AIBOX-8550

48T High Computing Power AI Box

V1.0   2025-12-1

T-CHIP INTELLIGENCE TECHNOLOGY

Product features

High-performance AI processor QCS8550

Features an octa-core 64-bit high-performance Qualcomm Kryo CPU (QCS8550), based on the ARM architecture with a maximum frequency of up to 3.36GHz, delivering robust support for high-performance computing and multitasking.

8K

Supports 8K video codec

Supports 8K@60fps/4K@240fps video decoding and 8K@30fps/4K@120fps video encoding; its powerful video codec capability enables 8K ultra-high-definition display with finer image quality.

Powerful image processing capability

Integrated with the Adreno 740 GPU, it fully supports ray tracing technology and is compatible with OpenGL ES 3.2, Vulkan 1.2, and full-profile OpenCL 3.0. Combined with Hexagon neural network direct acceleration, it delivers enhanced graphics processing and AI computing performance.

48TOPS computing power NPU

Integrated with a 48TOPS NPU, it supports INT4/INT8/INT16/FP16 mixed-precision computing, enabling intelligent data processing, speech recognition, and image analysis to meet the AI application requirements of edge computing for most terminal devices.

Product features

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, Qwen series, Phi series and other large language models.

Multiple deep learning frameworks

Supports QNN AI inference framework, as well as various deep learning frameworks: TensorFlow, TensorFlow Lite, PyTorch, ONNX, etc.

All-aluminum alloy enclosure for heat dissipation

The industrial-grade all-metal enclosure with aluminum alloy structure for thermal conduction. The side of the top cover features a grille design for efficient heat dissipation. Its top cover is a porous hexagonal design, combining elegance with high efficiency. The compact, exquisite device operates stably and meets the needs of various industrial-grade applications.

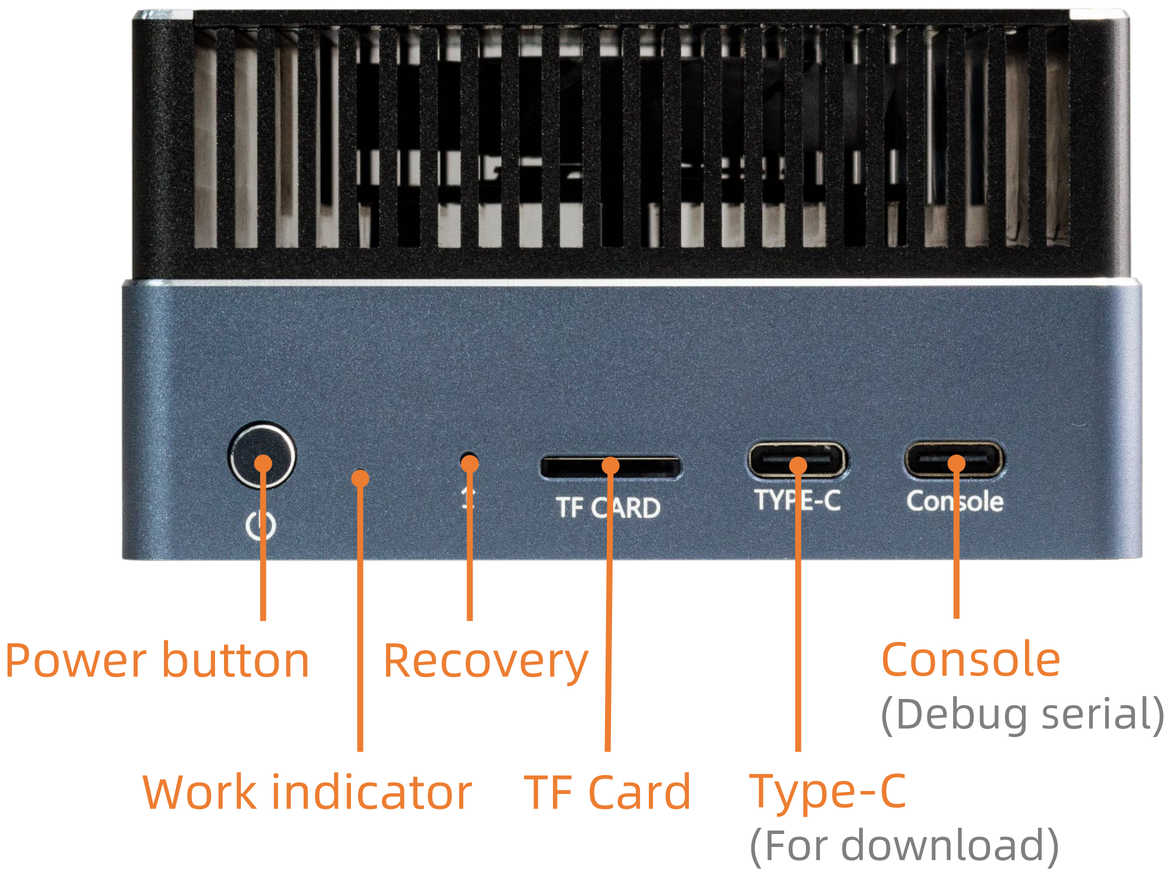
Abundant expansion interfaces

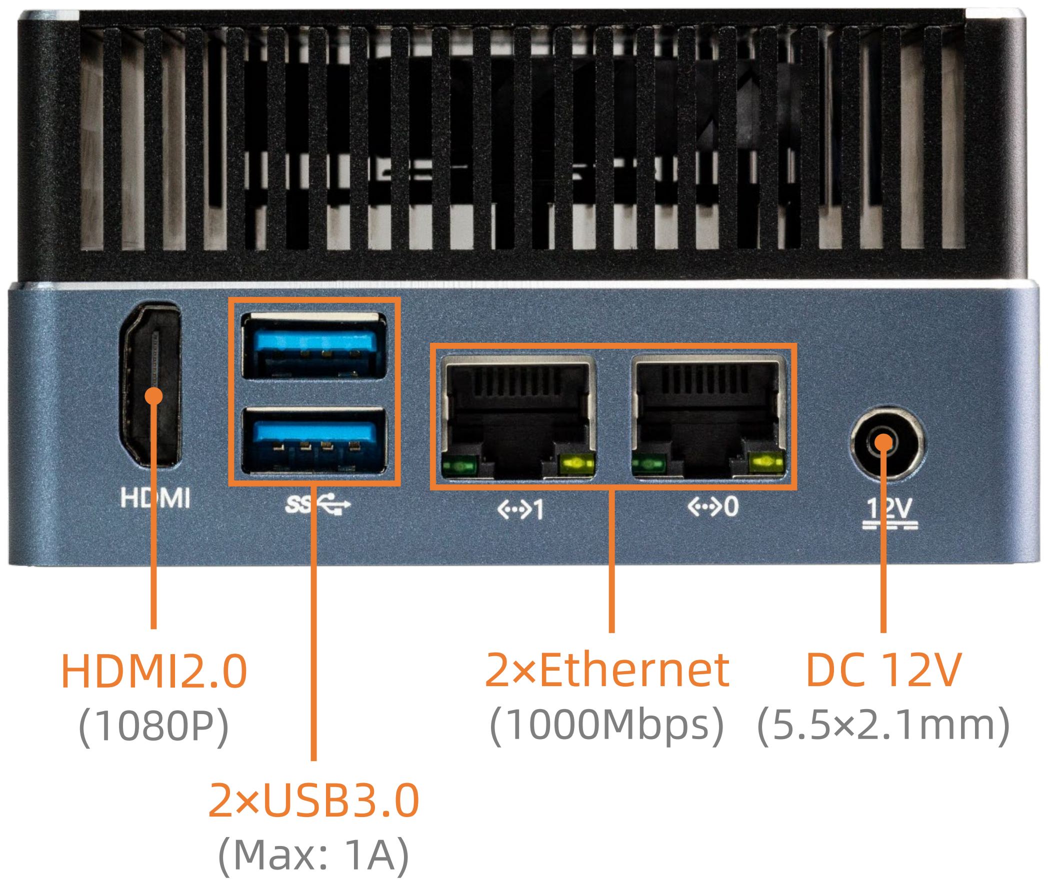
It has 2 × Gigabit Ethernet, 2 × USB3.0, 1 × TF Card, 1 × Type-C, 1 × HDMI2.0, 1 × Console and other expansion interfaces, which are convenient to connect various peripherals and realize multi-field product applications.

Specifications

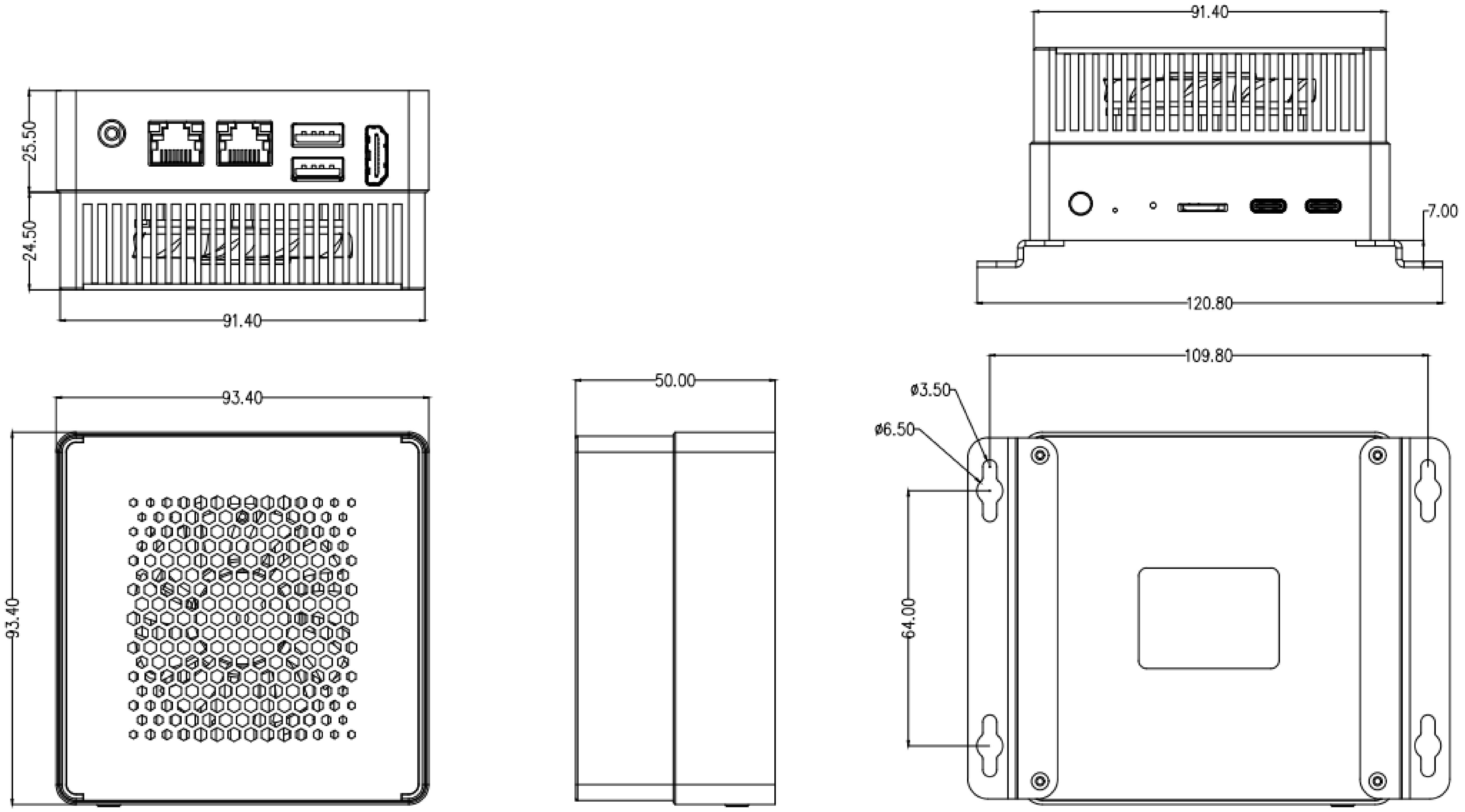
Specifications		
Basic Specifications	SOC	Qualcomm QCS8550
	CPU	Qualcomm Kryo® CPU: Octa-core 64-bit (1×GoldPlus@3.2GHz + (2+2)Gold@2.8GHz + 3×Silver@2.0GHz), 4nm advanced process, maximum frequency up to 3.36GHz
	GPU	Adreno 740 GPU: Supports ray tracing technology, OpenGL ES 3.2, Vulkan 1.2, full-profile OpenCL 3.0, and Adreno NN Direct
	ISP	Equipped with Qualcomm Spectra™ Cognitive ISP (Image Signal Processor), featuring three 18-bit 36MP ISPs
	NPU	Dual eNPU V3: Equipped with 4 HVX (Hexagon Vector Extensions), 1 HMX (Hexagon Matrix Extension); Computing power up to 48 TOPS (INT8), 12 TOPS (FP16)
	Codec	Video decoding: 8K@60fps/4K@240fps H.265/H.264/VP9/AV1 Video encoding: 8K@30fps/4K@120fps H.265/H.264 Supports concurrent 4K@60fps decoding and 4K@60fps encoding for wireless display scenarios
	RAM	16GB LPDDR5x
	Storage	256GB UFS4.0
	Storage expansion	1 × M.2 (Expandable PCIe NVMe SSD/SATA SSD, supports 2242/2260/2280 specifications; Inside the device), 1 × TF Card
	Power	DC 12V/5A (5.5 × 2.1mm)
	Power consumption	Normal: 4.32W(12V/360mA), Max: 20W(12V/1670mA), Min(Sleep): 0.6W(12V/50mA)
	OS	Ububtu
	Software support	Supports on-premises deployment of large-scale parameter models based on the Transformer architecture, such as large language models (LLMs) including the Deepseek-R1 series, Gemma series, Llama series, Qwen series, Phi series, etc. Supports the QNN AI inference framework, as well as various deep learning frameworks including TensorFlow, TensorFlow Lite, PyTorch, ONNX, etc.
	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 (1080P)
	USB	2 × USB3.0 (Max: 1A), 1 × Type-C (For download)
	Console	1 × Console (Debug serial)
	Button	1 × Power, 1 × Recovery

Interface description





Dimension


25.50
24.50
91.40
91.40
7.00
120.80
109.80
ø3.50
ø6.50
93.40
93.40
50.00
64.00

T-CHIP INTELLIGENCE TECHNOLOGY

Contact Us
(+86)18688117175

E-mail
global@t-firefly.com

Website
https://en.t-firefly.com/

Address
Room 2101, Hongyu Building, #57 Zhongshan 4Rd, East District,
Zhongshan, Guangdong, China.