**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.

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**Basic specifications**

<table>
<thead>
<tr>
<th>CPU</th>
<th>Intel® 8th gen Dual/Quad Core Ultra Low Power</th>
<th>Processor TDP</th>
<th>15W</th>
</tr>
</thead>
<tbody>
<tr>
<td>Memory</td>
<td>Onboard Dual Channel DDR4 memory, Max 16GB</td>
<td>VPU</td>
<td>Optional by adding UP AI Core XM 2280</td>
</tr>
<tr>
<td>FPGA</td>
<td>Intel® FPGA Altera MAX 5</td>
<td>Storage</td>
<td>64GB eMMC, 1x SATA Connector with power connector</td>
</tr>
<tr>
<td>Expansion Slot</td>
<td>1x M.2 2230 B+M Key (PCIe Gen 3 x 2CH / SATA x 1)</td>
<td>Other</td>
<td>RTC, PXE, CEC</td>
</tr>
<tr>
<td>Ethernet Connector (Core™ i7 / Core™ i5)</td>
<td>1x LAN (Intel® i210-AT), 1x LAN(Intel® i219-LM)</td>
<td>Graphics features</td>
<td>3 independent video outputs with 4K video output</td>
</tr>
<tr>
<td>Ethernet Connector (Core™ i3 / Celeron)</td>
<td>1x LAN (Intel® i210-AT), 1x LAN(Intel® i219-V)</td>
<td>Power</td>
<td>12~60V DC-IN (lockable connector)</td>
</tr>
</tbody>
</table>

**Video output**

- HDMI+DP

**Expansion HAT (40pin)**

- MAX5: 28x GPIO, 2x SPI, 2x I2C, 1x ADC, 1x I2S, 2x PWM, 1x UART, 3V3, 5V, GND

**Docking Connector (100pin)**

- USB 2.0, USB 3.0, 6 PCH-E Lane, SATA, I2C, 12V, 2x SPI, 2x I2C, 1x ADC, 1x I2S, 1x PWM, 1x UART, 3V3, 5V, GND

**Phoenix connector**

- Phoenix 1: 3V3, 5V, GND, I2C, GPIO x8, PWM x2

- Phoenix 2: 3V3, GND, I2C, GPIO, CAN RS & TX, ADC x7

**RTC, PXE, CEC**

- 3 independent video outputs with 4K video output

**Form Factor**

- 12~60V DC-IN (lockable connector)

**Operating Temperature**

- -20°C~70°C

**Certification**

- Intel® Distribution of OpenVINO™ toolkit 2019 R3

**Inference toolkit**

- TensorFlow, Caffe

**Supported frameworks**

- Ubuntu 18.04
- Windows 10, Linux (Ubuntu, Yocto)

**OS compatibility**

- Optional (via M.2 2230)

- 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

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

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.

Expandable to scale up
100-pin / AI Edge expansions
40-pin / Intel® Altera MAX 5
M2 2230 E, M2 2280 B+M, mPCIe WiFi, Bluetooth and LoRa Ready

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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