



AI EDGE COMPUTER

# JCO-6000-ORN-B

NVIDIA Jetson AGX Orin™ AI Computer with 8-core/12-core Arm® Cortex®-A78AE v8.2 64-bit CPU, 4x EDGEBoost I/O Support



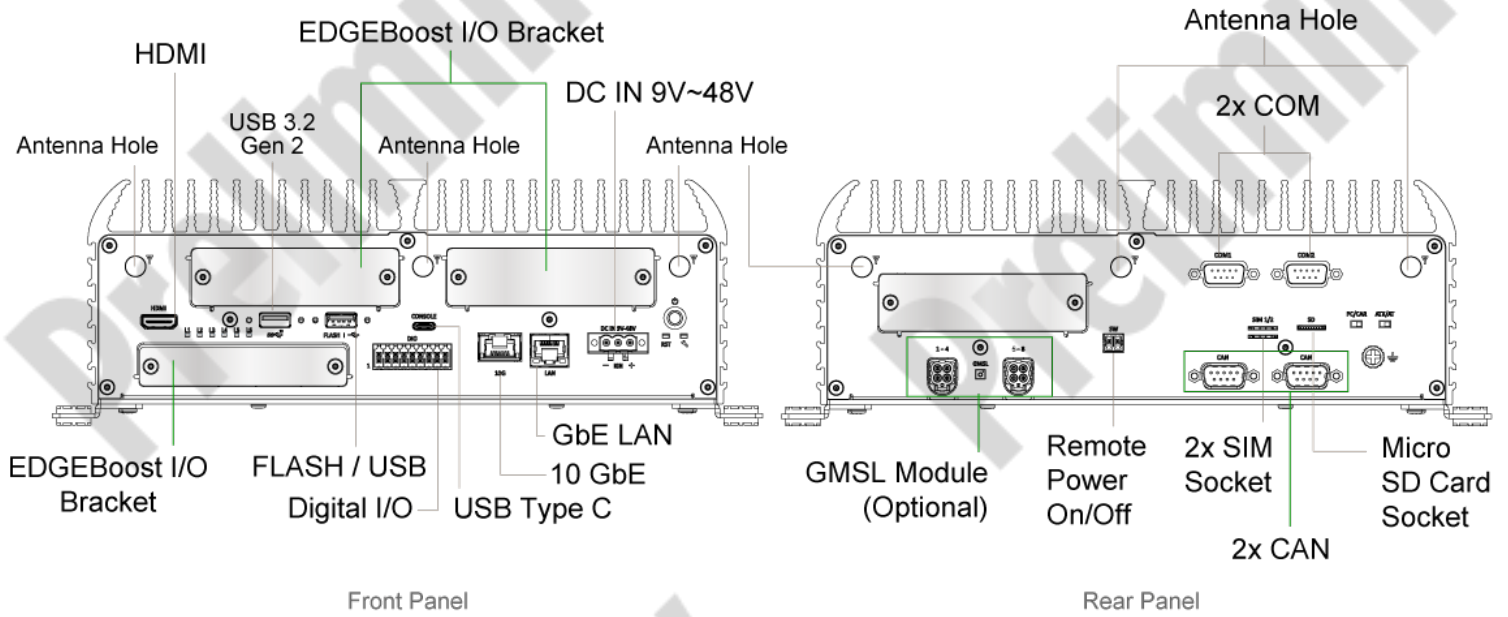
## Features

- 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

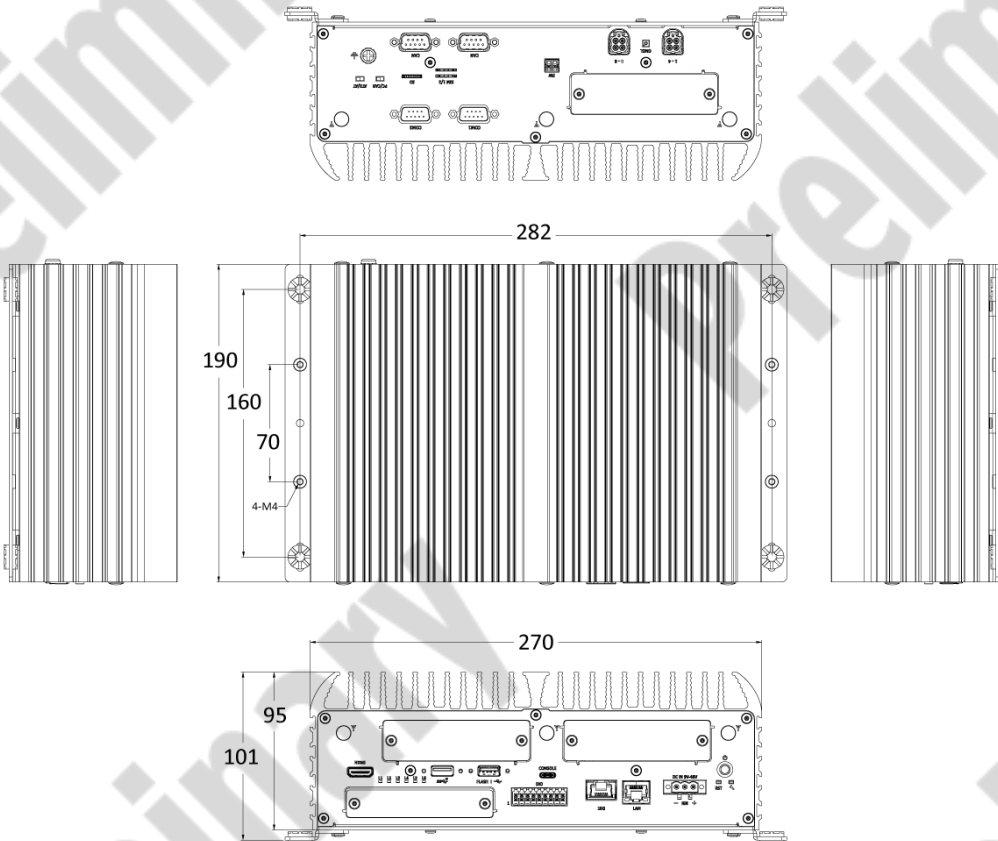
System		Power	
<b>Processor</b> • 64 GB, 12-core Arm® Cortex®-A78AE v8.2 64-bit CPU (60W/275 TOPS) • 32 GB, 8-core Arm® Cortex®-A78AE v8.2 64-bit CPU (40W/200 TOPS)		<b>Power Adapter</b> Optional AC/DC 24V/5A, 120W Optional AC/DC 24V/9.2A, 220W Optional AC/DC 24V/11.67V, 280W	
<b>LAN Chipset</b> GbE1: Marvell 88e1512 (right) 10 GbE2: Marvell AQC113(left)		<b>Power Mode</b> AT, ATX	
<b>System Memory</b> AGX Orin 32 GB/64 GB LPDDR5 @ 3200 MHz on SOM		<b>Power Ignition Sensing</b> Adjustable Power Ignition Management	
<b>TPM</b> TPM 2.0		<b>Power Supply Voltage</b> DC IN 9~48V DC IN 48~110V, Optional (occupied 1x EBIO Bracket)	
Display		Power Connector	
<b>HDMI</b> 1x HDMI, 3840 x 2160 @ 60Hz		3-pin Terminal Block	
Storage		Power Protection	
<b>eMMC</b> 1x eMMC 5.1, 64 GB		OVP (Over Voltage Protection); OCP (Over Current Protection) Reverse Protection	
<b>M.2</b> 1x M.2 (M Key, 2242/2260/2280, PCIe x4, Support NVMe) (Default 128GB)		Environment	
<b>SD</b> 1x Micro SD Socket		<b>Operating Temperature</b> -20°C to 60°C with 0.6 m/s airflow (MaxN 60W TDP mode, non-throttling)	
<b>SIM Socket</b> 2x Micro SIM Socket (M.2 B Key attached)		<b>Storage Temperature</b> -40°C to 85°C	
Expansion		<b>Relative Humidity</b> 10% to 95% (non-condensing)	
<b>M.2</b> 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)		<b>Certification</b> 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)	
<b>Expansion Modules</b> 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		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	
I/O		<b>Vibration</b> 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	
<b>CAN</b> 2x CAN (Optional, internal)		<b>Shock</b> 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	
<b>COM</b> 2x RS-232/422/485 (Optional, internal)		Physical	
<b>DIO</b> 8 in / 8 out (Isolated)		<b>Dimensions</b> 270 (W) x 190 (D) x 95 (H) mm	
<b>EDGEBoost I/O Bracket</b> 4x EDGEBoost I/O Bracket (3x Front Panel, 1x Back Panel)		<b>Weights</b> 5.02 kg	
<b>GMSL Camera</b> GMSL 2 Camera Support by 2x Quad Port Mini Fakra, supporting 8x 1280x720 @ 30 FPS (Optional)		<b>Construction</b> Extruded Aluminum with Heavy Duty Metal	
<b>LAN</b> 2x RJ45		<b>Mounting Options</b> Wall Mounting/DIN rail (Optional)	
<b>OOB</b> 1x RJ45 (OOB Management Module, Optional, Occupied 1x EBIO Bracket and 1x COM)			
<b>PoE</b> By Optional PoE Power Module, Support up to three 4x RJ45/M12 LAN Module			
<b>USB</b> 1x USB 3.2 Gen 2 1x USB 2.0 (Flash) 1x USB Type C (Console)			
<b>LED</b> 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)			
<b>Others</b> 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			
<b>Linux</b> Linux Ubuntu 20.04 with JetPack			

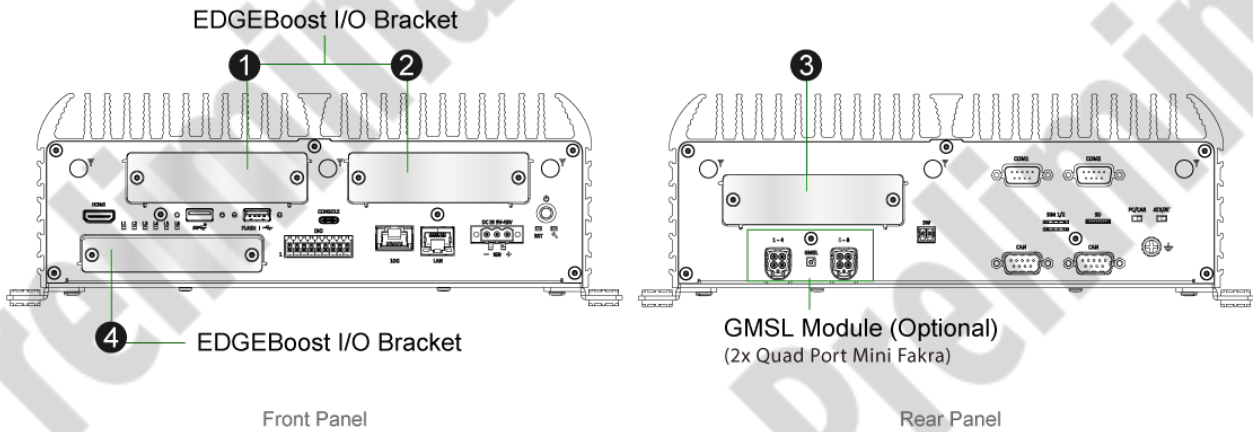
## External I/O Mechanical Layout



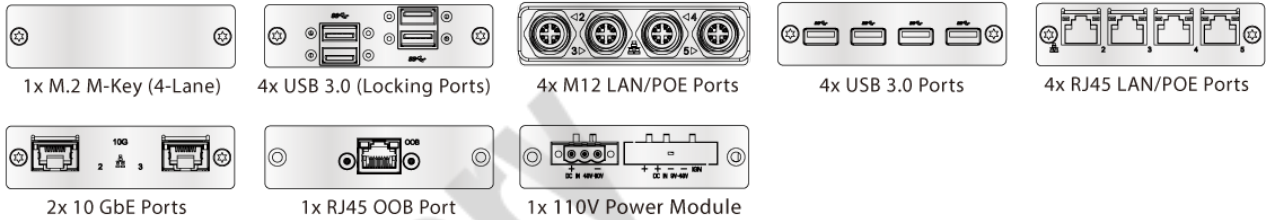
## Dimension

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 OOB Module will be put at the rear panel (3), 2x COM ports from the rear panel (3) will move to the front panel		✓	✓	✓ (Default)			1
1x GMSL Module						✓	1

## Available Models

Model No.	Description
JCO-6000-ORN-B-AGX64	NVIDIA Jetson AGX Orin™ AI Computer with 12-core Arm® Cortex®-A78AE v8.2 64-bit CPU, 4x EDGEBoost I/O
JCO-6000-ORN-B-AGX32	NVIDIA Jetson AGX Orin™ AI Computer with 8-core Arm® Cortex®-A78AE v8.2 64-bit CPU, 4x EDGEBoost I/O

## 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
1-TPCD00005	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