



# EC-R3588RT

| Smart routers

V1.0 2024-3-1

T-CHIP INTELLIGENCE TECHNOLOGY



# Product features



## A new generation of high-performance AIoT chips

The new generation of flagship AIoT chip RK3588 uses an 8nm LP process, equipped with an octa-core 64-bit CPU, and the main frequency is up to 2.4GHz. Integrating the ARM Mali-G610 MP4 quad-core GPU, the powerful RK3588 delivers optimized performance for a wide range of AI application scenarios.



## 8K HD video decoding

It supports 8K@60fps H.265/VP9 video decoding, true 8K HD presentation, ultra-clear images, richer details, and supports 1 channel 8K HDMI 2.1, 1 channel 4K HDMI 2.0, and 1 channel 8K DP output to meet the needs of various HD video display scenarios.



## High-speed Ethernet port

1 x 2.5G high-speed Ethernet port, 2 x Gigabit Ethernet port. 2.5G Ethernet supports 16k ultra-large frames to adapt to complex network environments, supports dual VLAN tagging, can freely build a virtual LAN, and supports multi-core receiver adjustment (RSS). The WAN/LAN usage can be customized.

# Product features



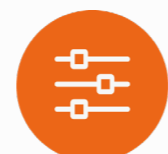
## 6 TOPS powerful computing power NPU

The computing power can reach 6TOPS, supports INT4/INT8/INT16 hybrid computing, and can realize network model conversion based on TensorFlow/MXNet/PyTorch/Caffe and other frameworks.



## Powerful gateway management system

Firefly gateway system is an edge computing gateway system launched by Firefly for the field of industrial Internet of Things, which has a rich resource chart, which can easily monitor and historical backtracking system information such as network traffic, CPU load, memory usage, and disk usage.



## Abundant expansion interfaces

It has USB3.0, USB2.0, Type-C, M.2 E-KEY interface (expandable WiFi6/Bluetooth), M.2 (SATA) and other rich expansion interfaces, and the M.2 interface can expand 2242 SATA SSD large-capacity storage devices, allowing the device to easily expand to TB-level super large capacity.

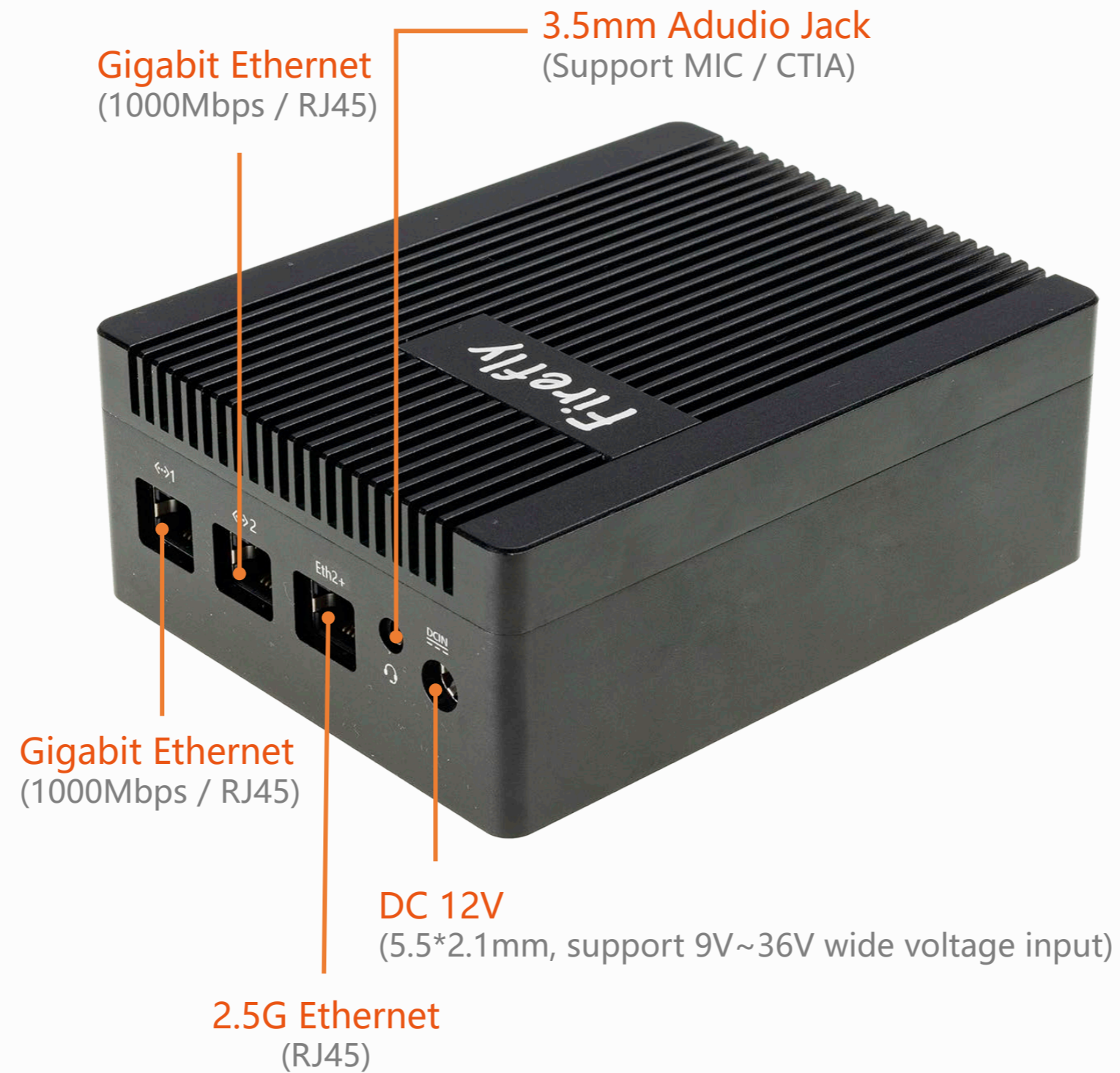
# Specifications



		Specifications
Basic Specifications	CPU	RK3588, Octa-core 64-bit (4*Cortex-A76+4*Cortex-A55), up to 2.4GHz
	GPU	ARM Mali-G610 MP4 Quad-core GPU, supports OpenGL ES3.2 / OpenCL 2.2 / Vulkan1.1, 450 GFLOPS
	NPU	The computing power is up to 6TOPs (INT8), supports INT4/INT8/INT16 hybrid computing, and can be based on TensorFlow/MXNet/PyTorch/Caffe and other series of frameworks.
	VPU	Hardware decoding: 8K@60fps H.265/VP9/AVS2, 8K@30fps H.264 AVC/MVC, 4K@60fps AV1, 1080P@60fps MPEG-2/-1/VC-1/VP8 Hardware encoding: 8K@30fps H.265 / H.264
	RAM	4GB/8GB/16GB(up to 32GB) LPDDR4/LPDDR4x/LPDDR5
	Storage	32GB/64GB/128GB eMMC
	Expand storage	M.2 SATA / PCIe NVMe SSD(2242), 1 * TF Card Slot
	Power	DC 12V (5.5*2.1mm, support 9V~36V wide voltage input)
	OS	Android, Linux OS, OpenWRT
	Size	113mm * 88mm * 42 mm
Environment	Operating Temperature:-20°C ~ 60°C    Operating Humidity:10% ~ 90%RH (non-condensing)	
Interface Specifications	Ethernet	2 * 1000M bps Ethernet, 1*2.5G bps Ethernet, WAN / LAN can be customized
	WiFi	The WiFi/BT module can be expanded through the M.2 E-KEY (2230) interface, supporting WiFi6, BT5.0
	Video output	1 * HDMI2.1 (8K@60Hz), 1 * HDMI2.0 (4K@60Hz), 1 * DP1.4 (8K@30Hz, output via USB-C port)
	Audio output	1 * 3.5mm Audio jack, Support MIC recording, American standard CTIA
	USB	1 * USB3.0 (Max: 1A), 1 * USB2.0 (Max: 500mA), 1 * USB-C (USB3.0 OTG / DP1.4)



# Interface description



# Dimension





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