

# ADN171/ADN173

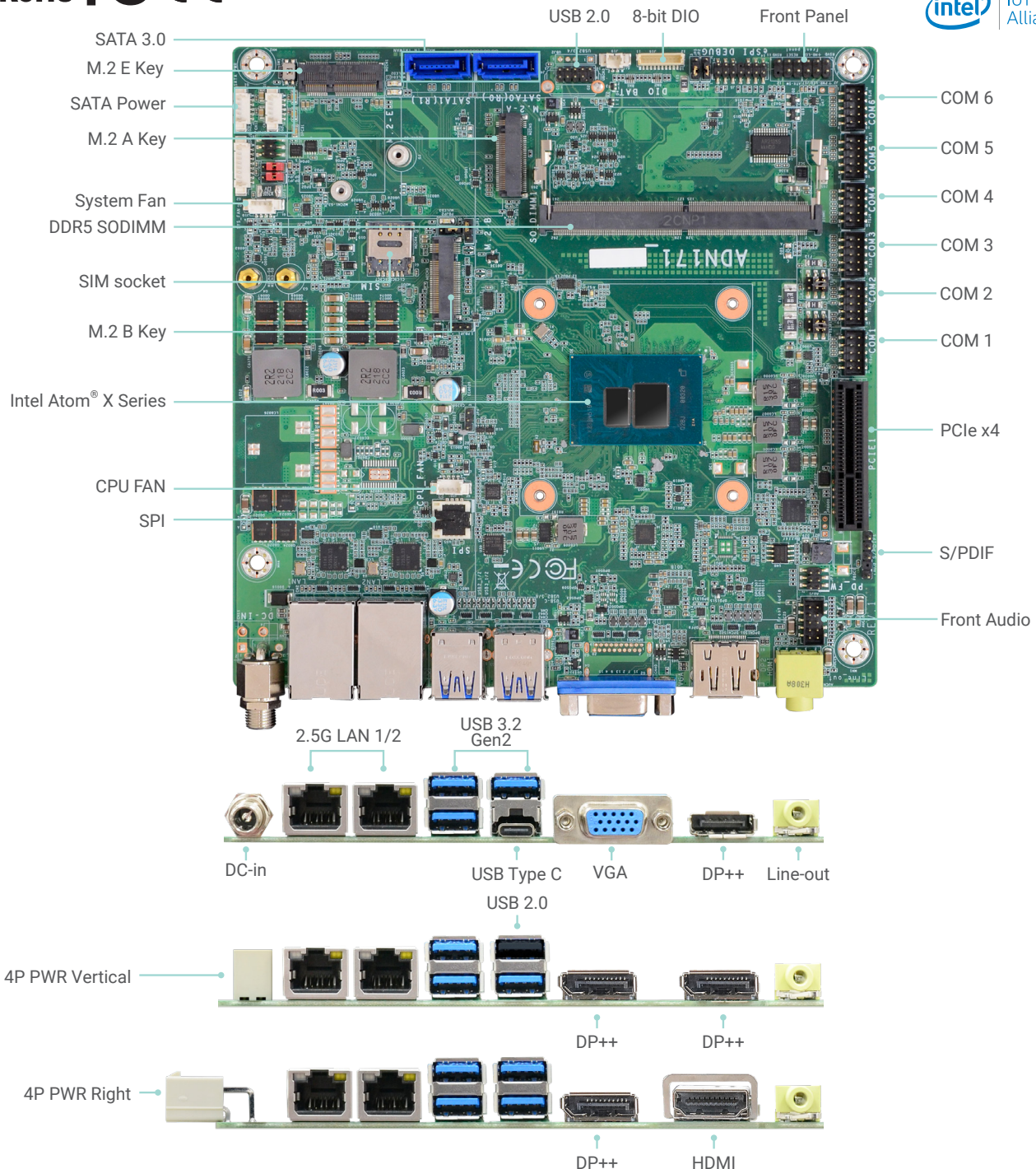


Atom

Intel Atom® X Series  
Mini-ITX



IoT Solutions  
Alliance



## KEY FEATURES



### DDR5

1 DDR5 4800MHz  
SODIMM up to 16GB



### 4K High Resolution

Supports 4K/ 2K reso-  
lution



### 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

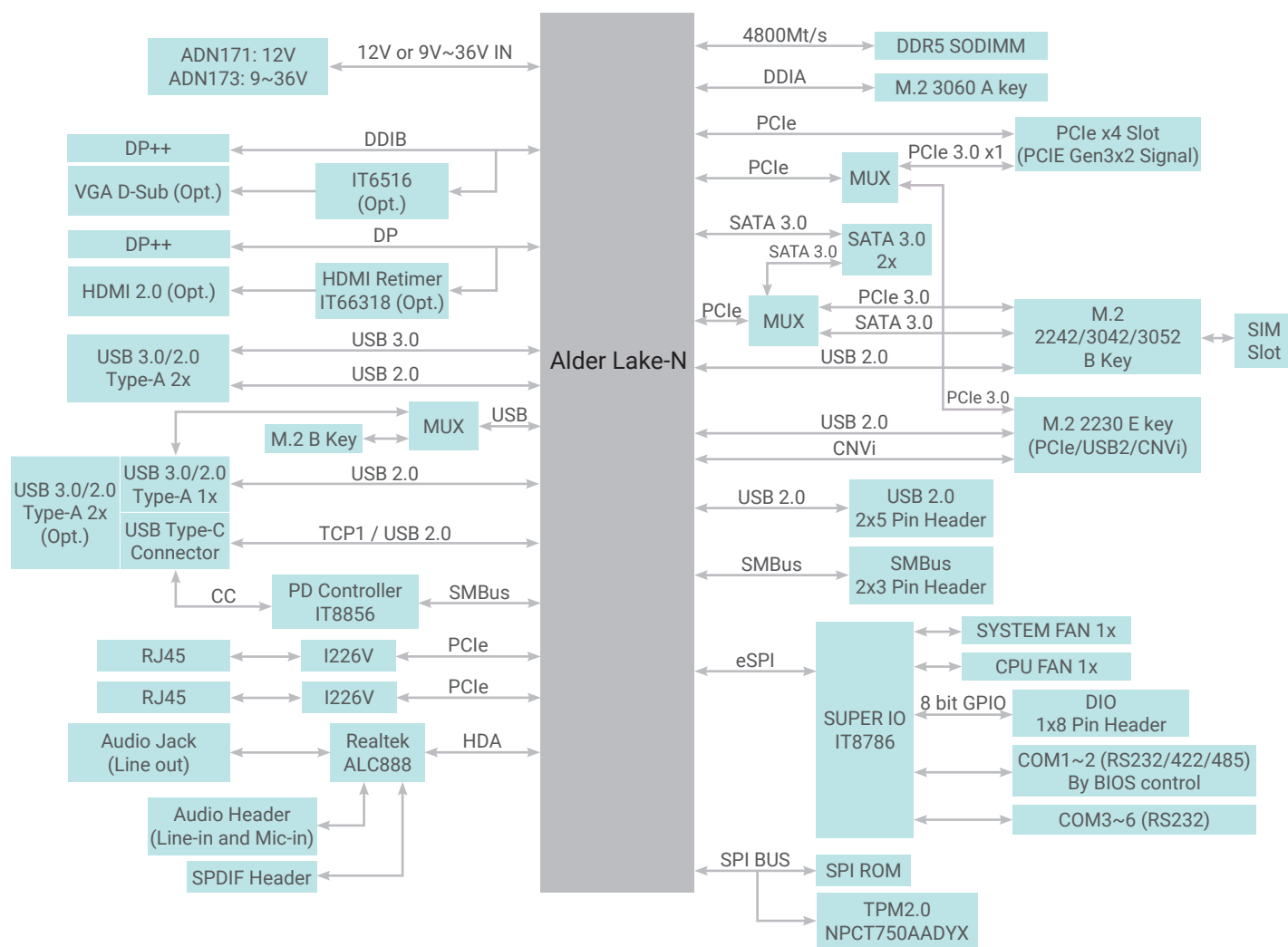


### Rich I/O

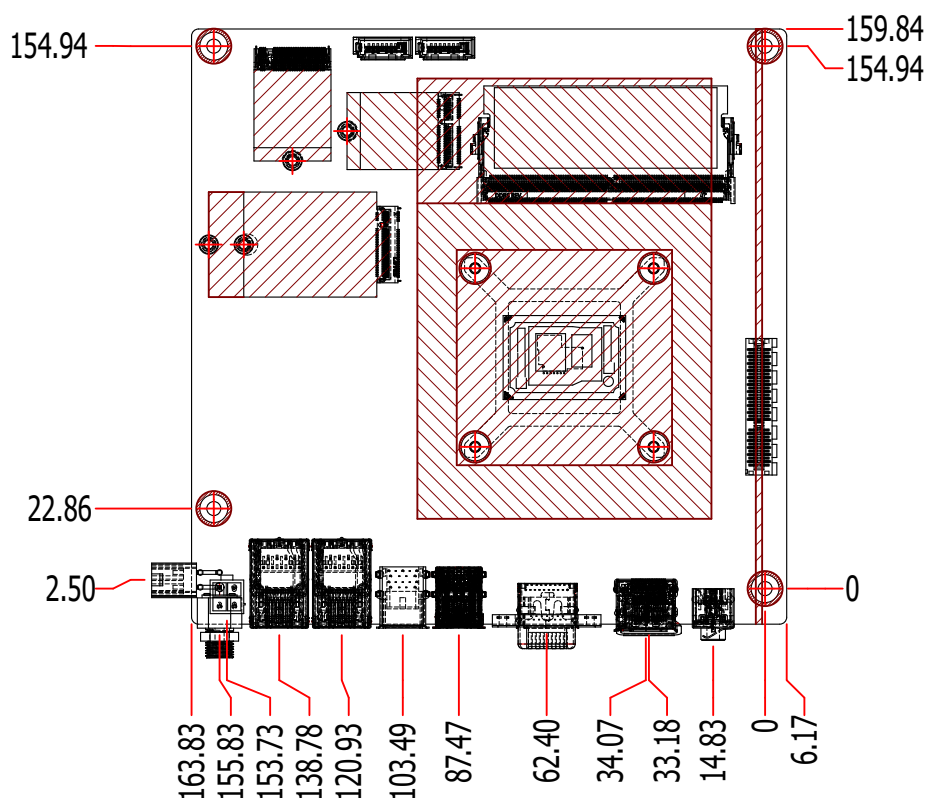
2 2.5GbE LAN, up to 4  
USB 3.2, 1 USB Type C,  
2 USB2.0, 2 SATA3.0,  
6 COM

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

## BLOCK DIAGRAM



## MECHANICAL DRAWING



## SPECIFICATION

|                             |                   |                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                         |
|-----------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SYSTEM                      | Processor         | Intel Atom® X Series Processors<br>Intel® Core i3-N305 Processor, 8 Core, 6M Cache, 3.8GHz, 15W<br>Intel® Atom® N200 Processor, Quad Core, 6M Cache, 3.7GHz, 6W<br>Intel® Atom® x7213E Processor, Dual Core, 16M Cache, 3.2GHz, 10W<br>Intel® Atom® N50 Processor, Dual Core, 6M Cache, 3.4GHz, 6W        |                                                                                                                                                                         |
|                             | Memory            | One 260-pin SODIMM up to 16GB<br>Single Channel DDR5 4800MHz                                                                                                                                                                                                                                              |                                                                                                                                                                         |
|                             | BIOS              | AMI SPI 256Mbit                                                                                                                                                                                                                                                                                           |                                                                                                                                                                         |
|                             | Feature           | OpenGL 4.6, Direct X 12.1, OpenCL 3.0<br>HW Decode: HEVC, VP9, AV1, AVC<br>HW Encode: HEVC, VP9, AVC                                                                                                                                                                                                      |                                                                                                                                                                         |
| GRAPHICS                    | Controller        | Intel® UHD Graphics                                                                                                                                                                                                                                                                                       |                                                                                                                                                                         |
|                             | Feature           | OpenGL 4.6, Direct X 12.1, OpenCL 3.0<br>HW Decode: HEVC, VP9, AV1, AVC<br>HW Encode: HEVC, VP9, AVC                                                                                                                                                                                                      |                                                                                                                                                                         |
|                             | Display           | 1 x DP++/ VGA (Co-layout)<br>1 x DP++/ HDMI2.0 (Co-layout)<br>1 x USB Type C (DP alt-mode/USB3.2 Gen2/PD 15W)                                                                                                                                                                                             | HDMI: resolution up to 3840x2160 @ 24Hz<br>DP++: resolution up to 3840x2160 @ 60Hz<br>VGA: resolution up to 2048x1536 @ 60Hz<br>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)                                                                                                                                                                                                               |                                                                                                                                                                         |
| EXPANSION                   | Interface         | 1 x PCIe x4 (PCIe signal x2)<br>1 x M.2 2242/3042/3052 B Key (PCIe Gen3x1 or SATA3 and USB2.0 wi USB3(opt.))<br>1 x M.2 2230 E Key (PCIe Gen3x1 and USB2.0, support Intel® CNVi)<br>1 x M.2 3060 A Key support DFI M2A-display module (opt. MOQ required)<br>1 x Nano SIM socket (connected to M.2 B key) |                                                                                                                                                                         |
|                             | Audio Codec       | Realtek ALC888S                                                                                                                                                                                                                                                                                           |                                                                                                                                                                         |
|                             | Controller        | 2 x Intel® I226V (10/100/1000/2500Mbps)                                                                                                                                                                                                                                                                   |                                                                                                                                                                         |
|                             | Ethernet          | 2 x 2.5GHz RJ45                                                                                                                                                                                                                                                                                           |                                                                                                                                                                         |
|                             | USB               | 4 x USB 3.2 Gen2 or 3 USB3.2Gen + 1 USB2.0 or 3 USB 3.2 Gen2+1 USB Type C                                                                                                                                                                                                                                 |                                                                                                                                                                         |
| REAR I/O                    | Display           | 1 x HDMI /DP++ (opt., MOQ may required)<br>1 x DP++ /VGA (opt., MOQ may required)<br>1 x USB Type C (DP alt-mode/USB3.2 Gen2/PD 15W)                                                                                                                                                                      |                                                                                                                                                                         |
|                             | Audio             | 1 x Line-out                                                                                                                                                                                                                                                                                              |                                                                                                                                                                         |
|                             | Serial            | 2 x RS-232/422/485 (RS-232 w/ power) (2.0mm pitch)<br>4 x RS-232 (2.0mm pitch)                                                                                                                                                                                                                            |                                                                                                                                                                         |
|                             | USB               | 4 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)                                                                                                                                                                                              |                                                                                                                                                                         |
| INTERNAL I/O                | Audio             | 1 x S/PDIF<br>1 x Line-in/Mic-in                                                                                                                                                                                                                                                                          |                                                                                                                                                                         |
|                             | SATA              | 2 x SATA 3.0 (up to 6Gb/s)                                                                                                                                                                                                                                                                                |                                                                                                                                                                         |
|                             | DIO               | 1 x 8-bit DIO                                                                                                                                                                                                                                                                                             |                                                                                                                                                                         |
|                             | SMBus             | 1 x SMBus                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                         |
|                             | Output & Interval | System Reset, Programmable via Software from 1 to 255 Seconds                                                                                                                                                                                                                                             |                                                                                                                                                                         |
| WATCHDOG TIMER              | TPM               | dTPM (default)<br>fTPM (option)                                                                                                                                                                                                                                                                           |                                                                                                                                                                         |
| SECURITY                    | Type              | Single 12VDC (+/-5%) (ADN171) (DC-In jack by default)<br>Wide Range 9~36V (ADN173) (4P vertical type by default)                                                                                                                                                                                          |                                                                                                                                                                         |
|                             | Connector         | DC-in Jack<br>Right Angle Connector (4-pin)<br>Vertical Type Connector (4-pin)                                                                                                                                                                                                                            |                                                                                                                                                                         |
|                             | Consumption       | TBD                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                         |
|                             | RTC Battery       | CR2032 Coin Cell                                                                                                                                                                                                                                                                                          |                                                                                                                                                                         |
| OS SUPPORT                  | Microsoft         | Windows IoT Enterprise 10 LTSB                                                                                                                                                                                                                                                                            |                                                                                                                                                                         |
|                             | Linux             | Linux                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                         |
| ENVIRONMENT                 | Temperature       | Operating: -5 to 65°C                                                                                                                                                                                                                                                                                     | Storage: -40 to 85°C                                                                                                                                                    |
|                             | Humidity          | Operating: 5 to 90% RH                                                                                                                                                                                                                                                                                    | Storage: 5 to 90% RH                                                                                                                                                    |
|                             | MTBF              | TBD                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                         |
| MECHANISM                   | Dimensions        | Mini-ITX Form Factor                                                                                                                                                                                                                                                                                      | 170mm (6.7") x 170mm (6.7")                                                                                                                                             |
|                             | Height            | PCB: 1.6mm<br>Top Side: TBD                                                                                                                                                                                                                                                                               | Bottom Side: TBD                                                                                                                                                        |
|                             | Certifications    | CE, FCC, RoHS                                                                                                                                                                                                                                                                                             |                                                                                                                                                                         |
| STANDARDS AND CERTIFICATION |                   |                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                         |

## ORDERING INFORMATION

| Model Name       | P/N              | Display       | Descreption                                                                                                                                                                    |
|------------------|------------------|---------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ADN171-CB-x7213E | 770-ADN1711-000G | VGA/DP/Type C | Intel Atom x7213E, 1 DDR5, Rear I/O(1 DP++, 1 VGA, I, 2LAN, 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 Atom N200, 1 DDR5, Rear I/O(1 DP++, 1 HDMI, 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-N50    | 770-ADN1711-200G | DP/DP         | Intel Atom N50, 1 DDR5, Rear I/O(2 DP++,2 LAN, 3 USB 3.2 Gen2, 1 USB2.0), 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 VGA, I, 2LAN, 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 |
| ADN173-CB-N50    | 770-ADN1731-100G | DP/DP/Type C  | Intel Atom N50, 1 DDR5, Rear I/O(2 DP++,2 LAN, 3 USB 3.2 Gen2, 1 USB2.0), 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 AND171/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                                            |