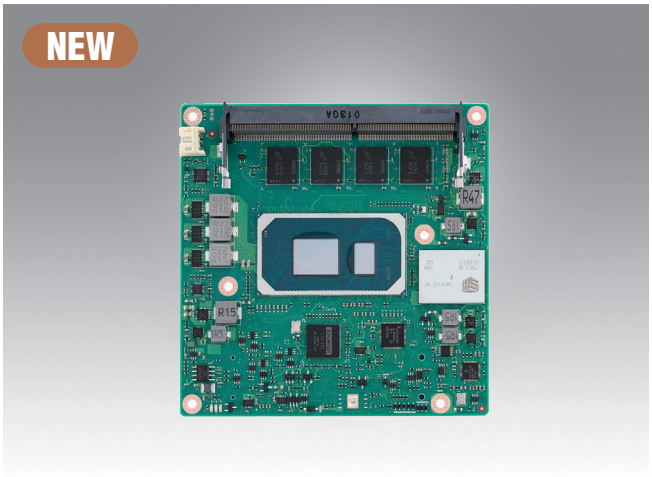
SOM-6883

11th Gen. Intel® Core™ Processor U-Series (Code Name: Tiger Lake-UP3) COM Express® Compact Type6



Features

- 11th Gen. Intel® Core™ Processor U-Series
- COM Express R3.0 Compact Module Type 6 Pinout
- Dual channel with one memory down and one SO-DIMM
- High speed I/O: 1 PCIe x4 Gen4, 5 PCIe x1 Gen3, 4 USB3.2 Gen2
- Onboard NVMe x4 SSD up to 64GB, TPM2.0 (Optional)
- Supports SUSI, DeviceOn and Edge AI Suite

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

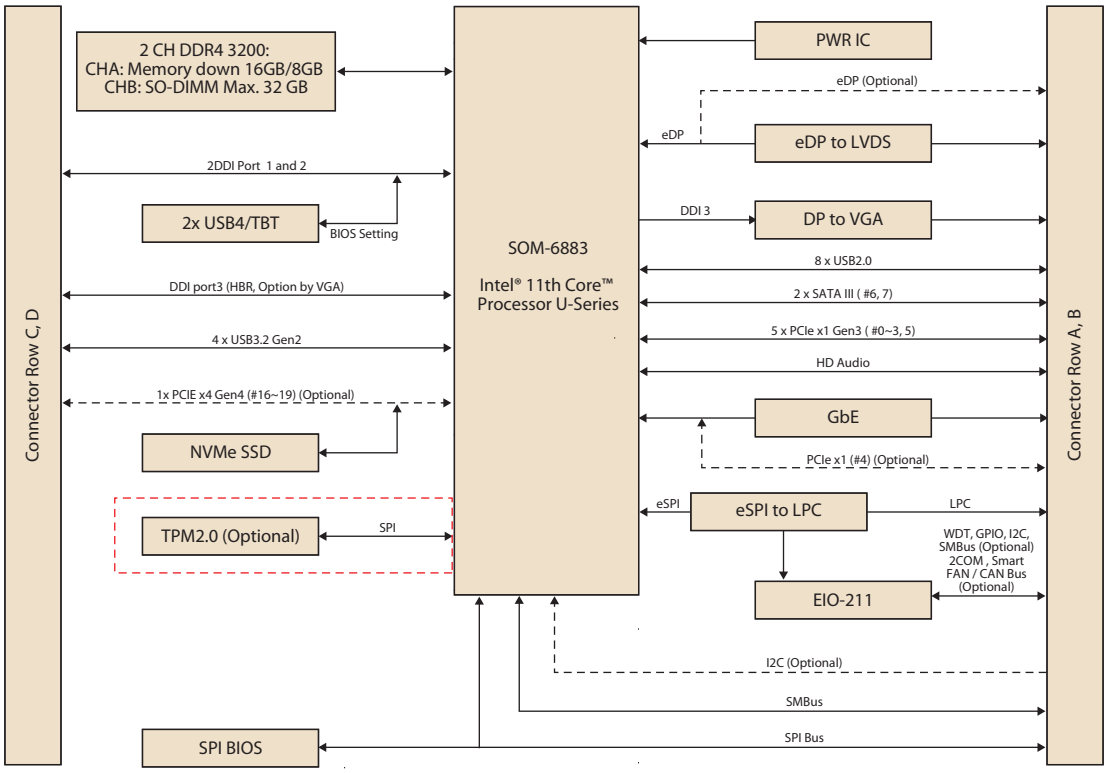
Windows Embedded iManager WISE-DeviceOn

Specifications

Form Factor	Form Factor	COM Express Compact Module						
	Pin-out Type	COM Express R3.0 Type 6 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/2.8GHz	28W/2.6GHz	28W/3.00GHz	N/A	28W/2.8GHz	28W/2.6GHz	28W/3.00GHz
	Configurable TDP-down/Frequency	12W/1.2GHz	12W/1.1GHz	12W/1.2GHz	N/A	12W/1.2GHz	12W/1.1GHz	12W/1.7GHz
Memory	Technology	DDR4, Dual-channel memory,up to 3200 MT/s						
	Onboard Memory	16GB/8GB						
	SODIMM Memory	up to 32 GB by one SODIMM Socket						
Graphics	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	1920 x 1200@60Hz						
	LCD	LVDS dual channel: 1920 x 1200@60Hz (option support eDP 4096 x 2304@60Hz, 24bpp)						
	DDI	3 DDI ports support configurable HDMI/DisplayPort -HDMI 2.0b: 4Kx2K 48-60Hz 24bpp -DisplayPort 1.4: 4096x2304 60Hz 36bpp						
	Multiple Display	Four displays with each display combinations						
Expansion	PCI Express x1 (Gen3)	5 PCIe x1 (Up to 6 by option)						
Serial Bus	SMBus	Yes						
	I2C Bus	Yes						
Ethernet	Gigabit	Intel I225 IT controller ; Speed: 10M / 100M / 1000M / 2.5G speeds						
I/O	SATA3.0	2 Ports (6Gbps)						
	USB3.2 (Gen2)	4 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	Support one CAN Bus option from COM Port						
	COM Port	2 Ports (2-Wire)						
	TPM	TPM2.0 (Optional)						
	Smart Fan	2 Ports: 1 port on COM module (Notice: the input voltage of fan is aligned to Vin); 1 port on carrier board						
Power	Type	ATX: Vin, VSB; AT: Vin						
	Supply Voltage	Vin: 8.5V ~ 20V; VSB: 4.75V ~ 5.25 V, RTC Battery: 2.0V ~ 3.3V						
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						
Mechanical	Dimensions	95 x 95 mm (3.74" x 3.74")						

ice.

Block Diagram



Ordering Information

P/N	CPU	Cores	CPU TDP	Onboard Memory	Onboard NVMe	PCIe x4 GEN4	eDP/LVDS	USB4	Power	Thermal Solution	Operating Temperature
SOM-6883C7A-S8A1	Core™ i7-1185G7E	4	28W	16GB	64GB	N/A	LVDS	N/A	AT/ATX	Active	0 ~ 60 °C
SOM-6883C7-S8A1	Core™ i7-1185G7E	4	28W	16GB	N/A	Yes	LVDS	N/A	AT/ATX	Active	0 ~ 60 °C
SOM-6883C5-S5A1	Core™ i5-1145G7E	4	28W	8GB	N/A	Yes	LVDS	N/A	AT/ATX	Active	0 ~ 60 °C
SOM-6883C5A-S5A1	Core™ i5-1145G7E	4	28W	8GB	N/A	Yes	eDP	N/A	AT/ATX	Active	0 ~ 60 °C
SOM-6883C3-U2A1	Core™ i3-1115G4E	2	28W	N/A	N/A	Yes	LVDS	N/A	AT/ATX	Active	0 ~ 60 °C
SOM-6883CR-S8A1	Celeron® 6305E	2	28W	N/A	N/A	Yes	LVDS	N/A	AT/ATX	Active	0 ~ 60 °C
SOM-6883R7X-S8A1	Core™ i7-1185GRE	4	28W	16GB	64GB	N/A	LVDS	N/A	AT/ATX	Active	-40 ~ 85 °C
SOM-6883R5X-S5A1	Core™ i5-1145GRE	4	28W	8GB	N/A	Yes	LVDS	N/A	AT/ATX	Active	-40 ~ 85 °C
SOM-6883R3X-U2A1	Core™ i3-1115GRE	2	28W	NA	N/A	Yes	LVDS	N/A	AT/ATX	Active	-40 ~ 85 °C
SOM-6883C3B-U2A1	Core™ i3-1115G4E	2	28W	N/A	N/A	Yes	LVDS	Option*	AT/ATX	Active	0 ~ 60 °C

*SOM-MZ10 is not included in SOM-6883C3B-U2A1, 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 Devel. Board COMe R3.0 Type6 pin-out (LVDS) 0 ~ 60 °C
SOM-DB5830A-00A2	COMe Devel. Board COMe R3.0 Type6 pin-out (eDP) 0 ~ 60 °C
SOM-DB5830X-00A2	COMe Devel. Board COMe R3.0 Type6 pin-out (LVDS) -40 ~ 85 °C

Optional Accessories

Part No.	Description
1970004870T001	Semi-Cooler 95 x 95 x 33 mm with 12V Fan
1970004871T001	QFCS 95 x 95 x 26 mm
SOM-MZ10-00A1	SOM-MZ10 USB4 card

Packing List

Part No.	Description	Quantity
1970004766T001	Heatspreader of SOM-6883	1

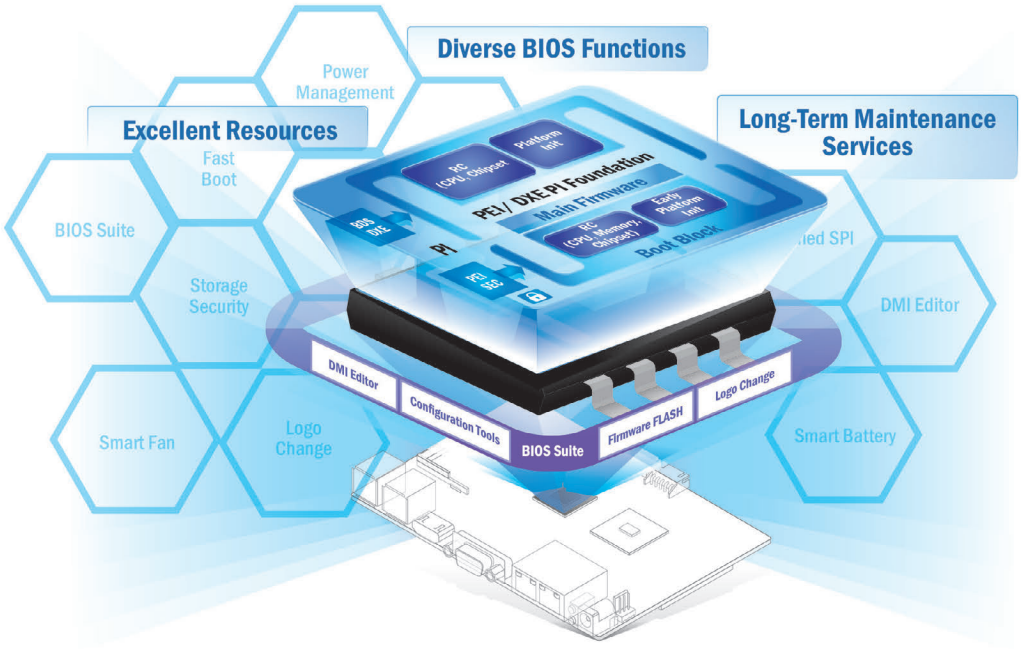
Embedded OS

OS	Part No.	Description
Win10	20706WX9HM0018	img W10 19HL SOM-6883 64b 1809 ENU (Audio_NV)
Win10	20706WX9VM0015	img W10 19VL SOM-6883 64b 1809 ENU (Audio_NV)
Win10	20706WX9EM0022	img W10 19EL SOM-6883 64b 1809 ENU (Audio_NV)
Ubuntu	20706U20DS0076	img UbuntuD SOM-6883 64b 20.04 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

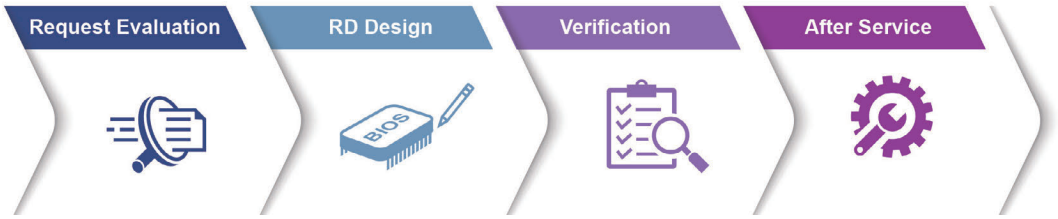
Diverse BIOS Functions

- 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
• 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

- Platform compatibility tests
- Preloaded functional driver and software stacks

Licensed Services

- License authorized Canonical delivers 10-years of bug fixes and security updates
- In-house bundled service

Numerous AI and Edge Resources

- Containerized technology for service provision and deployment
- AI resources from Caffe, TensorFlow, and mxnet

Local Partner Alliance

- Embedded Linux and Android Alliance (ELAA)