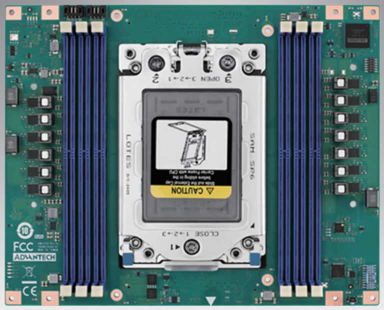
SOM-E781

AMD EPYC™ 8004 Processor
COM-HPC® Extension Size E module

NEW



Features

- COM-HPC® Extension Size E module
- AMD EYPC™ 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

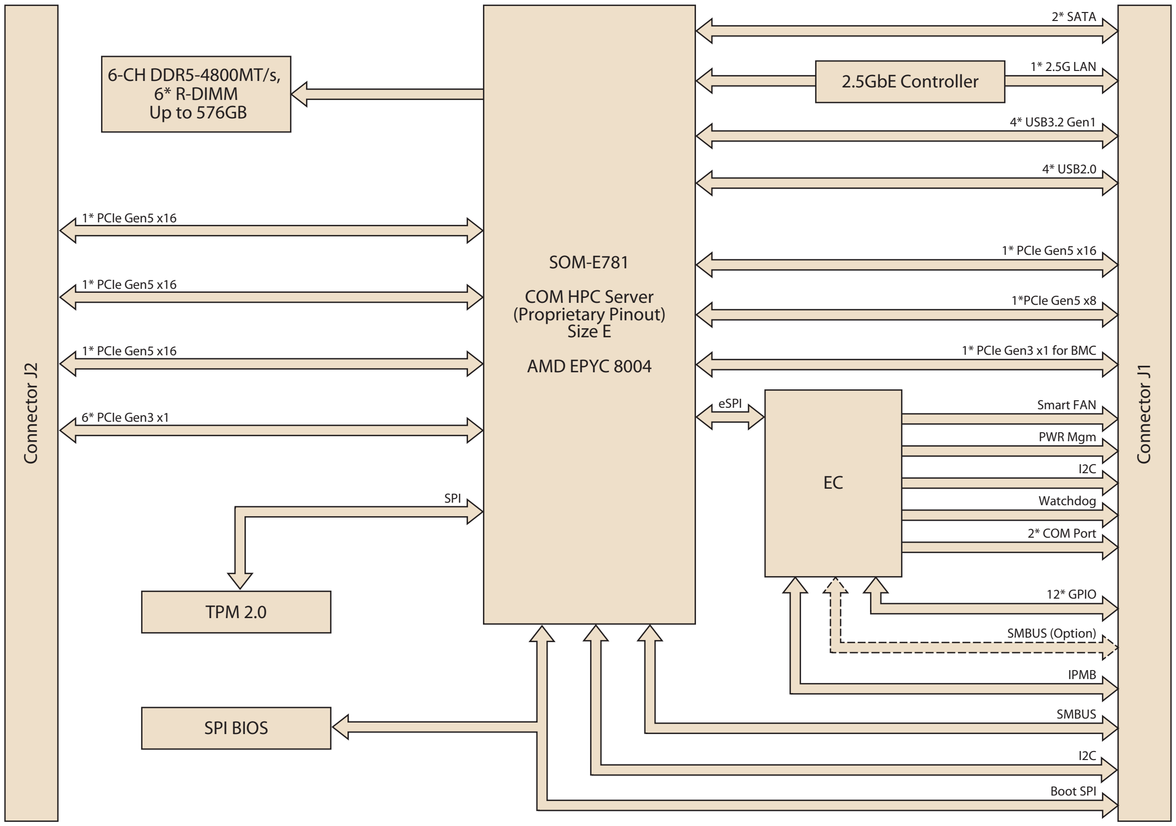
Software APIs: Watchdog I²C SMBus H/W Monitor GPIO Brightness

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	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) 1 PCIe x1, Gen 3 for BMC (COM-HPC standard), total 79 PCIe lanes	
	CXL	48 lanes CXL1.1, shared with PCIe x16	
Serial Bus	SMBus	1	
	I2C Bus	2	
Ethernet	Gigabit	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) Idle: 32.46W @12V(8534P with 576GB DDR5) * 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 reduce to 173W at 60°C for CPU SKU 8534P	
	Storage Temperature	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	3.5 Grms	
Mechanical	Dimension	200 x 160 mm	

Block Diagram



Ordering Information

Part No.	CPU	Cores	Base Freq.	Max Turbo Freq.	CPU TDP	CPU Threads	DDR5 RDIMM	BMC	Power	Thermal Solution	Operating Temperature
SOM-E781S64-U3A1	EPYC 8534P	64	2.3 GHz	3.1 GHz	200W	128	4800 MT/s	N/A	AT/ATX	Active * Optional Accessories	0 ~ 50 °C
SOM-E781S16-U4A1	EPYC 8124P	16	2.45 GHz	3.0 GHz	125W	32	4800 MT/s	N/A	AT/ATX	Active * Optional Accessories	0 ~ 50 °C
SOM-E781S16A-U4A1	EPYC 8124P	16	2.45 GHz	3.0 GHz	125W	32	4800 MT/s	Yes*	AT/ATX	Active * Optional Accessories	0 ~ 50 °C

Any other SKUs or combination is project based support. Please contact sales for details.
*Compatible with BMC Card SOM-RM10 (P/N: SOM-RM10-00A1)

Development Board

Part No.	Description
SOM-DH7000-00A2	COM-HPC Size E Extension Dev. Board A2
SOM-DH7000A-00A2	COM-HPC Size E Extension Dev. Board A2 Share NIC

*For Development board support, please contact Advantech for more information.

Packing List

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

Optional Accessories

Part No.	Description
1970005652T001	Heatsink, 119.3x78.9x22.6mm
1970006083N000	Addon fan module
SOM-RM10-00A1	SOM-RM10 AST2600 2GB OCP RunBMCv1.5 Large

Embedded OS

OS	Part No.	Description
Windows Server 2022	20706WS22S0002	img Svr Std 16Core SOM-E781 64b 2022 ENU