

IBOX-604-G2

NVIDIA® Jetson Orin™ Lightweight AI Drone Computer



- NVIDIA® Jetson Orin™ NX SoM with 1024 CUDA Cores
- 10-60VDC Input Supports 3S-14S Lithium Battery
- 2 x GMSL-2 Cameras Support
- Lightweight Compact Design
- Built-in 3-axis Accelerometer

Edge AI Application



2 x USB for GNSS or USB Peripherals

High-precision GNSS modules or other peripherals connection.



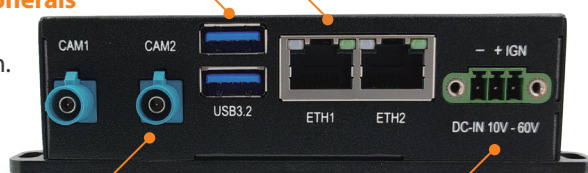
2 x Ethernet for High-speed Data Transmission

- 1 x 2.5GbE for the data transmission between the drone system
- 1 x GbE for high-resolution sensor or LiDAR connections



2 x GMSL-2 for Cameras

For quick-response, high-resolution video capture.



CAN FD/RS-232/UART for Drone System Communication

Offers multiple interfaces for the drone control system communication.



10-60VDC for 3S-14S Battery System

Supports 11V~58VDC input voltage with a power protection mechanism.

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

Security

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

Watchdog

- Auto reset for unresponsive system

Sensor

- Built-in 3-axis accelerometer

Internal Expansion

M.2

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

Storage

Type

- 1 x M.2 2242 Key M for NVMe SSD

Power

Power Input

- DC 10-60V (nominal power input DC 11V/22V/58V) via 3-pin terminal block

Power Protection

- OCP, OVP, surge protection, reversed polarity protection

Power Management

- Ignition detection, Smart Power Management

RTC Battery

- Built-in RTC coin cell battery

Interface

Video

- 1 x HDMI® Type-A output

Audio

- 1 x HD audio output via HDMI®

Ethernet

- 1 x 2.5GbE (Intel® I226-IT) via RJ-45
- 1 x GbE (NVIDIA SoM) via RJ-45

Camera

- 2 x GMSL-2 via FAKRA

CAN

- 1 x CAN FD

USB

- 2 x USB 3.2

DIO

- 1 x DI, 1 x DO, I2C (optional SKU)

GPIO

- 1 x UART w/ 3.3VDC (connector shared with CAN FD)

COM

- 1 x RS-232/422/485

Mgmt. Port

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

Software

Operating System

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

Certification / Compliance

- CE, FCC Class A, UKCA, IEC 62368-1

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