

SINTRONES

Edge AI Computing

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

IBOX-650P-IP66

Version. 2024-12-23

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

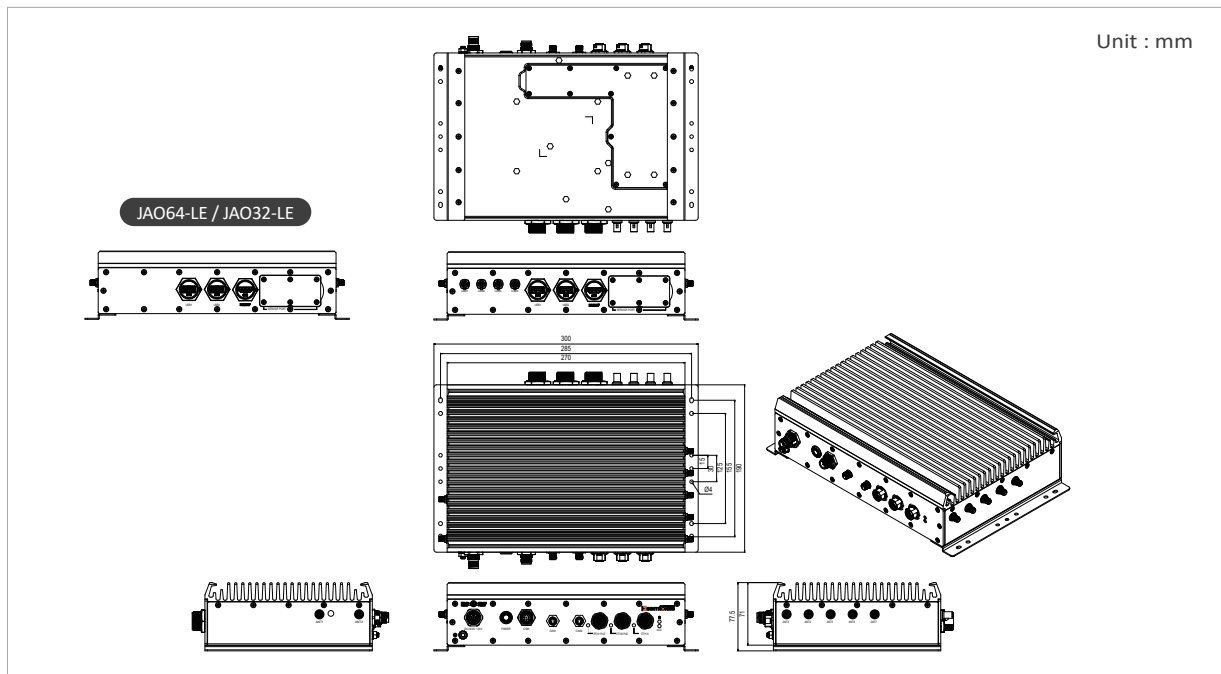
Weight

- 5100 g

Dimensions

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

Dimensions



Ordering Information

Model Number	IBOX-650P-IP66-01-JAO64	NVIDIA® Jetson AGX Orin™ 64GB / VDB-101 / 4 x GMSL-2 / IP66 / Model M12X
	IBOX-650P-IP66-01-JAO32	NVIDIA® Jetson AGX Orin™ 32GB / VDB-101 / 4 x GMSL-2 / IP66 / Model M12X
	IBOX-650P-IP66-JAO64-LE	NVIDIA® Jetson AGX Orin™ 64GB / 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.

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SINTRONES

Assured Systems

Assured Systems is a leading technology company with over 1,500 regular clients in 80 countries, deploying over 85,000 systems to a diverse customer base in 12 years of business. We offer high-quality and innovative rugged computing, display, networking and data collection solutions to the embedded, industrial, and digital-out-of-home market sectors.

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