

# RCX-1000 PEG



Workstation-grade Intel® Xeon®/Core™ i7/i5/i3 (CFL-R)  
Expandable GPU Computing System with  
NVIDIA® Tesla®/Quadro®/GeForce® Graphics

- 8 cores 9th Generation Intel® Xeon®/Core™ i7/i5/i3 (Coffee Lake Refresh) with workstation-grade Intel® C246 Chipset
- 4 DDR4 2666MHz Memory, up to 128GB (ECC/Non-ECC)
- 6 external USB 3.1 Gen 2 support up to 10Gbps data transfer
- Supports up to 300W NVIDIA® or AMD Graphics card
- NVIDIA® Tesla®/Quadro®/GeForce® graphics card, powered by advanced NVIDIA Turing/Pascal architecture, delivers leading AI computing productivity
- Multiple DVI, HDMI and DisplayPort display interfaces support max 7 independent displays, up to 8K Resolution
- 2 Independent GigE LAN, iAMT 12.0 supported
- 2 External SIM Socket for WiFi/4G/3G/LTE/GPRS/UMTS
- 4 Front-access 2.5" SSD Tray, RAID 0, 1, 5, 10 supported
- 32 Isolated DIO, 4 COM RS-232/422/485
- 2 PCI/PCIe Slot, 2 M.2 Socket : 1 M.2 Key M, 1 M.2 Key E
- System-oriented power optimization, up to 300W independent graphics card
- Supports wide range power input with 80V Surge Protection
- Configurable Ignition Power Control



Deep Learning



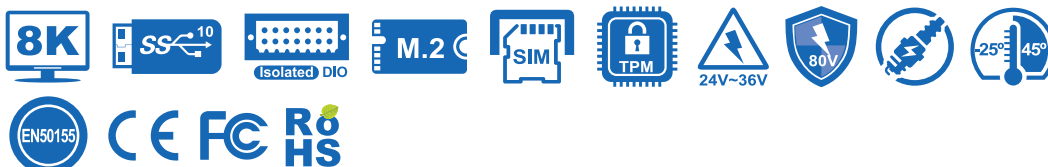
Autonomous Vehicles



Robotic Control



Public Surveillance



# Specifications

## System

|           |                                                         |
|-----------|---------------------------------------------------------|
| Processor | 8 cores Intel® Xeon®/Core™ i7/i5/i3 Processor (CFL-R 5) |
| Chipset   | Intel® C246                                             |
| BIOS      | AMI                                                     |
| SIO       | IT8786E                                                 |
| Memory    | 4 DDR4 2666MHz SO-DIMM, up to 128GB (ECC/Non-ECC)       |
| OS        | Windows 10, Linux                                       |

## I/O Interface

|              |                                                        |
|--------------|--------------------------------------------------------|
| Serial       | 4 COM RS-232/422/485 (ESD 8KV)                         |
| USB          | - 6 USB 3.1 Gen 2 (External)<br>- 1 USB 2.0 (Internal) |
| Isolated DIO | 32 Isolated DIO : 16 DI, 16 DO                         |
| LED          | Power, HDD, Wireless                                   |
| SIM Card     | 2 External SIM Card Socket                             |

## Expansion

|           |                                                  |
|-----------|--------------------------------------------------|
| Mini PCIe | 2 Full-size for PCIe/USB/External SIM Card/mSATA |
| M.2       | 1 M.2 Key E Socket                               |
| PCI/PCIe  | Up to 2 PCI/PCIe Slot, by request                |

## Graphics

|                    |                                                                                                                                                                                                   |
|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Graphics Processor | Intel® UHD Graphics 630<br><b>Independent Graphics</b> : By request                                                                                                                               |
| Interface          | Up to 7 independent displays :<br>- 1 DVI : Up to 1920 x 1200 @60Hz<br>- 1 DisplayPort : Up to 4096 x 2304 @60Hz<br>- 1 Digital Display : Up to 4096 x 2304 @60Hz<br>- By requested Graphics Card |

## Storage

|                |                                                           |
|----------------|-----------------------------------------------------------|
| SATA           | 4 SATA III (6Gbps) support S/W RAID 0, 1, 5, 10           |
| mSATA          | 2 SATA III (Mini PCIe Type, 6Gbps)                        |
| Storage Device | - 4 Front-access 2.5"SSD/HDD Tray<br>- 1 M.2 Key M Socket |

## Audio

|                 |                                      |
|-----------------|--------------------------------------|
| Audio Codec     | Realtek ALC892, 5.1 Channel HD Audio |
| Audio Interface | 1 Mic-in, 1 Line-out                 |

## Ethernet

|       |                                           |
|-------|-------------------------------------------|
| LAN 1 | Intel® I219LM GigE LAN supports iAMT 12.0 |
| LAN 2 | Intel® I210 GigE LAN                      |

## Power

|                  |                                               |
|------------------|-----------------------------------------------|
| Power Input      | - 24V to 36V, DC-in<br>- 12V DC-in (Optional) |
| Power Interface  | 3-pin Terminal Block : V+, V-, Frame Ground   |
| Ignition Control | 16 Mode (Internal)                            |
| Remote Switch    | 3-pin Terminal Block                          |
| Surge Protection | Up to 80V/1ms Transient Power                 |

## Others

|                |                                                                               |
|----------------|-------------------------------------------------------------------------------|
| TPM            | Optional Infineon SLB9665 supports TPM 2.0, LPC 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                 | 330.0mm x 210.0mm x 172.0mm (12.99" x 8.27" x 6.77")                                 |
| Weight (w/o Graphics Card) | <b>RCX-1400FR PEG</b> : 5.6 kg (12.37lb)<br><b>RCX-1400F PEG</b> : 5.4 kg (11.87 lb) |
| 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<br>- Railway Applications : Rolling Stock Equipment, Shock and Vibration Tests |
| EMC               | CE, FCC, EN50155, EN50121-3-2                                                                     |

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# Order Information

| Model          | SSD Tray | PCI | PCIe x4 | PCIe x1 | 10G USB 3.1 | SIM | Isolated DIO |
|----------------|----------|-----|---------|---------|-------------|-----|--------------|
| RCX-1430FR-PEG | 4        | -   | 1       | 1       |             |     |              |
| RCX-1430F-PEG  | -        | -   | 1       | 1       |             |     |              |
| RCX-1421FR-PEG | 4        | 1   | 1       | -       | 6           | 2   | 32           |
| RCX-1421F-PEG  | -        | 1   | 1       | -       |             |     |              |
| RCX-1412FR-PEG | 4        | 2   | -       | -       |             |     |              |
| RCX-1412F-PEG  | -        | 2   | -       | -       |             |     |              |

## CPU List

| Series       | CPU      | Cores | GHz | TDP (W) | CPU       | Cores | GHz | TDP (W) | ECC RAM |
|--------------|----------|-------|-----|---------|-----------|-------|-----|---------|---------|
| Intel® Xeon® | E-2176G  | 6     | 4.6 | 80      | E-2278GE  | 8     | 4.7 | 80      | Yes     |
|              |          |       |     |         | E-2278GEL | 8     | 3.9 | 35      |         |
|              | E-2124G  | 4     | 4.5 | 71      | E-2226GE  | 6     | 4.6 | 80      |         |
| Intel® Core™ | i7-8700  | 6     | 4.6 | 65      | i7-9700E  | 8     | 4.4 | 65      | N/A     |
|              | i7-8700T | 6     | 4   | 35      | i7-9700TE |       | 3.8 | 35      |         |
|              | i5-8500  | 6     | 4.1 | 65      | i5-9500E  | 6     | 4.2 | 65      |         |
|              | i5-8500T | 6     | 3.5 | 35      | i5-9500TE |       | 3.6 | 35      |         |
|              | i3-8100  | 4     | 3.6 | 65      | i3-9100E  | 4     | 3.7 | 65      |         |
|              | i3-8100T | 4     | 3.1 | 35      | i3-9100TE |       | 3.2 | 35      |         |

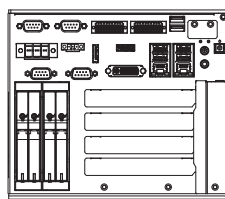
## Accessories

|                  |                                                                               |
|------------------|-------------------------------------------------------------------------------|
| DDR4 32G         | Certified DDR4 32GB 2666MHz RAM                                               |
| DDR4 16G         | Certified DDR4 16GB 2666/2400/2133 MHz RAM                                    |
| DDR4 8G          | Certified DDR4 8GB 2666/2400/2133 MHz RAM                                     |
| DDR4 4G          | Certified DDR4 4GB 2666/2400/2133 MHz RAM                                     |
| PWS-480W-WT      | 480W, 24V, 90V AC to 305V AC Power Supply, Wide-Temp, IP65                    |
| PWS-600W         | 600W, 24V, 90V AC to 305V AC Power Supply                                     |
| PWS-600W-WT      | 600W, 28.8V, 90V to 305V AC Power Supply, Wide Temperature -40°C to +70°C     |
| FAN Sink         | Fan Sink for RCX-1000 Series                                                  |
| 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 |
| 4G Module        | Mini PCIe 4G/GPS Module with Antenna                                          |
| WiFi & Bluetooth | WiFi & Bluetooth Module with Antenna                                          |

# Dimensions & Drawing

Unit : mm (inch)

## RCX-1400FR PEG



## RCX-1400F PEG

