



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)

BIOS AMI 256Mbit SPI BIOS

Watchdog Software Programmable Supports 1~255 sec. System Reset

TPM TPM 2.0

Display

VGA Yes (by optional split cable)

DVI 1x DVI-I, support resolution 1920 x 1200

DisplayPort 2x DisplayPort, support resolution 4096 x 2304

Multiple Display Triple Display

Storage

SSD/HDD 1x Internal 2.5" SATA HDD Bay (support H=9mm)
1x Removable 2.5" SATA HDD Bay
(support H=7mm, hot-swappable) Support RAID 0, 1, 5

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

M.2 1x M.2 (E Key, PCIe x1, USB 2.0, 2230, Support CNVi)

SIM Socket 2x External SIM socket

Expansion

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

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

FEATURES

- Support 8th/9th Gen Intel® CFL-R S Processor (LGA 1151, 65W/35W TDP)
- Intel® Q370 Chipset
- Triple Independent Display by 1x DVI-I and 2x DisplayPort
- 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

Operating System

Windows Windows 10

Linux Linux kernel

Power

Power Mode AT, ATX

Power Supply Voltage 9~48VDC

Power Ignition Sensing Power Ignition Management

Power Connector 3-pin Terminal Block

Power Adaptor Optional AC/DC 24V/11.67A, 280W
Optional AC/DC 24V/9.2A, 220W

Power Protection OVP (Over Voltage Protection) ; OCP (Over Current Protection)
Reserve Protection

I/O

COM 3x RS-232/422/485 ; 2x RS-232/422/485 (internal)

USB 4x USB 3.2 Gen 2 (10 Gbps), 4x USB 2.0 (2x internal)

LAN 2x RJ45

Audio 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

Environment

Operating Temp. -25°C to 60°C (35W CPU) ;
-25°C to 50°C (65W CPU)

Storage Temp. -30°C to 85°C

Relative Humidity 10% to 95% (non-condensing)

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

Shock With SSD: 50G, half sine, 11ms

Standards / Certification CE, FCC Class A

Physical

Construction Extruded Aluminum with Heavy Duty Metal

Dimension 192 (W) x 197 (D) x 60.3 (H) mm

Weight 2.8 ~ 3.6 kg

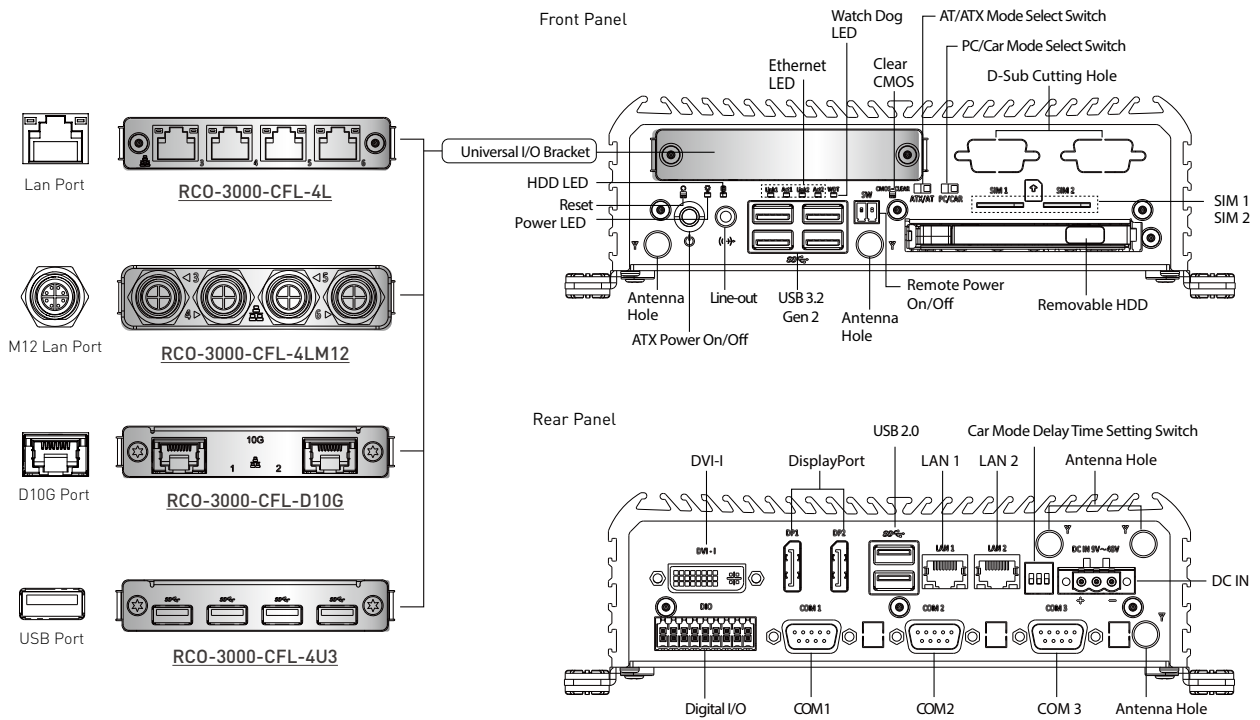
Mounting Wall Mounting / DIN rail (Optional)

* 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.

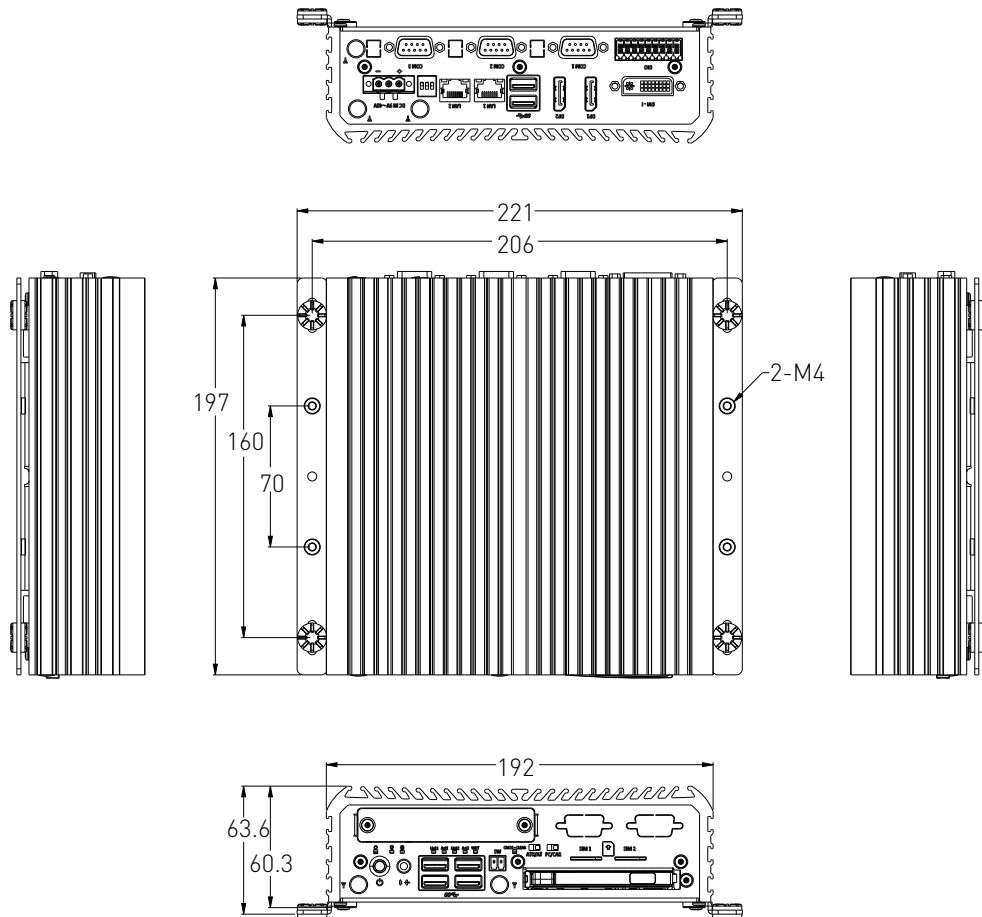
*** All specifications and photos are subject to change without notice.

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
SFICBL022	Power Cord, 3-pin US Type, 180cm
1-TPCD00002	Power Cord, European Type
1-TPCD00001	Power Cord, 3-pin UK Type, 180cm

PACKING LIST

- 1x RCO-3000-CFL Series Embedded System
- 1x Utility DVD Driver
- 1x Wall Mount Kit
- 1x Accessory Kit
- 1x DVI to VGA Adapter

AVAILABLE MODELS

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