

SOM-6874

AMD Ryzen™ AI Embedded P100 COM Express® Compact Type 6

Features

- COM Express® R3.1 Compact Module Type 6 Pinout
- AMD Ryzen™ AI Embedded P100, Hi-Performance Zen4 CPU up to 12C / 24T
- AMD Radeon™ RDNA3.5 Graphics, 4 independent 4K displays
- AMD XDNA2 NPU up to 50 TOPS, Overall up to 80 TOPS
- Dual Channels DDR5 SO-DIMM Sockets, Up to 96GB RAM
- High Speed I/Os: 2.5GbE, PCIe Gen 4, USB 3.2 Gen2, SATA3.0
- Supporting Embedded Software APIs and WISE-PaaS/DeviceOn

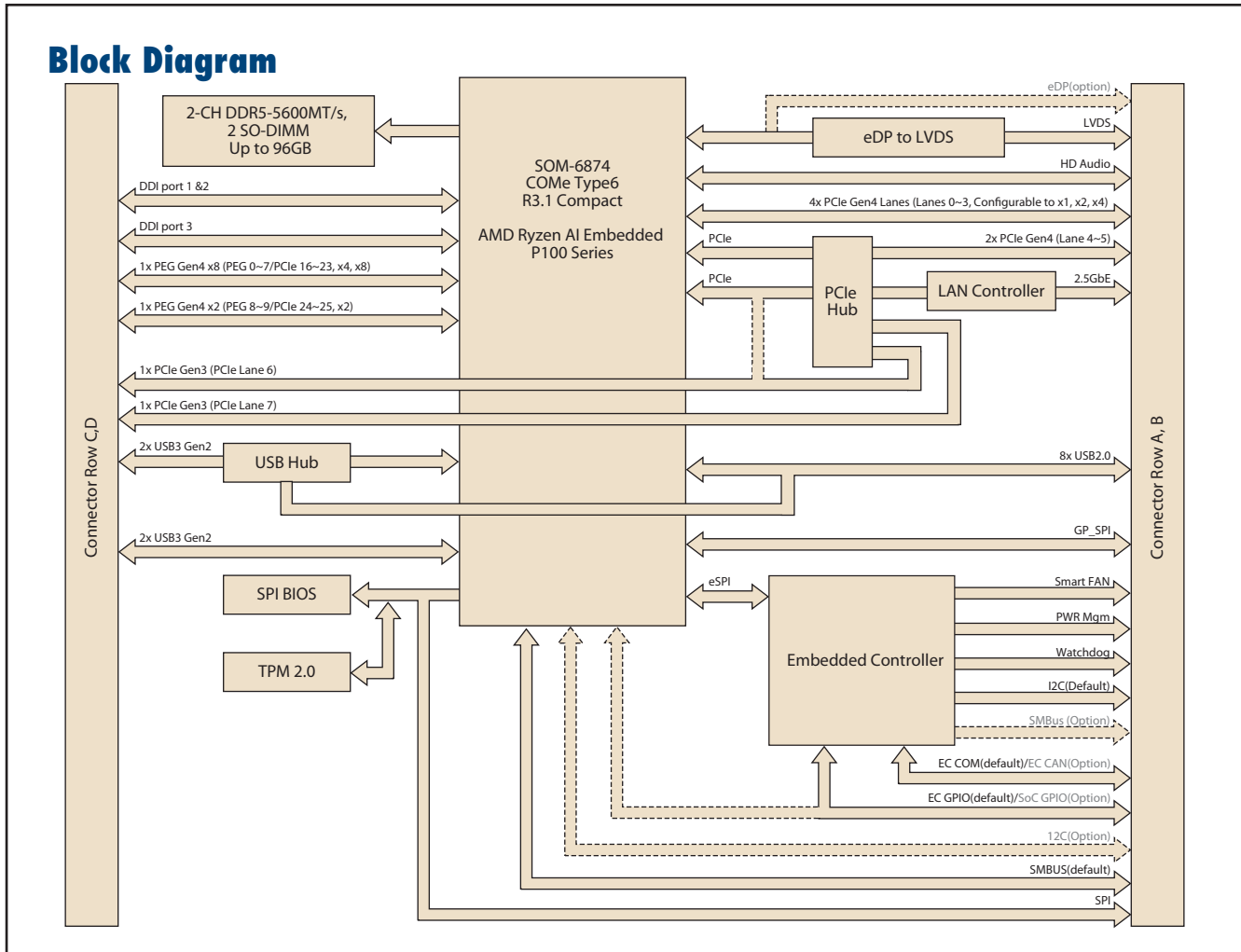
Software APIs:



Specifications

Form Factor	Form Factor	COM Express Compact Module				
	Pin-out Type	COM Express R3.1 Type 6 compatible				
Processors	CPU	P185/P185i	P174/P174i	P164/P164i	P132/P132i	P121/P121i
	Cores/Thread	12C/24T	10C/20T	8C/16T	6C/12T	4C/8T
	Max. Frequency (Standard) Classic/Dense	5.1GHz/3.3GHz	5GHz/3.3GHz	5GHz/3.3GHz	4.5GHz/3.4GHz	4.4GHz/3.4GHz
	Max. Frequency (Extended) Classic/Dense	TBD	TBD	TBD	3.75GHz/3.1GHz	3.75GHz/3.1GHz
	LLC	24MB	24MB	16MB	8MB	8MB
	TDP	28W (15-54W)	28W (15-54W)	28W (15-54W)	28W (15-54W)	28W (15-54W)
	BIOS	AMI UEFI 256Mbit				
Integrated GPU	Controller	AMD Radeon RDNA3.5 Graphics				
	WGP# (CUs)	8 (16)	6 (12)	6 (12)	2 (4)	1 (2)
	Max. Frequency	2.9GHz	2.8GHz	2.8GHz	2.8GHz	2.7GHz
	FP16 iGPU TFLOPS	23.8 TFLOPS	17.9	17.9	5.9	5.9
Integrated NPU	Controller	AMD XDNA2 NPU				
	NPU TOPs	50 TOPS	50 TOPS	50 TOPS	50 TOPS	30 TOPS
Memory	Technology	DDR5				
	Speed	5600 MT/s				
	Max. Capacity	Up to 96GB (48GB/SODIMM)				
	ECC Support	ECC support				
Display	Channel/Socket	Dual Channels, 1 SO-DIMM socket/Channel (1 on the top side and 1 on the bottom side)				
	LVDS/eDP	eDP1.4b HBR3				
	DDI (HDMI/DisplayPort)	3 DDI ports support configurable HDMI/DisplayPort -HDMI 2.1: 4096 x 2304 @ 60Hz -DisplayPort 1.4a HBR3: 4096x2304 60Hz 36bpp; 5120x3200 60Hz 24bpp				
Ethernet	Multiple Display	Quad Simultaneous Independent Displays				
	Gigabit	Intel I226 controller; Speed: 10M/100M/1000M/2.5Gbps				
I/O Interfaces	PEG	8x/6x PCIe Gen4 Lanes, Bifurcate to x8, x4, x2				
	PCI Express	PCIe Gen4, up to 8 lanes and up to 7 end devices, Bifurcate to x4, x2, x1				
	USB3.2 (Gen2)	4 Ports (10 Gbps)				
	USB 2.0	8 Ports (480 Mbps)				
	GPIO	8-bit, Default from EC, Option from CPU				
	Audio Interface	HD Audio				
	Watchdog	65536 level, 0 – 65535 sec				
	COM Port	2 Ports (2-Wire)				
Serial Bus	Smart Fan	Yes				
	SMBus	Yes, Default from SoC and option from EC				
	I2C Bus	Yes, Default from EC and option from SoC				
	CAN Bus	Yes, Support one CAN Bus option from EC				
	SPI Bus	Yes				
Security	Trusted Platform Module (TPM)	TPM2.0				
	Type	ATX: Vin, VSB; AT: Vin				
Power	Supply Voltage	Vin: 4.75V ~ 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) 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.IEC 60068-2-64, random, 5 ~ 500 Hz, 1 hr/axis				
Mechanical	Dimensions	95 x 95 mm (3.74" x 3.74")				

Block Diagram



Ordering Information

Part No.	SKU	Core/Thread	Base/1T Boost Freq.	L2C	L3C	Default CPU TDP	Thermal Solution	Operating Temperature
TBD								

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

Packing List

Part No.	Description	Quantity
-	SOM-6874 COM module	1
TBD	Heatspreader	1

Memory AVL List

Vendor	Part No.	Speed	Capacity
TBD			

Optional Accessories

Part No.	Description
TBD	Semi-Heatsink
TBD	QFCS Cooler

Embedded OS

OS	Part No.	Description
Win11	TBD	TBD
Ubuntu	TBD	TBD