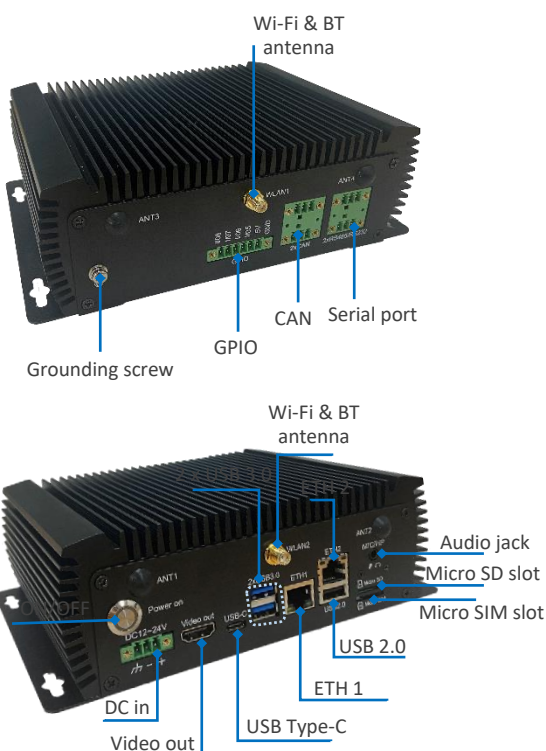# IBOX3588 Edge AI

# Embedded Industrial Computer

## Product Brief

Vantron IBOX3588 Edge AI Embedded Industrial Computer is powered by quad-core CA76 and quad-core CA55 chipset. The innovative chipset is equipped with an 8-core 64-bit CPU, an ARM Mali-G610 MP4 quad-core GPU, and a built-in AI acceleration NPU, providing 6 TOPS computing power. Furthermore, it supports mainstream deep learning frameworks to allow a wide range of AI-based applications. As technology continues to advance, there definitely will be a rising demand for AI-based products in the industrial control market, making IBOX3588 the ideal choice for businesses looking to stay ahead of the curve.

The industrial computer boasts an impressive array of features including two Gigabit Ethernet ports, support for Wi-Fi 6 and Bluetooth 5.1, ensuring the communication is uninterrupted. IBOX3588 also supports 8K video decoding and encoding for exceptional display performance.

IBOX3588 offers rich peripheral interfaces, allowing businesses to connect a wide range of peripherals for extended applications, making customers rest assured of a reliable and consistent user experience.
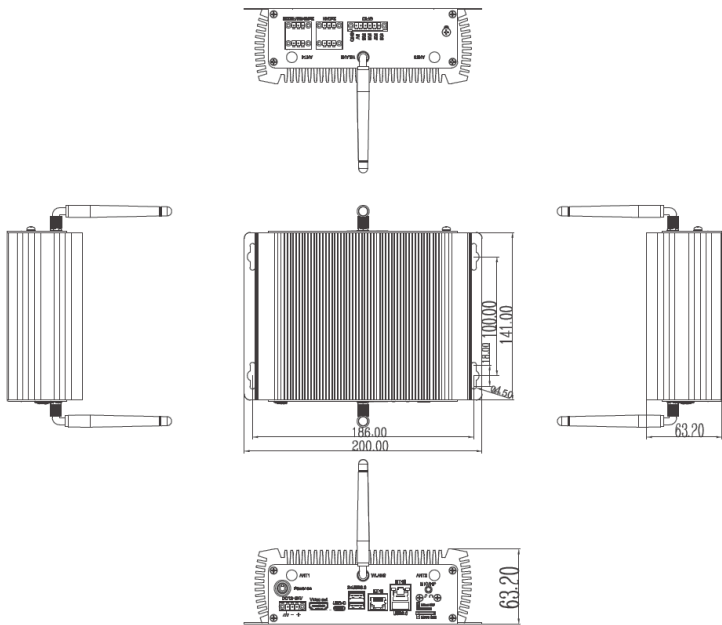
## Exterior and Features

Wi-Fi & BT antenna

CAN
Serial port
GPIO
Grounding screw

Wi-Fi & BT antenna

Audio jack
Micro SD slot
Micro SIM slot
USB 2.0
ETH 1
USB Type-C
DC in
Video out

| IBOX3588 |
| --- |
| Quad-core CA76 + Quad-core CA55 processor |
| High-quality video output |
| Rich interface for expansion |
| Wi-Fi (6)/BT/ETH for communication |
| Industrial-grade wide temperature design |
| High computing power |
| Deep learning acceleration |
| Industrial longevity |

## IBOX3588 Edge AI Embedded Industrial Computer Datasheet

| IBOX3588 | | |
|---|---|---|
| **System** | CPU | Quad-core Cortex-A76 + Quad-core Cortex-A55, 2.4GHz (Max.) |
| | GPU | ARM Mali-G610 MC4, 1GHz (Max.) |
| | NPU | 6 TOPS |
| | Memory | 8GB LPDDR4, up to 32GB |
| | Storage | 32GB eMMC, up to 128GB<br>SSD supported by an M.2 M-Key/M.2 B-Key (256GB ~ 1TB) |
| **Communication** | Ethernet | 2 x RJ45, 10/100/1000Mbps |
| | Cellular | 4G/5G (Optional) |
| | Wi-Fi & Bluetooth | Wi-Fi 802.11 a/b/g/n/ac/ax + BT 5.1 |
| **Media** | Display | 1 x HDMI (4096 x 2160 @60Hz) |
| | Audio | 1 x Combo audio jack |
| **I/Os** | USB | 2 x USB 3.0 Host, Type-A<br>1 x USB 2.0 Host, Type-A<br>1 x USB 3.0 Type-C (OTG supported) |
| | Serial port | 2 x RS232/RS485 (2 x 3 x 3.81mm, Baud rate: 115200) |
| | SIM slot | 1 x Micro SIM slot |
| | SD slot | 1 x Micro SD slot |
| | RTC | Supported |
| | Watchdog | Supported |
| **Expansion** | M.2 slot | 1 x M.2 M-Key (2260/2280), PCIe 3.0 x 4, for SSD<br>1 x M.2 B-Key (2242/3052), USB 3.0/SATA 3.0, for 4G/5G/SSD |
| | GPIO | 4 x GPIO on the Phoenix terminal |
| | CAN | 2 x CAN on the Phoenix terminal |
| **System Control** | Button | 1 x ON/OFF button (long press to reset) |
| | LED | 1 x LED indicator for power and system status |
| **Software** | OS | Android 12, Debian 11, Ubuntu 20.04 |
| | Language | English (default), Chinese |
| | Device management platform | BlueSphere MDM (Android version only) |
| | OTA tool | BlueSphere OTA |
| **Power** | Input | 1 x Power distribution block (12V/5A, 24V/3A) |
| **Mechanical** | Dimensions | 200mm x 141mm x 63.2mm |
| | Enclosure | Aluminum + sheet metal, black |
| | Weight | 1200g |
| | Shock test | IEC 60068-2-27 |
| | IP rating | IP40 |
| **Environment Condition** | Temperature | Operating: 0℃ ~ +60℃ (Optional: -20℃ ~ +70℃)<br>Storage: -40℃ ~ +85℃ |
| | Humidity | 0~95% RH (non-condensing) |
| | Certification | FCC*, CCC, UL |

* IBOX3588 is FCC certified without cellular capability.

## Product Outlines



## Ordering Information

| Ordering No. | Memory | Storage | Description |
|---|---|---|---|
| IBOX3588 | 8GB | 32GB | USB 2.0, USB 3.0, RS232, RS485, Ethernet, Wi-Fi, Bluetooth |
| IBOX3588-SSD1 | 8GB | 32GB + 256GB (SSD) | USB 2.0, USB 3.0, RS232, RS485, Ethernet, Wi-Fi, Bluetooth |
| IBOX3588-4G | 8GB | 32GB | USB 2.0, USB 3.0, RS232, RS485, Ethernet, Wi-Fi, Bluetooth, 4G |

\* More variants are available, please contact the sales executive for details.

| Packing list | | | |
|---|---|---|---|
| IBOX3588 Embedded industrial computer | 1 | Mating connector for GPIO | 1 |
| Wi-Fi & Bluetooth antenna | 2 | Mating connector for CAN | 2 |
| DC power connector | 1 | 256GB/512GB/1T SSD for SSD version | 1 |
| Mating connector for RS232/RS485 | 2 | 4G antenna/5G antenna for cellular version | 2/4 |
| **Optional accessories** | | | |
| 12V DC Power adapter | 1 | Power cord | 1 |

Since its establishment in 2002 by two Silicon Valley entrepreneurs, Vantron Technology has been at the forefront of the connected IoT devices and IoT platform solutions. Today, Vantron boasts a global customer base that includes Fortune Global 500 companies. Its product lines cover edge intelligent hardware, IoT communication devices, industrial displays, and BlueSphere cloud platforms.

With over 20 years of experience in R&D of intelligent edge hardware, Vantron has provided users with diverse embedded solutions featuring ARM and X86 architectures. Its offerings range from Linux to Windows, from embedded level to desktop level, and from gateways to servers. In addition, it provides users with system clipping, driver transplantation and other related services.