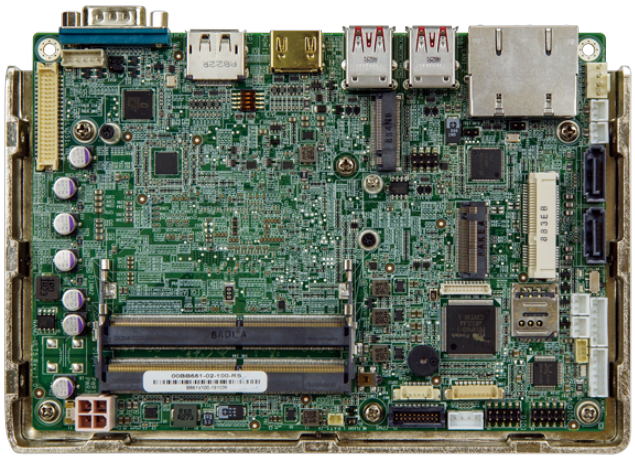
# NANO-ULT5

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 3.1 Gen2, SATA 6Gb/s, COM, Audio and RoHS, -20°C ~ 60°C



## Features

» EPIC SBC supports Intel® 8th Generation ULT processor or Celeron® on-board SoC supports dual-channelDDR4 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 3.1 Gen2, SATA 6Gb/s, eMMC 5.0 and audio support

» Support temperature operation: -20°C ~ 60°C

## Specifications

| | |
|---|---|
| System | |
| CPU | 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) |
| Memory | Dual 260-pin 2400MHz Dual-channel DDR4 SO-DIMMs support |
| Memory Max. | 32GB |
| Physical Characteristics | |
| Dimensions (LxWxH) (mm) | 115 X 165 |
| Net Weight | 350g |
| Storage | |
| Storage | 2 x SATA :6Gb/s with 5V SATA power connector |
| | 1 x eMMC :32GB(optional) |
| I/O Interface | |
| Display Output | 1 x HDMI :up to 38400x2160@60Hz |
| | 1 x Display Port :up to 38400x2160@60Hz |
| | 1 x LVDS :up to 1920x1200@60Hz |
| Ethernet | Description: 1 x PCIe GbE LAN Intel® i211 controller |
| | 1 x PCIe GbE LAN Intel® i219 controller |
| Audio | Description: 1 X Analog audio (2x5 pin) |
| I/O Interface | 1 x External RS-232 |
| | 1 x Internal RS-232 :1x9 pin, p=1.25 |
| | 1 x Internal RS-422/485 :1x4 pin, P=2.0 |
| | 4 x External USB 3.2 Gen1x1 |
| | 2 x Internal USB 2.0 :2x4 pin, P=2.0 |
| Expansion | Description: 1 X SIM card |
| | 1 x PCIe mini Card Slot |
| | 2 x M.2(NGFF) :1 X 2230 A Key, 1 X 2280 M Key |
| Other Features | |
| TPM | 2x10 pin |
| Power | |

| | |
|---|---|
| Power Supply | 12V DC input |
| | 1 x Internal power connector (2x2 pin) |
| | Support AT/ATX mode |
| Environment | |
| Operating Temperature | -20°C ~ 60°C |
| Storage Temperature | -30°C ~ 70°C |
| Humidity | 5% ~ 95%, non-condensing |

## Ordering Information

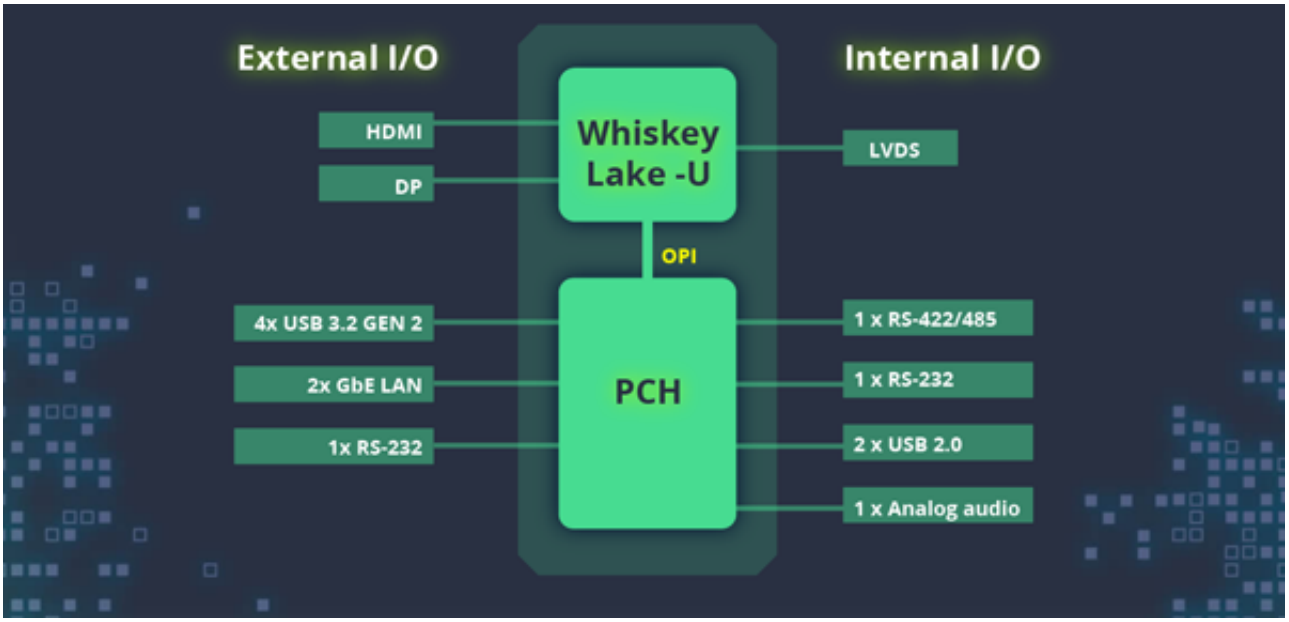
| | |
|---|---|
| NANO-ULT5-i7-R10 | EPIC SBC supports Intel® 14nm 8th Generation Mobile Core™ i7-8665UE (15W) on-board Processor (ULT) with HDMI/LVDS/DP, Dual PCIe GbE, USB 3.1 Gen 2, PCIe Mini, M.2 A & M Key, SATA 6Gb/s , COM, SPI TPM , Audio and RoHS |
| NANO-ULT5-i5-R10 | EPIC SBC supports Intel® 14nm 8th Generation Mobile Core™ i5-8365UE (15W) on-board Processor (ULT) with HDMI/LVDS/DP, Dual PCIe GbE, USB 3.1 Gen 2, PCIe Mini, M.2 A & M Key, SATA 6Gb/s , COM,SPI TPM ,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 3.1 Gen 2, PCIe Mini, M.2 A & M Key, SATA 6Gb/s , SPI TPM ,COM, Audio and RoHS |
| 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 3.1 Gen 2, PCIe Mini, M.2 A & M Key , SATA 6Gb/s ,SPI TPM ,COM, Audio and RoHS |

## Packing List

| | |
|---|---|
| 1 x NANO-ULT5 single board computer with Heatsink | 1 x Power Cable |
| 1 x SATA with power cable kit | 2 x RS-232 cable |
| 1 x Audoi Cable | 1 x QIG (Quick Installation Guide) |

## Intel's 8th Gen Core (Whiskey Lake-U) SoC

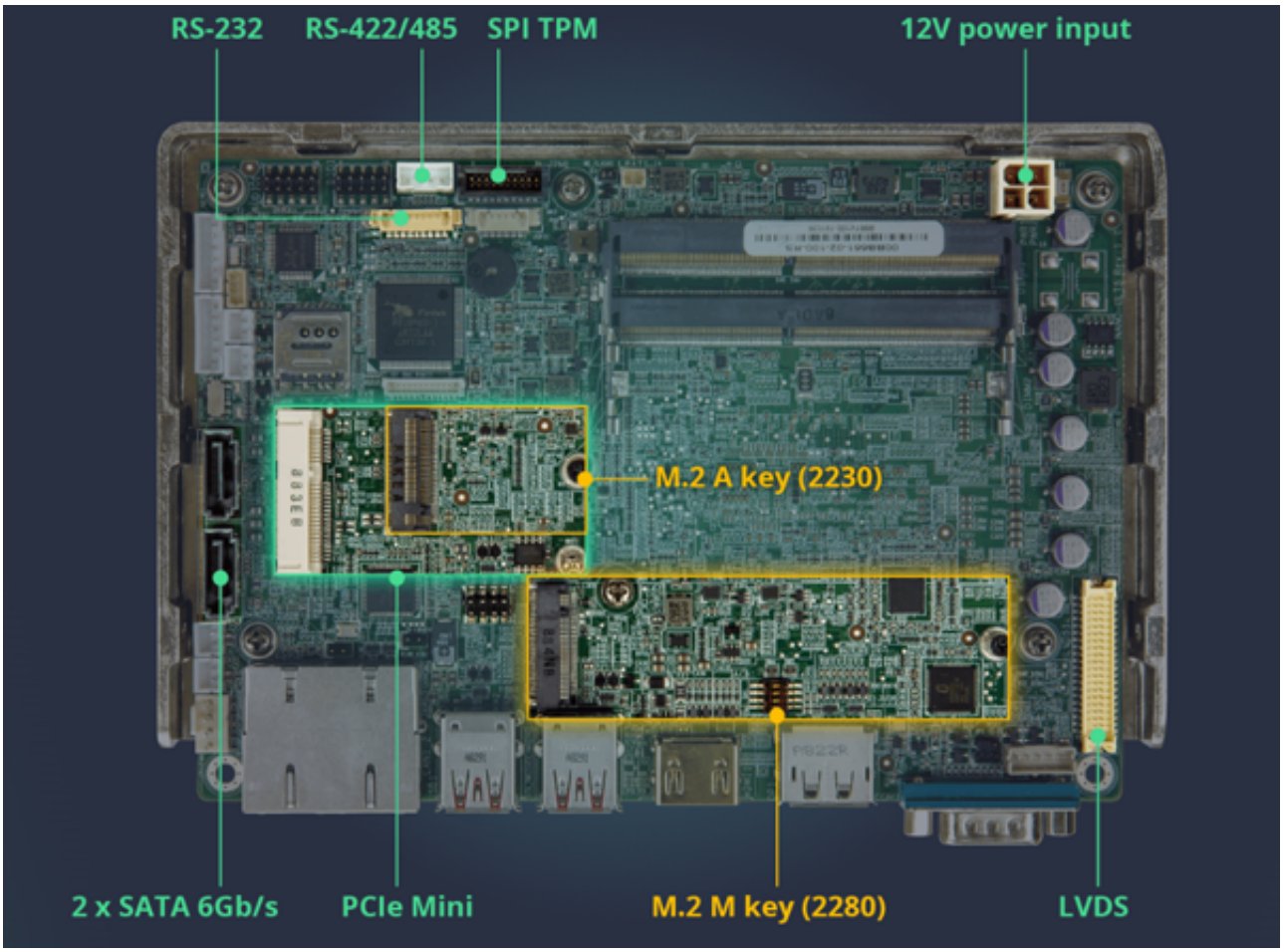
IEI's 4" EPIC Board NANO-ULT5 based on Intel® Whiskey Lake-U 15W SoC, which is aimed at embedded applications. The NANO-ULT5 mainboard is designed for applications like Panel PC, small size embedded system, point-of-sales systems, kiosks, and digital signage, but can be used for regular low-power computers in a EPIC form-factor.

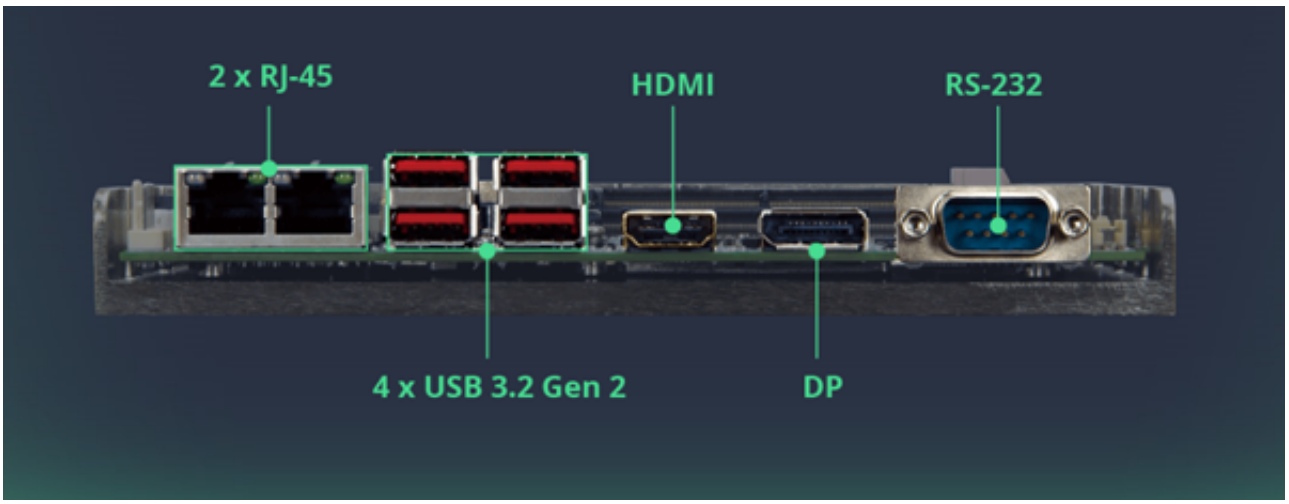


## Multiple expansion slot for diverse solution

The design concept for NANO-ULT5 is to multiple expansion for diverse applications and make it an easy and better solution for users.

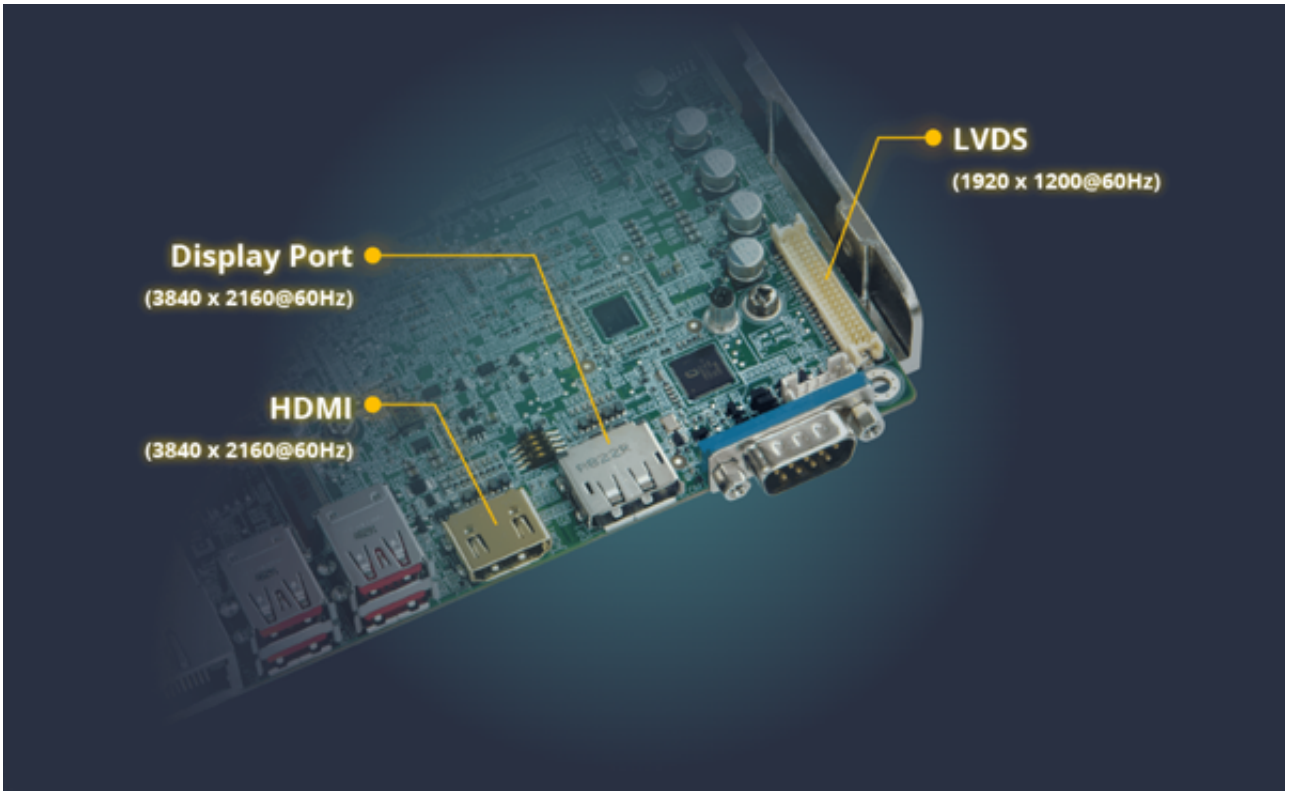
## Product Overview






## Triple Independent Display

The NANO-ULT5 is equipped with Intel® HD Graphics Gen9 which supports 16 execution units and 4K codec decode, and allows to display videos and images in stunning 4K resolution. With triple independent displays (eDP + HDMI+DP),the HDMI and DisplayPort support up to 4K high resolution. The enhanced visual quality responses the demand of high precision displaying.




## Application Field

For the application field, NANO-ULT series are suitable for various application. With LVDS as a panel PC or using triple independent display in the hospital as a monitoring system. In factory automation field, RS-232 could connect with processing machine. A real case for us is a self-service ordering machine, by using USB and HDMI to connector with partner's touch panel and M.2 A key for transferring order to the kitchen. In makes customer easily make an order without waiting.

Panel PC

Hospital monitoring system

Factory monitor

Self-service ordering machine