

# RCO-6120-2060S

GPU Computing System with LGA 1151 for Intel 8<sup>th</sup>/9<sup>th</sup> Gen Processor and Q370 PCH, RTX 2060 Super integrated



## 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™ i7-9700T, 8 Cores, 12MB cache, up to 3.8 GHz
- Intel® Core™ i5-9500T, 6 Cores, 9MB Cache, up to 3.6 GHz
- Intel® Core™ i3-9100T, 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)<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 (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 or NVIDIA GeForce® RTX 2060 Super |
| DVI              | 1x DVI-I, 1x DVI-D  |
| HDMI             | 1x HDMI   |
| DisplayPort      | 3x DisplayPort  |
| Multiple Display | 6 Display interfaces  |

### Storage

|            |   |
|------------|---|
| SSD/HDD    | 2x Internal 2.5" SATA HDD Bay (support H=9mm)<br>2x Removable 2.5" SATA HDD Bay (support H=7mm, hot-swappable) Support RAID 0, 1, 5, 10 |
| mSATA      | 1x mSATA (Shared by 1x Mini PCI Express)  |
| M.2        | 1x M.2 (M Key, PCIe x4, 2280, Support NVMe),<br>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 x16 for GPU Card   |
| 4-Port GbE (Optional) | 4-port GbE module with Intel® I350-AM4 Chipset, RJ-45 or M12 connector (PoE optional)<br>Occupied one Universal I/O Slot |
| 2-Port GbE (Optional) | 2-Port RJ45 10GbE with Intel X710-AT2 Chipset<br>Occupied one Universal I/O Slot   |
| 4-Port USB (Optional) | 4-Port USB with Renesas uPD720201K18 host controller<br>Occupied one Universal I/O Slot                                  |

## 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
- NVIDIA GeForce® RTX 2060 Super Graphics engine based on NVIDIA Turing™ GPU architecture
- 2x 260-pin DDR4 SODIMM. Max. up to 64GB
- 6 Display interface supported by 1x DVI-I, 1x DVI-D 3x DisplayPort, 1x HDMI
- 2x Intel® GbE supporting Wake-on-LAN and PXE
- 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)
- 9 to 48VDC Wide Range Power Input Supporting AT/ATX Mode
- Wide Operating Temperature (-25°C to 60°C)
- Power ignition management

|               |   |
|---------------|---|
| 5G (Optional) | 1x M.2 for 5G (B Key, PCIe x4, USB 3.0, 3042/3052)<br>Including 2x SIM socket, 1x SIM switch<br>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) ;<br>5x USB 3.2 Gen 1 (5 Gbps) ;<br>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 | 3x Universal I/O Bracket (By mini PCIe interface)  |
| 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 |

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

### Power

|                        |   |
|------------------------|---|
| Power Mode             | AT, ATX   |
| Power Supply Voltage   | 9~48VDC, 12~48VDC for GPU   |
| Power Ignition Sensing | Power Ignition Management   |
| Power Connector        | 3-pin Terminal Block<br>4-pin Terminal Block for GPU<br>(12V requires 4-pin terminal block) |
| Power Adaptor          | Optional AC/DC 24V, 220W/ 280W<br>Optional AC/DC 24V, 280W for GPU                          |
| Power Protection       | OVP (Over Voltage Protection); OCP (Over Current Protection)<br>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<br>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,<br>EMC Conformity with EN 50155, EN 50121-3-2                 |

### Physical

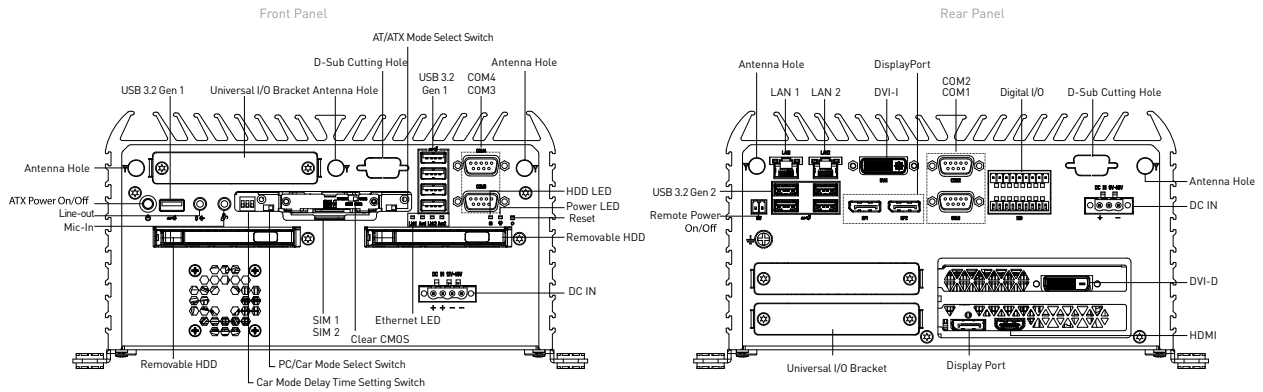
|              |   |
|--------------|---|
| Construction | Extruded Aluminum with Heavy Duty Metal |
| Dimension    | 240 (W) x 261 (D) x 127.2 (H) mm        |
| Weight       | 9.5 ~ 10.4 kg                           |
| Mounting     | Wall Mounting                           |

\* 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.

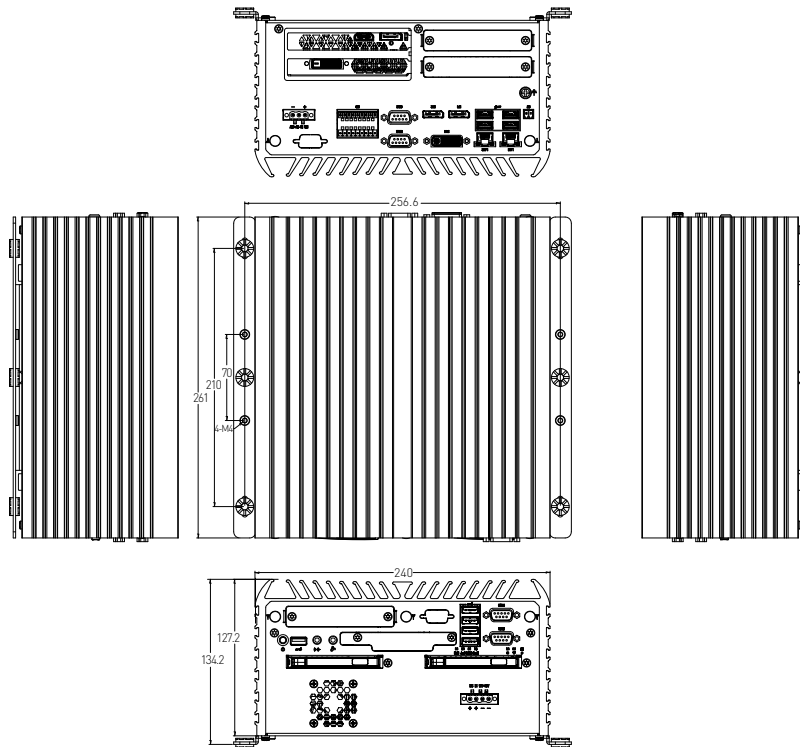
\*\*\* All specifications and photos are subject to change without notice.

## EXTERNAL I/O MECHANICAL LAYOUT



## DIMENSION

Unit: mm



## ORDERING INFORMATION

| MODEL NO.   | DESCRIPTION  |
|-------------|--|
| 1-E09A22801 | Adapter AC/DC 24V/11.67A 280W with 3-pin Terminal Block Plug 5.0mm Pitch |
| 1-E09A22102 | Adapter AC/DC 24V/9.2A 220W with 3pin Terminal Block Plug 5.0mm Pitch    |
| SFICBL022   | 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-6100 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-6120-2060S | GPU Computing System with LGA 1151 for Intel 8 <sup>th</sup> /9 <sup>th</sup> Gen Processor and Q370 PCH, RTX 2060 Super Integrated |