EC-I3588J

| Octa-core 8K Computer
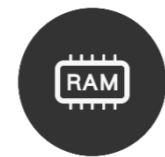
Product features

New-gen AIoT SoC RK3588

RK3588 is Rockchip's new-gen flagship AIoT SoC with 8nm lithography process. Equipped with 8-core 64-bit CPU, its frequency is up to 2.4GHz. Integrated with ARM Mali-G610 MP4 quad-core GPU and built-in AI accelerator NPU, it provides 6TOPS computing power and supports mainstream deep learning frameworks.

8K video encoding and decoding

The computer supports 8K@60fps H.265/VP9 video decoding and 8K@30fps H.265/H.264 video encoding, and also supports encoding and decoding simultaneously – up to 32-channel 1080P@30fps decoding and 16-channel 1080P@30fps encoding can be achieved.

Super-large 32GB RAM

Up to 32GB of super-large RAM can be configured, which exceeds the limit of the previous RAM and delivers a faster response speed. It can meet the application requirements of products with large RAM and large storage.
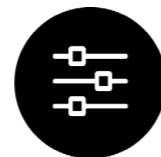
Product features

Multi-channel input and output

With HDMI2.1/DP1.4/VGA multi-channel video output and HDMI-IN video input interfaces, it supports multi-channel 8K video output and 4K video input – up to four-screen output with different displays can be achieved.

Supports various operating systems

Android 12.0, Ubuntu Desktop version and Server version, Debian11, Buildroot, KylinOS and UOS are supported. It also supports RTLinux, delivering excellent real-time performance. Besides, UEFI Boot is available.

More interfaces for more possibilities

Various interfaces are equipped, such as USB-C, VGA, HDMI IN, HDMI 4K, HDMI 8K, USB3.0, RJ45, Line-in, Phone, Mic, TF Card, SIM Card and DC 12V.

A wide range of applications

It can be widely used in edge computing box, NVR, 8K video box, Android game device, desktop computer, small server and other fields.

Specifications

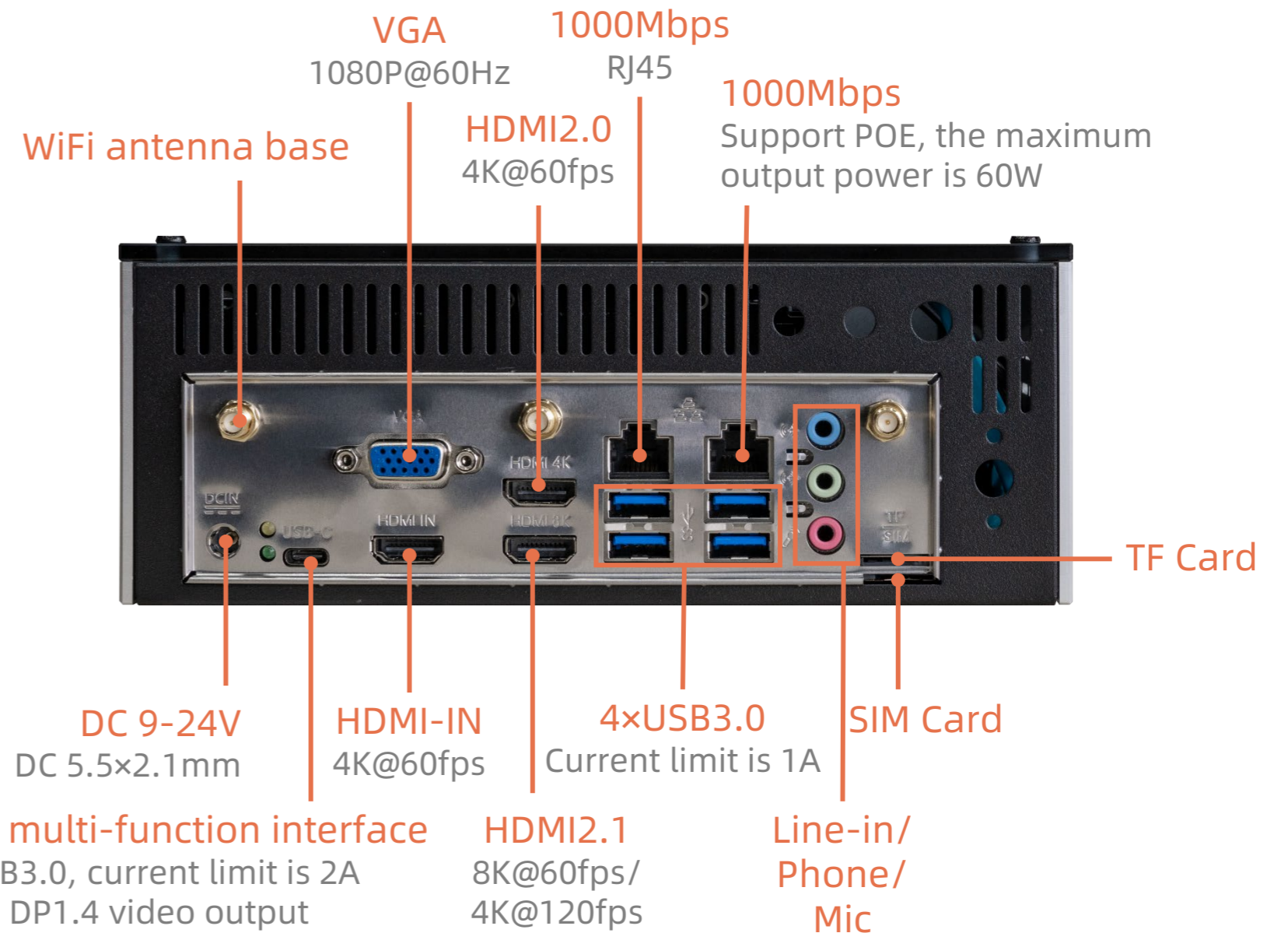|	Specifications	
Basic Specifications	SOC	RockChip RK3588
	CPU	Octa-core 64-bit (4×Cortex-A76+4×Cortex-A55), 8nm lithography process, frequency up to 2.4GHz
	GPU	ARM Mali-G610 MP4 quad-core GPU, support OpenGL ES3.2 / OpenCL 2.2 / Vulkan1.1, 450 GFLOPS
	NPU	NPU computing power up to 6 TOPS, support INT4/INT8/INT16 mixed operation, support framework switching of TensorFlow/MXNet/PyTorch/Caffe
	VPU	Video decoding: 8K@60fps H.265/VP9/AVS2, 8K@30fps H.264 AVC/MVC, 4K@60fps AV1, 1080P@60fps MPEG-2/-1/VC-1/VP8 Video encoding: 8K@30fps H.265/H.264 Achieve up to 32-channel 1080P@30fps decoding and 16-channel 1080P@30fps encoding
	RAM	4GB/8GB/16GB 64-bit LPDDR4/LPDDR4x (Up to 32GB optional)
	Storage	16GB/32GB/64GB/128GB eMMC
	Storage Expansion	1 × M.2 SATA3.0, can expand with one 2242 (SATA3.0) SSD 4 × Standard SATA3.0, can expand with two SATA3.0 SSD/HDD 1 × TF Card
	Power	DC 9-24V voltage input (DC 5.5×2.1mm)
	Power Consumption	Idle: ≈1.35W (12V/110mA), Typical: ≈4.8W (12V/400mA) , Max: ≈20W (12V/1700mA)
	OS	Android: Android 12.0 Linux: Ubuntu Desktop, Ubuntu Server, Debian11, Buildroot, RTLinux Kylin Linux, UOS, etc. Supports UEFI Boot
	Case	20cm(L) × 20cm(W) × 8.5cm(H) (including rubber feet), metal brushed enclosure
	Weight	≈1.3kg (no peripheral devices)
	Environment	Operating Temperature: -20℃ ~ 60℃, Storage Temperature: -20℃ ~ 70℃, Storage Humidity: 10% ~ 80%RH (non-condensing)
Interface Specifications	Wireless	2.4GHz/5GHz dual-band WiFi6, Bluetooth 5.0, support 5G/4G LTE expansion
	Ethernet	2 × 1000Mbps Ethernet (RJ45) * One of them supports POE power supply and max output is 60w (optional)
	Display	Video output: 1 × HDMI2.1 (8K@60fps or 4K@120fps), 1 × HDMI2.0 (4K@60fps), 1 × DP1.4 (8K@30fps, USB-C multi-function interface output), 1 × VGA (1080P@60fps) Video input: 1 × HDMI-IN (4K@60fps), support HDCP 2.3
	Audio	Audio output: 1 × Phone output , 2 × HDMI audio output, 1 × DP1.4 audio output Audio input: 1 × Line-in input, 1 × MIC input, 1 × HDMI audio input
	USB	4 × USB3.0 (Limit 1A) 1 × USB-C multi-function interface (USB3.0 OTG/DP1.4, Limit 2A) 2 × USB2.0 (Limit 500mA)
	Button	1 × Power button

Interface description

VGA
1080P@60Hz

1000Mbps
RJ45

1000Mbps
Support POE, the maximum
output power is 60W

WiFi antenna base

HDMI2.0
4K@60fps

TF Card

DC 9-24V
DC 5.5×2.1mm

HDMI-IN
4K@60fps

4×USB3.0
Current limit is 1A

SIM Card

Power button

2×USB3.0
Current limit is 500mA

USB-C multi-function interface
USB3.0, current limit is 2A
DP1.4 video output

HDMI2.1
8K@60fps/
4K@120fps

Line-in/
Phone/
Mic

Dimension

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