IBOX-650P-IP66

NVIDIA® Jetson AGX Orin Fanless Edge AI Computer

IP66 WATERPROOF

- 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

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

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

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

Specifications

System

Module
- NVIDIA® Jetson AGX Orin™ 64GB - 275 TOPS
  (2048 CUDA® cores GPU + 12-core Arm Cortex-A78AE CPU + 64 GB LPDDR5)
- NVIDIA® Jetson AGX Orin™ 32GB - 200 TOPS
  (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
  *Thermal solution is required for M.2 5G Module

mPCIe Slot
- 1 x mPCIc 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 w/0.6 m/s airflow (for barebone system)
  *Operating Temp. Varies by Accessories Installed.

Storage Temp.
• -40°C ~ 80°C

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
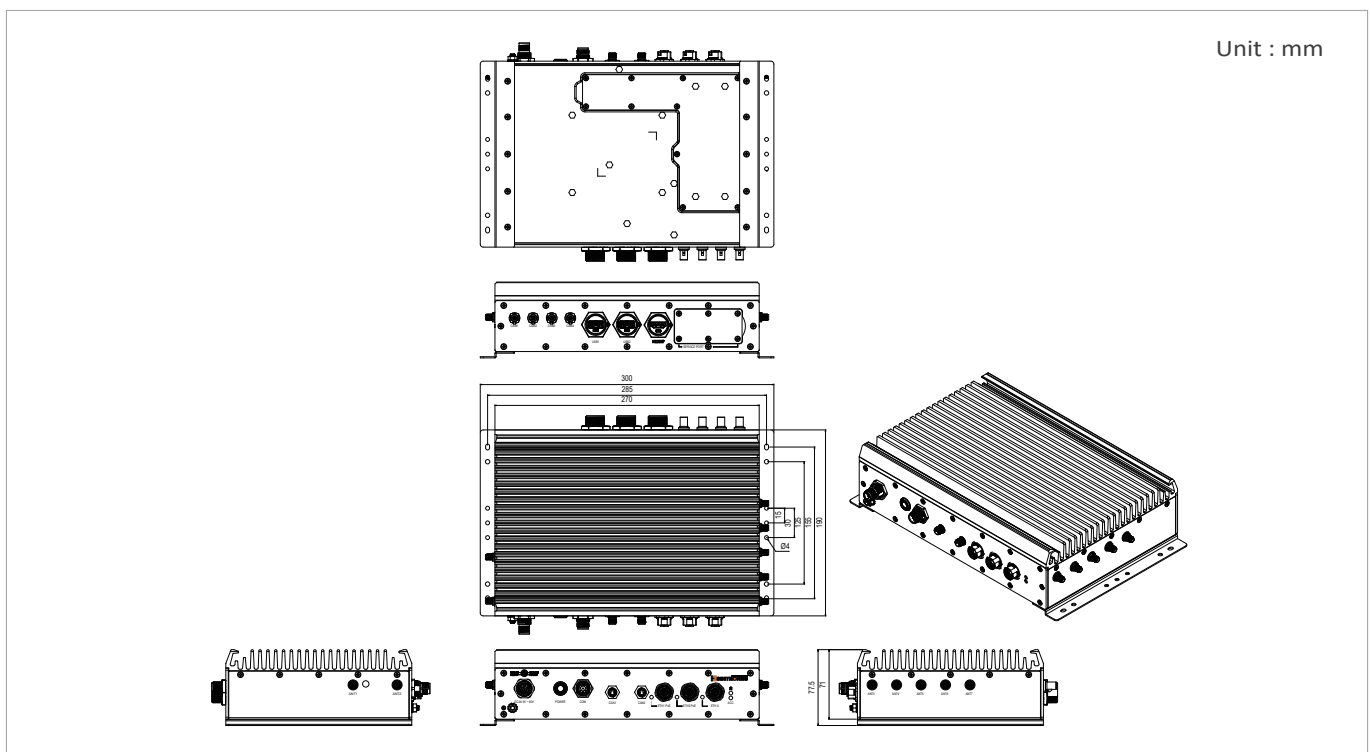• Fanless Passive Cooling

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 / IP66 / Model M12X
	IBOX-650P-IP66-JAO32	NVIDIA® Jetson AGX Orin™ 32GB / GMSL / IP66 / Model M12X
	IBOX-650P-IP66-JAO32-LE	NVIDIA® Jetson AGX Orin™ 32GB / IP66 / Model M12X
Description	NVIDIA® Jetson AGX Orin™ w/ 1x 10GbE / 2x 2.5GbE / 1x HDMI / 2x CAN FD/ DC 9-60V/ Intelligent 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

All specifications are subject to change without notice.

SINTRONES