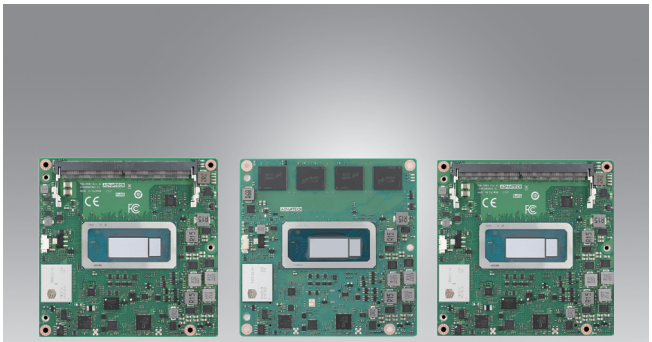
SOM-6884

13th Gen Intel® Core™ Processor (Code Name: Raptor Lake-P) COM Express® Compact Type 6



SOM-6884 A1 SOM-6884 A2 SOM-6884 A3

Windows Embedded iManager WISE-DeviceOn

Features

- 13th Generation Intel® Core™ Processor
- COM Express R3.1 Compact Module Type 6 Pinout
- Dual channel DDR5 memory up to 64GB, 4800MT/s (A1 version)
- Dual channel LPDDR5X on-board memory up to 64GB, 6000MT/s (A2 version)
- High speed I/O: 12x PCIe Gen4, Extra 4x PCIe Gen4 (A2 version), 8x PCIe Gen3, 2x USB4 & 4x USB3.2 Gen2
- Supports SUSI, DeviceOn and Edge AI Suite

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

Specifications

Form Factor	Form Factor	COM Express Compact Module			
	Pin-out Type	COM Express R3.1 Type 6 compatible			
Processor System	CPU	13th Gen Intel® Core™ Processor H series	13th Gen Intel® Core™ Processor P Series	13th Gen Intel® Core™ Processor U series	13th Gen Intel® Processor U300E
	P-core Base/Turbo Frequency	2.5/5.0GHz	1.9/4.8GHz	1.7/4.9GHz	1.10 GHz /4.30 GHz
	E-core Base/Turbo Frequency	1.8/4.0GHz	1.2/3.7GHz	1.2/3.7GHz	800 MHz /3.20 GHz
	Cores	14C (6P+8E)	14C (6P+8E)	10C (2P+8E)	5C (1P+4E)
	Cache	24M	24M	12M	8M
	CPU TDP	45W	28W	15W	15W
Memory	Technology	A1 version: DDR5, 4800MT/s A2 version: LPDDR5X, 6400MT/s			A3 version (U300E): DDR5, 4800MT/s
	Channel/Socket	A1 version: Dual Channel, 2 Sockets SODIMM, 1DPC A2 version: Dual Channel, Memory Down			A3 Version (U300E): Dual Channel, 2 Sockets SODIMM, 1DPC
	ECC support	IBECC Supported by Specific CPU SKUs			
Graphics	Controller	Intel® Iris® Xe Graphics/UHD Graphics Architecture			
	Max Graphic Frequency	1.4GHz	1.4GHz	1.3GHz	1.1GHz
	3D graphic HW acceleration	DX12, Open GL 4.6, Vulkan 1.2			
	HW Media Acceleration	oneVPL			
	Encode/Decode	H.2641/AVC, H.265/HEVC			
Display	LCD	LVDS dual channel: 1920 x 1200@60Hz (option support eDP1.4b 4096 x 2304@60Hz, 24bpp)			
	DDI	3 DDI ports support configurable HDMI/DisplayPort -HDMI 2.0b: 4Kx2K 48-60Hz 24bpp -DisplayPort 1.4a: 4096x2304 60Hz 36bpp			
	Multiple Display	Four displays with each display combinations			
Expansion	PEG	A1 Version: - PEG (H series only): 8x PCIe Gen4 lanes, Bifurcate to 1 x8 - PEG: 4x PCIe Gen4 lanes, Bifurcate to 1 x4 A2 Version: - PEG (H series only): 8x PCIe Gen4 lanes, Bifurcate to 1 x8 - PEG: 4x PCIe Gen4 lanes, Bifurcate to 1 x4 - PEG: 4x PCIe Gen4 lanes, Bifurcate to 1 x4 (The onboard NVMe SSD has been removed due component EOL)			A3 Version (U300E) - PEG: 4x PCIe Gen4 lanes, Bifurcate to 1 x4
	PCI Express	A1 & A2 Version: Up to 8x PCIe Gen3 lane, Default 5 lanes, Bifurcate to x1, x2, x4			A3 Version (U300E): Default: 4x PCIe Gen4 lanes, 4x PCIe Gen3 lanes Option: 1x PCIe Gen4 lanes, 7x PCIe Gen3 lanes

All product specifications are subject to change without notice.

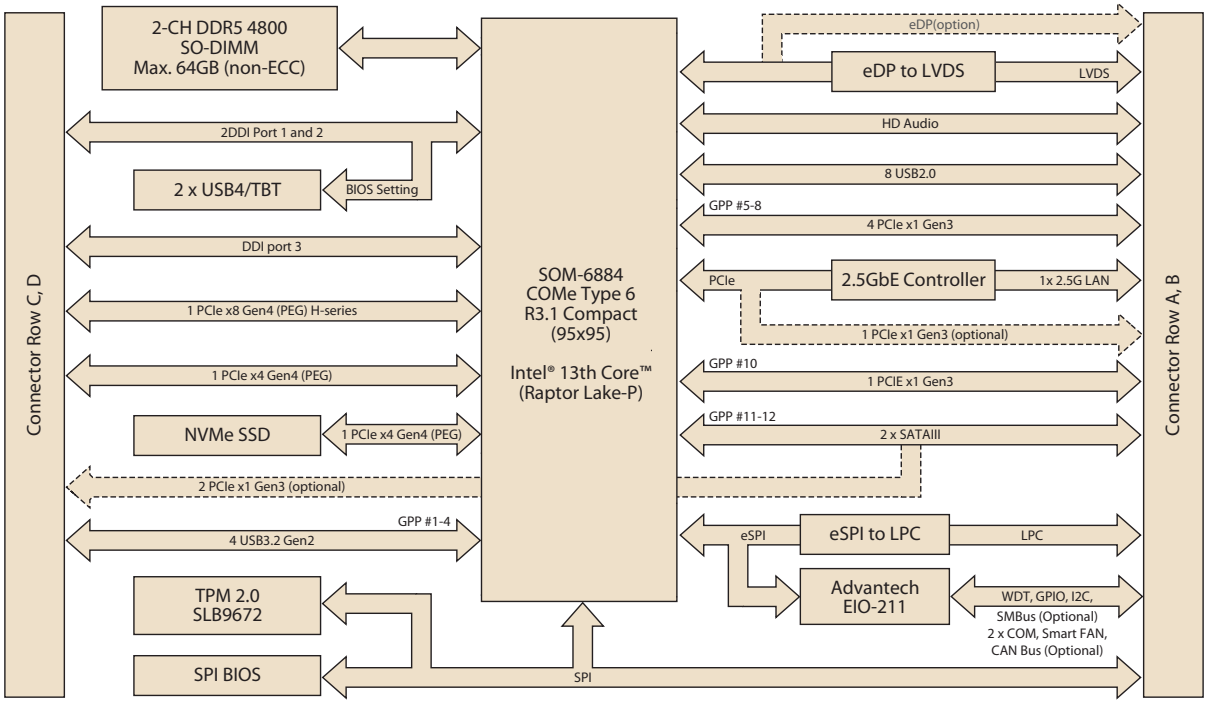
Last updated: 27-Oct-2026

Specifications (Cont.)

Serial Bus	SMBus	Yes	
	I2C Bus	Yes	
Ethernet	Gigabit	Intel® I226 controller; 10M/100M/1000M/2.5Gbps	
I/O	SATA3.0	2 Ports (6Gbps)	
	Onboard Storage	A1 version: On-board NVME SSD A2 version: N/A (The onboard NVMe SSD has been removed due component EOL)	A3 Version (U300E): N/A
	USB 4	2 Ports (SOM-MZ20 required, MUX with DDI1/2)	
	USB 3.2 (Gen2)	4 Ports (10Gbps)	
	USB 2.0	8 Ports (480Mbps)	
	LPC	Yes	
	SPI Bus	Yes	
	GPIO	8-bits 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	
	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 ~ 5.25V; RTC Battery: 2.0V ~ 3.3V	
Environment	Operating Temperature	Operating Standard: 0 ~ 60° C (32 ~ 140° F)	
	Storage Temperature	Storage: 0 ~ 60 °C (32 ~ 140 °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")	

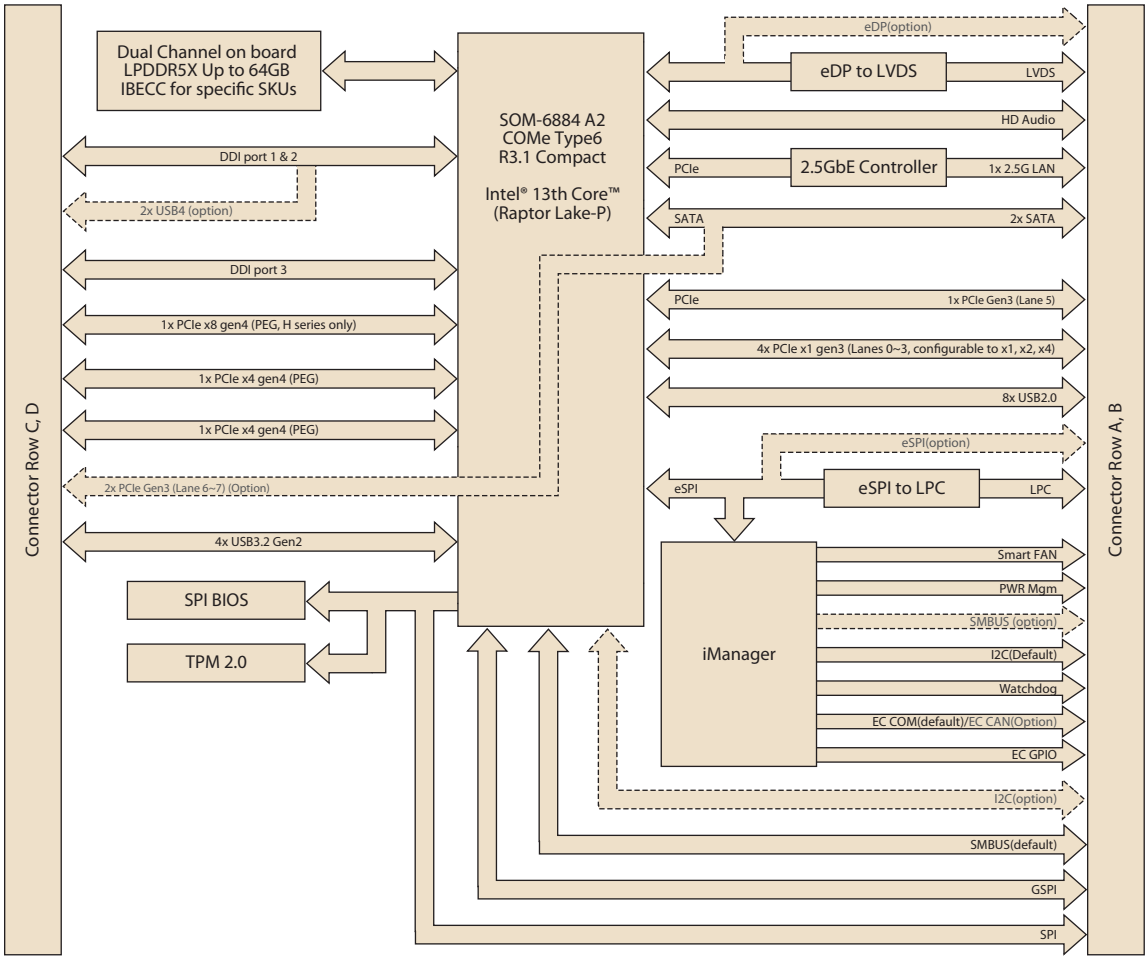
Block Diagram

Block Diagram for A1



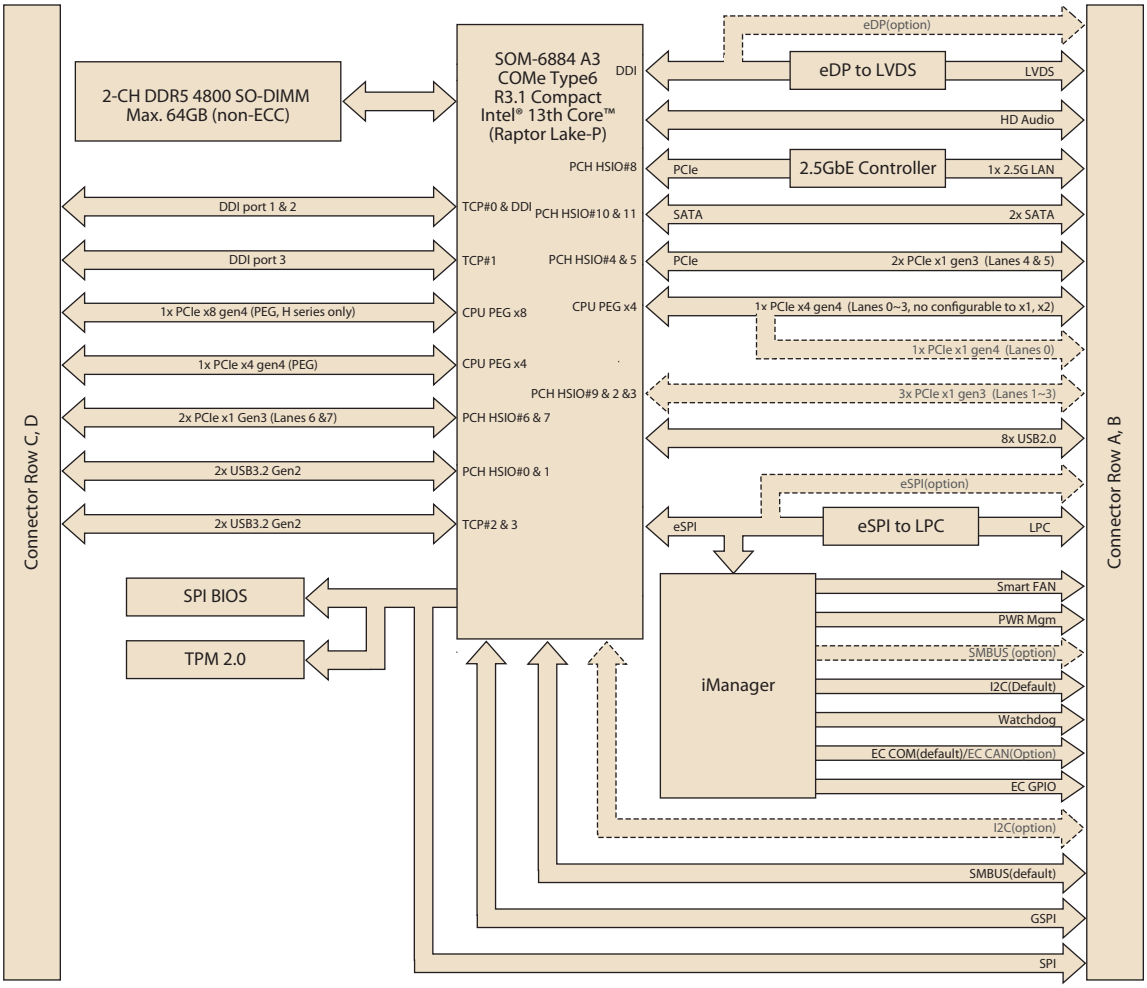
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Block Diagram

Block Diagram for A3



Ordering Information

Part No.	CPU	Cores (P+E)	Default TDP	P-core Base/ Turbo Freq.	E-core Base/ Turbo Freq.	Onboard NVMe	PEG x8 GEN4	IBECC	USB4	Thermal Solution	Operating Temperature
SOM-6884C7H-U5A1	Core™ i7-13800HE	14C (6+8)	45W	2.5GHz/5.0GHz	1.8GHz/4.0GHz	64GB	YES	N/A	N/A	Active	0~60°C
SOM-6884C5H-U7A1	Core™ i5-13600HE	12C (4+8)	45W	2.7GHz/4.8GHz	1.9GHz/3.6GHz	N/A	YES	N/A	N/A	Active	0~60°C
SOM-6884C3H-U1A1	Core™ i3-13300HE	8C (4+4)	45W	2.1GHz/4.6GHz	1.5GHz/3.4GHz	N/A	YES	N/A	N/A	Active	0~60°C
SOM-6884C3HA-U1A1	Core™ i3-13300HE	8C (4+4)	45W	2.1GHz/4.6GHz	1.5GHz/3.4GHz	N/A	YES	N/A	Option*	Active	0~60°C
SOM-6884C7HX-U5A1	Core™ i7-13800HRE	14C (6+8)	45W	2.5GHz/5.0GHz	1.8GHz/4.0GHz	64GB	YES	Yes	N/A	Active	-40~85°C***
SOM-6884C7U-S7A1	Core™ i7-1365UE	10C (2+8)	15W	1.7GHz/4.9GHz	1.2GHz/3.7GHz	N/A	N/A	N/A	N/A	Active	0~60°C
SOM-6884C5U-S4A1	Core™ i5-1345UE	10C (2+8)	15W	1.4GHz/4.6GHz	1.1GHz/3.4GHz	N/A	N/A	N/A	N/A	Active	0~60°C
SOM-6884C3U-S2A1	Core™ i3-1315UE	6C (2+4)	15W	1.2GHz/4.5GHz	0.9GHz/3.3GHz	N/A	N/A	N/A	N/A	Active	0~60°C
SOM-6884C7UX-S7A1	Core™ i7-1365URE	10C (2+8)	15W	1.7GHz/4.9GHz	1.2GHz/3.7GHz	NA	NA	YES	NA	Active	-40~85°C***
SOM-6884C3PX-S7A1	Core™ i3-1320PRE	8C (4+4)	28W	1.7GHz/4.5GHz	1.2GHz/3.3GHz	NA	NA	YES	NA	Active	-40~85°C***

Part No.	CPU	Cores (P+E)	Default TDP	P-core Base/ Turbo Freq.	E-core Base/ Turbo Freq.	Onboard NVMe	Onboard RAM	PEG x8 GEN4	IBECC	USB4	Thermal Solution	Operating Temperature
SOM-6884C7HXA-U5A2	Core™ i7-13800HRE	14C (6+8)	45W	2.5GHz/5.0GHz	1.8GHz/4.0GHz	N/A*	64GB	YES	YES	NA	Active	-40~85°C***
SOM-6884C7UXA-S7A2	Core™ i7-1365URE	10C (2+8)	15W	1.7GHz/4.9GHz	1.2GHz/3.7GHz	N/A*	64GB	NA	YES	NA	Active	-40~85°C***
SOM-6884C7UXB-S7A2	Core™ i7-1365URE	10C (2+8)	15W	1.7GHz/4.9GHz	1.2GHz/3.7GHz	N/A*	32GB	NA	YES	NA	Active	-40~85°C***
SOM-6884C5UA-S4A2	Core™ i5-1345URE	10C (2+8)	15W	1.4GHz/4.6GHz	1.1GHz/3.4GHz	NA	16GB	NA	YES	YES	Active	0~60°C

Note: Any other SKU or combination is project based support. Please contact sales for details.
*Due to wafer supply constraints and the unavailability of a pin-to-pin replacement, the onboard 512GB and 1TB NVMe SSD options are no longer available.
***Wide-temperature specification applies to the SOM module only. Actual system operating temperature depends on system thermal design and requires system-level validation.

Part No	CPU	Core (P+E)	Default TDP	P-core Base/ Turbo Freq.	E-core Base/ Turbo Freq.	Onboard NVMe	PEG x8 GEN4	IBECC	USB4	Thermal Solution	Operating Temperature
SOM-6884U3U-S1A3**	Intel U300E	5C (1P+4E)	15W	1.10 GHz / 4.30 GHz	800 MHz / 3.20 GHz	N/A	N/A	N/A	N/A	Active	0~60°C

**This SKU is made in China

Development Board

Part No.	Description
SOM-DB5830-00A3	COMe Devel. Board COMe R3.1 Type6 pin-out (LVDS) 0 ~ 60 °C
SOM-DB5830A-00A3	COMe Devel. Board COMe R3.1 Type6 pin-out (eDP) 0 ~ 60 °C

Optional Accessories

Part No.	Description
1970004870T021	Semi-Cooler 95 x 95 x 33 mm with 12V Fan
1970005709T001	QFCS 95 x 95 x 29.3 mm
SOM-MZ20-00A1	SOM-MZ20 USB4 card

Packing List

Part No.	Description	Quantity
-	SOM-6884 CPU Module	1
1970005711T000	Heatspreader of SOM-6884	1

Embedded OS

OS	Part No.	Description
Win10 (HL)	20706WX1HS0044	img W10 21HL SOM-6884 64b 21H2 ENU
Win10 (VL)	20706WX1VS0044	img W10 21VL SOM-6884 64b 21H2 ENU
Win10 (EL)	20706WX1ES0044	img W10 21EL SOM-6884 64b 21H2 ENU
Ubuntu 22.04	20706U22DS0018	img UbuntuD SOM-6884 64b 22.04 ENU
Win10 (HL)	20706WX1VS0103	img W10 21VL SOM-6884A2 64b 21H2 ENU
Win10 (VL)	20706WX1VS0103	img W10 21VL SOM-6884A2 64b 21H2 ENU
Win10 (EL)	20706WX1ES0103	img W10 21EL SOM-6884A2 64b 21H2 ENU