

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



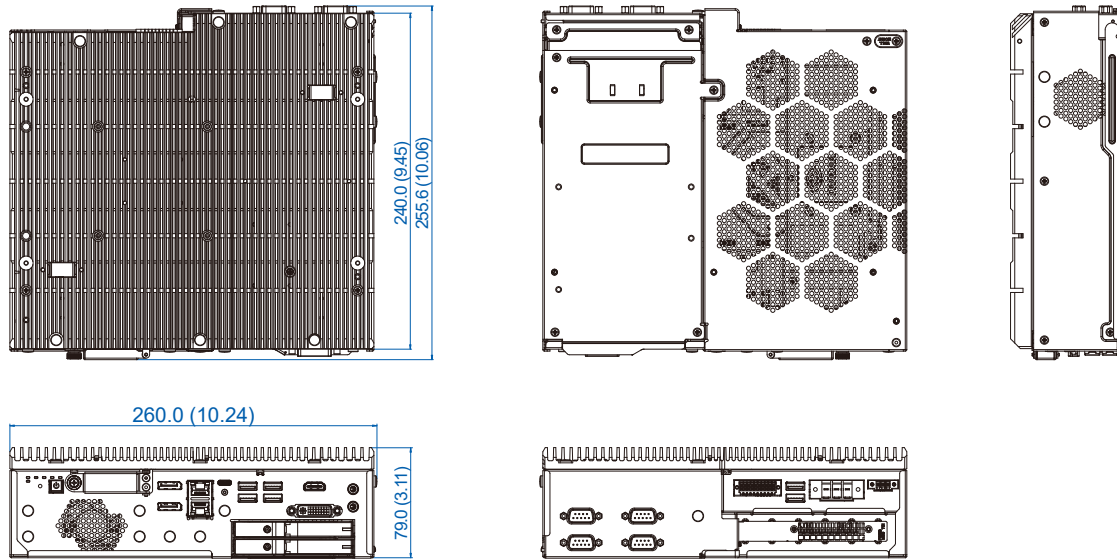
Specifications

System	
Processor	▪ 24-core Intel® Core™ i9/i7/i5/i3 Processor (14th gen, Raptor Lake-S Refresh) ▪ 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® R680E
BIOS	AMI
SIO	IT8786E
Memory	2 DDR5 5200MHz SO-DIMM, up to 96GB
OS	Windows 11, Windows 10, Linux
AI Accelerator	
AI chip	Neuchips RecAccel™ N3000 series AI chip
TOPS (INT8)	206 TOPS
Memory	LPDDR5 64GB
LLM Model	Supports Llama3-8b, Llama2-7B, Mistral-7B, TAIDE, Breeze-7B, Phi-2
RAG	Hardware enabled with engine in chip
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	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
M.2	▪ 1 M.2 Key B Socket (3042/2280, PCIe/USB 3, default/USB 2) ▪ 1 M.2 Key B Socket (3052/2280, PCIe/USB 3, default/USB 2) ▪ 1 M.2 Key E Socket (2230, PCIe/USB)
Graphics	
Graphics Processor	Intel® UHD Graphics 770/730 driven by Intel® X® Architecture
Interface	▪ 1 DVI-I : Up to 1920 x 1080 @60Hz ▪ 1 HDMI : Up to 1920 x 1080 @60Hz ▪ 2 DisplayPort : Up to 7680 x 4320 @60Hz/5120 x 2880 @120Hz

Storage	
SATA	2 SATA III (6Gbps) support software RAID 0, 1
M.2	1 M.2 Key M Socket (2280, PCIe Gen 4)
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® I210 GigE LAN
Power	
Power Input	DC 12V 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" x 9.45" x 3.11")
Weight	4.91 kg (10.82 lb)
Mounting	▪ Wallmount by mounting bracket ▪ VESA Mount (Optional), Rackmount (Optional)
Environment	
Operating Temperature	-20°C to 45°C (-4°F to 113°F), with System Fan
Storage Temperature	-40°C to 85°C (-40°F to 185°F)
Humidity	5% to 95% Humidity, non-condensing
Relative Humidity	95% @45°C
Shock	Operating, MIL-STD-810G, Procedure I
Vibration	Operating, MIL-STD-810G, Procedure I
EMC	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

DDR5 48G	Certified DDR5 48GB 5600MHz RAM
DDR5 32G	Certified DDR5 32GB 4800/5600MHz RAM
DDR5 24G	Certified DDR5 24GB 5600MHz RAM
DDR5 16G	Certified DDR5 16GB 4800/5600MHz RAM
DDR5 8G	Certified DDR5 8GB 4800/5600MHz 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)
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	Rockmount Kit
DIN Rail	DIN Rail and VESA Mounting 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

Optional Software

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