

# ECX-1000-4R

9th Generation Intel® Xeon®/Core™ i7/i5/i3 (Coffee Lake Refresh) Fanless Embedded System with Intel® C246 Chipset, 4 GigE LAN, 6 USB 3.1, 2 Front-access SSD Tray, 2 M.2 Socket, 16 GPIO, 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
- 4 Independent GigE LAN, iAMT 12.0 supported
- SIM Sockets for WiFi/4G/3G/LTE/GPRS/UMTS
- 2 2.5 SSD Tray, 2 SIM Socket, 1 CFast Socket, 2 M.2 Socket
- 6 USB 3.1, 4 COM RS-232/422/485, 16 GPIO
- 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



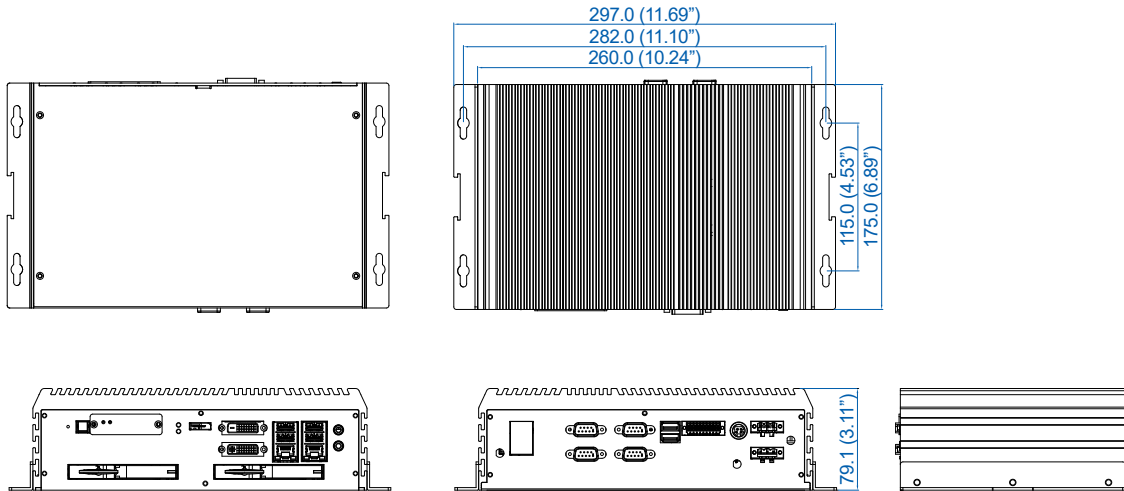
## Specifications

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 GPIO
<b>LED</b>	Power, HDD, 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 Front-access 2.5" SSD/HDD Tray</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
<b>LAN 3</b>	Intel® I210 GigE LAN
<b>LAN 4</b>	Intel® I210 GigE LAN

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) <b>65W TDP CPU</b> : -40°C to 55°C (-40°F to 131°F) <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

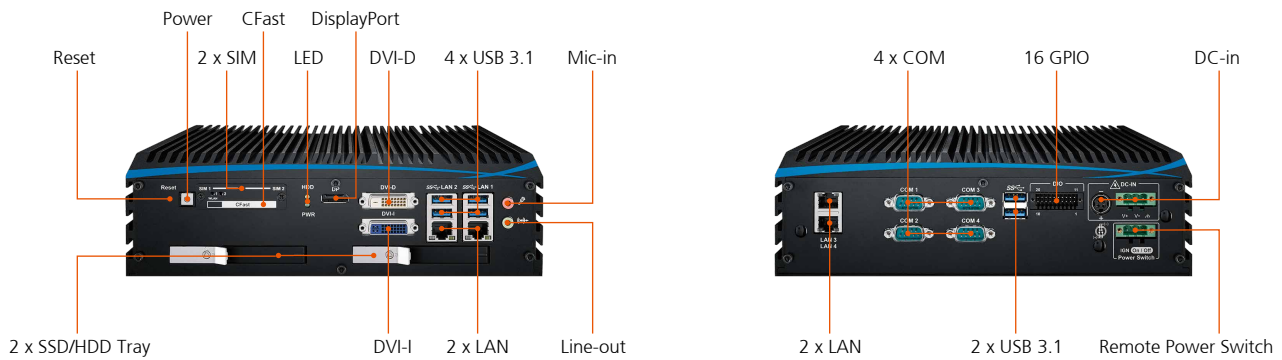
## Dimensions

Unit : mm/ inch



## Front I/O

## Rear I/O



## Order Information

<b>ECX-1000-4R</b>	ECX-1000, 4 GigE LAN, 2 SSD Tray, 4 COM, 2 SIM, 6 USB 3.1, 16 GPIO
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### 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	