

ECX

3200/3100

13th/12th Gen Intel® Core™ i9/i7/i5/i3 Processor (Raptor Lake/Alder Lake)
Workstation-grade Expandable Fanless Embedded System



▲ Rolling Stock



- Workstation-grade Platform : 13th/12th Gen Intel® Core™ i9/i7/i5/i3 Processor (Codename : Raptor Lake-S/Alder Lake-S) running with Intel® 600 series chipset supports max 65W TDP CPU
- 2 DDR5 4800MHz Memory support up to 64GB
- 5 Independent 2.5GigE LAN with 4 IEEE 802.3at PoE+
- 1 USB 3.2 Gen 2x2 Type C support up to 20Gbps data transfer
- DC 9V to 50V Power Input, Software Ignition Control
- 1 PCIe x16, 32 Isolated DIO, 4 COM RS-232/422/485
- 5G/WiFi/BT/4G/LTE/GPRS/UMTS, Intel® TCC, TSN, TPM 2.0
- Optional VHub One-Stop AIoT Solution Service supports OpenVINO based AI accelerator and advanced Edge AI applications
- Fanless, -40°C to 75°C Operation Temperature

▼ Smart Retail



▲ AMR

intel partner
Gold IoT Solutions



VHub

Vecow

Specifications

System

Processor	- 24-core 13th Gen Intel® Core™ i9/i7/i5/i3 Processor (Raptor Lake-S) - 16-core 12th Gen Intel® Core™ i9/i7/i5/i3 Processor (Alder Lake-S)
Chipset	Intel® 600 Series Chipset
BIOS	AMI
SIO	IT8786E
Memory	2 DDR5 4800MHz SO-DIMM, up to 64GB
OS	Windows 10, Linux

I/O Interface

Serial	4 COM RS-232/422/485
USB	- 6 USB 3.2 Gen 2, USB Type A Connector - 1 USB 3.2 Gen 2x2, USB Type-C Connector supports max 20Gbps data transfer (15W, 5V/3A)
Isolated DIO	ECX-3200 Series : 32 Isolated DIO (16 DI, 16 DO) ECX-3100 Series : 16 GPIO
LED	Power, HDD, PoE, WLAN
SIM Card	3 External Nano SIM Card Socket
RTC Battery	1 Front-access RTC Battery

Expansion

Mini PCIe	1 Mini PCIe sockets for PCIe/USB/SIM Card/Optional mSATA
PCIe/PCI	1 PCIe x16 Slot
M.2	- 1 M.2 Key B Socket (3042/2280, PCIe/USB3/USB2) - 1 M.2 Key B Socket (3052/2280, PCIe/USB3/USB2) - 1 M.2 Key E Socket (2230, PCIe/USB)
SUMIT	2 SUMIT Slot (Optional)

Graphics

Graphics Processor	Intel® UHD Graphics 770 driven by Intel® X ^e Architecture
Interface	- 1 DVI-I : Up to 1920 x 1080 @60Hz - 2 HDMI : Up to 1920 x 1080 @60Hz - 2 DisplayPort : Up to 7680 x 4320 @60Hz/5120 x 2880 @60Hz

Storage

SATA	2 SATA III (6Gbps) support S/W RAID 0, 1
M.2	1 M.2 Key M Socket (2280, PCIe x4)
Storage Device	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 GigE LAN supports iAMT
LAN 2	Intel® I226-IT 2.5GigE LAN

PoE (ECX-3200)

LAN 3 to LAN 6	- 2.5GigE IEEE 802.3at (25.5W/48V) PoE+ by Intel® I226 - ECX-3200MX: X-Coded M12 Connector
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Power

Power Input	DC 9V to 50V Power Input
Power Interface	3-pin Terminal Block : V+, V-, Frame Ground
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	260mm x 240mm x 79mm (10.24"x9.45"x3.11")
Weight	4.5 kg (9.92 lb)
Mounting	- Wallmount by mounting bracket - VESA 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
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	PCIe x16	LAN			SSD Tray	USB 3.2	USB Type C	COM	Isolated DIO (GPIO)
		2.5G	2.5G PoE*	GigE					
ECX-3200MX	1		4 M12						32
ECX-3200	1	5	4 RJ45	1	2	6	1	4	32
ECX-3100	1		-						(16)

*Fan sink modules for ECX-3200 Series are optional. Please contact our sales team if needed.

CPU List

Series	CPU	Cores	GHz	TDP (W)	ECC	CPU	Cores	GHz	TDP (W)	ECC
Intel® Core™	i9-13900E	24	5.2	65		i9-12900E	16	5	65	
	i9-13900TE	24	5	35		i9-12900TE	16	4.8	35	
	i7-13700E	16	5.1	65		i7-12700E	12	4.8	65	
	i7-13700TE	16	4.8	35	Y	i7-12700TE	12	4.7	35	Y
	i5-13500E	14	4.6	65		i5-12500E	6	4.5	65	
	i5-13500TE	14	4.5	35		i5-12500TE	6	4.3	35	
	i3-13100E	4	4.4	65		i3-12100E	4	4.2	65	
	i3-13100TE	4	4.1	35		i3-12100TE	4	4	35	

Optional Software

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

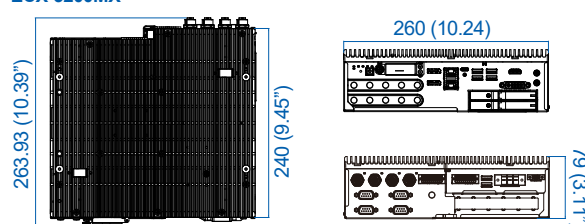
Accessories

DDR5 32G	Certified DDR5 32GB 4800MHz RAM
DDR5 16G	Certified DDR5 16GB 4800MHz RAM
DDR5 8G	Certified DDR5 8GB 4800MHz RAM
PWA-160WB-WT	160W, 24V, 85V AC to 264V AC Power Adapter with 3-pin Terminal Block (7.62mm pitch), Wide Temperature -30°C to +70°C
PWA-180WB	180W, 24V, 90V AC to 264V AC Power Adapter with 3-pin Terminal Block (7.62mm pitch)
PWA-280WB-WT	280W, 24V, 85V AC to 264V AC Power Adaptor with 3-pin Terminal Block, Wide Temperature -30°C to +70°C
PWA-330WB	330W, 24V, 90V AC to 264V AC Power Adapter with 3-pin Terminal Block (7.62mm pitch)
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
Rackmount	2U Rackmount Kit
VESA Mount	VESA Mounting Kit
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

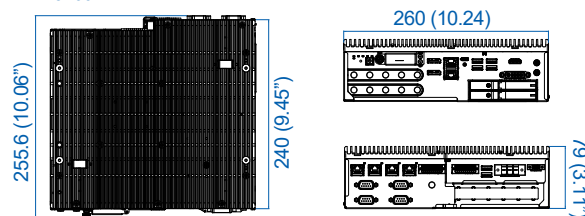
Dimensions & Drawing

Unit : mm (inch)

ECX-3200MX



ECX-3200



ECX-3100

