



RUGGED EMBEDDED COMPUTER

# RCO-1000-EHL-10

Fanless Mini Computer with Intel® Atom® X6425E Processor, 2x DP, 2x COM, 1x 2.5" SATA HDD Bay

## Features

- Support Intel® Atom® X6425E
- 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/5G)
- 1x Full-size mini PCIe for communication or expansion modules
- 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 to 70°C
- TPM 2.0 Supported
- With 1x Universal Expansion Slot
- Edge AI Ready with Hailo-8™ (26 TOPS / 2.5W)
- UL Listed



## Specifications

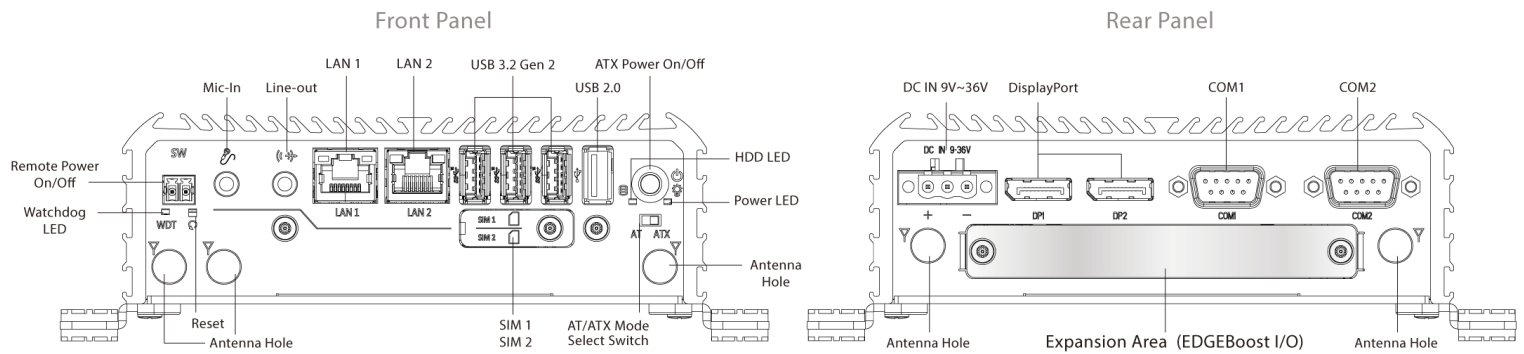
| System                                           |                                                                                                                                                |
|--------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|
| Processor                                        | Supports 11th Gen Intel® Atom® Processor (Elkhart Lake)<br>- Intel® Atom® Processor X6425E, Quad Core, 1.5 MB Cache, 1.8 GHz, 12W TDP          |
| 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)                                         |
| Audio Codec                                      | Realtek ALC888S                                                                                                                                |
| System Memory                                    | 1x 260-Pin DDR4 2400/2667/3200MT/s SODIMM. Max. up to 32 GB                                                                                    |
| Graphics                                         | Intel® UHD Graphics                                                                                                                            |
| BIOS                                             | AMI 256Mbit SPI BIOS                                                                                                                           |
| Watchdog                                         | Software Programmable Supports 1~255 sec. System Reset                                                                                         |
| AI Accelerator                                   | Supports 1x Hailo-8™ module                                                                                                                    |
| TPM                                              | TPM 2.0                                                                                                                                        |
| Display                                          |                                                                                                                                                |
| Display Port                                     | 2x DisplayPort 1.4, DP++ (4096 x 2160@60Hz)                                                                                                    |
| Multiple Display                                 | Dual Display                                                                                                                                   |
| Storage                                          |                                                                                                                                                |
| M.2                                              | 1x M.2 (B Key, 2242/3042/3052, PCIe x1 + USB 3.2 Gen2, Support 4G/5G Module)                                                                   |
| mSATA                                            | 1x mSATA (shared by 1x Mini PCI Express)                                                                                                       |
| SIM Socket                                       | 2x External SIM socket                                                                                                                         |
| SSD/HDD                                          | 1x Internal 2.5" SATA HDD Bay (support H=9.5 mm)                                                                                               |
| Expansion                                        |                                                                                                                                                |
| Mini PCIe                                        | 1x Full-size Mini PCIe                                                                                                                         |
| Expansion Modules                                |                                                                                                                                                |
| Optional:                                        |                                                                                                                                                |
| • 2-port COM module with Super I/O Chipset       |                                                                                                                                                |
| • 4-Port USB module with USB hub                 |                                                                                                                                                |
| • 1-Port DP 1.4 and DIO (4 in / 4 out, Isolated) |                                                                                                                                                |
| • 1-Port HDMI 2.0                                |                                                                                                                                                |
| I/O                                              |                                                                                                                                                |
| Audio                                            | 1x Mic-in, 1x Line-out                                                                                                                         |
| CAN                                              | 2x CAN 2.0 A/B 2-pin Internal header                                                                                                           |
| COM                                              | 2x RS-232/422/485                                                                                                                              |
| LAN                                              | 2x RJ45 (2.5 & 1 GbE)                                                                                                                          |
| Universal I/O Bracket                            | 1x Universal I/O Bracket (By mini PCIe interface, Proprietary Module)                                                                          |
| USB                                              | 3x USB 3.2 Gen 2 (10 Gbps)<br>1x USB 2.0                                                                                                       |
| 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 |
| Operating System                                 |                                                                                                                                                |
| Windows                                          | Windows 10/11                                                                                                                                  |
| Linux                                            | Linux Kernel                                                                                                                                   |
| Power                                            |                                                                                                                                                |
| Power Adapter                                    | Optional AC/DC 12V/5A, 60W                                                                                                                     |
| Power Mode                                       | AT, ATX                                                                                                                                        |
| Power Ignition Sensing                           | Adjustable power ignition management can be achieved through BIOS and optional daughter board.                                                 |
| Power Supply Voltage                             | 9~36VDC                                                                                                                                        |
| Power Connector                                  | 3-pin Terminal Block                                                                                                                           |

|                  |                                                                                      |
|------------------|--------------------------------------------------------------------------------------|
| Power Protection | OVP (Over Voltage Protection)<br>OCP (Over Current Protection)<br>Reverse Protection |
|------------------|--------------------------------------------------------------------------------------|

| Environment           |                                                                                        |
|-----------------------|----------------------------------------------------------------------------------------|
| Operating Temperature | -40°C to 70°C                                                                          |
| Storage Temperature   | -40°C to 85°C                                                                          |
| Relative Humidity     | 10% to 95% (non-condensing)                                                            |
| Certification         | UL 62368 Ed. 3, CE, FCC Class A                                                        |
| Vibration             | With SSD: 5 Grms, 5 - 500 Hz, 0.5 hr/axis<br>With HDD: 1 Grms, 5 - 500 Hz, 0.5 hr/axis |
| Shock                 | With SSD: 50G, half sine, 11ms                                                         |
| Physical              |                                                                                        |
| Dimensions            | 150 (W) x 105 (D) x 49 (H) mm                                                          |
| Weights               | 0.9 kg                                                                                 |
| Construction          | Extruded Aluminum with Heavy Duty Metal                                                |
| Mounting Options      | Wall Mounting<br>SIDE / VESA / DIN-Rail Mounting (Optional)                            |

- For Intel® Atom® Processor x6425E operating temperature limited -40°C to 70°C
- Intel 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 EDGEBoost I/O for Rear Panel



- 1x DP Port and 1x DIO (4 in / 4 out, Isolated)



- 1x HDMI Port



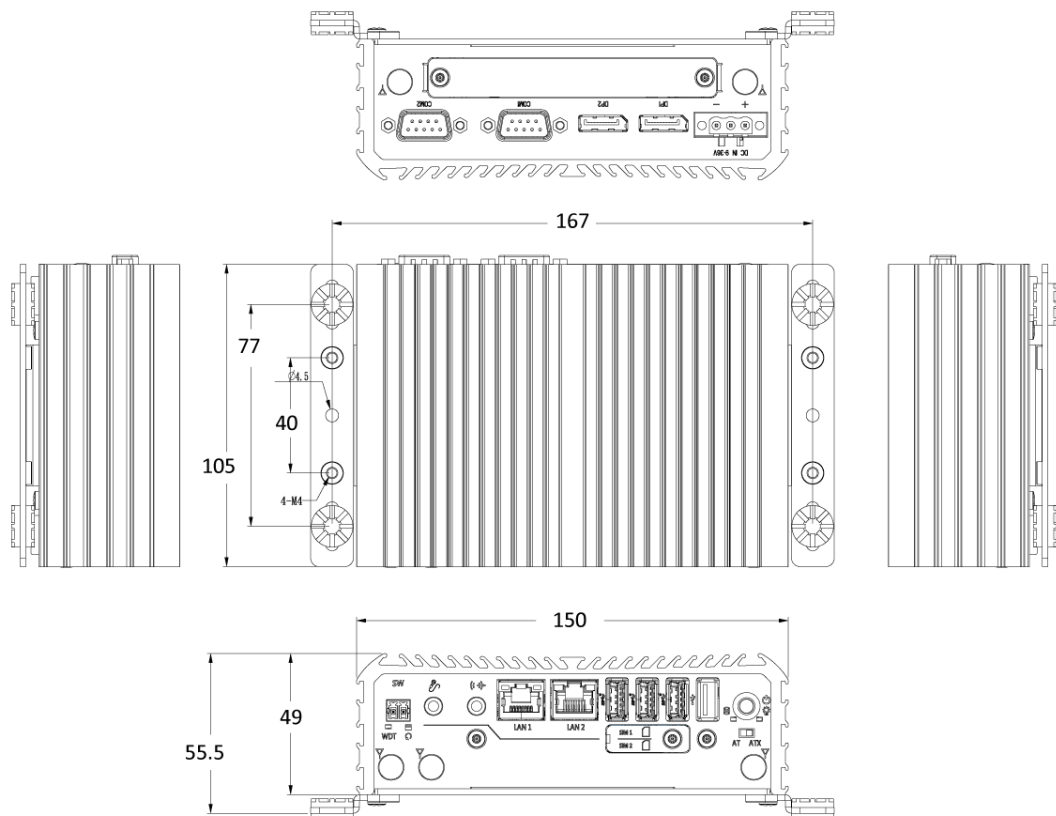
- 4x USB Ports



- 2x COM Ports

## Dimension

Unit: mm



## Compliances and Standards

|                       |                                                                                                                                                                                                                                                                                                                  |
|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Shock                 | With SSD: 50G, half sine, 11msIEC60068-2-27:2008<br>Designed to comply with MIL-STD-810H Method 516.8 Procedure I                                                                                                                                                                                                |
| Vibration             | With SSD: 5 Grms, 5 - 500 Hz, 0.5 hr/axis<br>With HDD: 1 Grms, 5 - 500 Hz, 0.5 hr/axis<br>IEC60068-2-64:2008<br>Designed to comply with MIL-STD-810H Method 514.8 Procedure I                                                                                                                                    |
| Operating Temperature | -40°C to 70°C<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)                                                                              |
| EMC                   | <ul style="list-style-type: none"> <li>FCC Class A</li> <li>CE</li> <li>ICES-003</li> <li>UKCA</li> <li>Industrial EMC Compliance</li> <li>- EN 61000-4-2: 2009</li> <li>- EN IEC 61000-4-3: 2020</li> <li>- EN 61000-4-4: 2012</li> <li>- EN 61000-4-5: 2014 +A1: 2017</li> <li>- EN 61000-4-6: 2014</li> </ul> |
| Safety                | <ul style="list-style-type: none"> <li>UL Safety: UL62368-1, 3rd Ed., (cULus)</li> <li>Test procedure: CB Scheme</li> <li>Standard: IEC 62368-1:2018</li> </ul>                                                                                                                                                  |

## Available Models

| Model No.                 | Description                                                                                 |
|---------------------------|---------------------------------------------------------------------------------------------|
| RCO-1000-EHL-X6425E-10-P  | Fanless Mini PC with Intel® Atom® X6425E (EHL) Processor, 1x EDGEBoost IO, w/ Power Adapter |
| RCO-1000-EHL-X6425E-10A-P | Fanless Mini PC with Intel® Atom® X6425E (EHL) Processor, DIO, 1x DP, w/ Power Adapter      |
| RCO-1000-EHL-X6425E-10B-P | Fanless Mini PC with Intel® Atom® X6425E (EHL) Processor, DIO, 4x COM, w/ Power Adapter     |
| RCO-1000-EHL-X6425E-10U-P | Fanless Mini PC with Intel® Atom® X6425E (EHL) Processor, DIO, 4x USB, w/ Power Adapter     |
| RCO-1000-EHL-X6425E-10H-P | Fanless Mini PC with Intel® Atom® X6425E (EHL) Processor, 1x HDMI, w/ Power Adapter         |

## Optional Accessories

| Model No.            | Description                                                        |
|----------------------|--------------------------------------------------------------------|
| 1-E09A06008          | Adapter AC/DC 12V 5A 60W 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-0002          | RCO-1000-EHL-10 Series Side Mount Kit                              |
| 3-VESA-0003          | RCO-1000 Series VESA Mount Kit                                     |
| 3-DINR-0004          | Din Rail-2 Mounting Kit                                            |
| 3-RC1200IGKIT-S0     | MOD, PWR IGNITION, KIT, 1000-EHL                                   |
| 1000-EHL-10-5G-KIT   | MOD, RCO-1000-EHL-10, 5G, THALES, KIT                              |
| 1000-EHL-10-NVME-KIT | MOD, RCO-1000-EHL-10, NVME, KIT                                    |
| 1000-EHL-10-TPU-KIT  | MOD, RCO-1000-EHL-10, TPU, HAILO-8, KIT                            |
| EBIO-2COM-34         | MOD, EBIO, 2XCOM, 3, 4, 1000-EHL                                   |
| EBIO-2COM-56         | MOD, EBIO, 2XCOM, 5, 6, 1000-EHL                                   |
| EBIO-4USB            | MOD, EBIO, 4XUSB2.0, 1000-EHL                                      |
| EBIO-DP-DIO          | MOD, EBIO, DP, DIO, 4IN, 4OUT, 1000-EHL                            |
| EBIO-HDMI            | MOD, EBIO, HDMI, 1000-EHL                                          |

## Packing List

|                                           |
|-------------------------------------------|
| 1x RCO-1000-EHL-10 Series Embedded System |
| 1x Wall Mount Kit                         |

## US Exports And Tariff Codes

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

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