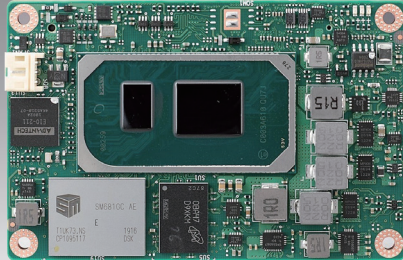


# SOM-7583

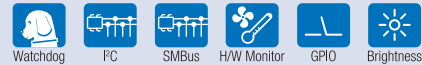
## 11th Gen. Intel® Core™ Processor U-Series (Code Name: Tiger Lake-UP3) COM Express® Mini Type 10



### Features

- Up to 4Cores Intel Core Processor, Intel Iris Xe Graphics 96EUs
- Max. 16GB LPDDR4 onboard, IB ECC support 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

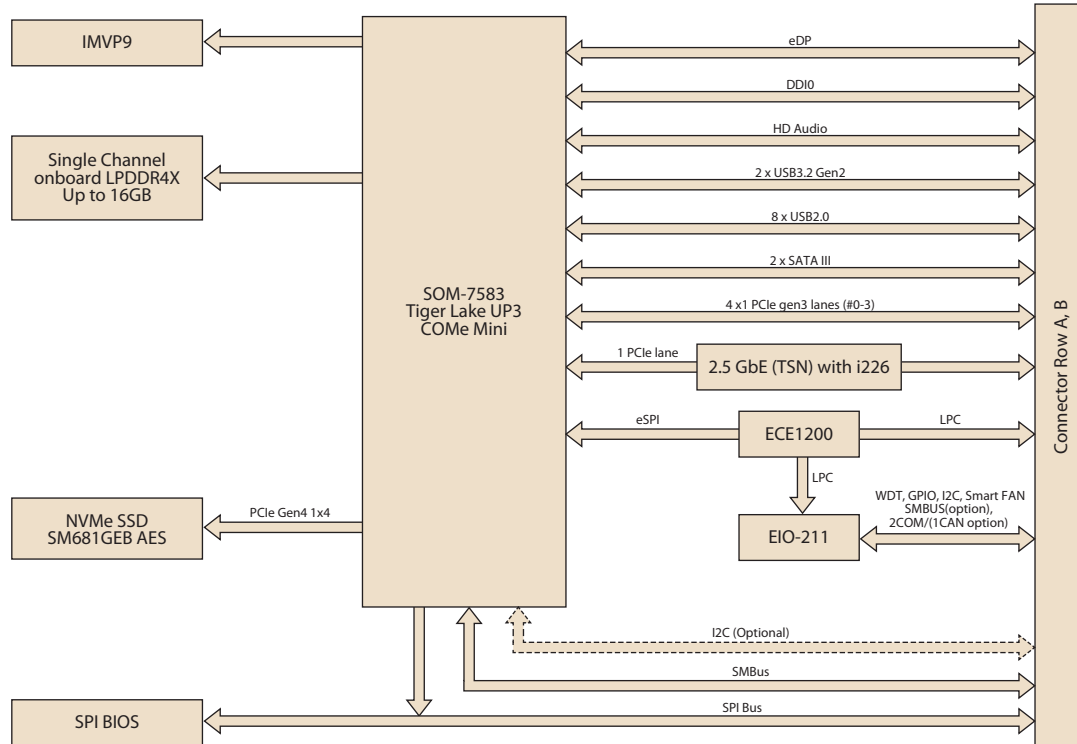
#### Software APIs:



### 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
	Cores/Threads	4C/8T	4C/8T	2C/4T	2C/2T	4C/8T	4C/8T	2C/4T
	Cache	12MB	8MB	6MB	4MB	12MB	8MB	6MB
	CPU TDP	28W	28W	28W	15W	28W	28W	28W
	Base Frequency	2.8GHz	2.6GHz	3.0GHz	1.8GHz	2.8GHz	2.6GHz	3.0GHz
	Max Turbo Frequency	4.4GHz	4.1GHz	3.9GHz	N/A	4.4GHz	4.1GHz	3.9GHz
	Configurable TDP-up Base Frequency	15W/1.8GHz	15W/1.5GHz	15W/2.2GHz	N/A	15W/1.8GHz	15W/1.5GHz	15W/2.2GHz
Configurable TDP-down Base Frequency	12W/1.2GHz	12W/1.1GHz	12W/1.7GHz	N/A	12W/1.2GHz	12W/1.1GHz	12W/1.7GHz	
Memory	Technology	LPDDR4						
	Speed	up to 4266						
	ECC Support	IB ECC supported by Industrial SKU						
	Onboard Memory	8GB or 16GB						
	SODIMM Memory	Not supported						
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	Not supported						
	LCD	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)	4 PCIe Lanes, default 4x1, configurable to x1, x2, x4						
Serial Bus	SMBus	Yes						
	I2C Bus	Yes						
Ethernet	Gigabit	Intel I226IT controller ; Speed: 10M / 100M / 1000M / 2.5G speeds						
	TSN	Support by I226						
I/O	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)						
	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							
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	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 No.	CPU	Cores/Threads	LLC	Max. TDP	Base/Max. Turbo Freq.	GFX Gen. 11	IBECC	USB4	On-Board LPDDR4	NVMe SSD	LAN Speed (Max.)	vPro	Thermal Solution	Operating Temp
SOM-7583C7-S8A1	Core i7-1185G7E	4C/8T	12MB	28W	2.8GHz/4.4GHz	96EUs	No	N/A	16GB	64GB	2.5G	Y	Active	0-60°C
SOM-7583C5-S5A1	Core i5-1145G7E	4C/8T	8MB	28W	2.6GHz/4.1GHz	80EUs	No	N/A	8GB	64GB	2.5G	Y	Active	0-60°C
SOM-7583C3-U2A1	Core i3-1115G4E	2C/4T	6MB	28W	3.0GHz/3.9GHz	48EUs	No	N/A	8GB	64GB	2.5G	-	Active	0-60°C
SOM-7583CR-S8A1	Celeron 6305E	2C/2T	4MB	15W	1.8GHz/NA	48EUs	No	N/A	8GB	64GB	2.5G	-	Active	0-60°C
SOM-7583R7X-S8A1	Core i7-1185GRE	4C/8T	12MB	28W	2.8GHz/4.4GHz	96EUs	Yes	N/A	16GB i-grade	64GB	2.5G	Y	Active	-40-85°C
SOM-7583R5X-S5A1	Core i5-1145GRE	4C/8T	8MB	28W	2.6GHz/4.1GHz	80EUs	Yes	N/A	8GB i-grade	64GB	2.5G	Y	Active	-40-85°C
SOM-7583R3X-U2A1	Core i3-1115GRE	2C/4T	6MB	28W	3.0GHz/3.9GHz	48EUs	Yes	N/A	8GB i-grade	64GB	2.5G	-	Active	-40-85°C
SOM-7583C7A-S8A1	Core i7-1185G7E	4C/8T	12MB	28W	2.8GHz/4.4GHz	96EUs	No	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
Ubuntu Image	20706U20DS0055	img Ubu20.4 SOM-7583 64b 2004 ENU