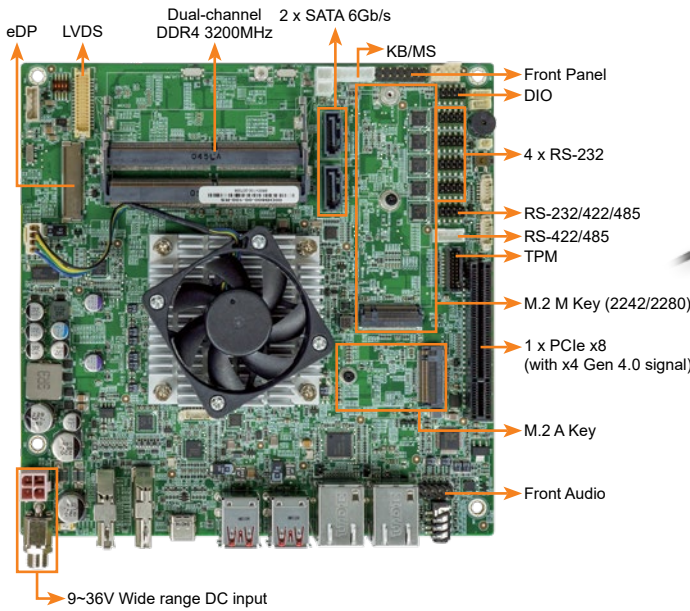


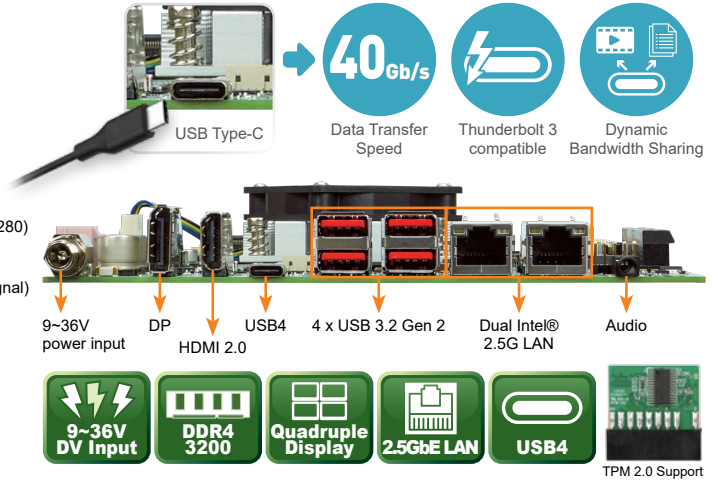
# tKINO-ULT6

Thin Mini-ITX SBC supports Intel® Tigerlake-UP3 Processor, 9~36V DC input, Quadruple Independent Display, HDMI, DP, eDP, SATA 6Gb/s, Dual Intel® GbE, USB4, M.2, HD audio and RoHS



USB4 higher transfer speeds, improved bandwidth & backward compatibility

**Preliminary**



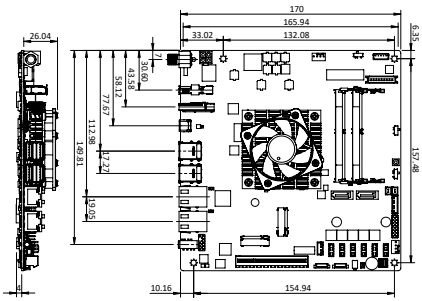
## Specifications

- ◆ CPU
  - 11th Gen. Intel® mobile Tiger Lake-UP3 on-board processor
  - Intel® Core™ i7-1185G7E (up to 4.4GHz, quad-core, 12M Cache, TDP=28/15/12W)
  - Intel® Core™ i5-1145G7E (up to 4.1GHz, quad-core, 8M Cache, TDP=28/15/12W)
  - Intel® Core™ i3-1115G4E (up to 3.9GHz, dual-core, 6M Cache, TDP=28/15/12W)
  - Intel® Celeron® 6305E (up to 1.8GHz, dual-core, 4M Cache, TDP=15W)
- ◆ BIOS: AMI UEFI BIOS
- ◆ Memory: 2 x SO-DIMM DDR4 3200MHz, system maximum up to 64GB
- ◆ Graphics Engine
  - Intel® HD Graphics Gen 12 Gfx; Up to 96EU; 2VDbox; AI (INT8)
  - HDMI 2.0 integrated, 4 Display Pipes, 8k60210b
  - AV1 Codec, 12b support, E2E Compression, IPU6 FF
- ◆ Display Output
  - 4 x 4K Independent Display
  - 1 x DP 1.4a (up to 4096 x 2160 @60Hz)
  - 1 x eDP/LVDS (select by switch)
  - 1 x HDMI 2.0b (up to 4096 x 2160@60Hz)
  - 1 x Type-C DP (up to 4096 x 2304 @60Hz) with USB4
- ◆ Ethernet
  - LAN1: Intel® I225V 2.5GbE controller
  - LAN2: Intel® I225V 2.5GbE controller
- ◆ Super I/O: Fintek F81966
- ◆ External I/O Interface
  - 4 x USB 3.2 Gen2
  - 1 x USB4
- ◆ Internal I/O Interface
  - 1 x RS-232/422/485 (2x5 pin, P=2.0) (RS-485 support AFC)
  - 1 x RS-422/485 (2x5 pin, P=2.0) (RS-485 support AFC)
  - 1 x KB/MS (1x6 pin)
  - 2 x SATA 6G/s with 5/12V SATA power connector
  - 4 x RS-232 (2x5 pin, P=2.0)
  - 4 x USB 2.0 (2x4 pin, P=2.0)
- ◆ SMBus: 1 x SMBus (1x4 pin)
- ◆ I²C: 1 x I²C (1x4 pin)
- ◆ Audio
  - Realtek ALC888S HD Audio Codec
  - 1 x Audio jacks (line-out, mic-in) on rear IO
  - 1 x Front audio (2x5-pin)
- ◆ Front Panel: 1 x Front Panel (2x7 pin, power LED, HDD LED, power button, reset button)
- ◆ LAN LED: 2 x LAN LED (1x2 pin)
- ◆ Expansion
  - 1 x PCIe x8 Slot Open-ended (Gen4.0 x4 signal)
  - 1 x M.2 2230 A key (PCIe x1 & USB 2.0)
  - 1 x M.2 2242/2280 M key (PCIe x2/SATA)
- ◆ Digital I/O: 1 x 8-bit digital I/O (2x5 pin)
- ◆ TPM: 1 x TPM (2x10 pin)
- ◆ Fan Connector
  - 1 x CPU fan connector (1x4 pin)
  - 1 x System fan connector (1x4 pin)
- ◆ Chassis Open: 1 x Chassis intrusion (1x2 pin)
- ◆ Power Supply
  - 9~36V DC input
  - 1 x Internal power connector (2x2 pin)
  - 1 x External DC power Jackc (Ø5.5mm)
  - ErP/EuP Compliant
- ◆ Watchdog Timer: Software Programmable support 1~255 sec. System reset
- ◆ Power Consumption
  - 12V@6.48A (Intel® Core™ i7-1185G7E up to 4.4GHz CPU with 16GB (8GB x 2) DDR4-3200 memory running in 2.8GHz)
- ◆ Operating Temperature: -20°C ~ 60°C
- ◆ Storage Temperature: -30°C ~ 70°C
- ◆ Operating Humidity: 5% ~95%, non-condensing
- ◆ Dimensions: 170 mm x 170 mm
- ◆ Weight: GW:900g / NW:400g
- ◆ CE/FCC compliant

## Features

- Thin Mini-ITX form factor with Intel® Tigerlake-UP3 processor support DDR4-3200 memory
- Wide range 9~36V DC Input
- Support quadruple independent displays (HDMI, DP, eDP/LVDS, Type-C DP)
- Dual Intel® 2.5GbE LAN
- M.2 A key for WiFi+Bluetooth (PCIe x1/USB 2.0), M.2 M key for Storage (PCIe x2/SATA)
- PCIe x8 Gen 4.0 slot (x4 signal)

## Dimensions (Unit: mm)



## Packing List

1 x tKINO-ULT6 single board computer with CPU cooler	1 x I/O shielding
1 x SATA cable	1 x QIG

## Ordering Information

Part No.	Description
tKINO-ULT6-i7-R10	Thin Mini-ITX SBC supports Intel® 11th Gen Tigerlake-UP3 Mobile Core™ i7-1185G7E Processor, 9~36V DC input, Quadruple Independent Display, HDMI, DP, eDP, SATA 6Gb/s, Dual Intel® 2.5GbE, USB4, M.2, HD audio and RoHS
tKINO-ULT6-i5-R10	Thin Mini-ITX SBC supports Intel® 11th Gen Tigerlake-UP3 Mobile Core™ i5-1145G7E Processor, 9~36V DC input, Quadruple Independent Display, HDMI, DP, eDP, SATA 6Gb/s, Dual Intel® 2.5GbE, USB4, M.2, HD audio and RoHS
tKINO-ULT6-i3-R10	Thin Mini-ITX SBC supports Intel® 11th Gen Tigerlake-UP3 Mobile Core™ i3-1115G4E Processor, 9~36V DC input, Quadruple Independent Display, HDMI, DP, eDP, SATA 6Gb/s, Dual Intel® 2.5GbE, USB4, M.2, HD audio and RoHS
tKINO-ULT6-C-R10	Thin Mini-ITX SBC supports Intel® 11th Gen Tigerlake-UP3 Mobile Celeron® 6305E Processor, 9~36V DC input, Quadruple Independent Display, HDMI, DP, eDP, SATA 6Gb/s, Dual Intel® 2.5GbE, USB4, M.2, HD audio and RoHS
19800-000075-RS	PS/2 KB/MS cable with bracket, 220mm, P=2.0
19800-003100-100-RS	Dual port USB cable with bracket, 30mm, P=2.54
32102-000100-200-RS	SATA power cable, MOLEX 5264-4P to SATA15P
32205-000702-100-RS	RS-232 cable, 230mm, P=2.54
32205-002700-200-RS	RS-232/422/485, 200mm, P=2.0
TPM-IN03-R10	20-pin Infineon SPI TPM2.0 module, software mangement tool, firmware V7.63