Firefly

EC-A3576C

▍Industry Computer

V1.0　2025-11-7
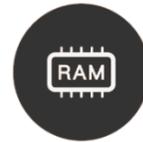
T-CHIP INTELLIGENCE TECHNOLOGY

Product features

Octa-core 64-bit AIOT processor RK3576

It adopts Rockchip's new generation of high-performance AIoT chip RK3576, octa-core 64-bit, large and small core architecture (4×A72 +4×A53), advanced process, and the main frequency is up to 2.2GHz.

4K@120fps high frame rate video decoding

Support 8K@30fps/4K@120fps decode (H.265/HEVC, VP9, AVS2, AV1) , 4K@60fps encode (H.265/HEVC, H.264/AVC). It supports HDMI/eDP, MIPI DSI, LVDS and other display interfaces, and supports three-screen different display and 4K@120Hz ultra-clear display to meet the diverse display needs of multiple scenes.

Supports high-bandwidth LPDDR5 memory

Compared with LPDDR4, LPDDR5 has the characteristics of larger memory capacity, higher bandwidth, faster data transmission rate, and lower power consumption, which can meet the needs of memory space and response speed for the privatization of large models.

The private deployment of large language models

Support the privatization deployment of ultra-large-scale parametric models under the Transformer architecture, such as Deepseek-R1 series, Gemma series, Llama series, ChatGLM series, Qwen series, Phi series and other large language models.

Product features

Multiple deep learning frameworks

It supports traditional network architectures such as CNN, RNN, and LSTM, and supports the import and export of RKNN models; Support a variety of deep learning frameworks, including TensorFlow, TensorFlow Lite, PyTorch, Caffe, ONNX and Darknet.

Supports RTLinx and multiple operating systems

Supports RTLinux kernel with excellent real-time performance; Supports Android 14, Linux OS, and Buildroot operating systems, providing a secure and stable system environment for product development and production.

All-aluminum alloy casing with efficient heat dissipation

Equipped with an industrial-grade all-aluminum alloy casing and fanless efficient heat dissipation, it operates stably 24/7, meeting various industrial-grade application requirements.
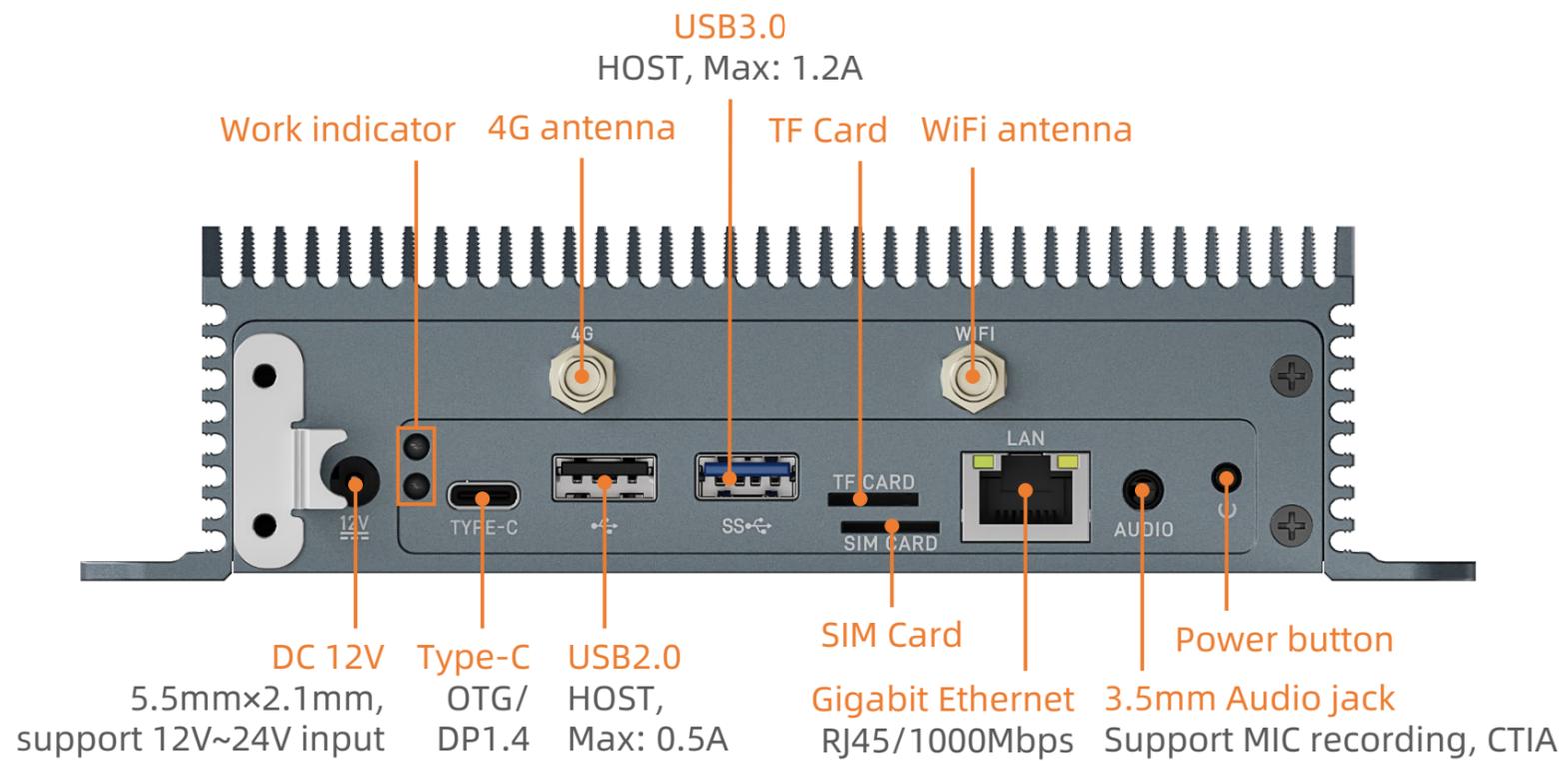
Comprehensive development materials

It provides supporting source codes, tutorials, technical documents, and development tools, making development simpler and more convenient.
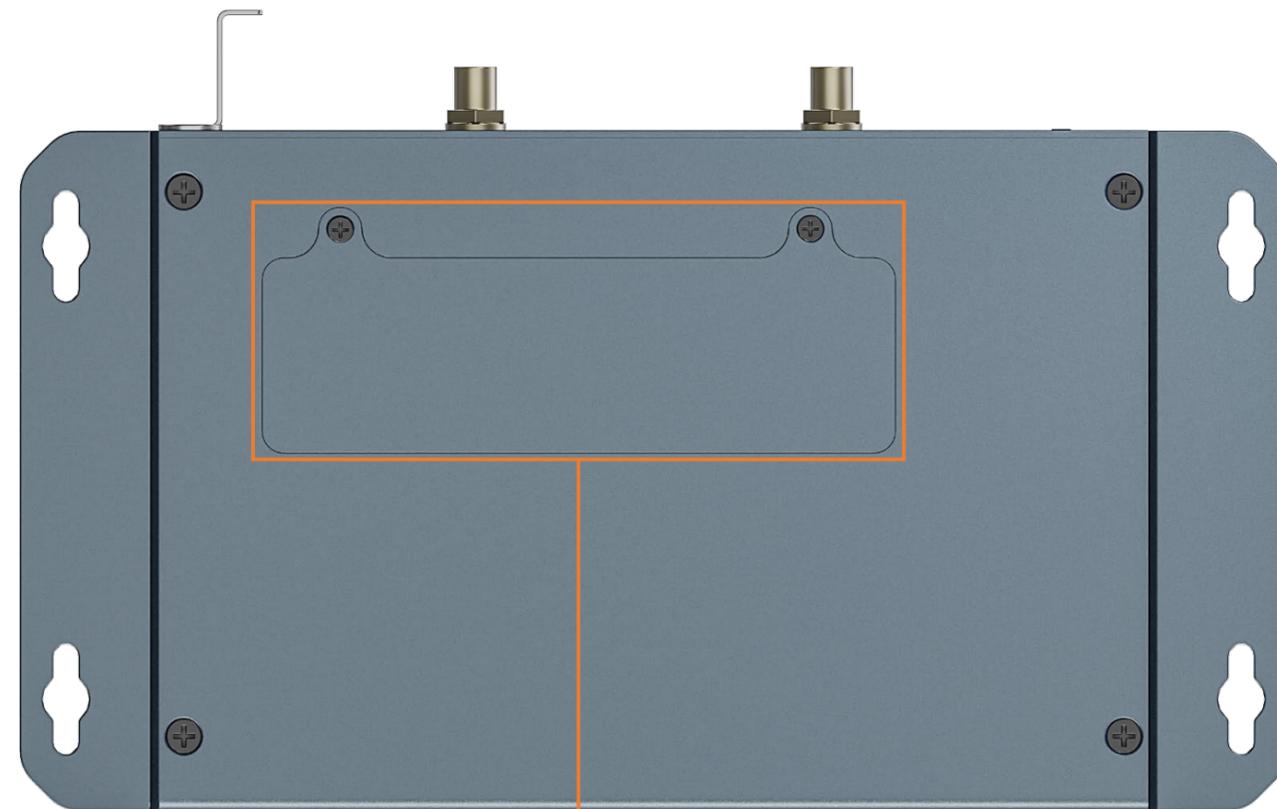
Specifications

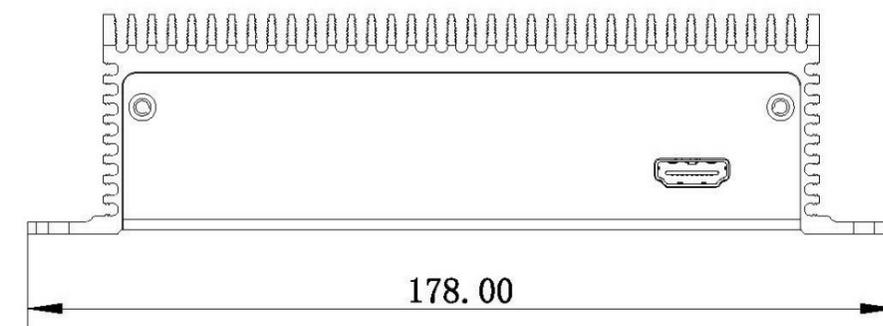| Specifications		
Basic Specifications	SOC	Rockchip RK3576
	CPU	Octa-core 64-bit processor (4×A72 + 4×A53) with a maximum frequency of 2.2GHz
	GPU	G52 MC3 @ 1GHz, supports OpenGL ES 1.1/2.0/3.2, OpenCL 2.0, Vulkan 1.1, embedded high-performance 2D acceleration hardware
	NPU	6 TOPS computing power NPU, support INT4/INT8/INT16/FP16/BF16/TF32 operation, support dual-core collaborative or independent work, support multi-task, multi-scenario parallelism
	ISP	Built-in 16 million pixel ISP, support low-light noise reduction, support RGB-IR sensor, support up to 120dB HDR, AI-ISP to improve low-noise image effect
	Decoding/ Encoding	Decode: 8K@30fps/4K@120fps (H.265/HEVC, VP9, AVS2, AV1), 4K@60fps (H.264/AVC) Encode: 4K@60fps (H.265/HEVC, H.264/AVC)
	RAM	LPDDR5 (4GB/8GB/16GB optional)
	Storage	eMMC (16GB/32GB/64GB/128GB/256GB optional)
	Storage expansion	1 × M.2 M-KEY (Scalable SATA3.0/PCIe NVMe SSD, support 2242/2260/2280, located at the bottom of the computer), 1 × TF Card
	Power	DC 12V (5.5mm × 2.1mm, support 12V~24V wide voltage input)
	Power consumption	Max: 8W(12V/667mA), Normal: 3W(12V/250mA), Min: 1.7W(12V/142mA)
	OS	It supports RTLinux kernel and has excellent real-time performance, which is widely used in industrial application scenarios.Support Android14, Linux OS, Buildroot, domestic operating system, provide a safe and stable system environment for product research and production.It has new industrial features such as real-time network, Flexbus, hardware resource isolation, and DSMC to meet the needs of different industrial applications.
	Software support	Support the privatization deployment of ultra-large-scale parametric models under the Transformer architecture, such as Deepseek-R1 series, Gemma series, Llama series, ChatGLM series, Qwen series, Phi series and other large language models. It supports traditional network architectures such as CNN, RNN, and LSTM, and supports the import and export of RKNN models; Support a variety of deep learning frameworks, including TensorFlow, TensorFlow Lite, PyTorch, Caffe, ONNX and Darknet. It also supports the development of custom operators. Support Docker container management technology.
		It supports the real-time object detection algorithm YOLO (You Only Look Once), which is fast and real-time compared with traditional object detection methods, and can accurately identify and locate multiple target objects in images or videos, powering AI applications.
	Size	188.00mm × 94.94mm × 50.65mm
	Weight	≈760g
	Environment	Operating Temperature: -20℃ ~ 60℃, Storage Temperature: -20℃ ~ 70℃, Storage Humidity: 10% ~ 90%RH(non-condensing)
Interface Specifications	Internet	1 × Gigabit Ethernet (RJ45/1000Mbps) Supports 2.4GHz/5GHz dual-band WiFi6 (802.11a/b/g/n/ac/ax), Bluetooth 5.4, and expandable 4G LTE (via internal Mini PCIe of the computer)
	Video output	1 × HDMI2.1 (4K@120Hz), 1 × DP1.4 (Up to 4K@60Hz, output via Type-C)
	Audio	1 × 3.5mm Audio jack (Support MIC recording, American Standard CTIA)
	USB	1 × USB3.0 (HOST, Max: 1.2A), 1 × USB2.0 (HOST, Max: 0.5A), 1 × Type-C (OTG/DP1.4)
	Others	1 × SIM Card, 1 × WiFi antenna, 1 × 4G antenna

Interface description

USB3.0
HOST, Max: 1.2A

Work indicator   4G antenna   TF Card   WiFi antenna

DC 12V   Type-C   USB2.0
5.5mm×2.1mm,   OTG/   HOST,
support 12V~24V input   DP1.4   Max: 0.5A

SIM Card

Gigabit Ethernet   3.5mm Audio jack
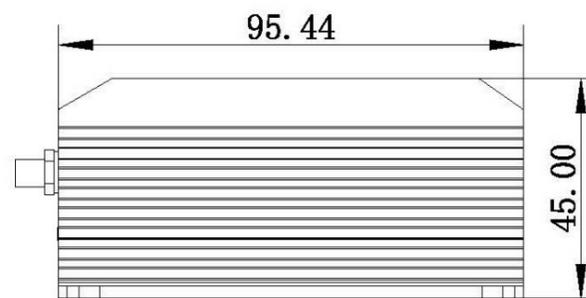RJ45/1000Mbps   Support MIC recording, CTIA
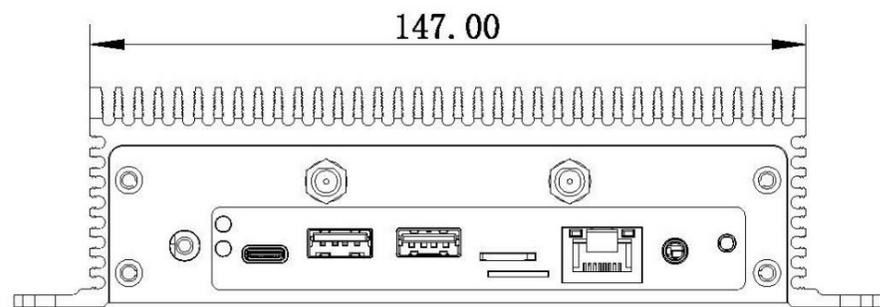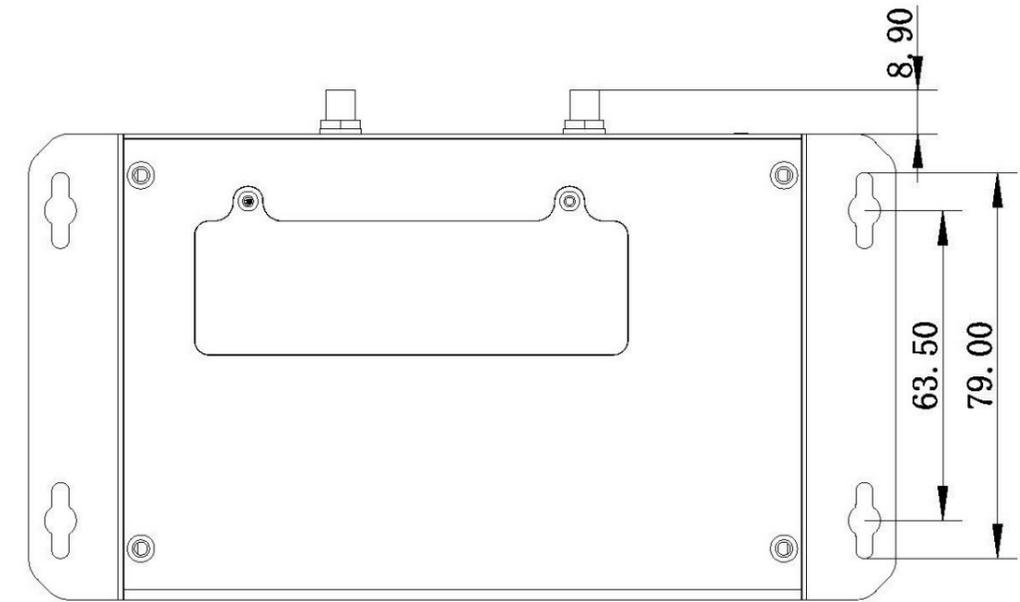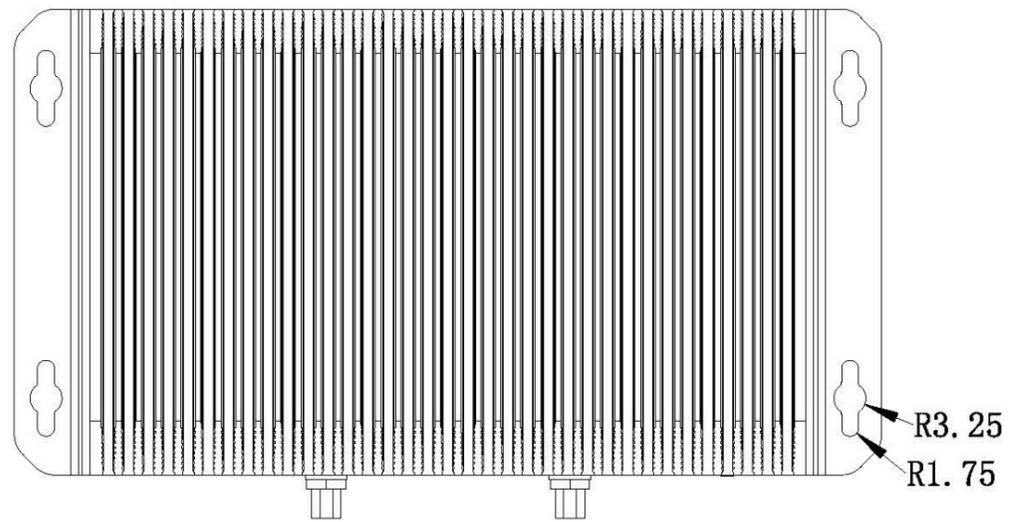
Power button

HDMI2.1
4K@120Hz

Interface description

M.2
Scalable 2242/2260/2280 SATA3.0/PCIe NVMe SSD

Dimension

T-CHIP INTELLIGENCE TECHNOLOGY

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