



AI EDGE INFERENCE COMPUTER

RCO-6000-RPL-4N-1E

AI Edge Industrial Computer with LGA 1700 for Intel® Core™ (Series 2)/14th/13th/12th Gen Processors & R680E PCH, 4 Bay U.2 7mm NVMe, 1x PCIe, Hardware RAID Option

Features

- Intel® Core™ Processors (BTL, Series 2) / 14th / 13th / 12th Gen RPL/ADL Series, LGA1700
- Intel® R680E Chipset
- 2x DDR5 4800/5600 MT/s SODIMM. Max. up to 96GB
- 3x Independent Displays: 1x DVI-I, 2x DisplayPort
- 2x Intel® 2.5 GbE supporting Wake-on-LAN and PXE
- PCIe x16 expansion to support dedicated GPU or hardware RAID
- 1x Full-size Mini PCIe for communication or expansion modules, 2x SIM socket
- 4x 7mm Hot-swappable NVMe SSD, Support RAID 0, 1, 5
- 1x 9mm 2.5" SATA SSD (Internal), 1x 7mm 2.5" SATA SSD (Hot-swap)
- 1x M.2 (E Key, PCIe x1, USB 2.0, 2230)
- 1x M.2 (B Key, 2242/3042/3052, PCIe x2, Support AI Module/NVMe Storage, PCIe x1 & USB 3.2 Gen1, Support 4G/5G)
- 6x RS-232/422/485 (4x internal), 8x USB 3.2 Gen 2
- 9 to 48VDC Wide Range Power Input Supporting AT/ATX Mode
- Wide Operating Temperature -25°C up to 45°C
- TPM 2.0 Supported

Specifications

System

Processor

Standard

13th Gen Intel® Core™ Processors (Raptor Lake-S)

- Intel® Core™ i7-13700TE, 35W

- Intel® Core™ i5-13500TE, 35W

12th Gen Intel® Core™ Processors (Alder Lake-S)

- Intel® Core™ i7-12700TE, 35W

- Intel® Core™ i5-12500TE, 35W

Project Based

- Intel® Core™ 3 / 5 / 7 (Series 2, Bartlett Lake-S, 45W)

- 14th Gen Intel® Core™ i3 / i5 / i7 / i9 (Raptor Lake-S Refresh, 35W~65W)

- 13th Gen Intel® Core™ i3 / i5 / i7 / i9 (Raptor Lake-S, 35W~65W)

- 12th Gen Intel® Core™ i3 / i5 / i7 / i9 (Alder Lake-S, 35W~65W)

System Chipset Intel® R680E Express Chipset

LAN Chipset 2.5 GbE1: Intel I226, 2.5 GbE2: Intel I226
Support Wake-on-LAN and PXE, Support TSN

Audio Codec Realtek ALC888S

System Memory 2x 262-Pin DDR5 4800/5600 MT/s SODIMM. Max. up to 96GB
(ECC and Non-ECC)

Graphics Intel® UHD Graphics 770/710

BIOS AMI 256Mbit SPI BIOS

Watchdog Software Programmable Supports 1~255 sec. System Reset

AI Accelerator Supports 3x Hailo-8™ modules

TPM TPM 2.0

Display

Display Port 2x DisplayPort 1.4a, Support resolution 5120 x 3200,
Up to 7680 x 4320

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

Multiple Display Triple Display

Storage

M.2 1x M.2 B Key, 2242/3042/3052
(PCIe x2, Support AI Module/NVMe Storage)
(PCIe x1 & USB 3.2 Gen1, Support 4G/5G)

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

NVMe 1x Removable Cannister Brick with 2.5" 4 Bay U.2 NVMe SSD
(Support H=7mm)

SIM Socket 2x External SIM socket (Mini PCIe/M.2 B Key attached)

SSD/HDD 1x 9mm 2.5" SATA HDD Bay (Internal)
1x 7mm 2.5" SATA HDD Bay (Hot-swappable)
4x 7mm 2.5" NVMe SSD Bay (Hot-swappable)
Support RAID 0, 1, 5

RAID Support Optional:
1x Hardware RAID Controller (Broadcomm MegaRAID 9560-8i)

Expansion

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

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

PCIe EDGEBoost Node Options:

- Hardware RAID: 1x PCIe x16 (8-lane, Gen 4), 1x PCIe x8 (open-ended, Gen 4)
- GPU: 1x PCIe x16 (8-lane, Gen 3), 1x PCIe x4 (1-lane, Gen 3)

Expansion Modules

2x EDGEBoost I/O Brackets:

- 4-port GbE module with Intel® I350 Chipset, RJ-45/M12 connector (PoE optional)
- 2-Port RJ45 10GbE with Intel X710 Chipset
- 4-Port USB 3.0 (share PCIe Gen2 x1 bandwidth)
- 1x M.2 B-Key, 2242 for AI/NVMe, 1x M.2 B-Key, 3042/3052 for 5G/AI/NVMe
- 1x M.2 M-Key, PCIe x4 Lane, 2242/2260 for AI Module/NVMe
- 1x M.2 for 5G (B Key, PCIe x1, USB 3.0, 3042/3052), 2x SIM socket, 1x SIM switch
- 1x RJ45 port for OOB Management Module

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 ; 4x RS-232/422/485 (Internal)

DIO 8 in / 8 out (Isolated)

EDGEBoost I/O Bracket 2x EDGEBoost I/O Bracket (By mini PCIe interface)

LAN 2x RJ45

USB 8x USB 3.2 Gen 2 (10 Gbps)
1x USB 2.0 (Internal)

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
1x Removable CMOS Battery

Operating System

Windows Windows 10/11

Linux Linux kernel

Power

Power Adapter Optional AC/DC 24V/11.67A, 280W
Optional AC/DC 24V/15A, 360W (i9 CPU/GPU/Card
Expansion)

Power Mode AT, ATX

Power Ignition Sensing Power Ignition Management

Power Supply Voltage 9~48VDC
12~48VDC for NVMe/GPU EDGEboost Node

Power Connector 5-pin Terminal Block
4-pin Terminal Block for GPU and NVMe EDGEBoost Node
(12V requires 4-pin terminal block)

Power Protection OVP (Over Voltage Protection)
OCP (Over Current Protection)
Reverse Protection

Environment

Operating Temperature -25°C to 45°C (35W~65W CPU, with GPU)

Storage Temperature -30°C to 85°C

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

Certification UL 62368 Ed. 3, CE, FCC Class A

Vibration With HDD: 1 Grms (5 ~ 500 Hz, 0.5 hr/axis)
With SSD: 3 Grms (5 ~ 500 Hz, 0.5 hr/axis)

Shock With SSD: 20G half-sin 11ms

Physical

Dimensions 240 (W) x 261 (D) x 166.9 (H) mm

Weights 11 ~ 12 kg

Construction Extruded Aluminum with Heavy Duty Metal

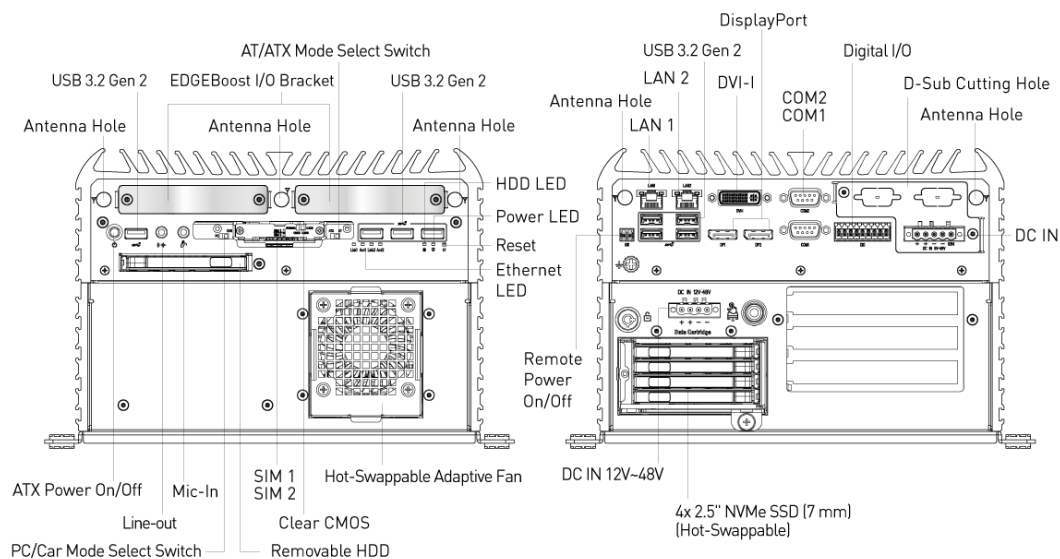
Mounting Options Wall Mounting

* Processor Base Power: 35W, 45W, 60W, 65W (CPU-dependent); View appendix for complete supported processors table.

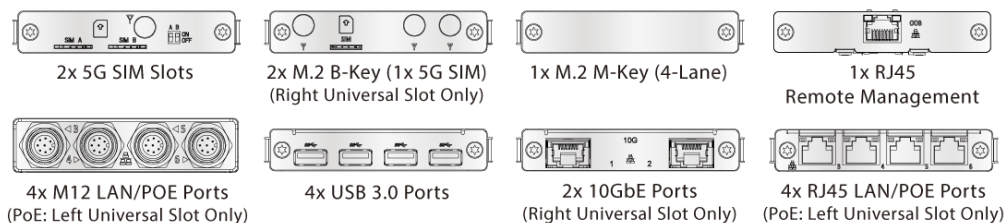
** 65W CPUS may experience thermal throttling depending on extreme application workloads; this is also due to an increase in the physical CPU cores from the Intel silicon (up to 24 cores). Please note, this does not indicate system malfunction or problems in the fanless design. Please consult our embedded 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

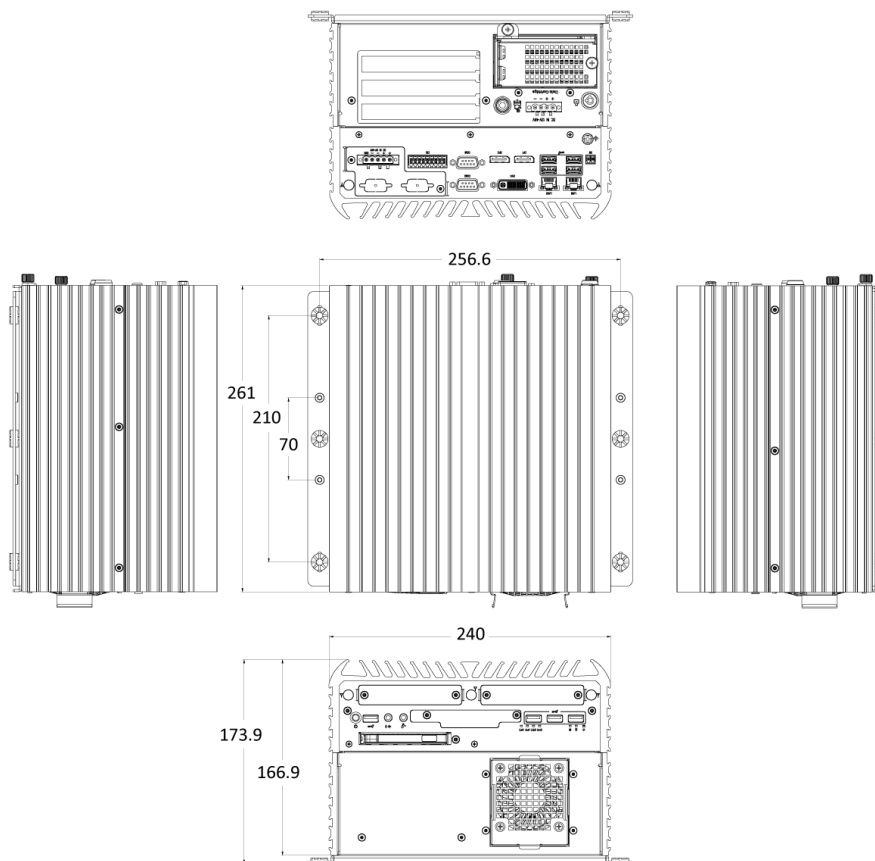


Available EDGEBoost I/O



Dimension

Unit: mm



Compatible CPU Support List

Generation and Code Name	Processor	P + E Cores	P-core Base Frequency	L3 Cache	Base Power
Intel® Core™ Series 2 Bartlett Lake-S	Intel® Core™ 7 Processor 251TE	8P + 16E	1.4 GHz	36 MB	45W
	Intel® Core™ 5 Processor 221TE	6P + 8E	1.8 GHz	24 MB	45W
	Intel® Core™ 3 Processor 201TE	4P	2.9 GHz	12 MB	45W
14th Gen Raptor Lake-S Refresh	Intel® Core™ i9 processor 14900	8P + 16E	2 GHz	36 MB	65W
	Intel® Core™ i9 processor 14900T	8P + 16E	1.1 GHz	36 MB	35W
	Intel® Core™ i7 processor 14700	8P + 12E	2.1 GHz	33 MB	65W
	Intel® Core™ i7 processor 14700T	8P + 12E	1.3 GHz	33 MB	35W
	Intel® Core™ i5 processor 14500	6P + 8E	2.6 GHz	24 MB	65W
	Intel® Core™ i5 processor 14500T	6P + 8E	1.7 GHz	24 MB	35W
	Intel® Core™ i3 processor 14100	4P	3.5 GHz	12 MB	60W
	Intel® Core™ i3 processor 14100T	4P	2.7 GHz	12 MB	35W
13th Gen Raptor Lake-S	Intel® Core™ i9 processor 13900E	8P + 16E	1.80 GHz	36 MB	65W
	Intel® Core™ i9 processor 13900TE	8P + 16E	1.00 GHz	36 MB	35W
	Intel® Core™ i7 processor 13700E	8P + 8E	1.90 GHz	30 MB	65W
	Intel® Core™ i7 processor 13700TE	8P + 8E	1.10 GHz	30 MB	35W
	Intel® Core™ i5 processor 13500E	6P + 8E	2.40 GHz	24 MB	65W
	Intel® Core™ i5 processor 13500TE	6P + 8E	1.30 GHz	24 MB	35W
	Intel® Core™ i3 processor 13100E	4P	3.30 GHz	12 MB	60W
	Intel® Core™ i3 processor 13100TE	4P	2.40 GHz	12 MB	35W
12th Gen Alder Lake-S	Intel® Core™ i9 processor 12900E	8P + 8E	2.30 GHz	30 MB	65W
	Intel® Core™ i9 processor 12900TE	8P + 8E	1.10 GHz	30 MB	35W
	Intel® Core™ i7 processor 12700E	8P + 4E	2.10 GHz	25 MB	65W
	Intel® Core™ i7 processor 12700TE	8P + 4E	1.40 GHz	25 MB	35W
	Intel® Core™ i5 processor 12500E	6P	2.90 GHz	18 MB	65W
	Intel® Core™ i5 processor 12500TE	6P	1.90 GHz	18 MB	35W
	Intel® Core™ i3 processor 12100E	4P	3.20 GHz	12 MB	60W
	Intel® Core™ i3 processor 12100TE	4P	2.10 GHz	12 MB	35W

Compatible GPU AVL

Model	GPU Memory	Memory Bandwidth	CUDA Cores	Tensor Cores	RT Cores	AI TOPS	Dimensions	Power & Thermal
NVIDIA RTX PRO 4000 Blackwell SFF Edition	24GB GDDR7 ECC	432 GB/s	8,960	280	70	770	2.7" H x 6.6" HHHL, Dual Slot	70 W
NVIDIA RTX PRO 2000 Blackwell	16GB GDDR7 ECC	288 GB/s	4,352	136	34	545	2.7" H x 6.6" L, HHHL Dual Slot	70 W
RTX 4000 SFF Ada Generation	20GB GDDR6 ECC	320 GB/s	6144	192	48	307	4.7" x 6.6" LP DS	70 W
NVIDIA RTX 2000 Ada Generation	16 GB GDDR6 with ECC	224 GB/s	2816	88	22	192	2.7" x 6.6" LP DS	70 W
NVIDIA RTX A1000	8GB GDDR6	192 GB/s	2304	72	18	108	2.7" H x 6.4" LP SS	50 W

Compliances and Standards

Vibration	With HDD: 1 Grms (5 - 500 Hz, 0.5 hr/axis) With SSD: 3 Grms (5 - 500 Hz, 0.5 hr/axis) IEC60068-2-64:2008 Designed to comply with MIL-STD-810H Method 514.8 Procedure I
Shock	With SSD: 20G half-sin 11ms IEC60068-2-27:2008 Designed to comply with MIL-STD-810H Method 516.8 Procedure I
Operating Temperature	-25°C to 45°C (35W~65W CPU, with GPU) IEC60068-2-1:2007 (Cold test procedure) IEC60068-2-2:2007 (Dry heat test procedure) IEC60068-2-3:2007 (Damp heat, steady state, test procedure) IEC60068-2-14:2009 (Wide temperature range thermal shock)
EMC	- FCC Class A - CE - ICES-003 - UKCA - Industrial EMC Compliance - EN 61000-4-2: 2009 - EN IEC 61000-4-3: 2020 - EN 61000-4-4: 2012 - EN 61000-4-5: 2014 +A1: 2017 - EN 61000-4-6: 2014
Safety	- UL Safety: UL62368-1, 3rd Ed., (cULus) - Test procedure: CB Scheme - Standard: IEC 62368-1:2018

Available Models

Model No.	Description
RCO-6000-RPL-4N-P	AI Edge Inference Computer with LGA 1700 for Intel® Core™ (Series 2)/14th/13th/12th Gen Processors & R680E PCH, 4 Bay U.2 7mm NVMe, 1x PCIe Expansion
RCO-6000-RPL-4NH-1E-P	AI Edge Inference Computer with LGA 1700 for Intel® Core™ (Series 2)/14th/13th/12th Gen Processors & R680E PCH, 4 Bay U.2 7mm NVMe, 1x PCIe Expansion, Hardware RAID

Optional Accessories

Model No.	Description
1-E09A28001	Adapter AC/DC 24V/11.67A 280W with 5pin Terminal Block Plug 5.0mm Pitch
1-E09A36003	Adapter AC/DC 48V/7.5A 360W with 5pin 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

Packing List

1x RCO-6000-RPL Series AI Edge Inference Computer
 1x Wall Mount Kit
 1x Accessory Kit
 1x DVI to VGA Adapter

Exports And Tariff Codes

ECCN	5A992.c
HTS	8471.50.0150
ScheduleB	84.71

Premio Inc.

918 Radecki Ct., City of Industry
 CA 91748, United States
 Toll Free: 800.977.3646

Premio Taiwan Inc.

18F, No.176, Jianyi Road, Zhonghe District,
 New Taipei City 235603, Taiwan
 Toll Free: 886.2.7731.7888

Email: sales@premioinc.com
 Website: <https://premioinc.com>