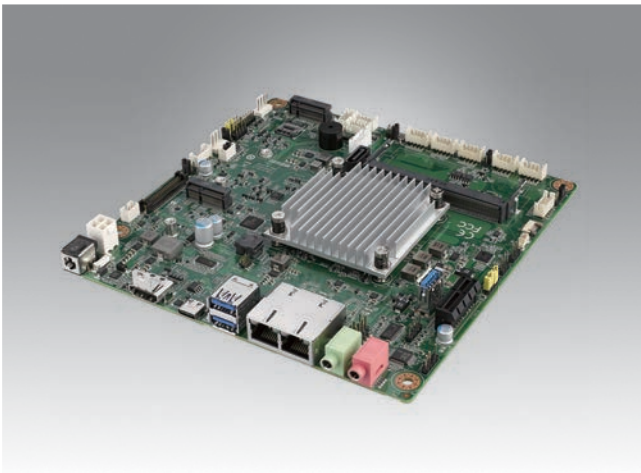


# AIMB-219

## Mini-ITX Motherboard Intel® Core™ i3, N series and Atom® x7000 Series Processors (Alder Lake-N/ Amston Lake)



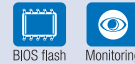
### Features

- Intel® Core™ i3, N series and Atom® x7000 Series Processors
- 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:



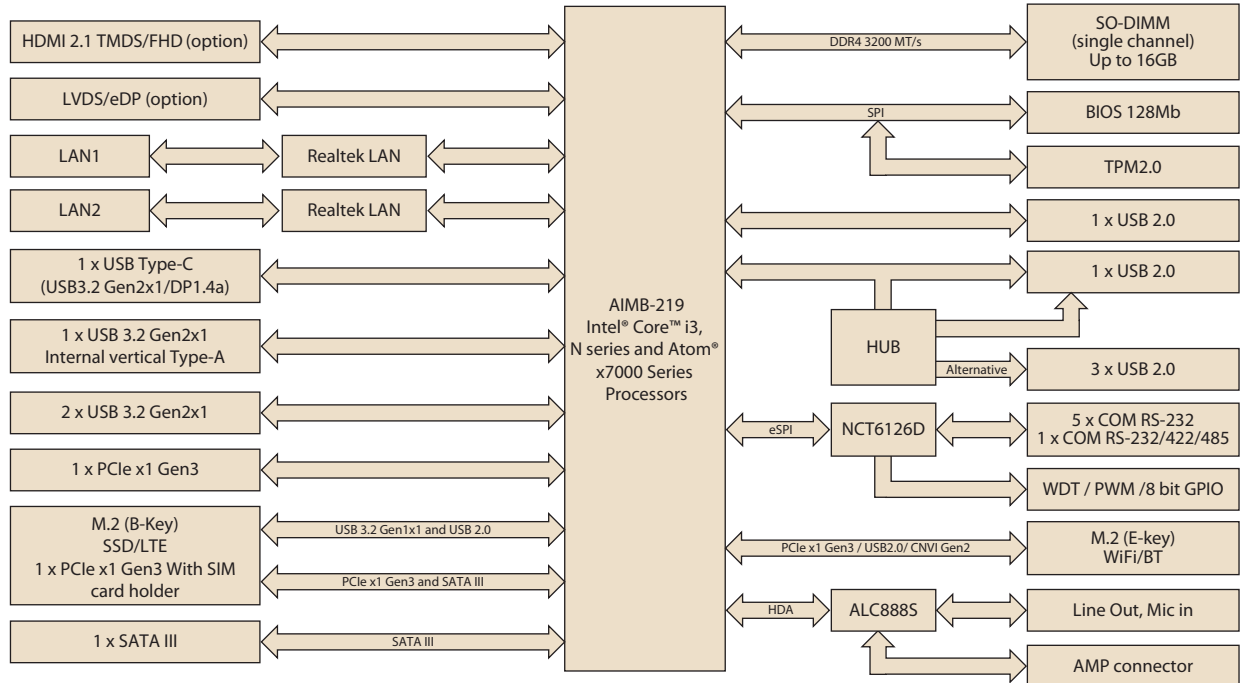
#### Utilities:



### Specifications

	CPU (10nm)	i3-N305	N200	N97	N50	x7835RE	x7433RE	x7213RE	x7211RE		
Processor System	Core Number	8	4	4	2	8	4	2	2		
	Base frequency (GHz)	1.8	1	2	1	1.3	1.5	2	1		
	TDP (W)	15	6	12	6	12	9	9	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; Cctalk 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) or -20 ~ 70 °C (-4 ~ 158 °F) for Z SKU									
	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	PCIex1	TPM	AMP	Thermal Solution	Operating Temp.
AIMB-219NC3F-LDA1	i3-N305	1	0	1/(1)	1	2*	6	1	3	5	1	1	1	1	1	Passive	0 - 60 °C
AIMB-219N2F-LDA1	N200	0	1	1/(1)	(1)	2	4/(2)	1	3	5	1	1	1	1	(1)	Passive	0 - 60 °C
AIMB-219N9F-LDA1	N97	0	1	1/(1)	1	2	4/(2)	1	3	5	1	1	1	1	(1)	Passive	0 - 60 °C
AIMB-219N5L-LDA1	N50	0	1	0	0	1/(1)	2/(4)	1	3	2/(3)	1	1	1	(1)	(1)	Passive	0 - 60 °C
AIMB-219M8F-LDA1	x7835RE	1	0	1/(1)	1	2*	6	1	3	5	1	1	1	1	1	Passive	0 - 60 °C
AIMB-219M4F-LDA1	x7213RE	0	1	1/(1)	(1)	2	4/(2)	1	3	5	1	1	1	1	(1)	Passive	0 - 60 °C
AIMB-219M6F-LDA1	x7433RE	0	1	1/(1)	1	2	4/(2)	1	3	5	1	1	1	1	(1)	Passive	0 - 60 °C
AIMB-21926F-LDA1	x7433RE	0	1	1/(1)	1	2	4/(2)	1	3	5	1	1	1	1	(1)	Passive	-20 - 70 °C
AIMB-219M2L-LDA1	x7211RE	0	1	0	0	1/(1)	2/(4)	1	3	2/(3)	1	1	1	(1)	(1)	Passive	0 - 60 °C

(\*) Supports by BOM options  
 \* AIMB-219NC3F-LDA1 and AIMB-219M8F-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
1700003194-01	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

### 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	Adaptor 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

### I/O View

