



UP Xtreme Edge Compute Enabling Kit

UP Xtreme Edge Compute Enabling Kit, powered by the 8th Generation Ultra-Low Power Intel® Core™ i3/i5/i7/Celeron CPU, is designed to boost your AI on the Edge solution. With a measure of 190 x 129 x 78.6 mm (LxWxH), the fanless system delivers a comprehensive set of features and I/O which allows you to reach astonishing performance.



Robotics

- Compatible with RealSense camera
- Intel Movidius module
- ROS2



Retail

- 3 independent displays
- Video analytic
- CMS gateway
- AI & IoT enabling



AI

- Powerful CPU & GPU
- Possible to add 1-2x Myriad X VPU
- Support OpenVINO



Automation

- 12-60V DC input
- TSN real-time network
- Support OPC-UA



IoT

- Support WiFi, Bluetooth, LTE, EnOcean and LoRa
- Multiple interfaces for sensors
- Support MRAA

Basic specifications

CPU	Intel® 8th gen Dual/Quad Core Ultra Low Power Celeron 4305UE i3-8145UE (up to 3.9 Ghz) i5-8365UE (up to 4.1 Ghz) * i7-8665UE (up to 4.4 Ghz) *
Processor TDP	15W
Memory	Onboard Dual Channel DDR4 memory, Max 16GB
VPU	Optional by adding UP AI Core XM 2280
Graphics	Intel® UHD Graphics 620 (610 for Celeron) 1x eDP with Backlight control Header 1x HDMI/DP STACK Connector
FPGA	Intel® FPGA Altera MAX 5
Storage	64GB eMMC, 1x SATA Connector with power connector
Expansion Slot	1x Minicard (PCIe [x1] Gen 3 x 1 (mSATA optional), USB 2.0 x 1) with SIM card, 1x M.2 2230 E Key (PCIe [x1] Gen 3 x 1, USB 2.0 x 2, CNV1 x 1), 1x M.2 2280 M Key
Ethernet Controller (Core™ i7 / Core™ i5)	1x LAN (Intel® i210-AT), 1x LAN (Intel® i219-LM)
Ethernet Controller (Core™ i3 / Celeron)	1x LAN (Intel® i210-AT), 1x LAN (Intel® i219-V)
Audio	ALC887 For Audio Out/Mic In, I2S
USB	4x USB 3.0, 1x USB 2.0 pin header
COM Ports	Fintek F81801, 2x RS232/422/485

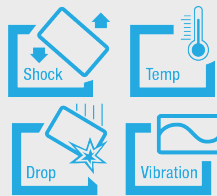
*Intel AMT is only supported for i5 and i7.

Video output	HDMI+DP
Expansion HAT (40pin)	By MAX5: 28x GPIO, 2x SPI, 2x I2C, 1x ADC, 1x I2S, 1x UART, 3V3, 5V, GND
Docking Connector (100pin)	USB 2.0, USB 3.0, 6 PCI-E Lane, SATA, I2C, I2S, SPI, PWM, LPC, SDIO, HSUART, I2H, GPIO
Phoenix connector	Phoenix 1: 3V3, 5V, GND, I2C, GPIO x8, Phoenix 2: 3V3, GND, I2C, GPIO, CAN R5 & TX, ADC x7
Other	RTC, PXE, CEC
Graphics features	3 independent video outputs with 4K video output
Power	12~60V DC-IN (lockable connector) 1x Power Button / LED
Form Factor	190 x 129 x 78.6 mm (LxWxH)
Operating Temperature	-20°C~70°C
Operating Humidity	0% ~ 90% relative humidity, non-condensing
Certification	CE, FCC
Inference toolkit	Intel® Distribution of OpenVINO™ toolkit 2019 R3
Supported frameworks	TensorFlow, Caffe
OS Installed	Ubuntu 18.04
OS compatibility	Windows 10, Linux (Ubuntu, Yocto)
WiFi, Bluetooth	Optional (via M.2 2230)
LTE/4G	Optional (via mPCIe)



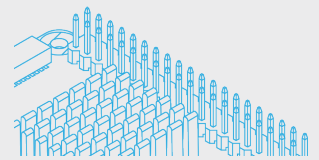
Ultra-low power Intel® 8th gen

With Intel® Whiskey Lake-U processors, it is high performance computing with low power consumption and brings a better performance.



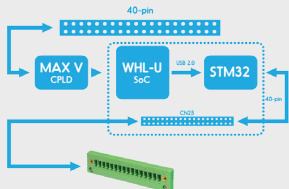
For industrial environment

Lockable DC input 12V – 60V
Operate at -20 °C to 70°C.
TSN enabled LAN port



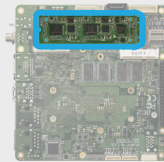
Expandable to scale up

100-pin / AI Edge expansions
40-pin / Intel® Altera MAX 5
M.2 2230 E, M.2 2280 B+M, mPCIe
WiFi, Bluetooth and LoRa Ready



Programmable I/O via MCU

CEC feature ready! Users can program I/O with various tools such as Arduino Create, Platformio and more.

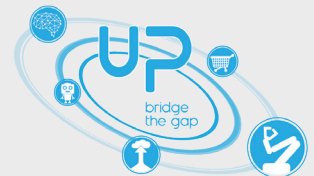


OpenVINO



AI proof

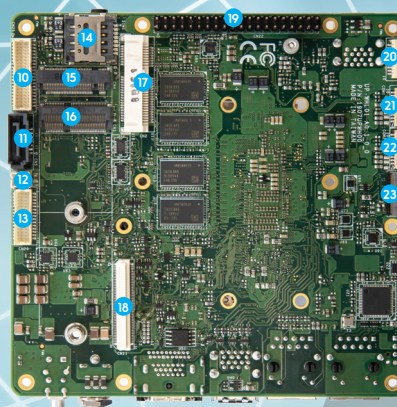
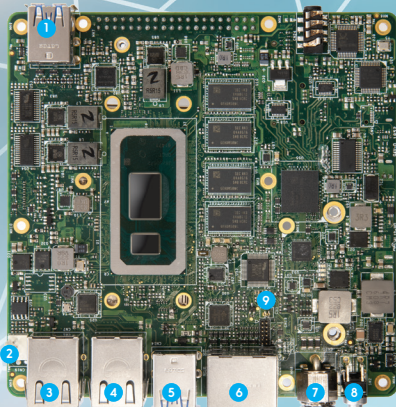
Support high-density deep learning accelerators via OpenVINO over CPU, GPU and VPU. Optional VPU by adding UP AI Core XM 2280.



Production-ready

The UP Xtreme Edge Compute system is production-ready for multiple functions for robotics, automation, retail, AI and IoT.

- 1) 2x USB 3.0
- 2) CPU FAN
- 3) Gbps Ethernet port RJ-45
- 4) Gbps Ethernet port RJ-45
- 5) 2x USB 3.0
- 6) HDMI + Display Port
- 7) Lockable 12~65V DC-IN
- 8) Power button
- 9) RTC Battery
- 10) STM32 I/O Header
- 11) SATA
- 12) SATA Power

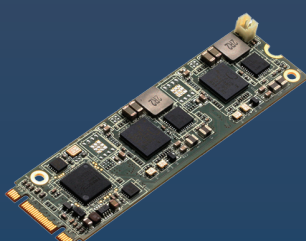


- 13) STM32 I/O Header
- 14) SIM Card slot
- 15) M.2 2280 M Key
- 16) M.2 2230 E Key
- 17) Minicard 1x PCIe x1
- 18) 100-pin docking connector
- 19) 40-pin HAT Connector
- 20) USB 2.0 header + HSUART
- 21) 10-pin RS232/422/485 header
- 22) 10-pin RS232/422/485 header
- 23) eDP Header

For pin-out information about the GPIO and 100-pin connector, please refer to the website

Artificial Intelligence on the edge

Expand your UP Xtreme Edge Compute for fit your exact needs



UP AI Core XM 2280



M.2 2230 WiFi kit



mPCIe LTE module kit