



INDUSTRIAL COMPUTER

RCO-3000-CFL

Superior Fanless Embedded System with LGA 1151 for Intel 8th/9th Gen CPU & Q370 PCH

Features

- Support 9th Gen Intel® CFL-R S Processor (LGA 1151, 35W TDP)
- 2x 260-Pin DDR4 2400/2666MHz SODIMM, Max. up to 64GB
- Intel® Q370 Chipset
- Triple Independent Display: 2x DisplayPort, 1x DVI-I
- 2x Intel® GbE supporting Wake-on-LAN and PXE
- 2x Full-size Mini PCIe (shared by 1x mSATA), and 2x SIM socket
- 2x 2.5" SATA HDD Bay with RAID 0, 1, 5 support, 1x mSATA (Shared by 1x Mini PCIe)
- 1x M.2 (E Key, PCIe x1, USB 2.0, 2230, Support CNVi)
- 5x RS-232/422/485 (2x internal)
- 4x USB 3.2 Gen 2 (10 Gbps), 4x USB 2.0 (2x internal)
- 8x DI + 8x DO with isolation
- 9 to 48VDC Wide Range Power Input Supporting AT/ATX Mode
- Wide Operating Temperature (-25°C to 60°C)
- TPM 2.0 Supported



Specifications

System

Processor
Support 8th/9th 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) |
| Graphics | Intel® UHD Graphics 610/630 |
| BIOS | AMI 256Mbit SPI BIOS |
| Watchdog | Software Programmable Supports 1~255 sec. System Reset |
| TPM | TPM 2.0 |

Display

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|------------------|--|
| Display Port | 2x DisplayPort, support resolution 4096 x 2304 |
| DVI | 1x DVI-I, support resolution 1920 x 1200 |
| Multiple Display | Triple Display |
| VGA | Yes (by optional split cable) |

Storage

| | |
|------------|---|
| M.2 | 1x M.2 (E Key, PCIe x1, USB 2.0, 2230, Support CNVi) |
| mSATA | 1x mSATA (shared by 1x Mini PCIe) |
| SIM Socket | 2x External SIM socket |
| SSD/HDD | 1x Internal 2.5" SATA HDD Bay (support H=9mm) 1x Hotswap 2.5" SATA HDD Bay (support H=7mm) Support RAID 0, 1, 5 |

Expansion

| | |
|-------------------|--|
| Mini PCIe | 2x Full-size Mini PCIe (1x Shared with mSATA) |
| Expansion Modules | 4-port GbE module with Intel® I350-AT4 Chipset, RJ-45 or M12 connector 4-Port USB with Renesas uPD720201K8 host controller 2-Port RJ45 10GbE with Intel X710-AT2 Chipset |

I/O

| | |
|-------|--|
| Audio | 1x Line-out |
| COM | 3x RS-232/422/485 ; 2x RS-232/422/485 (internal) |
| DIO | 8 in / 8 out (Isolated) |

| | |
|-----------------------|---|
| LAN | 2x RJ45 |
| Universal I/O Bracket | 1x Universal I/O Bracket (By mini PCIe interface) |
| USB | 4x USB 3.2 Gen 2 (10Gbps) 4x USB 2.0 (2x Internal) |
| 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 |

Operating System

| | |
|---------|--------------|
| Windows | Windows 10 |
| Linux | Linux kernel |

Power

| | |
|------------------------|---|
| Power Adapter | Optional AC/DC 24V/11.67A, 280W Optional AC/DC 24V/9.2A, 220W |
| Power Mode | AT, ATX |
| Power Ignition Sensing | Power Ignition Management |
| Power Supply Voltage | 9~48VDC |
| Power Connector | 3-pin Terminal Block |
| Power Protection | Over-Voltage Protection (OVP) Over-Current Protection (OCP) Reverse Polarity Protection (RPP) |

Environment

| | |
|-----------------------|--|
| Operating Temperature | -25°C to 60°C (35W CPU) -25°C to 50°C (65W CPU) |
| Storage Temperature | -30°C ~ 85°C |
| Relative Humidity | 10% to 95% (non-condensing) |
| Certification | CE, FCC Class A |
| Vibration | 5 Grms, 5 ~ 500 Hz, 0.5 hr/axis (SSD) 1 Grms, 5 ~ 500 Hz, 0.5 hr/axis (HDD) |
| Shock | 50G, half-sine, 11 ms (SSD) |

Physical

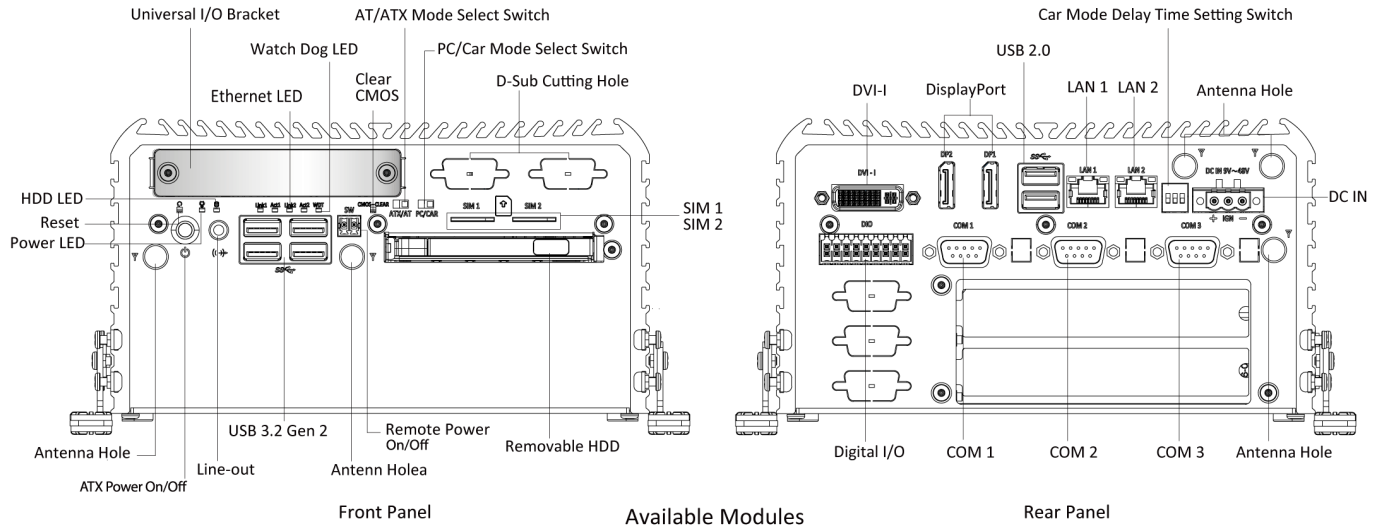
| | |
|------------------|---|
| Dimensions | 192 (W) x 197 (D) x 60.3 (H) mm |
| Weights | 2.8kg - 3.6 kg |
| Construction | Extruded aluminum with heavy duty metal |
| Mounting Options | Wall Mounting / DIN Rail (Optional) |

* For 8th/9th CPUs configured to run at 65W, operating temperatures will be limited to 50°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.



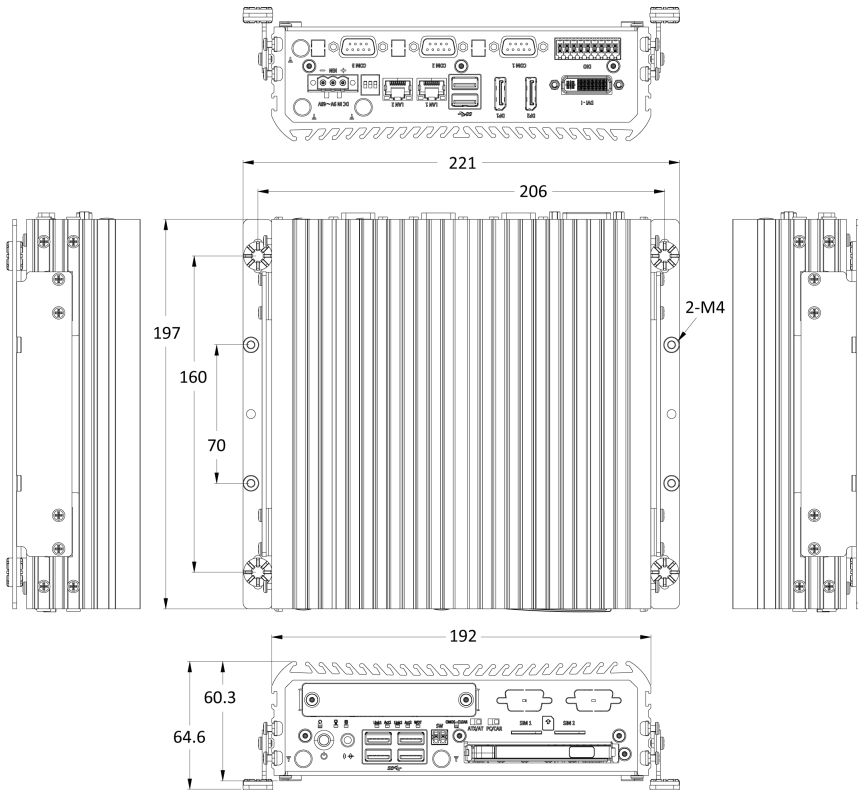
RCO-3000-CFL

External I/O Mechanical Layout



Dimension

Unit: mm





RCO-3000-CFL

Available Models

| Model No. | Description |
|--------------------|--|
| RCO-3000-CFL | Advanced Fanless Embedded System w/ LGA 1151 for Intel® 8th/9th Gen CPU & Q370 PCH, 2x LAN |
| RCO-3000-CFL-4L | Advanced Fanless Embedded System w/ LGA 1151 for Intel® 8th/9th Gen CPU & Q370 PCH, 6x LAN |
| RCO-3000-CFL-4LM12 | Advanced Fanless Embedded System w/ LGA 1151 for Intel® 8th/9th Gen CPU & Q370 PCH, 2x LAN, 4x M12 LAN |
| RCO-3000-CFL-D10G | Advanced Fanless Embedded System w/ LGA 1151 for Intel® 8th/9th Gen CPU & Q370 PCH, 2x LAN, 2x 10G LAN |
| RCO-3000-CFL-4U3 | Advanced Fanless Embedded System w/ LGA 1151 for Intel® 8th/9th Gen CPU & Q370 PCH, 2x LAN, 10x USB |

Optional Accessories

| Model No. | Description |
|-------------|---|
| 1-E09A22801 | Adapter AC/DC 24V/11.67A 280W with 3pin Terminal Block Plug 5.0mm Pitch |
| 1-E09A22102 | Adapter AC/DC 24V 9.2A 220W 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-3000-CFL
- 1x Wall Mount Kit
- 1x Accessory Kit
- 1x DVI to VGA Adapter



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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.

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