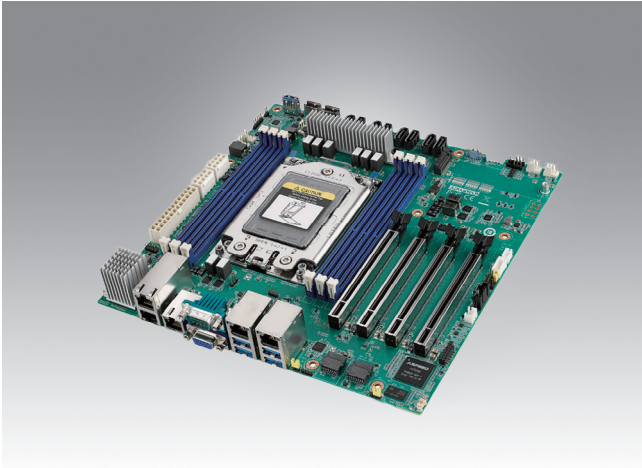


# AIMB-592

## Micro-ATX Motherboard AMD EPYC 7003 Series Processor



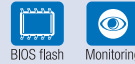
### Features

- Supports AMD EPYC™ 7003 up to 64 Zen 3 cores
- Supports 4 x PCIe Gen 4 x16 slots
- Supports 128GB DDR4 3200MHz with 6 RDIMMs
- Supports 2 x 10GbE, 2 x 2.5GbE LANs, 1 x BMC LAN
- Max up to 5 x USB 3.2 Gen1, 4 x PCIe x16, 6 x DDR4, 8 x SATA III, 2 x PCIe x4 slimline SAS, 1 x COM, 1 x VGA
- WISE-DeviceOn and Embedded Software APIs

#### Software APIs:



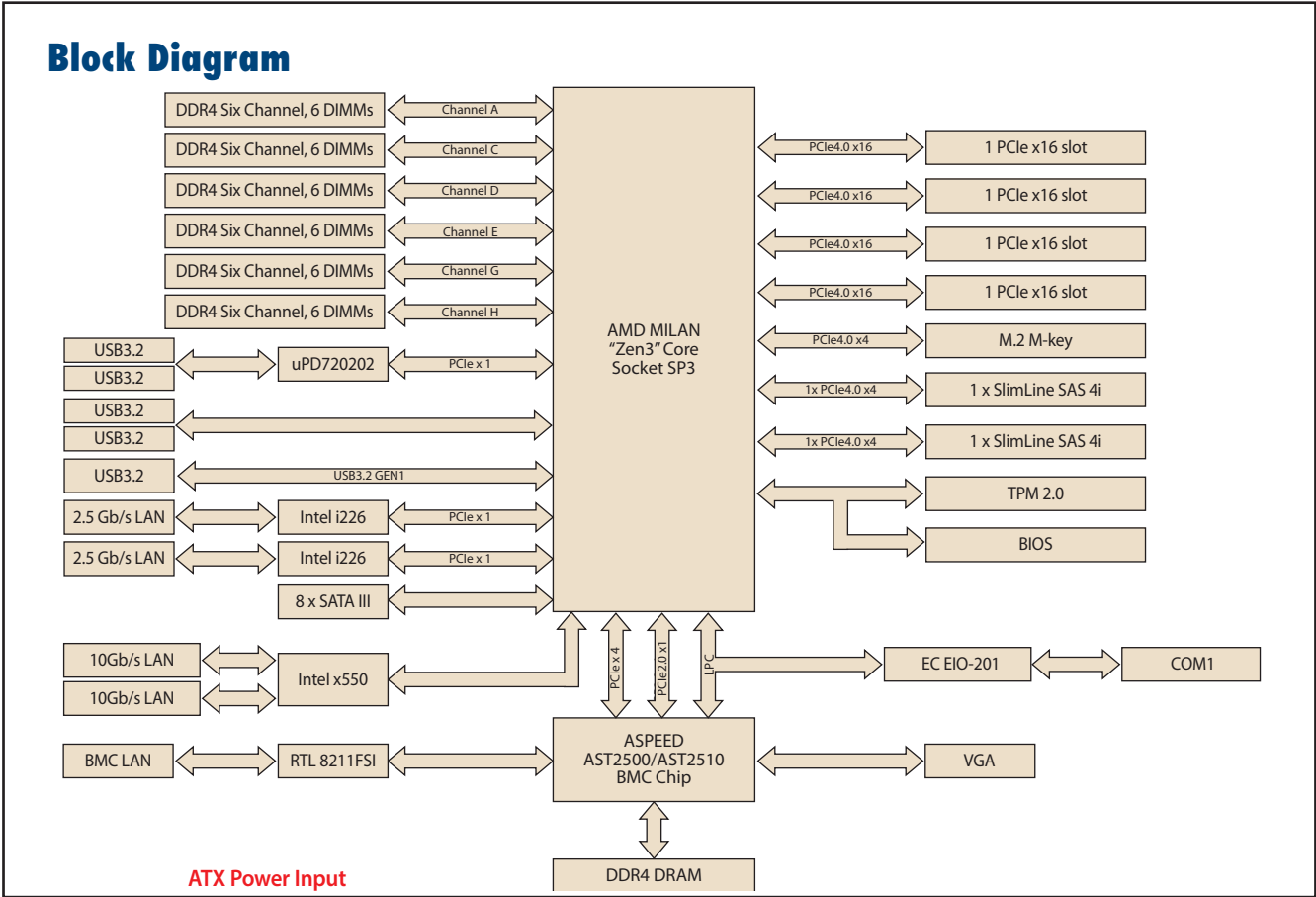
#### Utilities:



### Specifications

|                          |                        |  |                            |          |
|--------------------------|------------------------|--|----------------------------|----------|
| Processor System         | CPU                    | 7313P  | 7543P                      | 7713P    |
|                          | Core Number            | 16   | 32                         | 64       |
|                          | Max. Speed             | 3.7GHz   | 3.7GHz                     | 3.675GHz |
|                          | L3 Cache               | 128MB  | 256MB                      | 256MB    |
|                          | TDP (W)                | 155W   | 225W                       | 225W     |
|                          | Supports Model         | AIMB-592SF, AIMB-592SL   |                            |          |
|                          | BIOS                   | AMI BIOS 256 Mb SPI  |                            |          |
| Expansion Slot           | PCIe x16 (Gen4)        | 4 slots  |                            |          |
|                          | Slimline SAS 4i        | 2 slimline SAS connector support 2 x PCIe x4 SAS   |                            |          |
| Memory                   | Technology             | 6 Channel DDR4 up to 3200, ECC memory supported  |                            |          |
|                          | Max. Capacity          | 768GB (128 GB per DIMM)  |                            |          |
|                          | Socket                 | 6 RDIMM 288-pin  |                            |          |
| Graphics                 | Controller             | BMC (AST2500/AST2510)  |                            |          |
| Ethernet                 | Controller             | LAN1: 2.5GbE Intel i226-LM (AIMB-592SF/AIMB-592SL)<br>LAN2: 2.5GbE Intel i226-LM (AIMB-592SF/AIMB-592SL)<br>LAN3: 10GbE Intel X550 (AIMB-592SF)<br>LAN4: 10GbE Intel X550 (AIMB-592SF)<br>LAN5: BMC LAN (AIMB-592SF) |                            |          |
|                          | Connector              | RJ45 x5 (592SF) / RJ45 x2 (592SL)  |                            |          |
| SATA                     | Max Data Transfer Rate | 600 MB/s Max. (SATA 3.0)   |                            |          |
|                          | Q'ty                   | 8 (AIMB-592SF/AIMB-592SL)  |                            |          |
| Rear I/O                 | VGA                    | 1  |                            |          |
|                          | Ethernet               | 5 (AIMB-592SF); 2 (AIMB-592L)  |                            |          |
|                          | Serial                 | 1 RS-232   |                            |          |
|                          | USB 3.2 Gen1           | 4 (AIMB-592SF/AIMB-592SL)  |                            |          |
| Internal Connector       | USB 3.2 Gen1           | 1 (AIMB-592SF/AIMB-592SL)  |                            |          |
|                          | SATA 3.0               | 8  |                            |          |
|                          | M.2 (M key)            | 1 2280 NVMe PCIe4 support (AIMB-592SF/AIMB-592SL)  |                            |          |
|                          | GPIO                   | 8-bit GPIO   |                            |          |
| Management Interface     | IPMI                   | IPMI 2.0   |                            |          |
| Watchdog Timer           | Output                 | System reset   |                            |          |
|                          | Interval               | Programmable 1 ~ 255 sec/min   |                            |          |
| Power Requirements       | Power On               | AMD EPYC 7543P 32-Core Processor 2.79GHz, with RDIMM DDR4 3200 128GB*6pcs  |                            |          |
|                          |                        | +5 V   | 3.3 V                      | +V12_8P  |
| Environment              | Temperature            | Operating  | Non-Operating              |          |
|                          |                        | 0 ~ 40 °C (32 ~ 113 °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")  |                            |          |
| Power                    | Input Mode             | ATX input  |                            |          |

### Block Diagram



### Ordering Information

| P/N             | USB 3.2 (Rear) | USB 3.2 (Internal) | VGA | PCIe x16 Gen4 | DDR 4 Memory | 10GbE LAN | 2.5GbE LAN | IPMI 2.0 | BMC          | BMC LAN | SATA III | M.2 M-key | TPM | Slimline   |
|-----------------|----------------|--------------------|-----|---------------|--------------|-----------|------------|----------|--------------|---------|----------|-----------|-----|------------|
| AIMB-592SF-0AA1 | 4              | 1                  | 1   | 4             | 6            | 2         | 2          | Yes      | 1 (AST2500)  | 1       | 8        | 1         | 1   | 2 (PCIex4) |
| AIMB-592SL-0AA1 | 4              | 1                  | 1   | 4             | 6            | 0         | 2          | No       | 1 (AST2510)* | 0       | 8        | 1         | 1   | 2 (PCIex4) |

\* No BMC function

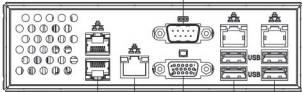
### Packing List

| Part Number    | Description             | Quantity |
|----------------|-------------------------|----------|
| 1960109979N001 | AIMB-592 I/O bracket    | 1        |
| 2046059200     | AIMB-592 Startup manual | 1        |
| 1700003194     | SATA HDD cable          | 4        |
| 19350304A0     | M.2 screws              | 2        |

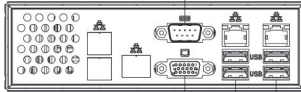
### Optional Accessories

| Part Number    | Description  |
|----------------|--|
| 1970004817N001 | AIMB-592 Cooler, for CPU TDP 225W, 120.0(W) x 80.0(L) x 64.0 (H) |
| 1700019748     | CPU power cable  |

### I/O View



AIMB-592SF



AIMB-592SL

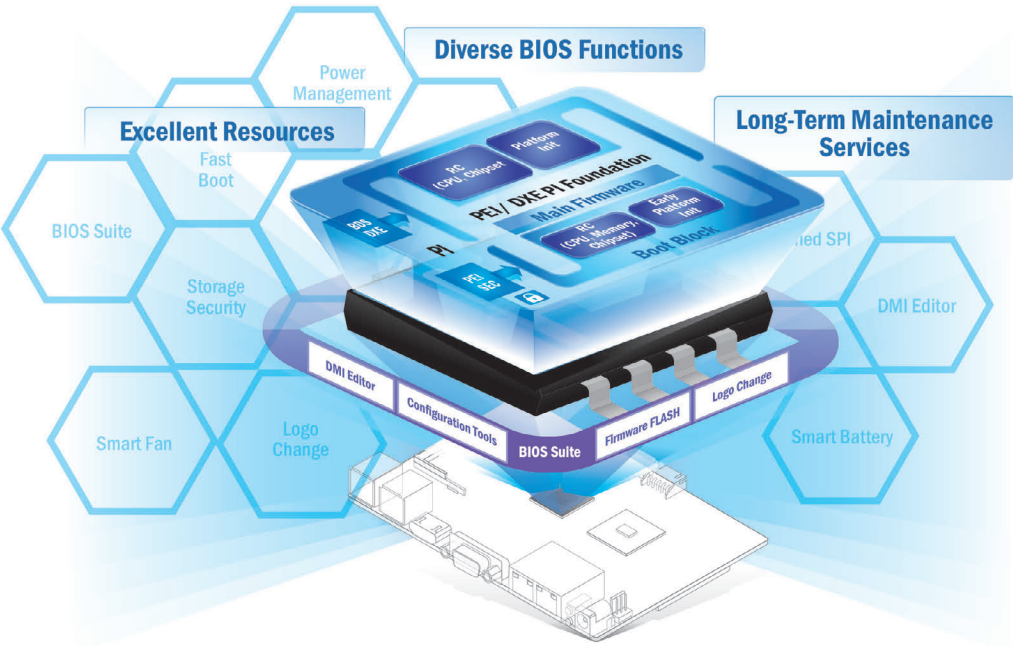
### Embedded OS/API

| OS/API         | Part No.       | Description                              |
|----------------|----------------|--|
| Windows Server | 20706WS96S0001 | Windows Server 2019 Standard image (64b) |
| Ubuntu         | 20706U22DS0030 | Ubuntu 22.04                             |

# Reliable Embedded BIOS Solutions

Custom BIOS services with long-term support

Advantech's high-quality embedded BIOS solutions deliver rapid execution and feature expert BIOS team support. These solutions feature multi-functional designs that ensure security and enable power/boot management. Advantech further provides 10+ years of BIOS version management, internal management, and longevity support for both hardware and BIOS — enhancing application efficiency, diversifying functionality, and optimizing performance.



### Embedded BIOS Solution Advantages

#### Sufficient Sources

- Strong partnership with BIOS vendors
- 50+ engineers with extensive industrial BIOS experience

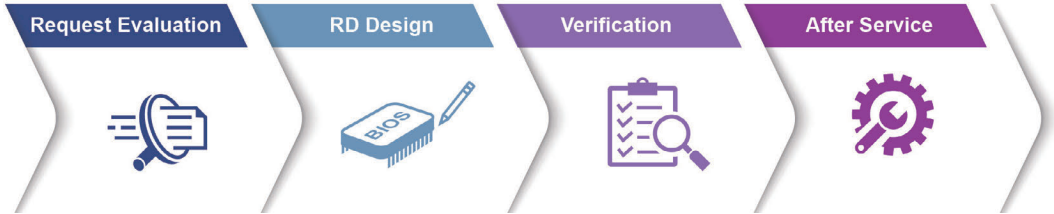
#### Diverse BIOS Functions

- Multi-layer security
- 3 second fast boot
- Power management
- BIOS suite utility

#### Long-Term Maintenance Services

- Platform longevity support
- 10-year BIOS version control
- BIOS remote backup

### Value-Added Customization Process



# WISE-DeviceOn

## Massive IoT Device Management Utility

IoT deployment and management typically involves numerous disparate devices installed on multiple sites. These devices require effective monitoring, managing, and tracking. Advantech's easy-to-use WISE-DeviceOn interface enables users to remotely monitor device health, troubleshoot problems, and send software/firmware updates over-the-air (OTA). In sum, DeviceOn empowers quick real-time responsiveness to emerging problems.



### Features

| Comprehensive Management   | Remote Access  | Efficient Operations   |
|--|--|--|
| <ul style="list-style-type: none"><li>• Devices status</li><li>• Peripherals/firmware</li><li>• Open for extension</li></ul> | <ul style="list-style-type: none"><li>• Real-time monitoring</li><li>• Remote controls</li><li>• Troubleshooting</li></ul> | <ul style="list-style-type: none"><li>• Zero-touch on-boarding</li><li>• OTA updates</li><li>• Batch control</li></ul> |

### Product Highlights

|   |  |  |   |
|---|--|--|---|
| <br><b>SOM-6883</b><br>High-performance 11 <sup>th</sup> Gen Intel <sup>®</sup> COMe Type 6 Module | <br><b>MIO-5375</b><br>Compact 11 <sup>th</sup> Gen Intel <sup>®</sup> Outdoor Focused 3.5" SBC | <br><b>EPC-B5587</b><br>10 <sup>th</sup> Gen Intel <sup>®</sup> Xeon <sup>®</sup> based Edge server | <br><b>EPC-R3220</b><br>Arm based IoT Edge Gateway |
|---|--|--|---|

# Edge AI Suite

AI development for diverse application at the Edge

Increasing demand for AI inference/analytic capabilities at the Edge make AI training models, software development environments, and hardware configuration key factors in successful solution deployment. Advantech's Edge AI Suite helps users build AI demo devices quickly and choose optimal hardware solutions easily.



| 5x Performance Boost   | All-in-one Installation  | One Click AI Experience  | Plug-and-play Environment  | Discover Cost-effective Hardware   |
|--|--|--|--|--|
| <ul style="list-style-type: none"><li>• Integrated Intel® OpenVINO™ technology</li><li>• Boost AI using Advantech hardware</li></ul> | <ul style="list-style-type: none"><li>• Build AI environment in under 5 minutes</li><li>• Ready-to-use configuration</li></ul> | <ul style="list-style-type: none"><li>• User friendly configuration guidance</li><li>• One-click Benchmark acquisition</li></ul> | <ul style="list-style-type: none"><li>• Easy access to 100+ AI inference extensions</li><li>• Software development package available</li></ul> | <ul style="list-style-type: none"><li>• Diverse CPU/RAM options</li><li>• Find hardware solutions for AI development</li></ul> |

# Embedded Linux Support and Design-in Services

## Hardware Certified Ubuntu and Yocto with Eco Partner Services

Linux is the most popular embedded OS for transportation, outdoor services, factory automation, and mission critical applications. Its open source and kernel reliability features ease security updates, and make it particularly adaptable to new AI and Edge computing technology. Advantech has cooperated with Canonical and other software partners to provide hardware certified Ubuntu image and Yocto BSP as Linux offerings. The Advantech, Embedded Linux, and Android Alliance (ELAA) delivers local software services and consultation.



### Features

| Certified OS and BSP  | Licensed Services  | Numerous AI and Edge Resources  | Local Partner Alliance   |
|---|--|---|--|
| <ul style="list-style-type: none"> <li>Platform compatibility tests</li> <li>Preloaded functional driver and software stacks</li> </ul> | <ul style="list-style-type: none"> <li>License authorized Canonical delivers 10-years of bug fixes and security updates</li> <li>In-house bundled service</li> </ul> | <ul style="list-style-type: none"> <li>Containerized technology for service provision and deployment</li> <li>AI resources from Caffe, TensorFlow, and mxnet</li> </ul> | <ul style="list-style-type: none"> <li>Embedded Linux and Android Alliance (ELAA)</li> </ul> |