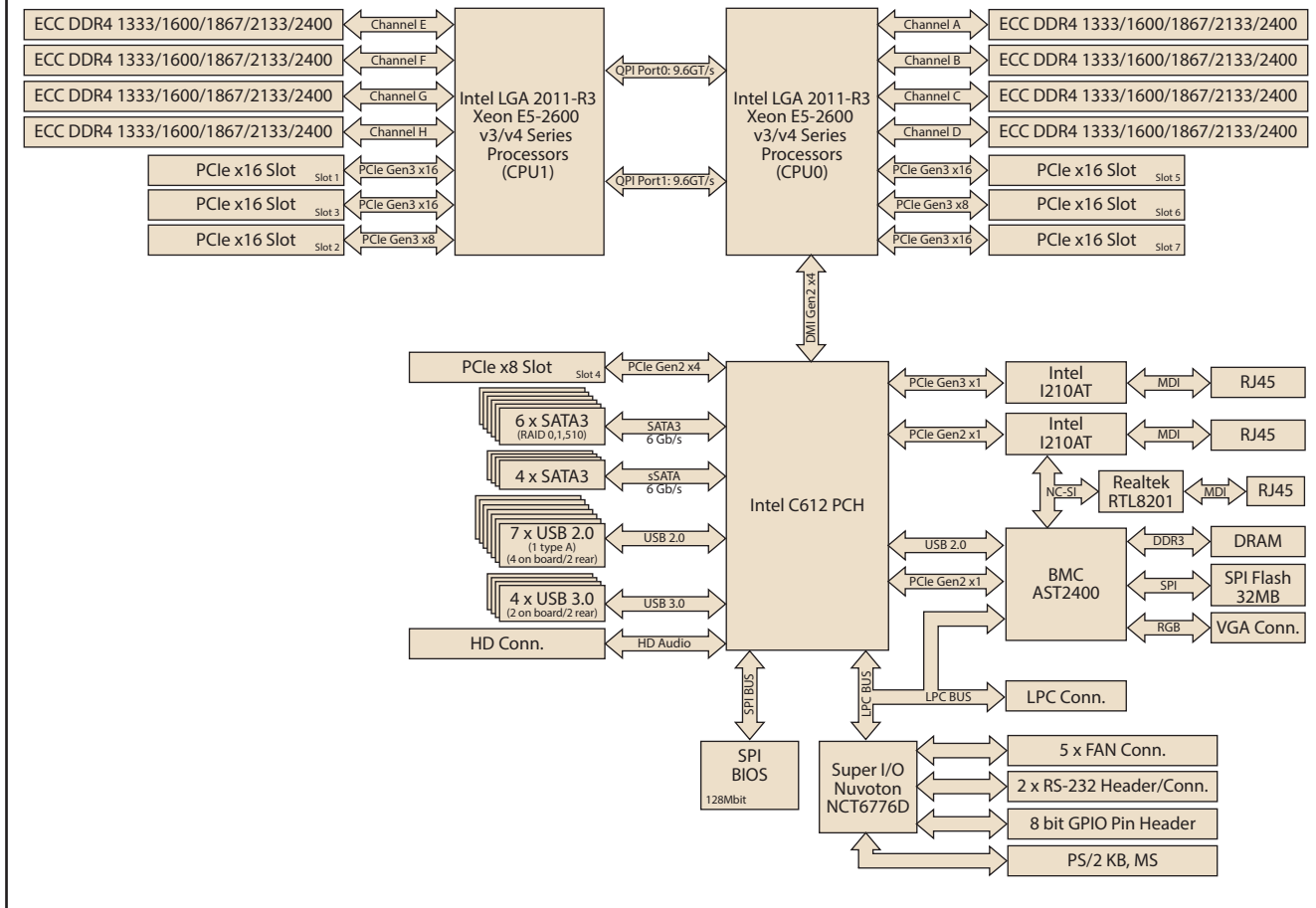
Quiet  vmware READY

CE FCC

## Features

- EATX Server Board with dual Xeon® E5-2600 v3/v4 processor, 8 DIMMs 256 GB memory capacity

- DDR4 2400 MHz RDIMM up to 256 GB

- Four PCIe x16 slots (Gen3) + two PCIe x8 slots (Gen3.0) and one PCIe x4 (Gen2.0)

- 0 ~ 40 °C ambient operation temperature range

## Specifications

| | | | | | |
|---|---|---|---|---|---|
| Form Factor | | Extended ATX form factor | | | |
| Processor System | Socket | Intel LGA 2011-R3 | | | |
| | CPU type | Intel® Xeon® E5-2600 v3/v4 dual processor (CPU cooler should be purchased separately and TDP up to 160W) Intel® Xeon® E5-1600 v3/v4 Series (1S conditional support, please contact to Advantech application engineer) | | | |
| Core Logic | Chipset | Intel C612 chipset | | | |
| Memory | Total slots | 8 (Quad Channel) | | | |
| | Capacity | Maximum 256 GB ECC RDIMM | | | |
| | Memory type | DDR4 ECC-REG 2400/2133/1866/1600/1333 MHz DIMM | | | |
| | Memory size | 1 GB, 2 GB, 4 GB, 8 GB, 16 GB, 32 GB | | | |
| Expansion Slots | Total PCI/PCI-X/PCIe slots | 7 | | | |
| | Slot location 1 | PCIe x16 slot (x16 link), signal from CPU1 | | | |
| | Slot location 2 | PCIe x16 slot (x8 link), signal from CPU1 | | | |
| | Slot location 3 | PCIe x16 slot (x16 link), signal from CPU1 | | | |
| | Slot location 4 | PCIe x8 slot (x4 link), signal from PCH | | | |
| | Slot location 5 | PCIe x16 slot (x16 link), signal from CPU0 | | | |
| | Slot location 6 | PCIe x16 slot (x8 link), signal from CPU0 | | | |
| | Slot location 7 | PCIe x16 slot (x16 link), signal from CPU0 | | | |
| Graphics | VGA | Aspeed AST2400/1400 64 MB | | | |
| Storage | IDE controller | - | | | |
| | SATA controller | Intel C610: 10 SATA3 6 Gb/s ports Intel Rapid Storage Technology (for Windows only) (SATA0-SATA5 and sSATA0-sSATA3 Supports software RAID 0, 1, 10 & 5) | | | |
| | SAS controller | - | | | |
| Networking | GbE LAN | 2 x Intel I210AT | | | |
| Onboard I/O Connectors | Floppy connector | - | | | |
| | PSU connector | 24-pin SSI power connector + 8-pin SSI 12 V power connector + 8-pin SSI 12 V power connector | | | |
| | USB connector | 2 (supports 4 USB port), 1* Type-A , 1* USB3.0 20pin header (supports 2*USB 3.0 port) | | | |
| | Fan header | 5 x 4-pin | | | |
| | SMBus | 1 | | | |
| | Chassis intruder | 1 | | | |
| | Front LAN LED | 2 | | | |
| | Audio Header | 1 | | | |
| | Serial port header | 1 | | | |
| Rear I/O Connectors | External serial port | 1 | | | |
| | External USB port | 4 (2*USB2.0 + 2*USB3.0) | | | |
| | VGA port | 1 | | | |
| | RJ-45 | 3 (1 port dedicated for IPMI function) | | | |
| | PS/2 KB/mouse | 1 | | | |
| | Infiniband | - | | | |
| Management Solution | Software | - | | | |
| | Out of band remote management | Yes (ASMB-923I sku only) | | | |
| Monitoring | CPU temperature | Yes | | | |
| | System Monitoring | Yes | | | |
| Watchdog Timer | Output | System reset | | | |
| | Interval | Programmable 1 ~ 255 sec/min | | | |
| Power Requirement | Power On | 3.3V | 5V | 12V | 5Vsb | -12V |
| | | 1.69A | 1.00A | 17.42A | 0.05A | 0.01A |
| Environment | | Operating | | | Non-operating | |
| | Temperature | 0 ~ 40 °C, depends on CPU speed and cooler solution | | | -40 ~ 85 °C | |
| | Humidity | 10% ~ 95% | | | 10% ~ 95% (Non condensing) | |
| Physical Characteristics | Dimension (L x H) | 304.8 x 330.2 mm (12" x 13") | | | |

# Block Diagram

| | | |
|---|---|---|
| ECC DDR4 1333/1600/1867/2133/2400 | Channel E | |
| ECC DDR4 1333/1600/1867/2133/2400 | Channel F | |
| ECC DDR4 1333/1600/1867/2133/2400 | Channel G | |
| ECC DDR4 1333/1600/1867/2133/2400 | Channel H | |

Intel LGA 2011-R3 Xeon E5-2600 v3/v4 Series Processors (CPU1)

QPI Port0: 9.6GT/s
QPI Port1: 9.6GT/s

Intel LGA 2011-R3 Xeon E5-2600 v3/v4 Series Processors (CPU0)

| | |
|---|---|
| Channel A | ECC DDR4 1333/1600/1867/2133/2400 |
| Channel B | ECC DDR4 1333/1600/1867/2133/2400 |
| Channel C | ECC DDR4 1333/1600/1867/2133/2400 |
| Channel D | ECC DDR4 1333/1600/1867/2133/2400 |

PCIe x16 Slot — Slot 1 — PCIe Gen3 x16
PCIe x16 Slot — Slot 3 — PCIe Gen3 x16
PCIe x16 Slot — Slot 2 — PCIe Gen3 x8

PCIe Gen3 x16 — PCIe x16 Slot — Slot 5
PCIe Gen3 x8 — PCIe x16 Slot — Slot 6
PCIe Gen3 x16 — PCIe x16 Slot — Slot 7

DMI Gen2 x4

PCIe x8 Slot — Slot 4 — PCIe Gen2 x4
6 x SATA3 (RAID 0,1,510) — SATA3 6 Gb/s
4 x SATA3 — sSATA 6 Gb/s
7 x USB 2.0 (1 type A) (4 on board/2 rear) — USB 2.0
4 x USB 3.0 (2 on board/2 rear) — USB 3.0
HD Conn. — HD Audio

Intel C612 PCH

PCIe Gen3 x1 — Intel I210AT — MDI — RJ45
PCIe Gen2 x1 — Intel I210AT — MDI — RJ45
NC-SI — Realtek RTL8201 — MDI — RJ45
USB 2.0
PCIe Gen2 x1 — BMC AST2400 — DDR3 — DRAM
— SPI — SPI Flash 32MB
— RGB — VGA Conn.

SPI BUS
LPC BUS — LPC BUS — LPC Conn.

SPI BIOS — 128Mbit

Super I/O Nuvoton NCT6776D
5 x FAN Conn.
2 x RS-232 Header/Conn.
8 bit GPIO Pin Header
PS/2 KB, MS

# Ordering Information

| Part Number | Chipset | Memory | GbE LAN | IPMI | VGA Chip |
|---|---|---|---|---|---|
| ASMB-923-00A1E | C612 | DDR4 RDIMM | 2 | - | AST 1400 |
| ASMB-923I-00A1E | C612 | DDR4 RDIMM | 2 | Yes | AST 2400 |

# Packing List

| Part Number | Description | Quantity |
|---|---|---|
| 2066923I01 | Driver CD | x 1 |
| 2006923I10 | Startup manual | x 1 |
| 1700003194 | SATA data cables | x 2 |
| 1703150102 | SATA power cables | x 2 |
| 1700019748 | CPU power cable(8P) | x 2 |
| 1960052312T010 | I/O shield | x 1 |

# Optional Accessories

| Part Number | Description |
|---|---|
| PCA-AUDIO-HDA1E | HD Audio-card |
| PCA-TPM-00B1E | TPM 2.0 Module by LPC |
| 1960057226N001 | LGA-2011 square CPU heatsink for 1U chassis (95W) |
| 1960055362N001 | LGA-2011 square CPU cooler for 2U/4U chassis (145W) |
| 1960065684N011 | LGA-2011 square CPU cooler for 4U chassis (160W) |
| 1700028025-01 | Dual port USB cable (45 cm) with bracket |
| 1700028042-01 | Four port USB cable (45 cm) with bracket |
| 1701090401 | COM port cable with bracket |
| 19Z0000406T000 | 1U chassis IO shield |
| 968EMLSAP2 | SUSIAccess Pro 3.0 |

# I/O View

ASMB-923-00A1E

ASMB-923I-00A1E