



AI EDGE COMPUTER

JCO-6000-ORN-B_4EBIO

High Performance AI Edge Computer with NVIDIA Jetson AGX Orin™, 4x EDGEBoost I/O Support



Features

- 8-core/12-core Arm® Cortex®-A78AE v8.2 64-bit CPU
- LPDDR5 3200MHz on SOM. 32GB/64GB
- 1x HDMI, 3840 x 2160 @ 60Hz
- 1x GbE, 1x 10 GbE (Wake-on-LAN and PXE)
- 2x External SIM Socket, 1x Micro SD Socket
- 1x eMMC 5.1 Storage, 64 GB
- 1x M.2 (M Key, 2242/2260/2280, PCIe x4, Support NVMe)
- 1x USB 3.2 Gen 2, 1x USB Type C, 1x USB 2.0
- 8x DI + 8x DO with isolation
- 9 to 48VDC Wide Range Power Input Supporting AT/ATX Mode
- Wide Operating Temperature -20°C to 60°C (60W CPU)
- Support GMSL 2 QUAD Port Mini Fakra, 8x Ports | 1280x720 @30FPS (optional)
- Up to 4x EDGEBoost I/O Support

Specifications

System

- Processor
- 64 GB, 12-core Arm® Cortex®-A78AE v8.2 64-bit CPU (60W/275 TOPS)
 - 32 GB, 8-core Arm® Cortex®-A78AE v8.2 64-bit CPU (40W/200 TOPS)

LAN Chipset GbE1: Marvell 88e1512 (right)
10 GbE2: Marvell AQC113(left)

System Memory AGX Orin 32 GB/64 GB LPDDR5 @ 3200 MHz on SOM

TPM TPM 2.0

Display

HDMI 1x HDMI, 3840 x 2160 @ 60Hz

Storage

eMMC 1x eMMC 5.1, 64 GB

M.2 1x M.2 (M Key, 2242/2260/2280, PCIe x4, Support NVMe) (Default 128GB)

SD 1x Micro SD Socket

SIM Socket 2x Micro SIM Socket (M.2 B Key attached)

Expansion

M.2 1x M.2 (B Key, 3042/3052, USB 3.2 Gen 2, Support 4G/5G Module)

1x M.2 (E Key, 2230, PCIe x1, USB 2.0, Support Wi-Fi/Bluetooth)

Expansion Modules

Support EDGEBoost I/O Modules:

- 4x GbE module with Intel® I350 Chipset, RJ45/M12 connector (PoE optional)
- 2x RJ45 10GbE with Intel X710 Chipset
- 4x USB 3.0 Locking Type with 2x screw hole/USB port
- 4x USB 3.0 (share PCIe Gen2 x1 bandwidth)
- 1x M.2 M Key, PCIe x4 Lane, 2242/2260 for NVMe Storage

*The left EBIO Bracket on the front panel don't support PoE Module

I/O

CAN 2x CAN (Optional, internal)

COM 2x RS-232/422/485 (Optional, internal)

DIO 8 in / 8 out (Isolated)

EDGEBoost I/O Bracket 4x EDGEBoost I/O Bracket (3x Front Panel, 1x Back Panel)

GMSL Camera GMSL 2 Camera Support by 2x Quad Port Mini Fakra, supporting 8x 1280x720 @ 30 FPS (Optional)

LAN 2x RJ45

OOB 1x RJ45 (OOB Management Module, Optional, Occupied 1x EBIO Bracket and 1x COM)

PoE By Optional PoE Power Module, Support up to three 4x RJ45/M12 LAN Module

USB 1x USB 3.2 Gen 2

1x USB 2.0 (Flash)

1x USB Type C (Console)

LED LED 1 : System Status (Blue)

LED 2 : Programmable LED (Blue)

LED 3 : Programmable LED (Blue)

LED 4 : Programmable LED (Blue)

LED 5 : Programmable LED (Blue)

LED 6 : Programmable LED (Red)

Others 6x Antenna Holes

1x Power Switch, 1x Reset Switch, 1x Force Recovery Switch

1x AT/ATX Switch, 1x Remote Power On/Off

1x PC/CAR Mode Switch

Operating System

Linux Linux Ubuntu 20.04 with JetPack

Power

Power Adapter Optional AC/DC 24V/5A, 120W
Optional AC/DC 24V/9.2A, 220W
Optional AC/DC 24V/11.67V, 280W

Power Mode AT, ATX

Power Ignition Sensing Adjustable Power Ignition Management

Power Supply Voltage DC IN 9~48V

DC IN 48~110V, Optional (occupied 1x EBIO Bracket)

Power Connector 3-pin Terminal Block

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

Environment

Operating Temperature -20°C to 60°C with 0.6 m/s airflow
(MaxN 60W TDP mode, non-throttling)

Storage Temperature -40°C to 85°C

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

Certification EMI:

- CE
- FCC Class A (47 CFR part 15.109 and part 15.107)
- ICES-003
- UKCA

EMC Compliance:

- Railway EMC: EN 50155: 2017, EN 50121-1: 2017, EN 50121-3-2: 2016
- Industrial EMC: 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
- E-Mark (E13)

Safety:

- UL Safety Pending: UL62368-1, 3rd Ed., (cULus)
- Test procedure: CB Scheme
- Standard: IEC 62368-1:2018

Green Product:

- RoHS 3.0 (Directive 2015/863/EU)
- REACH

Vibration IEC60068-2-64:2008

With SSD: 5 Grms (5 - 500 Hz, 0.5 hr/axis)

Designed to comply with MIL-STD-810G Method 514.7 Procedure I

Shock IEC60068-2-27:2008

With SSD: 50G half-sin 11ms

Designed to comply with MIL-STD-810G Method 516.7 Procedure I

Package Drop Test: ISTA 2A

Physical

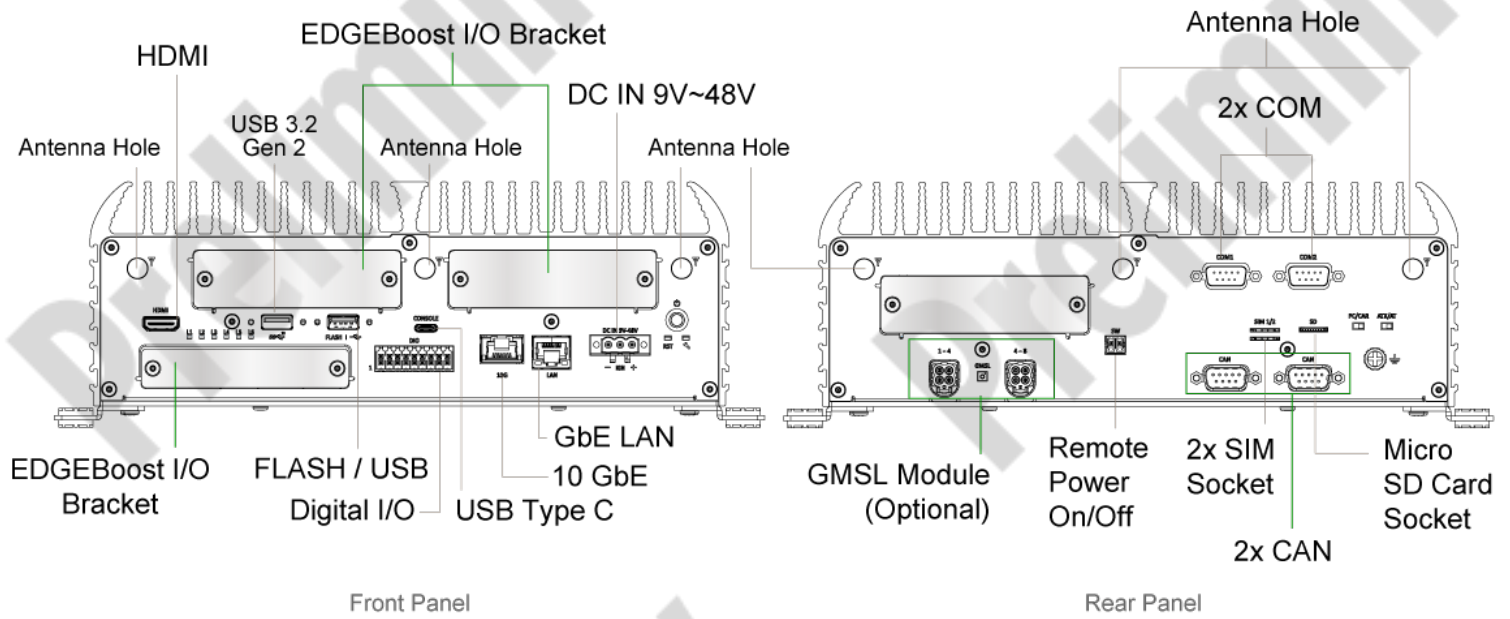
Dimensions 270 (W) x 190 (D) x 95 (H) mm

Weights 5.02 kg

Construction Extruded Aluminum with Heavy Duty Metal

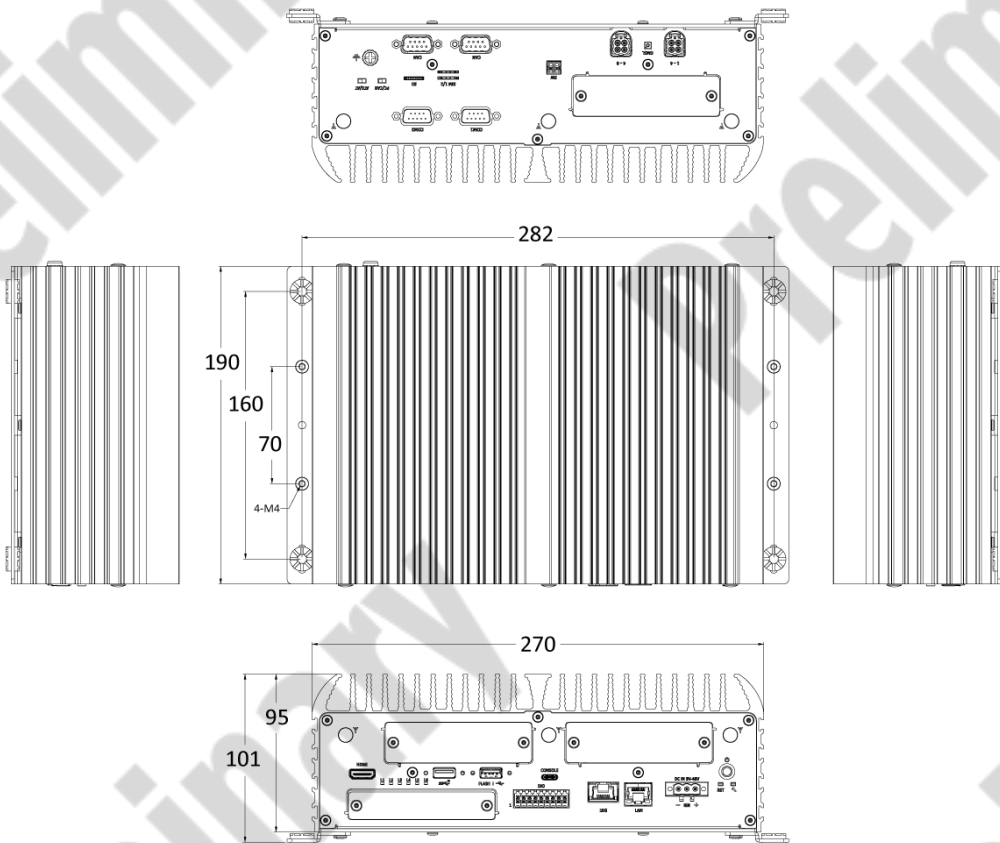
Mounting Options Wall Mounting/DIN rail (Optional)

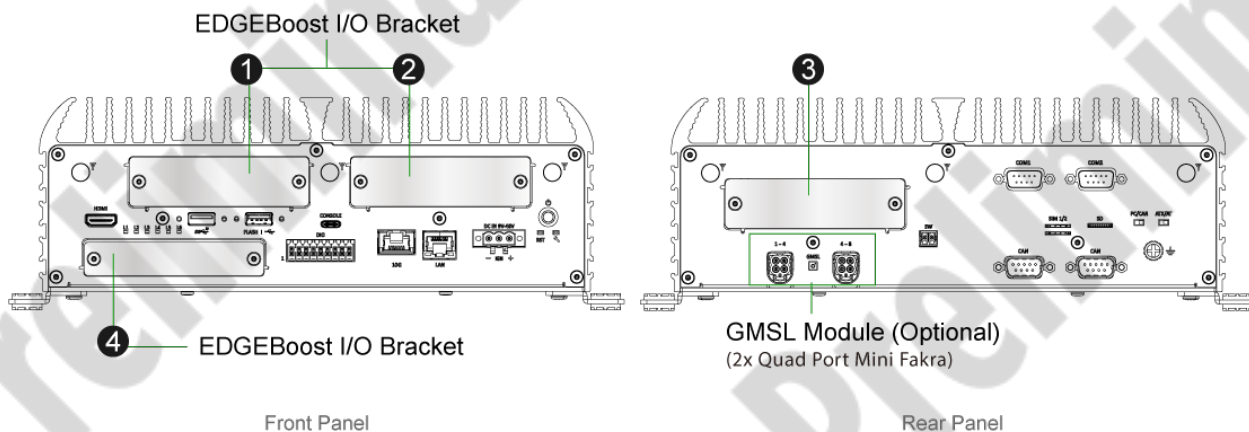
External I/O Mechanical Layout



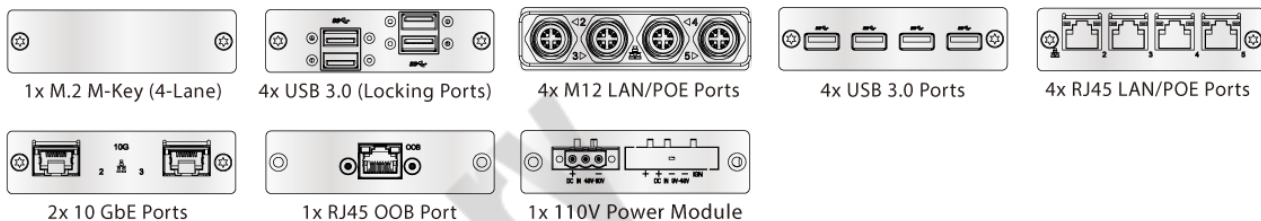
Dimension

Unit: mm





Available EDGEBoost I/O & Expansion



Optional Configurations for Additional Features

Available Model	EDGEBoost I/O No.	①	②	③	④	Optional	Support Q'ty
4x M12/RJ45 LAN Ports		✓	✓	✓	✓		4
4x M12/RJ45 POE Ports			✓	✓ (by internal PoE Module)	✓ (by internal PoE Module)		3
2x 10 GbE Ports		✓	✓	✓	✓		1
4x USB 3.0 Ports		✓	✓	✓	✓		4
4x USB 3.0 (Locking Ports)		✓	✓				2
1x M.2 M-Key (4-Lane)		✓	✓	✓	✓		4
110V Power Module			✓				1
1x RJ45 OOB Module <small>OOB Module will be put at the rear panel (3), 2x COM ports from the rear panel (3) will move to the front panel</small>		✓	✓	✓ (Default)			1
1x GMSL Module						✓	1

Available Models

Model No.	Description
TBD	To Be Determined

Optional Accessories

Model No.	Description
1-E09A12002	Adapter AC/DC 24V 5A 120W with 3pin Terminal Block Plug 5.0mm Pitch
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
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 JCO-6000-ORN-B_4EBIO Robust AI Edge Computer
 1x Wall Mount Kit
 1x Accessory Kit

Compliances and Standards

Shock	IEC60068-2-27:2008 With SSD: 50G half-sin 11ms Designed to comply with MIL-STD-810G Method 516.7 Procedure I Package Drop Test: ISTA 2A IEC60068-2-27:2008 Designed to comply with MIL-STD-810G Method 516.7 Procedure I
Vibration	IEC60068-2-64:2008 With SSD: 5 Grms (5 - 500 Hz, 0.5 hr/axis) Designed to comply with MIL-STD-810G Method 514.7 Procedure I IEC60068-2-64:2008 Designed to comply with MIL-STD-810G Method 514.7 Procedure I
Operating Temperature	-20°C to 60°C with 0.6 m/s airflow (MaxN 60W TDP mode, non-throttling) 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)
EMI	<ul style="list-style-type: none"> • CE • FCC Class B • FCC Class A (47 CFR part 15.109 and part 15.107) • ICES-003 • UKCA
Safety	<ul style="list-style-type: none"> • UL Safety: UL62368-1, 3rd Ed., (cULus) • Test procedure: CB Scheme • Standard: IEC 62368-1:2018
Green Product	<ul style="list-style-type: none"> • RoHS 3.0 (Directive 2015/863/EU) • REACH