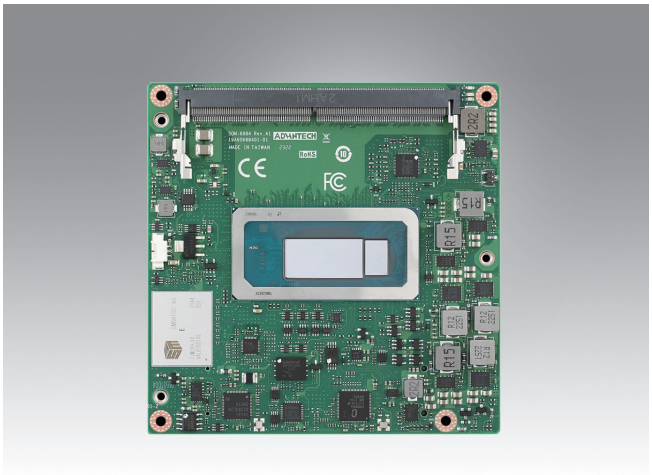
SOM-6884

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



Features

- 13th Generation Intel® Core™ Processor
- COM Express R3.1 Compact Module Type 6 Pinout
- Dual channel DDR5 memory up to 64GB, 4800MT/s
- High speed I/O: 12x PCIe Gen4, 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

Windows Embedded iManager WISE-DeviceOn

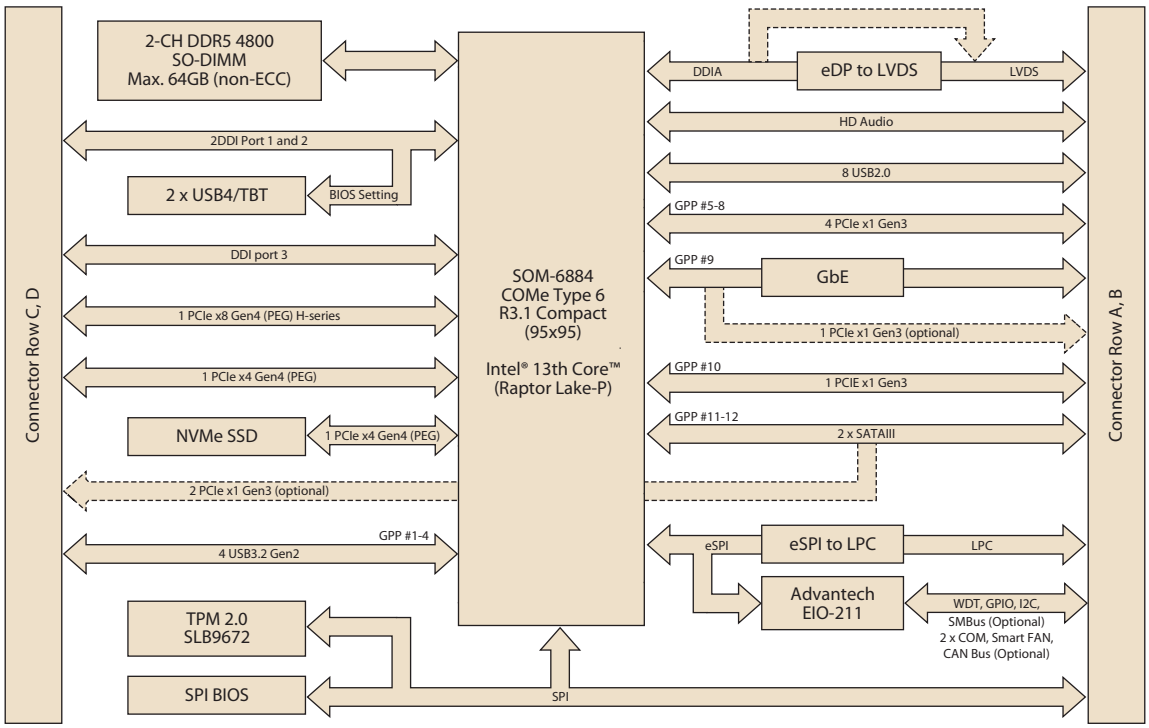
Specifications

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
	P-core Base/Turbo Frequency	2.5/5.0GHz	1.9/4.8GHz	1.7/4.9GHz
	E-core Base/Turbo Frequency	1.8/4.0GHz	1.2/3.7GHz	1.2/3.7GHz
	Cores	14C (6P+8E)	14C (6P+8E)	10C (2P+8E)
	Cache	24M	24M	12M
	CPU TDP	45W	28W	15W
Memory	Technology	DDR5, 4800 MT/s, non-ECC		
	SO-DIMM Memory	Up to 64GB by 2 SO-DIMM		
Graphics	Controller	Intel® Iris® Xe Graphics/UHD Graphics Architecture		
	Max Graphic Frequency	1.4GHz	1.4GHz	1.3GHz
	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	PCI Express	PEG: PCIe Gen4, 12 lanes (H series), Bitfurcate to 1 x8, 1 x4 PEG: PCIe Gen4, 4 lanes (P/U series), Bitfurcate to 1 x4 PCIe: PCIe Gen3, 8 lanes max up to 6 end devices, Default 5 lanes (5 x1, 2 x2 + 1 x1), Option 2 x4, 1 x4 + 2 x2 (Co-lay with SATA & Ethernet)		
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	On-board NVME SSD (Optional; Max. Capacity, 512GB)		
	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 (±5%); VSB: 5 ±5%, 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")		

All product specifications are subject to change without notice.

Last updated: 28-Dec-2023

Block Diagram



Ordering Information

P/N	CPU	Core	CPU TDP	Onboard NVMe	PEG x8 GEN4	IBECC	USB4	Thermal Solution	Operating Temperature
SOM-6884C7H-U5A1	Core™ i7-13800HE	14C (6+8)	45 W	64GB	YES	N/A	N/A	Active	0 ~ 60 °C
SOM-6884C5H-U7A1	Core™ i5-13600HE	12C (4+8)	45 W	N/A	YES	N/A	N/A	Active	0 ~ 60 °C
SOM-6884C3H-U1A1	Core™ i3-13300HE	8C (4+4)	45 W	N/A	YES	N/A	N/A	Active	0 ~ 60 °C
SOM-6884C3HA-U1A1	Core™ i3-13300HE	8C (4+4)	45 W	N/A	YES	N/A	Option*	Active	0 ~ 60 °C
SOM-6884C7HX-U5A1	Core™ i7-13800HRE	14C (6+8)	45 W	64GB	YES	Yes	N/A	Active	-40 ~ 85 °C
SOM-6884C7U-S7A1	Core™ i7-1365UE	10C (2+8)	15 W	N/A	N/A	N/A	N/A	Active	0 ~ 60 °C
SOM-6884C5U-S4A1	Core™ i5-1345UE	10C (2+8)	15 W	N/A	N/A	N/A	N/A	Active	0 ~ 60 °C
SOM-6884C3U-S2A1	Core™ i3-1315UE	6C (2+4)	15 W	N/A	N/A	N/A	N/A	Active	0 ~ 60 °C

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

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

Packing List

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

Optional Accessories

Part No.	Description
1970004870T001	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

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