ECX-1000-4G

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 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 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
Processor Intel® Xeon™/Core™ i7/i5/i3 Processor (CFL-R S/CFL-S)
Chipset Intel® C246
BIOS AMI
SIO IT8786E
Memory 2 DDR4 2666MHz SO-DIMM, up to 64GB (ECC/Non-ECC)

I/O Interface
Serial 4 COM RS-232/422/485 (ESD 8KV)
USB • 6 USB 3.1 (6 External)
• 1 USB 2.0 (Internal)
Isolated DIO 16 GPIO
LED Power, HDD, Wireless
SIM Card 2 External SIM Card Socket

Expansion
Mini PCIe 2 Full-size Mini PCIe Socket for PCIe/USB/External SIM Card/mSATA
M.2 1 M.2 Key E Socket
SUMIT A, B 2 SUMIT Slot (Optional)

Graphics
Graphics Processor Intel® UHD Graphics 630
Interface • DVI-I: Up to 1920 x 1200 @60Hz
• DVI-D: Up to 1920 x 1080 @60Hz
• DisplayPort: Up to 4096 x 2304 @60Hz

Storage
SATA 2 SATA III (6Gbps) support 5W RAID 0, 1
mSATA 2 SATA III (Mini PCIe Type, 6Gbps)
Storage Device • 1 CFast Socket, Push-in/Push-out Ejector
• 2.25” SSD/HDD Bracket (Internal)
• 1 M.2 Key M Socket

Audio
Audio Codec Realtek ALC892, 5.1 Channel HD Audio
Audio Interface 1 Mic-in, 1 Line-out

Ethernet
LAN 1 Intel® i219LM GigE LAN supports iAMT 12.0
LAN 2 Intel® i210 GigE LAN
LAN 3 Intel® i210 GigE LAN
LAN 4 Intel® i210 GigE LAN

Power
Power Input 6V to 36V, DC-in
Power Interface 3-pin Terminal Block : V+, V-, Frame Ground
Ignition Control 16 Mode (Internal)
Remote Switch 3-pin Terminal Block : On, Off, IGN
Surge Protection Up to 80V/1ms Transient Power

Others
TPM Optional Infineon SLB9665 supports TPM 2.0, LPC Interface
Watchdog Timer Reset : 1 to 255 sec./min. per step
Smart Management Wake on LAN, PXE supported
HW Monitor Monitoring temperature, voltages. Auto throttling control when CPU overheats.

Software Support
OS Windows 10, Linux

Mechanical
Dimensions (W x L x H) 260mm x 175mm x 79mm (10.2" x 6.9" x 3.1")
Weight 3.8 kg (8.38 lb)
Mounting • Wallmount by mounting bracket
• DIN Rail Mount (Optional)
• 2U Rackmount (Optional)

Environment
Operating Temperature 35W TDP CPU : -40°C to 75°C (~40°F to 167°F)
65W TDP CPU : -40°C to 55°C (~40°F to 131°F)
80W TDP CPU : -40°C to 45°C (~40°F to 113°F)
Storage Temperature -40°C to 85°C (~40°F to 185°F)
Humidity 5% to 95% Humidity, non-condensing
Relative Humidity 95% @ 75°C
Shock • IEC 60068-2-27
• SSD : 50G @ wallmount, Half-sine, 11ms
Vibration • IEC 60068-2-64
• SSD : 5Gms, 5Hz to 500Hz, 3 Axis
EMC CE, FCC, EN50155, EN50121-3-2
Dimensions

Unit: mm/ inch

Front I/O

Rear I/O

Order Information

ECX-1000-4G

ECX-1000, 4 GigE LAN, 4 COM, 2 SIM, 6 USB 3.1, 16 GPIO

CPU List

## Intel® Xeon®

<table>
<thead>
<tr>
<th>Series</th>
<th>CPU</th>
<th>Cores</th>
<th>GHz</th>
<th>TDP (W)</th>
<th>ECC RAM</th>
</tr>
</thead>
<tbody>
<tr>
<td>E-2176G</td>
<td>6</td>
<td>4.6</td>
<td>80</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>E-2124G</td>
<td>4</td>
<td>4.5</td>
<td>71</td>
<td></td>
<td></td>
</tr>
<tr>
<td>E-2278GEL</td>
<td>8</td>
<td>4.7</td>
<td>80</td>
<td></td>
<td></td>
</tr>
<tr>
<td>E-2226GE</td>
<td>8</td>
<td>3.9</td>
<td>35</td>
<td></td>
<td></td>
</tr>
<tr>
<td>E-2226GE</td>
<td>6</td>
<td>4.6</td>
<td>80</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Intel® Core™

<table>
<thead>
<tr>
<th>Series</th>
<th>CPU</th>
<th>Cores</th>
<th>GHz</th>
<th>TDP (W)</th>
<th>ECC RAM</th>
</tr>
</thead>
<tbody>
<tr>
<td>9700E</td>
<td>8</td>
<td>3.8</td>
<td>35</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>8500</td>
<td>6</td>
<td>4.1</td>
<td>65</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8500</td>
<td>6</td>
<td>3.5</td>
<td>35</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8500</td>
<td>6</td>
<td>3.6</td>
<td>35</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9100E</td>
<td>4</td>
<td>4.1</td>
<td>65</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>9100E</td>
<td>4</td>
<td>3.7</td>
<td>65</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9100TE</td>
<td>4</td>
<td>3.2</td>
<td>35</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Accessories

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