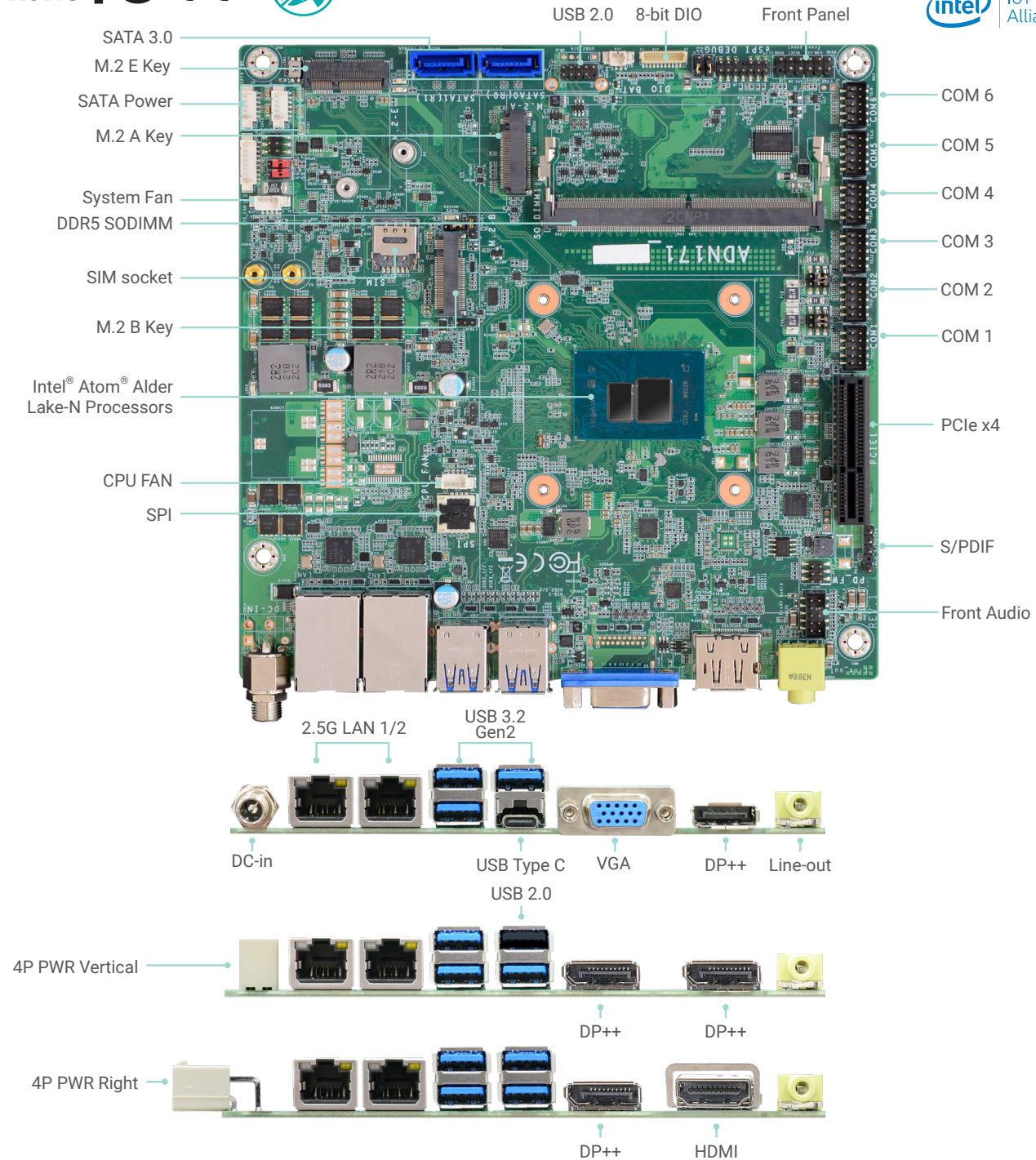


# ADN171/ADN173

Intel® Atom® Alder Lake-N Processors

Atom

Mini-ITX



## KEY FEATURES



### DDR5

1 DDR5 4800MHz SODIMM up to 16GB



### 4K High Resolution

Supports 4K/ 2K resolution



### Triple Displays

DP++/VGA + HDMI/  
DP++ + USB-Type C +  
\*M2A-Display(optional)



### Multiple Expansion

1 M.2 A Key,  
1 M.2 B Key,  
1 M.2 E Key

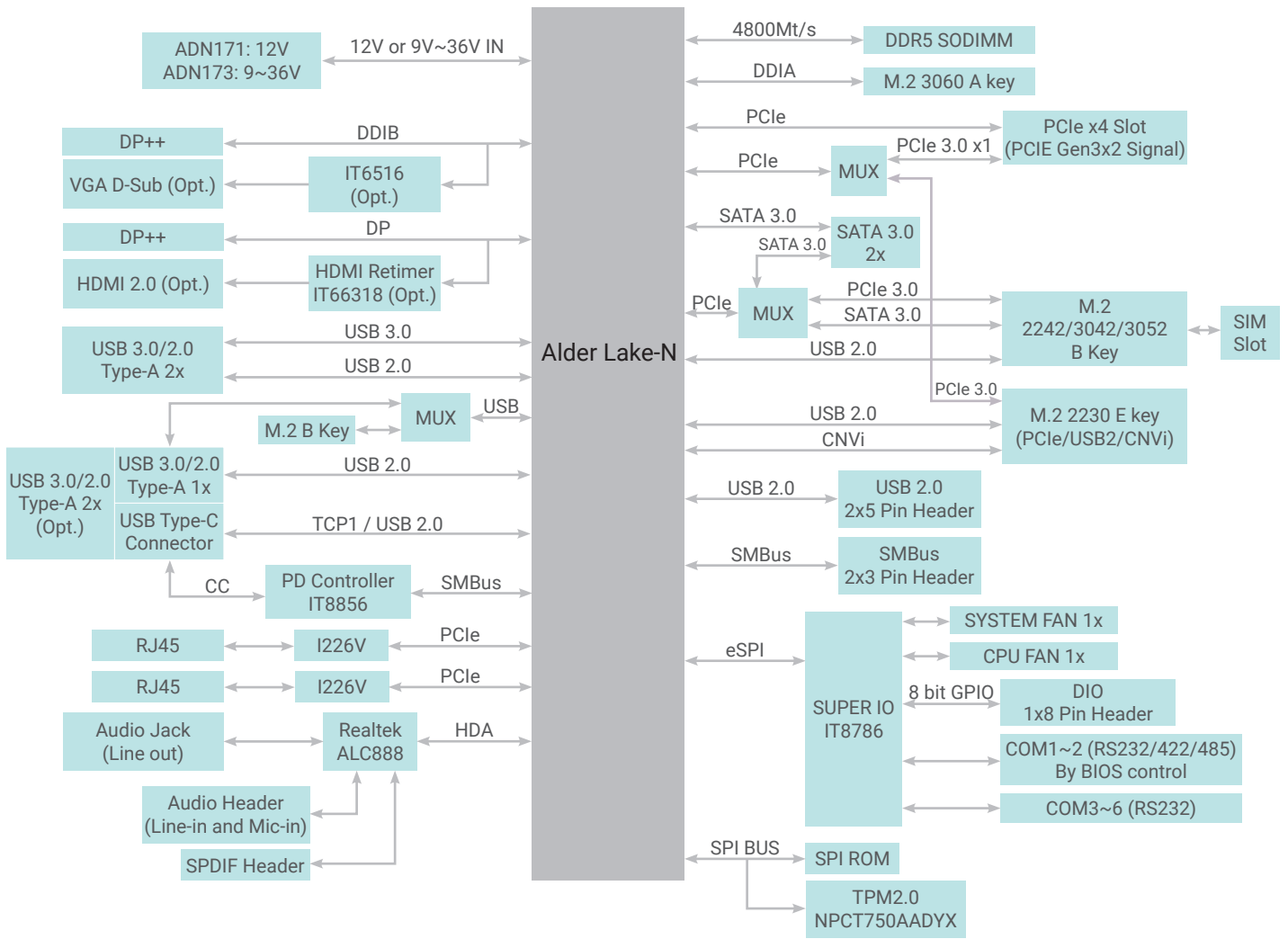


### Rich I/O

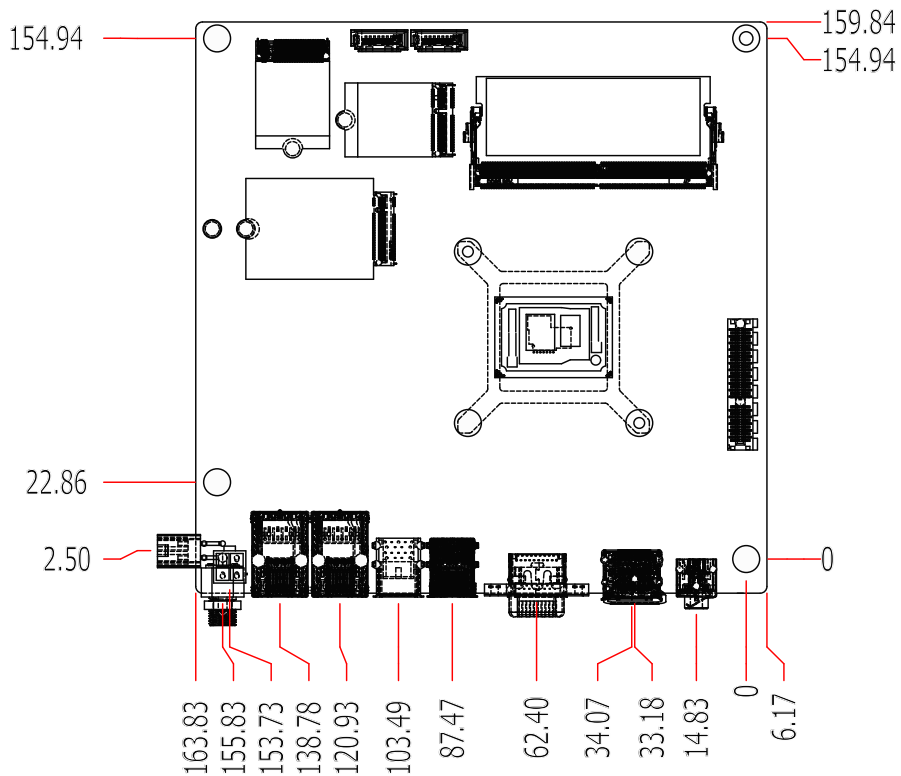
2 2.5GbE LAN, up to 4  
USB 3.2, 1 USB Type C,  
2 USB2.0, 2 SATA3.0,  
6 COM

\*M2A Display support (eDP/LVDS/VGA/HDMI/DP)

## BLOCK DIAGRAM



## MECHANICAL DRAWING



## SPECIFICATION

<b>SYSTEM</b>	<b>Processor</b>	Intel® Atom® Alder Lake-N Processors, TDP up to 15W Intel® Processor N200, Quad Core, 6M Cache, 3.7GHz, 6W Intel® Atom® x7213E Processor, Dual Core, 6M Cache, 3.2GHz, 10W Intel® Processor N50, Dual Core, 6M Cache, 3.4GHz, 6W	
	<b>Memory</b>	One 262-pin SODIMM up to 16GB Single Channel DDR5 4800MHz	
	<b>BIOS</b>	AMI SPI 256Mbit	
<b>GRAPHICS</b>	<b>Controller</b>	Intel® UHD Graphics	
	<b>Feature</b>	OpenGL 4.6, Direct X 12.1, OpenCL 3.0	
		HW Decode: HEVC, VP9, AV1, AVC	
		HW Encode: HEVC, VP9, AVC	
<b>Display</b>	1 x DP++/ VGA (Co-layout) 1 x DP++/ HDMI2.0 (Co-layout) 1 x USB Type C (DP alt-mode/USB3.2 Gen2/PD 15W)	HDMI: resolution up to 3840x2160 @ 24Hz DP++: resolution up to 3840x2160 @ 60Hz VGA: resolution up to 2048x1536 @ 60Hz USB-C: resolution up to 3840x2160 @24Hz	
<b>Triple Displays</b>	DP++/VGA + HDMI/DP++ + USB Type C (DP alt-mode/USB3.2 Gen2/PD 15W) + M2A-Display (optional)		
<b>EXPANSION</b>	<b>Interface</b>	1 x PCIe x4 (PCIe signal x2)	
		1 x M.2 2242/3042/3052 B Key (PCIe Gen3x1 or SATA3 and USB2.0 wi USB3(opt.))	
		1 x M.2 2230 E Key (PCIe Gen3x1 and USB2.0, support Intel® CNVi)	
		1 x M.2 3060 A Key support DFI M2A-display module (opt. MOQ required)	
		1 x Nano SIM socket (connected to M.2 B key)	
<b>AUDIO</b>	<b>Audio Codec</b>	Realtek ALC888S	
<b>ETHERNET</b>	<b>Controller</b>	2 x Intel® I226V (10/100/1000/2500Mbps)	
<b>REAR I/O</b>	<b>Ethernet</b>	2 x 2.5GHz RJ45	
	<b>USB</b>	4 x USB 3.2 Gen2 or 3 x USB 3.2 Gen2 + 1 x USB 2.0 or 3 x USB 3.2 Gen2 + 1 x USB Type C	
	<b>Display</b>	1 x HDMI /DP++ (opt., MOQ may required)	
		1 x DP++ /VGA (opt., MOQ may required) 1 x USB Type C (DP alt-mode/USB3.2 Gen2/PD 15W)	
<b>Audio</b>	1 x Line-out		
<b>INTERNAL I/O</b>	<b>Serial</b>	2 x RS-232/422/485 (RS-232 w/ power) (2.0mm pitch)	
		4 x RS-232 (2.0mm pitch)	
	<b>USB</b>	2 x USB 2.0 (2.0mm pitch) or 1 x USB 2.0 (2.00mm pitch) + 1 x Vertical USB 2.0 (type A) (opt., MOQ required)	
	<b>Audio</b>	1 x S/PDIF	
		1 x Line-in/Mic-in	
	<b>SATA</b>	2 x SATA 3.0 (up to 6Gb/s)	
<b>DIO</b>	1 x 8-bit DIO		
<b>SMBus</b>	1 x SMBus		
<b>WATCHDOG TIMER</b>	<b>Output &amp; Interval</b>	System Reset, Programmable via Software from 1 to 255 Seconds	
<b>SECURITY</b>	<b>TPM</b>	dTPM (default) fTPM (option)	
<b>POWER</b>	<b>Type</b>	Single 12VDC (+/-5%) (ADN171) (DC-In jack by default) Wide Range 9~36V (ADN173) (4P vertical type by default)	
	<b>Connector</b>	DC-in Jack	
		Right Angle Connector (4-pin) Vertical Type Connector (4-pin)	
	<b>Consumption</b>	Idle: x7213E 10W: 12V @ 0.62A (7.44W) Max: x7213E 10W: 12V @ 2.31A (27.72W)	
<b>RTC Battery</b>	CR2032 Coin Cell		
<b>OS SUPPORT</b>	<b>Microsoft</b>	Windows IoT Enterprise 10 LTSB	
	<b>Linux</b>	Linux	
<b>ENVIRONMENT</b>	<b>Temperature</b>	Operating: -5 to 65°C	Storage: -40 to 85°C
	<b>Humidity</b>	Operating: 5 to 90% RH	Storage: 5 to 90% RH
	<b>MTBF</b>	MTBF 478,716 hrs @ 25°C; 297,120 hrs @ 45°C; 197,152 hrs @ 60°C; 148,106 hrs @ 70°C; Calculation model: Telcordia Issue 4 Environment: GB, GC – Ground Benign, Controlled	
<b>MECHANISM</b>	<b>Dimensions</b>	Mini-ITX Form Factor	170mm (6.7") x 170mm (6.7")
	<b>Height</b>	PCB: 1.6mm	
		Top Side: 20mm	Bottom Side: 3mm
<b>STANDARDS AND CERTIFICATION</b>	<b>Certifications</b>	CE, FCC, RoHS	

## ORDERING INFORMATION

Model Name	P/N	Display	Description
ADN171-CB-x7213E	770-ADN1711-000G	VGA/DP/Type C	Intel® Atom® x7213E, 1 DDR5, Rear I/O(1 DP++, 1 VGA, 2 LAN, 3 USB 3.2 Gen2, 1 USB Type C), Internal I/O (4 RS-232, 2 RS-232/422/485, 2 USB 2.0), 12V DC, Fanless, -5 to 65°C
ADN171-CB-N200	770-ADN1711-100G	DP/ HDMI	Intel® Processor N200, 1 DDR5, Rear I/O(1 DP++, 1 HDMI, 2 LAN, 4 USB 3.2 Gen2), Internal I/O (4 RS-232, 2 RS-232/422/485, 2 USB 2.0), 12V DC, Fanless, -5 to 65°C
ADN171-CB-N50	770-ADN1711-200G	DP/DP	Intel® Processor N50, 1 DDR5, Rear I/O(2 DP++, 2 LAN, 3 USB 3.2 Gen2, 1 USB 2.0), Internal I/O (4 RS-232, 2 RS-232/422/485, 2 USB 2.0), 12V DC, Fanless, -5 to 65°C
ADN173-CB-x7213E	770-ADN1731-000G	DP/HDMI	Intel® Atom® x7213E, 1 DDR5, Rear I/O(1 DP++, 1 HDMI, 2 LAN, 3 USB 3.2 Gen2, 1 USB 2.0), Internal I/O (4 RS-232, 2 RS-232/422/485, 2 USB 2.0), 9~36V DC, Fanless, -5 to 65°C
ADN173-CB-N50	770-ADN1731-100G	DP/DP/Type C	Intel® Processor N50, 1 DDR5, Rear I/O(2 DP++, 2 LAN, 3 USB 3.2 Gen2, 1 USB Type C), Internal I/O (4 RS-232, 2 RS-232/422/485, 2 USB 2.0), 9~36V DC, Fanless, -5 to 65°C

## PACKING LIST

1 ADN171/ADN173 motherboard
1 COM port cable (Length: 250mm, 1 x COM ports)
1 Serial ATA data & power cable w/lock (Length: 300mm)
1 Heat sink