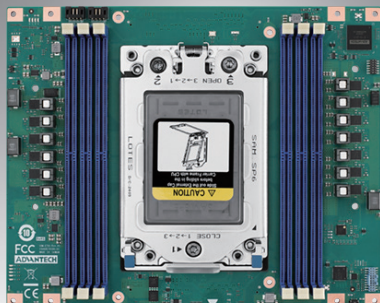


# SOM-E781

## AMD EPYC™ 8004 Processor COM-HPC® Server Size E module with proprietary pinout

NEW



### Features

- COM-HPC® Server Size E module with proprietary pinout
- AMD EPYC™ 8004 real server grade CPU, up to 64C/200W with extreme performance
- Up to 576GB large memory size with 6x DDR5 RDIMM
- 72 lanes PCIe Gen5, includes 48 lanes CXL1.1
- Multiple I/O expansion: 2.5GbE, USB3.2 Gen1, SATA3.0
- Supports iManager, Embedded Software APIs, DeviceOn, and IPMB

Software APIs:



 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                   | 8534P                                                                                                                                                                                                            | 8124P                  |
|                   | Base Frequency        | 2.3GHz                                                                                                                                                                                                           | 2.45GHz                |
|                   | Max Frequency         | 3.1GHz                                                                                                                                                                                                           | 3.0GHz                 |
|                   | Cores                 | 64                                                                                                                                                                                                               | 16                     |
|                   | LLC                   | 128MB                                                                                                                                                                                                            | 64MB                   |
|                   | Default TDP           | 200W                                                                                                                                                                                                             | 125W                   |
|                   | Socket type           | Socket SP6                                                                                                                                                                                                       |                        |
|                   | BIOS                  | AMI UEFI 256Mbit                                                                                                                                                                                                 |                        |
| Memory            | Technology            | DDR5                                                                                                                                                                                                             | DDR5                   |
|                   | Speed                 | 4800 MT/s                                                                                                                                                                                                        | 4800 MT/s              |
|                   | Max. Capacity         | Up to 576GB                                                                                                                                                                                                      |                        |
|                   | Channel/Socket        | 6 Channel / 6 Sockets RDIMM, 1DPC                                                                                                                                                                                |                        |
|                   | ECC Support           | ECC and non-ECC                                                                                                                                                                                                  |                        |
| Expansion         | PCI Express           | 4 PCIe x16, 64 lanes, Gen5 (Bitfurcate to x16, x8, x4)                                                                                                                                                           |                        |
|                   |                       | 1 PCIe x8, 8 lanes Gen5; 6 PCIe x1, 6 lanes Gen3 extra using for KR and RSVD signals (proprietary)                                                                                                               |                        |
|                   | CXL                   | 1 PCIe x1, Gen 3 for BMC (COM-HPC standard), total 79 PCIe lanes                                                                                                                                                 |                        |
| Serial Bus        | SMBus                 | 48 lanes CXL1.1, shared with PCIe x16                                                                                                                                                                            |                        |
|                   | I2C Bus               | 1                                                                                                                                                                                                                |                        |
| Ethernet          | Gigabit               | 2                                                                                                                                                                                                                |                        |
|                   |                       | Intel I226 controller ; Speed: 10M / 100M / 1000M / 2.5G speeds                                                                                                                                                  |                        |
| I/O               | SATA3.0               | 2 Ports (6Gbps)                                                                                                                                                                                                  |                        |
|                   | USB3.2 Gen1           | 4 Ports (5Gbps)                                                                                                                                                                                                  |                        |
|                   | USB2.0                | 4 Ports (480Mbps)                                                                                                                                                                                                |                        |
|                   | SPI Bus               | 1                                                                                                                                                                                                                |                        |
|                   | GPIO                  | 12-bits GPIO                                                                                                                                                                                                     |                        |
|                   | eSPI                  | 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 |                       | Turbo Max: 199.61W @12V(8534P with 576GB DDR5)<br>Idle: 32.46W @12V(8534P with 576GB DDR5)<br>* Only for reference and will depend on custom software loading. For more details please refer to the user manual. |                        |
| Environment       | Operating Temperature | Standard: 0 ~ 50 °C (32 ~ 122 °F), TDP will become 173W by 60 °C                                                                                                                                                 |                        |
|                   | Storage Temperature   | 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  | 3.5 Grms                                                                                                                                                                                                         |                        |
| Mechanical        | Dimensions            | 200 x 160 mm                                                                                                                                                                                                     |                        |

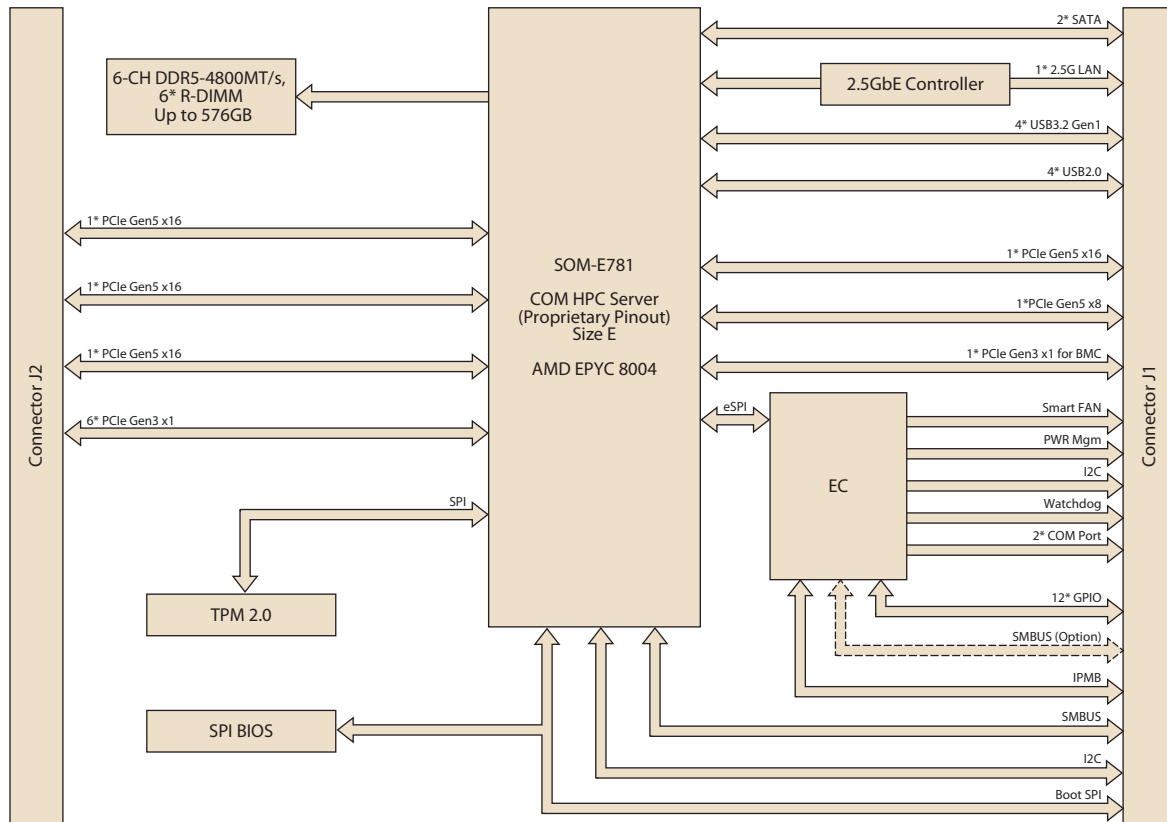
**ADVANTECH**

**Computer On Modules**

All product specifications are subject to change without notice.

Last updated: 9-Jan-2025

## Block Diagram



## Ordering Information

| Part No.         | CPU         | Cores | Base Freq. | Max Turbo Freq. | CPU TDP | CPU Threads | DDR5 RDIMM | Ethernet mode          | PCIe lanes            | CXL                               | Power  | Thermal solution              | Operating Temp. |
|------------------|-------------|-------|------------|-----------------|---------|-------------|------------|------------------------|-----------------------|-----------------------------------|--------|-------------------------------|-----------------|
| SOM-E781S64-U3A1 | EPYC™ 8534P | 64    | 2.3GHz     | 3.1GHz          | 200W    | 128         | 4800MT/s   | 10M/100M/1000M/2.5Gbps | 79 (Gen5*72 & Gen3*7) | 48 *CXL 1.1, shared with PCIe x16 | AT/ATX | Active * Optional Accessories | 0 ~ 50 °C       |
| SOM-E781S16-U4A1 | EPYC™ 8124P | 16    | 2.45GHz    | 3.0GHz          | 125W    | 32          | 4800MT/s   | 10M/100M/1000M/2.5Gbps | 79 (Gen5*72 & Gen3*7) | 48 *CXL 1.1, shared with PCIe x16 | AT/ATX | Active * Optional Accessories | 0 ~ 50 °C       |

Any other SKUs or combination is project based support. Please contact sales for details.

## Development Board

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

## Optional Accessories

| Part No.       | Description      |
|----------------|------------------|
| 1970005652T001 | QFCS             |
| TBD            | Addon fan module |

## Packing List

| Part No. | Description         | Quantity |
|----------|---------------------|----------|
| -        | SOM-E781 COM module | 1        |

## Embedded OS

| OS             | Part No. | Description |
|----------------|----------|-------------|
| Windows Server | TBD      | TBD         |