

# ECX-3100 RAG

Intel® Core™ i9/i7/i5/i3 Processor (14th Gen) RAG-enabled LLM AI Inference Workstation



## Features

- Workstation-grade Platform : 14th Gen Intel® Core™ i9/i7/i5/i3 Processor with Intel® R680E PCH supports max 65W TDP CPU
- Compact size AI PCIe card powered by Neuchips RecAccel™ N3000 chip supports advanced LLMs AI applications
- USB 3.2 Gen 2x2 offers a max speed of 20Gbps data transfer
- DC 12V to 50V wide range power input, Software Ignition Control
- 5G/WiFi/BT/4G/LTE/GPRS/UMTS, Supports Intel® vPro, TCC, Time-Sensitive Networking (TSN), and TPM 2.0
- Storage : 2 front-access 2.5" SSD Tray, M.2 Key M



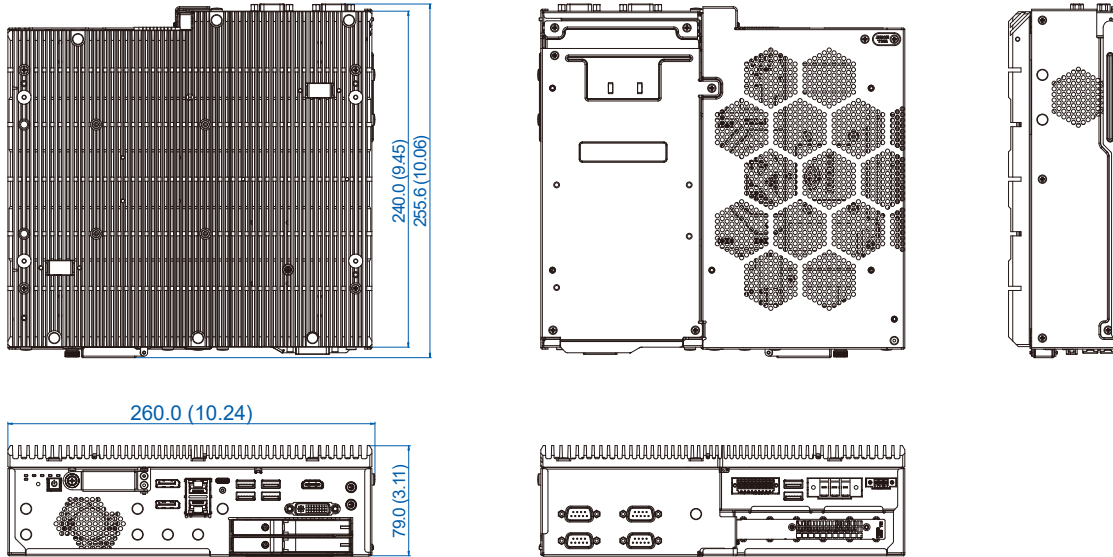
## Specifications

System	
<b>Processor</b>	<ul style="list-style-type: none"> <li>▪ 24-core Intel® Core™ i9/i7/i5/i3 Processor (14th gen, Raptor Lake-S Refresh)</li> <li>▪ 24-core 13th Gen Intel® Core™ i9/i7/i5/i3 Processor (Raptor Lake-S)</li> <li>▪ 16-core 12th Gen Intel® Core™ i9/i7/i5/i3 Processor (Alder Lake-S)</li> </ul>
<b>Chipset</b>	Intel® R680E
<b>BIOS</b>	AMI
<b>SIO</b>	IT8786E
<b>Memory</b>	2 DDR5 5200MHz SO-DIMM, up to 96GB
<b>OS</b>	Windows 11, Windows 10, Linux
AI Accelerator	
<b>AI chip</b>	Neuchips RecAccel™ N3000 series AI chip
<b>TOPS (INT8)</b>	206 TOPS
<b>Memory</b>	LPDDR5 64GB
<b>LLM Model</b>	Supports Llama3-8b, Llama2-7B, Mistral-7B, TAIDE, Breeze-7B, Phi-2
<b>RAG</b>	Hardware enabled with engine in chip
I/O Interface	
<b>Serial</b>	4 COM RS-232/422/485
<b>USB</b>	<ul style="list-style-type: none"> <li>▪ 6 USB 3.2 Gen 2, USB Type A Connector</li> <li>▪ 1 USB 3.2 Gen 2x2, USB Type C Connector supports max 20Gbps data transfer (15W, 5V/3A)</li> </ul>
<b>Isolated DIO</b>	16 GPIO
<b>LED</b>	Power, HDD, PoE, WLAN
<b>SIM Card</b>	3 External Nano SIM Card Socket
<b>RTC Battery</b>	1 Front-access RTC Battery
Expansion	
<b>Mini PCIe</b>	1 Mini PCIe sockets for PCIe/USB/SIM Card
<b>M.2</b>	<ul style="list-style-type: none"> <li>▪ 1 M.2 Key B Socket (3042/2280, PCIe/USB 3, default/USB 2)</li> <li>▪ 1 M.2 Key B Socket (3052/2280, PCIe/USB 3, default/USB 2)</li> <li>▪ 1 M.2 Key E Socket (2230, PCIe/USB)</li> </ul>
Graphics	
<b>Graphics Processor</b>	Intel® UHD Graphics 770/730 driven by Intel® X® Architecture
<b>Interface</b>	<ul style="list-style-type: none"> <li>▪ 1 DVI-I : Up to 1920 x 1080 @60Hz</li> <li>▪ 1 HDMI : Up to 1920 x 1080 @60Hz</li> <li>▪ 2 DisplayPort : Up to 7680 x 4320 @60Hz/5120 x 2880 @120Hz</li> </ul>

Storage	
<b>SATA</b>	2 SATA III (6Gbps) support software RAID 0, 1
<b>M.2</b>	1 M.2 Key M Socket (2280, PCIe Gen 4)
<b>Storage Device</b>	2 Front-access 2.5" SSD/HDD Tray
Audio	
<b>Audio Codec</b>	Realtek® ALC888S-VD, 7.1 Channel HD Audio
<b>Audio Interface</b>	1 Mic-in, 1 Line-out
Ethernet	
<b>LAN 1</b>	Intel® I219LM GigE LAN supports iAMT
<b>LAN 2</b>	Intel® I210 GigE LAN
Power	
<b>Power Input</b>	DC 12V to 50V Power Input
<b>Power Interface</b>	3-pin Terminal Block : V+, V-, Frame Ground
<b>Ignition Control</b>	16-mode Software Ignition Control
<b>Remote Switch</b>	3-pin Terminal Block
Others	
<b>TPM</b>	Infineon SLB9670 supports TPM 2.0, SPI Interface
<b>Watchdog Timer</b>	Reset : 1 to 255 sec./min. per step
<b>Smart Mgmt.</b>	Wake on LAN, PXE supported
<b>HW Monitor</b>	Monitoring temperature, voltages. Auto throttling control when CPU overheats.
Mechanical	
<b>Dimensions</b>	260mm x 240mm x 79mm (10.24" x 9.45" x 3.11")
<b>Weight</b>	4.91 kg (10.82 lb)
<b>Mounting</b>	<ul style="list-style-type: none"> <li>▪ Wallmount by mounting bracket</li> <li>▪ VESA Mount (Optional), Rackmount (Optional)</li> </ul>
Environment	
<b>Operating Temperature</b>	-20°C to 45°C (-4°F to 113°F), with System Fan
<b>Storage Temperature</b>	-40°C to 85°C (-40°F to 185°F)
<b>Humidity</b>	5% to 95% Humidity, non-condensing
<b>Relative Humidity</b>	95% @45°C
<b>Shock</b>	Operating, MIL-STD-810G, Procedure I
<b>Vibration</b>	Operating, MIL-STD-810G, Procedure I
<b>EMC</b>	CE, FCC, EN50155, EN50121-3-2

## Dimensions

Unit : mm/ inch



## Order Information

Model Name	GigE LAN	SSD Tray	USB 3.2	20G USB Type C	GPIO
ECX-3100 RAG	2	2	6	1	16

### CPU List

Processor Brand	CPU	Cores	GHz	TDP (W)	CPU	Cores	GHz	TDP (W)	ECC
Intel® Core™ (14th Gen)*	i9-14900	24	5.8	65	i9-14900T	24	5.5	35	Y
	i7-14700	20	5.4		i7-14700T	20	5.2		
	i5-14500	14	5		i5-14500T	14	4.8		
	i3-14100	4	4.7		i3-14100T	4	4.4		
Intel® Core™ (13th Gen)	i9-13900E	24	5.2		i9-13900TE	24	5		
	i7-13700E	16	5.1		i7-13700TE	16	4.8		
	i5-13500E	14	4.6		i5-13500TE	14	4.5		
	i3-13100E	4	4.4		i3-13100TE	4	4.1		
Intel® Core™ (12th Gen)	i9-12900E	16	5		i9-12900TE	16	4.8		
	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		

\*14th Gen support PC Client use condition only.

### Accessories

<b>DDR5 48G</b>	Certified DDR5 48GB 5600MHz RAM
<b>DDR5 32G</b>	Certified DDR5 32GB 4800/5600MHz RAM
<b>DDR5 24G</b>	Certified DDR5 24GB 5600MHz RAM
<b>DDR5 16G</b>	Certified DDR5 16GB 4800/5600MHz RAM
<b>DDR5 8G</b>	Certified DDR5 8GB 4800/5600MHz RAM
<b>PWA-160WB-WT</b>	160W, 24V, 85V AC to 264V AC Power Adapter with 3-pin Terminal Block (7.62mm pitch), Wide Temperature -30°C to +70°C
<b>PWA-180WB</b>	180W, 24V, 90V AC to 264V AC Power Adapter with 3-pin Terminal Block (7.62mm pitch)
<b>TMK2-20P-100</b>	Terminal Block 20-pin to Terminal Block 20-pin Cable, 100cm
<b>TMK2-20P-500</b>	Terminal Block 20-pin to Terminal Block 20-pin Cable, 500cm
<b>TMB-TMBK-20P</b>	Terminal Board with One 20-pin Terminal Block Connector and DIN-Rail Mounting
<b>Rackmount</b>	Rockmount Kit
<b>DIN Rail</b>	DIN Rail and VESA Mounting Kit
<b>VESA Mount</b>	VESA Mounting Kit
<b>M.2 Storage Module</b>	M.2 Key M Storage Module
<b>5G Module</b>	5G Module with Antenna
<b>4G Module</b>	4G/GPS Module with Antenna
<b>WiFi &amp; Bluetooth</b>	WiFi & Bluetooth Module with Antenna

### Optional Software

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