



SUPERIOR AI EDGE COMPUTING SYSTEM

# RCO-6000-CFL-8NS

Superior AI Edge Computing System W/ LGA 1151 for Intel 8th/9th Gen CPU & Q370 PCH, 8 Bay U.2 7mm, 1x PCIe x4 (1-lane)



## FEATURES

- LGA 1151 socket for 8<sup>th</sup>/9<sup>th</sup> Gen. Intel® CFL-R S Processor Pentium® / Celeron® Desktop Processor
- Intel® Q370 chipset
- 2x 260-pin DDR4 SODIMM. Max. up to 64GB
- Triple Independent Display by 1x DVI-I and 2x DisplayPort
- 2x Intel® GbE supporting Wake-on-LAN and PXE
- 2x Removable 4 Bay NVMe SSD Module with RAID 0, 1 (Support H=7mm)
- 4x 2.5" SATA HDD Bay and 2x mSATA with RAID 0, 1, 5, 10 support
- 1x M.2 (M Key, PCIe x4, 2280, Support NVMe)
- 1x M.2 (E Key, PCIe x2, 2230, USB 2.0, Support CNVi), 2x SIM socket
- 9 to 48VDC Wide Range Power Input Supporting AT/ATX Mode
- Wide Operating Temperature [-25°C to 60°C]
- Power ignition management

## SPECIFICATIONS

### System

#### Processor

Support 8<sup>th</sup>/9<sup>th</sup> Gen Intel® CFL-R S Processor (LGA 1151, 65W/35W TDP)

- Intel® Core™ i7-9700E, 8 Cores, 12MB cache, up to 4.4 GHz
- Intel® Core™ i5-9500E, 6 Cores, 9MB Cache, up to 4.2 GHz
- Intel® Core™ i3-9100E, 4 Core, 6MB Cache, 3.7 GHz
- Intel® Core™ i7-9700TE, 8 Cores, 12MB cache, up to 3.8 GHz
- Intel® Core™ i5-9500TE, 6 Cores, 9MB Cache, up to 3.6 GHz
- Intel® Core™ i3-9100TE, 4 Core, 6MB Cache, 3.2 GHz
- Intel® Core™ i7-8700T, 6 Cores, 12MB cache, up to 4.0 GHz
- Intel® Core™ i5-8500T, 6 Cores, 9MB Cache, up to 3.5 GHz
- Intel® Core™ i3-8100T, 4 Cores, 6MB Cache, 3.1 GHz
- Intel® Pentium® G5400T, 2 Cores, 4MB Cache, up to 3.1 GHz
- Intel® Celeron® G4900T, 2 Cores, 2MB Cache, up to 2.9 GHz

#### System Chipset

Intel® Q370 Express Chipset

#### LAN Chipset

GbE1: Intel I219LM (Support Wake-on-LAN and PXE)  
GbE2: Intel I210-AT (Support Wake-on-LAN and PXE)

#### Audio Codec

Realtek ALC888S

#### System Memory

2x 260-Pin DDR4 2400/2666MHz SODIMM.  
Max. up to 64GB (Un-buffered and Non-ECC)

#### BIOS

AMI 256Mbit SPI BIOS

#### Watchdog

Software Programmable Supports 1-255 sec. System Reset

#### TPM

TPM 2.0

### Display

#### Graphics

Intel® UHD Graphics 610/630

#### DVI

1x DVI-I, support resolution 1920 x 1200

#### DisplayPort

2x DisplayPort, support resolution 4096 x 2304

#### Multiple Display

3 Display interfaces

### Storage

#### SSD/HDD

2x Internal 2.5" SATA HDD Bay (support H=9.5mm)  
2x Removable 2.5" SATA HDD Bay  
(support H=7mm, hot-swappable) Support RAID 0, 1, 5, 10

#### NVMe

2x Removable 4 Bay NVMe SSD Module with RAID 0, 1 support (Support H=7mm)

#### mSATA

1x mSATA (Shared by 1x Mini PCI Express)

#### M.2

1x M.2 (M Key, PCIe x4, 2280, Support NVMe)  
1x M.2 (E Key, PCIe x2, 2230, USB 2.0, Support CNVi)

#### SIM Socket

2x External SIM socket

### Expansion

#### Mini PCI Express

2x Full-size Mini PCIe (1x shared by 1x mSATA)

#### PCIe

1x PCIe x4 (x1 Lane)

#### 4-Port GbE (Optional)

4-port GbE module with Intel® I350-AT4 Chipset, RJ-45 or M12 connector (PoE optional)  
Occupied one Universal I/O Slot

#### 2-Port GbE (Optional)

2-Port RJ45 10GbE with Intel X710-AT2 Chipset  
Occupied one Universal I/O Slot

#### 4-Port USB (Optional)

4-Port USB with Renesas uPD720201K8 host controller  
Occupied one Universal I/O Slot

#### 5G (Optional)

1x M.2 for 5G (B Key, PCIe x4, USB 3.0, 3042/3052)  
Including 2x SIM socket, 1x SIM switch  
Occupied one Universal I/O Slot

### I/O

#### COM

4x RS-232/422/485 ; 2x RS-232/422/485 (internal)

#### USB

4x USB 3.2 Gen 2 (10 Gbps) ;  
5x USB 3.2 Gen 1 (5 Gbps, internal) ;  
1x USB 3.2 Gen 1 header (5 Gbps, internal)

#### LAN

2x RJ45

#### Audio

1x Mic-in, 1x Line-out

#### DIO

8 in / 8 out (Isolated)

#### Universal I/O Bracket

1x Universal I/O Bracket (By mini PCIe interface)

#### Others

5x WiFi Antenna Holes  
1x Power Switch, 1x AT/ATX Switch, 1x Remote Power On/Off  
1x PC/Car Mode Switch, 1x Delay Time Switch  
1x Removable CMOS Battery

#### Windows

Windows 10

#### Linux

Linux kernel 5.X

### Power

#### Power Mode

AT, ATX

#### Power Supply Voltage

9-48VDC

#### Power Ignition Sensing

Power Ignition Management

#### Power Connector

3-pin Terminal Block, 4-pin Terminal Block for Storage  
(12V requires 4-pin terminal block)

#### Power Adaptor

Optional AC/DC 24V/9.2A, 220W  
Optional AC/DC 24V/11.27A, 280W

#### Power Protection

OVP (Over Voltage Protection); OCP (Over Current Protection)  
Reverse Protection

### Environment

#### Operating Temp.

-25°C to 60°C (35W /65W CPU)

#### Storage Temp.

-30°C to 85°C

#### Relative Humidity

10% to 95% (non-condensing)

#### Vibration

With SSD: 3 Grms, 5 - 500 Hz, 0.5 hr/axis  
With HDD: 1 Grms, 5 - 500 Hz, 0.5 hr/axis

#### Shock

With SSD: 20G, half sine, 11ms

#### Standards / Certification

CE, FCC Class A, E-Mark,  
EMC Conformity with EN 50155, EN 50121-3-2

### Physical

#### Construction

Extruded Aluminum with Heavy Duty Metal

#### Dimension

261 (D) x 240 (W) x 168 (H)

#### Weight

10.1 kg

#### Mounting

Wall Mounting

\* For 8<sup>th</sup>/9<sup>th</sup> CPUs configured to run at 65W, operating temperatures will be limited to 60°C.

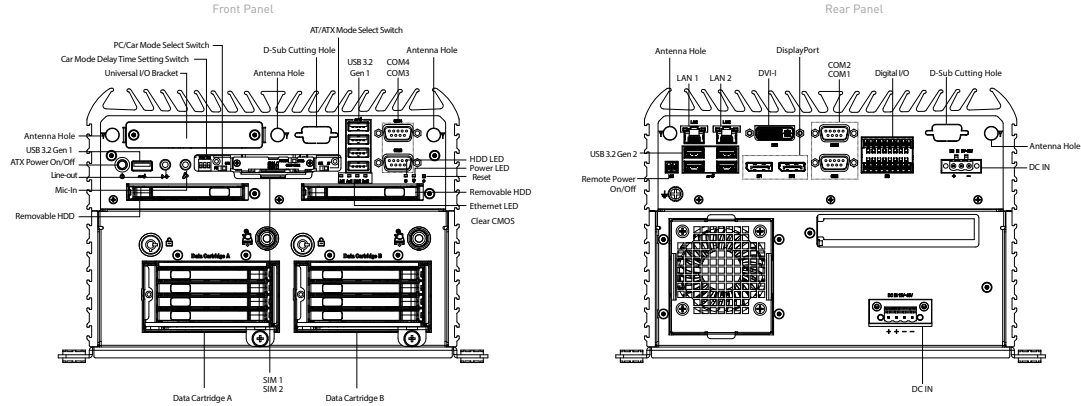
\*\* 65W CPUS may experience thermal throttling depending on extreme application workloads; this is also due to an increase in the physical CPU cores from the Intel silicon (up to 8 cores). Please note, this does not indicate system malfunction or problems in the fanless design. Please consult our embedded engineers for the best configuration to match your application requirements.

\*\*\* All specifications and photos are subject to change without notice.



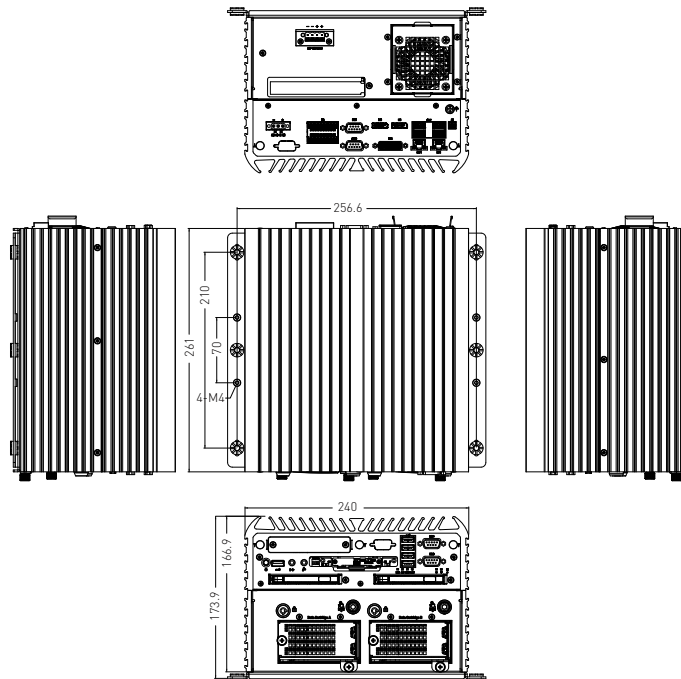
# RCO-6000-CFL-8NS

## EXTERNAL I/O MECHANICAL LAYOUT



## DIMENSION

Unit: mm



## ORDERING INFORMATION

MODEL NO.	DESCRIPTION
1-E09A22102	Adapter AC/DC 24V 9.2A 220W with 3pin Terminal Block Plug 5.0mm Pitch
1-E09A22801	Adapter AC/DC 24V/11.67A 280W with 3pin Terminal Block Plug 5.0mm Pitch
1-TPCD00005	Power Cord, 3-pin US Type, 180cm
1-TPCD00002	Power Cord, European Type, 180cm
1-TPCD00001	Power Cord, 3-pin UK Type, 180cm

## PACKING LIST

- 1x RCO-6000-CFL-8NS Series Embedded System
- 1x Wall Mount Kit
- 1x Accessory Kit
- 1x DVI to VGA Adapter

## AVAILABLE MODELS

MODEL NO.	DESCRIPTION
RCO-6000-CFL-8NS	Superior AI Edge Computing System W/ LGA 1151 for Intel 8th/9th Gen CPU & Q370 PCH, 8 Bay U.2 7mm, 1x PCIe x4 (1-lane)

## Assured Systems

Assured Systems is a leading technology company with over 1,500 regular clients in 80 countries, deploying over 85,000 systems to a diverse customer base in 12 years of business. We offer high-quality and innovative rugged computing, display, networking and data collection solutions to the embedded, industrial, and digital-out-of-home market sectors.

### US

[sales@assured-systems.com](mailto:sales@assured-systems.com)

Sales: +1 347 719 4508  
Support: +1 347 719 4508

1309 Coffeen Ave  
Ste 1200  
Sheridan  
WY 82801  
USA

### EMEA

[sales@assured-systems.com](mailto:sales@assured-systems.com)

Sales: +44 (0)1785 879 050  
Support: +44 (0)1785 879 050

Unit A5 Douglas Park  
Stone Business Park  
Stone  
ST15 0YJ  
United Kingdom

VAT Number: 120 9546 28  
Business Registration Number: 07699660