EC-R3588SPC FD

Octa-Core 8K AI Industrial Computer

V1.2 2025-3-10

T-CHIP INTELLIGENCE TECHNOLOGY

Product features

A new generation of high-end processor

RK3588S is Rockchip's new-gen flagship AIoT SoC with the 8nm lithography process. Equipped with an octa-core 64-bit CPU, its frequency is up to 2.4GHz.

Built-in 6TOPS powerful computing power NPU

Supports mixed operations such as INT4/INT8/INT16, and can achieve network model transformation based on TensorFlow/MXNet/PyTorch and other 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. It 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, exceeding the limit of the previous RAM and delivering a faster response time. It is able to meet the product requirements for large RAM and high storage capacity.

Product features

Supporting various operating systems

Android and Ubuntu (Desktop Version and Server Version) are supported. The reliable operation provides a safe and stable system environment for product research and production.

Excellent heat dissipation

This device comes equipped with an industrial-grade metal enclosure and a fanless design, ensuring not only low power consumption and efficient heat dissipation but also absolute silence. 7×24h continuous and stable operation is supported.

A variety of interfaces

It has rich expansion interfaces such as HDMI2.1, Gigabit Ethernet (1000Mbps), USB3.0, USB2.0, USB-C (OTG/DP1.4).

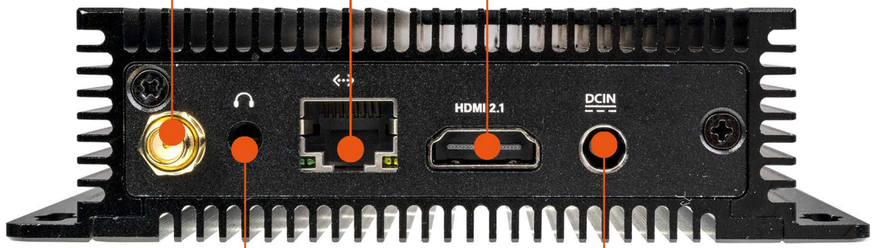
A wide range of applications

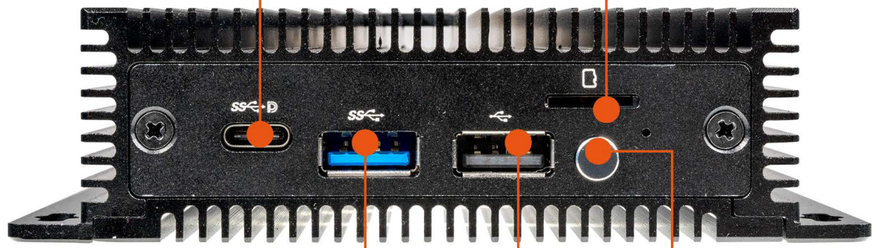
The computer can be widely used in edge computing, Artificial Intelligence, smart home, intelligent retail, and intelligent industry.

Specifications

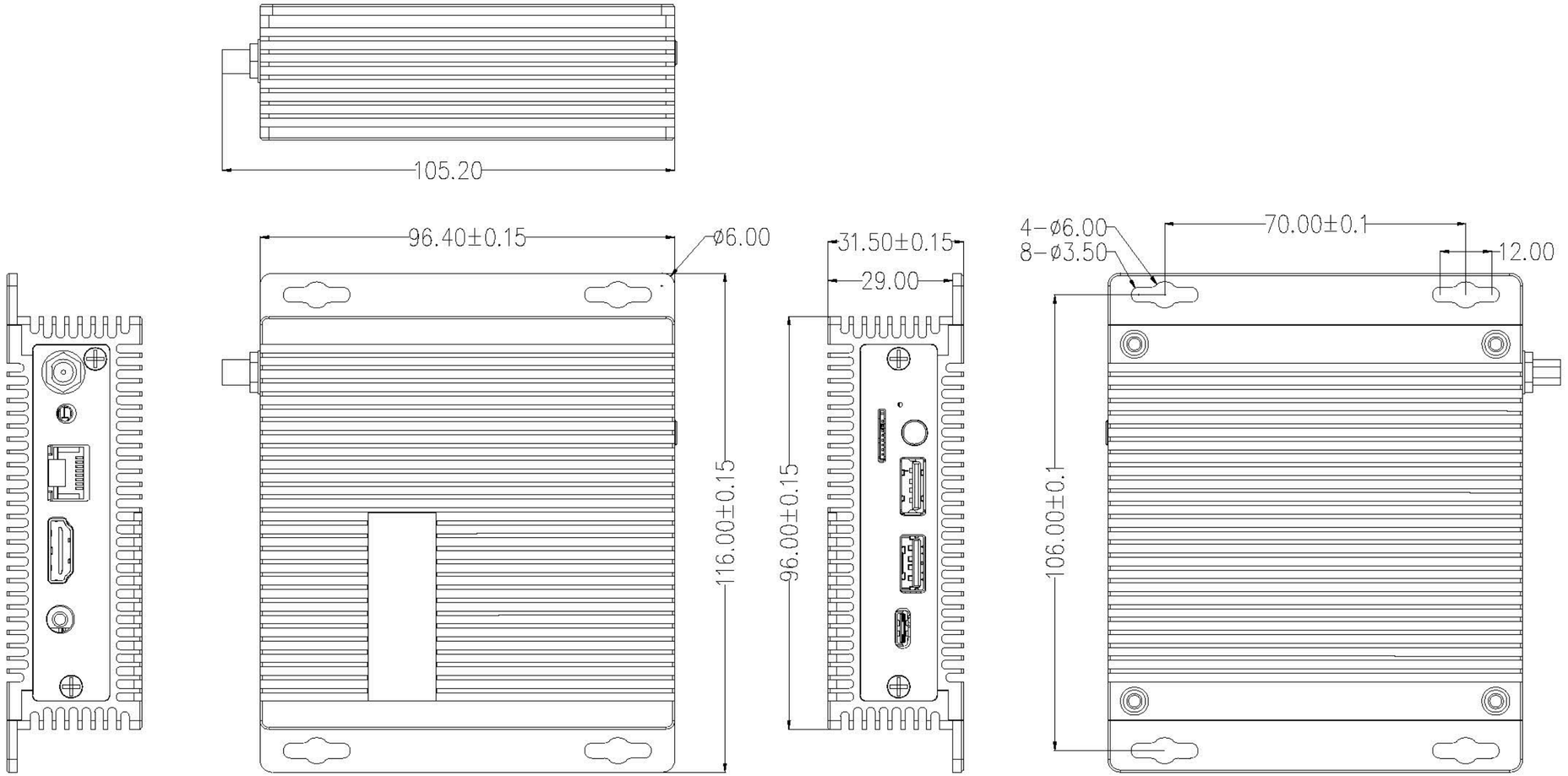
Specifications		
Basic Specifications	SOC	RK3588S
	CPU	Octa-core 64-bit (4×Cortex-A76+4×Cortex-A55), 8nm lithography process, up to 2.4GHz
	GPU	ARM Mali-G610 MP4 GPU，Support OpenGL ES3.2 / OpenCL 2.2 / Vulkan1.1, 450 GFLOPS
	NPU	6 TOPS, Support INT4/INT8/INT16 mixed operation, Support framework switching of TensorFlow / MXNet / PyTorch / Caffe
	Codecs	Decoding: 8K@60fps H.265/VP9/AVS2, 8K@30fps H.264 AVC/MVC, 4K@60fps AV1, 1080P@60fps MPEG-2/-1/VC-1/VP8 Encoding: 8K@30fps H.265/H.264
	RAM	4GB/8GB/16GB/32GB 64-bit LPDDR4/LPDDR4x/LPDDR5
	Storage	16GB/32GB/64GB/128GB eMMC
	Storage Expansion	1 × TF Card
	Power	DC 12V (5.5×2.1mm, support 9V~24V wide voltage input)
	Power Consumption	Idle: ≈0.48W (12V/40mA), Typical: ≈1.8W(12V150mA), Max: ≈12W(12V/1A)
	OS	Android, Ubuntu (desktop and Server)
	Dimension	116.0mm × 105.2mm × 31.5mm
	Weight	≈ 0.43kg
	Environment	Operating Temperature: -20℃ ~ 60℃, Storage Temperature: -20℃ ~ 70℃, Operating Humidity: 10% ~ 90%RH (non-condensing)
Interface Specifications	Ethernet	1 × Gigabit Ethernet (1000Mbps/RJ45)
	Wireless	2.4GHz/5GHz Dual-band WiFi (802.11 a/b/g/n/ac), Bluetooth 4.2
	Video	1 × HDMI2.1 (8K@60fps or 4K@120fps), 1 × DP1.4 (8K@30fps), support dual screen output with different displays
	Audio	1 × 3.5mm Audio jack (support Mic), 1 × HDMI2.1 Audio output, 1 × DP1.4 Audio output
	USB	1 × USB3.0 (Max:1A), 1 × USB2.0 (Max:500mA), 1 × USB-C (USB3.0 OTG/DP1.4, Max:2A)

Interface description





Dimension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ø6.00
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8-ø3.50
70.00±0.1
12.00
106.00±0.1

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