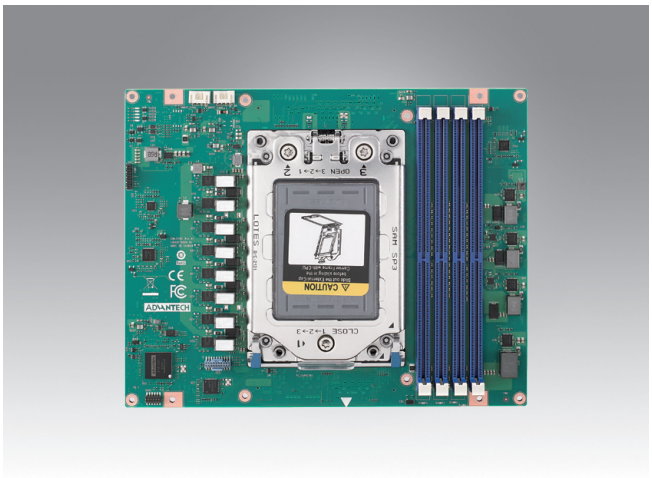
# SOM-E780

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



## 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

## 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 | 1DPC, 4x RDIMM/LRDIMM sockets |
| | PCI Express | 4 PCIe x16, 64 lanes, Gen4 (Bitfurcate to x16, x8, x4)<br>14 PCIe x1, 14 lanes, Gen4, extra using for KR and RSVD signals (proprietary)<br>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 (2-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.) | TBD |
| | Power Consumption (Idle) | TBD |
| Environment | Temperature | Operating Standard: 0 ~ 60 °C (32 ~ 140 °F)<br>Storage: 0 ~ 60 °C (32 ~ 140 °F) |
| | Humidity | Operating: 40 °C @ 95% relative humidity, non-condensing<br>Storage: 60 °C @ 95% relative humidity, non-condensing |
| | Vibration Resistance | 3.5G, 5~500Hz X/Y/Z Axis |
| Mechanical | Dimensions | 200 x 160 mm |

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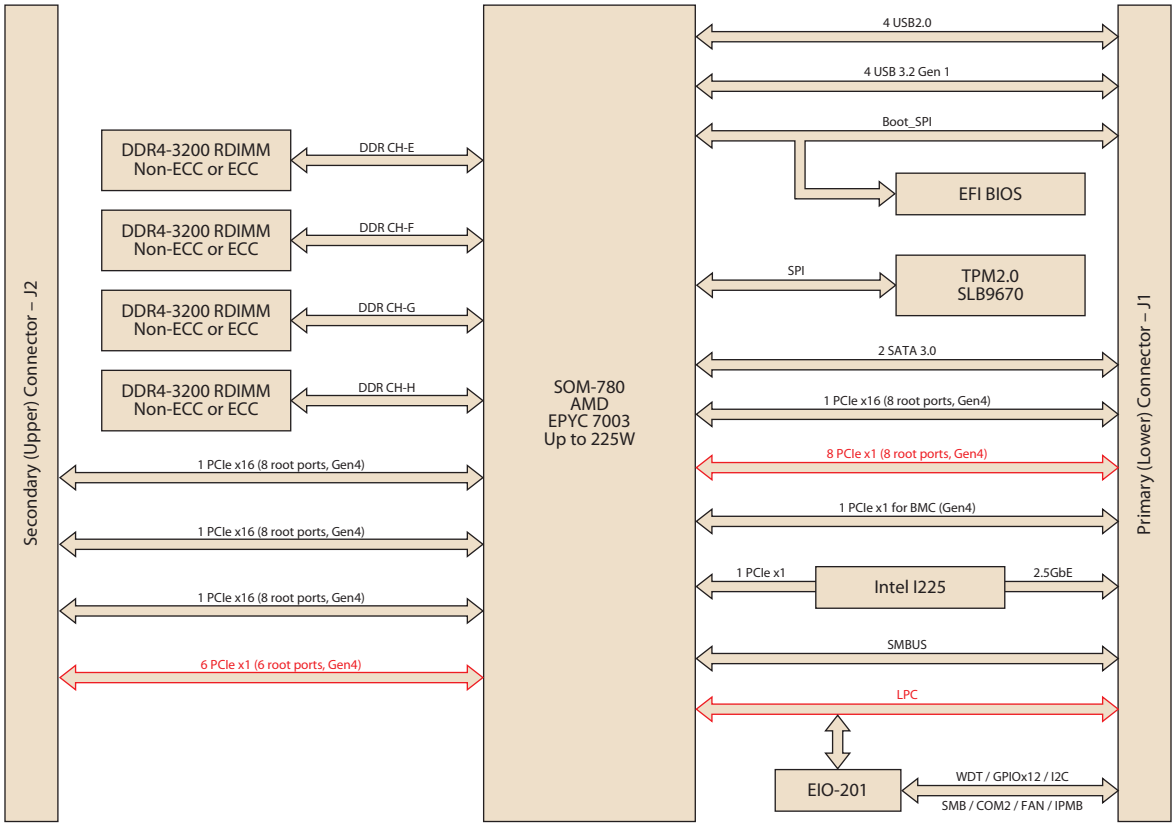
## Block Diagram




## Ordering Information

| Part No. | CPU | Core | Base Freq. | Max Turbo Freq. | SoC TDP | LLC | DDR4 RDIMM/ LRDIMM | Ethernet mode | PCIe Gen. 4 lanes | Power | Thermal solution | Operating Temp. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| N/A | | | | | | | | | | | | |

* Other combination is project based support. Please contact sales for details.

## Optional Accessories

| Part No. | Description |
|---|---|
| TBD | One piece heatsink |
| TBD | Addon fan module to be used on top of semiheatsink/heatsink |

## Development Board

| Part No. | Description |
|---|---|
| TBD | Development Board SOM-DH7000 |

## Packing List

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

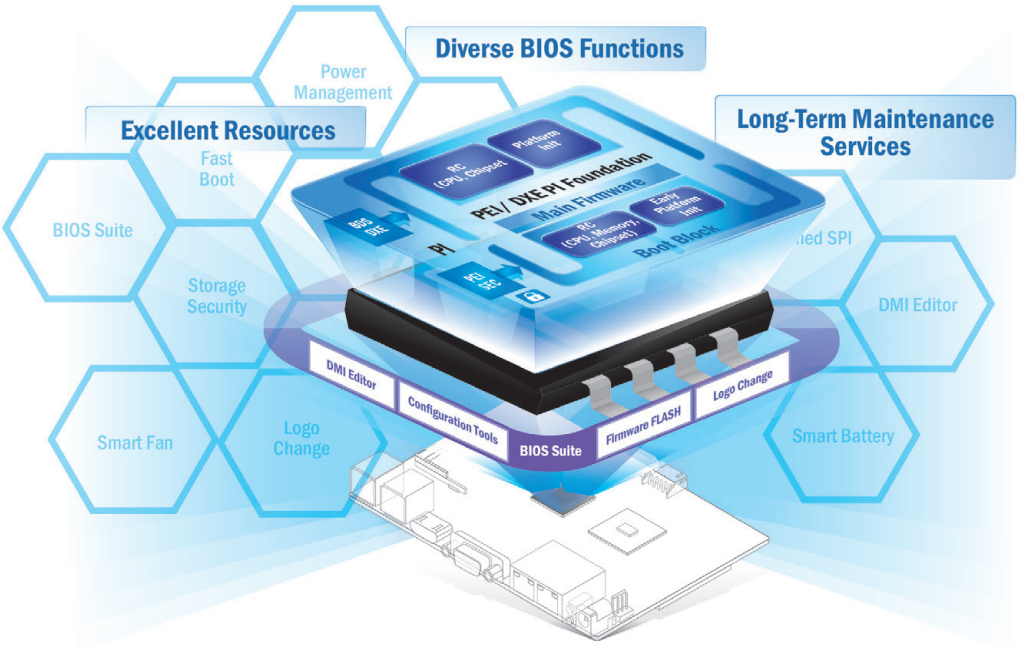
## Embedded OS

| OS | Part No. | Description |
|---|---|---|
| Win10 | TBD | TBD |

# 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

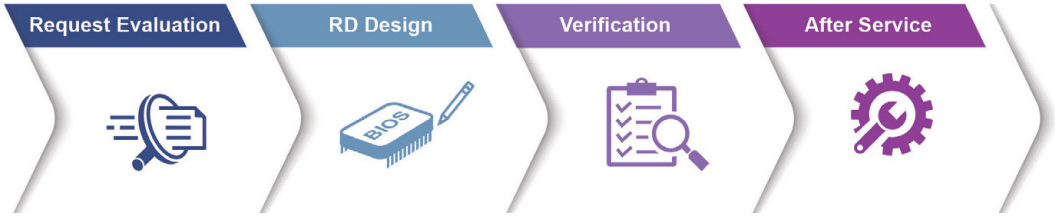
**Diverse BIOS Functions**

- 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<br>• Peripherals/firmware<br>• Open for extension | • Real-time monitoring<br>• Remote controls<br>• Troubleshooting | • Zero-touch on-boarding<br>• OTA updates<br>• 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<br>• Boost AI using Advantech hardware | • Build AI environment in under 5 minutes<br>• Ready-to-use configuration | • User friendly configuration guidance<br>• One-click Benchmark acquisition | • Easy access to 100+ AI inference extensions<br>• Software development package available | • Diverse CPU/RAM options<br>• 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 | Licensed Services | Numerous AI and Edge Resources | Local Partner Alliance |
|---|---|---|---|
| • Platform compatibility tests<br>• Preloaded functional driver and software stacks | • License authorized Canonical delivers 10-years of bug fixes and security updates<br>• In-house bundled service | • Containerized technology for service provision and deployment<br>• AI resources from Caffe, TensorFlow, and mxnet | • Embedded Linux and Android Alliance (ELAA) |