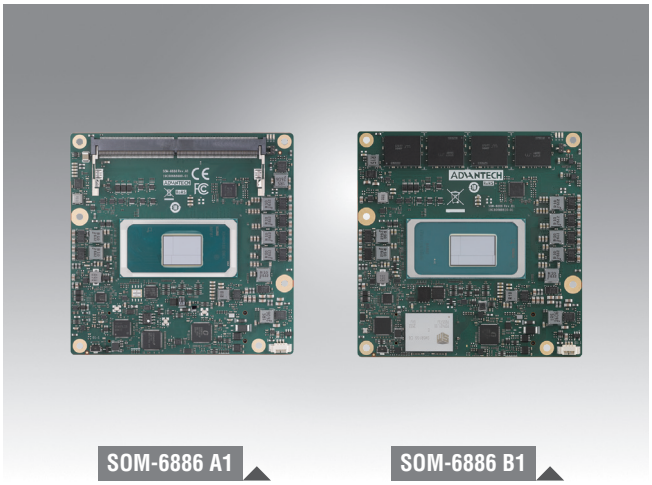
SOM-6886

Intel® Core™ Ultra Series 3 Processors (Code Name: Panther Lake-H) COM Express® Compact Type 6 Module



Windows Embedded DeviceOn

Features

- COM Express R3.1 Compact Module Type 6 Pinout
- Intel® Core™ Ultra Series 3 Processors, 16 Core / 65W TDP
- Intel Arc Graphic, supports up to 12 Xe Core (192 EU), Integrated NPU 50 TOPs, total SoC AI up to 180 TOPs
- Support DDR5 up to 128GB 7200 MT/s (A1 version). Support LPDDR5x up to 64GB 9600 MT/s (B1 version)
- Up to 20 lanes PCIe Gen4, 4x USB3, 1x USB4, MIPI-CSI
- Wide temperature -40~85°C & wide voltage
- AS9100 compliance

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

Specifications

Form Factor	Form Factor	COM Express Compact			
	Pin-out Type	COM Express R3.1 Type 6 compatible			
Processor System	CPU	386H (Core Ultra9)	358H (Core Ultra7)	356H (Core Ultra7)	325 (Core Ultra5)
	Cores	16C (4P+8E+4LPE)	16C (4P+8E+4LPE)	16C (4P+8E+4LPE)	8C (4P+4LPE)
	Base Frequency	2.1 GHz	1.9 GHz	1.9 GHz	2.1 GHz
	P-Core Max Turbo Frequency	4.9 GHz	4.8 GHz	4.7 GHz	4.4 GHz
	LLC	18M	18M	18M	12M
	Default TDP	45W	45W	45W	25W
	vPRO	Yes	No	No	Yes
	BIOS	AMI UEFI 256Mbit			
Memory	Technology	A1: DDR5 (CSODIMM Dual sockets) B1: LPDDR5x			
	Speed	A1: 7200MT/s B1: 9600MT/s			
	Max. Capacity	A1: 128GB B1: 64GB			
	Channel/Socket	Dual Channel			
	ECC Support	IBECC			
Graphics	Controller	Intel® Xe LPG			
	Graphics EU	64EU	192EU	64EU	64EU
	Max. Frequency	2.5GHz	2.5GHz	2.45GHz	2.45GHz
	Graphic pTOPs	40	122	40	40
	3D/HW Acceleration	HW Encode: Supports AVC/H264, HEVC/H265, VP9, JPEG and AV1. HW Decode: Supports MPEG2, AVC/H264, JPEG/MJPEG, HEVC/H265, VP9, AV1 and VVC/H266			
Integrated NPU	pTOPS	50	50	50	47
Display	LCD (LVDS/eDP)	1port LVDS Dual channel: 1920 x 1200 @60Hz/eDP 4096 x 2304 @60Hz			
	DDI (HDMI/DisplayPort)	3x DisplayPort/HDMI - 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)	1x PEG Gen4 x8 (Bitfurcate to x4, x8, 386H & 356H only) 1x PEG Gen4 x4 (Bitfurcate to x2, x4, option with specific features) - A1: Option w/o SATA & LAN - B1: Option w/o NVMe SSD			
	PCI Express	Up to 8 lanes PCIe Gen4 lane (Bifurcate to x1, x2, x4) - A1: Default 8 lanes PCIe Gen4 - B1: Default 7 lanes PCIe Gen4 (Option 8 lanes PCIe Gen4 w/o LAN)			
Serial Bus	SMBus	Yes			
	I2C Bus	Yes			
Ethernet	Gigabit	Intel I226 controller; Speed: 10M / 100M / 1000M / 2.5G speeds			
Onboard Storage	NVMe SSD	B1 only, by PEG Gen4 x4, up to 1TB			

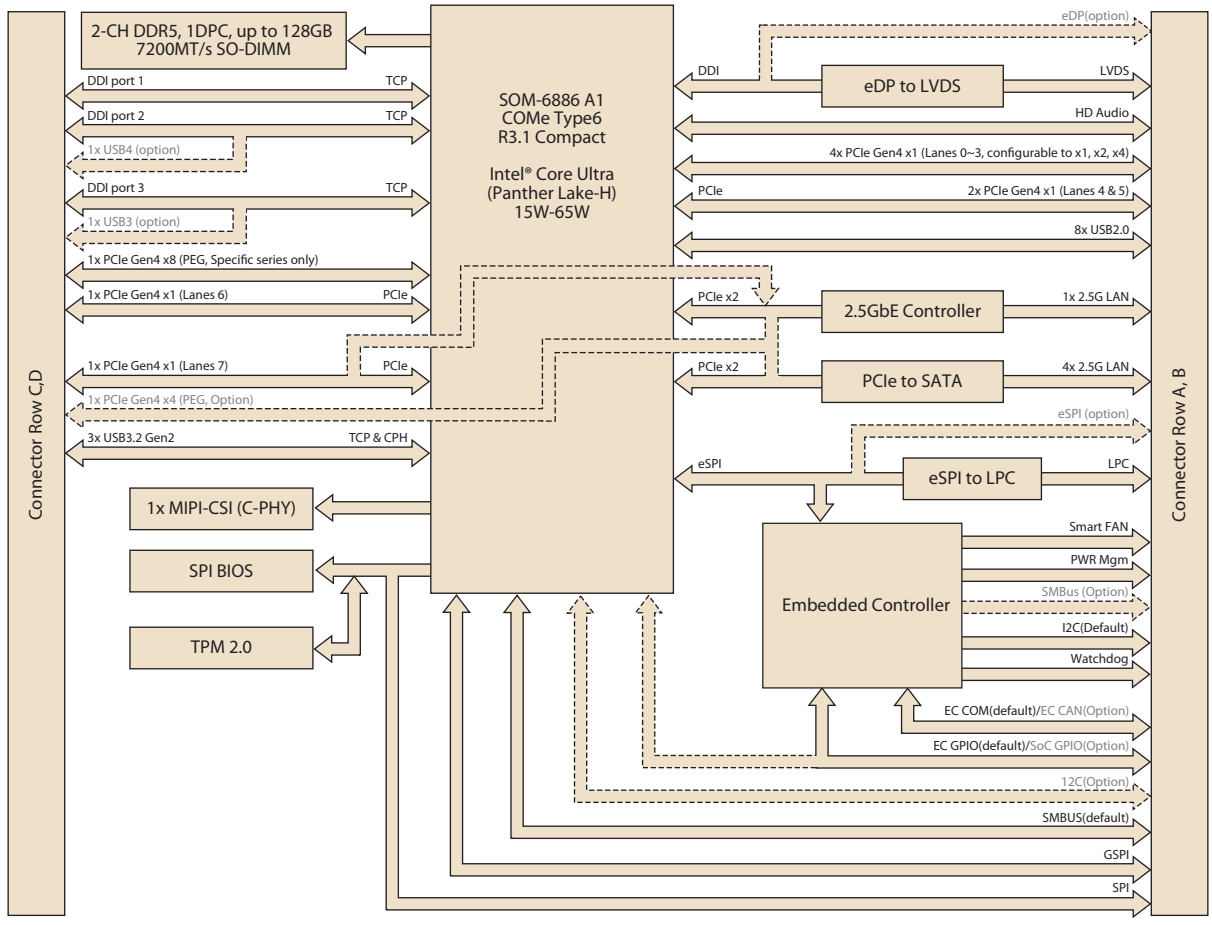
All product specifications are subject to change without notice.

Specifications (Cont.)

I/O	USB4	1 port, Co-lay with DDI2, Support by SOM-MZ20
	USB3.2 (Gen2)	Default 3 Ports (10 Gbps, option 4 ports w/o DDI3)
	USB2.0	8 Ports (480 Mbps)
	SPI Bus	Yes. For BIOS EEPROM
	GPIO	8-bit, Default from Embedded Controller, Option from CPU
	LPC	Yes
	Audio Interface	HD Audio
	Watchdog	65536 level, 0 ~ 65535 sec
	COM Port	2 Ports (2-Wire)
	CAN Bus	Support one CAN Bus option from COM Port
	MIPI	1x MIPI CSI C-PHY (Proprietary Pinout)
	TPM	TPM2.0
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.)	TBD
	Power Consumption (Idle)	TBD
Environment	Operating Temperature	Standard: 0 ~ 60 °C (32 ~ 140 °F) Extended: -40 ~ 85 °C (-40 ~ 185 °F)
	Storage Temperature	-40 ~ 85 °C (-40 ~ 185 °F)
	Humidity	Operating: 40℃@95% relative humidity, non-condensing Storage: 60℃@95% relative humidity, non-condensing
	Vibration Resistance	3.5 Grms
Mechanical	Dimensions	95 x 95 mm (3.74" x 3.74")

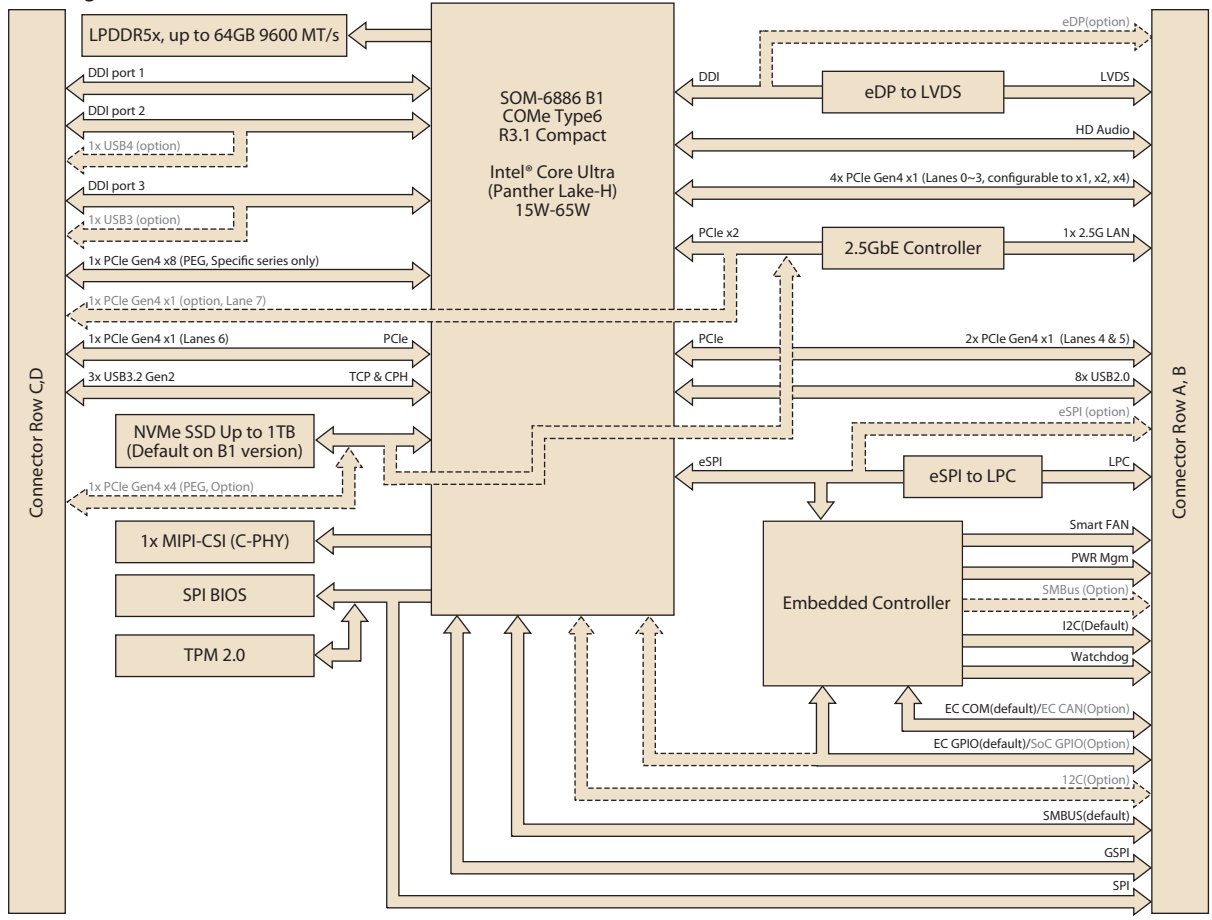
Block Diagram

Block Diagram for A1



Block Diagram

Block Diagram for B1



Ordering Information

Series	STD P/N	CPU	Cores	Default TDP	Base Freq. (GHz)	P-Core Max Turbo Freq. (GHz)	LLC	PCIe to SATA	Onboard Memory	Onboard NVMe SSD	NPU PTOPs	GPU Xe Cores	GPU Max Freq. (GHz) /PTOPs	vPro	SoC total PCIe Lane	IBECC	Thermal Solution	Operating Temp.
SOM-6886 A1	SOM-6886C9HG-U2A1	Intel Core Ultra X9 388H	16C (4P+8E+4LPE)	45W	2.1GHz	5.1GHz	18MB	Yes	N/A	N/A	50	12Xe	2.5GHz/122	Yes	12	Yes	Active	0~60°C
	SOM-6886C9H-U2A1	Intel Core Ultra 9 386H	16C (4P+8E+4LPE)	45W	2.1GHz	4.9GHz	18MB	Yes	N/A	N/A	50	4Xe	2.5GHz/40	Yes	20	Yes	Active	0~60°C
	SOM-6886C7H-U0A1	Intel Core Ultra 7 366H	16C (4P+8E+4LPE)	45W	2.0GHz	4.8GHz	18MB	Yes	N/A	N/A	50	4Xe	2.45GHz/40	No	20	Yes	Active	0~60°C
	SOM-6886C5U-S9A1	Intel Core Ultra 5 336H	8C (4P+0E+4LPE)	25W	1.9GHz	4.6GHz	12MB	Yes	N/A	N/A	47	4Xe	2.5GHz/40	No	20	Yes	Active	0~60°C
	SOM-6886C5U-U1A1	Intel Core Ultra 5 325	8C (4P+0E+4LPE)	25W	2.1GHz	4.4GHz	12MB	N/A	N/A	N/A	47	4Xe	2.45GHz/40	Yes	12	Yes	Active	0~60°C
SOM-6886 B1	SOM-6886C9HGX-U2B1	Intel Core Ultra X9 388H	16C (4P+8E+4LPE)	45W	2.1GHz	5.0GHz	18MB	N/A	32GB	128GB	50	12Xe	2.5GHz/122	Yes	12	Yes	Active	-40~85°C
	TBD	Intel Core Ultra 7 366HRE	16C (4P+8E+4LPE)	45W	TBD	TBD	18MB	N/A	16GB	128GB	50	4Xe	TBD	Yes	20	Yes	Active	-40~85°C
	TBD	Intel Core Ultra 5 335RE	8C (4P+0E+4LPE)	25W	TBD	TBD	12MB	N/A	16GB	128GB	47	4Xe	TBD	Yes	12	Yes	Active	-40~85°C

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

Optional Accessories

Part No.	Description
TBD	Semi-Heatsink
TBD	QFCS Cooler

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-6886 COM module	1
1970006473T001	Heatspreader	1

Embedded OS

OS	Part No.	Description
Win11	TBD	TBD
Ubuntu	TBD	TBD
VxWorks	TBD	TBD