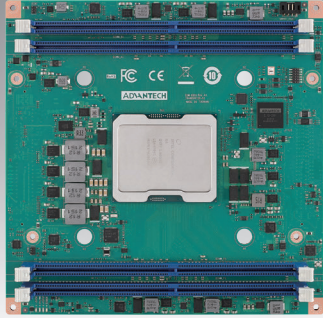


SOM-D580

Intel® Xeon® D-2700 & D-2800 Processors (Ice Lake-D HCC) COM-HPC® Server Size D

Preliminary



Features

- COM-HPC® Server Size D Module
- Intel® Xeon® D-2700 & D-2800 Processors (Ice Lake-D HCC)
- Up to 20 Cores, 30MB LLC Cache, 118W TDP
- Quad channel DDR4-2933 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

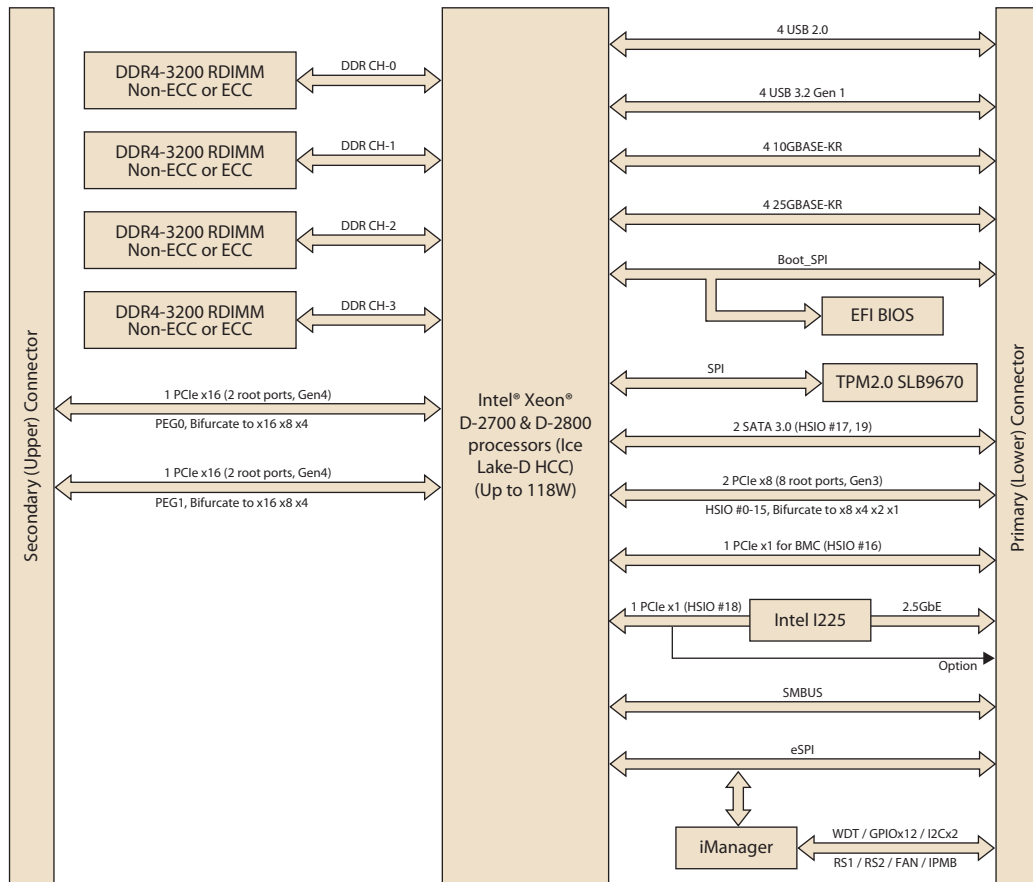
Software APIs:  Watchdog  PCI  SMBus  H/W Monitor  GPIO  Brightness

 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-2752TER	D-2733NT	D-2712T	D-2896TER
	Base Frequency	2.0 GHz	2.0 GHz	1.8 GHz	2.1 GHz	1.9 GHz	2.0 GHz
	Max Turbo Frequency	3.1 GHz	3.1 GHz	2.8 GHz	3.2 GHz	3.0 GHz	3.2 GHz
	Core	20	16	12	8	4	20
	LLC	30MB	25MB	20MB	15MB	15MB	30MB
	TDP	118W	100W	77W	80W	65W	110W
	BIOS	AMI UEFI 256Mbit					
Memory	Technology	DDR4					
	Frequency	2933MHz					
	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	32 x PCIe Gen 4 and 17 x PCIe Gen 3 (1port PCIe x1 Gen3 for BMC), total 49 lanes					
Serial Bus	SMBus	Yes					
	I2C Bus	x2					
Ethernet	Ethernet KR	Intel Integrated 4x 10G or 4x 25G (depends on SoC SKU)					
	Gigabit	Intel I225IT Controller; 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 (4-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.)		178.11W@12V (D-2796TE with 512GB LRDDR4 3200)					
Power Consumption (Idle)		71.06W@12V (D-2796TE with 512GB LRDDR4 3200)					
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					

Block Diagram



Ordering Information

Part No.	SoC	Cores	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	30MB	2933MT/s	100G	32	AT/ATX	Active * Optional Accessories	0 – 60 °C
SOM-D580D16-U0A1	D-2775TE	16	2.0 GHz	3.1 GHz	100W	25MB	2933MT/s	100G	32	AT/ATX	Active * Optional Accessories	0 – 60 °C
SOM-D580D12-S8A1	D-2752TER	12	1.8 GHz	2.8 GHz	77W	20MB	2667MT/s	50G	32	AT/ATX	Active * Optional Accessories	0 – 60 °C
SOM-D580D8-U1A1	D-2733NT	8	2.1 GHz	3.2 GHz	80W	15MB	2667MT/s	50G	32	AT/ATX	Active * Optional Accessories	0 – 60 °C
SOM-D580D4-S9A1	D-2712T	4	1.9 GHz	3.0 GHz	65W	15MB	2667MT/s	50G	32	AT/ATX	Active * Optional Accessories	0 – 60 °C
SOM-D580D20X-U0A1	D-2796TE	20	2.0 GHz	3.1 GHz	118W	30MB	2933MT/s	100G	32	AT/ATX	Active * Optional Accessories	-40 – 85 °C
SOM-D580D16X-U0A1	D-2775TE	16	2.0 GHz	3.1 GHz	100W	25MB	2933MT/s	100G	32	AT/ATX	Active * Optional Accessories	-40 – 85 °C
SOM-D580D12X-S8A1	D-2752TER	12	1.8 GHz	2.8 GHz	77W	20MB	2667MT/s	50G	32	AT/ATX	Active * Optional Accessories	-40 – 85 °C
SOM-D580RD20-U0A1	D-2896TER	20	2.0 GHz	3.2 GHz	110W	30 MB	2933 MHz	100G	32	AT/ATX	Active * Optional Accessories	0 – 60 °C
SOM-D580RD20X-U0A1	D-2896TER	20	2.0 GHz	3.2 GHz	110W	30 MB	2933 MHz	100G	32	AT/ATX	Active * Optional Accessories	-40 – 85 °C

Any other SKUs or 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.

Packing List

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

Development Board

Part No.	Description
SOM-DH5000-00A1	COM-HPC Size D Developing Board A1 With 10GBASE-KR OCP cards (SOM-EA70 + SOM-EA64)
SOM-DH5000-01A1	COM-HPC Size D Developing Board A1 With 25GBASE-KR OCP card (SOM-EA71)

Optional Accessories

Part No.	Description
1970005587T001	One piece heatsink, H.S R4 Intel.-Ice Lake-D HCC 118W 120x98x23.5mm
1970005122N001	Addon fan module, CL R3 160x160 SC for SOM-D580

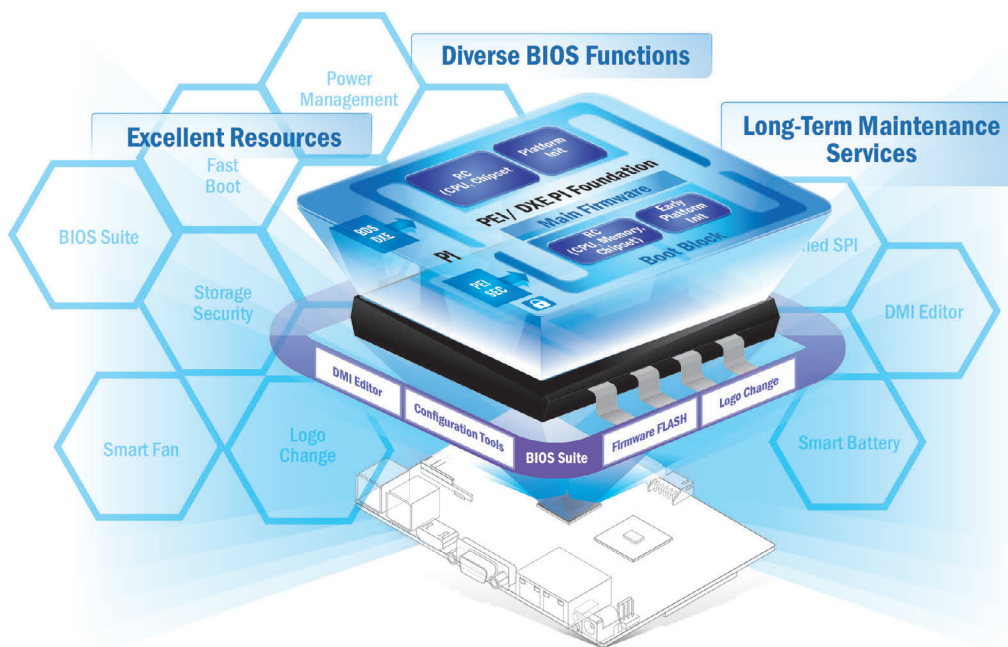
Embedded OS

OS	Part No.	Description
Win10	20706WX1HS0078	img W10 21HL SOM-D580 64b 21H2 ENU
Win10	20706WX1VS0078	img W10 21VL SOM-D580 64b 21H2 ENU
Win10	20706WX1ES0078	img W10 21EL SOM-D580 64b 21H2 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

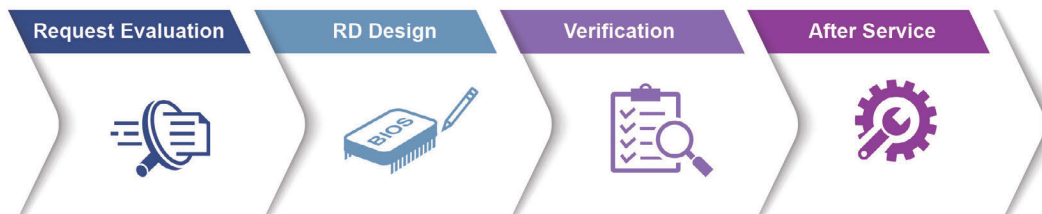
Diverse BIOS Functions

- 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



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
<ul style="list-style-type: none"> • Devices status • Peripherals/firmware • Open for extension 	<ul style="list-style-type: none"> • Real-time monitoring • Remote controls • Troubleshooting 	<ul style="list-style-type: none"> • 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
<ul style="list-style-type: none"> Integrated Intel® OpenVINO™ technology Boost AI using Advantech hardware 	<ul style="list-style-type: none"> Build AI environment in under 5 minutes Ready-to-use configuration 	<ul style="list-style-type: none"> User friendly configuration guidance One-click Benchmark acquisition 	<ul style="list-style-type: none"> Easy access to 100+ AI inference extensions Software development package available 	<ul style="list-style-type: none"> 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
<ul style="list-style-type: none"> Platform compatibility tests Preloaded functional driver and software stacks 	<ul style="list-style-type: none"> License authorized Canonical delivers 10-years of bug fixes and security updates In-house bundled service 	<ul style="list-style-type: none"> Containerized technology for service provision and deployment AI resources from Caffe, TensorFlow, and mxnet 	<ul style="list-style-type: none"> Embedded Linux and Android Alliance (ELAA)