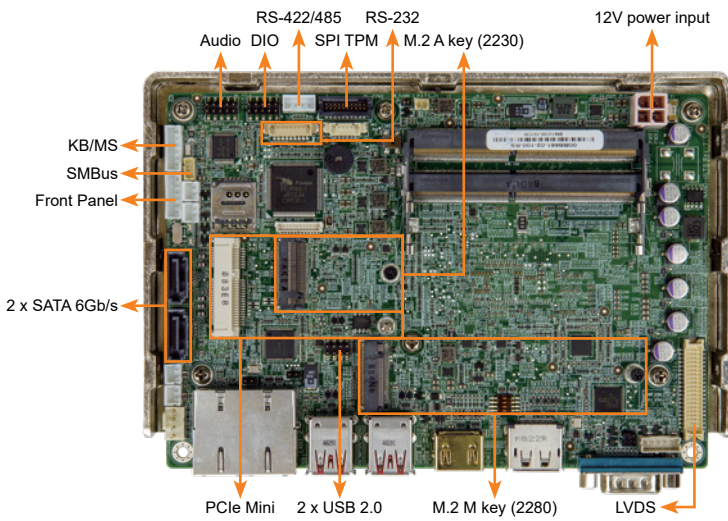
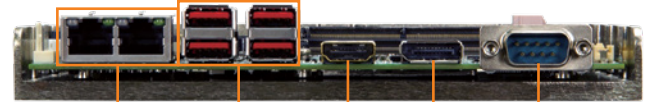


# NANO-ULT5

EPIC SBC supports Intel® 14nm 8th Generation Mobile Core™ i3/i5/i7 and Celeron® on-board processor (ULT) with HDMI, DP LVDS, mPCIe, M.2 A key M key, USB 3.2 Gen 2, SATA 6Gb/s, COM, Audio and RoHS, -20°C ~ 60°C



## Multiple Expansion for Diverse Applications



2 x RJ-45 4 x USB 3.2 Gen 2 HDMI DP RS-232



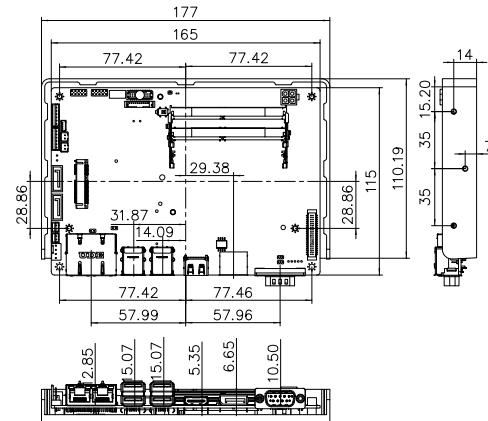
## Specifications

- ◆ SoC
  - Intel® Celeron® processor 4305UE (2.0 GHz Dual Core, 2MB cache, TDP=15W)
  - Intel® Core™ i3-8145UE (2.2 GHz Dual Core, 4MB cache, TDP=15W)
  - Intel® Core™ i5-8365UE (1.6 GHz, Quad Core, 6MB cache, TDP=15W)
  - Intel® Core™ i7-8665UE (1.7 GHz Quad Core, 8MB cache, TDP=15W)
- ◆ BIOS:
  - AMI UEFI BIOS
- ◆ Memory
  - Dual 260-pin 2400MHz Dual-channel DDR4 SO-DIMMs support up to 32GB
- ◆ Graphics Engine
  - Intel® HD Graphics Gen9 Low Power; 16 Execution Units
  - 4K Codec Decode
- ◆ Display Output
  - Triple Independent Displays
  - 1 x HDMI up to 3840x2160@60Hz
  - 1 x DP up to 3840x2160@60Hz
  - 1 x Internal LVDS up to 1920x1200@60Hz
- ◆ Ethernet
  - 1 x PCIe GbE LAN Intel® i211 controller
  - 1 x PCIe GbE LAN Intel® i219 controller
- ◆ Embedded Controller
  - iWDD IT8587VG
- ◆ External I/O Interface
  - 4 x USB 3.2 Gen 2
  - 1 x RS-232
- ◆ Internal I/O Interface
  - 1 x 32 GB eMMC 5.1 (optional)
  - 2 x SATA 6G/s with 5V SATA power connector
  - 1 x TPM (2x10 pin, P=0.5)
  - 2 x USB 2.0 (2x4 pin, P=2.0)
  - 1 x RS-422/485 (1x4 pin, P=2.0) (Support Auto Flow Control over RS-485)
  - 1 x RS-232 (1x9 pin, P=1.25)
- ◆ SMBus/I<sup>2</sup>C
  - 1 x 4-pin connector (1x4)
- ◆ Audio
  - Realtek ALC888S HD Audio codec
  - 1 x Analog audio (2x5 pin)
- ◆ Front Panel
  - 1 x Power LED & HDD LED (1x6 pin)
  - 1 x Power button (1x2 pin)
  - 1 x Reset button (1x2 pin)
- ◆ LAN LED
  - 2 x LAN LED (1x2 pin)
- ◆ Expansion
  - 1 x M.2 slot with 2230 A key
  - 1 x Full-size PCIe Mini slot
  - 1 x M.2 slot with 2280 M key
  - 1 x SIM card
- ◆ Digital I/O
  - 1 x 8-bit digital I/O (2x5 pin)
- ◆ Fan Connector
  - 1 x Smart fan connector (1x4 pin)
- ◆ Power Supply
  - 12V DC input
  - 1 x Internal power connector (2x2 pin)
  - Support AT/ATX mode
- ◆ Watchdog Timer
  - Software programmable support 1~255 sec. system reset
- ◆ Power Consumption
  - 12V@6.62A (4.6 GHz Intel® Core™ i7-8665UE CPU with two 16 GB 2666 MHz DDR4 memory modules)
- ◆ Operating Temperature: -20°C ~ 60°C
- ◆ Storage Temperature: -30°C ~ 70°C
- ◆ Operating Humidity: 5% ~ 95%, non-condensing
- ◆ Dimensions: 115mm x 165mm
- ◆ Weight: GW:850g / NW:350g

## Features

- EPIC SBC supports Intel® 8th Generation ULT processor or Celeron® on-board SoC supports dual-channel DDR4 SO-DIMMs
- Triple independent display support
- 12V DC input design
- M.2 slot with A key, M.2 M Key PCIe Mini slot with SIM holder
- COM, USB 3.2 Gen 2, SATA 6Gb/s, eMMC 5.1 and audio support
- Support temperature operation: -20°C ~ 60°C
- Support Auto Flow Control over RS-485

## Dimensions (Unit: mm)



## Packing List

1 x NANO-ULT5 single board computer with heatspreader	1 x Power cable
1 x Audio cable	2 x RS-232 cable
1 x SATA with power cable kit	1 x QIG

## Ordering Information

Part No.	Description
NANO-ULT5-C-R10**	EPIC SBC supports Intel® 14nm 8th Generation Mobile Celeron™ 4305UE (15W) on-board Processor (ULT) with HDMI/LVDS/DP, Dual PCIe GbE, USB 3.2 Gen 2, PCIe Mini, M.2 A & M Key, SATA 6Gb/s, SPI TPM, COM, Audio and RoHS
NANO-ULT5-i3-R10	EPIC SBC supports Intel® 14nm 8th Generation Mobile Core™ i3-8145UE (15W) on-board Processor (ULT) with HDMI/LVDS/DP, Dual PCIe GbE, USB 3.2 Gen 2, PCIe Mini, M.2 A & M Key, SATA 6Gb/s, SPI TPM, COM, Audio and RoHS
NANO-ULT5-i5-R10	EPIC SBC supports Intel® 14nm 8th Generation Mobile Core™ i5-8365UE (15W) on-board Processor (ULT) with HDMI/LVDS/DP, Dual PCIe GbE, USB 3.2 Gen 2, PCIe Mini, M.2 A & M Key, SATA 6Gb/s, COM, SPI TPM, Audio and RoHS
NANO-ULT5-i7-R10	EPIC SBC supports Intel® 14nm 8th Generation Mobile Core™ i7-8665UE (15W) on-board Processor (ULT) with HDMI/LVDS/DP, Dual PCIe GbE, USB 3.2 Gen 2, PCIe Mini, M.2 A & M Key, SATA 6Gb/s, COM, SPI TPM, Audio and RoHS

\*\* Without full functions support, please refer to user manual