

ECX-2000-6FR/2000F-6FR

10th Gen Intel® Xeon®/Core™ i9/i7/i5/i3 (Comet Lake) Fanless Embedded System with optional Fan Sink, 6 GigE LAN with 2 SFP, 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
- 6 Independent GigE LAN with 2 SFP
- 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

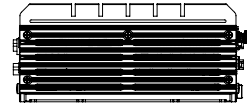
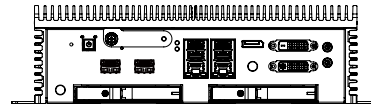
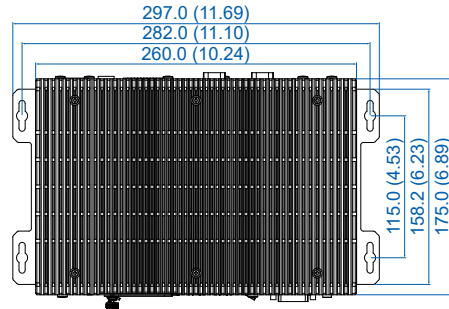
System	
Processor	Intel® 10th Generation Xeon®/Core™ i7/i5/i3 Processor (Comet Lake)
Chipset	Intel® W480E
BIOS	AMI
SIO	IT8786E
Memory	2 DDR4 2933MHz Memory, up to 64GB (ECC/Non-ECC)
I/O Interface	
Serial	4 COM RS-232/422/485 (ESD 8kV)
USB	▪ 6 USB 3.2 (External) ▪ 1 USB 2.0 (Internal)
Isolated DIO	16 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	▪ 1 M.2 Key B Socket (3042/3052) ▪ 1 M.2 Key E Socket (2230, supports CNVi)
Graphics	
Graphics Processor	Intel® UHD Graphics 630
Interface	▪ 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	▪ 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
SFP	
LAN 5 to 6	1000BASE SFP by Intel® I350

Power	
Power Input	9V to 50V, DC-in
Power Interface	▪ 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	▪ 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	▪ IEC 60068-2-27 ▪ SSD : 50G @ wallmount, Half-sine, 11ms
Vibration	▪ IEC 60068-2-64 ▪ SSD : 5Grms, 5Hz to 500Hz, 3 Axis
EMC	CE, FCC, EN 50155, EN 50121-3-2

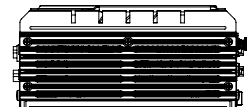
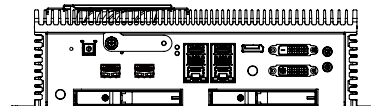
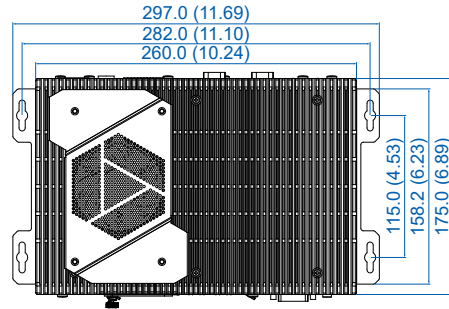
Dimensions

Unit : mm/ inch

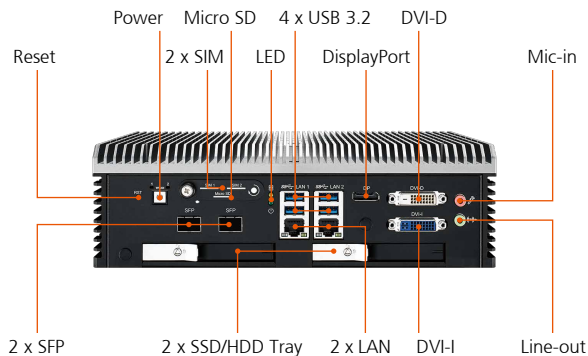
ECX-2000-6FR



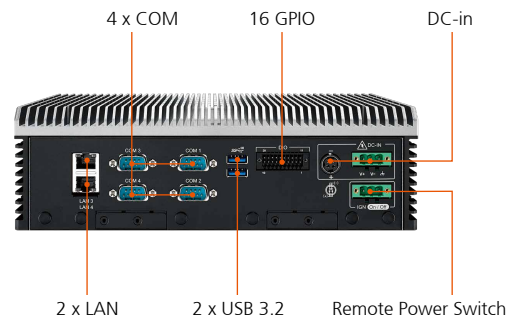
ECX-2000F-6FR



Front I/O



Rear I/O



Order Information

ECX-2000-6FR	ECX-2000, 6 GigE LAN with 2 SFP, 2 SSD Tray, 4 COM, 2 Nano SIM, 6 USB 3.2, 16 GPIO, Fanless
ECX-2000F-6FR	ECX-2000, 6 GigE LAN with 2 SFP, 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 Adapter 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	
Intel® Core™	W-1250TE	3.8	35	N/A
	i9-10900E	4.7	65	
	i7-10700E	4.5	65	
	i5-10500E	4.2	65	
	i3-10100E	3.8	65	
	i9-10900TE	4.5	35	
	i7-10700TE	4.4	35	
	i5-10500TE	3.7	35	
	i3-10100TE	3.6	35	Yes