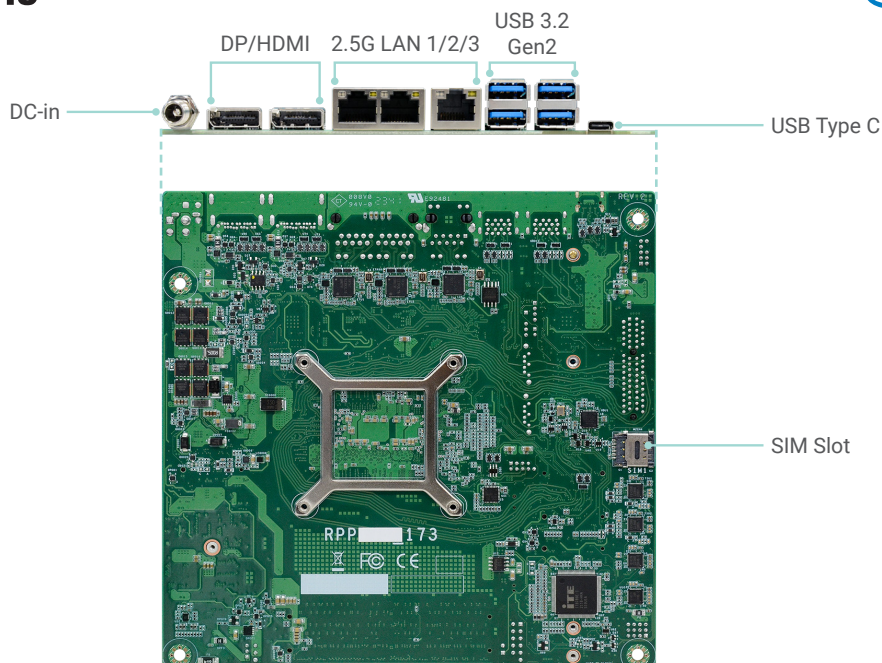


# RPP171/RPP173

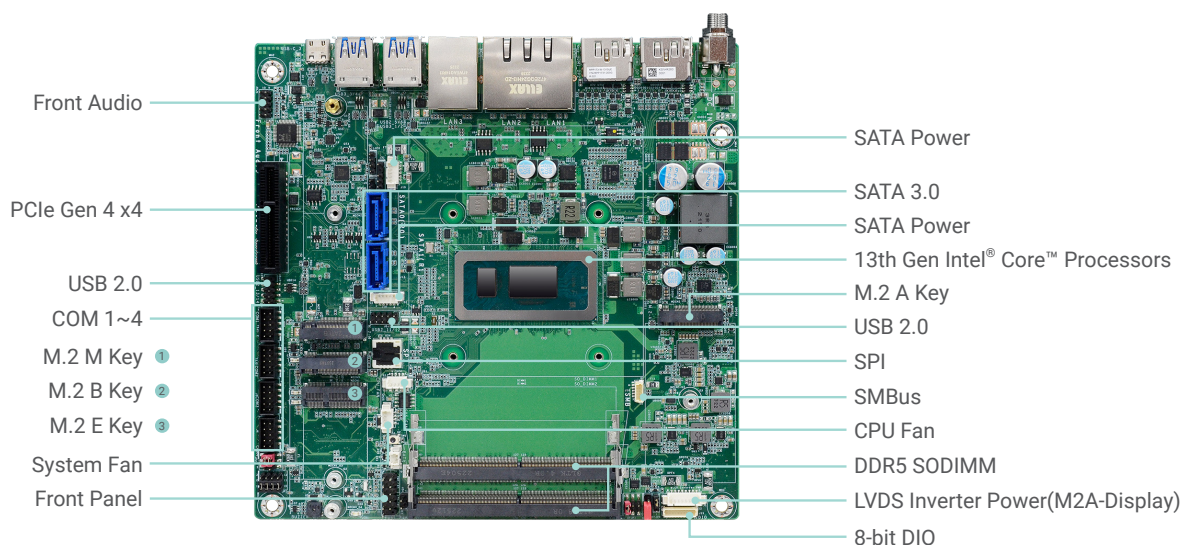


ULT

13th Gen Intel® Core™  
Mini-ITX



Bottom View



Top View

## KEY FEATURES



### DDR5

2 DDR5 SODIMM up to 64GB



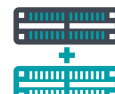
### 4K High Resolution

Supports 4K resolution



### Quad Displays

2 DP/HDMI + 1 USB Type C + 1 M2A Display (eDP/LVDS/VGA/HDMI)



### Multiple Expansion

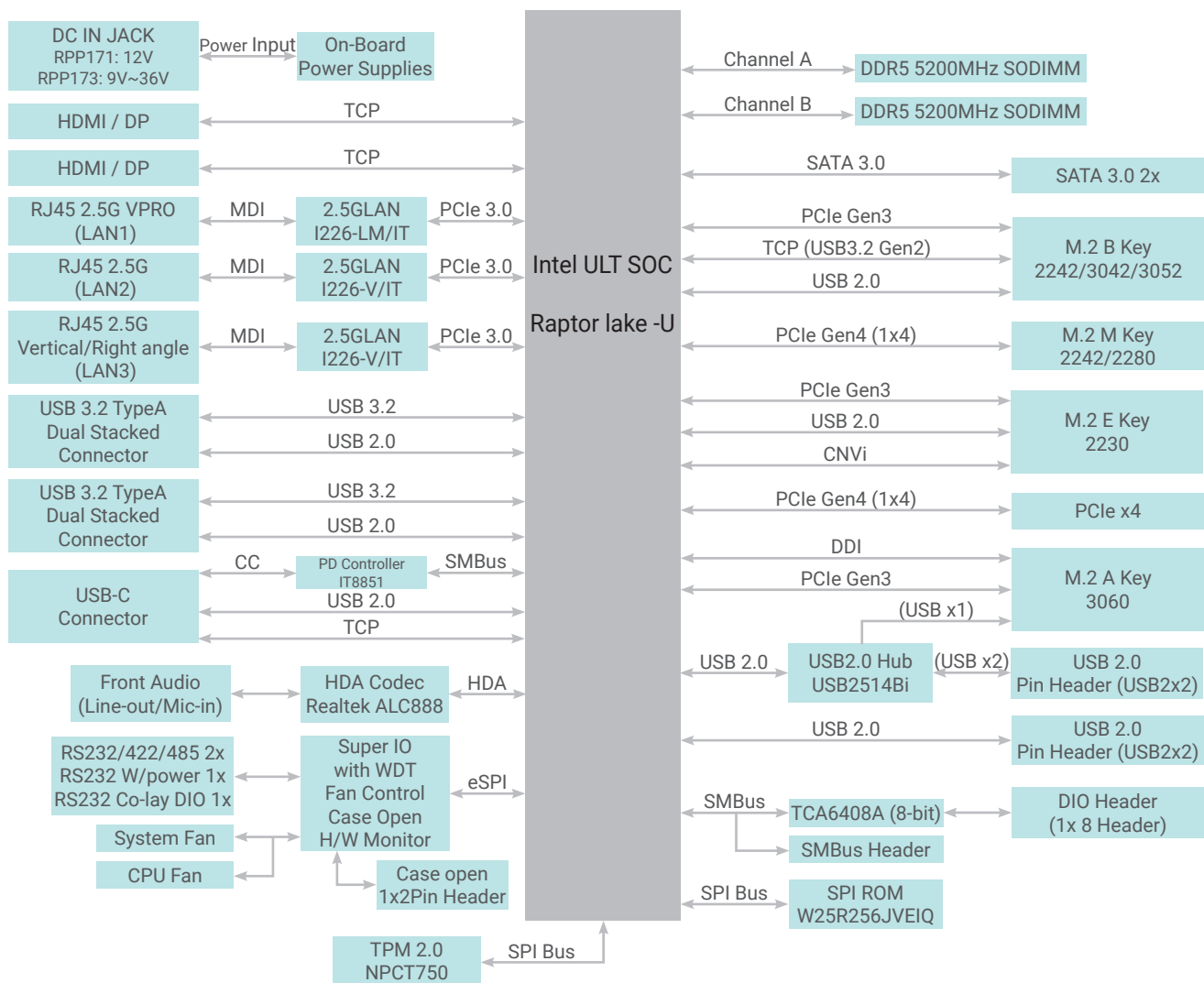
1 PCIe x4, 1 M.2 M key, 1 M.2 B key, 1 M.2 E Key, 1 M.2 A Key



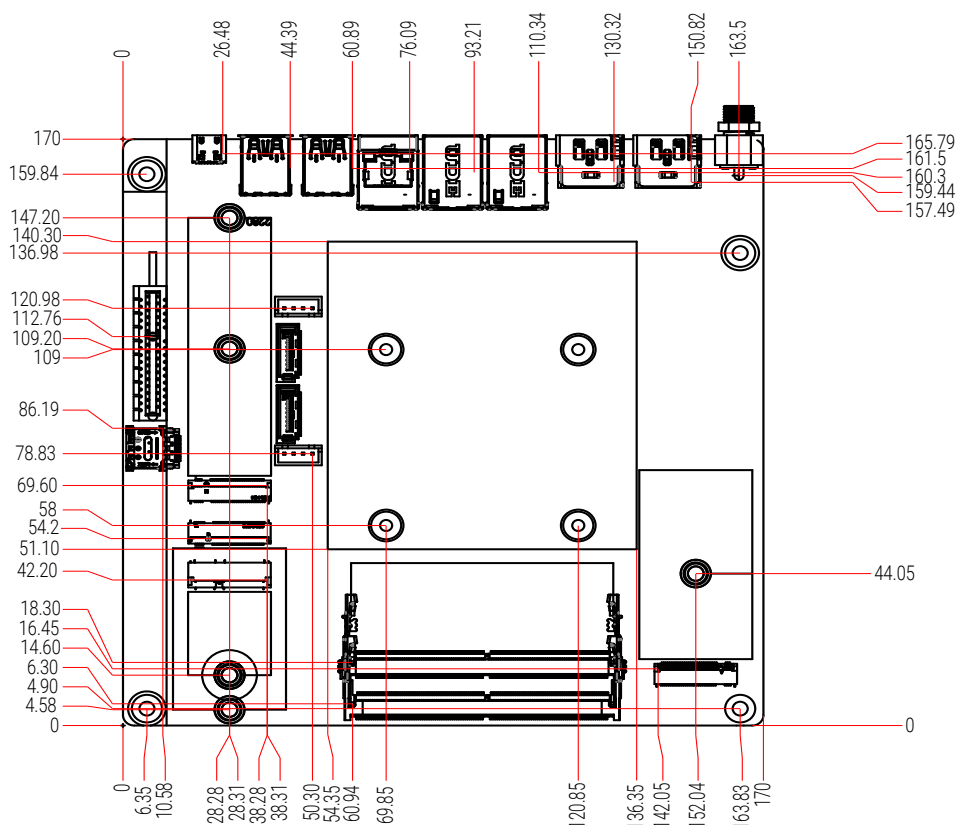
### Rich I/O

Up to 3 Intel 2.5GbE, 4 USB 3.2 Gen2, 1 USB Type C and 4 USB2.0 headers

## BLOCK DIAGRAM



## MECHANICAL DRAWING



## SPECIFICATION

|                |                   |                                                                                                                                                                                                                                                                                                                                                      |                             |
|----------------|-------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|
| SYSTEM         | Processor         | 13th Generation Intel® Core™ Processors<br>Intel® Core™ i7-1365UE (10 Cores, 12M Cache, up to 4.9 GHz); 15~28W<br>Intel® Core™ i5-1345UE (10 Cores, 12M Cache, up to 4.6 GHz); 15~28W<br>Intel® Core™ i3-1315UE (6 Cores, 10M Cache, up to 4.5 GHz); 15~28W<br>Intel® Processor U300E (Formerly Pentium) (5 Cores, 24M Cache, up to 4.3 GHz); 15~28W |                             |
|                | Memory            | 2x 262-pin SODIMM up to 64GB<br>Dual Channel DDR5 5200MHz                                                                                                                                                                                                                                                                                            |                             |
|                | BIOS              | AMI SPI 256Mbit                                                                                                                                                                                                                                                                                                                                      |                             |
| GRAPHICS       | Controller        | Intel® Iris® Xe Graphics eligible                                                                                                                                                                                                                                                                                                                    |                             |
|                | Feature           | OpenGL 4.6, DirectX 12.1, OpenCL 3.0, OpenGL 4.6<br>HW Decode: AVC/H.264, MPEG2, VC1/WMV9, JPEG/MJPEG, HEVC/H265, VP8, VP9<br>HW Encode: MPEG2, AVC/H264, JPEG, HEVC/H265, VP8, VP9                                                                                                                                                                  |                             |
|                | Display           | 2 x HDMI/DP Combo (Auto detect)<br>HDMI: resolution up to 4096x2160 @30Hz<br>DP: resolution up to 4096x2304 @60Hz<br>USB Type C (DP alt-mode/USB3.2 Gen2/PD 15W): resolution up to 4096x2304 @60Hz (HBR2)                                                                                                                                            |                             |
|                | Quad Displays     | HDMI + DP + USB Type C (DP alt-mode/USB3.2 Gen2/PD 15W) + M2A-Display (optional)                                                                                                                                                                                                                                                                     |                             |
| EXPANSION      | Interface         | 1 x PCIe Gen 4 x4<br>1 x M.2 2242/2280 M Key (PCIe Gen4x4, support NVMe )<br>1 x M.2 2242/3042/3052 B Key (PCIe Gen3x1, USB3.2 Gen2, USB2.0, selected by BIOS)<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)                                          |                             |
| AUDIO          | Audio Codec       | Realtek ALC888S                                                                                                                                                                                                                                                                                                                                      |                             |
| ETHERNET       | Controller        | 1 x Intel® I226LM/IT (10/100/1000/2500Mbps)<br>2 x Intel® I226V/IT (10/100/1000/2500Mbps)                                                                                                                                                                                                                                                            |                             |
| REAR I/O       | Ethernet          | Up to 3 x 2.5GHz RJ45 (LAN 3 colayout with internal vertical RJ45 by option)                                                                                                                                                                                                                                                                         |                             |
|                | USB               | 4 x USB 3.2 Gen2<br>1 x USB Type C (DP alt-mode/USB3.2 Gen2/PD 15W)                                                                                                                                                                                                                                                                                  |                             |
|                | Display           | 2 x DP/HDMI combo (Auto detect)                                                                                                                                                                                                                                                                                                                      |                             |
| INTERNAL I/O   | Serial            | 2 x RS-232/422/485 (2.0mm pitch)<br>1 x RS-232 with power (2.0mm pitch)<br>1 x RS-232 (2.0mm pitch) colay with DIO-4bit (JP1)                                                                                                                                                                                                                        |                             |
|                | USB               | 4 x USB 2.0 (2.0mm pitch)                                                                                                                                                                                                                                                                                                                            |                             |
|                | Display           | 1 x M.2 A key, support M2A-Display (eDP/LVDS/VGA/HDMI/DP) by optional                                                                                                                                                                                                                                                                                |                             |
|                | Audio             | 1 x Line-out/Mic-in                                                                                                                                                                                                                                                                                                                                  |                             |
|                | SATA              | 2 x SATA 3.0                                                                                                                                                                                                                                                                                                                                         |                             |
|                | DIO               | 1 x 8-bit DIO                                                                                                                                                                                                                                                                                                                                        |                             |
|                | SMBus             | 1 x SMBus                                                                                                                                                                                                                                                                                                                                            |                             |
| WATCHDOG TIMER | Output & Interval | System Reset, Programmable via Software from 1 to 255 Seconds                                                                                                                                                                                                                                                                                        |                             |
| SECURITY       | TPM               | dTPM (default)<br>fTPM (option)                                                                                                                                                                                                                                                                                                                      |                             |
| POWER          | Type              | RPP171: Single 12VDC<br>RPP173: Wide Range 9~36VDC                                                                                                                                                                                                                                                                                                   |                             |
|                | Connector         | DC-in Jack<br>Right Angle Connector (4-pin) (available upon request)<br>Straightl Type Connector (4-pin) (available upon request)                                                                                                                                                                                                                    |                             |
|                | Consumption       | TBD                                                                                                                                                                                                                                                                                                                                                  |                             |
|                | RTC Battery       | CR2032 Coin Cell                                                                                                                                                                                                                                                                                                                                     |                             |
| OS SUPPORT     | Microsoft         | Windows IoT Enterprise 10 LTSC                                                                                                                                                                                                                                                                                                                       |                             |
|                | Linux             | Linux                                                                                                                                                                                                                                                                                                                                                |                             |
| ENVIRONMENT    | Temperature       | Operating: -5 to 65°C, -20 to 70°C<br>Storage: -40 to 85°C                                                                                                                                                                                                                                                                                           |                             |
|                | Humidity          | Operating: 5 to 95% RH<br>Storage: 5 to 95% RH                                                                                                                                                                                                                                                                                                       |                             |
|                | MTBF              | TBD                                                                                                                                                                                                                                                                                                                                                  |                             |
|                | Dimensions        | Mini-ITX Form Factor                                                                                                                                                                                                                                                                                                                                 | 170mm (6.7") x 170mm (6.7") |
| MECHANISM      | Height            | PCB: 1.6mm<br>Top Side: TBD                                                                                                                                                                                                                                                                                                                          |                             |
|                |                   |                                                                                                                                                                                                                                                                                                                                                      |                             |
| CERTIFICATIONS | Certifications    | CE, FCC, RoHS                                                                                                                                                                                                                                                                                                                                        |                             |

## ORDERING INFORMATION

| Model Name       | P/N              | Memory                                                                                                                                                                     |
|------------------|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| RPP171-IE-1365UE | 770-RPP1711-000G | RPP171-IE-1365UE, 2 DDR5, Rear I/O(2 DP/HDMI combo, 3 LAN, 4 USB 3.2 Gen2, 1 USB Type C), Internal I/O (M.2 M/B/E/A Key, 4 USB 2.0, w/TPM), DC-Jack, Wide Temp -20 to 70°C |
| RPP171-IE-1345UE | 770-RPP1711-100G | RPP171-IE-1345UE, 2 DDR5, Rear I/O(2 DP/HDMI combo, 3 LAN, 4 USB 3.2 Gen2, 1 USB Type C), Internal I/O (M.2 M/B/E/A Key, 4 USB 2.0, w/TPM), DC-Jack, Wide Temp -20 to 70°C |
| RPP171-IB-1315UE | 770-RPP1711-200G | RPP171-IE-1315UE, 2 DDR5, Rear I/O(2 DP/HDMI combo, 3 LAN, 4 USB 3.2 Gen2, 1 USB Type C), Internal I/O (M.2 M/B/E/A Key, 4 USB 2.0, w/TPM), DC-Jack, -5 to 65°C            |
| RPP171-IB-U300E  | 770-RPP1711-300G | RPP171-IB-U300, 2 DDR5, Rear I/O( 2 DP/HDMI combo, 3 LAN, 4 USB 3.2 Gen2, 1 USB Type C), Internal I/O (M.2 M/B/E/A Key, 4 USB 2.0, w/TPM), DC-Jack, -5 to 65°C             |
| RPP173-IE-1365UE | 770-RPP1731-000G | RPP173-IE-1365UE, 2 DDR5, Rear I/O(2 DP/HDMI combo, 3 LAN, 4 USB 3.2 Gen2, 1 USB Type C), Internal I/O (M.2 M/B/E/A Key, 4 USB 2.0, w/TPM), DC-Jack, Wide Temp -20 to 70°C |
| RPP173-IE-1345UE | 770-RPP1731-100G | RPP173-IE-1345UE, 2 DDR5, Rear I/O(2 DP/HDMI combo, 3 LAN, 4 USB 3.2 Gen2, 1 USB Type C), Internal I/O (M.2 M/B/E/A Key, 4 USB 2.0, w/TPM), DC-Jack, Wide Temp -20 to 70°C |
| RPP173-IB-1315UE | 770-RPP1731-200G | RPP173-IE-1315UE, 2 DDR5, Rear I/O(2 DP/HDMI combo, 3 LAN, 4 USB 3.2 Gen2, 1 USB Type C), Internal I/O (M.2 M/B/E/A Key, 4 USB 2.0, w/TPM), DC-Jack, -5 to 65°C            |
| RPP173-IB-U300E  | 770-RPP1731-300G | RPP173-IB-U300, 2 DDR5, Rear I/O(2 DP/HDMI combo, 3 LAN, 4 USB 3.2 Gen2, 1 USB Type C), Internal I/O (M.2 M/B/E/A Key, 4 USB 2.0, w/TPM), DC-Jack, -5 to 65°C              |

## PACKING LIST

|                             |
|-----------------------------|
| 1 RPP171/RPP173 motherboard |
| 1 Serial ATA data cable     |
| 1 I/O shield                |
| 4 M.2 screw/standoff        |