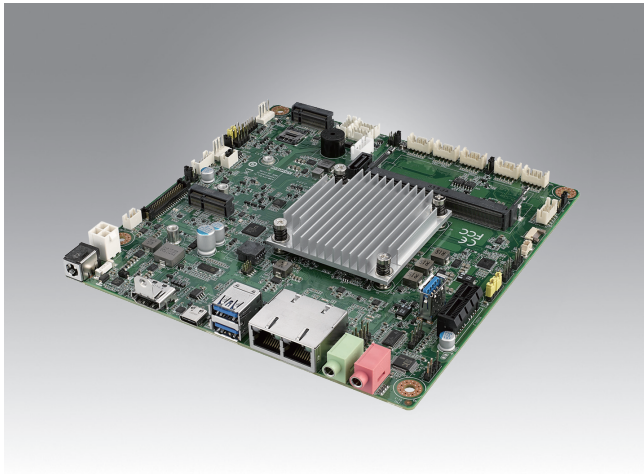


# AIMB-219

## Mini-ITX Motherboard Intel® Core™ i3 and Processor N-series (codename: Alder Lake-N)



### Features

- Supports Intel Alder Lake-N processor
- Up to 16GB DDR4 3200MT/s with one SO-DIMM
- Triple independent display with 1 DP, 1 HDMI, 1 LVDS(or eDP)
- Abundant I/O expansion: 1 M.2 B-key & 1 M.2 E-key, 3 USB 3.2 Gen2x1, 5 USB 2.0, 1 USB Type-C and 6 COM
- Mini-ITX low profile motherboard, fanless design
- Supports Device-On and Embedded Software APIs

#### Software APIs:



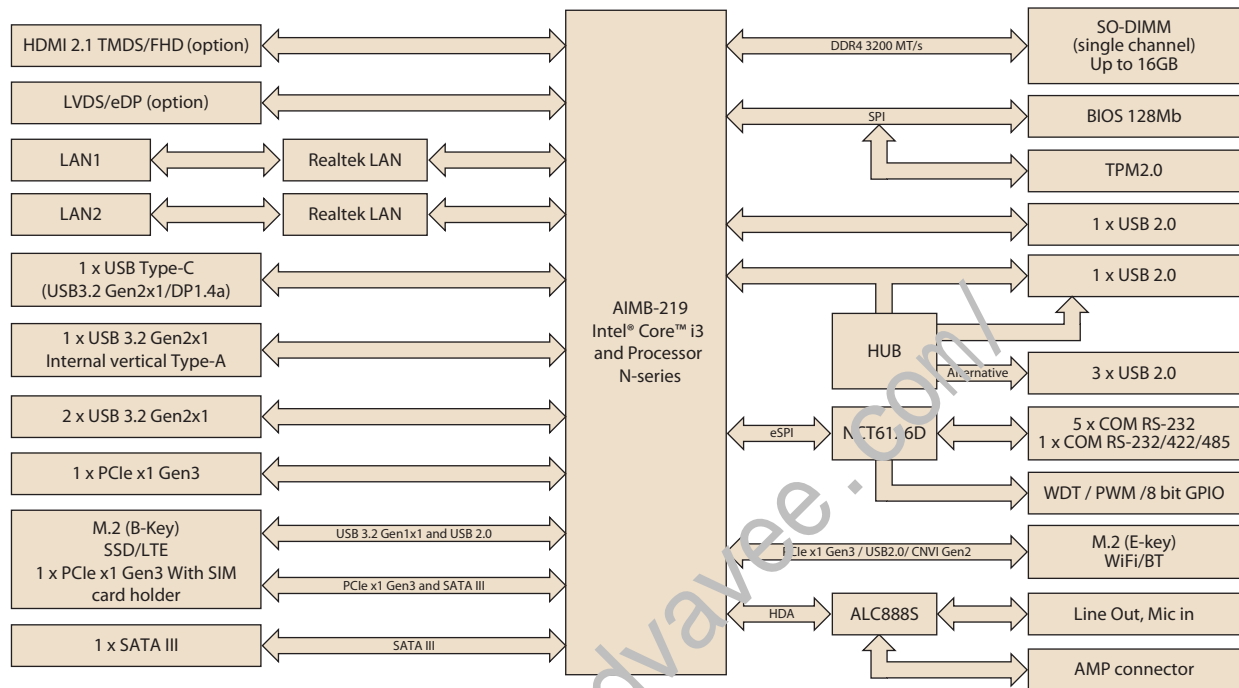
#### Utilities:



### Specifications

Processor System	CPU (10nm)	i3-N305	N200	N97	N50
	Core Number	8	4	4	2
	Base frequency (GHz)	1.8	1.0	2.0	1.0
	TDP (W)	15	6	12	6
	BIOS	AMI EFI 256Mb SPI			
Expansion Slot	M.2	1 x E-Key for wireless module (WiFi/BT), 1 x B-key for storage (SSD/LTE)			
	PCIe	1 PCIe x1 Gen3 (8GT/s)			
Memory	Technology	Single channel DDR4 3200 MT/s (non-ECC)			
	Max. Capacity	16 GB			
	Socket	1 x 260pin SO-DIMM			
Graphics	Controller	Intel® UHD Graphics			
	HDMI	1 x HDMI 2.1 TMDS, up to 4Kx2K @ 60 Hz (refer to Ordering Information)			
	DP	1 x DP 1.4a, up to 4096x2304 @ 60 Hz (via USB Type-C)			
	LVDS	1 (default, pin header, supports dual channel 18/24-bit, up to 1920 x 1200 @ 60 Hz)			
	eDP	1 (option, pin header, up to 4096 x 2304 @ 60 Hz)			
	Multi Displays	Triple displays			
Network	Ethernet	10/100/1000/2500 Mbps			
	Controller	RTL8111K (1GbE) or RTL8125BG (2.5GbE), refer to Ordering Information			
	Connector	2 x RJ45			
Audio	Codec	Realtek ALC888S, High Definition Audio (HD), Line out, Mic-in			
	Amplifier	Yes, 6W			
SATA	Max data transfer rate	6.0 Gb/s			
	Channel	1 x SATAIII			
Rear I/O	DP (via USB Type-C)	1			
	HDMI	1			
	Ethernet	2			
	USB	2 x USB3.2 Gen2x1 + 1 x USB3.2 Gen2x1 Type-C			
	Audio	1 (Line-Out, Mic-In)			
Internal Connector	USB	5 x USB2.0 + 1 x USB3.2 Gen2x1 (Internal vertical Type-A)			
	LVDS/eDP	1 (eDP colay with LVDS)			
	Serial	6, COM1~COM2: Support RS-232 by default COM3: Support RS-232/422/485(BOM option), auto flow control by BIOS COM4: Support RS-232 by default; CClalk by BOM option COM5: Support RS-232 by default; TTL by BOM option COM6: Support RS-232 by default; Ring-in 5V/12V select by jumper			
	SATA	1 x SATAIII 6.0 Gb/s			
	M.2	1 x B-key (dimension: 2242/2280/3042)			
		1 x E-key (dimension: 2230)			
	GPIO	8-bit			
Watchdog Timer	Output	System reset			
	Interval	Programmable 1 ~ 255 (second or minute)			
Power Requirements	Input voltage	12V DC-in			
	Connector	DC Jack, Internal 4-pin ATX			
	Power consumption	Configuration	Intel Core i3-N305, 1pcs 16 GB DDR4 3200MT/s SO-DIMM		
		Max.	39.7 W		
		Typical	26.4 W		
Environment	Temperature	Operating: 0 ~ 60 °C (32 ~ 140 °F)			
	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	CPU	HDMI 2.1 TMDS	HDMI FHD	LVDS/eDP	USB Type-C	GbE	COM	SATAIII	USB3.2	USB2.0	M.2 B key	M.2 E key	PClex1	TPM	AMP
AIMB-219NC3F-LDA1	i3-N305	1	0	1/(1)	1	2*	6	1	3	5	1	1	1	1	1
AIMB-219N2F-LDA1	N200	0	1	/(1)	(1)	2	4/(2)	1	3	5	1	1	1	1	(1)
AIMB-219N9F-LDA1	N97	0	1	1/(1)	1	2	4/(2)	1	3	5	1	1	1	1	(1)
AIMB-219N5L-LDA1	N50	0	1	0	0	1/(1)	2/(4)	1	3	2/(3)	1	1	1	(1)	(1)

\* (1) Supports by BOM options

\* AIMB-219NC3F-LDA1: default 2.5 GbE x2; the other SKU support 2.5GbE by option.

## Packing List

Part Number	Description	Quantity
AIMB-219 Board	AIMB-219 motherboard	1
170003194-21	SATA HDD cable	1
1700034404-01	1-to-1 serial port cable, 50cm	1
1960115632T001	I/O port bracket	1
2046021900	Startup manual for AIMB-219	1
1970005854T001	Fanless heatsink for CPU i3-N305 or N97	1
1960064228T011	Fanless heatsink for CPU N200 or N50	1
19350304A0	M.2 Screw, M3x4L R/S D=5.3 H=2 (2+)	2
1910003418-01	M.2 Post, F=M3x4L M=M3x3L B=5 H=5.2	1
1700018785-01	SATA power cable	1

## I/O View



## Optional Chassis

Part Number	Description
AIMB-B2000-00YE	Mini-ITX chassis with optional DC Adaptor

## Optional Accessories

Part Number	Description
1700034405-01	1-to-1 USB cable, 50cm
96PSA-A120W12V1-3	Adapter AC100-240V 120W 12V

## Embedded OS/API

OS	Part No.	Description
Ubuntu	20706U22DS0039	img UbuntuD AIMB-219 64b 22.04 ENU
Windows 10	20706WX1ES0083	img W10 21EL AIMB-219 64b 21H2 ENU
Windows 10	20706WX1HS0083	img W10 21HL AIMB-219 64b 21H2 ENU
Windows 10	20706WX1VS0083	img W10 21VL AIMB-219 64b 21H2 ENU