

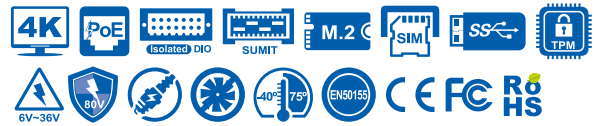
# ECX-1000-PoE

9th Generation Intel® Xeon®/Core™ i7/i5/i3 (Coffee Lake Refresh) Fanless Embedded System with Intel® C246 Chipset, 6 GigE LAN with 4 PoE\*, 6 USB 3.1, 2 M.2 Socket, Isolated DIO, High Performance, Rugged, -40°C to 75°C Extended Temperature



## Features

- 8 Cores 9th Generation Intel® Xeon®/Core™ i7/i5/i3 Processor (Coffee Lake Refresh) with Intel® C246 Chipset
- Fanless, -40°C to 75°C Operating Temperature
- 6 Independent GigE LAN with 4 IEEE 802.3at PoE\*
- SIM Sockets for WiFi/4G/3G/LTE/GPRS/UMTS
- 2 SIM Socket, 1 CFast Socket, 2 M.2 Socket
- 6 USB 3.1, 4 COM RS-232/422/485, 16 Isolated DIO
- Expansion : SUMIT A, B, M.2, up to 5 Mini PCIe
- 6V to 36V DC Power Input with 80V Surge Protection
- Configurable Ignition Power Control



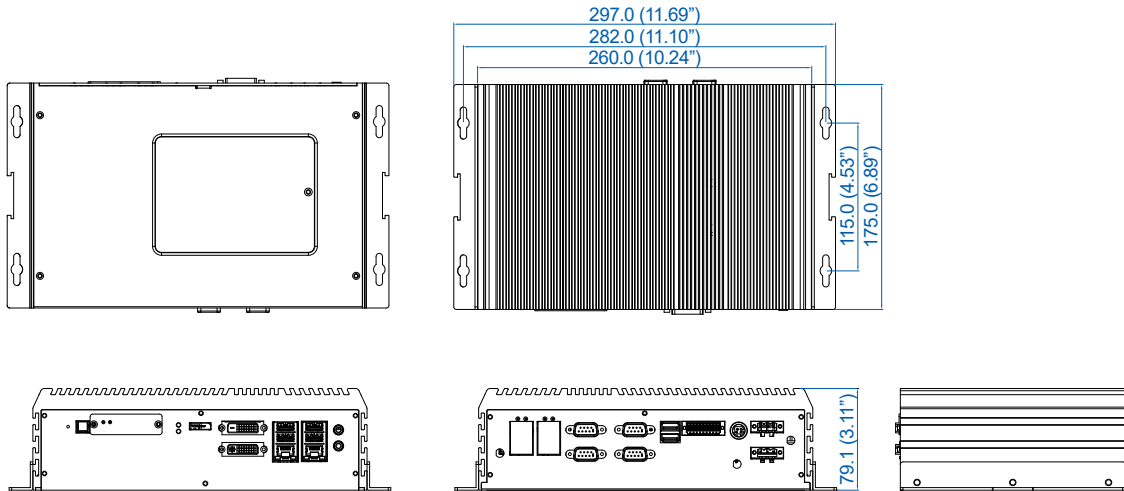
## Specifications

| System                    |   |
|---------------------------|---|
| <b>Processor</b>          | Intel® Xeon®/Core™ i7/i5/i3 Processor (CFL-R S/CFL-S)   |
| <b>Chipset</b>            | Intel® C246   |
| <b>BIOS</b>               | AMI   |
| <b>SIO</b>                | IT8786E   |
| <b>Memory</b>             | 2 DDR4 2666MHz SO-DIMM, up to 64GB (ECC/Non-ECC)  |
| I/O Interface             |   |
| <b>Serial</b>             | 4 COM RS-232/422/485 (ESD 8KV)  |
| <b>USB</b>                | <ul style="list-style-type: none"> <li>▪ 6 USB 3.1 (6 External)</li> <li>▪ 1 USB 2.0 (Internal)</li> </ul>  |
| <b>Isolated DIO</b>       | 16 Isolated DIO : 8 DI, 8 DO  |
| <b>LED</b>                | Power, HDD, PoE, Wireless   |
| <b>SIM Card</b>           | 2 External SIM Card Socket  |
| Expansion                 |   |
| <b>Mini PCIe</b>          | 2 Full-size Mini PCIe Socket for PCIe/USB/External SIM Card/ mSATA  |
| <b>M.2</b>                | 1 M.2 Key E Socket  |
| <b>SUMIT A, B</b>         | 2 SUMIT Slot (Optional)   |
| Graphics                  |   |
| <b>Graphics Processor</b> | Intel® UHD Graphics 630   |
| <b>Interface</b>          | <ul style="list-style-type: none"> <li>▪ DVI-I : Up to 1920 x 1200 @60Hz</li> <li>▪ DVI-D : Up to 1920 x 1080 @60Hz</li> <li>▪ DisplayPort : Up to 4096 x 2304 @60Hz</li> </ul> |
| Storage                   |   |
| <b>SATA</b>               | 2 SATA III (6Gbps) support S/W RAID 0, 1  |
| <b>mSATA</b>              | 2 SATA III (Mini PCIe Type, 6Gbps)  |
| <b>Storage Device</b>     | <ul style="list-style-type: none"> <li>▪ 1 CFast Socket, Push-in/Push-out Ejector</li> <li>▪ 2 2.5" SSD/HDD Bracket (Internal)</li> <li>▪ 1 M.2 Key M Socket</li> </ul>         |
| Audio                     |   |
| <b>Audio Codec</b>        | Realtek ALC888S-VD, 7.1 Channel HD Audio  |
| <b>Audio Interface</b>    | 1 Mic-in, 1 Line-out  |
| Ethernet                  |   |
| <b>LAN 1</b>              | Intel® I219LM GigE LAN supports iAMT 12.0   |
| <b>LAN 2</b>              | Intel® I210 GigE LAN  |
| PoE                       |   |
| <b>LAN 3 to 6</b>         | GigE IEEE 802.3at (25.5W/48V) PoE* by Intel® I210 with Power On/Off Control   |

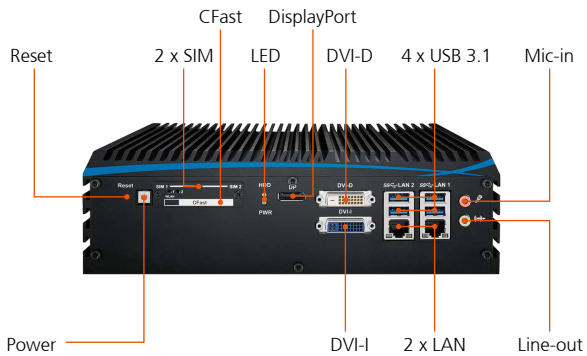
| Power                         |   |
|-------------------------------|---|
| <b>Power Input</b>            | 6V to 36V, DC-in  |
| <b>Power Interface</b>        | 3-pin Terminal Block : V+, V-, Frame Ground   |
| <b>Ignition Control</b>       | 16 Mode (Internal)  |
| <b>Remote Switch</b>          | 3-pin Terminal Block : On, Off, IGN   |
| <b>Surge Protection</b>       | Up to 80V/1ms Transient Power   |
| Others                        |   |
| <b>TPM</b>                    | Optional Infineon SLB9665 supports TPM 2.0, LPC Interface   |
| <b>Watchdog Timer</b>         | Reset : 1 to 255 sec./min. per step   |
| <b>Smart Management</b>       | Wake on LAN, PXE supported  |
| <b>HW Monitor</b>             | Monitoring temperature, voltages. Auto throttling control when CPU overheats.   |
| Software Support              |   |
| <b>OS</b>                     | Windows 10, Linux   |
| Mechanical                    |   |
| <b>Dimensions (W x L x H)</b> | 260mm x 175mm x 79mm (10.2" x 6.9" x 3.1")  |
| <b>Weight</b>                 | 3.8 kg (8.38 lb)  |
| <b>Mounting</b>               | <ul style="list-style-type: none"> <li>▪ Wallmount by mounting bracket</li> <li>▪ DIN Rail Mount (Optional)</li> <li>▪ 2U Rackmount (Optional)</li> </ul>         |
| Environment                   |   |
| <b>Operating Temperature</b>  | <b>35W TDP CPU</b> : -40°C to 75°C (-40°F to 167°F)<br><b>65W TDP CPU</b> : -40°C to 55°C (-40°F to 131°F)<br><b>80W TDP CPU</b> : -40°C to 45°C (-40°F to 113°F) |
| <b>Storage Temperature</b>    | -40°C to 85°C (-40°F to 185°F)  |
| <b>Humidity</b>               | 5% to 95% Humidity, non-condensing  |
| <b>Relative Humidity</b>      | 95% @ 75°C  |
| <b>Shock</b>                  | <ul style="list-style-type: none"> <li>▪ IEC 60068-2-27</li> <li>▪ SSD : 50G @ wallmount, Half-sine, 11ms</li> </ul>  |
| <b>Vibration</b>              | <ul style="list-style-type: none"> <li>▪ IEC 60068-2-64</li> <li>▪ SSD : 5Grms, 5Hz to 500Hz, 3 Axis</li> </ul>   |
| <b>EMC</b>                    | CE, FCC, EN50155, EN50121-3-2   |

## Dimensions

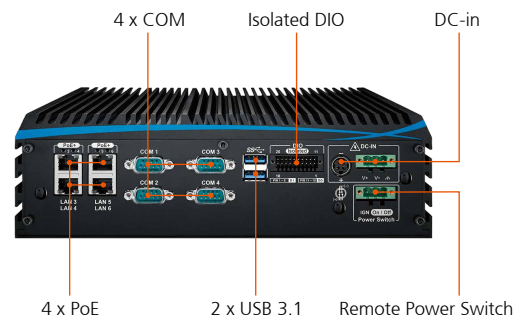
Unit : mm/ inch



## Front I/O



## Rear I/O



## Order Information

|                      |   |
|----------------------|---|
| <b>ECX-1000-PoER</b> | ECX-1000, 6 GigE LAN w/4 PoE*, 4 COM, 2 SIM, 6 USB 3.1, 16 Isolated DIO |
|----------------------|---|

### Accessories

|                             |  |
|-----------------------------|--|
| <b>DDR4 32G</b>             | Certified DDR4 32GB 2666MHz RAM  |
| <b>DDR4 16G</b>             | Certified DDR4 16GB 2666MHz RAM  |
| <b>DDR4 8G</b>              | Certified DDR4 8GB 2666MHz RAM   |
| <b>DDR4 4G</b>              | Certified DDR4 4GB 2666MHz RAM   |
| <b>PWA-120W</b>             | 120W, 24V, 90VAC to 264VAC Power Adapter with 3-pin Terminal Block                                     |
| <b>PWA-160W-WT</b>          | 160W, 24V, 85V AC to 264V AC Power Adapter with 3-pin Terminal Block, Wide Temperature -30°C to +70°C  |
| <b>PWA-180W</b>             | 180W, 24V, 90V AC to 132V AC/ 180V AC to 264V AC Power Adapter with 3-pin Terminal Block, 0°C to +40°C |
| <b>PWA-280W-WT</b>          | 280W, 24V, 85V AC to 264V AC Power Adapter with 3-pin Terminal Block, Wide Temperature -30°C to +70°C  |
| <b>VESA Mount</b>           | VESA Mounting Kit  |
| <b>DIN-RAIL</b>             | DIN Rail Kit   |
| <b>Rack Mount</b>           | 2U Rackmount Kit   |
| <b>TMK2-20P-100</b>         | Terminal Block 20-pin to Terminal Block 20-pin Cable, 100cm  |
| <b>TMK2-20P-500</b>         | Terminal Block 20-pin to Terminal Block 20-pin Cable, 500cm  |
| <b>TMB-TMBK-20P</b>         | Terminal Board with One 20-pin Terminal Block Connector and DIN-Rail Mounting                          |
| <b>4G Module</b>            | Mini PCIe 4G/GPS Module with Antenna   |
| <b>WiFi &amp; Bluetooth</b> | WiFi & Bluetooth Module with Antenna   |

### CPU List

| Series       | CPU       | Cores | GHz | TDP (W) | ECC RAM |
|--------------|-----------|-------|-----|---------|---------|
| Intel® Xeon® | E-2176G   | 6     | 4.6 | 80      | Yes     |
|              | E-2124G   | 4     | 4.5 | 71      |         |
|              | E-2278GE  | 8     | 4.7 | 80      |         |
|              | E-2278GEL | 8     | 3.9 | 35      |         |
|              | E-2226GE  | 6     | 4.6 | 80      |         |
| Intel® Core™ | i7-8700   | 6     | 4.6 | 65      | N/A     |
|              | i7-8700T  | 6     | 4   | 35      |         |
|              | i7-9700E  | 8     | 4.4 | 65      |         |
|              | i7-9700TE | 8     | 3.8 | 35      |         |
|              | i5-8500   | 6     | 4.1 | 65      |         |
|              | i5-8500T  | 6     | 3.5 | 35      |         |
|              | i5-9500E  | 6     | 4.2 | 65      |         |
|              | i5-9500TE | 6     | 3.6 | 35      |         |
|              | i3-8100   | 4     | 3.6 | 65      |         |
|              | i3-8100T  | 4     | 3.1 | 35      |         |
| Yes          | i3-9100E  | 4     | 3.7 | 65      |         |
|              | i3-9100TE | 4     | 3.2 | 35      |         |