# premio

## AI EDGE INFERENCE COMPUTER
# RCO-6000-CFL

### Industrial Computer with 9th Gen Intel® Core™ CFL-R S Processor



**Features**
- LGA 1151 socket for 9th Gen. Intel® CFL-R S Processor (35W TDP)
- Intel® Q370 chipset
- 2x DDR4 2400/2666Hz 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 Full-size mini PCIe for communication or expansion modules, 2x SIM socket
- 4x 2.5" SATA HDD Bay and 1x mSATA with RAID 0, 1, 5, 10 support
- 1x M.2 (M Key, NVMe PCIe x4, 2280); 1x M.2 (E Key, PCIe x2, 2230, USB 2.0, Support CNVi)
- 6x RS-232/422/485 (w/ 2x internal), 4x USB 3.2 Gen 2, 5x USB 3.2 Gen 1
- 8x DI + 8x DO with isolation
- 9 to 48VDC Wide Range Power Input Supporting AT/ATX Mode
- Wide Operating Temperature -25°C to 70°C (35W CPU)
- TPM 2.0 Supported
- Supports Hailo-8™ Module m.2 M-Key PCIe x4

## Specifications

### System

| | |
|---|---|
| Processor | Support 9th Gen Intel® Core™ CFL-R S Processor (LGA 1151, 35W TDP)<br>- Intel® Core™ i7-9700TE, 8 Cores, 12MB cache, up to 3.8 GHz<br>- Intel® Core™ i5-9500TE, 6 Cores, 9MB Cache, up to 3.6 GHz<br>- Intel® Core™ i3-9100TE, 4 Core, 6MB Cache, 3.2 GHz |
| System Chipset | Intel® Q370 Express Chipset |
| LAN Chipset | GbE1: Intel I219LM (Support Wake-on-LAN and PXE)<br>GbE2: Intel I210-AT (Support Wake-on-LAN and PXE) |
| Audio Codec | Realtek ALC888S |
| System Memory | 2x 260-Pin DDR4 2400/2666MHz SODIMM.<br>Max. up to 64GB |
| Graphics | Intel® UHD Graphics 610/630 |
| BIOS | AMI 256Mbit SPI BIOS |
| Watchdog | Software Programmable Supports 1~255 sec.<br>System Reset |
| AI Accelerator | Hailo-8™ Module m.2 M-Key PCIe x4 (Optional) |
| TPM | TPM 2.0 |

### Display

| | |
|---|---|
| Display Port | 2x DP |
| DVI | 1x DVI-I |
| Multiple Display | Triple Display |
| VGA | Yes (by optional split cable) |

### Storage

| | |
|---|---|
| M.2 | 1x M.2 (M Key, NVMe PCIe x4, 2280)<br>1x M.2 (E Key, PCIe x2, 2230, USB 2.0, Support CNVi) |
| mSATA | 1x mSATA (shared by 1x Mini PCIe) |
| SIM Socket | 2x External SIM socket |
| SSD/HDD | 2x Internal 2.5" SATA HDD Bay (support H=9mm)<br>2x Hotswap 2.5" SATA HDD Bay (support H=7mm)<br>Support RAID 0, 1, 5, 10 |

### 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 (PoE optional)
- 2-Port RJ45 10GbE with Intel X710-AT2 Chipset
- 4-Port USB with Renesas uPD720201K8 host controller
- 1x M.2 for 5G (B Key, PCIe x4, USB 3.0, 3042/3052) Including 2x SIM socket, 1x SIM switch

### I/O

| | |
|---|---|
| Audio | 1x Mic-in, 1x Line-out |
| COM | 4x 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 |
| USB | 4x USB 3.2 Gen 2 (10Gbps)<br>5x USB 3.2 Gen 1 (5 Gbps)<br>1x USB 3.2 Gen 1 header (5 Gbps, internal) |
| Others | 5x WiFi Antenna Holes<br>1x Power Switch, 1x AT/ATX Switch, 1x Remote Power On/Off<br>1x PC/Car Mode Switch, 1x Delay Time Switch<br>1x Removable CMOS Battery |

### Operating System

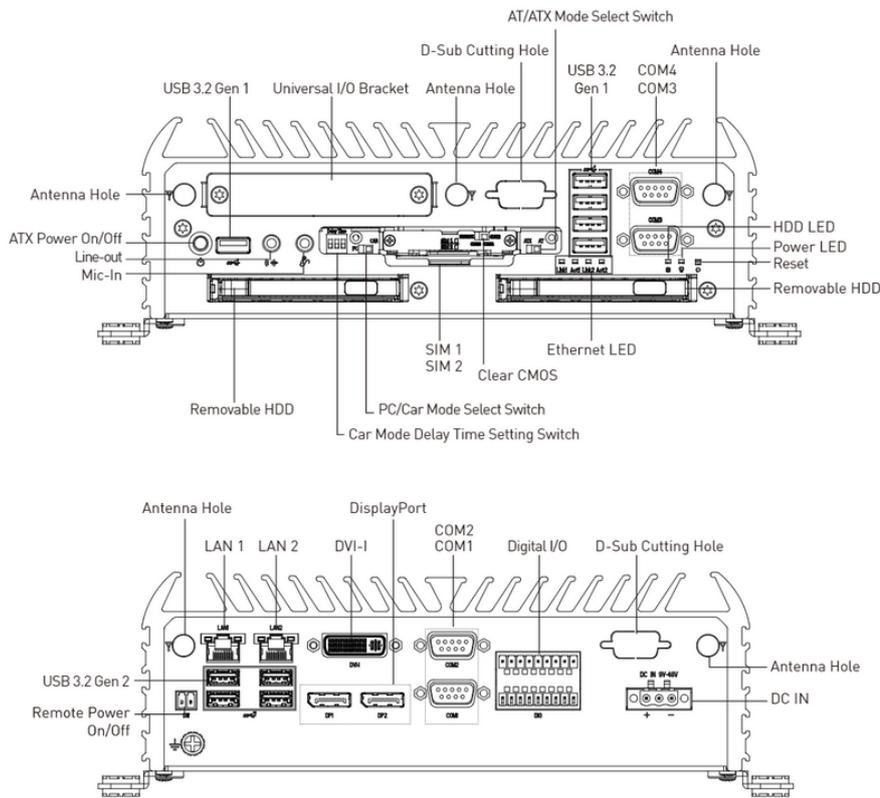| | |
|---|---|
| Windows | Windows 10 |
| Linux | Linux kernel 5.X |

### Power

| | |
|---|---|
| Power Adapter | Optional AC/DC 24V/9.2A, 220W<br>Optional AC/DC 24V/5A, 120W |
| Power Mode | AT, ATX |
| Power Ignition Sensing | Power Ignition Management |
| Power Supply Voltage | 9 ~ 48 VDC |
| Power Connector | 3-pin Terminal Block |
| Power Protection | Over-Voltage Protection (OVP)<br>Over-Current Protection (OCP)<br>Reverse Polarity Protection (RPP) |

### Environment

| | |
|---|---|
| Operating Temperature | -25°C to 70°C (35W CPU) |
| Storage Temperature | -30°C ~ 85°C |
| Relative Humidity | 10% to 95% (non-condensing) |
| Certification | CE, FCC Class A, E-Mark, EMC Conformity with EN 50155, EN 50121-3-2 |
| 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 | 240 (W) x 261 (D) x 79.2 (H) mm |
| Weights | 7.5 - 8.25 kg |
| Construction | Extruded aluminum with heavy duty metal |
| Mounting Options | Wall Mounting |

\* For 8th/9th CPUs configured to run at 65W, operating temperatures will be limited to 60°C.
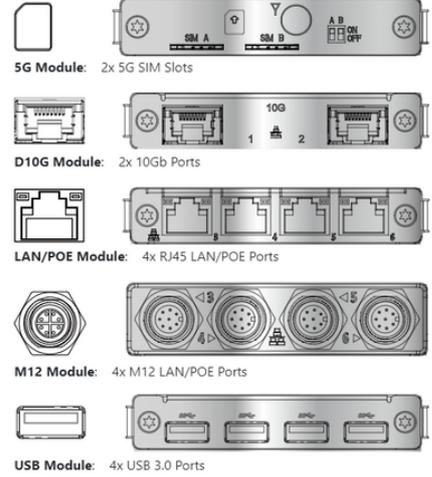\*\* 65W CPUS may experience thermal throttling depending on extreme application workloads; this is also due to an increase in the physical CPU cores from the Intel silicon (up to 8 cores). Please note, this does not indicate system malfunction or problems in the fanless design. Please consult our embedded engineers for the best configuration to match your application requirements.
\*\*\* All specifications and photos are subject to change without notice.
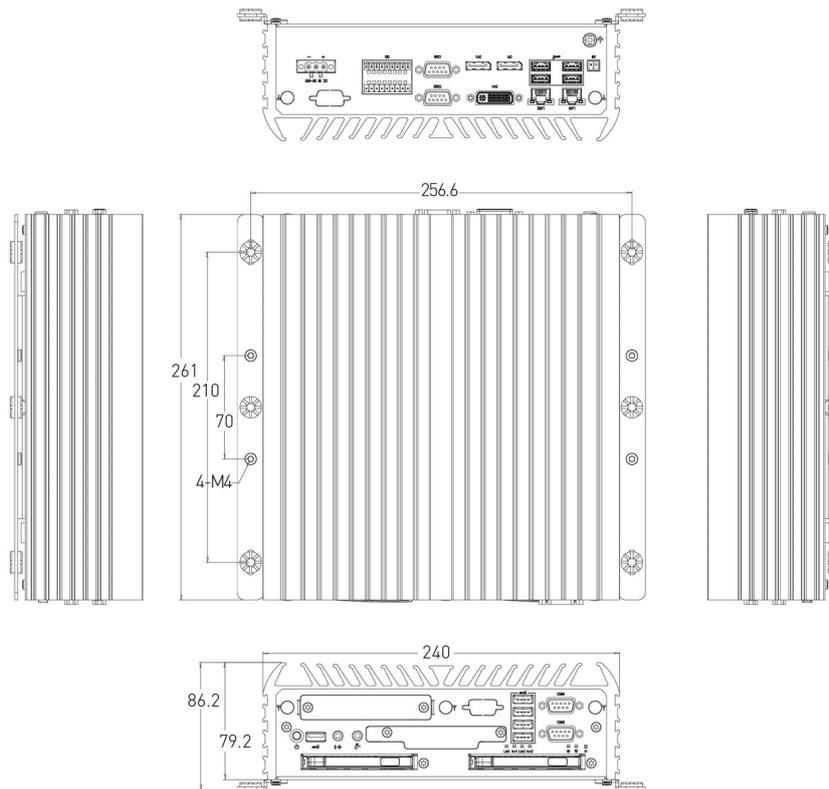
## External I/O Mechanical Layout



### Available Modules

**5G Module:** 2x 5G SIM Slots

**D10G Module:** 2x 10Gb Ports

**LAN/POE Module:** 4x RJ45 LAN/POE Ports

**M12 Module:** 4x M12 LAN/POE Ports

**USB Module:** 4x USB 3.0 Ports

## Dimension

Unit: mm

## Available Models

| Model No. | Description |
|---|---|
| RCO-6000-CFL-P | Industrial Computer with 9th Gen Intel® Core™ Processor, Q370 PCH |

## 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 |
| 999930 | Power Cord, 3-pin US Type, 180cm |
| 1-TPCD00002 | Power Cord, European Type, 180cm |
| 1-TPCD00001 | Power Cord, 3-pin UK Type, 180cm |
| PETPUHAILOCFL-KIT | Hailo-8™ AI Accelerator Module, M.2 M-Key Kit |

## Packing List
• 1x RCO-6000-CFL
• 1x Utility DVD Driver
• 1x Wall Mount Kit
• 1x Accessory Kit
• 1x DVI to VGA Adapter

## Compliances and Standards

| | |
|---|---|
| Shock | 50G, half-sine, 11 ms (SSD)<br>IEC60068-2-27:2008<br>Designed to comply with MIL-STD-810G Method 516.7 Procedure I |
| Vibration | 5 Grms, 5 ~ 500 Hz, 0.5 hr/axis (SSD) 1 Grms, 5 ~ 500 Hz, 0.5 hr/axis (HDD)<br>IEC60068-2-64:2008<br>Designed to comply with MIL-STD-810G Method 514.7 Procedure I |
| Operating Temperature | -25°C to 70°C (35W CPU)<br>IEC60068-2-1:2007 (Cold test procedure)<br>IEC60068-2-2:2007 (Dry heat test procedure)<br>IEC60068-2-3:2007 (Damp heat, steady state, test procedure)<br>IEC60068-2-14:2009 (Wide temperature range thermal shock) |
| EMI | • FCC Class A (47 CFR part 15.109 and part 15.107)<br>• CE<br>• ICES-003<br>• UKCA |

## Exports And Tariff Codes

| | |
|---|---|
| ECCN | 5A992.c |
| HTS | 8471.50.0150 |
| ScheduleB | 84.71 |