



AI EDGE COMPUTER

# JCO-6000-ORN-A

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

## Features

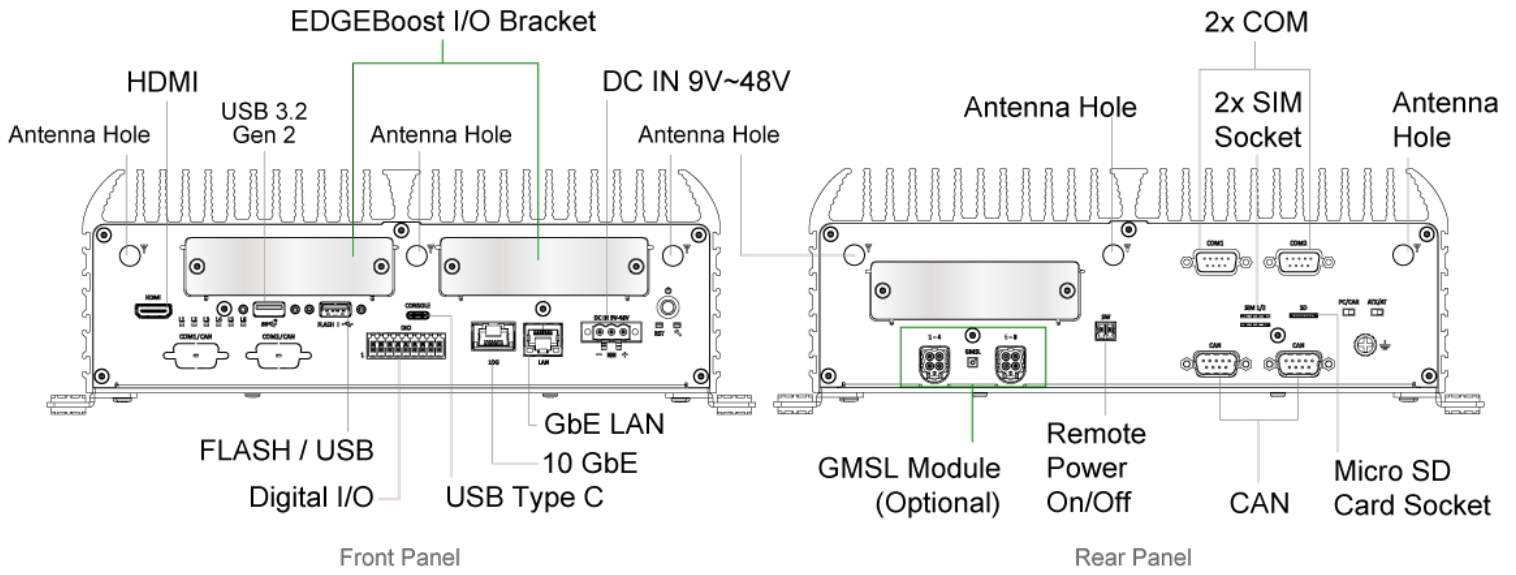
- 8-core/12-core Arm® Cortex®-A78AE v8.2 64-bit CPU
- LPDDR5 3200MHz on SOM. 32 GB/64 GB
- 1x HDMI, 3840 x 2160 @ 60Hz
- 1x GbE, 1x 10 GbE (Wake-on-LAN and PXE)
- 2x External SIM Socket, 1x Micro SD Socket
- 1x eMMC 5.1 Storage, 64 GB
- 1x M.2 (M Key, 2280, PCIe x4, Support NVMe)
- 1x USB 3.2 Gen 2, 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 55°C (60W CPU)
- Support GMSL 2 QUAD Port Mini Fakra, 8x Ports | 1280x720 @30FPS (optional)
- Up to 2x EDGEBoost I/O Support



## Specifications

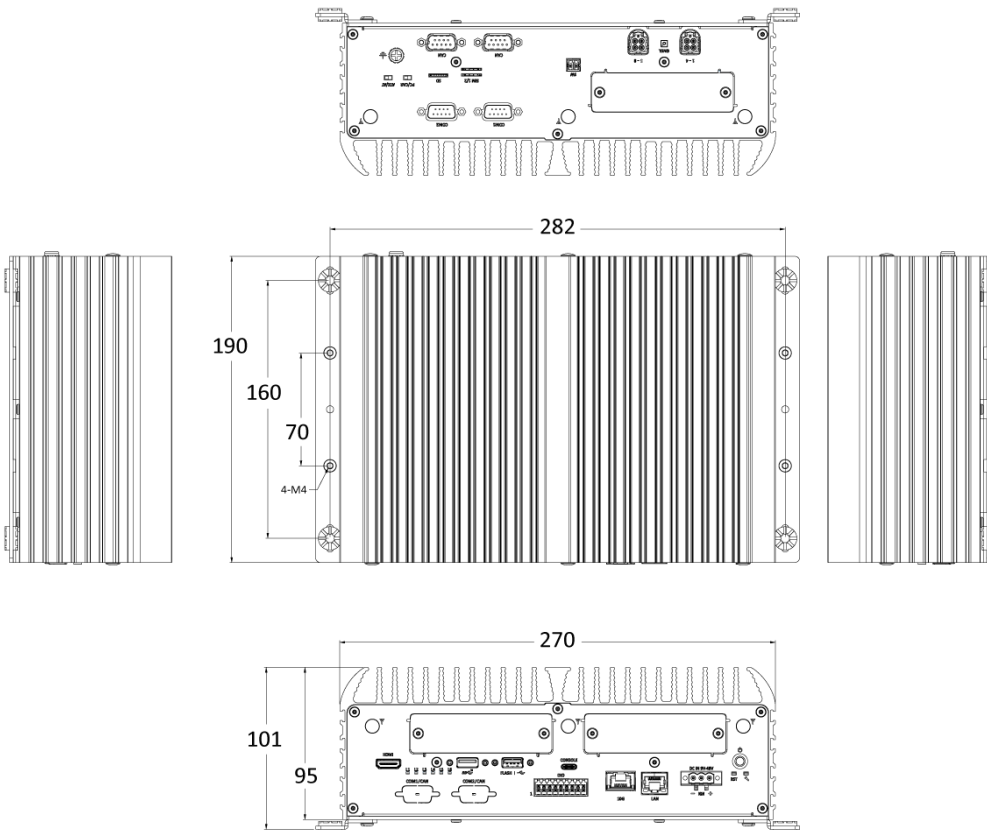
System		Power	
<b>Processor</b> • 64 GB, 12-core Arm® Cortex®-A78AE v8.2 64-bit CPU (60W/275 TOPS) • 32 GB, 8-core Arm® Cortex®-A78AE v8.2 64-bit CPU (40W/200 TOPS)		<b>Power Adapter</b> Optional AC/DC 24V/5A, 120W Optional AC/DC 24V/9.2A, 220W Optional AC/DC 24V/11.67V, 280W	
<b>LAN Chipset</b> GbE1: 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) 12V: PoE Power Budget Supports Up to 40~60W 24V: PoE Power Budget Supports Up to 120W	
Display		Environment	
<b>HDMI</b> 1x HDMI, 3840 x 2160 @ 60Hz		<b>Operating Temperature</b> -20°C to 55°C (AGX 64G, MaxN Mode at 68 Watt, Non-Throttling) -20°C to 50°C (AGX 64G, MaxN Mode at 68 Watt, Non-Throttling, With PoE/10G/4U3V Module, full CPU+GPU stressing) with 0.6 m/s airflow	
Storage		<b>Storage Temperature</b> -40°C to 85°C	
<b>eMMC</b> 1x eMMC 5.1, 64 GB		<b>Relative Humidity</b> 10% to 95% (non-condensing)	
<b>M.2</b> 1x M.2 (M Key, 2280, PCIe x4, Support NVMe) (Default 128GB)		<b>Certification</b> CE, FCC Class A, UL 62368-1, E-Mark, EMC Conformity with EN50155 & EN50121-3-2	
<b>SD</b> 1x Micro SD Socket		<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>SIM Socket</b> 2x Micro SIM Socket (M.2 B Key attached)		<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	
Expansion		Physical	
<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>Dimensions</b> 270 (W) x 190 (D) x 95 (H) mm	
<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 • 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		<b>Weights</b> 6~7 kg	
<b>I/O</b> CAN 2x CAN 2.0 B COM 2x RS-232/422/485 (Switch by MCU) DIO 8 in / 8 out (Isolated) EDGEBoost I/O Bracket 2x EDGEBoost I/O Bracket 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 & 1x USB Type-C Console Port) PoE By Optional PoE Power Module, Support up to 4x RJ45/M12 LAN Module USB 1x USB 3.2 Gen 2 (10 Gbps) 1x USB Type C (Console) 1x USB 2.0 (OS Flash) 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)		<b>Construction</b> Extruded Aluminum with Heavy Duty Metal	
<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		<b>Mounting Options</b> Wall Mounting	
Operating System			
<b>Linux</b> Linux Ubuntu 22.04 with JetPack 6.2			

## External I/O Mechanical Layout

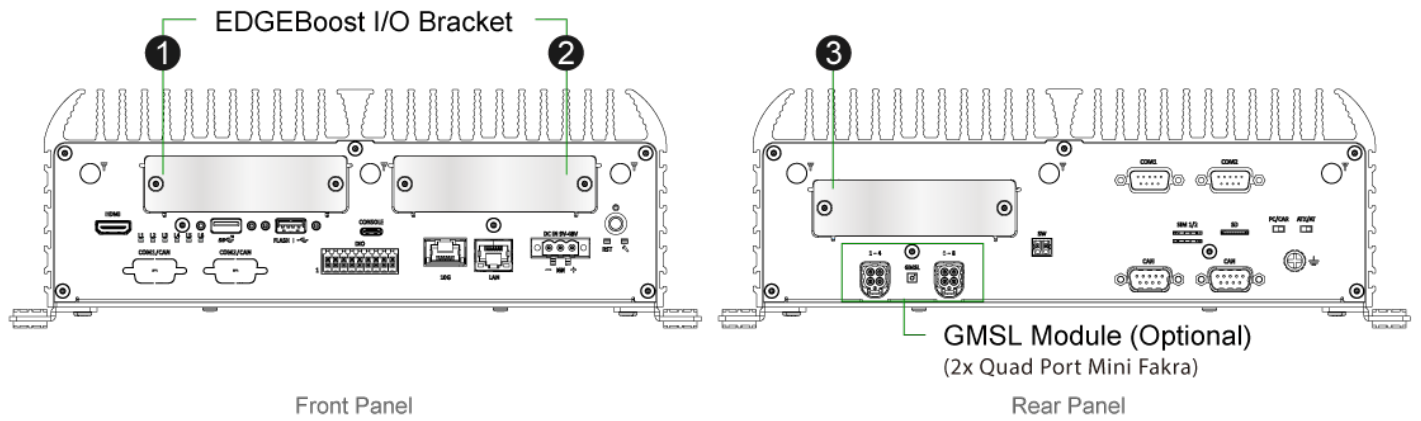


## Dimension

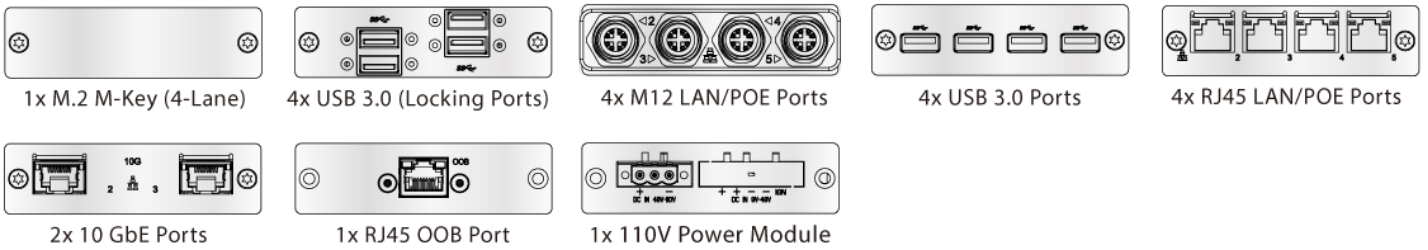
Unit: mm



## Expansion



### Available EDGEBoost I/O & Expansion



### Optional Configurations for Additional Features

Available Model	EDGEBoost I/O No.	①	②	③	Optional	Support Q'ty
4x M12/RJ45 LAN Ports		✓	✓			2
4x M12/RJ45 POE Ports			✓			1
2x 10 GbE Ports		✓	✓			1
4x USB 3.0 Ports		✓	✓			2
4x USB 3.0 (Locking Ports)		✓	✓			2
1x M.2 M-Key (4-Lane)		✓	✓			2
110V Power Module			✓			1
1x RJ45 OOB Module		✓	✓	✓ (Default)		1
1x GMSL Module					✓	1

## Available Models

Model No.	Description
JCO-6000-ORN-A	Superior Edge AI Computer with NVIDIA Jetson AGX Orin 12-core/8-core Arm® CPU, 2x LAN, 3x USB, 2x COM
JCO-6000-ORN-A-4L	Superior Edge AI Computer with NVIDIA Jetson AGX Orin 12-core/8-core Arm® CPU, 6x LAN, 3x USB, 2x COM
JCO-6000-ORN-A-4LM12	Superior Edge AI Computer with NVIDIA Jetson AGX Orin 12-core/8-core Arm® CPU, 2x LAN, 3x USB, 2x COM, 4x M12 LAN
JCO-6000-ORN-A-8L	Superior Edge AI Computer with NVIDIA Jetson AGX Orin 12-core/8-core Arm® CPU, 10x LAN, 3x USB, 2x COM
JCO-6000-ORN-A-8LM12	Superior Edge AI Computer with NVIDIA Jetson AGX Orin 12-core/8-core Arm® CPU, 2x LAN, 3x USB, 2x COM, 8x M12 LAN
JCO-6000-ORN-A-4P	Superior Edge AI Computer with NVIDIA Jetson AGX Orin 12-core/8-core Arm® CPU, 2x LAN, 3x USB, 2x COM, 4x PoE
JCO-6000-ORN-A-4PM12	Superior Edge AI Computer with NVIDIA Jetson AGX Orin 12-core/8-core Arm® CPU, 2x LAN, 3x USB, 2x COM, 4x M12 PoE
JCO-6000-ORN-A-D10G	Superior Edge AI Computer with NVIDIA Jetson AGX Orin 12-core/8-core Arm® CPU, 2x LAN, 3x USB, 2x COM, 2x 10G LAN
JCO-6000-ORN-A-4U3	Superior Edge AI Computer with NVIDIA Jetson AGX Orin 12-core/8-core Arm® CPU, 2x LAN, 7x USB, 2x COM
JCO-6000-ORN-A-8U3	Superior Edge AI Computer with NVIDIA Jetson AGX Orin 12-core/8-core Arm® CPU, 2x LAN, 11x USB, 2x COM
JCO-6000-ORN-A-4U3V	Superior Edge AI Computer with NVIDIA Jetson AGX Orin 12-core/8-core Arm® CPU, 2x LAN, 3x USB, 2x COM, 4x USB Locking Ports
JCO-6000-ORN-A-8U3V	Superior Edge AI Computer with NVIDIA Jetson AGX Orin 12-core/8-core Arm® CPU, 2x LAN, 3x USB, 8x USB Locking Ports, 2x COM
JCO-6000-ORN-A-M2MK	Superior Edge AI Computer with NVIDIA Jetson AGX Orin 12-core/8-core Arm® CPU, 2x LAN, 3x USB, 2x COM, 1x M.2 M-Key
JCO-6000-ORN-A-110V	Superior Edge AI Computer with NVIDIA Jetson AGX Orin 12-core/8-core Arm® CPU, 2x LAN, 3x USB, 2x COM, 1x 110V DC IN
JCO-6000-ORN-A-8GML	Superior Edge AI Computer with NVIDIA Jetson AGX Orin 12-core/8-core Arm® CPU, 2x LAN, 3x USB, 2x COM, 8x GMSL
JCO-6000-ORN-A-OOB	Superior Edge AI Computer with NVIDIA Jetson AGX Orin 12-core/8-core Arm® CPU, 2x LAN, 2x USB, 1x COM, 1x RJ45 OOB

## 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-A Robust AI Edge Computer  
 1x Wall Mount Kit  
 1x Accessory Kit

## Compliances and Standards

Shock	With SSD: 50G half-sin 11ms IEC60068-2-27:2008 Designed to comply with MIL-STD-810G Method 516.7 Procedure I
Vibration	With SSD: 5 Grms (5 - 500 Hz, 0.5 hr/axis) IEC60068-2-64:2008 Designed to comply with MIL-STD-810G Method 514.7 Procedure I
Operating Temperature	-20°C to 55°C -20°C to 50°C (With PoE/10G/4U3V Module, full CPU+GPU stressing) 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	<ul style="list-style-type: none"> <li>• FCC Class A</li> <li>• CE</li> <li>• ICES-003</li> <li>• UKCA</li> <li>• Railway EMC Compliance</li> <li>- EN 50155: 2017</li> <li>- EN 50121-1: 2017</li> <li>- EN 50121-3-2: 2016</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: UL 62368-1, 3rd Ed., (cULus)</li> <li>• Test procedure: CB Scheme</li> <li>• Standard: IEC 62368-1:2018</li> <li>• E-mark (E24)</li> </ul>