

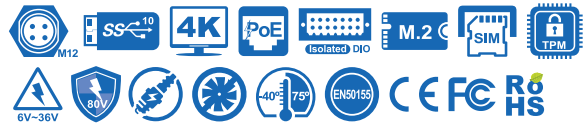
# ECX-1210M/1201M (M12)

9th Generation Intel® Xeon®/Core™ i7/i5/i3 (Coffee Lake Refresh) Expandable Fanless System with Intel® C246 Chipset, 6 GigE LAN with 4 M12 PoE+, 2 Front-access SSD Tray, 1 PCI/PCIe, 6 USB 3.1, 3 M.2 Socket, 3 SIM, 32 Isolated DIO, High Performance, Rugged, -40°C to 75°C Extended Temperature



## Features

- 8 Cores 9th Generation Intel® Xeon®/Core™ i7/i5/i3 (Coffee Lake Refresh) with workstation-grade Intel® C246 Chipset
- Fanless, -40°C to 75°C Operating Temperature
- Multiple USB 3.1 Gen 2 supports up to 10Gbps SuperSpeed data transfer
- 6 Independent GigE LAN with 4 M12 IEEE 802.3at PoE+
- 32 Isolated DIO, 6 USB 3.1, 4 COM RS-232/422/485
- Expansion : 1 PCI/PCIe, 2 Mini PCIe/mSATA, 1 M.2
- PCIe x16 expansion supports up to 200W Power Budget
- Storage : 2 2.5" SSD Tray, 1 CFast, 2 M.2, 2 SATA III
- 3 External SIM Socket for WiFi/4G/3G/LTE/GPRS/UMTS
- 6V to 36V DC Power Input with 80V Surge Protection
- Configurable Ignition Power Control



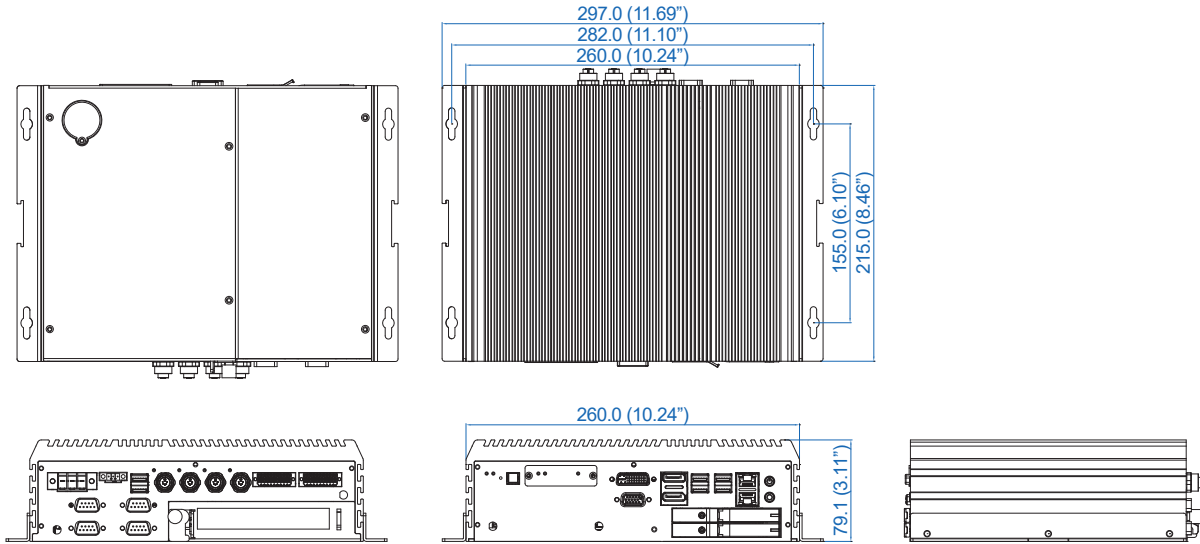
## Specifications

| 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  |
| I/O Interface      |   |
| Serial             | 4 COM RS-232/422/485 (ESD 8KV)  |
| USB                | <ul style="list-style-type: none"> <li>▪ 6 USB 3.1 (6 External)</li> <li>▪ 1 USB 2.0 (Internal)</li> </ul>  |
| Isolated DIO       | 32 Isolated DIO : 16 DI, 16 DO  |
| LED                | Power, HDD, PoE, Wireless   |
| SIM Card           | 3 External SIM Card Socket  |
| Expansion          |   |
| Mini PCIe          | 2 Full-size Mini PCIe Socket for PCIe/USB/External SIM Card/mSATA   |
| PCI/PCIe           | ECX-1210M : 1 PCIe x16<br>ECX-1201M : 1 PCI   |
| M.2                | 1 M.2 Key E Socket (2230), (PCIe x1, USB2.0, I2C Bus)   |
| SUMIT A, B         | 2 SUMIT Slot (Optional)   |
| Graphics           |   |
| Graphics Processor | Intel® UHD Graphics 630   |
| Interface          | <ul style="list-style-type: none"> <li>▪ VGA : Up to 1920 x 1200 @60Hz</li> <li>▪ DVI-I : Up to 1920 x 1200 @60Hz</li> <li>▪ DisplayPort : Up to 4096 x 2304 @60Hz</li> </ul> |
| Storage            |   |
| SATA               | 2 SATA III (6Gbps) support S/W RAID 0, 1  |
| mSATA              | 2 SATA III (Mini PCIe Type, 6Gbps)  |
| M.2                | <ul style="list-style-type: none"> <li>▪ 1 M.2 Key M Socket (2280) (PCIe x4/SATA)</li> <li>▪ 1 M.2 Key B Socket (2230,2280) (PCIe x1/SATA, USB2.0, I2C Bus)</li> </ul>        |
| Storage Device     | <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> </ul>                                      |
| 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  |

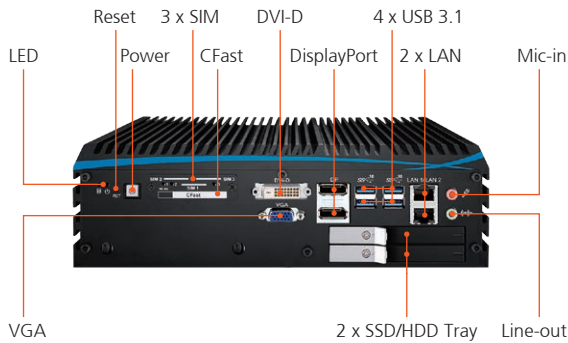
| PoE                    |   |
|------------------------|---|
| LAN 3 to 6             | GigE IEEE 802.3at (25.5W/48V) PoE+ by Intel® I350, M12 Connector  |
| Power                  |   |
| Power Input            | 6V to 36V, DC-in  |
| Power Interface        | 3-pin Terminal Block : V+, V-, Frame Ground   |
| 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 215mm x 79mm (10.2" x 8.46" x 3.11")  |
| Weight                 | 4.5 kg (9.92 lb)  |
| Mounting               | <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            |   |
| Operating Temperature  | <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) |
| 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                  | <ul style="list-style-type: none"> <li>▪ IEC 60068-2-27</li> <li>▪ SSD : 50G @ wallmount, Half-sine, 11ms</li> </ul>  |
| Vibration              | <ul style="list-style-type: none"> <li>▪ IEC 60068-2-64</li> <li>▪ SSD : 5Grms, 5Hz to 500Hz, 3 Axis</li> </ul>   |
| EMC                    | CE, FCC, EN50155, EN50121-3-2   |

## Dimensions

Unit : mm/ inch



## Front I/O



## Rear I/O



## Order Information

|                  |  |
|------------------|--|
| <b>ECX-1210M</b> | ECX-1200, 6 GigE LAN w/4 M12 PoE <sup>+</sup> , 2 SSD Tray, 1 PCIe x16, 6 USB 3.1, 4 COM, 3 SIM, 32 Isolated DIO |
| <b>ECX-1201M</b> | ECX-1200, 6 GigE LAN w/4 M12 PoE <sup>+</sup> , 2 SSD Tray, 1 PCI, 6 USB 3.1, 4 COM, 3 SIM, 32 Isolated DIO      |

### Accessories

|                             |  |
|-----------------------------|--|
| <b>DDR4 32G</b>             | Certified DDR4 32GB 2666MHz RAM  |
| <b>DDR4 16G</b>             | Certified DDR4 16GB 2666/2400/2133MHz RAM  |
| <b>DDR4 8G</b>              | Certified DDR4 8GB 2666/2400/2133MHz RAM   |
| <b>DDR4 4G</b>              | Certified DDR4 4GB 2666/2400/2133MHz RAM   |
| <b>PWA-160WB-WT</b>         | 160W, 24V, 85V AC to 264V AC Power Adapter with 3-pin Terminal Block (7.62mm pitch), Wide Temperature -30°C to +70°C |
| <b>PWA-280WB-WT</b>         | 280W, 24V, 85V AC to 264V AC Power Adapter with 3-pin Terminal Block (7.62mm pitch), Wide Temperature -30°C to +70°C |
| <b>VESA Mount</b>           | VESA Mounting Kit  |
| <b>DIN-RAIL Kit</b>         | DIN Rail and VESA Mounting 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      |         |
|              | i3-9100E  | 4     | 3.7 | 65      |         |
| i3-9100TE    | 4         | 3.2   | 35  |         |         |