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 Indepentend 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, 1x USB 3.2 Gen 1 (internal)
- 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	

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 3.2 Gen 1 (5 Gbps, 1x Internal), 2x 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

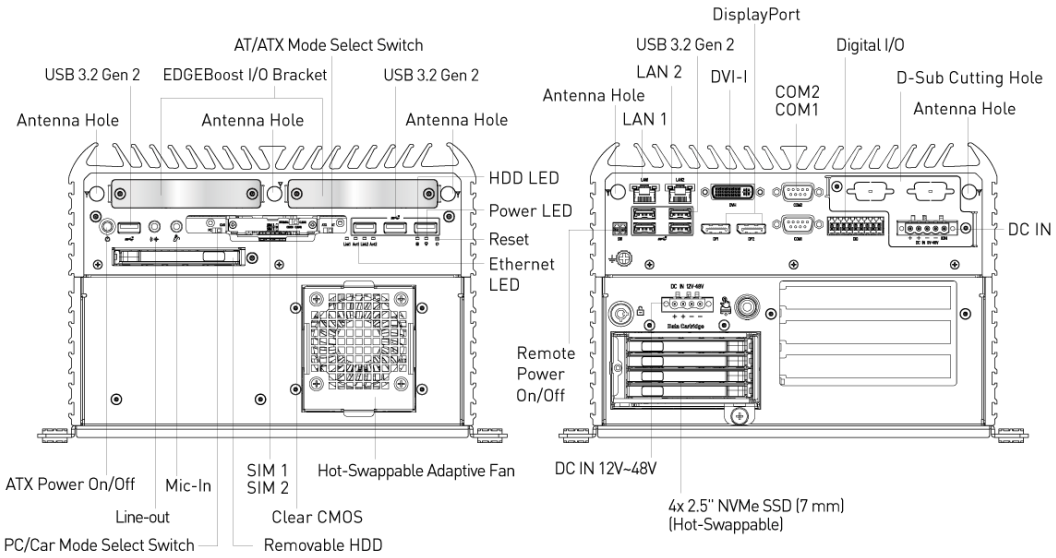
Power	
Power Adapter	Optional AC/DC 24V/9.2A, 220W Optional AC/DC 24V/11.67A, 280W Optional AC/DC 24V/15A, 360W (i7/i9 CPU/GPU/Card Expansion)
Power Mode	AT, ATX
Power Ignition Sensing	Power Ignition Management
Power Supply Voltage	9~48VDC 12~48VDC for NVMe/GPU EDGEboost Node
Power Connector	5-pin Terminal 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

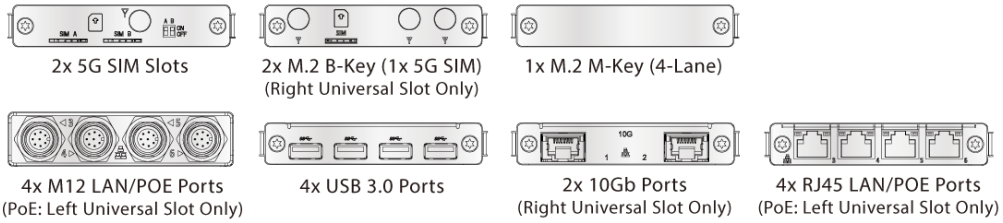
Physical	
Dimensions	240 (W) x 261 (D) x 166.9 (H) mm
Weights	11 ~ 12 kg
Construction	Extruded Aluminum with Heavy Duty Metal
Mounting Options	Wall Mounting

* Processor Base Power: 35W, 45W, 60W, 65W (CPU-dependent); View appendix for complete supported processors table.
** For 12/13/14th Gen Intel CPUs configured to run at 65W, operating temperatures will be limited to 45°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 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

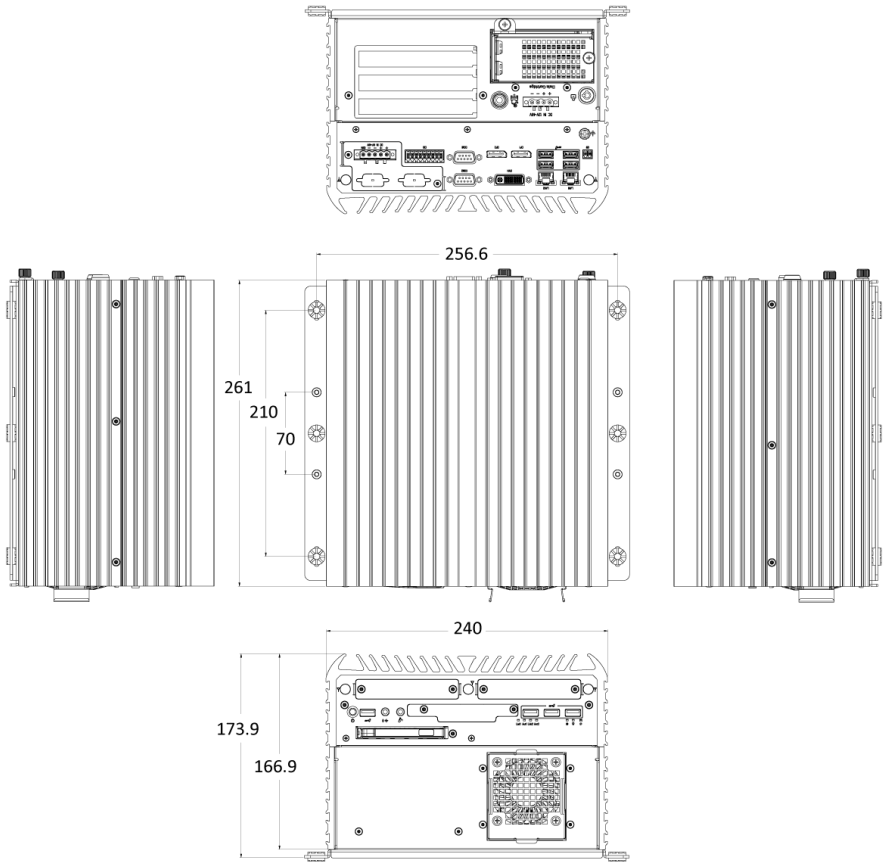


Available EDGEBoost I/O



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	RAM	CUDA Cores	TDP	TOPS/TFLOPS	Displays	System Interface	Form Factor
NVIDIA T1000	8G	896	50W	5.3 TFLOPS	4x mDP	PCIe 3.0 x16	2.7" H x 6.1" L, Low-Profile Single Slot
NVIDIA RTX A1000	8G	2304	50W	6.74 TFLOPS	4x mDP	PCIe 4.0 x8	2.7" H x 6.4" L, Single slot
NVIDIA RTX A2000	12G	3328	70W	7.99 TFLOPS	4x mDP	PCIe 4.0 x16	2.7" H x 6.6" L, Low Profile, Dual Slot
NVIDIA RTX 2000 ADA	16G	2816	70W	12 TFLOPS	4x mDP	PCIe 4.0 x8	2.7" H x 6.6" L, Dual slot
NVIDIA RTX 4000 SFF ADA	20G	6144	70W	19.2 TFLOPS	4x mDP	PCIe 4.0 x16	2.7" H x 6.6" L, Low Profile, Dual Slot

RCO-6000-RPL-4N-1E

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-E09A22102	Adapter AC/DC 24V 9.2A 220W with 3pin Terminal Block Plug 5.0mm Pitch
1-E09A22801	Adapter AC/DC 24V/11.67A 280W with 3pin Terminal Block Plug 5.0mm Pitch
1-E09A36002	Adapter AC/DC 48V/7.5A 360W 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

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

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

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