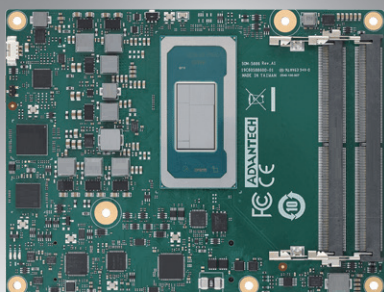


SOM-5886

Intel® Core™ Ultra Series 3 Processors (Panther Lake) COM Express® Basic Type 6 Module



Features

- COM Express® R3.1 Basic Module Type 6 Pinout
- Intel® Core™ Ultra Series 3 Processors (Panther Lake), Up to 16C/20T
- Intel® ARC™ GPU up to 12Xe, 4 independent 4K display
- Integrated NPU5 50TOPS for dedicated AI acceleration,
- Dual-Channel DDR5-7200 up to 128GB CSODIMM
- Multiple I/O expansion: 2.5GbE, PCIe Gen4, USB4 & USB3.2 Gen2, SATA3.0
- Supporting Embedded Software APIs and WISE-PaaS/DeviceOn

Software APIs:

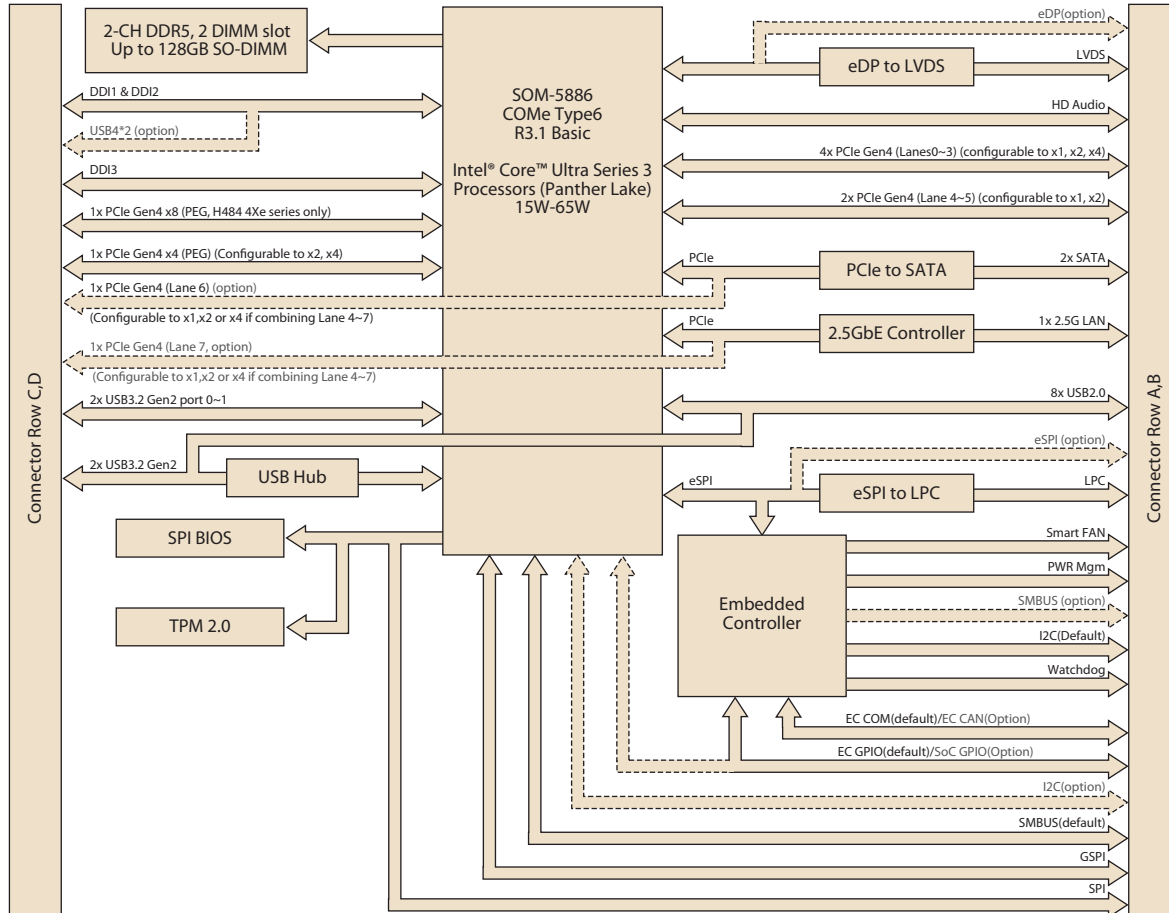


Windows SUSI API DeviceOn CE FC

Specifications

Form Factor	Form Factor	COM Express Basic						
	Pin-out Type	COM Express R3.1 Type 6 compatible						
CPU	CPU	Intel Core Ultra X9 388H	Intel Core Ultra 9 386H	Intel Core Ultra X7 358H	Intel Core Ultra 7 356H	Intel Core Ultra 5 325	Intel Core Ultra 7 366HRE	Intel Core Ultra 5 336HRE
	Cores	16C	16C	16C	12C	8C	16C	12C
	Base Frequency	2.1GHz	2.1GHz	1.9GHz	1.9GHz	2.1GHz	TBD	TBD
	Max Turbo Frequency (P-core)	5.0GHz	4.8GHz	4.7GHz	4.6GHz	4.4GHz	TBD	TBD
	LLC	18MB	18MB	18MB	18MB	12MB	18MB	18MB
	Processor Base Power	25W	25W	25W	25W	25W	25W	25W
	Maximum Turbo Power	64W, 80W	64W, 80W	64W, 80W	64W, 80W	55W	64W, 80W	64W, 80W
	cTDP	15W-65W	15W-65W	15W-65W	15W-65W	12W-45W	15W-65W	15W-65W
	vPRO	Yes	Yes	No	No	No	Yes	Yes
Integrated GPU	BIOS	AMI UEFI 256Mbit						
	Controller	Intel® Xe3 LPG						
	Total Xe Cores	12Xe (192EUs)	4Xe (64EUs)	12Xe (192EUs)	4Xe (64EUs)	4Xe (64EUs)	4Xe (64EUs)	4Xe (64EUs)
	Max. Frequency/PTOPS	2.5GHz/122TOPS	2.5GHz/40TOPS	2.5GHz/122TOPS	2.45GHz/40TOPS	2.45GHz/40TOPS	TBD	TBD
Integrated NPU	3D/HW Acceleration	HW Encode: Supports AVC/H264, JPEG, HEVC/H265 and AV1. HW Decode: Supports MPEG2, AVC/H264, JPEG/MJPEG, HEVC/H265, VP9, AV1 and VVC/H266						
	PTOPS	50TOPS	50TOPS	50TOPS	50TOPS	47TOPS	50TOPS	47TOPS
Memory	Technology	DDR5						
	Speed	7200 MT/s						
	Max. Capacity	Up to 128GB (2x 64GB)						
	Channel/Socket	Dual Channel / 2 Sockets CSODIMM, 1DPC						
Display	ECC Support	IB ECC						
	LCD (LVDS/eDP)	1port LVDS Dual channel: 1920 x 1200 @60Hz/eDP 4096 x 2304 @60Hz						
	DDI (HDMI/DisplayPort)	- HDMI 2.1: 4096 x 2304 @ 60Hz - DisplayPort 2.1 up to HBR3: 4096 x 2304 @ 60Hz						
	Multiple Display	Quad Simultaneous Independent Display						
Expansion	PEG (PCI Express Graphics)	PEG (H484 series): PCIe Gen4, 8 lanes, Bitfurcate to 1 x8, 2 x4 PEG (H12Xe & H404 series): PCIe Gen4, 4 lanes, Bitfurcate to 2 x4						
	PCI Express	PCIe Gen4, Up to 8 lanes & Up to 8 end devices - 8 PCIe Gen4 lanes, Bitfurcate to x1, x2, x4						
Serial Bus	SMBus	Yes						
	I2C Bus	Yes						
Ethernet	Gigabit	Intel I226 controller; Speed: 10M / 100M / 1000M / 2.5G speeds						
	SATA3.0	Up to 2 Ports (6Gbps)						
I/O	USB4	Up to 2 ports, Co-lay with DDI, Support by SOM-MZ20						
	USB3.2 (Gen2)	4 Ports (10 Gbps)						
	USB2.0	8 Ports (480 Mbps)						
	SPI Bus	Yes						
	GPIO	8-bit, Default from EC, Option from CPU						
	LPC	Yes						
	Audio Interface	HD Audio						
	Watchdog	65536 level, 0 ~ 65535 sec						
	COM Port	2 Ports (2-Wire)						
	TPM	TPM2.0						
	CAN Bus	Support one CAN Bus option from COM Port						
Power	Type	ATX: Vin, VSB; AT: Vin						
	Supply Voltage	Vin: 8.5V ~ 20V; VSB: 4.75V ~ 5.25V; RTC Battery: 2.0V ~ 3.3V						
	Power Consumption (Max.)	TBC	TBC	85.56W	85.42W	TBC	TBC	TBC
	Power Consumption (Idle)	TBC	TBC	18.43W	20.13W	TBC	TBC	TBC
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	125 mm x 95 mm (4.92" x 3.74")						

Block Diagram



Ordering Information

Part No.	CPU	Cores	Base Freq.	Max Turbo Freq.	LLC Cache	NPU PTOPS	GPU Xe3 Cores	GPU Max Freq. (GHz) /PTOPS	Memory	PCIe Lanes	vPro	Processor Base Power	Max. Turbo Power	cTDP	Operating Temp.
SOM-5886C9HG-U1A1	Intel Core Ultra X9 388H	16C (4P+8E+4LPE)	2.1GHz	5.0GHz	18MB	50	12Xe	2.5GHz/122	DDR5 7200	12	Yes	25W	64W, 80W	15W-65W	0~60°C
SOM-5886C9H-U1A1	Intel Core Ultra 9 386H	16C (4P+8E+4LPE)	2.1GHz	4.8GHz	18MB	50	4Xe	2.5GHz/40	DDR5 7200	20	Yes	25W	64W, 80W	15W-65W	0~60°C
SOM-5886C7HG-S9A1	Intel Core Ultra X7 358H	16C (4P+4E+4LPE)	1.9GHz	4.7GHz	18MB	50	12Xe	2.5GHz/122	DDR5 7200	12	No	25W	64W, 80W	15W-65W	0~60°C
SOM-5886C7H-S9A1	Intel Core Ultra 7 356H	16C (4P+8E+4LPE)	1.9GHz	4.6GHz	18MB	50	4Xe	2.45GHz/40	DDR5 7200	20	No	25W	64W, 80W	15W-65W	0~60°C
SOM-5886C5-U1A1	Intel Core Ultra 5 325	8C (4P+0E+4LPE)	2.1GHz	4.4GHz	12MB	47	4Xe	2.45GHz/40	DDR5 6400	12	No	25W	55W	12W-45W	0~60°C
SOM-5886C7HX-U0A1	Intel Core Ultra 7 366HRE	16C (4P+8E+4LPE)	TBD	TBD	18MB	50	4Xe	TBD	DDR5 7200	20	Yes	25W	64W, 80W	15W-65W	-40~85°C
SOM-5886C5HX-S9A1	Intel Core Ultra 5 336HRE	12C (4P+4E+4LPE)	TBD	TBD	18MB	47	4Xe	TBD	DDR5 7200	20	Yes	25W	64W, 80W	15W-65W	-40~85°C

*Any other SKUs 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

Optional Accessories

Part No.	Description
1970005036T011	Semi-Cooler 125x95x33.2mm with 12V Fan (TDP up to 35W)
1970006409T001	QFCS 125x95x26.9mm (TDP up to 45W)

Packing List

Part No.	Description	Quantity
-	SOM-5886 COM module	1
1970006397T001	Heatspreader	1

Embedded OS

OS	Part No.	Description
Windows 11	20706WLH1S0137	img W11 24HL SOM-5886 64b 24H2 ENU
Windows 11	20706WLV1S0137	img W11 24VL SOM-5886 64b 24H2 ENU
Windows 11	20706WLE1S0137	img W11 24EL SOM-5886 64b 24H2 ENU
Ubuntu	20706U24DS0065	img Ubuntu D SOM-5886 64b 24.04 ENU