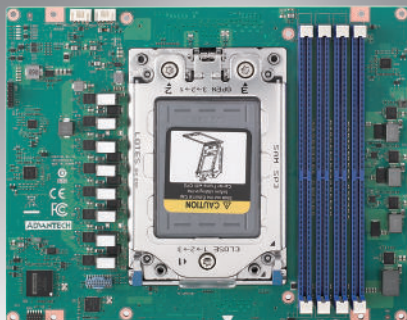# SOM-E780

AMD EPYC™ 7003 Processor COM-HPC® Server Size E module with proprietary pinout

NEW

Features

- COM-HPC® Server Size E module with proprietary pinout
- Up to 64C/225W AMD EYPC™ 7003 real server grade CPU with extreme performance
- Up to 512GB large memory size with 4x DDR4 long DIMM
- 79 PCIe Gen4 lanes (14 more than COM-HPC STD)
- Supports iManager, Embedded Software APIs, WISE-DeviceOn, and IPMB

Software APIs: Watchdog   I²C   SMBus   H/W Monitor   GPIO   Brightness

Windows Embedded iManager WISE-DeviceOn C€ FC

Specifications

Form Factor	Form Factor	COM-HPC® Size E
	Pin-out Type	COM-HPC® Server (Proprietary Pinout)
Processor System	CPU	AMD EPYC 7003
	Core Number	Up to 64C/128T
	Socket Type	Socket SP3 (LGA 4094)
	Platform Controller Hub	SOC
	BIOS	AMI UEFI 128Mbit
Memory	Technology	DDR4
	Frequency	3200MHz
	ECC Support	Yes
	Max. Capacity	512GB
	Socket	4 x RDIMM, 1 DPC, 3200 MT/s, max DIMM capacity 64GB, up to 256GB 4 x LRDIMM, 1 DPC, 3200 MT/s, max DIMM capacity 128GB, up to 512GB
Expansion	PCI Express	4 PCIe x16, 64 lanes, Gen4 (Bitfurcate to x16, x8, x4) 14 PCIe x1, 14 lanes, Gen4, extra using for KR and RSVD signals (proprietary) 1 PCIe x1, Gen 4 for BMC (COM-HPC standard), total 79 PCIe lanes
Serial Bus	SMBus	1 (SOC or EC)
	I2C Bus	1
Ethernet	Gigabit	Intel I225; 10M/100M/1000M/2.5Gbps
I/O	SATA3.0	2 Ports
	USB 3.2 Gen1	4 Ports
	USB 2.0	4 Ports
	SPI Bus	1 port
	GPIO	12-bits GPIO
	LPC	1
	Watchdog	65536 level, 0 ~ 65535 sec
	COM Port	2 Ports (4-Wire)
	TPM	TPM2.0
	Smart Fan	2 Ports: 1 port on COM-HPC® module (4 pins); 1 port on carrier board (3 pins)
Power	Type	ATX: Vin, VSB; AT: Vin
	Supply Voltage	Vin: 12V (± 5%); VSB: 5V (± 5%), RTC Battery: 2.0V ~ 3.3V
	Power Consumption (Max.)	261.34W@12V (AMD EPYC 7713P with 512GB RDIMM 3200)
	Power Consumption (Idle)	39.39W@12V (AMD EPYC 7713P with 512GB RDIMM 3200)
Environment	Temperature	Operating Standard: 0 ~ 60 °C (32 ~ 140 °F) Storage: 0 ~ 60 °C (32 ~ 140 °F)
	Humidity	Operating: 40 °C @ 95% relative humidity, non-condensing Storage: 60 °C @ 95% relative humidity, non-condensing
	Vibration Resistance	3.5G, 5~500Hz X/Y/Z Axis
Mechanical	Dimensions	200 x 160 mm

Block Diagram
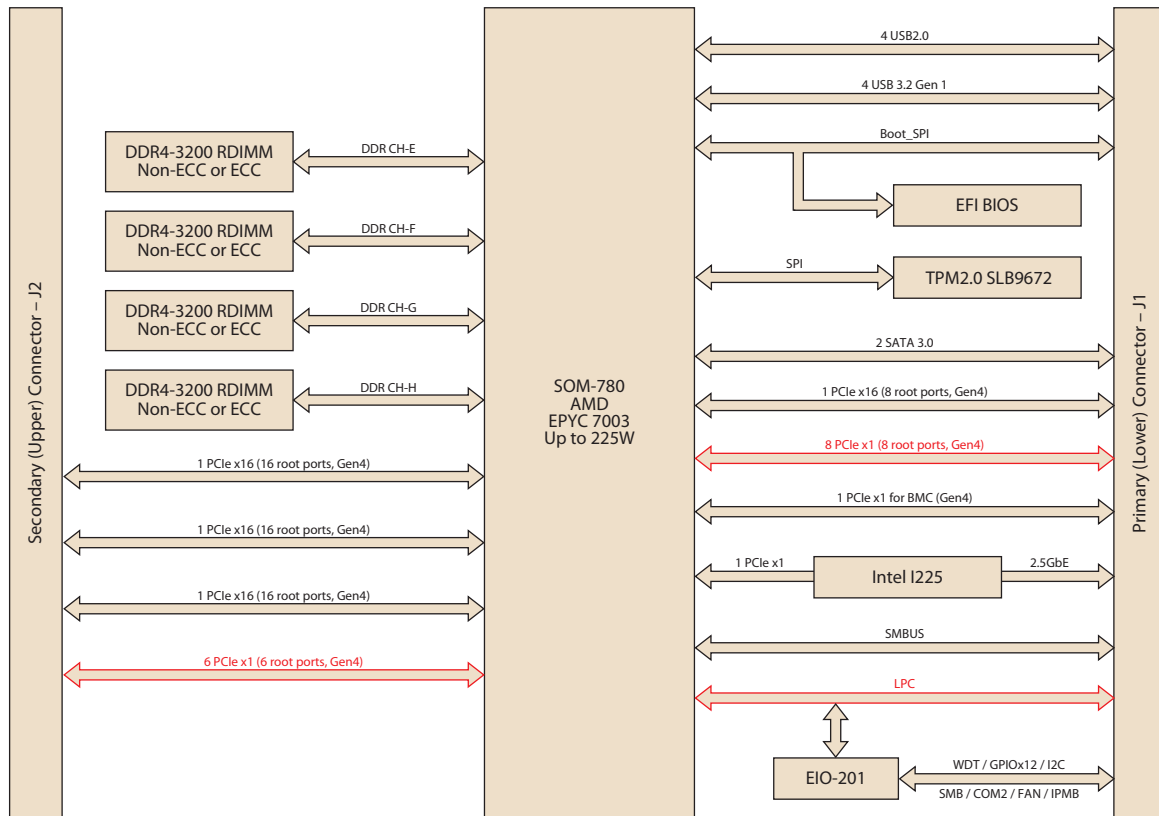
Ordering Information

Part No.	CPU	Cores	Base Freq.	Max Turbo Freq.	CPU TDP	CPU Threads	DDR4 RDIMM/ LRDIMM	Ethernet mode	PCIe Gen. 4 lanes	Power	Thermal solution	Operating Temp.
SOM-E780S64-U0A1	EYPC™ 7713P	64	2.0GHz	3.675GHz	225W	128	3200 MHz	10M/100M/ 1000M/2.5Gbps	79	AT/ATX	Active * Optional Accessories	0 ~ 60 °C
SOM-E780S32-U8A1	EYPC™ 7543P	32	2.8GHz	3.7GHz	225W	64	3200 MHz	10M/100M/ 1000M/2.5Gbps	79	AT/ATX	Active * Optional Accessories	0 ~ 60 °C
SOM-E780S24-U8A1	EYPC™ 7443P	24	2.85GHz	4.0GHz	200W	48	3200 MHz	10M/100M/ 1000M/2.5Gbps	79	AT/ATX	Active * Optional Accessories	0 ~ 60 °C
SOM-E780S16-H0A1	EYPC™ 7313P	16	3.0GHz	3.7GHz	155W	32	3200 MHz	10M/100M/ 1000M/2.5Gbps	79	AT/ATX	Active * Optional Accessories	0 ~ 60 °C

* Other combination is project based support. Please contact sales for details.
Thermal solution is not included in standard package, please remember to place order for thermal solution.

Optional Accessories

Part No.	Description
1970005652T001	QFCS, H.S R5 AMD.-Milan 225W 119.3x78.9x22.6mm
1970005648N000	Addon fan module, C.L R3 200x160x100.96mm SC SOM-E780

Development Board

Part No.	Description
SOM-DH7000-00A1	COM-HPC Size E proprietary Dev. Board A1

Packing List

Part No.	Description	Quantity
-	SOM-E780 CPU Module	1

Embedded OS

OS	Part No.	Description
Ubuntu Image	20706U20DS0066	img UbuntuD SOM-E780 64b 20.04 ENU
Ubuntu Image	20706U22DS0006	img UbuntuD SOM-E780 64b 22.04 ENU

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.
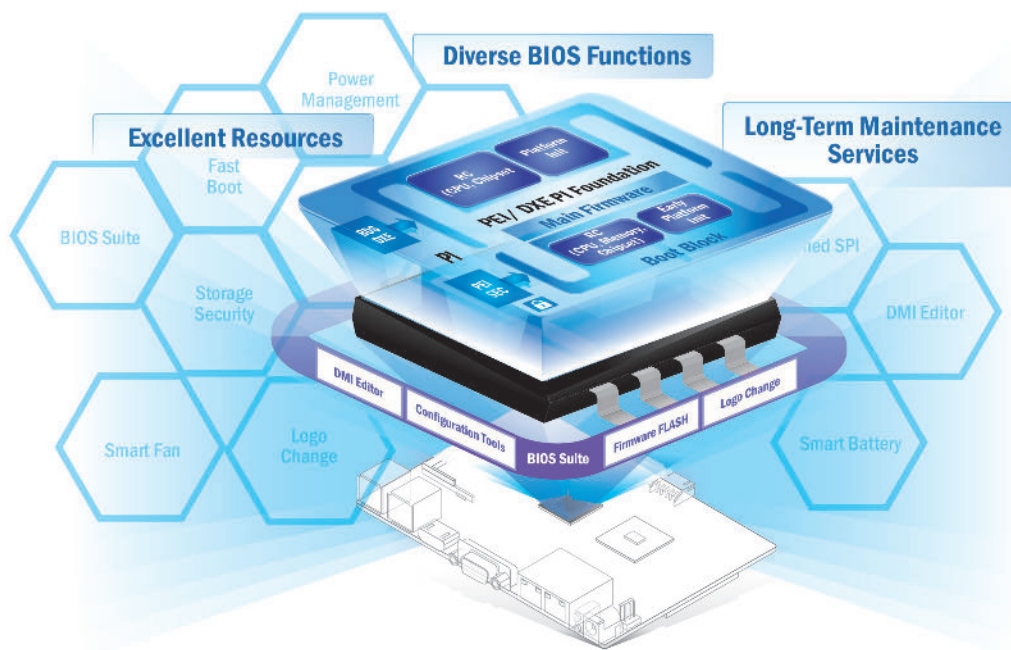
Embedded BIOS Solution Advantages

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

Request Evaluation | RD Design | Verification | After Service
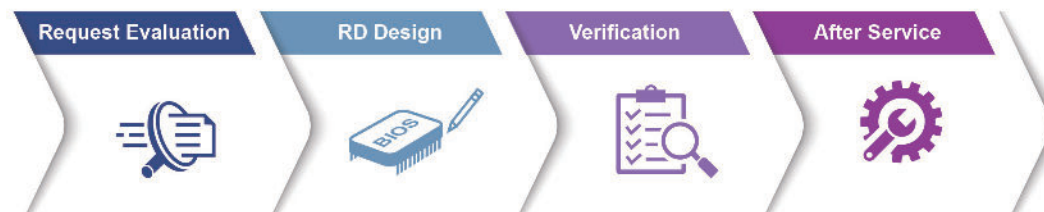
WISE-DeviceOn
Massive IoT Device Management Utility

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.

WISE-DeviceOn

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.
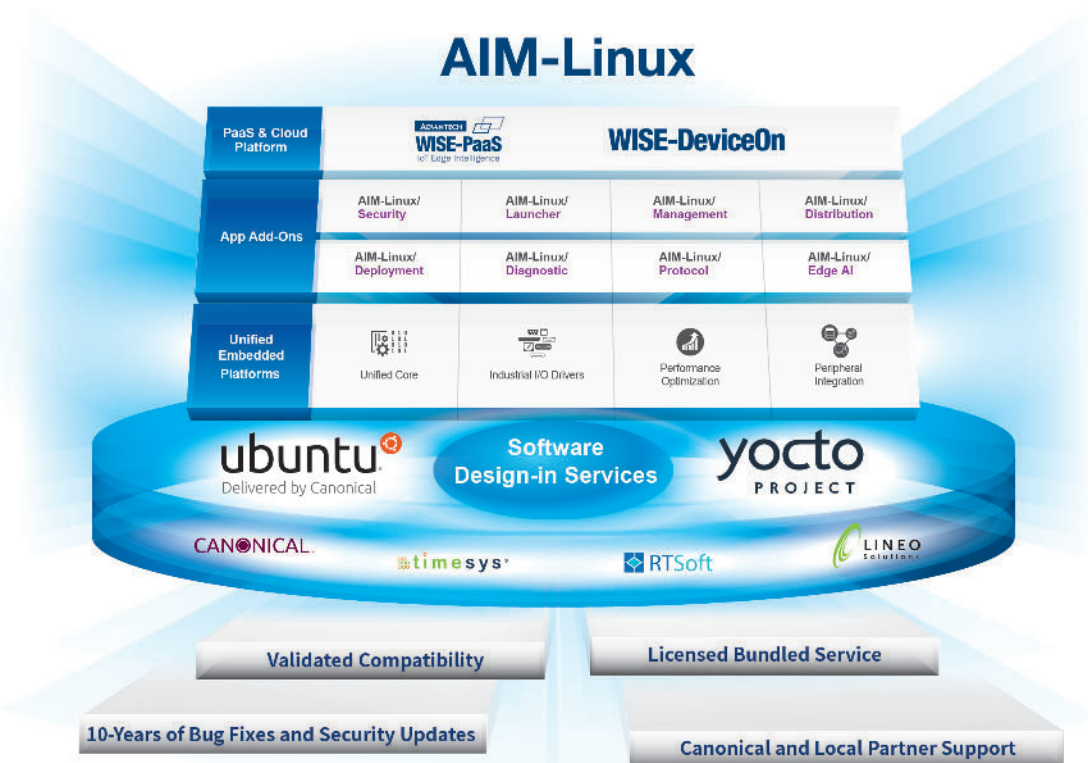

Retail
Enables Customer Personalization

Factory Automation
Increased Productivity

Intelligent Transportation
Enables Real-time Analytics

Smart City
Improve Public Service

Medical
Enhance Diagnostic Quality

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)