

Octa-core 8K AI Edge Computer

High Integration / High Accuracy / Mainstream AI

1.PRODUCT OVERVIEW



Industrial-grade
Octa-core AI chipset

Flexible
configurations

Dual Gigabit
Ethernet

6Tops of
computing
capability

4G/5G/
Dual-band
WiFi 6

Computing
capability
Flexible

Rich
Peripheral

Ubuntu/
Android14/
Debian

The EPC80-3588 edge computer box is with an industrial-grade black metal case, which is precisely manufactured, has excellent heat dissipation performance, fan-less, dust-proof, anti-rust, firm structure. It is developed based on the RK3588 industrial wide-temperature core board, AI acceleration card. It supports multiple mainstream AI deep learning frameworks. It supports an industrial wide-temperature range of -20℃ to +70℃, has stable computing performance, strong deployment capability, and high accuracy. It can be flexibly applied in AIoT edge scenarios.

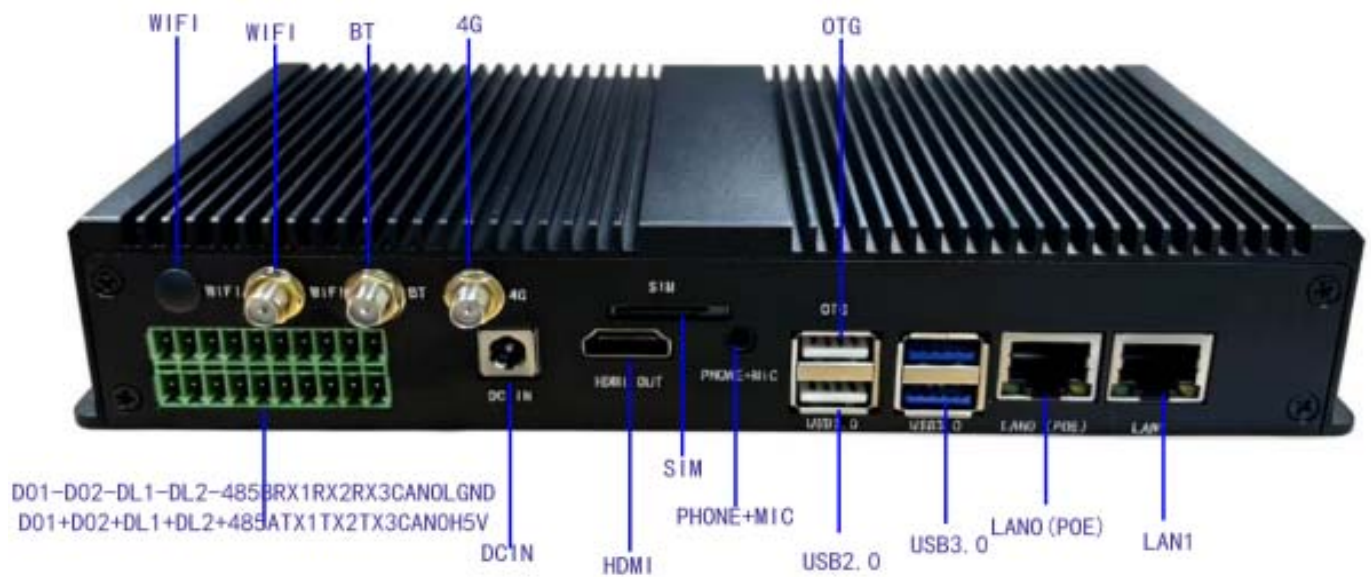
— PRODUCT CHARACTERISTICS

- ▶ The RK3588 chip adopts 8nm LP process, with a 64-bit octa-core CPU, speed is up to 2.4GHz, and integrates an ARM Mali-G610 MP4 quad-core GPU.
- ▶ Strong computing power, strong compatibility, the built-in NPU computing power can reach 6TOPS. It supports mixed operations of INT4/INT8/INT16, and can realize the conversion of network models based on series frameworks such as TensorFlow/MXNet/PvTorch/Caffe.
- ▶ Supports 8K@60fps H.265/VP9 video decoding, true 8K high-definition presentation, with extremely clear images and richer details. Fully compatible with OpenGL ES 1.1, 2.0 and 3.2, OpenCL up to 2.2 and Vulkan 1.2.
- ▶ Rich interfaces, supporting mainstream interfaces such as RS232/485/USB3.0/USB2.0/HDMI/MIC, meeting the high-speed expansion requirements of various edge scenarios.
- ▶ Engineering design, with stable performance. It has run various software and hardware tests, ensuring stable operation in harsh environments for 7x24 hours.
- ▶ Built-in dual-gigabit Ethernet, supporting POE, and supporting 5G/4G LTE expansion, enabling higher network communication speeds.

2.PRODUCT PARAMETERS

EPC80-3588	
CPU	RK3588 (4*Cortex-A76+4*Cortex-A55)
GHZ	2.4 GHz
GPU	ARM Mali-G610 MP4 GPU, OpenGL ES3.2 / OpenCL 2.2 / Vulkan1.1, 450 GFLOPS
	Embedded high-performance 2D acceleration
NPU	6TOPs (INT8) support int4/int8/int16/FP16/BF16/TF32 acceleration
DDR	16GB
Storage capacity	128GB Micro SD (Up to 256GB) M.2 SSD, SATA
Os	Android14、Linux、ubuntu、debian
Network	2 * 1000Mbps Ethernet、2.4GHz/5G Hzdual-band WiFi 6 (802.11a/b/g/n/ac/ax)、Bluetooth 5.0、LTE optional
multimedia	Decoder: 8K@60fps H.265/VP9/AVS2、8K@30fps H.264 AVC/MVC、4K@60fps AV1、1080P@60fps MPEG-2/-1/VC-1/VP8 Encoder: 8K@30fps H.265 / H.264
Display output	HDMI2.1 (8K@60fps or 4K@120fps)
Audio Input/Output	HDMI, 3.5mm headphone output, 3.5mm microphone input
USB	2x USB3.0, 2x USB2.0
Operation temperature	-20° C~+75° C
Power adapter	Input: AC100-240V.50-60HZ, DC12V/3A
Relay Output	2-ways, 0.5A 125VAC / 1A 30VDC
Optocouple Input	2-ways, voltage level: 3.3V~5V
RS485	1-way, voltage level: $\pm 3.3V$
RS232	3-ways, voltage level: $\pm 5.4V$
CAN Bus	1-way
Power output	+5V ($\pm 0.2V$)/0.5A

3.INTERFACE LAYOUT



Backside Interface



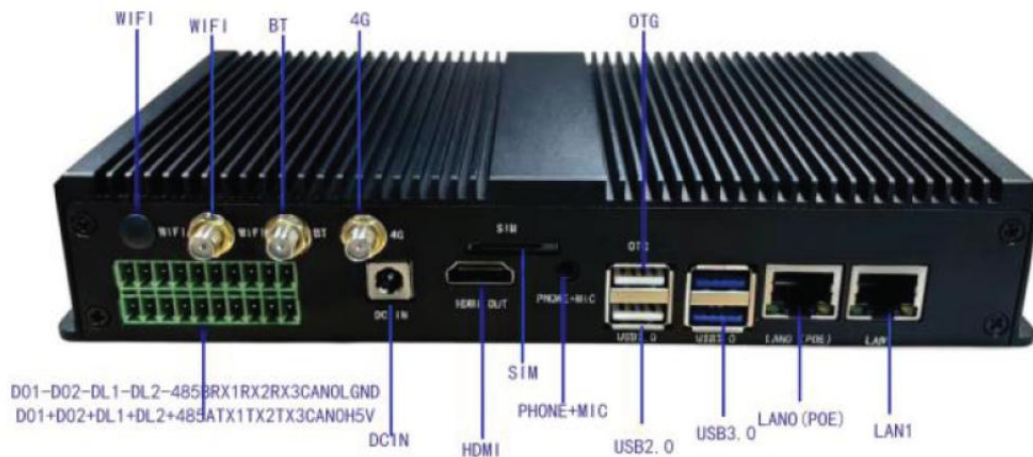
Frontside Interface



4.DIMENSION



L: 220mm W: 117mm H: 38mm



1. Product Introduction

This device is an industrial AI edge computing gateway (Model: **EPC80-3588**) powered by RK3588 octa-core processor. It supports dual Gigabit Ethernet, Wi-Fi 6, Bluetooth 5.0, and optional LTE. The unit provides high-performance data processing, AI computing, and stable wired/wireless communication for industrial IoT and edge scenarios.

2. Scope of Application

- Indoor/industrial use
- Edge computing, data processing, intelligent video analysis, IoT gateway applications

3. Safety Precautions

- Do not open or disassemble the device.
- Do not expose the unit to water, moisture, or corrosive gas.
- Use only the recommended power adapter: **DC 12V = 3A**.
- Keep the device away from high temperature, strong vibration, and dust.
- Ensure sufficient ventilation for heat dissipation.
- Unplug the power cord before cleaning or moving.

4. Package Contents

- EPC80-3588 Edge Computing Gateway ×1
- Power Adapter (DC 12V/3A) ×1
- This User Manual ×1

5. Product Specifications

- CPU: RK3588 64-bit octa-core (4×A76 + 4×A55), up to 2.4 GHz
- NPU: Up to 6 TOPS (standard); up to 24 TOPS (with accelerator card)
- Memory: 16GB LPDDR4x
- Storage: 128GB eMMC; Micro SD; M.2 SSD support
- Ethernet: 2× Gigabit Ethernet (10/100/1000 Mbps)
- Wireless: Wi-Fi 6 (2.4G+5G), Bluetooth 5.0; optional 4G/5G
- Video Output: HDMI 2.1 (8K@60fps)
- USB: 2× USB3.0, 2× USB2.0
- Power Input: AC 100–240V 50/60Hz (adapter)
- Operating Temperature: Commercial: -20°C ~ +75°C; Industrial: -40°C ~ +85°C
- Dimensions: 220 mm × 117 mm × 38 mm

6. Basic Operation Instructions

6.1 Power On

1. Connect the DC 12V/3A power adapter to the device.
2. Plug the adapter into a mains power outlet.
3. The device will **power on and boot automatically**.

6.2 Network Connection

1. Insert an Ethernet cable into one of the **Gigabit Ethernet ports**.
2. Connect the other end to your router, switch, or LAN network.
3. The gateway will obtain an IP address automatically and establish network connectivity.

6.3 Data Processing

After power-on and network connection:

- The device runs the operating system (Linux)
- It automatically processes edge data, AI computing tasks, and IoT communication.
- Users can access the device via network for configuration and management.

7. FCC Statement (Required)

This device complies with Part 15 of the FCC Rules.

Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference.

(2) This device must accept any interference received, including interference that may cause undesired operation.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

8. Troubleshooting

- No power: Check power adapter and power outlet.
- No network: Check Ethernet cable and router status.
- System abnormal: Restart the device by reconnecting power.

9. Maintenance

- Keep the device clean and dry.
- Do not block the cooling vents.
- Unplug power during long-term non-use.

10. Manufacturer Information

SHENZHEN KING HISTRONG ELECTRONICS CO., LTD.

Address: Bao'an District, Shenzhen, China

FCC Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Caution: Any changes or modifications to this device not explicitly approved by manufacturer could void your authority to operate this equipment.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

RF Exposure Information

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator and your body.