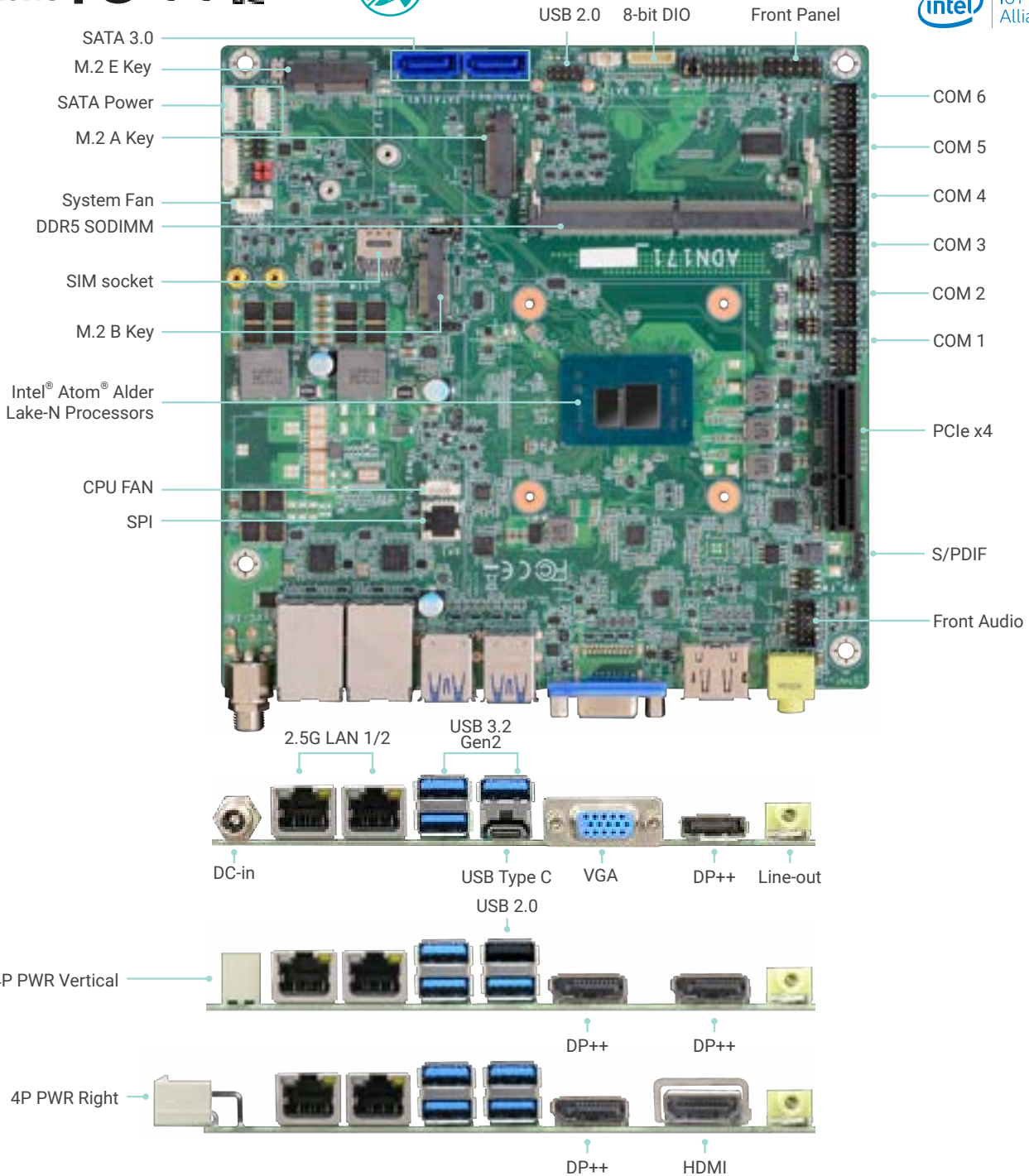


ADN171/ADN173

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

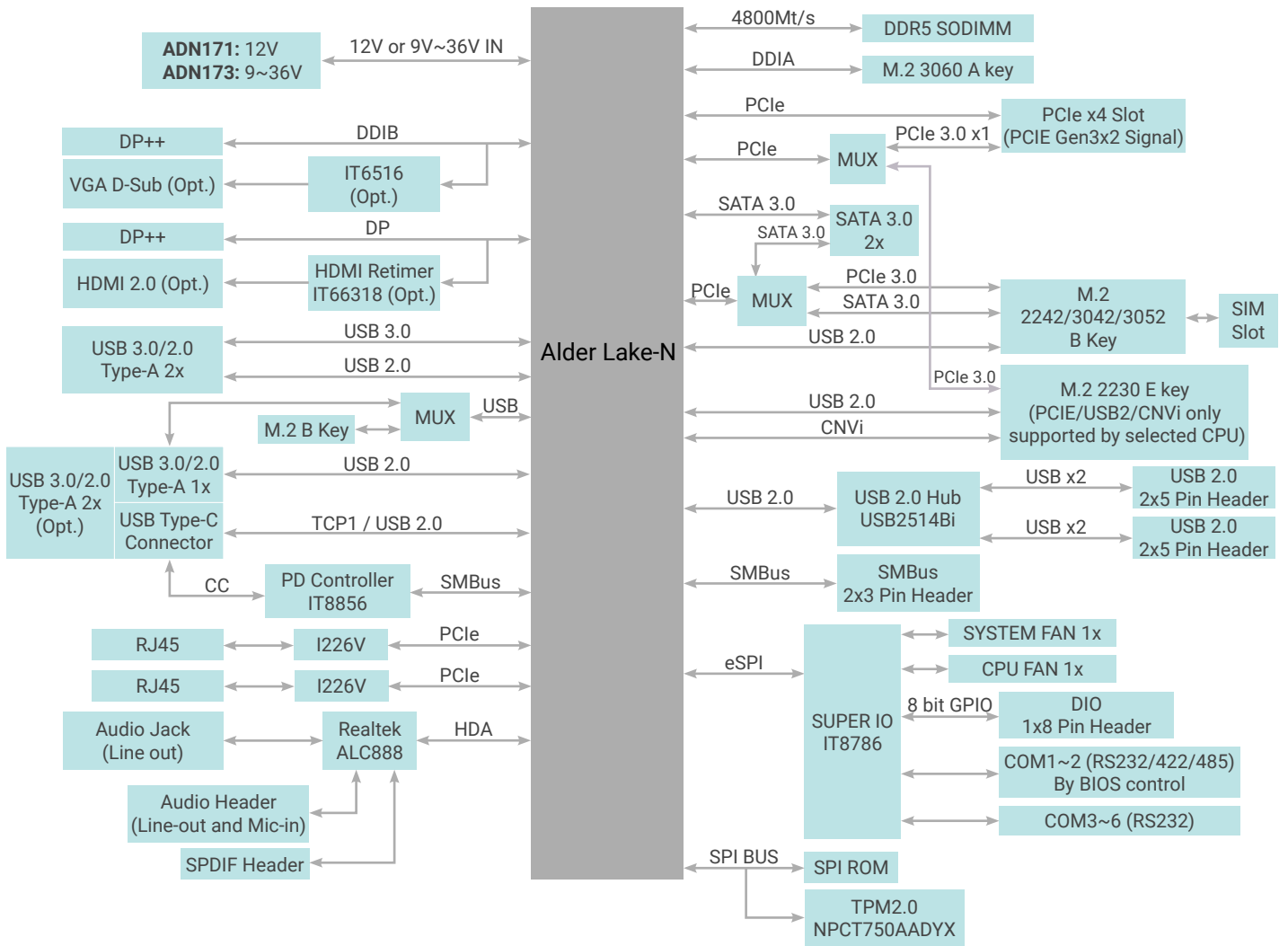


Rich I/O

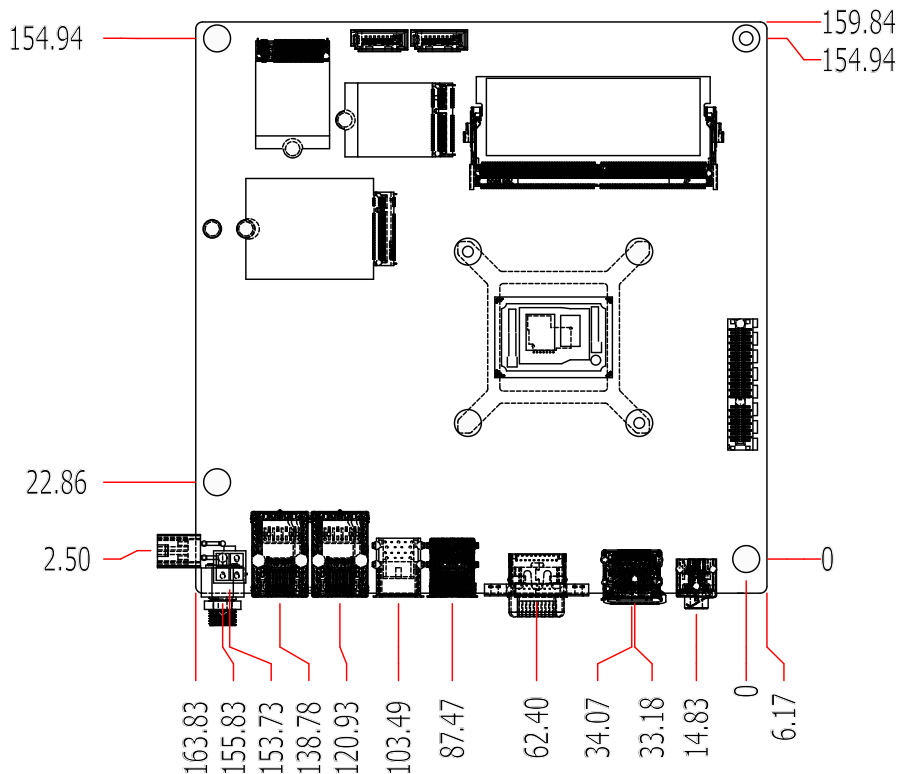
2 2.5GbE LAN, up to 4 USB 3.2, 1 USB Type C, 4 USB 2.0, 2 SATA 3.0, 6 COM

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

BLOCK DIAGRAM



MECHANICAL DRAWING



SPECIFICATION

| Model Name | | ADN171 | ADN173 |
|----------------|-------------------|--|---|
| SYSTEM | Processor | Intel® Atom® Alder Lake-N Processors, TDP up to 15W - Embedded Intel Atom® x7425E, 4 cores, 6M Cache, up to 3.40 GHz, 12W Intel Atom® x7213E, 2 cores, 6M Cache, up to 3.20 GHz, 10W Intel Atom® x7211E, 2 cores, 6M Cache, up to 3.20 GHz, 6W - PC Client Intel® Core™ i3-N305, 8 cores, 6M Cache, up to 3.80 GHz, 15W Intel® Processor N200, 4 cores, 6M Cache, up to 3.70 GHz, 6W Intel® Processor N97, 4 cores, 6M Cache, up to 3.60 GHz, 12W Intel® Processor N50, 2 cores, 6M Cache, up to 3.40 GHz, 6W | |
| | Memory | One 262-pin SODIMM up to 16GB Single Channel DDR5 4800MHz | One 262-pin SODIMM up to 16GB Single Channel DDR5 4800MHz |
| | BIOS | AMI SPI 256Mbit | AMI SPI 256Mbit |
| GRAPHICS | Controller | Intel® UHD Graphics | Intel® UHD Graphics |
| | Feature | OpenGL 4.6, Direct X 12.1, OpenCL 3.0 HW Decode: HEVC, VP9, AV1, AVC HW Encode: HEVC, VP9, AVC | OpenGL 4.6, Direct X 12.1, OpenCL 3.0 HW Decode: HEVC, VP9, AV1, AVC HW Encode: HEVC, VP9, AVC |
| | Display | 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) DP++: resolution up to 3840x2160 @ 60Hz VGA: resolution up to 2048x1536 @ 60Hz HDMI: resolution up to 3840x2160 @ 24Hz USB-C: resolution up to 3840x2160 @24Hz | 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) DP++: resolution up to 3840x2160 @ 60Hz VGA: resolution up to 2048x1536 @ 60Hz HDMI: resolution up to 3840x2160 @ 24Hz USB-C: resolution up to 3840x2160 @24Hz |
| | Triple Displays | DP++/VGA + HDMI/DP++ + USB Type C (DP alt-mode/USB3.2 Gen2/PD 15W) + M2A-Display (optional) | DP++/VGA + HDMI/DP++ + USB Type C (DP alt-mode/USB3.2 Gen2/PD 15W) + M2A-Display (optional) |
| EXPANSION | Interface | 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, USB2.0, CNVi) (CNVi only support by selected CPU) 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) | 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, USB2.0, CNVi) (CNVi only support by selected CPU) 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) |
| AUDIO | Audio Codec | Realtek ALC888S | Realtek ALC888S |
| ETHERNET | Controller | 2 x Intel® I226V (10/100/1000/2500Mbps) | 2 x Intel® I226V (10/100/1000/2500Mbps) |
| REAR I/O | Ethernet | 2 x 2.5GHz RJ45 | 2 x 2.5GHz RJ45 |
| | USB | 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 | 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 |
| | Display | 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) | 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) |
| | Audio | 1 x Line-out | 1 x Line-out |
| INTERNAL I/O | Serial | 2 x RS-232/422/485 (RS-232 w/ power) (2.0mm pitch) 4 x RS-232 (2.0mm pitch) | 2 x RS-232/422/485 (RS-232 w/ power) (2.0mm pitch) 4 x RS-232 (2.0mm pitch) |
| | USB | 4 x USB 2.0 (2.0mm pitch) or 3 x USB 2.0 (2.00mm pitch) + 1 x Vertical USB 2.0 (type A) (opt., MOQ required) | 4 x USB 2.0 (2.0mm pitch) or 3 x USB 2.0 (2.00mm pitch) + 1 x Vertical USB 2.0 (type A) (opt., MOQ required) |
| | Audio | 1 x S/PDIF 1 x Line-out/Mic-in | 1 x S/PDIF 1 x Line-out/Mic-in |
| | SATA | 2 x SATA 3.0 (up to 6Gb/s) | 2 x SATA 3.0 (up to 6Gb/s) |
| | DIO | 1 x 8-bit DIO | 1 x 8-bit DIO |
| | SMBus | 1 x SMBus | 1 x SMBus |
| WATCHDOG TIMER | Output & Interval | System Reset, Programmable via Software from 1 to 255 Seconds | System Reset, Programmable via Software from 1 to 255 Seconds |
| SECURITY | TPM | dTPM (default) fTPM (option) | dTPM (default) fTPM (option) |
| POWER | Type | Single 12VDC (+/-5%) | Wide Range 9~36V |
| | Connector | DC-in Jack (Default) Right Angle Connector (4-pin) Vertical Type Connector (4-pin) | DC-in Jack (Default) Right Angle Connector (4-pin) Vertical Type Connector (4-pin) |
| | Consumption | Idle: x7213E 10W: 12V @ 0.62A (7.44W) Max: x7213E 10W: 12V @ 2.31A (27.72W) | Idle: x7213E 10W: 12V @ 0.62A (7.44W) Max: x7213E 10W: 12V @ 2.31A (27.72W) |
| | RTC Battery | CR2032 Coin Cell | CR2032 Coin Cell |
| OS SUPPORT | Microsoft | Windows IoT Enterprise 10 LTSC Windows 11 | Windows IoT Enterprise 10 LTSC Windows 11 |
| | Linux | Linux | Linux |

SPECIFICATION

| Model Name | | ADN171 | ADN173 |
|---------------|----------------|---|--|
| ENVIRONMENT | Temperature | Operating: -5 to 65°C Storage: -40 to 85°C | Operating: -5 to 65°C Storage: -40 to 85°C |
| | Humidity | Operating: 5 to 90% RH Storage: 5 to 90% RH | Operating: 5 to 90% RH Storage: 5 to 90% RH |
| | MTBF | ADN171-CB-N200 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 | ADN173-CB-x7425 MTBF 455,085 hrs @ 25°C; 278,736 hrs @ 45°C; 183,740 hrs @ 60°C; 137,635 hrs @ 70°C; Calculation model: Telcordia Issue 4 Environment: GB, GC – Ground Benign, Controlled |
| MECHANISM | Dimensions | Mini-ITX Form Factor 170mm (6.7") x 170mm (6.7") | Mini-ITX Form Factor 170mm (6.7") x 170mm (6.7") |
| | Height | PCB: 1.6mm Top Side: 20mm Bottom Side: 3mm | PCB: 1.6mm Top Side: 20mm Bottom Side: 3mm |
| CERTIFICATION | Certifications | CE, FCC, RoHS, UKCA, KC | CE, FCC, RoHS, UKCA, KC |

ORDERING INFORMATION

| Model Name | P/N | CPU | Memory | Rear I/O | | | Internal I/O | | | Power | Thermal | Operating Temp. | CNVi |
|-------------------|------------------|---------|--------|---------------|---------|------------------------------|--------------|----------------|-----------|---------|---------|-----------------|------|
| | | | | Display | 2.5 GbE | USB | RS-232 | RS-232/422/485 | USB | | | | |
| ADN171-CB-x7213E | 770-ADN1711-000G | x7213E | 1 DDR5 | VGA/DP/Type C | 2 | 3 USB 3.2 Gen2, 1 USB Type C | 4 | 2 | 2 USB 2.0 | 12VDC | Fanless | -5 to 65°C | N/A |
| ADN171-CB-N200 | 770-ADN1711-100G | N200 | | DP/HDMI | | 4 USB 3.2 Gen2 | | | | 12VDC | | | Yes |
| ADN171-CB-N50 | 770-ADN1711-200G | N50 | | DP/DP | | 3 USB 3.2 Gen2, 1 USB 2.0 | | | | 12VDC | | | Yes |
| ADN171-CB-N97 | 770-ADN1711-300G | N97 | | DP/DP/Type C | | 3 USB 3.2 Gen2, 1 USB Type C | | | | 12VDC | | | Yes |
| ADN171-CB-i3-N305 | 770-ADN1711-400G | i3-N305 | | DP/HDMI | | 3 USB 3.2 Gen2, 1 USB 2.0 | | | | 12VDC | | | Yes |
| ADN173-CB-x7213E | 770-ADN1731-000G | x7213E | | DP/HDMI | | 3 USB 3.2 Gen2, 1 USB 2.0 | | | | 9~36VDC | | | N/A |
| ADN173-CB-N50 | 770-ADN1731-100G | N50 | | DP/DP/Type C | | 3 USB 3.2 Gen2, 1 USB Type C | | | | 9~36VDC | | | Yes |
| ADN173-CB-x7425E | 770-ADN1731-200G | x7425E | | VGA/DP/Type C | | 3 USB 3.2 Gen2, 1 USB Type C | | | | 9~36VDC | | | Yes |
| ADN173-CB-N97 | 770-ADN1731-300G | N97 | | DP/DP | | 3 USB 3.2 Gen2, 1 USB 2.0 | | | | 9~36VDC | | | Yes |
| ADN173-CB-i3-N305 | 770-ADN1731-400G | i3-N305 | | DP/HDMI | | 3 USB 3.2 Gen2, 1 USB 2.0 | | | | 9~36VDC | | | Yes |

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 |