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Datasheet

Advantech

SOM-5993

COM Express® Basic Type7 with Intel® Xeon® D-1700 (Ice Lake-D LCC) Processors

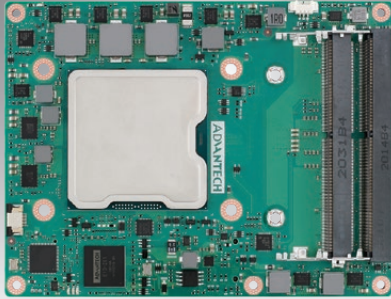


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SOM-5993

Intel® Xeon® D Processor (Code Name: Ice Lake-D LCC) COM Express® Basic Type7

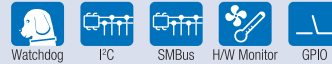
Preliminary



Features

- Intel® Xeon® D Processor
- COM Express R3.0 Basic Module Type 7 pin out
- 4~10 core processor, with max. TDP 69W
- High speed Ethernet(4 x 10GBASE-KR interfaces, one GbE)
- Abundant expansion (PCIe x16 Gen4, PCIe X8, 4PCIe X1)
- Supports SUSI, DeviceOn and Edge AI Suite

Software APIs:



Utilities:

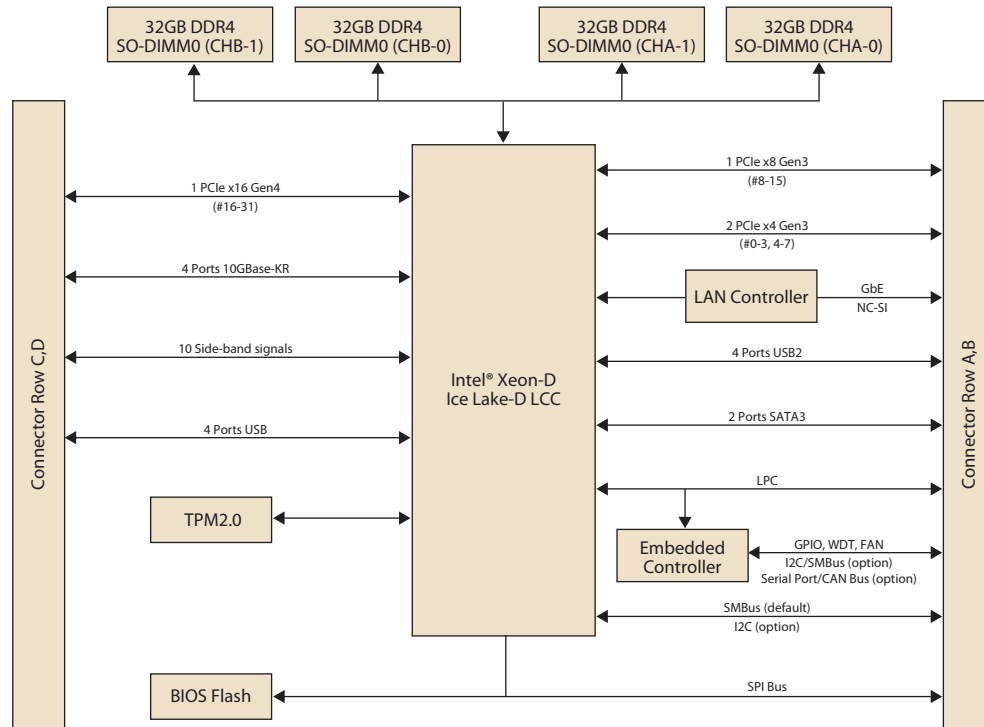


Windows Embedded **iManager WISE-DeviceOn** CE FC

Specifications

Form Factor	Form Factor	COM Express Basic Module				
	Pin-out Type	COM Express R3.0 Type 7 compatible				
Processor System	CPU	Xeon	Xeon	Xeon	Xeon	Xeon
	Base Frequency	2.3GHz	2.1GHz	2.1GHz	1.6GHz	1.6GHz
	Max Single Core Turbo Frequency	2.3GHz	2.1GHz	2.1GHz	1.6GHz	1.6GHz
	Cores	10	8	8	4	4
	LLC	15MB	12MB	12MB	6MB	6MB
	CPU TDP	69W	59W	52W	50W	39W
	BIOS	AMI UEFI 128Mbit				
Memory	Technology	DDR4				
	Max. Frequency	2933MHz				
	ECC Support	Non-ECC or ECC				
	Max. Capacity	128GB				
	Socket	4x 260P SO-DIMM, Dual Channel				
Expansion	PCI Express	1 PCIe gen4x16, bifurcatable to 2x8, 4x4 1 PCIe gen3x8, bifurcatable to 2x4, 4x2, 4x1 2 PCIe gen3x4, bifurcatable to 4x2, 4x1				
	LPC	Yes				
Serial Bus	SMBus	Yes				
	I²C Bus	Yes (Optional)				
Ethernet	10Gb Ethernet	Intel integrated 4 x 10G LAN controller; Interface: 10GBase-KR				
	Gigabit	Intel I210AT/I210IT controller; Speed: 10/100/1000 Mbps				
I/O	SATA	2 ports support SATA, 6.0Gb/s				
	USB3.0	4 Ports				
	USB2.0	4 Ports				
	SPI Bus	Yes				
	GPIO	8-bit				
	Watchdog	65536 level, 0 ~ 65535 sec				
	COM Port	2 Ports (2-Wire)				
	TPM	TPM2.0				
	Smart Fan	2 Ports: 1 port on COM module; 1 port on carrier board				
Power	Type	ATX: Vin, VSB; AT: Vin				
	Supply Voltage	Vin: 9V(± 5%)~12V (± 5%), VSB: 5V±5%, RTC Battery: 2.0-3.3V				
	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	3.5 Grms, IEC 60068-2-64, random, 5 ~ 500 Hz, 1 hr/axis				
Mechanical	Dimensions	125 mm x 95 mm (4.92" x 3.74")				

Block Diagram



Ordering Information

P/N	CPU	Cores	Freq.	CPU TDP	LLC	"DDR4 SODIMM"	Giga LAN	10GBase-KR	PEG X16	PEG X8	PEG X1	USB 2.0	USB 3.0	SATA III	LPC	Power	Thermal Solution	Operating Temperature
TBD	TBD	10	2.0	69W	15MB	ECC/non ECC	1	4	1	1	4	4	4	2	Yes	AT/ATX	Active	0-60°C
TBD	TBD	8	2.1	59W	12MB	ECC/non ECC	1	4	1	1	4	4	4	2	Yes	AT/ATX	Active	0-60°C
TBD	TBD	8	2.1	52W	12MB	ECC/non ECC	1	4	1	1	4	4	4	2	Yes	AT/ATX	Active	0-60°C
TBD	TBD	4	1.6	50W	6MB	ECC/non ECC	1	4	1	1	4	4	4	2	Yes	AT/ATX	Active	0-60°C
TBD	TBD	4	1.6	39W	6MB	ECC/non ECC	1	4	1	1	4	4	4	2	Yes	AT/ATX	Active	0-60°C

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

Development Board

Part No.	Description
TBD	COM-Express Development Board, T7 Pin-out support 10GBASE-T(4port)

Optional Accessories

Part No.	Description
TBD	standard semi cooler
TBD	QFCS

Packing List

Part No.	Description	Quantity
-	SOM-5993 module	1
TBD	Standard heat spreader	1

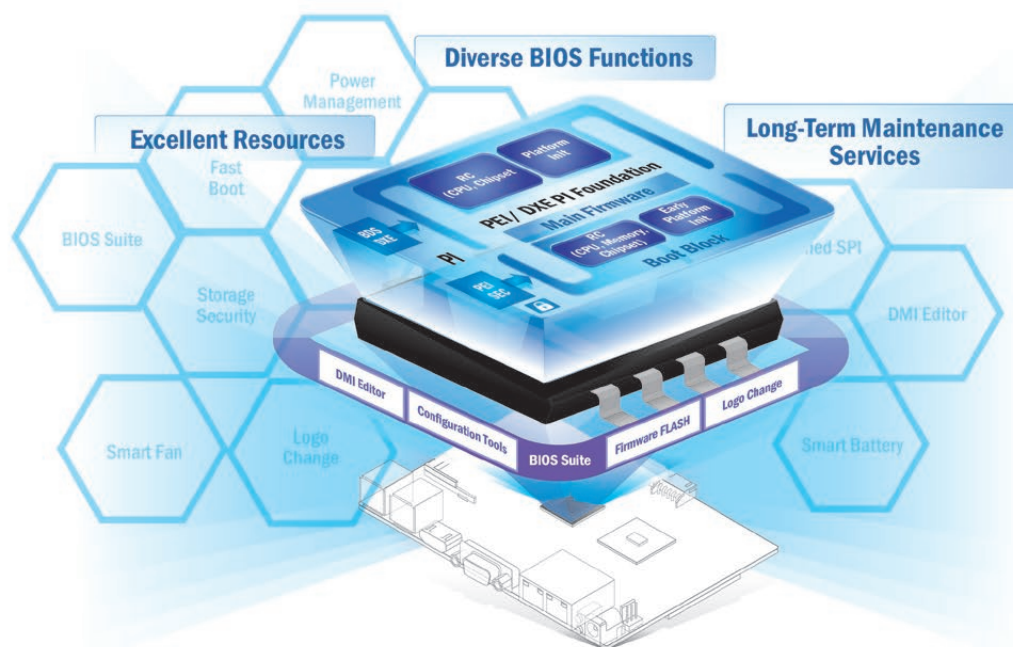
Embedded OS

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

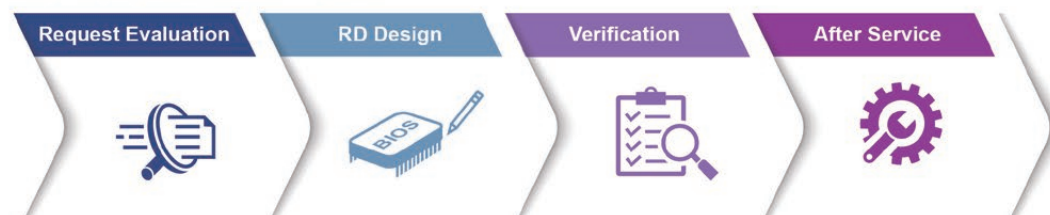
Diverse BIOS Functions

- 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
<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.



<p>5x Performance Boost</p> <ul style="list-style-type: none"> Integrated Intel® OpenVINO™ technology Boost AI using Advantech hardware 	<p>All-in-one Installation</p> <ul style="list-style-type: none"> Build AI environment in under 5 minutes Ready-to-use configuration 	<p>One Click AI Experience</p> <ul style="list-style-type: none"> User friendly configuration guidance One-click Benchmark acquisition 	<p>Plug-and-play Environment</p> <ul style="list-style-type: none"> Easy access to 100+ AI inference extensions Software development package available 	<p>Discover Cost-effective Hardware</p> <ul style="list-style-type: none"> Diverse CPU/RAM options Find hardware solutions for AI development
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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)

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