



## RUGGED EMBEDDED COMPUTER

## RCO-1000-EHL-30-2P

Compact fanless embedded system with Intel Atom® CPU, 2x DP, 2x COM, 1x 2.5" SATA HDD Bay, Dual PoE

## Features

- Support Intel Atom® Processor
- 1x 260-pin DDR4 SODIMM. Max. up to 32GB
- Dual Independent Display by 2x Display Port
- 1x 2.5GbE, 1x GbE supporting (Wake-on-LAN and PXE)
- 1x 2.5" SATA HDD Bay, 1x mSATA
- 1x M.2 (B Key, 2242/3042/3052, Support 4G or Module Expansion)
- 2x PoE. Max. up to 30W
- 2x RS-232/422/485, 3x USB 3.2 Gen2, 1x USB 2.0
- 9 to 36VDC Wide Range Power Input Supporting AT/ATX Mode
- Wide Operating Temperature -40°C up to 50°C
- TPM 2.0 Supported
- With 3x Universal Expansion Slots
- Edge AI Ready with Hailo-8™ (26 TOPS / 2.5W)



## Specifications

| System                                                                                                                                |                                                                                                                                                | Power Connector                                                                  | 3-pin Terminal Block                                                                           |
|---------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|
| Processor                                                                                                                             |                                                                                                                                                | Power Protection                                                                 | OVP (Over Voltage Protection);<br>OCP (Over Current Protection)<br>Reverse Protection          |
| Supports 11th Gen Intel® Atom® Processor (Elkhart Lake)<br>- Intel® Atom® Processor X6425E, Quad Core, 1.5 MB Cache, 2.0 GHz, 12W TDP |                                                                                                                                                | <b>Environment</b>                                                               |                                                                                                |
| System Chipset                                                                                                                        | SoC integrated                                                                                                                                 |                                                                                  |                                                                                                |
| LAN Chipset                                                                                                                           | 1 GbE1: Intel I210 (Support Wake-on-LAN and PXE)<br>2.5 GbE2: Intel I225 (Support Wake-on-LAN and PXE)                                         | Operating Temperature                                                            | -40°C to 50°C (Supported by Intel® Embedded Series: x6425E)                                    |
| Audio Codec                                                                                                                           | Realtek ALC888S                                                                                                                                | Storage Temperature                                                              | -40°C to 85°C                                                                                  |
| System Memory                                                                                                                         | 1x 260-Pin DDR4 2400/2667/3200MT/s SODIMM. Max. up to 32 GB                                                                                    | Relative Humidity                                                                | 10% to 95% (non-condensing)                                                                    |
| Graphics                                                                                                                              | Intel® UHD Graphics                                                                                                                            | Certification                                                                    | CE, FCC Class A                                                                                |
| BIOS                                                                                                                                  | AMI 256Mbit SPI BIOS                                                                                                                           | Vibration                                                                        | With SSD: 5 Grms, 5 - 500 Hz, 0.5 hr/axis<br>With HDD: 1 Grms, 5 - 500 Hz, 0.5 hr/axis         |
| Watchdog                                                                                                                              | Software Programmable Supports 1~255 sec. System Reset                                                                                         | Shock                                                                            | With SSD: 50G, half sine, 11ms                                                                 |
| TPM                                                                                                                                   | TPM 2.0                                                                                                                                        | <b>Physical</b>                                                                  |                                                                                                |
| Display                                                                                                                               |                                                                                                                                                |                                                                                  |                                                                                                |
| Display Port                                                                                                                          | 2x DisplayPort 1.4, DP++ (4096 x 2160@60Hz)                                                                                                    | Dimensions                                                                       | 150 (W) x 105 (D) x 83 (H) mm                                                                  |
| Multiple Display                                                                                                                      | Dual Display                                                                                                                                   | Weights                                                                          | 1.2 kg                                                                                         |
| Storage                                                                                                                               |                                                                                                                                                | Construction                                                                     | Extruded Aluminum with Heavy Duty Metal                                                        |
| M.2                                                                                                                                   | 1x M.2 (B Key, 2242/3042/3052, PCIe x1 + USB 3.2 Gen2, Support 4G or Module Expansion)                                                         | Mounting Options                                                                 | Wall Mounting<br>SIDE / VESA / DIN-Rail Mounting (Optional)                                    |
| mSATA                                                                                                                                 | 1x mSATA (shared by 1x Mini PCI Express)                                                                                                       | <b>Expansion</b>                                                                 |                                                                                                |
| SIM Socket                                                                                                                            | 2x External SIM socket                                                                                                                         |                                                                                  |                                                                                                |
| SSD/HDD                                                                                                                               | 1x Internal 2.5" SATA HDD Bay (support H=9.5 mm)                                                                                               | Mini PCIe                                                                        | 1x Full-size Mini PCIe (Occupied by PoE Module)                                                |
| Expansion                                                                                                                             |                                                                                                                                                | Expansion Modules                                                                |                                                                                                |
| Optional:                                                                                                                             |                                                                                                                                                | Optional:                                                                        |                                                                                                |
| • 2-port COM module with Super I/O Chipset, Support 2x Universal Slot Only                                                            |                                                                                                                                                | • 2-port COM module with Super I/O Chipset, Support 2x Universal Slot Only       |                                                                                                |
| • 4-Port USB module with USB hub, Support 1x Universal Slot Only                                                                      |                                                                                                                                                | • 4-Port USB module with USB hub, Support 1x Universal Slot Only                 |                                                                                                |
| • 1-Port DP 1.4 and DIO (4 in / 4 out, Isolated), Support 1x Universal Slot Only                                                      |                                                                                                                                                | • 1-Port DP 1.4 and DIO (4 in / 4 out, Isolated), Support 1x Universal Slot Only |                                                                                                |
| • 1-Port HDMI 2.0, Support 1x Universal Slot Only                                                                                     |                                                                                                                                                | • 1-Port HDMI 2.0, Support 1x Universal Slot Only                                |                                                                                                |
| I/O                                                                                                                                   |                                                                                                                                                | <b>Operating System</b>                                                          |                                                                                                |
| Audio                                                                                                                                 | 1x Mic-in, 1x Line-out                                                                                                                         |                                                                                  |                                                                                                |
| CAN                                                                                                                                   | 2x CAN 2.0 A/B 2-pin Internal header                                                                                                           | Windows                                                                          | Windows 10                                                                                     |
| COM                                                                                                                                   | 2x RS-232/422/485                                                                                                                              | Linux                                                                            | Linux Kernel                                                                                   |
| LAN                                                                                                                                   | 2x RJ45 (2.5 & 1 GbE)                                                                                                                          | <b>Power</b>                                                                     |                                                                                                |
| PoE                                                                                                                                   | 2x IEEE 802.3af (15.4W) GbE RJ45, Max up to 30w in total                                                                                       |                                                                                  |                                                                                                |
| Universal I/O Bracket                                                                                                                 | 3x Universal I/O Bracket (By mini PCIe interface, Proprietary Module)                                                                          | Power Adapter                                                                    | Optional AC/DC 24V 5A, 120W                                                                    |
| USB                                                                                                                                   | 3x USB 3.2 Gen 2 (10 Gbps)<br>1x USB 2.0                                                                                                       | Power Mode                                                                       | AT, ATX                                                                                        |
| Others                                                                                                                                | 5x WiFi Antenna Holes<br>1x Power Switch, 1x AT/ATX Switch, 1x Remote Power On/Off<br>1x Internal CMOS Battery Cable<br>1x 4-PIN FAN Connector | Power Ignition Sensing                                                           | Adjustable power ignition management can be achieved through BIOS and optional daughter board. |
| Operating System                                                                                                                      |                                                                                                                                                | Power Supply Voltage                                                             | 9~36VDC                                                                                        |
| Windows                                                                                                                               | Windows 10                                                                                                                                     | <b>Power</b>                                                                     |                                                                                                |
| Linux                                                                                                                                 | Linux Kernel                                                                                                                                   |                                                                                  |                                                                                                |
| Power                                                                                                                                 |                                                                                                                                                | Power Adapter                                                                    | Optional AC/DC 24V 5A, 120W                                                                    |
| Power Adapter                                                                                                                         |                                                                                                                                                | Power Mode                                                                       | AT, ATX                                                                                        |
| Power Mode                                                                                                                            |                                                                                                                                                | Power Ignition Sensing                                                           | Adjustable power ignition management can be achieved through BIOS and optional daughter board. |
| Power Ignition Sensing                                                                                                                |                                                                                                                                                | Power Supply Voltage                                                             | 9~36VDC                                                                                        |

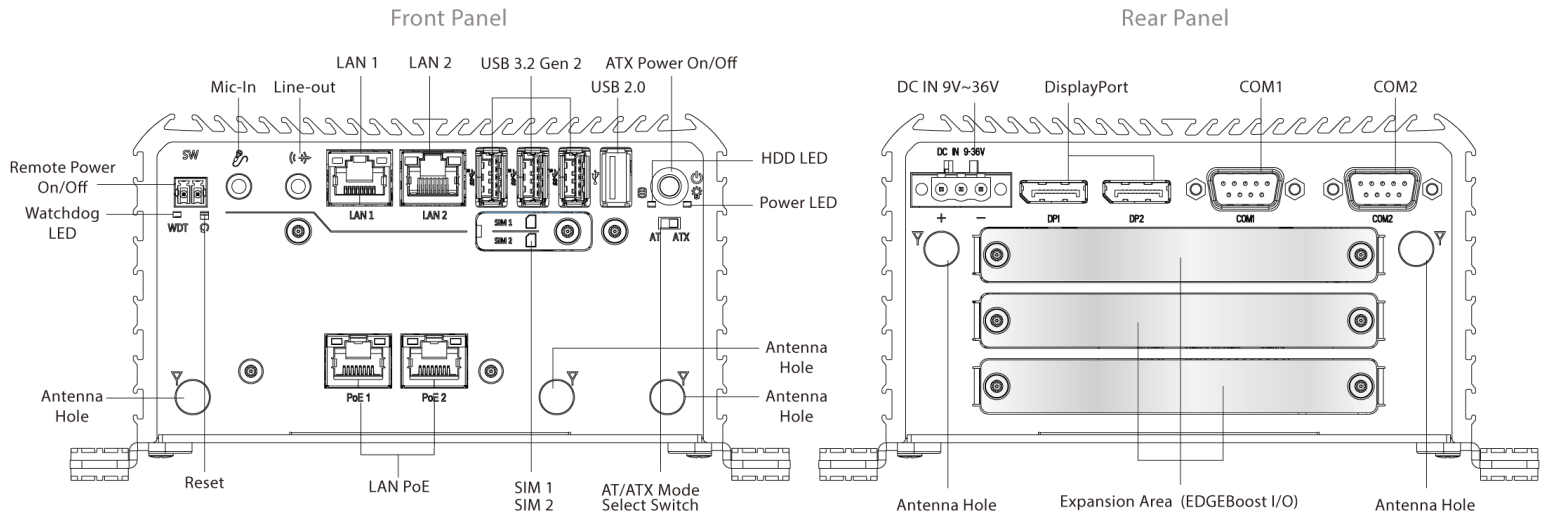
• For configured to run at 12W, operating temperatures will be limited to 50°C.

• 12W CPUS may experience thermal throttling depending on extreme application workloads; this is also due to environmental factors.

• Intel Atom® Processor X6425E is not indicated on the product label.

- For configured to run at 12W, operating temperatures will be limited to 50°C.
- 12W 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 4 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 Expansion Module Options for Rear Panel



- 1x DP Port and 1x DIO (4 in / 4 out, Isolated)  
(Support 1x Universal Slot Only)



- 1x HDMI Port  
(Support 1x Universal Slot Only)



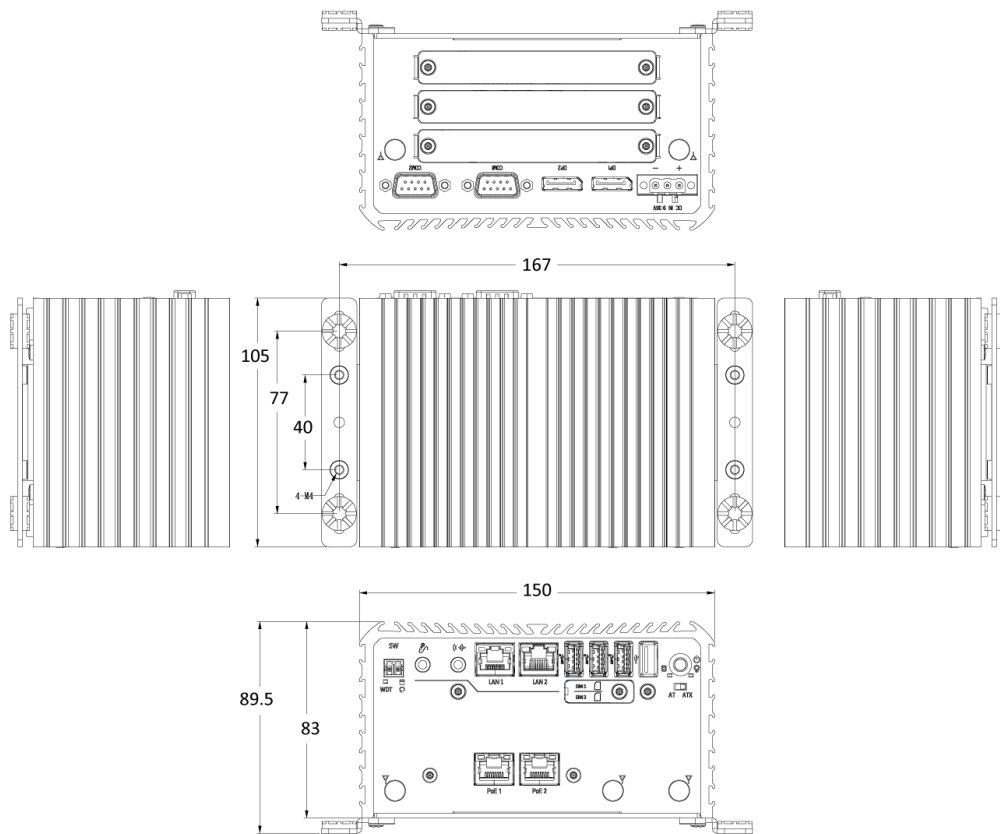
- 4x USB Ports  
(Support 1x Universal Slot Only)



- 2x COM Ports  
(Support 2x Universal Slot Only)

## Dimension

Unit: mm



## Available Models

| Model No.                 | Description                                                                                |
|---------------------------|--------------------------------------------------------------------------------------------|
| RCO-1000-EHL-X6425E-30-2P | Fanless Mini Computer with Intel x6425E CPU, 2x DP, 2x COM, 1x 2.5" SATA HDD Bay, Dual PoE |

## Optional Accessories

| Model No.   | Description                                                         |
|-------------|---------------------------------------------------------------------|
| 1-E09A12002 | Adapter AC/DC 24V 5A 120W with 3pin Terminal Block Plug 5.0mm Pitch |
| 1-TPCD00002 | Power Cord, European Type, 180cm                                    |
| 1-TPCD00001 | Power Cord, 3-pin UK Type, 180cm                                    |
| 1-TPCD00005 | Power Cord, 3-pin US Type, 180cm                                    |
| 3-SIDE-0004 | RCO-1000-EHL-30 Series Side Mount Kit                               |
| 3-VESA-0003 | RCO-1000 Series VESA Mount Kit                                      |
| 3-DINR-0004 | Din Rail-2 Mounting Kit                                             |

## Packing List

1x RCO-1000-EHL-30-2P Series Embedded System  
1x Wall Mount Kit  
1x Accessory Kit