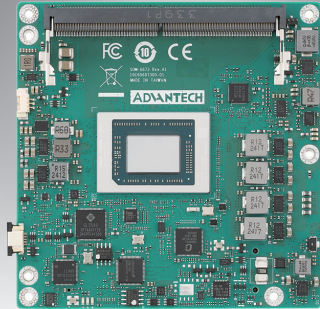


SOM-6873

AMD RYZEN™ EMBEDDED 8000 COM Express® Compact Type 6

Preliminary



Features

- COM Express® R3.1 Compact Module Type 6 Pinout
- AMD RYZEN™ Embedded 8000, Hi-Performance Zen4 CPU up to 8C / 16T
- AMD Radeon™ RDNA3 Graphics, 4 independent 4K displays
- AMD XDNA NPU, 16 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
- Supports iManager, Embedded Software APIs and DeviceOn

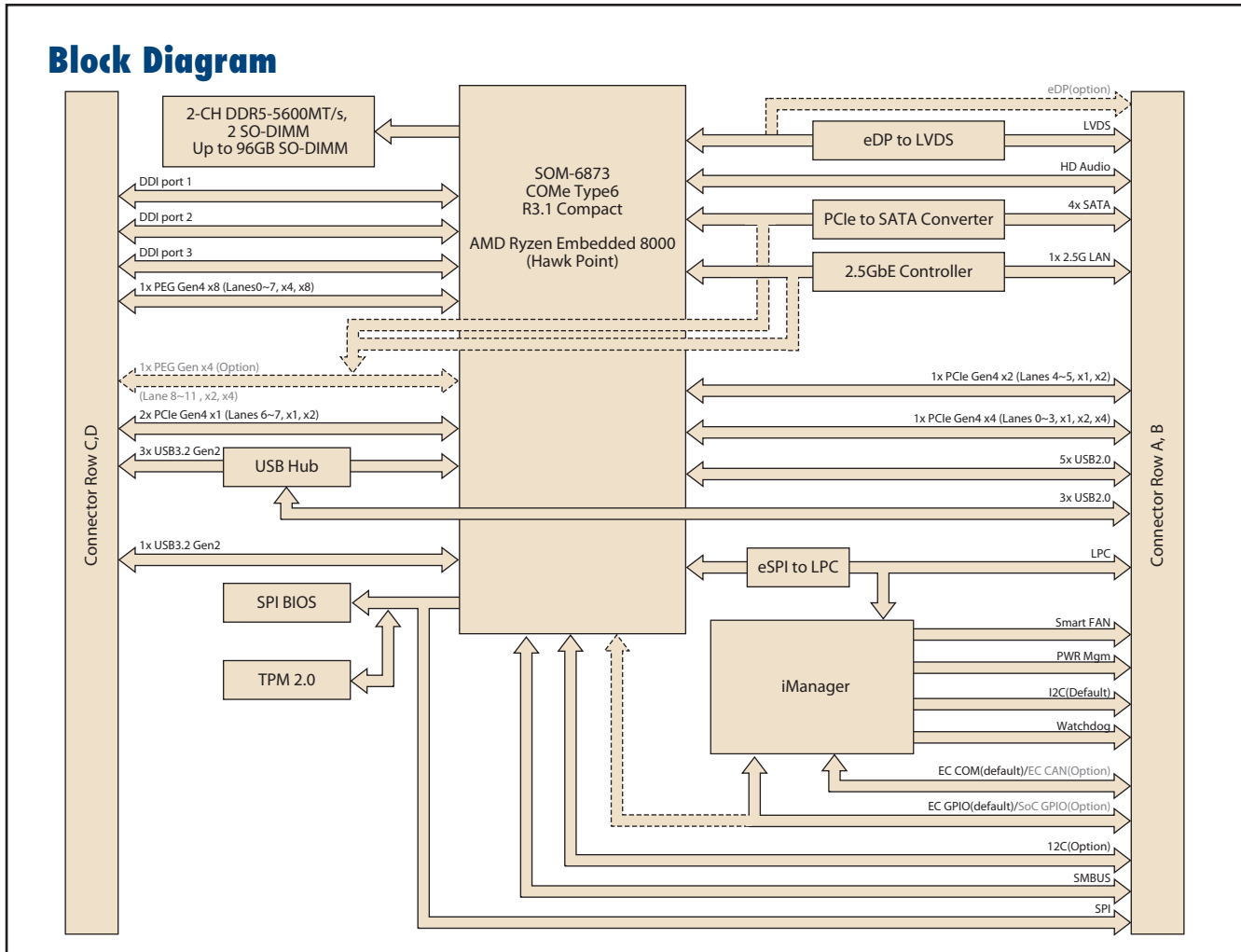
Software APIs:



Specifications

Form Factor	Form Factor	COM Express Compact Module			
	Pin-out Type	COM Express R3.1 Type 6 compatible			
Processor System	CPU	8845HS	8645HS	8840U	8640U
	Base. Frequency	3.8GHz	4.3GHz	3.3GHz	3.5GHz
	CPU 1T Boost Frequency	5.1GHz	5.0GHz	5.1GHz	4.9GHz
	Core/Thread	8C/16T	6C/12T	8C/16T	6C/12T
	LLC	16MB	16MB	16MB	16MB
	Default TDP	54W (35-54W)	54W (35-54W)	30W (15-30W)	30W (15-30W)
	BIOS	AMI UEFI 256Mbit			
Memory	Technology	DDR5			
	Speed	5600 MT/s			
	Max. Capacity	Up to 96GB (48GB/SODIMM)			
	ECC Support	ECC support up to 32GB; Non ECC support up to 48GB			
	Channel/Socket	Dual Channels, 1 SO-DIMM socket/Channel (1 on the top side and 1 on the bottom side)			
Graphics	Controller	AMD Radeon RDNA3 Graphics			
	WGPs	6	4	6	4
	Max. Frequency	2.7GHz	2.6GHz	2.7GHz	2.6GHz
	3D/HW Acceleration	VCN4.0 -VP9, H.264, H.265 decode with 8bit and 10bit depth and up to 4K@24, 30 and 60 FPS video at Vmin -H.264, H.265 8bit video encode up to 4K@30 or 60 fps			
Display	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			
	Multiple Display	Quad Simultaneous Independent Displays			
Expansion	PEG	PCIe Gen4, 12 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			
Serial Bus	SMBus	Yes			
	I2C Bus	Yes (Default from EC, Option from SoC)			
	CAN Bus	Yes (Optional, co-layout with COM port)			
Ethernet	Gigabit	Intel I226 controller; Speed: 10M/100M/1000M/2.5Gbps			
I/O	SATA	4 SATA3.0			
	USB 3.2 Gen 2x1	4 Ports (10 Gbit/s)			
	USB 2.0	8 Ports			
	SPI Bus	Yes, for BIOS EEPROM			
	GPIO	8-bit, Default from iManager, Option from CPU			
	LPC	Yes			
	Audio Interface	HD Audio			
	Watchdog	65536 level, 0 – 65535 sec			
	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			
Power Consumption (Max.)		TBD			
Power Consumption (Idle)		TBD			
Environment	Operating Temperature	Standard: 0 – 60 °C (32 – 140 °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	95 mm x 95 mm (3.74" x 3.74")			

Block Diagram



Ordering Information

Part No.	CPU	Core/Thread	LVDS/eDP	Base Freq.	1T Boost Freq.	Default TDP	LLC	DDR5 SODIMM	Thermal Solution	Operating Temp.
SOM-6873R7H-H8A1	8845HS	8C/16T	LVDS	3.8GHz	5.1GHz	54W (35-54W)	16M	5600MT/s	Active	0-60° C
SOM-6873R5H-M3A1	8645HS	6C/12T	LVDS	4.3GHz	5.0GHz	54W (35-54W)	16M	5600MT/s	Active	0-60° C
SOM-6873R7U-H3A1	8840U	8C/16T	LVDS	3.3GHz	5.1GHz	30W (15-30W)	16M	5600MT/s	Active	0-60° C
SOM-6873R5U-H5A1	8640U	6C/12T	LVDS	3.5GHz	4.9GHz	30W (15-30W)	16M	5600MT/s	Active	0-60° C

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

Development Board

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

Optional Accessories

Part No.	Description
1970004870T021	Semi-Cooler 95x95x33.2mm (for U SKUs only)
1970006137T001	QFCS (for All SKUs)

Embedded OS

OS	Part No.	Description
Win11	TBD	TBD
Ubuntu	TBD	TBD

Packing List

Part No.	Description	Quantity
-	SOM-6873 COM module	1
1970006130T001	Heatspreader	1