

IBOX-602P-IP66

NVIDIA® Jetson Orin™ Rugged IP66 PoE
Edge AI Computer

- NVIDIA® Jetson Orin™ NX SoM with 1024 CUDA Cores
- IP66 Design (Waterproof and Dustproof) for Harsh Environment
- 2 x GMSL-2 Cameras Support
- 2 x Ethernet with PoE Support
- Optional Backup Battery for Emergency

Edge AI Application



1 x CAN FD for Vehicle Connection

For data communication of vehicle equipment



9-60VDC for 12/24/48V Vehicle System

A wide input range with smart power management for EV applications



2 x PoE for IP Camera and ADAS

For high-resolution image capture or LiDAR connections



GMSL-2 for Real-time Camera Connection

2 x FAKRA connectors provide robust and real-time video data transmission



UPS : The optional backup battery for emergency power loss situation



Watchdog : Monitoring the system status

Specifications

System

Module

- NVIDIA® Jetson Orin™ NX 16GB (1024 CUDA cores + 8-core ARM Cortex-A78AE CPU + 16 GB LPDDR5)
- NVIDIA® Jetson Orin™ NX 8GB (1024 CUDA cores + 6-core ARM Cortex-A78AE CPU + 8 GB LPDDR5)

Security

- Platform Security Controller (PSC), Security Engine (SE)

Watchdog

- Auto reset for unresponsive system

Interface

Video

- 1 x HDMI® (with a cover)

Audio

- 1 x HD Audio from the HDMI®

Ethernet

- 1 x 2.5GbE (Intel® I226-IT) via M12 X-code
- 1 x GbE (SoM) via M12 x-code
- PoE supports 15.4W per port (PSE Class 3) with total power budget: 32W

Camera

- 2 x GMSL-2 via FAKRA

CAN

- 1 x CAN FD via M8

USB

- 1 x USB 3.2 (with a cover)

DIO

- 3 x DI, 4 x DO (12VDC/100mA) via M8

COM

- 1 x RS-232/422/485 via M8

Mgmt. Port

- 1 x USB via type-C for system recovery (device only)

Internal Expansion

M.2

- 1 x M.2 3042/3052 Key B for WWAN w/ dual Nano SIM support
- 1 x M.2 2230 Key E for Wi-Fi/BT

Storage

Type

- 1 x M.2 2280 Key M for NVMe SSD (Pre-installed system BSP)

Power

Power Input

- DC 9-60V (nominal power input DC 12V/24V/48V) via M12 K-code

Power Protection

- OCP, surge protection, and reversed polarity protection

Power Management

- Supports Smart Power Management

RTC Battery

- High-capacity coin cell battery for RTC

Battery Backup Unit (BBU)

- Optional battery kit for up to 5 ~ 10 minutes of emergency backup time

* BBU backup time varies depending on actual overall system power consumption and battery is required to be charged before being used for system power backup
Patent No.: M447854 (Built-in battery)

Software

Operating System

- NVIDIA® JetPack 6.2 or above
(Jetson Linux and NVIDIA® development tools included)

Environmental

Operating Temp.

Low-Temp. Starter Enabled

- -40°C ~ 65°C (-40°F ~ 149°F) with 0.6m/s airflow for startup
Condition: Default power mode setting without stress testing

- -35°C ~ 65°C (-31°F ~ 149°F) with 0.6m/s airflow
Condition: 2 x GMSL-2 enabled without stress testing

- -35°C ~ 60°C (-31°F ~ 140°F) with 0.6m/s airflow
Condition: Stress testing with 2 x GMSL-2 and 2 x PoE enabled
Powered by A Built-in BBU

- -10°C ~ 55°C (14°F ~ 131°F) with 0.6m/s airflow
Condition: 2 x GMSL-2 enabled for 10 min without stress testing

Storage Temp.

- -40°C ~ 80°C (-40°F ~ 176°F)

Relative Humidity

- 10% RH – 90% RH (non-condensing)

Vibration

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

Shock

- MIL-STD-810G - Method 516.6, Procedure I, trucks and semi-trailers=15G (11ms)

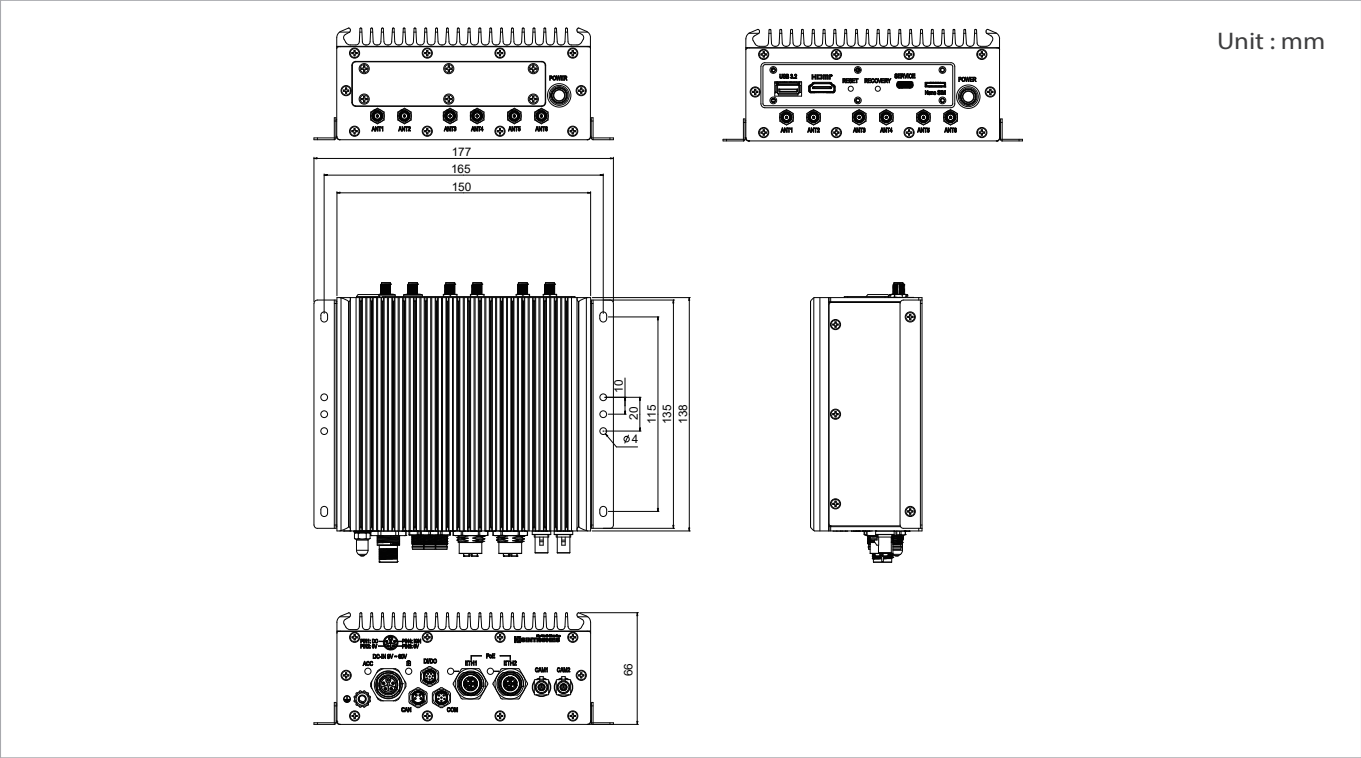
Certification / Compliance

• CE, FCC Class A, UKCA, E-mark, EN50155, EN45545-2 (R25)

Mechanical

- Construction**
- Aluminum Alloy
- Antenna**
- 6 x SMA connector mounting hole (with caps)
- Mounting**
- Wall mounting
- Net Weight**
- 1.78 kg (3.92 lb)
- Dimensions (L x W x H)**
- 150 x 138 x 66 mm (6.0 x 5.5 x 5.6 in.)
- Ingress Protection**
- IP66

Dimensions



Ordering Information

Model Number	IBOX-602P-IP66-ONX16	NVIDIA® Jetson Orin™ NX NX 16GB / 2 x PoE / 2 x GMSL-2
	IBOX-602P-IP66-ONX8	NVIDIA® Jetson Orin™ NX NX 8GB / 2 x PoE / 2 x GMSL-2
Description	NVIDIA® Jetson Orin™ NX NX SoM w/ 2x LAN / 2x PoE / 2x GMSL-2 / 1x CAN FD / DC 9-60V / IP66 Edge AI Computer	
State of Origin	Made in Taiwan	

Jetson Orin SoM Lifecycle is available through January 2032.

Optional Accessories

Storage*	M.2 2280 Key M NVMe SSD
Wi-Fi	M.2 2230 Key A-E Wi-Fi module
WWAN	M.2 3042/3052 WWAN modem
GNSS	M.2 2242 Key B GNSS module
Battery (BBU)	BAT-23002 battery kit, charging Temp. 0°C ~ 45°C, discharging Temp. -10°C ~ 60°C
Power Adapter	AC/DC 100-240V/24V 160W C14 DC plug power adapter

*The NVMe SSD is a mandatory accessory for this product.

Supported Camera List

Brand	Camera Part Number	IBOX-601-M12X-00 IBOX-601-G2-00	IBOX-601-M12X-01 IBOX-601-G2-01	IBOX-602P-IP66-01
oToBrite	oToCAM264ISP Series (2MP, Sony IMX390)	V (4)	V (4)	V (2)
oToBrite	oToCAM260ISP Series (5.36MP, Sony IMX490)	V (4)	V (4)	V (2)
oToBrite	oToCAM223 Series (2.95MP, Sony ISX031)	V (4)	V (4)	V (2)
e-con Systems	STURDeCAM25 (2MP, Omsemi AR0234CS)	-	V (4)	V (2)
e-con Systems	STURDeCAM31 (3MP, Sony ISX031)	-	V (4)	V (2)
e-con Systems	STURDeCAM81 (8MP, Omsemi AR0821)	-	V (4)	V (2)
StereoLabs	ZED X Stereo (Dual 2MP)	Tested	V (2)	V (2)*
StereoLabs	ZED X One 4K (8.2MP)	-	V (4)	V (2)

Brand	Camera Part Number	IBOX-604-G2	IBOX-650P-IP66-01	IBOX-650P-T1-01
oToBrite	oToCAM264ISP Series (2MP, Sony IMX390)	V (2)	V (4)	V (4)
oToBrite	oToCAM260ISP Series (5.36MP, Sony IMX490)	-	V (4)	V (4)
oToBrite	oToCAM223 Series (2.95MP, Sony ISX031)	V (2)	V (4)	V (4)
e-con Systems	STURDeCAM25 (2MP, Omsemi AR0234CS)	V (2)	V (4)	V (4)
e-con Systems	STURDeCAM31 (3MP, Sony ISX031)	V (2)	V (4)	V (4)
e-con Systems	STURDeCAM81 (8MP, Omsemi AR0821)	V (2)	V (4)	V (4)
StereoLabs	ZED X Stereo (Dual 2MP)	V (1)	V (2)	V (2)
StereoLabs	ZED X One 4K (8.2MP)	V (2)	V (4)	V (4)

V: Supported
(n): Maximum number of camera connections