

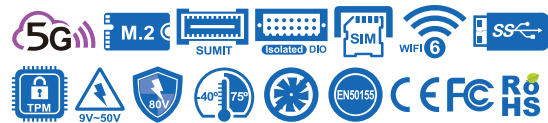
# ECX-2000-2G/2000F-2G

10th Gen Intel® Xeon®/Core™ i9/i7/i5/i3 (Comet Lake) Fanless Embedded System with optional Fan Sink, 2 GigE LAN, 2 SSD Bracket, 3 M.2 Socket, 16 GPIO, 9V to 50V DC, High Performance, Rugged, -40°C to 75°C Extended Temperature



## Features

- Workstation-grade Platform : 10-core 10th Gen Intel® Xeon® / Core™ i9/i7/i5/i3 Processor (CML-S) running with Intel® W480E chipset supports max 95W TDP CPU
- 2 DDR4 2933MHz Memory supports up to 64GB, optional with ECC
- 9V to 50V wide range DC Power Input with 80V Surge Protection
- Fanless, -40°C to 75°C Operating Temperature
- 2 Independent GigE LAN
- SIM Sockets for 5G/WiFi 6/4G/3G/LTE/GPRS/UMTS
- Expansion : 1 M.2 Key B, 1 M.2 Key E, 1 Mini PCIe, optional SUMIT A, B
- 6-port USB 3.2 supports up to 10Gbps data transfer
- Front Access : 2 Nano SIM Socket, 1 SD Card
- Supports Configurable Software Ignition Power Control and TPM 2.0



## Specifications

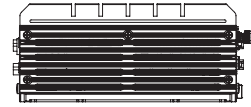
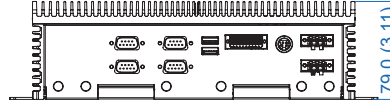
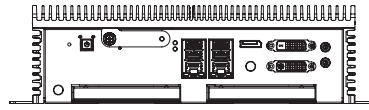
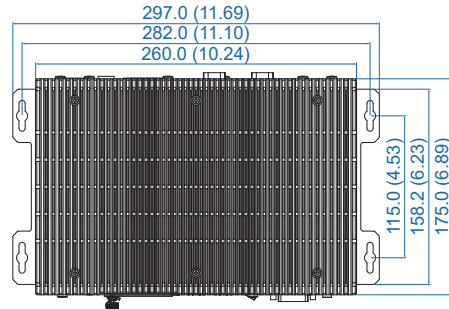
| System             |                                                                                                                                                                                |
|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Processor          | Intel® 10th Generation Xeon®/Core™ i7/i5/i3 Processor (Comet Lake)                                                                                                             |
| Chipset            | Intel® W480E                                                                                                                                                                   |
| BIOS               | AMI                                                                                                                                                                            |
| SIO                | IT8786E                                                                                                                                                                        |
| Memory             | 2 DDR4 2933MHz Memory, up to 64GB (ECC/Non-ECC)                                                                                                                                |
| I/O Interface      |                                                                                                                                                                                |
| Serial             | 4 COM RS-232/422/485 (ESD 8kV)                                                                                                                                                 |
| USB                | <ul style="list-style-type: none"><li>▪ 6 USB 3.2 (External)</li><li>▪ 1 USB 2.0 (Internal)</li></ul>                                                                          |
| Isolated DIO       | 16 GPIO                                                                                                                                                                        |
| LED                | Power, HDD, Wireless                                                                                                                                                           |
| SIM Card           | 2 External Nano SIM Card Socket                                                                                                                                                |
| Expansion          |                                                                                                                                                                                |
| Mini PCIe          | 1 Mini PCIe Socket for PCIe/USB/SIM Card/Optional mSATA                                                                                                                        |
| M.2                | <ul style="list-style-type: none"><li>▪ 1 M.2 Key B Socket (3042/3052)</li><li>▪ 1 M.2 Key E Socket (2230, supports CNVi)</li></ul>                                            |
| SUMIT              | 2 SUMIT Slot (Optional)                                                                                                                                                        |
| Graphics           |                                                                                                                                                                                |
| Graphics Processor | Intel® UHD Graphics 630                                                                                                                                                        |
| Interface          | <ul style="list-style-type: none"><li>▪ DVI-I : Up to 1920 x 1080 @ 60Hz</li><li>▪ DVI-D : Up to 1920 x 1080 @ 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              | 1 SATA III (Mini PCIe Type, 6Gbps)                                                                                                                                             |
| M.2                | 1 M.2 Key M Socket (2280, PCIe x4)                                                                                                                                             |
| Storage Device     | <ul style="list-style-type: none"><li>▪ 1 Micro SD Card, Push-in/Push-out Ejector</li><li>▪ 2 2.5" SSD/HDD Bracket (Internal)</li></ul>                                        |
| Audio              |                                                                                                                                                                                |
| Audio Codec        | Realtek ALC888S-VD, 7.1 Channel HD Audio                                                                                                                                       |
| Audio Interface    | 1 Mic-in, 1 Line-out                                                                                                                                                           |
| Ethernet           |                                                                                                                                                                                |
| LAN 1              | Intel® I219LM Gigabit LAN supports iAMT 14.0                                                                                                                                   |
| LAN 2              | Intel® I210 Gigabit LAN                                                                                                                                                        |

| Power                  |                                                                                                                                                                                                         |
|------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Power Input            | 9V to 50V, DC-in                                                                                                                                                                                        |
| Power Interface        | <ul style="list-style-type: none"><li>▪ 3-pin Terminal Block : V+, V-, Frame Ground</li><li>▪ Mini-DIN 4-pin</li></ul>                                                                                  |
| Ignition Control       | 16 Mode Software Ignition Control                                                                                                                                                                       |
| Remote Switch          | 3-pin Terminal Block                                                                                                                                                                                    |
| Surge Protection       | Up to 80V/1ms Transient Power                                                                                                                                                                           |
| Others                 |                                                                                                                                                                                                         |
| TPM                    | 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) | 260.0mm x 175.0mm x 79.0mm (10.24" x 6.89" x 3.11")                                                                                                                                                     |
| Weight                 | 3.8 kg (8.38 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), Fanless<br><b>65W TDP CPU</b> : -40°C to 55°C (-40°F to 131°F), Fanless<br><b>80W, 95W TDP CPU</b> : -40°C to 55°C (-40°F to 131°F), with fan sink |
| 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, EN 50155, EN 50121-3-2                                                                                                                                                                         |

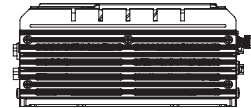
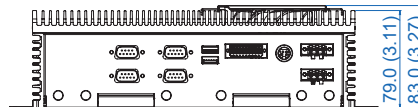
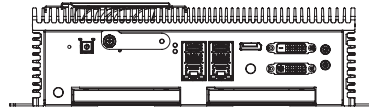
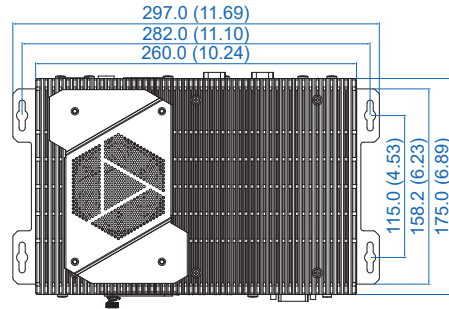
## Dimensions

Unit : mm/ inch

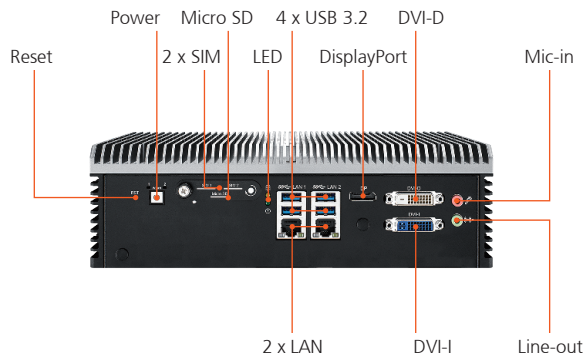
ECX-2000-2G



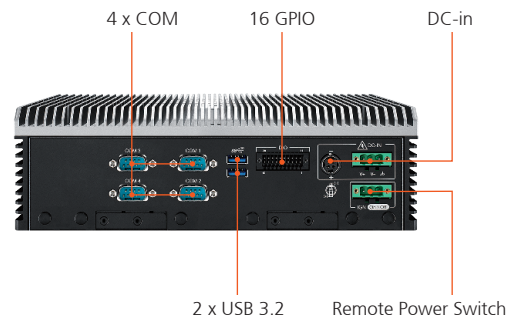
ECX-2000F-2G



## Front I/O



## Rear I/O



## Order Information

|              |                                                                            |
|--------------|----------------------------------------------------------------------------|
| ECX-2000-2G  | ECX-2000, 2 GigE LAN, 4 COM, 2 Nano SIM, 6 USB 3.2, 16 GPIO, Fanless       |
| ECX-2000F-2G | ECX-2000, 2 GigE LAN, 4 COM, 2 Nano SIM, 6 USB 3.2, 16 GPIO, with Fan Sink |

### Accessories

|                    |                                                                                                        |
|--------------------|--------------------------------------------------------------------------------------------------------|
| DDR4 32G           | Certified DDR4 32GB 3200MHz RAM                                                                        |
| DDR4 16G           | Certified DDR4 16GB 3200MHz RAM                                                                        |
| DDR4 8G            | Certified DDR4 8GB 3200MHz RAM                                                                         |
| DDR4 4G            | Certified DDR4 4GB 3200MHz RAM                                                                         |
| PWA-160W-WT        | 160W, 24V, 85V AC to 264VAC Power Adaptor with 3-pin Terminal Block, Wide Temperature -30°C to +70°C   |
| PWA-180W           | 180W, 24V, 90V AC to 132V AC/ 180V AC to 264V AC Power Adaptor with 3-pin Terminal Block, 0°C to +40°C |
| PWA-280W-WT        | 280W, 24V, 85V AC to 264VAC Power Adaptor with 3-pin Terminal Block, Wide Temperature -30°C to +70°C   |
| VESA Mount         | VESA Mounting Kit                                                                                      |
| DIN-RAIL           | DIN Rail and VESA Mounting Kit                                                                         |
| Rack Mount         | 2U Rackmount Kit                                                                                       |
| TMK2-20P-100       | Terminal Block 20-pin to Terminal Block 20-pin Cable, 100cm                                            |
| TMK2-20P-500       | Terminal Block 20-pin to Terminal Block 20-pin Cable, 500cm                                            |
| TMB-TMBK-20P       | Terminal Board with One 20-pin Terminal Block Connector and DIN-Rail Mounting                          |
| M.2 Storage Module | M.2 Key M/Key B PCIe Storage Module                                                                    |
| 5G Module          | 5G Module with Antenna                                                                                 |
| 4G Module          | 4G/GPS Module with Antenna                                                                             |
| WiFi & Bluetooth   | WiFi & Bluetooth Module with Antenna                                                                   |

### CPU List

| Series       | CPU        | GHz | TDP (W) | ECC RAM |
|--------------|------------|-----|---------|---------|
| Intel® Xeon® | W-1290E    | 4.8 | 95      | Yes     |
|              | W-1270E    | 4.8 | 80      |         |
|              | W-1250E    | 4.7 | 80      |         |
|              | W-1290TE   | 4.5 | 35      |         |
|              | W-1270TE   | 4.4 | 35      |         |
|              | W-1250TE   | 3.8 | 35      |         |
| Intel® Core™ | i9-10900E  | 4.7 | 65      | N/A     |
|              | i7-10700E  | 4.5 | 65      |         |
|              | i5-10500E  | 4.2 | 65      |         |
|              | i3-10100E  | 3.8 | 65      | Yes     |
|              | i9-10900TE | 4.5 | 35      |         |
|              | i7-10700TE | 4.4 | 35      |         |
|              | i5-10500TE | 3.7 | 35      |         |
|              | i3-10100TE | 3.6 | 35      |         |