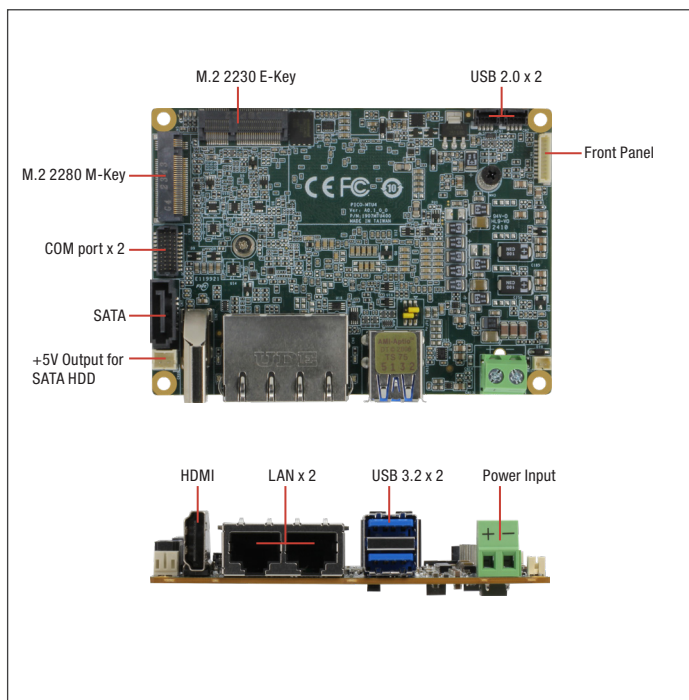


# PICO-ARU4

Pico-ITX Board with Intel® Core™ Ultra Processors (Series 2)



## Features

- Intel® Core™ Ultra Processors (Series 2) SoC
- Onboard LPDDR5, up to 32GB
- 2.5GbE + 1GbE
- HDMI 1.4 + eDP 1.4
- M.2 2280 M-Key x 1 (PCIe 4.0 [x4]/SATA)
- M.2 2230 E-Key x 1 (PCIe 4.0 [x1] + USB 2.0)
- USB 3.2 Gen 2 x 2 + USB 2.0 x 2
- RS-232/422/485 x 2
- TPM, GPIO 4-bit, SATA 6Gb/s x 1
- SMBus/I2C (Default: SMBus)
- Intel® AMT Support



| Internal I/O                |  |
|-----------------------------|--|
| USB                         | USB 2.0 x 2  |
| Serial Port                 | COM 1 ~ 2 (RS-232/422/485, supports 5V/12V/RI)   |
| Video                       | —  |
| SATA                        | SATA 6Gb/s x 1<br>+5V SATA Power Connector x 1   |
| Audio                       | —  |
| DIO/GPIO                    | GPIO 4-bit   |
| SMBus/I2C                   | I2C/SMBus (Default: SMBus)   |
| Fan                         | 4pins Smart Fan x1   |
| Front Panel                 | HDD LED, PWR LED, Power Button, Buzzer, Reset  |
| Others                      | —  |
| Expansion                   |  |
| Mini PCIe/mSATA             | —  |
| M.2                         | M.2 2280 M-Key x 1 (PCIe 4.0 [x4] / SATA, Default: PCIe [x4], select by BOM)<br>M.2 2230 E-Key x 1 (PCIe 4.0 [x1] + USB 2.0) |
| Others                      | —  |
| Environment & Certification |  |
| Operating Temp              | -4°F ~ 158°F (-20°C ~ 70°C)  |
| Storage Temp                | -40°F ~ 185°F (-40°C ~ 85°C)   |
| Operating Humidity          | 0% ~ 90% relative humidity, non-condensing   |
| MTBF (Hours)                | 1,063,716  |
| EMC                         | CE/FCC Class A   |

## Specifications

| System            |  |
|-------------------|--|
| Form Factor       | PICO-ITX   |
| CPU               | Intel® Core™ Ultra 7 Processor 255U (2PC+10EC/14T, P-core 2.00 GHz, E-core 1.70 GHz, 15W)<br>Intel® Core™ Ultra 5 Processor 225U (2PC+10EC/14T, P-core 1.50 GHz, E-core 1.30 GHz, 15W) |
| Chipset           | Integrated with Intel® SoC   |
| Memory Type       | Single-Channel LPDDR5 6400, up to 32GB   |
| BIOS              | UEFI   |
| Wake on LAN       | Yes  |
| Watchdog Timer    | 255 Levels   |
| Security          | TPM 2.0  |
| RTC Battery       | Lithium Battery 3V/240mAh  |
| Dimension         | 3.94" x 2.84" (100mm x 72mm)   |
| Gross Weight      | 0.18 lb (0.08 kg)  |
| OS Support        | Windows 10/11 (64bit, NPU is supported only on Win 11)<br>Linux Ubuntu 22.04.2 kernel 5.19.0 32 generic  |
| Power             |  |
| Power Requirement | 12V only   |
| Power Supply Type | AT/ATX   |
| Connector         | Phoenix 2-pin Connector (Default)<br>Lockable DC Jack Connector (Optional)   |
| Power Consumption | Intel® Core™ Ultra 7 Processor 255U, DDR5 32GB x 1, 2.85A @+12V (Typical)<br>Intel® Core™ Ultra 7 Processor 255U, DDR5 32GB x 1, 6.96A @+12V (Max)                                     |
| Display           |  |
| Controller        | Intel® Graphics  |
| LVDS/eDP          | eDP 1.4 x 1  |
| Display Interface | HDMI 1.4 x 1, 3840 x 2160 @30Hz  |
| Multiple Display  | Up to 2 Simultaneous Displays  |
| Audio             |  |
| Codec             | —  |
| Audio Interface   | —  |
| Speaker           | —  |
| External I/O      |  |
| Ethernet          | Intel® Ethernet Controller I226, 2.5GbE, RJ-45 x 1<br>Intel® Ethernet Connection I219, 1GbE RJ-45 x 1  |
| USB               | USB 3.2 Gen 2 x 2 ports  |
| Serial Port       | —  |
| Video             | HDMI 1.4 x 1   |

## Packing List

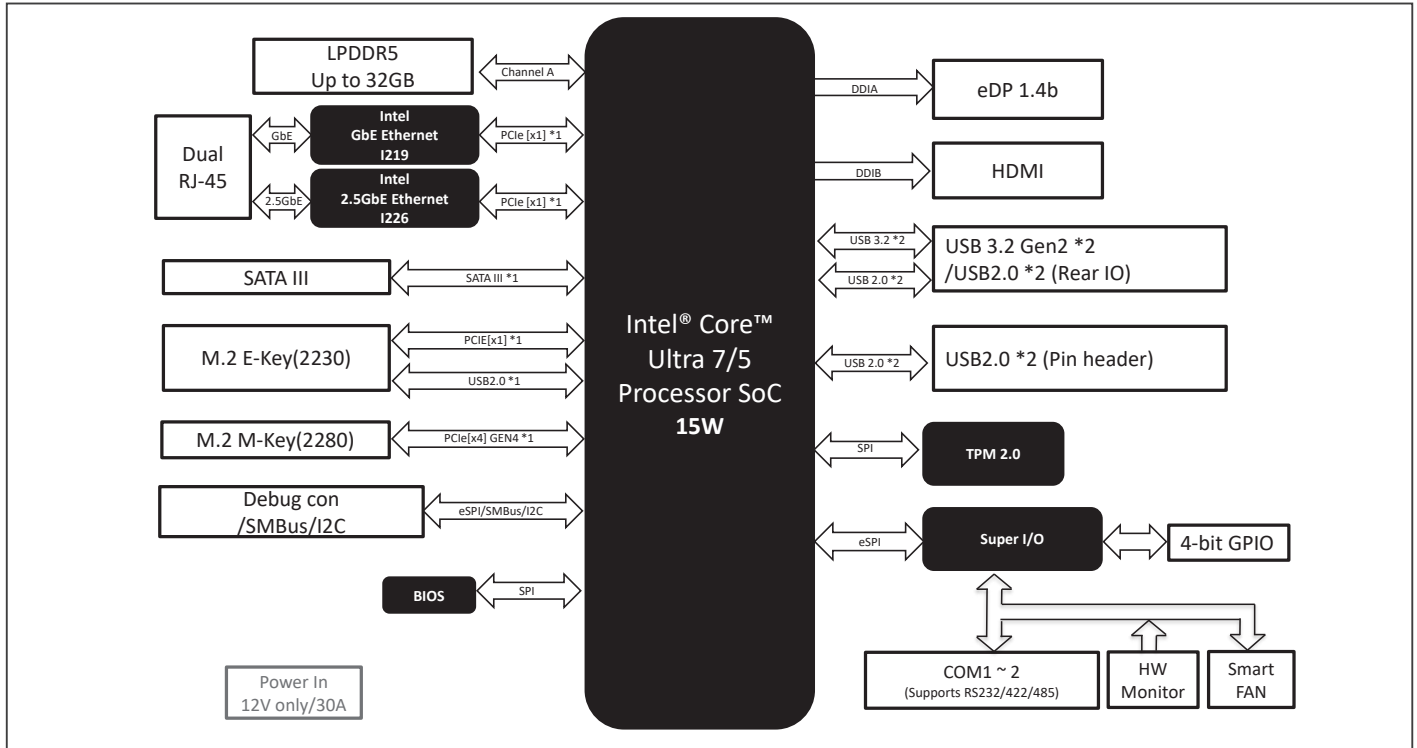
- PICO-ARU4

## Optional Accessories

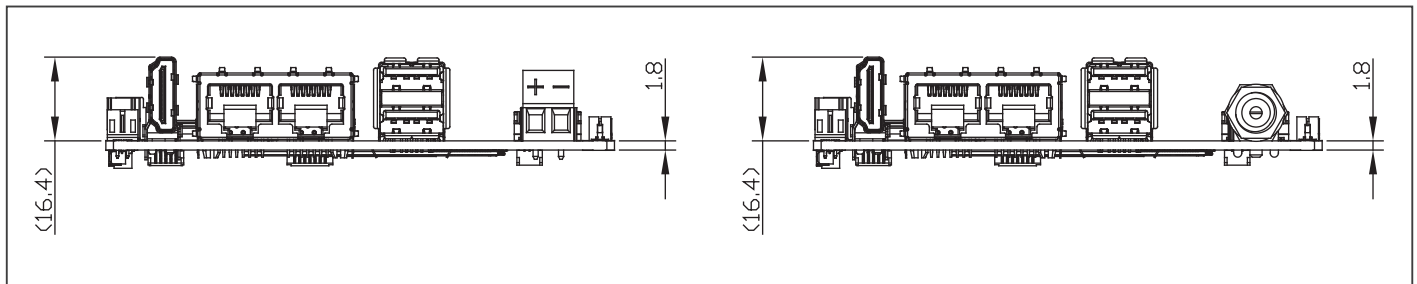
| Part Number       | Description   | Qty. |
|-------------------|---|------|
| 170X000603        | Front Panel cable.10cm  | 1    |
| 170X000231        | Dual COM cable.30cm   | 1    |
| 170X000880        | Single USB 2.0 lockable cable.20cm                                  | 2    |
| 1709070500        | SATA cable.50cm   | 1    |
| 1702150155        | SATA power cable.15cm   | 1    |
| 1702030200        | Power cable (Phoenix type to DC Jack) 20cm                          | 1    |
| PICO-MTU4-FAN01   | Cooler.100*72*14mm.5200rpm.for PICO-MTU4                            | 1    |
| PER-P30D-A11-0001 | 120W, DC-DC Converter, 9~36V input, 12V output, Rev A1.1, 30 x 72mm | 1    |



## Block Diagram



## Dimension Unit: mm



## Ordering Information

| Part number        | CPU                                 | Memory      | Display             | Storage        | LAN                   | USB                             | COM               | Expansion slot                           | Power                 | Operating Temp | Audio | Others                     |
|--------------------|-------------------------------------|-------------|---------------------|----------------|-----------------------|---------------------------------|-------------------|--|-----------------------|----------------|-------|----------------------------|
| PICO-ARU4-A10-0002 | Intel® Core™ Ultra 5 Processor 225U | LPDDR5 16GB | HDMI x 1<br>eDP x 1 | SATA 6Gb/s x 1 | GbE x 1<br>2.5GbE x 1 | USB 2.0 x 2<br>USB3.2 Gen 2 x 2 | RS232/422/485 x 2 | M.2 2230 E-key x 1<br>M.2 2280 M-key x 1 | +12V (Terminal block) | -20°C ~ 70°C   | —     | SMBus x 1,<br>TPM2.0, GPIO |
| PICO-ARU4-A10-0003 | Intel® Core™ Ultra 5 Processor 225U | LPDDR5 32GB | HDMI x 1<br>eDP x 1 | SATA 6Gb/s x 1 | GbE x 1<br>2.5GbE x 1 | USB 2.0 x 2<br>USB3.2 Gen 2 x 2 | RS232/422/485 x 2 | M.2 2230 E-key x 1<br>M.2 2280 M-key x 1 | +12V (Terminal block) | -20°C ~ 70°C   | —     | SMBus x 1,<br>TPM2.0, GPIO |
| PICO-ARU4-A10-0004 | Intel® Core™ Ultra 7 Processor 255U | LPDDR5 32GB | HDMI x 1<br>eDP x 1 | SATA 6Gb/s x 1 | GbE x 1<br>2.5GbE x 1 | USB 2.0 x 2<br>USB3.2 Gen 2 x 2 | RS232/422/485 x 2 | M.2 2230 E-key x 1<br>M.2 2280 M-key x 1 | +12V (Terminal block) | -20°C ~ 70°C   | —     | SMBus x 1,<br>TPM2.0, GPIO |