

# AIMB-593

## Micro-ATX Motherboard AMD EPYC 8004 Series Processor

### Features

- Supports AMD EPYC 8004 processor
- Supports 576GB DDR5 4800MT/x with 6 RDIMMs
- 2 x M.2 M-Key 2280 slots (PCIe Gen5 x4) for high-speed NVMe SSDs
- Up to 5 x PCIe Gen5x16 slots, default onboard 4 x PCIe Gen5x16 slots
- 2 MCIO x8 (offer extension board for additional 2 PCIe slots)
- Intel® X710-AT2 dual 10GbE ports & I226 dual GbE ports
- WISE-DeviceOn and Embedded Software APIs

#### Software APIs:



#### Utilities:



Windows 11



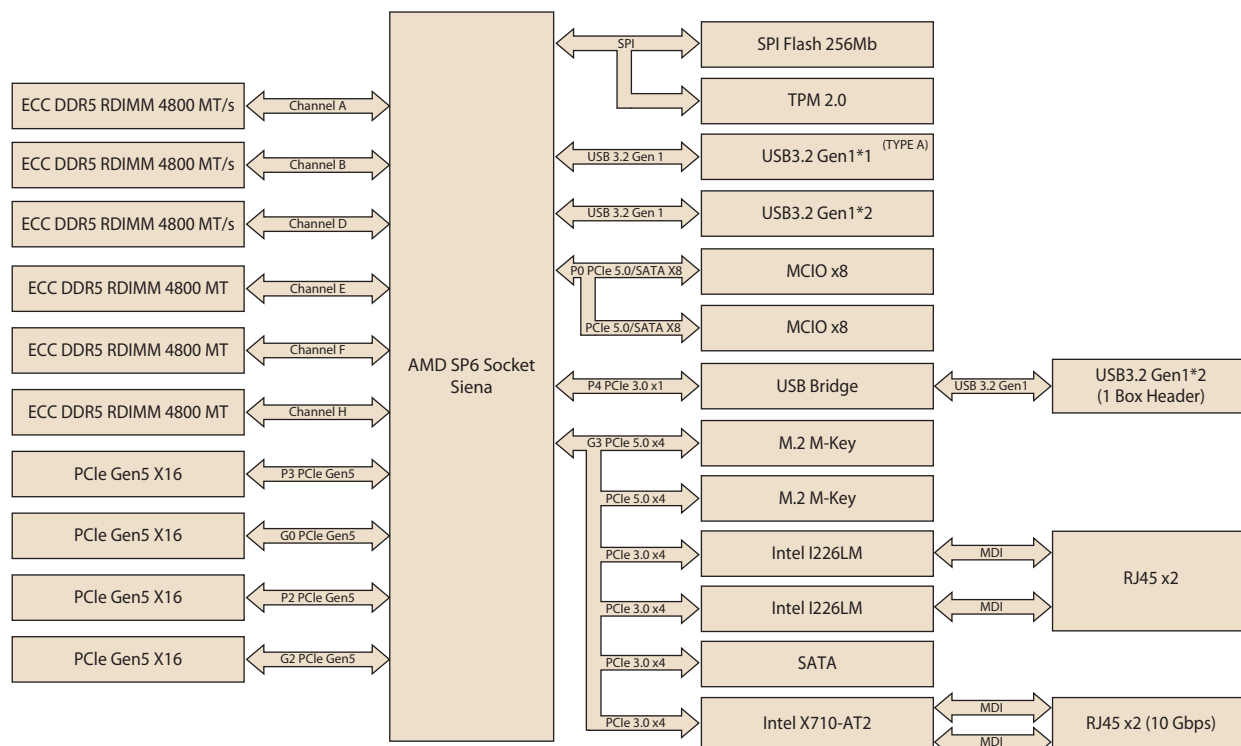
WISE-DeviceOn



### Specifications

|                          |                            |                                                                              |       |       |        |       |       |
|--------------------------|----------------------------|------------------------------------------------------------------------------|-------|-------|--------|-------|-------|
| Processors               | CPU                        | 8534P                                                                        | 8434P | 8324P | 8224P  | 8124P | 8C24P |
|                          | Core                       | 64                                                                           | 48    | 32    | 24     | 16    | 12    |
|                          | Base frequency (GHz)       | 2.3                                                                          | 2.5   | 2.65  | 2.55   | 2.45  | 2.45  |
|                          | Max Speed (GHz)            | 3.1                                                                          | 3.1   | 3     | 3      | 2.95  | 2.95  |
|                          | L3 Cache (MB)              | 128                                                                          | 128   | 128   | 64     | 64    | 32    |
|                          | TDP (W)                    | 200                                                                          | 200   | 180   | 160    | 125   | 100   |
| Processor System         | BIOS                       | AMI EFI 256 Mbit SPI                                                         |       |       |        |       |       |
| Memory                   | Technology                 | DDR5, 6 Channel, support RDIMM                                               |       |       |        |       |       |
|                          | Frequency                  | 4800MT/x                                                                     |       |       |        |       |       |
|                          | Max. Capacity              | 576GB (up to 96GB per DIMM)                                                  |       |       |        |       |       |
|                          | ECC Support                | Yes                                                                          |       |       |        |       |       |
|                          | Socket                     | 6 x 288-pin DDR5 RDIMM sockets                                               |       |       |        |       |       |
| TPM                      | IC                         | 1 x NPCT760AABYX                                                             |       |       |        |       |       |
| Network                  | Ethernet                   | 10/100/1000/2500/10000 Mbps (10G LAN by BOM Option)                          |       |       |        |       |       |
|                          | Controller                 | 2 x Intel® I226LM + 2 x Intel® X710-AT2 (By BOM Option)                      |       |       |        |       |       |
|                          | Connector                  | 4 x RJ45 (2 x 10G LAN by BOM Option)                                         |       |       |        |       |       |
| SATA                     | Max data transfer rate     | Max. 600 MB/s                                                                |       |       |        |       |       |
|                          | Channel                    | 1                                                                            |       |       |        |       |       |
| Expansion Slot           | M.2                        | 2 x M-key 2280 (PCIe Gen5x4)                                                 |       |       |        |       |       |
|                          | PCIe x16                   | 4 x PCIe x16 slot with Gen5 x16lanes (PCIe Gen5, #2 and #4 Support CXL)      |       |       |        |       |       |
|                          | MCIO                       | 2 x MCIO 8i (PCIe Gen5 x8, Support CXL)                                      |       |       |        |       |       |
| Rear I/O                 | RJ45                       | 4 x RJ45 (2 x 10G LAN by BOM Option)                                         |       |       |        |       |       |
|                          | USB                        | 2 x USB 3.2 Gen1                                                             |       |       |        |       |       |
|                          | COM                        | 1 x RS232                                                                    |       |       |        |       |       |
|                          |                            |                                                                              |       |       |        |       |       |
| Internal Connector       | USB                        | 2 x USB 3.2 Gen1, box header<br>1 x USB3.2 Gen1, Type-A vertical             |       |       |        |       |       |
|                          | SATA                       | 1                                                                            |       |       |        |       |       |
|                          | M.2                        | 2 x M-key 2280                                                               |       |       |        |       |       |
|                          | Intrusion Protection       | 1                                                                            |       |       |        |       |       |
|                          | CPU & System Fan Connector | 1 x CPU FAN<br>5 x SYS FAN                                                   |       |       |        |       |       |
|                          | Power Connector            | ATX 24-pin(system) + ATX 8-pin(CPU)                                          |       |       |        |       |       |
|                          | GPIO                       | 1 x 8-bit                                                                    |       |       |        |       |       |
| Watchdog Timer           | Output                     | System reset                                                                 |       |       |        |       |       |
|                          | Interval                   | Programmable 1 ~ 255 (second or minute)                                      |       |       |        |       |       |
| Power Requirements       | Input voltage              | ATX                                                                          |       |       |        |       |       |
|                          | Connector                  | ATX 24-pin(system) + ATX 8-pin(CPU)                                          |       |       |        |       |       |
|                          | Operation                  | +5V                                                                          | 3.3V  | 12V   | 12V_8P |       |       |
|                          | Configuration              | TBD                                                                          |       |       |        |       |       |
|                          | Standby (5Vsb)             | 3A                                                                           |       |       |        |       |       |
| Environment              | Temperature                | Operating: 0 ~ 60° C (32 ~ 140° F), depends on CPU speed and cooler solution |       |       |        |       |       |
|                          | Storage                    | Non-Operating: -40 ~ 85° C (-40 ~ 185° F)                                    |       |       |        |       |       |
| Physical Characteristics | Dimensions                 | 244 mm x 244 mm (9.6" x 9.6") x 2.4mm                                        |       |       |        |       |       |

## Block Diagram



## Ordering Information

| P/N           | DDR5 | PCIe x16 (Gen5) | MCIO 8i (Gen5) | 10GbE LAN | 2.5GbE LAN | USB 3.2 Gen 1 (Type A) (Rear I/O) | USB 3.2 Gen 1 (Type A) (internal) | USB 3.2 Gen1 (1 x box header) (internal) | RS-232 | SATA III | M.2 2280 Gen5 M-Key | TPM |
|---------------|------|-----------------|----------------|-----------|------------|-----------------------------------|-----------------------------------|------------------------------------------|--------|----------|---------------------|-----|
| AIMB-593-0AA1 | 6    | 4               | 2              | (2)       | 2          | 2                                 | 1                                 | 2                                        | 1      | 1        | 2                   | Yes |

## Packing List

| P/N           | Description                 | Quantity |
|---------------|-----------------------------|----------|
| 1700018971    | SATA HDD cable              | 1        |
| TBD           | I/O port bracket            | 1        |
| 1930006770-01 | M.2 device screw            | 2        |
| TBD           | Startup manual for AIMB-593 | 1        |

## Embedded OS/API

| P/N | Description | 968 PN | Description |
|-----|-------------|--------|-------------|
|     |             |        |             |

## Optional Chassis

| OS/API | Part No. |
|--------|----------|
|        |          |

## Optional Accessories

| P/N            | Description                                                      |
|----------------|------------------------------------------------------------------|
| 1700020277-01  | USB 3.0 cable 30cm with IO bracket                               |
| 1700034192-01  | Serial ports cable, 50cm                                         |
| 1700034684-01  | MCIO cable, 74Pin to 74Pin, 26cm                                 |
| TBD            | MCIO cable, 74Pin to 4 x SATA, 60 CM                             |
| 1970005652T001 | AIMB-592 Cooler, for CPU TDP 225W, 119.3(W) x78.9(L) x22.6(H) mm |
| AIMB-59EB1     | MCIO to 1 PCIe Gen5 x16 or 2 PCIe Gen5 x8                        |