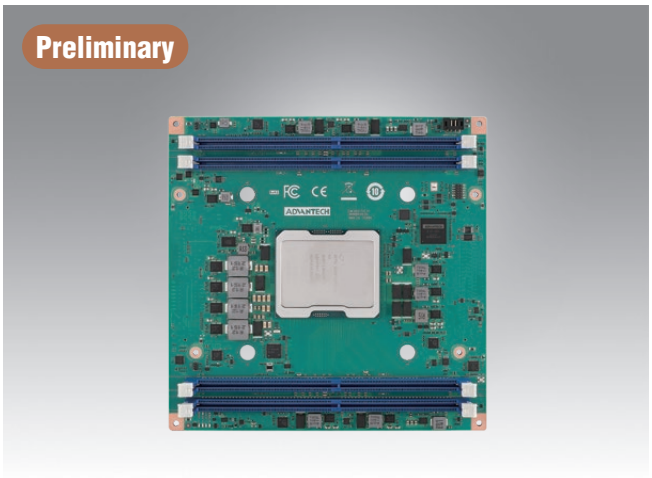
SOM-D580

Intel® Xeon® D-2700 Processor (Code Name: Ice Lake-D HCC) COM-HPC® Server Size D



Features

- COM-HPC® Server Size D Module
- Intel® Xeon® D-2700 processors
- Up to 20 Cores, 30MB LLC Cache, 118W TDP
- Quad channel DDR4-3200 RDIMM/LRDIMM up to 512GB (Both ECC & Non-ECC)
- 32 x PCIe Gen 4, 17 x PCIe Gen 3, 4 x 25GBASE-KR, IPMB
- Supports iManager, Embedded Software APIs, and WISE-DeviceOn

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

Windows Embedded **iManager WISE-DeviceOn**

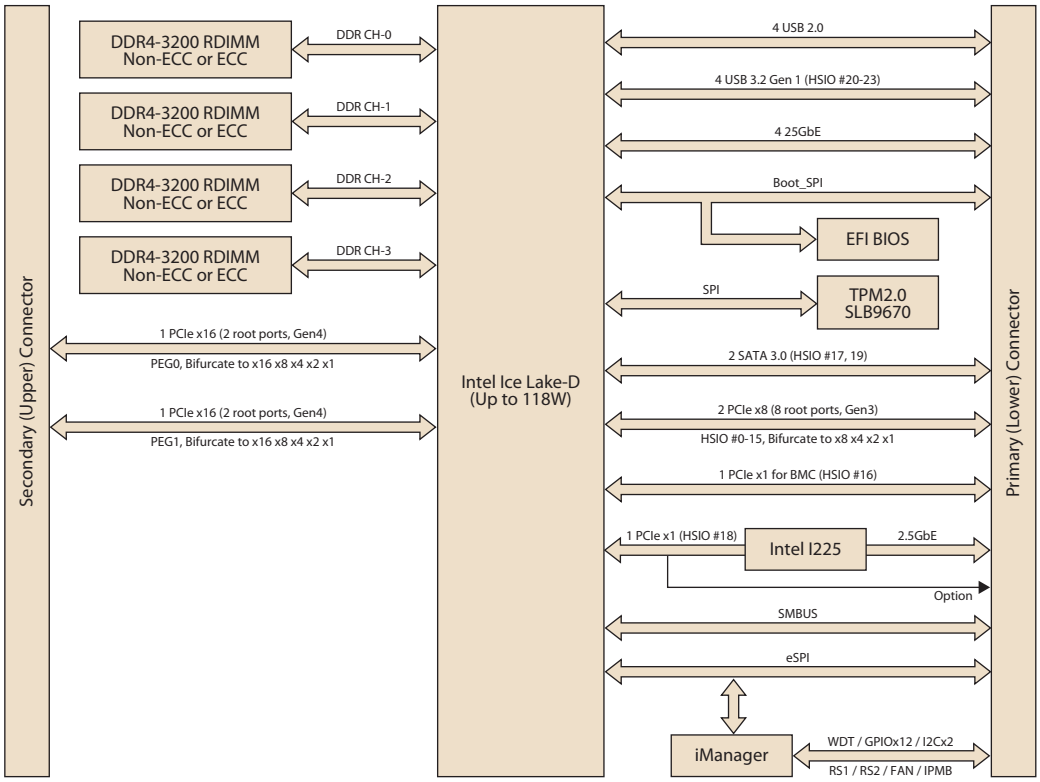
Specifications

Form Factor	Form Factor	COM-HPC® Size D				
	Pin-out Type	COM-HPC® Server				
Processor System	CPU	D-2796TE	D-2775TE	D-2733NT	D-2752TER	D-2712T
	Base Frequency	2.0 GHz	2.0 GHz	2.1 GHz	1.8 GHz	1.9 GHz
	Max Turbo Frequency	3.1 GHz	3.1 GHz	3.2 GHz	2.8 GHz	3.0 GHz
	Core	20	16	8	12	4
	LLC	30MB	25MB	15MB	20MB	15MB
	TDP	118W	100W	80W	77W	65W
	BIOS	AMI UEFI 256Mbit				
Memory	Technology	DDR4				
	Frequency	2933MHz/2667MHz				
	ECC Support	Yes				
	Max. Capacity	512GB				
	Socket	1DPC, 4x RDIMM, LRDIMM socket				
	PCI Express	2 PCIe x16, 32 lanes, Gen 4 (Bifurcate to x16, x8, x4, x2, x1) 2 PCIe x8, 16 lanes, Gen 3 (Bifurcate to x8, x4, x2, x1)				
Serial Bus	SMBus	Yes				
	I2C Bus	x2				
Ethernet	Ethernet KR	Intel Integrated 8x 10G or 4x 25G (depands on SoC SKU)				
	Gigabit	Intel I225; 10M/100M/1000M/2.5Gbps				
I/O	SATA3.0	2 Ports				
	USB 3.2 Gen1	4 Ports				
	USB2.0	4 Ports				
	SPI Bus	Yes				
	GPIO	12-bit GPIO				
	eSPI	Yes				
	Watchdog	65536 level, 0 ~ 65535 sec				
	COM Port	2 Ports (2-Wire)				
	TPM	TPM2.0				
	Smart Fan	2 Ports: 1 port on COM 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	Operating Temperature	Standard: 0 ~ 60 °C (32 ~ 140 °F) Extend: -40 ~ 85 °C (-40 ~ 185 °F)				
	Storage Temperature	-40 ~ 85 °C (-40 ~ 185 °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	160 x 160 mm				

昊生研究科技 15323 3600

All product specifications are subject to change without notice.

Block Diagram



Ordering Information

Part No.	SoC	Core	Base Freq.	Max Turbo Freq.	SoC TDP	LLC	DDR4 RDIMM/ LRDIMM	Ethernet mode	PCIe Gen. 4 lanes	Power	Thermal solution	Operating Temp.
SOM-D580D20-U0A1	D-2796TE	20	2.0 GHz	3.1 GHz	118W	8MB	2933MT/s	100G	32	AT/ATX	Active	0 ~ 60 °C
SOM-D580D16-U0A1	D-2775TE	16	2.0 GHz	3.1 GHz	100W	8MB	2933MT/s	100G	32	AT/ATX	Active	0 ~ 60 °C
SOM-D580D12-S8A1	D-2752TER	12	1.8 GHz	2.8 GHz	77W	8MB	2667MT/s	50G	32	AT/ATX	Active	0 ~ 60 °C
SOM-D580D8-U1A1	D-2733NT	8	2.1 GHz	3.2 GHz	80W	8MB	2667MT/s	50G	32	AT/ATX	Active	0 ~ 60 °C
SOM-D580D4-S9A1	D-2712T	4	1.9 GHz	3.0 GHz	65W	8MB	2667MT/s	50G	32	AT/ATX	Active	0 ~ 60 °C

Any other SKUs or 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-DH5000

Packing List

Part No.	Description	Quantity
-	SOM-D580 CPU Module	1

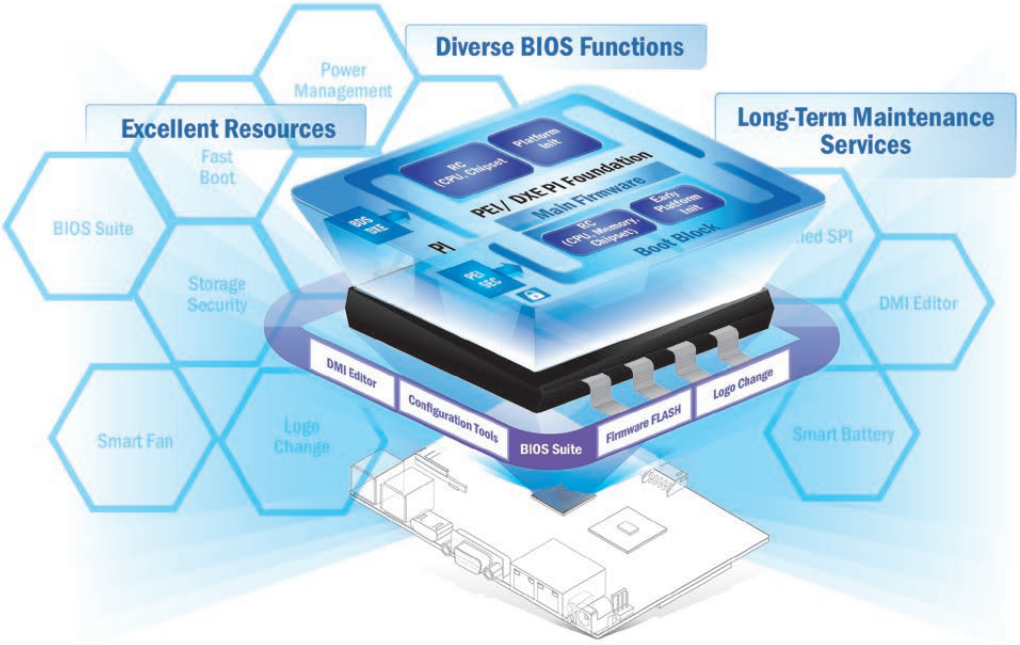
Embedded OS

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

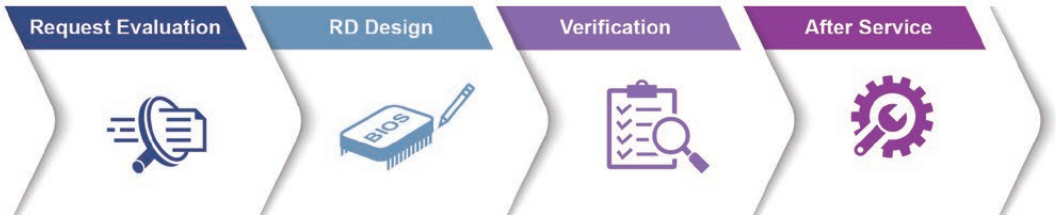
Diverse BIOS Functions

- 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 • 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	Licensed Services	Numerous AI and Edge Resources	Local Partner Alliance
• Platform compatibility tests • Preloaded functional driver and software stacks	• License authorized Canonical delivers 10-years of bug fixes and security updates • In-house bundled service	• Containerized technology for service provision and deployment • AI resources from Caffe, TensorFlow, and mxnet	• Embedded Linux and Android Alliance (ELAA)