



Octa-core 8K AI Embedded Computer

- | EC-A3588Q(Commercial)
- | EC-A3588JQ(Industrial)
- | EC-A3588MQ(Automotive)

V1.1 2025-3-11

T-CHIP INTELLIGENCE TECHNOLOGY

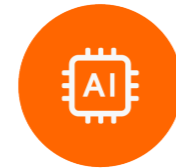


Product features



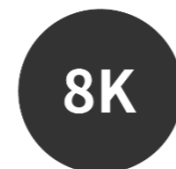
New-gen AIoT SoC RK3588

RK3588 is Rockchip's new-gen flagship high-end processor with 8nm lithography process and frequency of up to 2.4GHz.



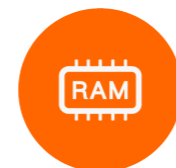
6TOPS powerful computing power

Built-in powerful NPU, comprehensive computing power up to 6TOPS. It supports INT4/INT8/INT16 hybrid computing, and can realize network model conversion based on TensorFlow, MXNet, PyTorch, Caffe and other series 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, with simultaneous encoding and decoding capabilities. It can achieve up to 32-channel 1080P@30fps decoding and 16-channel 1080P@30fps encoding.



Super-large 32GB RAM

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

Product features



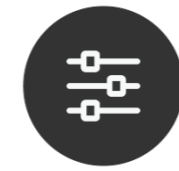
Strong network communication capability

Dual Gigabit Ethernet, 2.4GHz/5GHz dual-band WiFi6, Bluetooth 5.0, and 5G/4G LTE expansion are supported, allowing higher-speed network communication.



Support various systems

The computer provides Android 12.0, Ubuntu (Desktop and Server), Debian11, Buildroot. It supports RTLinux, delivering excellent real-time performance. Thanks to these options, a safe and stable system environment for product research and production is available.



A variety of interfaces

Equipped with HDMI, VGA, DP, HDMI IN, RS485, RS232, CAN, USB3.0, MIC, LINE-IN and other expansion interfaces.



A wide range of applications

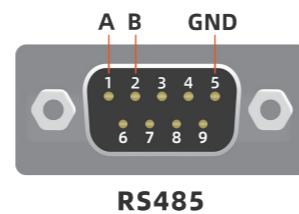
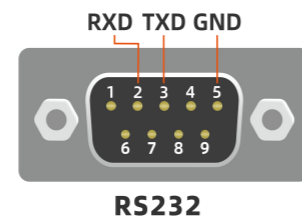
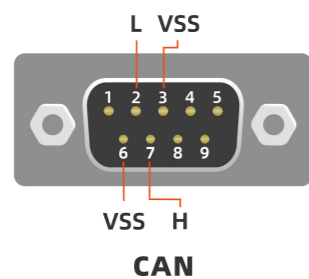
This computer can be widely used in ARM PC, edge computing, industrial control, IoT gateway, cloud terminal and intelligent vehicle.

Specifications



		EC-A3588Q(Commercial)	EC-A3588JQ(Industrial)	EC-A3588MQ(Automotive)
Basic Specifications	CPU	RK3588 Octa-core 64-bit (4xCortex-A76+4xCortex-A55) Up to 2.4GHz	RK3588J Octa-core 64-bit (4xCortex-A76+4xCortex-A55) Up to 1.6GHz	RK3588M Octa-core 64-bit (4xCortex-A76+4xCortex-A55) Up to 2.0GHz
	GPU	ARM Mali-G610 MP4 quad-core GPU Support OpenGL ES3.2 / OpenCL 2.2 / Vulkan1.1, 450 GFLOPS		
	NPU	Up to 6 TOPS (INT8) Support INT4/INT8/INT16 mixed operations Support framework switching of TensorFlow / MXNet / PyTorch / Caffe		
	ISP	48MP ISP with HDR & 3DNR		
	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	LPDDR4/LPDDR4x (4GB/8GB/16GB/32GB optional)	LPDDR4/LPDDR4x (industrial) (4GB/8GB/16GB/32GB optional)	LPDDR4/LPDDR4x (4GB/8GB/16GB/32GB optional)
	Storage	eMMC (16GB/32GB/64GB/128GB optional)		
	Storage Expansion	1 × M.2 SATA 3.0 SSD (2242), 1 × TF Card Slot		
	Power	DC 12V (5.5mm × 2.1mm, voltage tolerance ± 5%)		
	Power consumption	Max: 14.4W(12V/1200mA) Normal: 3.6W(12V/300mA) Min: 0.084W(12V/7mA)	Max: 10.8W(12V/900mA) Normal: 3.6W(12V/300mA) Min: 0.084W(12V/7mA)	Max: 13.2W(12V/1100mA) Normal: 3.6W(12V/300mA) Min: 0.144W(12V/12mA)
	OS	Android and Linux OS Support Kernel-based Virtual Machine (KVM) and Docker container technology Run Android, Ubuntu, Debian, and Linux simultaneously, achieve "One Screen for One OS" display, and enable cross-domain integration in smart vehicles		
	Size	182.5mm × 150.0mm × 66.5mm		
	Weight	≈ 1.77kg		
	Environment	Operating temperature: -20°C ~ 60°C Operating humidity: 10% ~ 90%RH (non-condensing)	Operating temperature: -40°C ~ 85°C Operating humidity: 10% ~ 90%RH (non-condensing)	Operating temperature: -40°C ~ 85°C Operating humidity: 10% ~ 90%RH (non-condensing)
	Interface Specifications	Ethernet	2 × 1000Mbps Ethernet (RJ45)	
Wireless Network		2.4GHz/5GHz dual-band WiFi6 (802.11a/b/g/n/ac/ax), Bluetooth 5.0, 5G/4G LTE expansion		
Video Input		1 × HDMI-IN (4K@60fps) Support HDCP 2.3		
Video Output		1 × HDMI2.1 (8K@60fps or 4K@120fps), 1 × DP1.4 (8K@30fps,via USB-C), 1 × VGA (1080P@60fps)		
USB		4 × USB3.1 (Gen1), 1 × USB-C (OTG/DP1.4)		
Other		2 × RS232, 1 × RS485, 1 × CAN		

Interface description

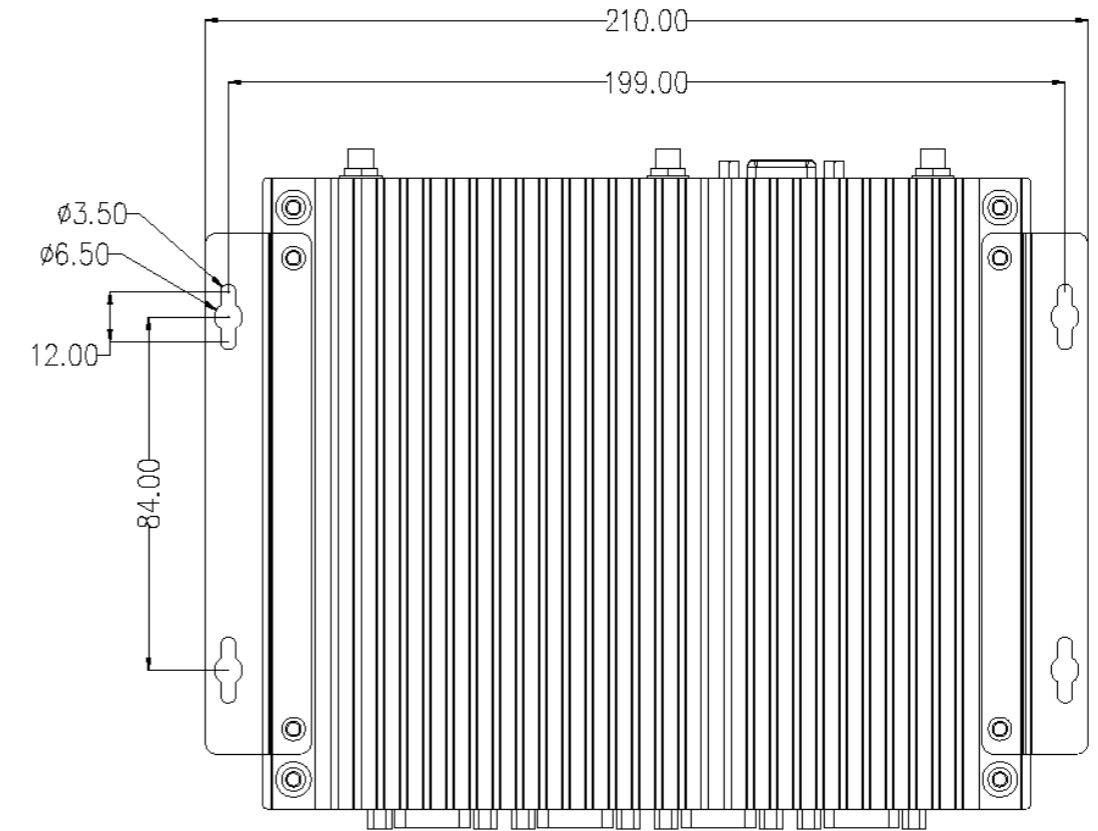
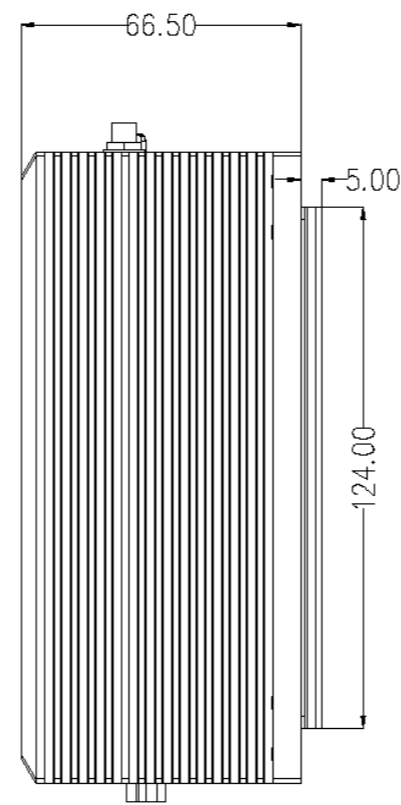
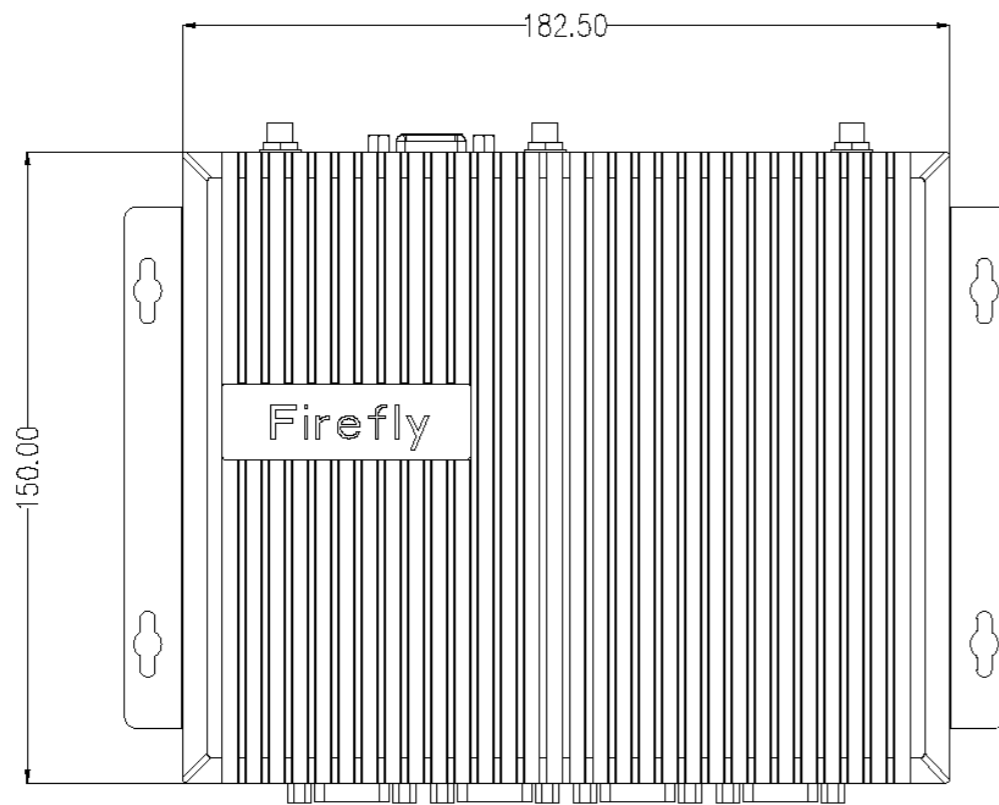
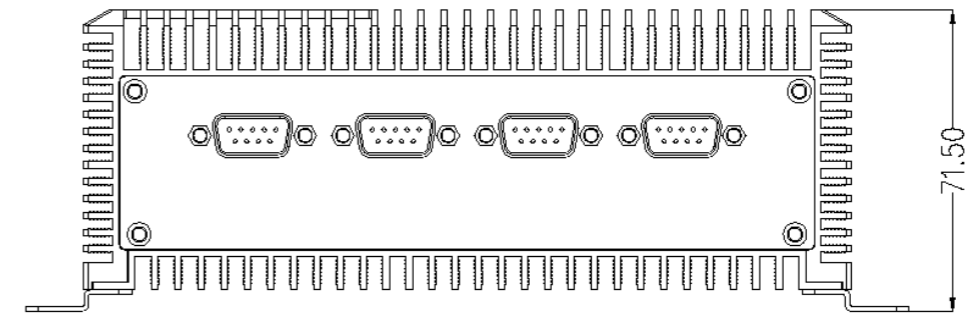
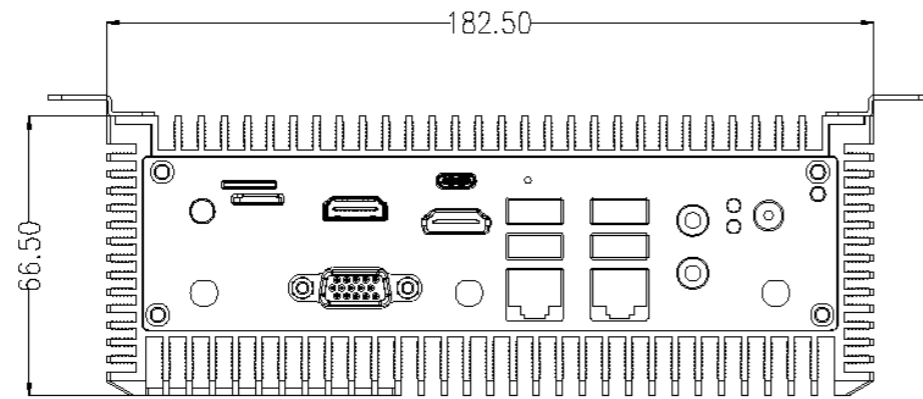


Note: The back interface can be customized

On the basis of this back interface (1 * CAN+2 * RS232+1 * RS485), the following interfaces can also be extended:

- 1) USB 2.0 (maximum of 2)
- 2) 4 serial ports (up to 4 for RS232, up to 4 for RS485, and up to 4 for the sum of the two)

Dimension





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