AIBOX-K3

60T High Computing Power AI Box

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FIREFLY TECHNOLOGY

Product features

High-performance RISC-V AI Processor K3

Equipped with an 8-core X100™ 64-bit RISC-V AI Processor SpacemiT Key Stone K3, it features a maximum main frequency of 2.4GHz and a computing power of 130KDMIPS. Supporting the complete RVA23 Profile, it delivers robust performance and can meet the requirements of high-performance computing and complex scenario applications.

60TOPS Universal AI Computing Power

Powered by an 8-core A100™, it delivers 60TOPS of universal AI computing power and supports data types including BF16, FP16, FP8, INT8 and INT4. It supports the deployment of all AI algorithms and models, and achieves zero-cost AI algorithm deployment by following the CPU programming paradigm.

4K HD Video Hardware Encoding and Decoding

Supports 4K@120fps H.264/VP9 high-definition video decoding, enabling smooth parsing of high-bitrate UHD video streams with clear and stutter-free playback. It also supports 4K@60fps H.264 hardware video encoding for efficient video compression, recording and transmission, saving storage space and bandwidth while maintaining excellent image quality.

High-Bandwidth LPDDR5 & UFS2.2 High-Speed Storage

Supports up to 32GB large-capacity LPDDR5 high-bandwidth memory paired with UFS2.2 high-speed storage. Featuring larger capacity, higher bandwidth and lower power consumption, it enables faster data read and write speeds to meet the requirements of large model private deployment for memory capacity and real-time response speed.

Product features

Higher-Level Security Defense Technology

Supports M/S/U three-level privileges, defends against Spectre, Meltdown and other vulnerability attacks at the hardware level, adopts RISC-V PMP/ePMP and dedicated IOPMP mechanisms to establish high-level security protection, supports secure boot, secure storage and signature verification, and integrates AES, SHA, RSA, SM2, SM3 and SM4 algorithms.

Industrial-grade Metal Body, Efficient Thermal Design

It features an industrial-grade all-metal aluminum alloy body with strip grille ventilation on the sides of the top cover, paired with a porous hexagonal structure on the top cover. This combines aesthetics with efficient heat dissipation and ensures stable and continuous operation of the device in high-temperature environments.

Abundant Expansion Interfaces

It has 2 × Gigabit Ethernet, 2 × USB3.0, 1 × Type-C, 1 × HDMI2.0, 1 × Console and other expansion interfaces, which are convenient to connect various peripherals and realize multi-field product applications.

Wide Application Scenarios

Widely used in: edge computing, computing power services, data security, privacy protection, private large model deployment, AI computers, AI education, self-service terminals and other products and fields.

Specifications

Specifications		
Basic Specifications	SOC	SpacemiT Key Stone K3
	CPU	8-core X100™ 64-bit RISC-V AI Processor, max main frequency 2.4GHz, 130KDMIPS general computing power, full RVA23 Profile support, single-core Specint2006>9.0/GHz, equivalent to ARM-A76
	AI performance	8-core A100™ delivering 60TOPS AI computing power, supporting data types including BF16, FP16, FP8, INT8, INT4; enabling smooth operation of 30B local models with performance > 10Tokens/S@30B, supporting deployment of all AI algorithms and models
	GPU	Integrated 3D graphics engine, supporting Vulkan 1.3, OpenCL 3.0, OpenGL ES 1.1/3.2, EGL 1.5
	Codec	Video decoding: 4K@120fps H.265/H.264/VP9 Video encoding: 4K@60fps H.265/H.264
	RAM	8GB/16GB/32GB LPDDR5
	Storage	128GB/256GB/512GB UFS2.2
	Expansion storage	1 × M.2 (PCIe3.0x4 lane, support for 2242/2280 specification PCIe NVMe SSD; located inside the computer)
	Power	DC 12V/5A (5.5 × 2.1mm, supporting 9V~20V wide voltage input)
	OS	Linux
	Size	93.4mm × 93.4mm × 50.0mm
	Weight	≈ 500g
	Environment	Operating Temperature: -20℃ ~ 60℃, Storage Temperature: -20℃ ~ 70℃, Operating Humidity: 10% ~ 90%RH (No condensation)
Interface Specifications	Ethernet	2 × Gigabit Ethernet (1000Mbps/RJ45)
	Video output	1 × HDMI2.0 (Up to 4K@60Hz)
	USB	2 × USB3.0 (Max: 1A), 1 × USB3.0 DRD (Type-C, includes USB2.0 OTG)
	Console	1 × Console (Debug serial)
	Button	1 × Power, 1 × Boot

Interface description

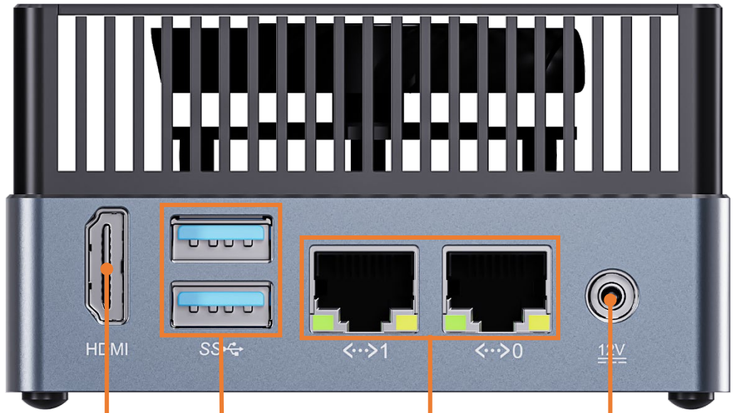
Power button

Work indicator

Boot

Type-C
(USB3.0 DRD, includes USB2.0 OTG)

Console
(Debug serial)



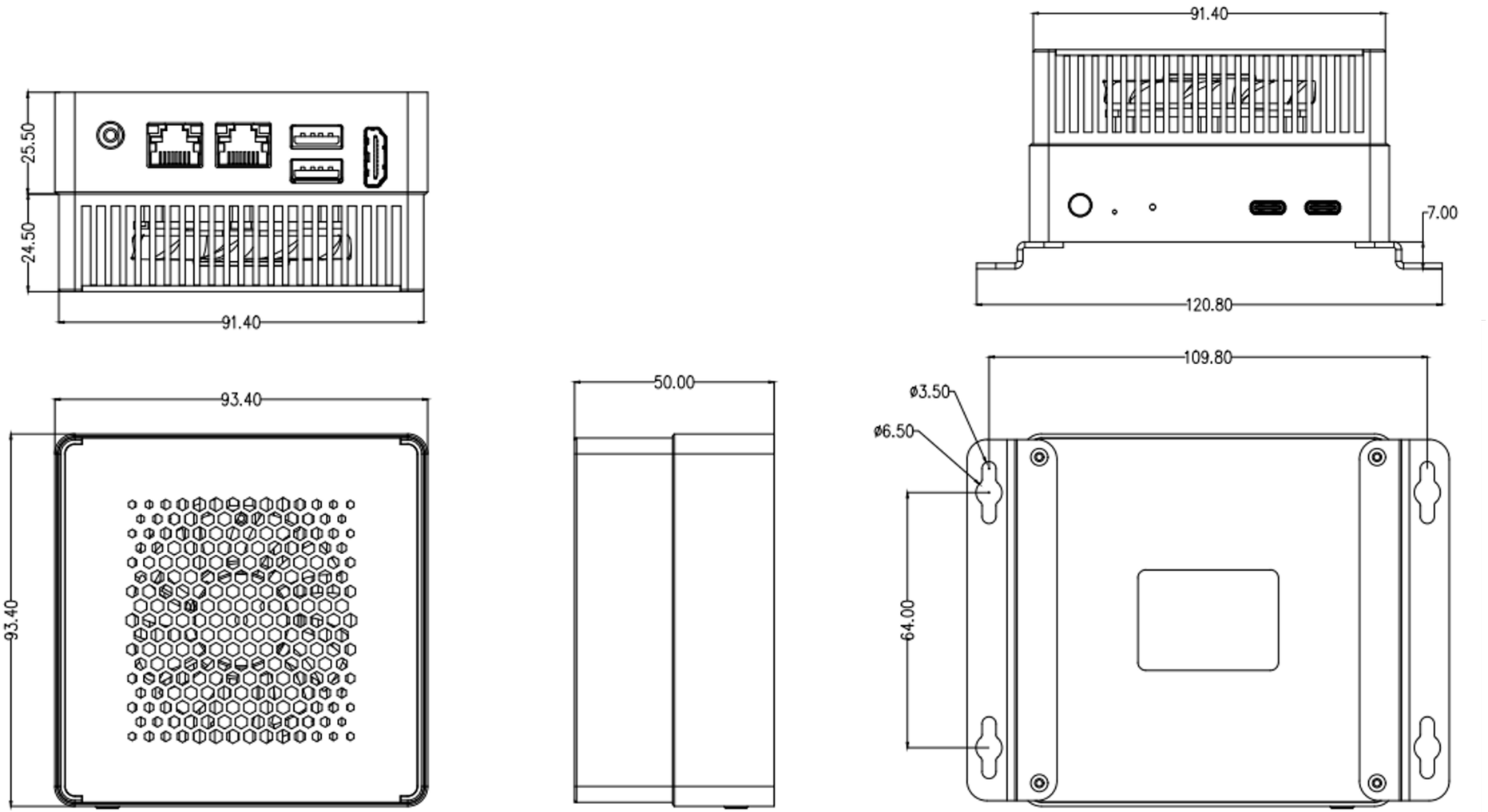
HDMI2.0
(Up to 4K@60Hz)

2×USB3.0
(Max: 1A)

2×Ethernet
(1000Mbps)

DC 12V
(5.5×2.1mm, support 9V~20V wide voltage input)

Dimension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