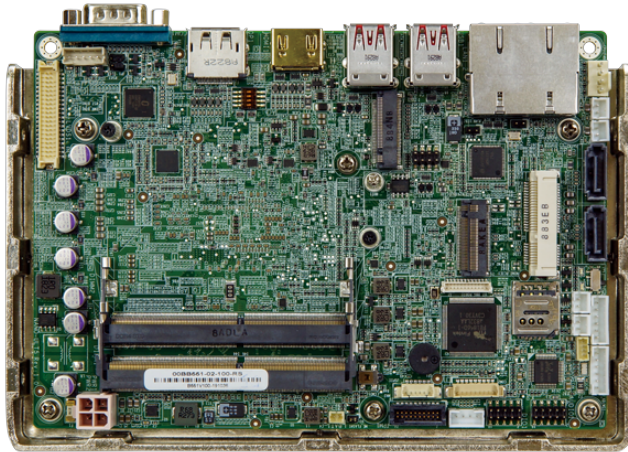


# NANO-ULT5

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-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 3.1 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
<b>Environment</b>	
Operating Temperature	-20°C ~ 60°C
Storage Temperature	-30°C ~ 70°C
Humidity	5% ~ 95%, non-condensing

## Ordering Information

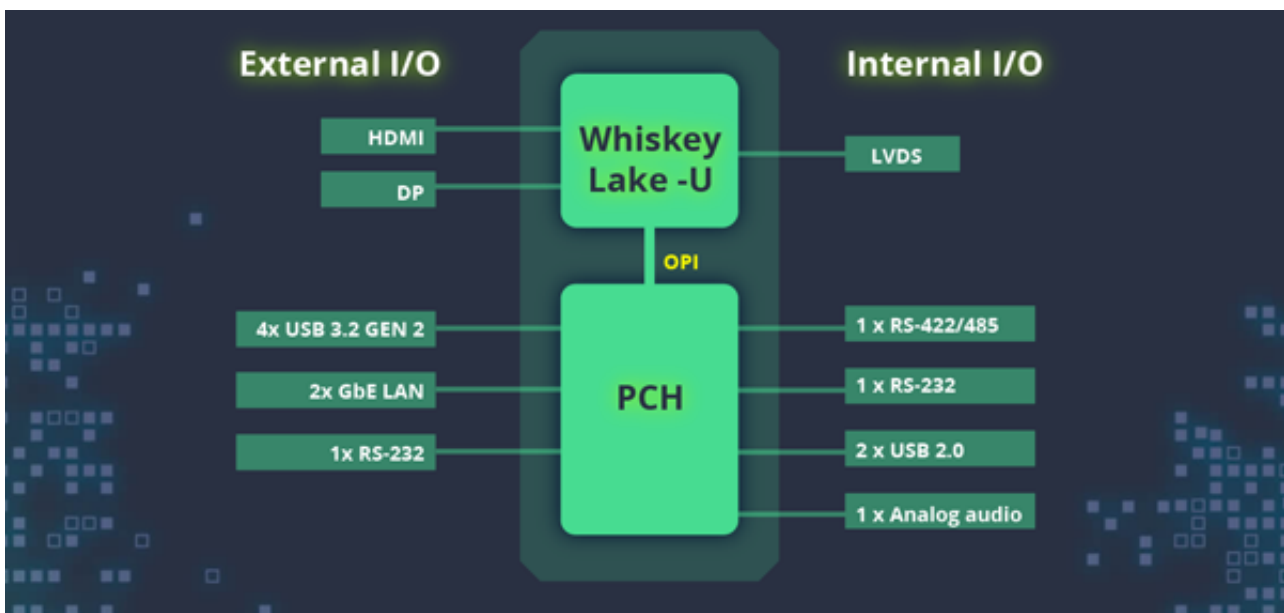
NANO-ULT5-i7-R10	EPIC SBC supports Intel® 14nm 8th Generation Mobile Core™ i7-8665UE (15W) on-board Processor (ULT) with HDMI™/LVDS/DP, Dual PCIe GbE, USB 3.1 Gen 2, PCIe Mini, M.2 A & M Key, SATA 6Gb/s, COM, SPI TPM, Audio and RoHS
NANO-ULT5-i5-R10	EPIC SBC supports Intel® 14nm 8th Generation Mobile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

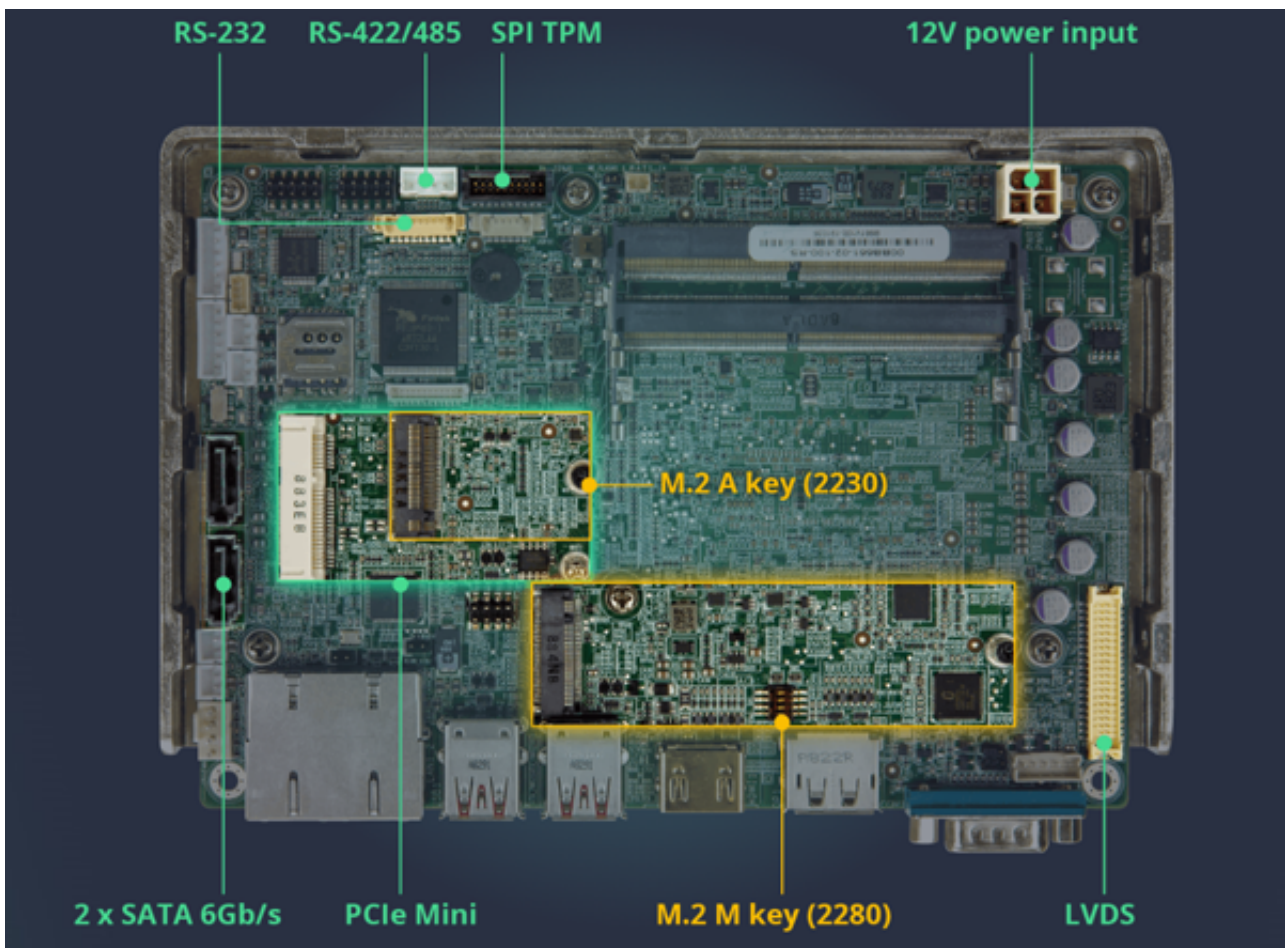


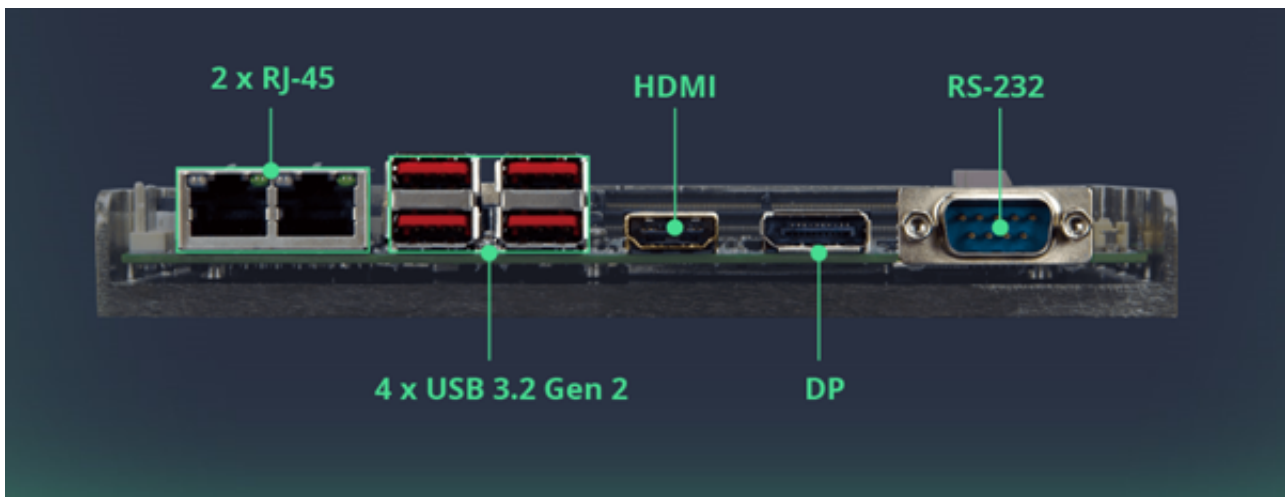
## Multiple expansion slot for diverse solution

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



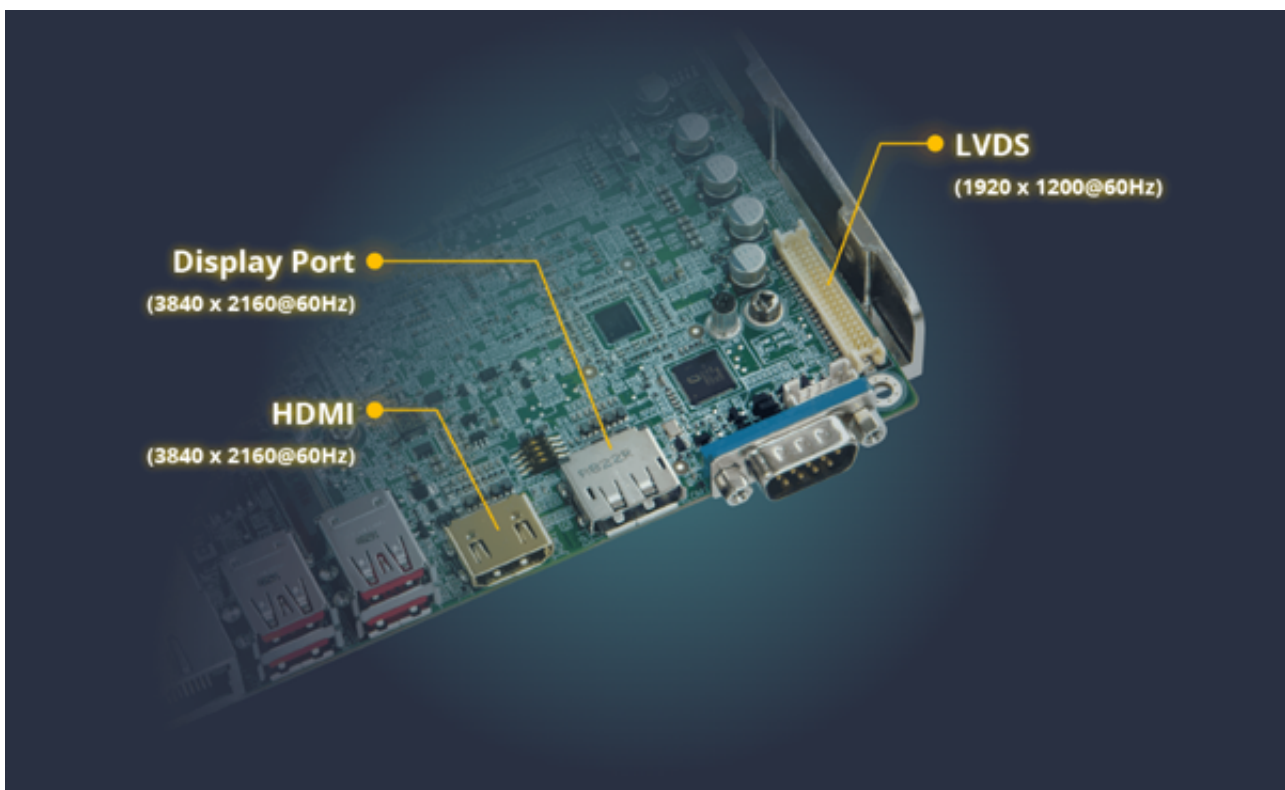
## Product Overview





## 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