

# IBOX-650P-IP66

## NVIDIA® Jetson AGX Orin Fanless Edge AI Computer



- NVIDIA® Jetson AGX Orin™ SoM with 2048 CUDA Cores
- IP66 Design (Waterproof and Dustproof) for Harsh Environment
- 1 x 10 GbE, 2 GbE with PoE via Phoenix Contact® M12 IP67 Connectors
- 2 x CAN FD
- 2 x RS-232/422/485\*, 4 x DI/4 x DO\*
- Supporting 4 x GMSL-2 Cameras (via FAKRA Connectors)
- 9 ~ 60VDC Input with Built-in Smart Ignition Power Management
- -25 ~ 70°C Operating with Fanless Design
- Patented Design of Emergency Backup Battery\*

\*This is a customized specification. If you have any needs, please contact our sales representative.

## Edge AI Application

**2 x CAN FD for Vehicle Connection**  
For data communication of vehicle equipment

**2 x 2.5 GbE for IP Camera**  
For high-resolution image capture or LiDAR connections

**Wide Range Power Input**  
9~60V DC Input with Smart Power Management

**1 x 10GbE for High-Data Transmission**  
High-speed network for local-server connection or backbone network communication

**2 x USB 3.2 for Camera / Sensor**  
High-speed data transfer rate for a variety of IoT devices connections or external storage applications

**GMSL-2 for Vehicle Cameras Connection**  
4 x FAKRA connectors provide robust vehicle camera connections

## Specifications

### System

- Module**
- NVIDIA® Jetson AGX Orin™ 64GB (2048 CUDA® cores GPU + 12-core Arm Cortex-A78AE CPU + 64 GB LPDDR5)
  - NVIDIA® Jetson AGX Orin™ 32GB (1792 CUDA® cores GPU + 8-core Arm Cortex-A78AE CPU + 32 GB LPDDR5)
- Network**
- Marvell® Industrial 10GbE, Intel® Industrial 2.5GbE
- Security**
- Platform Security Controller (PSC), Security Engine (SE)

### Interface

- Ethernet**
- 1 x 10GbE, 2 x 2.5GbE w/ 2 x IEEE 802.3at PoE PSE Class 4 (PoE+ 30 watts) (3 x Phoenix Contact® M12 X-coded connectors)
- USB**
- 2 x USB Type-A/IP67 connector for USB 3.2  
\*One port share 10Gbps bandwidth
- Video**
- 1 x HDMI Type-A/IP67 connector for HDMI 2.1 output
- Audio**
- 1 x HD Audio output from the HDMI
- Serial Port**
- 1 x M12 A-coded connector for RS-232/422/485
- CAN Bus**
- 2 x M8 A-coded connectors for CAN FD
- Mgmt. Port**
- 1 x USB Type-C for System Recovery (Device only)
- Camera**
- 4 x FAKRA-Z connectors for GMSL-2 cameras
- SIM Card**
- 1 x Nano SIM card slot

### Internal Expansion

- M.2 Slot**
- 1 x M.2 3042/52 Key B slot (USB3.0) with a Nano SIM Card Slot
  - 1 x M.2 2230 Key E slot
- mPCIe Slot**
- 1 x mPCIe Full size slot (USB.2.0 supported)

### Storage

- Type**
- 1 x 64GB eMMC (Built-in within SoM)
  - 1 x M.2 2280 Key M slot supports NVMe SSD

### Power

- Supply Voltage**
- 1 x Phoenix Contact® M12 K-coded connector for DC-IN 9~60V
- Power Protection**
- OCP, OVP, Surge and Reversed Polarity Protection
- Power Management**
- Ignition Detection with Smart Power Management
- RTC Battery**
- High-capacity coin cell battery for RTC
- UPS (Option)**
- Backup battery for system power backup

### Software

- Operating System / BSP**
- NVIDIA® JetPack including Jetson Linux, NVIDIA® development tools

**Environmental**

**Operating Temp.**

- 25°C ~ 70°C (-13°F ~ 158°F), ambient w/ 0.6m/s airflow
- \* Operating temp. varies by accessories installed.

**Storage Temp.**

- 40°C ~ 80°C (-40°F ~ 176°F)

**Relative Humidity**

- 10% RH – 90% RH (non-condensing)

**Vibration (with SSD)**

- MIL-STD-810G, Method 514.6, Procedure I, Cat.4 (Operating)
- IEC60068-2-64, random, 2.5G@5~500Hz, 1hr/axis

**Shock (with SSD)**

- MIL-STD-810G, Method 516.6, Procedure I, Trucks and semi-trailers=15G (11ms) with SSD (Operating)

**Certification / Standard**

- CE, FCC Class A, E-Mark, ECE R118, EN50155\*, EN45545-2 (R25)
- \*On going

**Mechanical**

**Construction**

- Aluminum Alloy

**Ingress Protection**

- IP66

**Thermal Design**

- Fanless Passive Cooling

**Mounting**

- Wall-mount

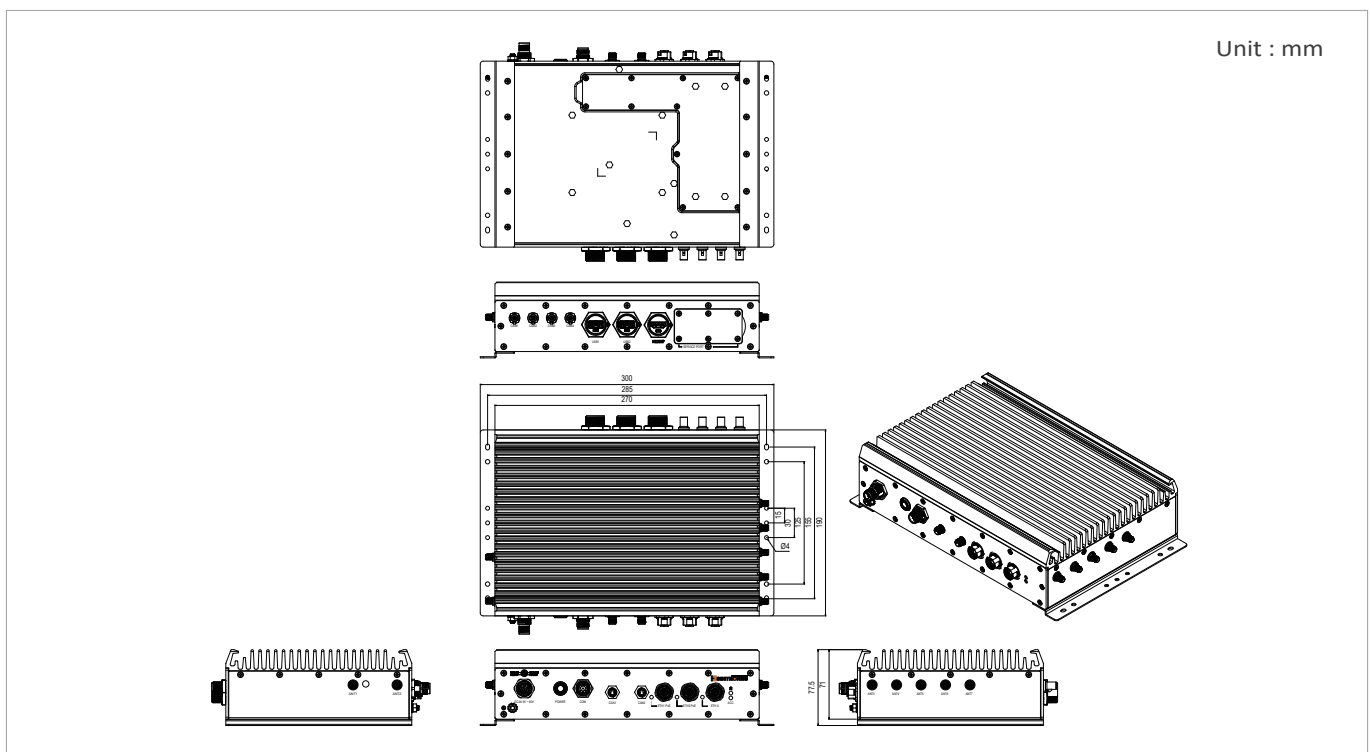
**Weight**

- 5100 g

**Dimensions**

- 300 (L) x 190 (W) x 77.5 (H) mm

**Dimensions**



Unit : mm

**Ordering Information**

Model Number	IBOX-650P-IP66-JAO64	NVIDIA® Jetson AGX Orin™ 64GB / GMSL-2 / IP66 / Model M12X
	IBOX-650P-IP66-JAO32	NVIDIA® Jetson AGX Orin™ 32GB / GMSL-2 / IP66 / Model M12X
	IBOX-650P-IP66-JAO32-LE	NVIDIA® Jetson AGX Orin™ 32GB / IP66 / Model M12X
Description	NVIDIA® Jetson AGX Orin™ w/ 1 x 10GbE / 2 x 2.5GbE / 1 x HDMI / 2 x CAN FD / DC 9-60V / IP66 Edge AI Computer	
State of Origin	Made in Taiwan	

\* Without an external NVMe SSD, the Jetpack will be pre-installed in the internal 64GB eMMC. Jetson Orin SoM Lifecycle is available through January 2032.

**Optional Accessories**

Storage	M.2 2280 NVMe SSD 480GB / 960GB
Wi-Fi	M.2 2230 Wi-Fi Module
WWAN Modem	M.2 3042/52 WWAN Modem
GNSS	mPCIe GPS Module
UPS	BAT-2300v2 (Operating Temp. : -20°C ~ 60°C / -4°F ~ 140°F)

All specifications are subject to change without notice.