

ECX

3000

12th Gen Intel® Core™ i9/i7/i5/i3 Processor (Alder Lake)
Workstation-grade Fanless Embedded System

10GigE

5G



Machine Vision



- 16-core 12th Gen Intel® Core™ i9/i7/i5/i3 Processor (Alder Lake-S) with intelligent workload optimization, up to 36% CPU performance improved
- Intel® UHD Graphics 770 driven by Intel® X^e Architecture, with max 94% graphics performance and 181% GPU image classification inference performance enhanced
- 8 Independent 2.5G LAN with 4 IEEE 802.3at PoE⁺
- 4 Front-access M.2 SSD Tray, 6 USB 3.2 Gen 2
- DC 9V to 50V Power Input, Software Ignition Control
- Supports Intel® vPro, TPM 2.0 and Time-Sensitive Networking (TSN)
- Optional VHub One-Stop AIoT Solution Service supports OpenVINO based AI accelerator and advanced Edge AI applications

Public Security



In-Vehicle Computing

intel
partner
Gold
IoT Solutions



VHub

Vecow

Specifications

System

Processor	12th Gen Intel® Core™ i9/i7/i5/i3 Processor (Alder Lake-S)
Chipset	Intel® R680E Series Chipset
BIOS	AMI
SIO	IT8786E
Memory	2 DDR4 3200MHz SO-DIMM, up to 64GB (ECC/Non-ECC)
OS	Windows 10, Linux

I/O Interface

Serial	Up to 4 COM RS-232/422/485
USB	6 USB 3.2 Gen 2
Isolated DIO	16 Isolated DIO : 8 DI, 8 DO (Optional)
LED	Power, HDD, PoE, Wireless
SIM Card	2 External SIM Card Sockets
RTC Battery	Front-access RTC Battery

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)
SUMIT	- 2 SUMIT Slot (Optional)

Graphics

Graphics Processor	Intel® UHD Graphics 770 driven by Intel® X® Architecture
Interface	- 2 DisplayPort : Up to 7680 x 4320 @60Hz/5120 x 2880 @60Hz - 1 DVI-I : Up to 1920 x 1080 @60Hz - 1 HDMI : Up to 4096 x 2160 @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	- 2 Front-access 2.5" SSD/HDD Tray - 4 Front-access M.2 Key M SSD Tray (ECX-3000 PoE)

Audio

Audio Codec	Realtek® ALC888S-VD, 7.1 Channel HD Audio
Audio Interface	1 Mic-in, 1 Line-out

Ethernet

LAN 1	Intel® I219LM GigE LAN supports iAMT
LAN 2	Intel® I225 2.5GigE LAN supports TSN

2.5G PoE

LAN 3 to LAN 6	2.5GigE IEEE 802.3at (25.5W/48V) PoE* by Intel® I225
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2.5G Ethernet (ECX-3025R/3025S)

LAN 7 to LAN 9	Intel® I225 2.5GigE LAN
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10G Ethernet (ECX-3071XR/3071X)

LAN 7 to LAN 8	Intel® X710-AT2 10GigE LAN
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Power

Power Input	DC 9V to 50V
Power Interface	- 3-pin Terminal Block : V+, V-, Frame Ground - 4-pin Mini-DIN
Ignition Control	16-mode Software Ignition Control
Remote Switch	3-pin Terminal Block

Others

TPM	Infineon SLB9670 supports TPM 2.0, SPI Interface
Watchdog Timer	Reset : 1 to 255 sec./min. per step
Smart Mgmt.	Wake on LAN, PXE supported
HW Monitor	Monitoring temperature, voltages. Auto throttling control when CPU overheats.

Mechanical

Dimensions	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 Temp.	35W TDP CPU : -40°C to 75°C (-40°F to 167°F), Fanless 65W TDP CPU : -40°C to 55°C (-40°F to 131°F), Fanless 2.5G Series : -40°C to 70°C (-40°F to 158°F), Fanless 10G Series : 0°C to 50°C (32°F to 122°F), with Internal Fan
Storage Temp.	-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, EN50155, EN50121-3-2

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Order Information

Model	LAN				COM	SSD Tray		Isolate DIO (GPIO)
	10G	2.5G	2.5G PoE*	GigE		M.2	2.5"	
ECX-3025(F)R	-	8	4	1	2	-	2	16
ECX-3025(F)	-	8	4		2	-	-	16
ECX-3000(F)-PoER	-	5	4		4	-	2	16
ECX-3000(F)-PoES	-	5	4		4	4	-	16
ECX-3000(F)-PoE	-	5	4		4	-	-	16
ECX-3000(F)-4R	-	3	-		4	-	2	(16)
ECX-3000(F)-4G	-	3	-		4	-	-	(16)
ECX-3000(F)-2R	-	1	-		4	-	2	(16)
ECX-3000(F)-2G	-	1	-		4	-	-	(16)
ECX-3071X(F)R	2	5	4		2	-	2	16
ECX-3071X(F)	2	5	4		2	-	-	16

** ECX-3000F Series are Fan Sink Models

** ECX-3071X Series requires internal fan

CPU List

Series	CPU	Cores	GHz	TDP (W)	ECC	CPU	Cores	GHz	TDP (W)	ECC
Intel® Core™	i9-12900E	16	5	65	Y	i9-12900TE	16	4.8	35	Y
	i7-12700E	12	4.8			i7-12700TE	12	4.7		
	i5-12500E	6	4.5			i5-12500TE	6	4.3		
	i3-12100E	4	4.2			i3-12100TE	4	4		

Optional Software

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

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-120W1	120W, 24V, 90V AC to 264V AC Power Adapter with 3-pin Terminal Block
PWA-120WM4P1	120W, 24V, 90V AC to 264V AC Power Adapter with 4-pin Mini-DIN Connector
PWA-160W-WT	160W, 24V, 85V AC to 264V AC Power Adaptor with 3-pin Terminal Block, Wide Temperature -30°C to +70°C
PWA-180W	180W, 24V, 90V AC to 264V AC Power Adapter with 3-pin Terminal Block
PWA-280W-WT	280W, 24V, 85V AC to 264V AC 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 Storage Module
5G Module	5G Module with Antenna
4G Module	4G/GPS Module with Antenna
WiFi & Bluetooth	WiFi & Bluetooth Module with Antenna

Dimensions & Drawing

Unit : mm (inch)

