

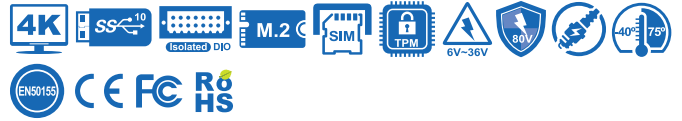
# RCX-1412F

Workstation-grade 8th Intel® Xeon®/Core™ i7/i5/i3 Fanless Robust Computing System with Intel® C246 Chipset, 2 GigE LAN, 1 PCIe x16, 2 PCI, 6 USB 3.1 Gen 2, 4 COM, 2 SIM, 32 Isolated DIO, High Performance, Expandable, Rugged, -40°C to 75°C Extended Temperature



## Features

- 6 Cores 8th Generation Intel® Xeon®/Core™ i7/i5/i3 (Coffee Lake-S) with workstation-grade Intel® C246 Chipset
- 4 DDR4 2666MHz Memory, up to 128GB (ECC/Non-ECC)
- 6 ports external USB 3.1 Gen 2 support up to 10Gbps data transfer
- Rugged & Fanless design, -40°C to 75°C Operating Temperature
- 2 External SIM Socket for WiFi/4G/3G/LTE/GPRS/UMTS
- 4 2.5" SSD Bracket, RAID 0, 1, 5, 10 supported
- 1 PCIe x16, 2 PCI
- Supports max 300W Power Budget for independent graphics operation
- 32 Isolated DIO, 6 USB 3.1, 4 COM RS-232/422/485
- 2 M.2 Socket : 1 M.2 Key M, 1 M.2 Key E
- 6V to 36V DC Power Input with 80V Surge Protection
- Configurable Ignition Power Control



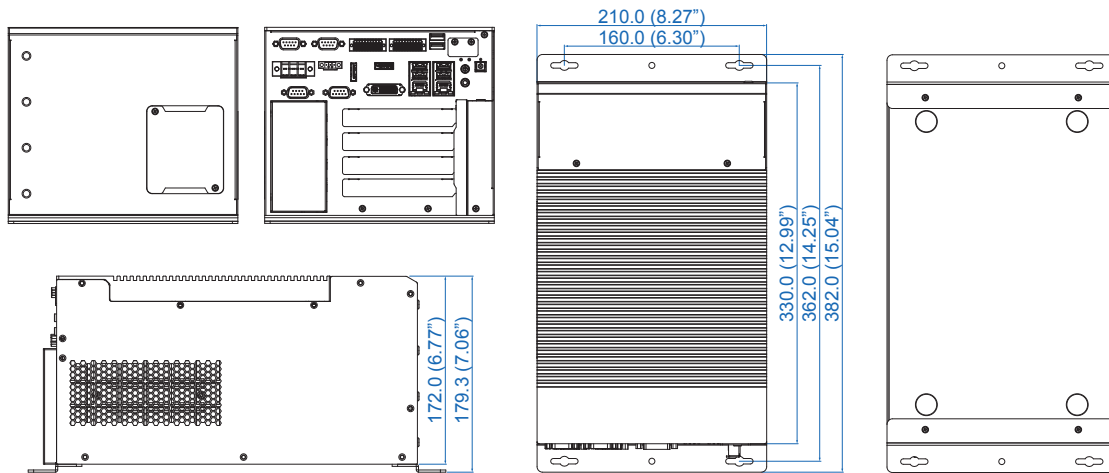
## Specifications

System	
Processor	6 Cores Intel® Xeon®/Core™ i7/i5/i3 Processor (Coffee Lake-S)
Chipset	Intel® C246
BIOS	AMI
SIO	IT8786E
Memory	4 DDR4 2666MHz SO-DIMM, up to 128GB (ECC/Non-ECC)
I/O Interface	
Serial	4 COM RS-232/422/485 (ESD 8KV)
USB	<ul style="list-style-type: none"> <li>▪ 6 USB 3.1 Gen 2 (External)</li> <li>▪ 1 USB 2.0 (Internal)</li> </ul>
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
PCIe	1 PCIe x16
PCI	2 PCI
Graphics	
Graphics Processor	Intel® UHD Graphics P630/630
Interface	<ul style="list-style-type: none"> <li>▪ 1 DVI-I : Up to 1920 x 1200 @ 60Hz</li> <li>▪ 2 DisplayPort : Up to 4096 x 2304 @ 60Hz</li> </ul>
Storage	
SATA	4 SATA III (6Gbps) support S/W RAID 0, 1, 5, 10
mSATA	2 SATA III (Mini PCIe Type, 6Gbps)
Storage Device	<ul style="list-style-type: none"> <li>▪ 4 2.5" SSD/HDD Bracket (Internal)</li> <li>▪ 1 M.2 Key M Socket (Internal)</li> </ul>
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

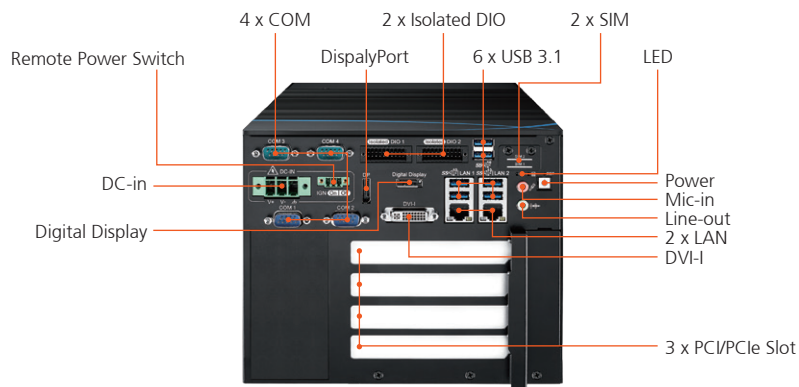
Power	
Power Input	6V to 36V, DC-in
Power Interface	3-pin Terminal Block : V+, V-, Frame Ground
Ignition Control	16 Mode (Internal)
Remote Switch	3-pin Terminal Block
Surge Protection	Up to 80V/1ms Transient Power
Others	
TPM	Optional Infineon SLB9665 supports TPM 2.0, LPC Interface
Watchdog Timer	Reset : 1 to 255 sec./min. per step
Smart Management	Wake on LAN, PXE supported
HW Monitor	Monitoring temperature, voltages. Auto throttling control when CPU overheats.
Software Support	
OS	Windows 10, Linux
Mechanical	
Dimensions	330.0mm x 210.0mm x 172.0mm (12.99" x 8.27" x 6.77")
Weight	4.9 kg (10.8 lb)
Mounting	Wallmount by mounting bracket
Environment	
Operating Temperature	35W TDP CPU : -40°C to 75°C (-40°F to 158°F) 65W TDP CPU : -40°C to 55°C (-4°F to 131°F) 80W TDP CPU : -40°C to 45°C (-4°F to 113°F)
Storage Temperature	-40°C to 85°C (-40°F to 185°F)
Humidity	5% to 95% Humidity, non-condensing
Relative Humidity	95% @ 75°C
Shock	<ul style="list-style-type: none"> <li>▪ IEC 60068-2-27</li> <li>▪ SSD : 50G @ wallmount, Half-sine, 11ms</li> </ul>
Vibration	<ul style="list-style-type: none"> <li>▪ IEC 60068-2-64</li> <li>▪ SSD : 5Grms, 5Hz to 500Hz, 3 Axis</li> </ul>
EMC	CE, FCC, EN50155, EN50121-3-2

# Dimensions

Unit : mm/ inch



# Front I/O



# Order Information

<b>RCX-1412F</b>	RCX-1400F, 2 GigE LAN, 1 PCIe x16, 2 PCI, 4 COM, 6 USB 3.1, 2 SIM, Isolated DIO
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## Accessories

<b>DDR4 32G</b>	Certified DDR4 32GB 2666MHz RAM
<b>DDR4 16G</b>	Certified DDR4 16GB 2666/2400/2133 MHz RAM
<b>DDR4 8G</b>	Certified DDR4 8GB 2666/2400/2133 MHz RAM
<b>DDR4 4G</b>	Certified DDR4 4GB 2666/2400/2133 MHz RAM
<b>PWA-160W-WT</b>	160W, 24V, 85V AC to 264V AC Power Adapter with 3-pin Terminal Block, Wide Temperature -30°C to +70°C
<b>PWA-280W-WT</b>	280W, 24V, 85V AC to 264V AC Power Adapter with 3-pin Terminal Block, Wide Temperature -30°C to +70°C
<b>PWS-480W-WT</b>	480W, 24V, 90V AC to 305V AC Power Supply, Wide-Temp, IP65
<b>PWS-600W</b>	600W, 24V, 90V AC to 305V AC Power Supply
<b>PWS-600W-WT</b>	600W, 28.8V, 90 to 305V AC Power Supply, Wide Temperature -40°C to +70°C
<b>FAN Module</b>	Fan Module for RCX-1400/RCX-1400F Series
<b>FAN Cover</b>	Fan Cover for RCX-1000 Series
<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>4G Module</b>	Mini PCIe 4G/GPS Module with Antenna
<b>WiFi &amp; Bluetooth</b>	WiFi & Bluetooth Module with Antenna

## CPU List

Series	CPU	Cache (MB)	Turbo Freq. (GHz)	TDP (W)	ECC Memory
Intel® Xeon®	E-2176G	12	4.6	80	Yes
	E-2124G	8	4.5	71	
Intel® Core™	i7-8700	12	4.6	65	NA
	i7-8700T		4.0	35	
	i5-8500	9	4.1	65	NA
	i5-8500T		3.5	35	
	i3-8100	6	3.6	65	Yes
	i3-8100T		3.1	35	

RCX-1412F-20181225  
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