

# AIMB-279 B1

## Mini-ITX Motherboard 12th/13th Gen Intel® Core™ Processor (codename: Alder Lake-S/Raptor Lake-S)



### Features

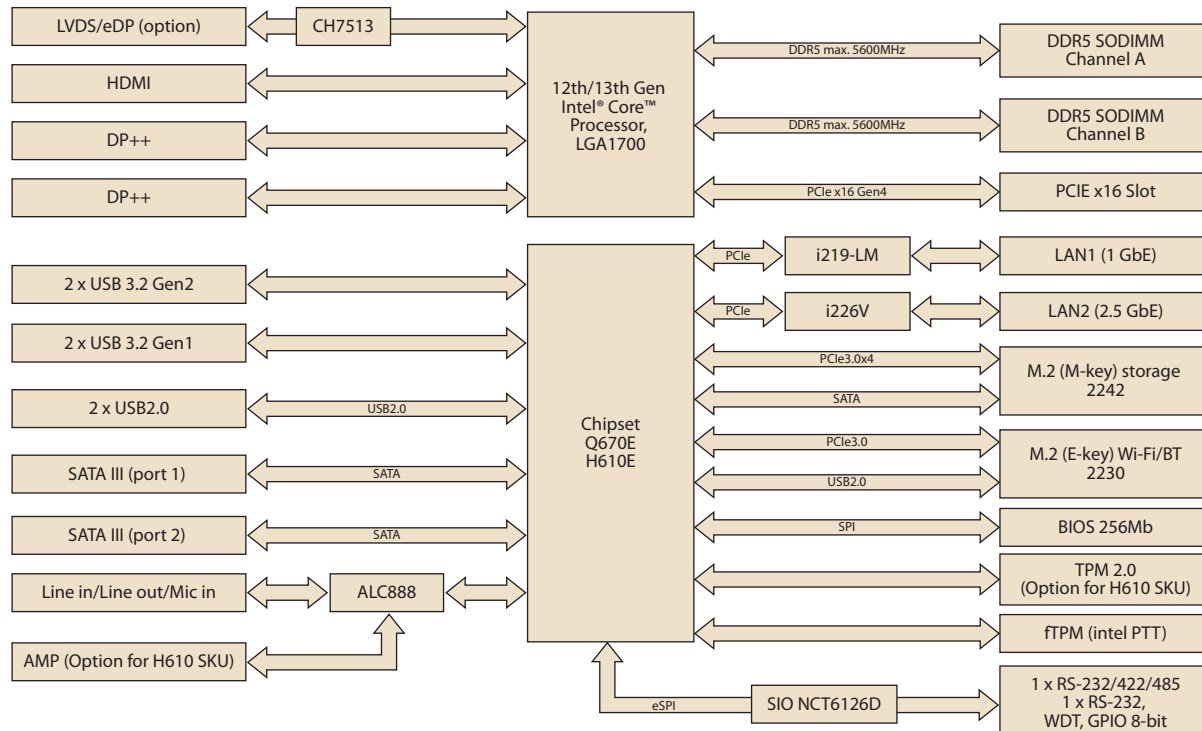
- 12th/13th Gen Intel® Core™ Desktop Processors, max. 24Core, support Q670E/H610E chipset
- Up to 96GB DDR5 5600MHz with two SODIMM
- PCIe x16 Gen4 (16GT/s)
- Four independent displays with 2 DP, 1 HDMI, 1eDP
- Rich expansion: 1 M.2 M key & 1 M.2 E key, 4 USB 3.2 & 2 USB2.0, 2 SATA
- 12-24V DCIN power input
- via ATX 8pin power connector & 5VSB 3pin header
- WISE-DeviceOn and Embedded Software APIs

Windows 10 ubuntu WISE-DeviceOn CE FCC

### Specifications

	CPU	i9-13900E / i9-13900	i9-13900TE	i7-13700E / i7-13700	i7-13700TE	i5-13500E / i5-13500	i5-13500TE	i5-13400E / i5-13400	i3-13100E / i3-13100	i3-13100TE				
13th Generation Processors	Core Number	24	24	16	16	14	14	10	4	4				
	Base frequency (GHz)	1.8/2.0	1	1.9/2.1	0.8	2.4/2.6	1.3	2.4/2.5	3.3/3.4	2.4				
	Max Speed (GHz)	5.2/5.6	5	5.1/5.2	4.8	4.6/4.8	4.5	4.6	4.4/4.5	4.1				
	Smart cache (MB)	36	36	30	30	24	24	20	12	12				
	TDP (W)	65	35	65	35	65	35	65	60	35				
12th Generation Processors	CPU	i9-12900E / i9-12900	i9-12900TE	i7-12700E / i7-12700	i7-12700TE	i5-12500E / i5-12500/12400	i5-12500TE	i3-12100E / i3-12100	i3-12100TE	G7400E	G7400TE	G6900E	G6900TE	
	Core Number	16	16	12	12	6	6	4	4	2	2	2	2	
	Base frequency (GHz)	2.3/2.4	1.1	2.1	1.4	2.9/3.0/2.5	1.9	3.2	2.1	3.6	3	3	2.4	
	Max Speed (GHz)	5	4.8	4.8	4.7	4.5/4.6/4.4	4.3	4.2/4.3	4	NA	NA	NA	NA	
	Smart cache (MB)	30	30	25	25	18	18	12	12	6	6	4	4	
TDP (W)	65	35	65	35	65	35	60	35	46	35	46	35		
Processor System	Chipset	Q670E / H610E												
	BIOS	AMI EFI 256Mb SPI												
Expansion Slot	M.2	1 M-Key for SSD, 1 E-Key for Wireless connection												
	PCIe x16	PCIe x16 Gen4 (16GT/s) for discrete GPU card and storage devices												
Memory	Technology	Dual Channel DDR5, up to 5600 MHz (non-ECC)												
	Max. Capacity	96GB (up to 48GB per SODIMM)												
	Socket	2 x 262pin SODIMM												
Graphics	Controller	Intel® UHD Graphics Driven by Xe Architecture												
	HDMI	HDMI2.0b, supports max. resolution 4096 x 2160 @ 60 Hz												
	DP	2 DP++, DP1.4a, supports max. resolution 4096 x 2304 @ 60 Hz												
	eDP	By option, with internal pin header, supports max. resolution 4096 x 2304 @ 60 Hz												
	LVDS	By default, internal pin header, supports single/dual channel 18/24-bit with maximum resolution up to 1920 x 1200 @ 60 Hz (eDP coloy with LVDS)												
Multi Displays	up to 4 independent displays (4 with Q670E)													
Network	ETHERNET	up to 2500 Mb/s												
	Controller	LAN1: Intel i219 (GbE) LAN2: Intel i226 (2.5GbE)												
	Connector	2 x RJ45												
SATA	Max data transfer rate	600 MB/s												
	Channel	2 x SATAIII												
Rear I/O	DP	2												
	HDMI	1												
	Ethernet	2												
	USB	2 ports USB3.2 Gen2(10Gbps) 2 ports USB3.2 Gen1(5Gbps)												
	Audio	1 (Line in/Line out/Mic in)												
Internal Connector	USB	2 ports USB2.0												
	LVDS/eDP	1 (LVDS coloy with eDP)												
	Serial	2 ports (COM1 RS232, COM2 RS232/422/485)												
	SATA	2												
	M.2	1 M-key (dimension: 2242) 1 E-key (dimension: 2230)												
	GPIO	8-bit												
Watchdog Timer	Output	System reset												
	Interval	Programmable 1 ~ 255 sec/min												
Power Requirements	ATX 8pin connector+ 5VSB 3 Pin Header													
Environment	Temperature	Operating: 0 ~ 60° C (32 ~ 140° F), depends on CPU speed and cooler solution												
	Storage	Non-Operating: -40 ~ 85° C (-40 ~ 185° F)												
Physical Characteristics	Dimensions	170 mm x 170 mm (6.69" x 6.69")												

## Block Diagram



## Ordering Information

P/N	Chipset	HDMI	DP	LVDS/eDP	GbE	2.5GbE	COM	SATAIII	USB3.2	USB2.0	M.2 M key	M.2 E key	PCIex16	TPM	AMP
AIMB-279QF-LDB1	Q670E	1	2	1/(1)	1	1	2	2	4	2	1	1	1	1	1
AIMB-279QF-EDB1	Q670E	1	2	(1)/1	1	1	2	2	4	2	1	1	1	1	1

\*(\*) Supports by BOM options

## Packing List

P/N	Description	Quantity
AIMB-279 Board	AIMB-279 B1 motherboard	1
1700034404-01	1-to-1 serial port cable, 50cm	1
1700003194	SATA HDD cable	1
1700018785	SATA PWR cable	1
1960115633T001 (279Q) 1960115633T002 (279H)	I/O port bracket	1
19350304A0	M.2 screws (M3, L=4mm)	2
1700023082-11	ATX cable 3P-2.0 15cm	1

## Optional Accessory

P/N	Description
1970005672T001	LGA1700 CPU Cooler (for CPU TDP <= 35W), H: 32mm
1970005349T001	LGA1700 CPU Cooler (for CPU TDP <= 65W), H: 56.5mm
1700034405-01	1-to-2 USB cable, 50cm

## Embedded OS / API

OS/API	Part No.	968 P/N	Description
Windows 10	20706WX1HS0080	968QW21HLE	img W10 21HL AIMB-279 64b 21H2 ENU
Windows 10	20706WX1VS0079	968QW21VLE	img W10 21VL AIMB-279 64b 21H2 ENU
Windows 10	20706WX1ES0080	968QW21ELE	img W10 21EL AIMB-279 64b 21H2 ENU
Ubuntu22.04	20706U22DS0035	968MOU204D	img UbuntuD AIMB-279 64b 22.04 ENU

## Optional Chassis

P/N	Description
EPC-B2000-A030	Mini-ITX Chassis with 350W ATX power supply