

# RCX 3000 PEG

13th Gen Intel® Core™ i9/i7/i5/i3 Processor (Raptor Lake/Alder Lake)  
Expandable GPU-accelerated System with Discrete Graphics



## ^ Autonomous Robotic

- Workstation-grade Platform : 13th/12th Gen Intel® Core™ i9/i7/i5/i3 Processor (Raptor Lake-S/Alder Lake-S) 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
- Flexible Power Input Design with Software Ignition Control : DC 16V to 50V or AC 220V
- Up to 7 Slot PCIe expansions with PCIe 4.0 x16/PCIe 4.0 x8 and PCIe x4 signals
- 2 Front-access M.2 and 2 2.5" SSD Tray, multiple 5G/WiFi/4G/LTE/GPRS/UMTS
- 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
- Support remote devices Out-Of-Band management functions powered by Allxon



## ^ Vehicle Computing



## ^ Deep Learning

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# 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® R680E
BIOS	AMI
SIO	IT8786E
Memory	4 DDR5 4800MHz UDIMM, up to 128GB (ECC/Non-ECC)
OS	Windows 10/11, 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	<b>RCX-3750 PEG/APEG :</b> - 2 PCIe x16 Slot with PCIe 4.0 x8 Signal - 3 PCIe x16 Slot with PCIe x4 Signal
	<b>RCX-3430 PEG :</b> - 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

Graphics Processor	Intel® UHD Graphics 770/730 driven by Intel® Xe 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	<b>RCX-3750/3430 PEG :</b> DC 16V to 50V <b>RCX-3750 APEG :</b> AC 90V to 240V (2000W @220V for dual discrete graphics card operation)
Power Interface	<b>RCX-3750/3430 PEG :</b> 4-pin Terminal Block : V+, V+, V-, V- <b>RCX-3750 APEG :</b> 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	<b>RCX-3750 PEG/APEG :</b> 253mm x 269mm x 398mm (9.96" x 10.59" x 15.67") <b>RCX-3430 PEG :</b> 206mm x 269mm 398mm (8.11" x 10.59" x 15.67")
Weight	<b>RCX-3750 PEG/APEG :</b> 10.2 kg (22.5lb) <b>RCX-3430 PEG :</b> 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 - IEC 61373 : 2010 - Railway Applications : Rolling Stock Equipment, Shock and Vibration Tests
Shock/Vibration	
EMC	CE, FCC, EN50155, EN50121-3-2

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# Order Information

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

## CPU List

Series	CPU	Cores	GHz	TDP (W)	CPU	Cores	GHz	TDP (W)
Intel® Core™	i9-13900E	24	5.2	65	i9-13900TE	24	5	35
	i7-13700E	16	5.1	65	i7-13700TE	16	4.8	35
	i5-13500E	14	4.6	65	i5-13500TE	14	4.5	35
	i3-13100E	4	4.4	65	i3-13100TE	4	4.1	35
	i9-12900E	16	5	65	i9-12900TE	16	4.8	35
	i7-12700E	12	4.8	65	i7-12700TE	12	4.7	35
	i5-12500E	6	4.5	65	i5-12500TE	6	4.3	35
	i3-12100E	4	4.2	65	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 UDIMM 32GB 4800MHz RAM
DDR5 16G	Certified DDR5 UDIMM 16GB 4800MHz RAM
DDR5 8G	Certified DDR5 UDIMM 8GB 4800MHz RAM
PWS-1000W-24V	1000W, 24V, 90V AC to 264V AC Power Supply
PWS-1500W-24V	1500W, 24V, 90V AC to 264V AC Power Supply
PWS-3000W-24V	3000W, 24V, 90V AC to 264V AC Power Supply
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/Key B PCIe 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)

