

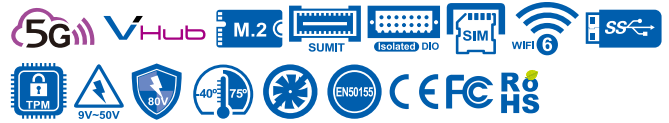
ECX-2000-4R/2000F-4R

10th Gen Intel® Xeon®/Core™ i9/i7/i5/i3 (Comet Lake) Fanless Embedded System with optional Fan Sink, 4 GigE LAN, 2 Front-access SSD Tray, 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
- 4 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 2.5 SSD Tray, 2 Nano SIM Socket, 1 SD Card
- Supports Configurable Software Ignition Power Control and TPM 2.0



Specifications

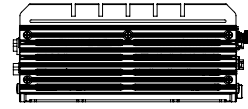
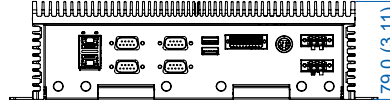
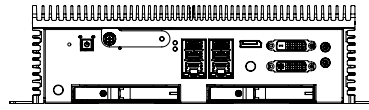
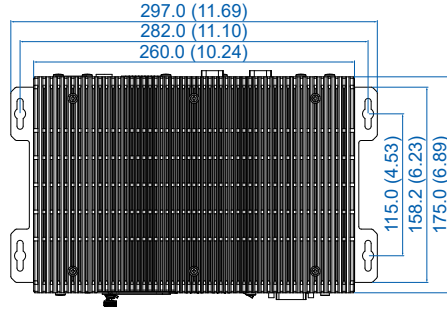
| System | |
|---------------------------|--|
| Processor | Intel® 10th Generation Xeon®/Core™ i7/i5/i3 Processor (Comet Lake) |
| Chipset | Intel® W480E |
| BIOS | AMI |
| SIO | IT8786E |
| Memory | 2 DDR4 2933MHz Memory, up to 64GB (ECC/Non-ECC) |
| I/O Interface | |
| Serial | 4 COM RS-232/422/485 (ESD 8kV) |
| USB | <ul style="list-style-type: none"> ▪ 6 USB 3.2 (External) ▪ 1 USB 2.0 (Internal) |
| 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"> ▪ 1 M.2 Key B Socket (3042/3052) ▪ 1 M.2 Key E Socket (2230, supports CNVi) |
| SUMIT | 2 SUMIT Slot (Optional) |
| Graphics | |
| Graphics Processor | Intel® UHD Graphics 630 |
| Interface | <ul style="list-style-type: none"> ▪ DVI-I : Up to 1920 x 1080 @ 60Hz ▪ DVI-D : Up to 1920 x 1080 @ 60Hz ▪ DisplayPort : Up to 4096 x 2304 @ 60Hz |
| 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"> ▪ 1 Micro SD Card, Push-in/Push-out Ejector ▪ 2 Front-access 2.5" SSD/HDD Tray |
| 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 |
| LAN 3 | Intel® I210 Gigabit LAN |
| LAN 4 | Intel® I210 Gigabit LAN |

| Power | |
|-------------------------------|--|
| Power Input | 9V to 50V, DC-in |
| Power Interface | <ul style="list-style-type: none"> ▪ 3-pin Terminal Block : V+, V-, Frame Ground ▪ Mini-DIN 4-pin |
| 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"> ▪ 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), Fanless 80W, 95W TDP CPU : -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"> ▪ IEC 60068-2-27 ▪ SSD : 50G @ wallmount, Half-sine, 11ms |
| Vibration | <ul style="list-style-type: none"> ▪ IEC 60068-2-64 ▪ SSD : 5Grms, 5Hz to 500Hz, 3 Axis |
| EMC | CE, FCC, EN 50155, EN 50121-3-2 |

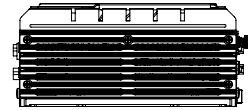
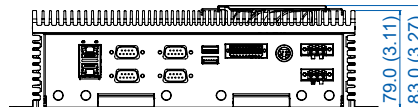
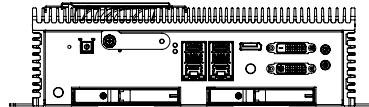
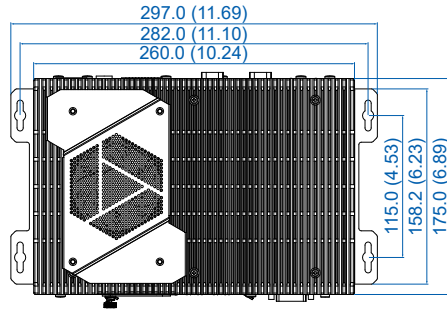
Dimensions

Unit : mm/ inch

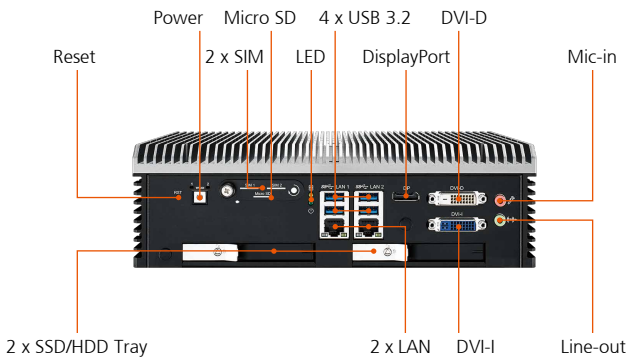
ECX-2000-4R



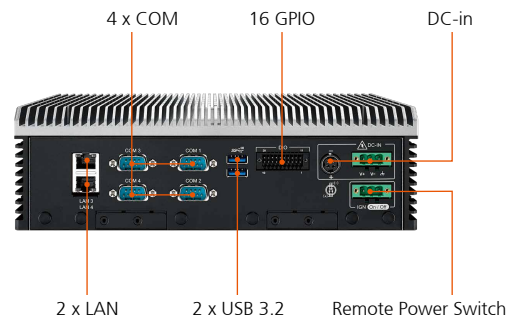
ECX-2000F-4R



Front I/O



Rear I/O



Order Information

| | |
|---------------------|--|
| ECX-2000-4R | ECX-2000, 4 GigE LAN, 2 SSD Tray, 4 COM, 2 Nano SIM, 6 USB 3.2, 16 GPIO, Fanless |
| ECX-2000F-4R | ECX-2000, 4 GigE LAN, 2 SSD Tray, 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 |

Optional Software

| | |
|--------------------------|----------------------|
| VHub AI Developer | AI Development Kit |
| VHub ROS | AMR Development Kit |
| VHub EtherCAT | I/O Control Platform |

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 | | N/A |
| | i7-10700TE | 4.4 | 35 | | |
| | i5-10500TE | 3.7 | 35 | | |
| i3-10100TE | 3.6 | 35 | Yes | | |