

RCX

3000 PEG

Intel® Core™ i9/i7/i5/i3 Processor (14th Gen)
Expandable GPU-accelerated System with Discrete Graphics



- Workstation-grade Platform : Intel® Core™ i9/i7/i5/i3 Processor running with Intel® R680E PCH supports max 65W TDP CPU
- Max 1800W power budget supports dual 900W NVIDIA® or AMD 2-slot full-length graphics card
- Up to 7 Slot PCIe expansions with PCIe 4.0 x8 and PCIe x4 signals
- 4 DisplayPort up to 4K resolution, USB 3.2 Gen 2x2 Type C with a max speed of 20Gbps data transfer supported, 2 Independent 2.5G LAN with Intel® TSN
- Flexible Power Input Design with Software Ignition Control : DC 16V to 50V
- 2 Front-access M.2 and 2 2.5" SSD Tray, multiple 5G/WiFi/4G/LTE/GPRS/UMTS

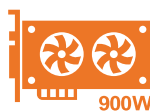
High-Performance AI Inference Platform | Advanced Integration Flexible Configuration | Industrial Optimization

The Rugged Science RCX-3000 PEG is an Expandable GPU-accelerated System powered by an Intel® Core™ i9/i7/i5/i3 Processor. The RCX-3000 PEG provides scalability with support for up to 7 PCIe expansions, making it capable of supporting a max 1800W power budget for dual 900W NVIDIA or AMD 2-slot full-length graphics card for AI and inferencing. Additionally, the RCX-3000 PEG offers rich I/O, including 2 GigE LAN with TSN, 4 USB 3.2 Gen 2, 4 COM, 32 Isolated DIO, 3 SIM card sockets, 1 Mini PCIe socket and provides 4 SATA for 2.5" SSD/HDD Tray. It also provides 2 front-access M.2 Key M SSD Trays for data storage. For industrial deployments, it features operating temperature range from -25°C to 45°C, and flexible power input options ranging from DC 16V to 50 and AC 90V to 220V.

The RCX-3000 PEG delivers workstation-grade computing capability, making it ideal for High-Speed AOI, 3D Mapping, Rolling Stock, and any Edge AI applications.



OpenVINO™



Specifications

RCX-04292024

System

Processor	- 24-core 14th Gen Intel® Core™ i9/i7/i5/i3 Processor Raptor Lake-S) - 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	4 DDR5 4800MHz UDIMM, up to 128GB (ECC/Non-ECC)
OS	Windows 11, Windows 10, Linux

I/O Interface

Serial	4 COM RS-232/422/485 (ESD 8kV)
USB	- 4 USB 3.2 Gen 2 Type A - 1 USB 3.2 Gen 2x2 Type C (5V/3A)
Isolated DIO	32 Isolated DIO : 16 DI, 16 DO
LED	Power, HDD, OOB
SIM Card	3 External SIM Card Sockets

Expansion

MiniPCIe	1 Mini PCIe Socket for PCIe/USB/SIM Card
PCIe	RCX-3750 PEG/APEG : - 2 PCIe x16 Slot with PCIe 4.0 x8 Signal - 3 PCIe x16 Slot with PCIe x4 Signal
	RCX-3430 PEG : - 1 PCIe x16 Slot with PCIe 4.0 x16 Signal - 2 PCIe x16 Slot with PCIe x4 Signal
M.2	- 2 M.2 Key B Socket (2280/3042/3052, PCIe x2/USB3(Default)/USB2) - 1 M.2 Key E Socket (2230, PCIe x1/USB)

Graphics

Processor	Intel® UHD Graphics 770/730 driven by Intel® X® Architecture
Interface	4 Independent displays : 4 DisplayPort, up to 4096 x 2304 @60Hz

Storage

SATA	4 SATA III (6Gbps) support S/W RAID 0, 1, 5, 10
M.2	2 Front-access M.2 Key M SSD Tray (2280, PCIe x4)
Storage Device	- 2 Front-access 2.5" SSD/HDD Tray - 2 Internal Bracket 2.5" SSD/HDD

Audio

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

Ethernet

LAN 1	Intel® I226 2.5GigE LAN supports TSN
LAN 2	Intel® I226 2.5GigE LAN supports TSN

Power

Power Input	RCX-3750/3430 PEG : DC 16V to 50V RCX-3750 APEG : AC 90V to 240V (2000W @220V for dual discrete graphics card operation)
Power Interface	RCX-3750/3430 PEG : 4-pin Terminal Block : V+, V-, V-, V- RCX-3750 APEG : 3-pin C14-type AC Plug
Ignition Control	16-mode Software Ignition Control
Remote Switch	3-pin Terminal Block

Out-of-Band Management

MCU	Nuvoton NUC980
Interface	OOB LAN, 10/100Mb Ethernet LAN, RJ45 Connector
Remote Management	Support Remote Power ON/OFF, Reset and Power Cycling

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	RCX-3750 PEG/APEG : 253mm x 269mm x 398mm (9.96" x 10.59" x 15.67") RCX-3430 PEG : 206mm x 269mm x 398mm (8.11" x 10.59" x 15.67")
Weight	RCX-3750 PEG/APEG : 10.2 kg (22.5lb) RCX-3430 PEG : 8.6 kg (18.96lb)
Mounting	Wallmount by mounting bracket

Environment

Operating Temp.	-25°C to 45°C (-13°F to 113°F)
Storage Temp.	-40°C to 85°C (-40°F to 185°F)
Humidity	5% to 95% Humidity, non-condensing
Relative Humidity	95% @45°C
Shock/Vibration	- IEC 61373 : 2010 - Railway Applications : Rolling Stock Equipment, Shock and Vibration Tests
EMC	CE, FCC, EN50155, EN50121-3-2

Order Information

Model	PCIe 4.0		PCIe x4	Power Input	2.5G LAN	USB 3.2 Gen 2	SSD Tray	M.2 Tray
	x16	x8						
RCX-3750 PEG	-	2	3	DC				
R C X - 3 7 5 0 APEG	-	2	3	AC	2	4	2	2
RCX-3430 PEG	1	-	2	DC				

CPU List

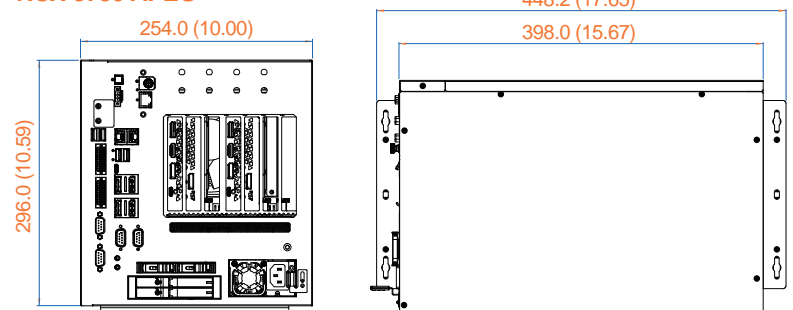
Series	CPU	GHz	TDP (W)	CPU	GHz	TDP (W)	ECC
Intel® Core™ (14th Gen)*	i9-14900	24	5.8	i9-14900T	24	5.5	
	i7-14700	20	5.4	i7-14700T	20	5.2	
	i5-14500	14	5	i5-14500T	14	4.8	
	i3-14100	4	4.7	i3-14100T	4	4.4	
Intel® Core™ (13th Gen)	i9-13900E	24	5.2	i9-13900TE	24	5	
	i7-13700E	16	5.1	i7-13700TE	16	4.8	
	i5-13500E	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.

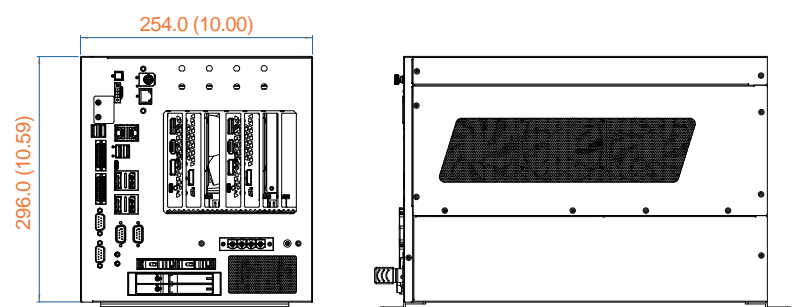
Dimensions & Drawing

Unit : mm (inch)

RCX-3750 APEG



RCX-3750 PEG



RCX-3430 PEG

