

AIMB-522

Micro-ATX Motherboard AMD Ryzen™ Embedded 5000 Series Processors



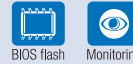
Features

- Supports AMD AM4 Ryzen™ 5000 series processor with X570 chipset
- Supports triple displays. (DP, VGA, HDMI display)
- Supports PCIe Gen4, max up to 8 x USB 3.2 Gen2, 3 x USB 2.0, 4 x SATAIII, 2 x 2.5GbE, 2 x 1GbE LANs, M.2 (M Key & E Key)
- Supports DeviceOn and Embedded Software APIs

Software APIs:



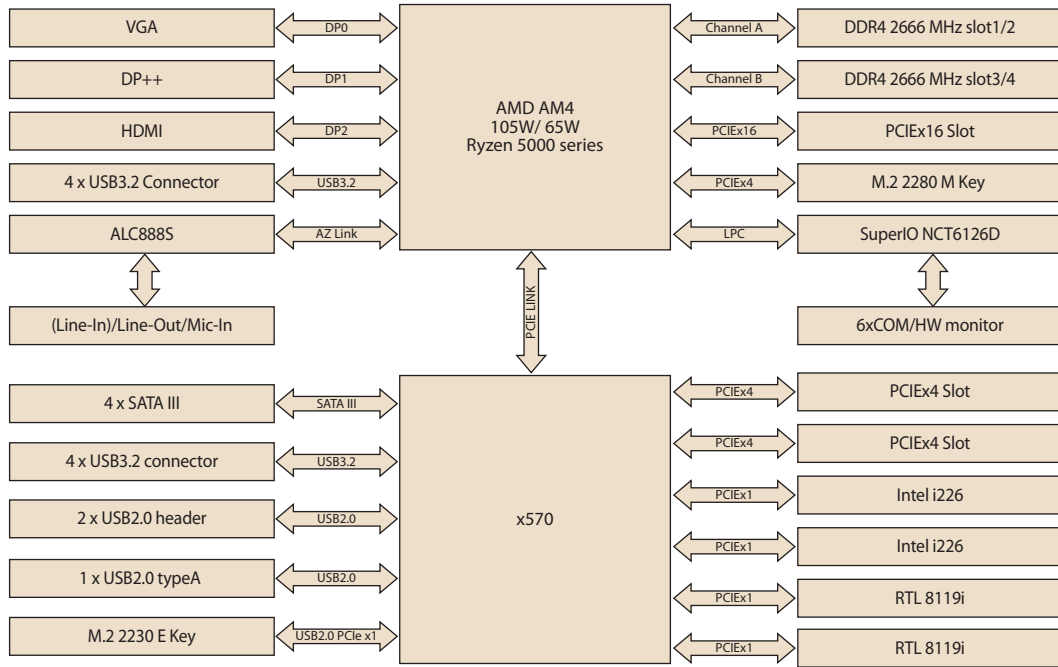
Utilities:



Specifications

Processor System	CPU	5950E	5900E	5800E	5600E	5950X	5900X	5800X	5600G	5700G	
	Core Number	12	10	8	6	16	12	8	6	8	
	Max. Speed	3.4 GHz	3.7 GHz	3.7 GHz	3.6 GHz	3.4GHz	3.7GHz	3.8GHz	3.9GHz	3.8GHz	
	L3 Cache	64 MB	64 MB	32 MB	32 MB	64MB	64MB	32MB	16MB	16MB	
	TDP (W)	105W	105W	100W	65W	105W	105W	105W	65W	65W	
	CPU/APU	CPU	CPU	CPU	CPU	CPU	CPU	CPU	APU	APU	
	Chipset	X570									
	BIOS	AMI EFI 256 Mbit SPI									
	Expansion Slot	PCIe x16	1 (x16 Gen4 signal from CPU; Gen3 signal from APU)								
		PCIe x4 slot 1	1 (x4 signal from X570), only support half-length card and up-to PCIe x8 card								
PCIe x4 slot 2		1 (x4 signal from X570), only support half-length card and up-to PCIe x8 card									
M.2		1 (2280 M key, PCIe Gen4 x4 from CPU, Gen3 x4 from APU)									
		1 (2230 E key, USB 2.0 and PCIe Gen4 x1 from X570)									
Memory	Technology	Supports Dual Channel DDR4 2666MHz									
	Max. Capacity	128GB (32GB per DIMM)									
	Socket	4 x 288 pin U DIMM									
Graphics	Controller	APU : Radeon™ Graphics CPU: N/A (Discrete Graphics Card Required)									
	VGA	1, up to 1920x1200@60Hz, 2048x1152@60Hz									
	HDMI	1, up to 4096x2304@30Hz									
	Display Port	1, up to 4096x2304@30Hz									
	Triple Display	VGA+DP+HDMI (5600G/5700G only)									
Ethernet	Controller	2 x INTEL LAN i226LM, 2 x Realtek 8119i									
	Connector	4 x RJ 45									
SATA	Max Data Transfer Rate	600 MB/s Max. (SATA 3.0)									
	Q'ty	4									
Rear I/O	Display Port	1									
	VGA	1									
	HDMI	1									
	Ethernet	4									
	USB	8 USB 3.2 ports (4 ports from CPU/APU, 4 ports from X570)									
	Audio	2 Jacks (colay 3 Jacks)									
Internal Connector	USB 2.0	2 for pin header and 1 for type A connector									
	Serial	COM1, COM2 with 10pin box header (RS-232/422/485) COM3456 with 40pin box header (RS-232 only)									
	SATA 3.0	4									
	PS/2 (KBMS1)	1 (6-pin header)									
	M.2 (M key)	1 (2280 NVMe PCIe4)									
	GPIO	1, 8bit pin header									
Watchdog Timer	Output	System reset									
	Interval	Programmable 1 ~ 255 sec/min									
Power Requirements	Operation	+5V	3.3V	12V	12V_8P						
	Configuration: AMD Ryzen 9 3900X 12-Core Processor 3.79GHz with UDIMM DDR4 3200 8GB*4pcs	4.424A	0.843A	2.344A	11.876A						
	Standby (5Vsb)	2A									
Environment		Operating						Non-Operating			
	Temperature	0 ~ 60 °C (depends on CPU speed and cooler solution)						-40 ~ 85 °C (-40 ~ 185 °F)			
Physical Characteristics	Dimensions	244 x 244 mm									
Power	Input Mode	ATX input									

Block Diagram



Ordering Information

P/N	Chipset	Rear IO USB3.2	Internal USB2.0 header	Internal USB2.0 typeA	DP++/VGA	HDMI	GbE LAN	2.5 Gbe LAN	SATA III	COM	M.2 E-key	M.2 M-key	TPM	AMP (6W)
AIMB-522G4-00A1	X570	8	2	1	1/1	1	2	2	4	6	1	1	1	(1)
AIMB-522G2-00A1	X570	8	2	1	1/1	1	2 (Realtek 8119i only)	0	4	6	1	1	1	(1)

* () means BOM option

Packing List

Part Number	Description	Quantity
1700003194	SATA HDD cable	2
1960107927T001	I/O port bracket	1
1930006770-01	M.2 screws	2
1700022363-01	1-to-1 serial port cable kit, 17cm	2
2046052200	AIMB-522 Startup manual	1

Optional Accessories

Part Number	Description
1700033177-01	1-to-1 serial port cable kit, 60cm with bracket
1700030647-01	1-to-1 serial port cable kit, 30cm
1700034017-01	1-to-4 serial ports cable kit with shield, 50cm
1700002204	Dual port USB 2.0 cable, 27cm with bracket
1700032182-01	Dual port USB 2.0 cable, 60cm
1970005287T001	AMD AM4 CPU cooler for 2U chassis, for CPU TDP 65W, 96x92x79.55mm

I/O View



AIMB-522G4-00A1

AIMB-522G2-00A1

Embedded OS/API

OS/API	Part No.	Description
win10 IoT Ent	20706WX9ES0172	IMG W10 19EL
	20706WX9HS0157	IMG W10 19HL
	20706WX9VS0161	IMG W10 19VL
Ubuntu20.04	20706U20DS0054	Ubuntu Desktop 20.04 LTS 64bit Image