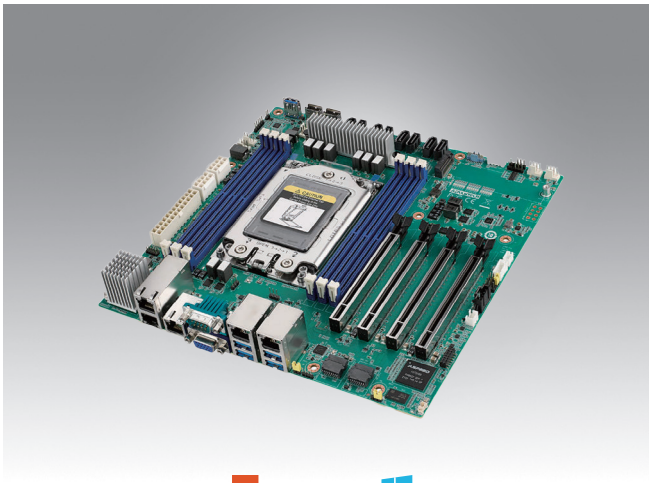
AIMB-592

Micro-ATX Motherboard
AMD EPYC 7003 Series Processor



Ubuntu Windows Server WISE-DeviceOn

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: SMBus, H/W Monitor, GPIO

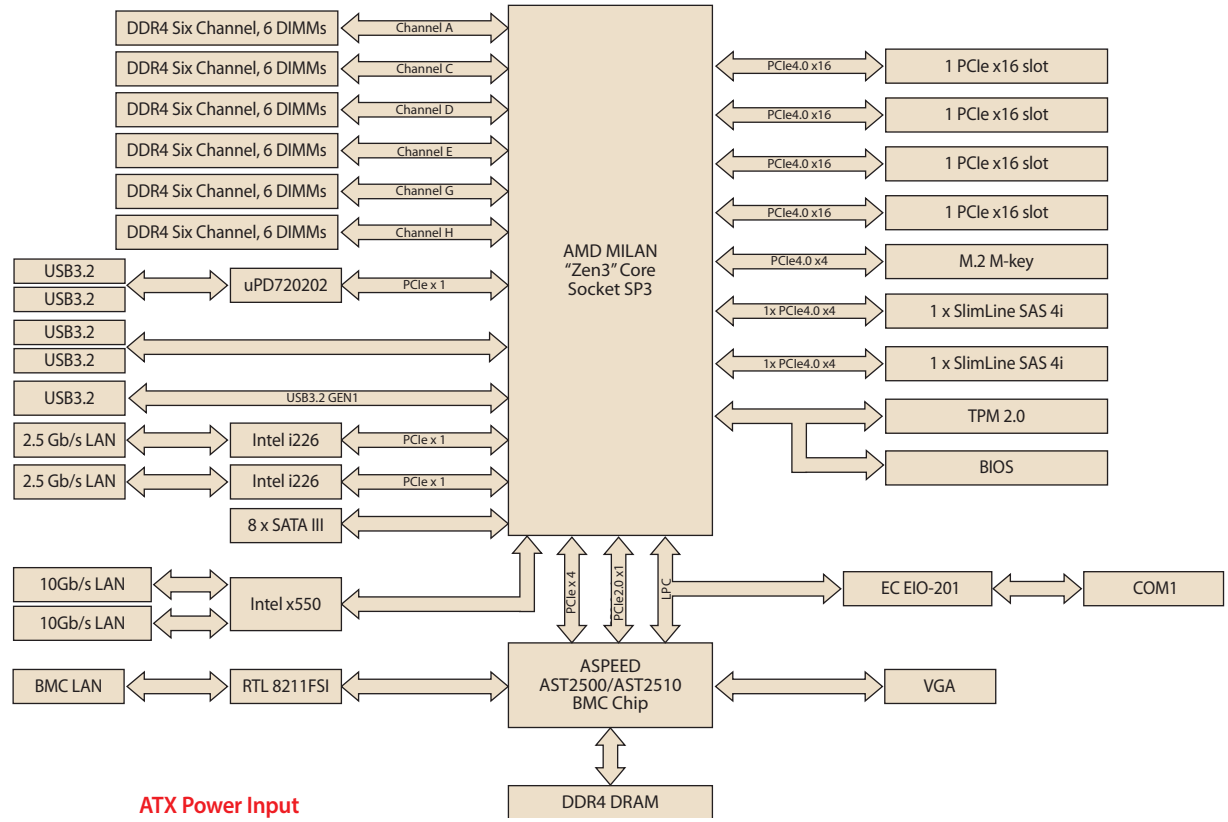
Utilities: BIOS flash, Monitoring

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	
	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) LAN2: 2.5GbE Intel i226-LM (AIMB-592SF/AIMB-592SL) LAN3: 10GbE Intel X550 (AIMB-592SF) LAN4: 10GbE Intel X550 (AIMB-592SF) 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 PCIex4 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	Operation	+5V	3.3V	12V	12V_8P
	Configuration: AMD EPYC 7543P 32-Core Processor 2.79GHz, with RDIMM DDR4 3200 128GB*6pcs	0.936A	1.8062A	0.005A	17.61060A
	Standby (5Vsb)	3A			
Environment		Operating			Non-Operating
	Temperature	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			

Last updated: 7-Mar-2025

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

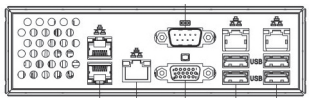
Packing List

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

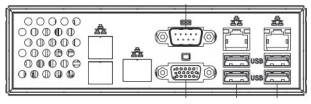
Optional Accessories

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

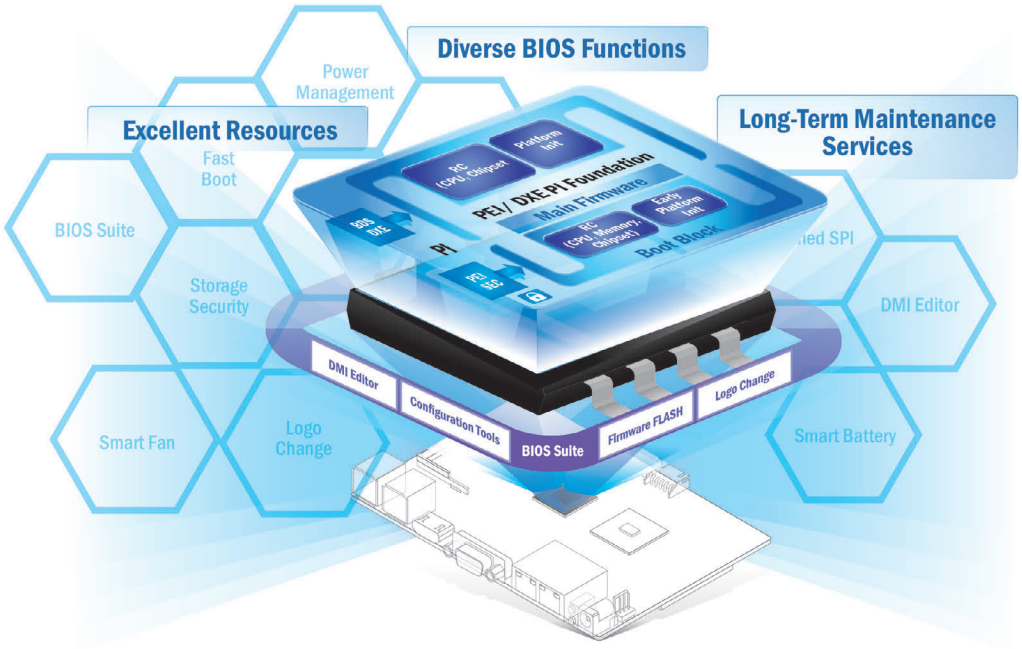
Embedded OS/API

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

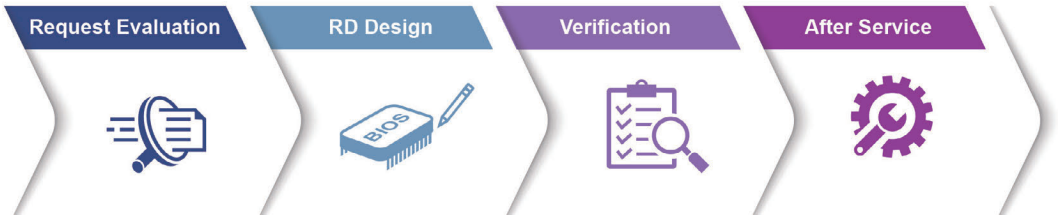
Diverse BIOS Functions

- 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
• Devices status • Peripherals/firmware • Open for extension	• Real-time monitoring • Remote controls • Troubleshooting	• Zero-touch on-boarding • OTA updates • Batch control

Product Highlights

SOM-6883
High-performance 11th Gen Intel® COMe Type 6 Module

MIO-5375
Compact 11th Gen Intel® Outdoor Focused 3.5" SBC

EPC-B5587
10th Gen Intel® Xeon® based Edge server

EPC-R3220
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
• Integrated Intel® OpenVINO™ technology • Boost AI using Advantech hardware	• Build AI environment in under 5 minutes • Ready-to-use configuration	• User friendly configuration guidance • One-click Benchmark acquisition	• Easy access to 100+ AI inference extensions • Software development package available	• Diverse CPU/RAM options • Find hardware solutions for AI development

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

- Platform compatibility tests
- Preloaded functional driver and software stacks

Licensed Services

- License authorized Canonical delivers 10-years of bug fixes and security updates
- In-house bundled service

Numerous AI and Edge Resources

- Containerized technology for service provision and deployment
- AI resources from Caffe, TensorFlow, and mxnet

Local Partner Alliance

- Embedded Linux and Android Alliance (ELAA)