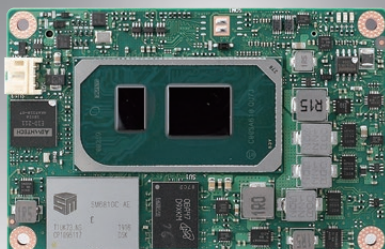


SOM-7583

11th Gen. Intel® Core™ Processor U-Series (Code Name: Tiger Lake-UP3) COM Express® Mini Type 10

NEW



Features

- Up to 4Cores Intel Core Processor, Intel Iris Xe Graphics 96EUs
- Max. 16GB LPDDR4 onboard, IBEC support. 32/64GB NVMe SSD
- Super Speed I/O Expansion: USB3.2 Gen2(10Gbps), PCIe Gen3, SATAIII
- Extended Temp. -40~85 °C
- Supports iManager, Edge-AI Suite, DeviceOn

Software APIs:

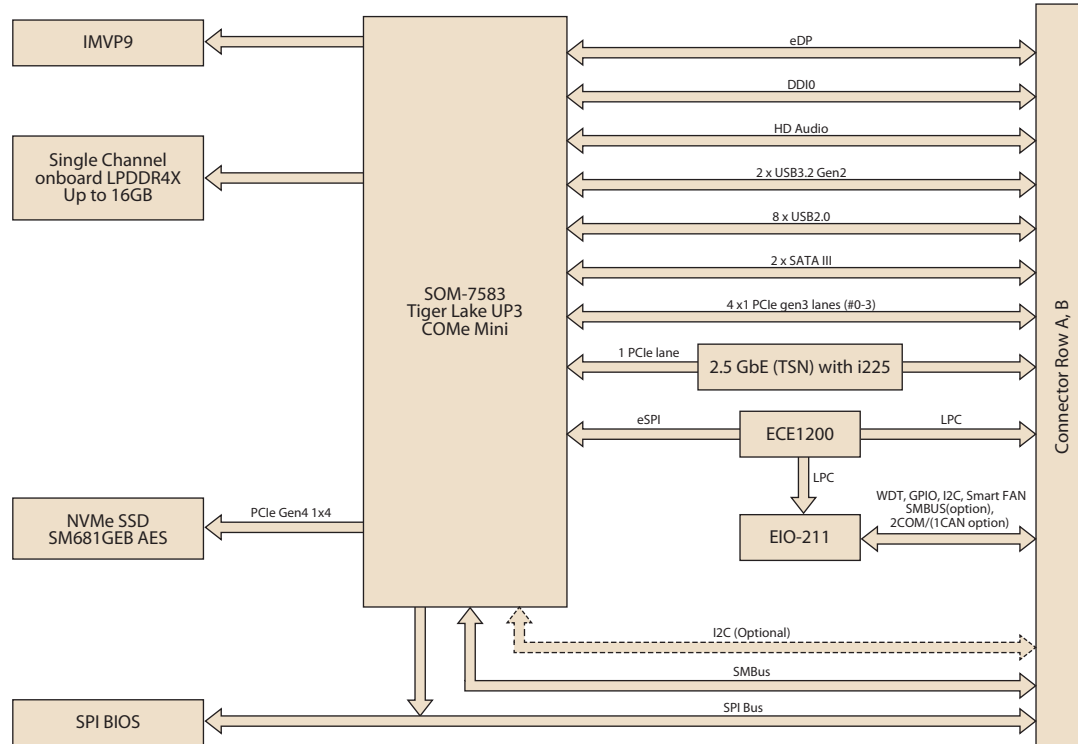


 Windows Embedded **iManager WISE-DeviceOn**  

Specifications

Form Factor	Form Factor	COM Express Mini Module						
	Pin-out Type	COM Express R3.0 Type 10 compatible						
Processor System	CPU	Core™ i7-1185G7E	Core™ i5-1145G7E	Core™ i3-1115G4E	Celeron® 6305E	Core™ i7-1185GRE	Core™ i5-1145GRE	Core™ i3-1115GRE
	Base Frequency	1.8GHz	1.5GHz	2.2GHz	1.8GHz	1.8GHz	1.5GHz	2.2GHz
	Turbo Frequency	4.4GHz	4.1GHz	3.9GHz	N/A	4.4GHz	4.1GHz	3.9GHz
	Cores	4	4	2	2	4	4	2
	Cache	12 MB	8 MB	6 MB	4 MB	12 MB	8 MB	6 MB
	CPU TDP	15W	15W	15W	15W	15W	15W	15W
	Configurable TDP-up Frequency	28W	28W	28W	N/A	28W	28W	28W
	Configurable TDP-down Frequency	12W	12W	12W	N/A	12W	12W	12W
Memory	Technology	LPDDR4						
	Speed	up to 4266						
	ECC Support	IBEC supported by Industrial SKU						
	Onboard Memory	8GB or 16GB						
Graphics	SODIMM Memory	Not supported						
	Controller	Intel® Iris® Xe Graphics/Intel® UHD Graphics						
	Graphics Max Dynamic Frequency	1.35GHz	1.30GHz	1.25GHz	1.25GHz	1.35GHz	1.30GHz	1.25GHz
	2D&3D/HW Acceleration	HW Encode: Supports AVC, MPEG-2, HEVC, and VP9 HW Decode: Supports Direct3D® 9 Video API (DXVA2), Direct3D12 Video API, Intel Media SDK, MFT (Media Foundation Transform) filters, Intel VA API						
Display	VGA	Not supported						
	LCD	eDP(HBR3) by option, source from TGL-UP3 DDIB eDP eDP: eDP1.4: 3840x2160 @ 60Hz, 30bpp Or 4096x2304 @ 60Hz, 24bpp						
	DDI	DDI port support configurable HDMI/DisplayPort DisplayPort 1.4: 4096x2304 60Hz 36bpp; 5120x3200 60Hz 24bpp (with DSC: 5120x3200 120Hz 30bpp; 7680x4320 60Hz 30bpp) HDMI 2.0b: 4Kx2K 48-60Hz 24bpp HDMI 1.4: 4Kx2K 24-30Hz 24bpp HDMI2.1 Can be supported using LSPCON (DP1.4 to HDMI2.1 protocol converter)						
	Type C	DP 1.4 (option from USB Type-C); HDMI 2.0b; 1 port						
	Multiple Display	Dual Display (DDI & eDP)						
	Expansion	PCI Express x1 (Gen3)						
Serial Bus	PCI Express x1 (Gen3)	1 PCIe x4, configurable to 4 PCIe x1						
	SMBus	Yes						
Ethernet	I2C Bus	Yes						
	Gigabit	Intel I225IT controller ; Speed: 10M / 100M / 1000M / 2.5G speeds						
I/O	TSN	Support by I225						
	SATA3.0	2 Ports (6Gbps)						
	USB3.2 (Gen2)	2 Ports (10 Gbps)						
	USB2.0	8 Ports (480 Mbps)						
	LPC	Yes						
	SPI Bus	Yes						
	GPIO	8-bit GPIO						
	Watchdog	65536 level, 0 ~ 65535 sec						
	CAN Bus	Optional						
	COM Port	2 Ports (2-Wire)						
Power	TPM	Intel fTPM						
	Smart Fan	2 Ports: 1 port on COM module (Notice: the input voltage of fan is aligned to Vin); 1 port on carrier board						
	Type	ATX: Vin, VSB; AT: Vin						
Environment	Supply Voltage	Vin: 8.5V ~ 20V; VSB: 4.75V ~ 5.25 V, RTC Battery: 2.0V ~ 3.3V						
	Operating Temperature	Standard: 0 ~ 60 °C (32 ~ 140 °F) Extend: -40 ~ 85 °C (-40 ~ 185 °F)						
	Storage Temperature	Standard: 0 ~ 60 °C (32 ~ 140 °F) Extend: -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						
Mechanical	Dimensions	84 x 55 mm						

Block Diagram



Ordering Information

Part Number	CPU	Base Freq.	Maximum TDP	LLC	GFX Gen. 11	IBEC	USB4	On Board LPDDR4	NVMe SSD	LAN speed (max.)	vPro	Thermal Solution	Operating Temp
SOM-7583C7-S8A1	i7-1185G7E	1.8 GHz	28W	12MB	96EUs	-	N/A	16GB	64GB	2.5G	Y	Active	0 ~ 60 °C
SOM-7583C5-S5A1	i5-1145G7E	1.5 GHz	28W	8MB	80EUs	-	N/A	8GB	32GB	2.5G	Y	Active	0 ~ 60 °C
SOM-7583C3-U2A1	i3-1115G4E	2.2 GHz	28W	6MB	48EUs	-	N/A	8GB	32GB	2.5G	-	Active	0 ~ 60 °C
SOM-7583CR-S8A1	Celeron 6305E	1.8 GHz	15W	4MB	48EUs	-	N/A	8GB	32GB	2.5G	-	Active	0 ~ 60 °C
SOM-7583R7X-S8A1	i7-1185GRE	1.8 GHz	28W	12MB	96EUs	Y	N/A	16GB i-grade	64GB	2.5G	Y	Active	-40 ~ 85 °C
SOM-7583R5X-S5A1	i5-1145GRE	1.5 GHz	28W	8MB	80EUs	Y	N/A	8GB i-grade	32GB	2.5G	Y	Active	-40 ~ 85 °C
SOM-7583R3X-U2A1	i3-1115GRE	2.2 GHz	28W	6MB	48EUs	Y	N/A	8GB i-grade	32GB	2.5G	-	Active	-40 ~ 85 °C
SOM-7583C7A-S8A1	i7-1185G7E	1.8 GHz	28W	12MB	96EUs	-	Option*	16GB	64GB	2.5G	Y	Active	0 ~ 60 °C

* SOM-MZ10 is not included in SOM-7583C7A-S8A1, need to be purchased from optional accessories.

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

Development Board

Part No.	Description
SOM-DB5830-00A2	COMe R3.0 Devel. Board Type6/Type10. Rev A2

Optional Accessories

Part No.	Description
1970004886N001	SOM-7583 semi-cooler
SOM-MZ10-00A1	SOM-MZ10 USB4 card

Packing List

Part No.	Description	Quantity
1970004887T001	SOM-7583 heat spreader	1

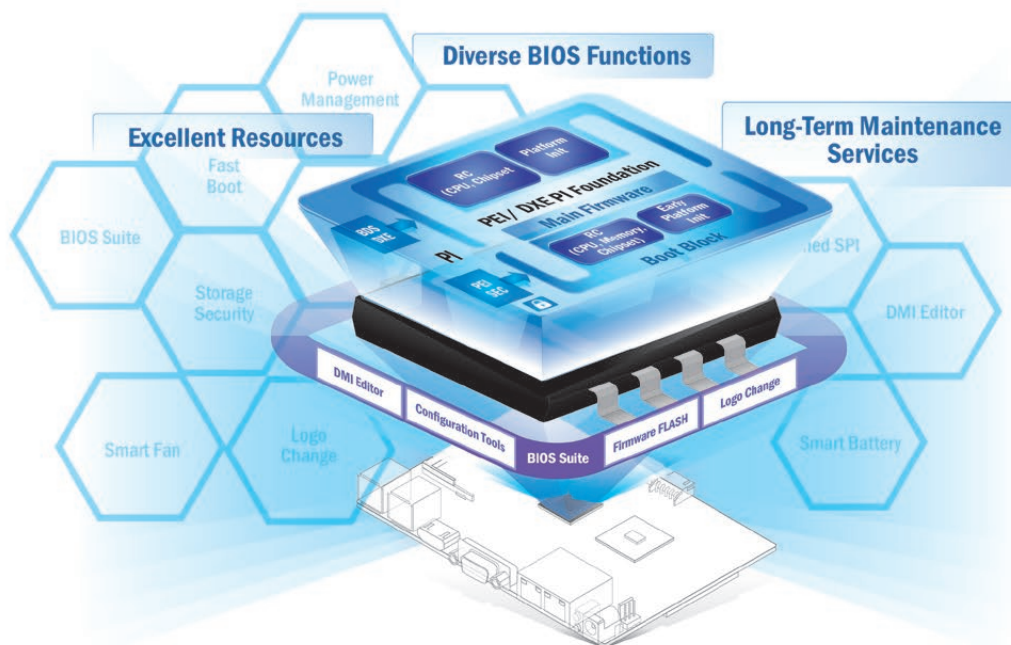
Embedded OS

OS	Part No.	Description
Win10	20706WX9EM0025	img W10 19EL SOM-7583 64b 1809 ENU (Audio_NV)
Win10	20706WX9HM0021	img W10 19HL SOM-7583 64b 1809 ENU (Audio_NV)
Win10	20706WX9VM0018	img W10 19VL SOM-7583 64b 1809 ENU (Audio_NV)

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

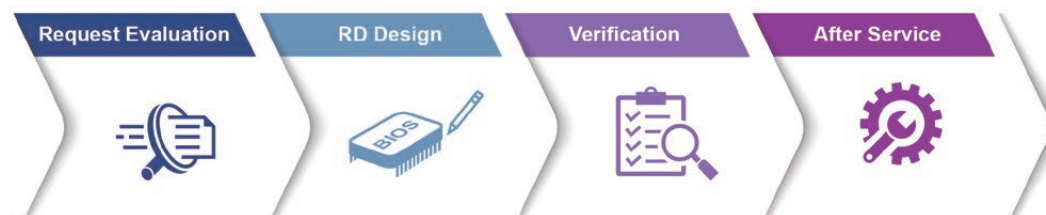
Diverse BIOS Functions

- 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

- Devices status
- Peripherals/firmware
- Open for extension

Remote Access

- Real-time monitoring
- Remote controls
- Troubleshooting

Efficient Operations

- 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)

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