157T Flagship AI Box

- AIBOX-OrinNX（16GB）
- AIBOX-OrinNano（8GB）

V1.0　2024-12-30

T-CHIP INTELLIGENCE TECHNOLOGY

Product features

NVIDIA High-performance edge computing module

NVIDIA Jetson OrinNX edge computing module (16GB version) features an octa-core ARM CPU and a 1024-core NVIDIA Ampere architecture GPU with 32 Tensor Cores. It is capable of running multiple concurrent AI application pipelines, providing powerful inference performance.

157TOPS computing power empowers AI applications

Mainstream modern AI models can be run. For example, the ROS robot model realizes larger and more complex deep neural networks, and realizes functions such as object recognition, object detection and tracking, speech recognition, and other visual development.

The private deployment of large models

Large language models: Support Ollama local large model deployment framework and the private deployment of ultra-large-scale parametric models: Llama3 and Phi-3 Mini.
Vision models: Support EfficientVIT, NanoOWL, NanoSAM, SAM and TAM.
AI painting: Support ComfyUI graphical deployment framework and the private deployment of Flux, Stable Diffusion image generation model in the AIGC field.

Multiple deep learning frameworks

Supports multiple deep learning frameworks accelerated by cuDNN, including PaddlePaddle, PyTorch, TensorFlow, MATLAB, MxNet, Caffe2, Chainer and Keras, as well as custom operator development. Docker containerization technology is supported.

Product features

AI software stack and ecosystem

NVIDIA JetPack™, Isaac ROS, and reference AI workflows enable seamless integration of cutting-edge technologies into your products, eliminating the need for costly internal AI resources. Experience end-to-end acceleration for AI applications and speed your time to market using the same powerful technologies that drive data centers and cloud deployments.

Abundant expansion interfaces

1 × Gigabit Ethernet (RJ45), 1 × HDMI 2.0, 2 × USB 3.0, 1 × Console, 1 × Type-C and other interfaces facilitate the connection of various peripherals and enable multi domain product applications

Aluminum alloy enclosure with efficient heat dissipation

The AI box features an industrial-grade all-metal enclosure with an aluminum alloy structure for thermal conduction. The side of the top cover features a grille design for external airflow and efficient heat dissipation, ensuring computing performance and stability even under high-temperature operating conditions.

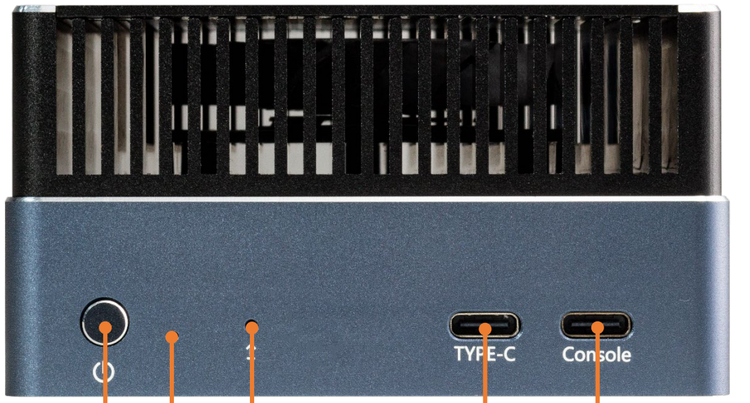
A wide range of applications

A widely used in intelligent surveillance, AI education, services based on computing power, edge computing, private deployment of large models, data security, and privacy protection.

Specifications

		AIBOX-OrinNano (8 GB)	AIBOX-OrinNX （16 GB ）
Basic Specifications	Module	Original NVIDIA Jetson OrinNano (8GB) module	Original NVIDIA Jetson OrinNX（16GB）module
	CPU	Hexa core 64 bit ARM Cortex-A78AE v8.2 processor Up to 1.7GHz	Octa core 64 bit ARM Cortex-A78AE v8.2 processor Up to 2.0GHz
	AI performance	67 TOPS	157 TOPS
	GPU	1024 core NVIDIA Ampere architecture GPU with 32 Tensor Cores	
	Video encoding	H.265: 1080p30	H.265: 1×4K60, 3×4K30, 6×1080p60, 12×1080p30
	Video decoding	H.265: 1×4K60, 2×4K30, 5×1080p60, 11×1080p30	H.265: 1×8K30, 2×4K60, 4×4K30, 9×1080p60, 18×1080p30
	Memory (Video Memory)	8GB LPDDR5	16GB LPDDR5
	Storage	128GB PCIe NVMe SSD(Installed inside the device)	
	Power	DC 12V/4A (DC 5.5 × 2.1mm)	
	Power consumption	Normal: 7.2W(12V/600mA) Max:18W(12V/1500mA)	Normal: 7.2W(12V/600mA) Max: 33.6W(12V/2800mA)
	Size	93.4mm × 93.4mm × 50.0mm	
	Weight	≈ 500g	
	Environment	Operating Temperature: -20℃ ~ 60℃, Storage Temperature: -20℃ ~ 70℃, Storage Humidity:10% ~ 90%RH(non-condensing)	
Software support	OS	Jetson systems based on Ubuntu 22.04 provide a complete desktop Linux environment with graphics acceleration and support for libraries such as NVIDIA CUDA, TensorRT, CuDNN, and more	
	Large model	Robot model: ROS robot model is supported. Large language models: Support Ollama local large model deployment framework, which can be used for natural language processing, code generation, and assistance scenarios. Support the private deployment of ultra-large-scale parametric models under the Transformer architecture, such as Llama3 and Phi-3 Mini. Large visual models: Support the privatization deployment of large visual models such as EfficientVIT, NanoOWL, NanoSAM, SAM and TAM. AI Painting: Support ComfyUI graphical deployment framework, which can be used for scenarios such as image restoration, image style conversion, and image synthesis. Supports the private deployment of Flux, Stable Diffusion and Stable Diffusion XL image generation model in the AIGC field.	
	Traditional network architecture	Supports multiple deep learning frameworks accelerated by cuDNN, including PaddlePaddle, PyTorch, TensorFlow, MATLAB, MxNet, Caffe2, Chainer and Keras. Supports custom operator development Docker containerization: Docker containerization technology is supported, which can be easily used for image deployment.	
	AI software stack	The NVIDIA Jetson Orin series delivers powerful AI compute power, massive unified memory, and a comprehensive software stack to power the latest generative AI applications. It enables fast inference on any generative AI model powered by the Transformer architecture, enabling superior edge performance on MLPerf	
Interface Specifications	Internet	1 × Gigabit Ethernet (1000Mbps/RJ45)	
	Display	1 × HDMI2.1(4K@60fps)	
	USB	2 × USB3.0 (Max: 1A)	
	Watchdog	Support external watchdog	
	Other interfaces	1 × Type-C (USB2.0 OTG), 1 × Console (Debug serial), 1 × Recovery, 1 × Power button	

Interface description



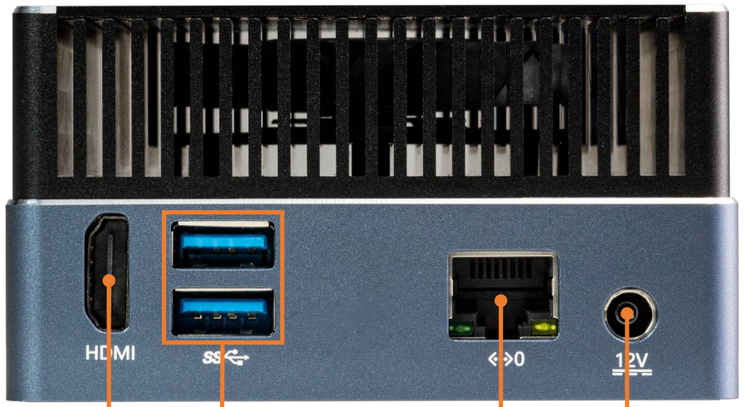
Power button

Recovery

Work indicator

Type-C
(USB2.0 OTG)

Console
(Debug serial)



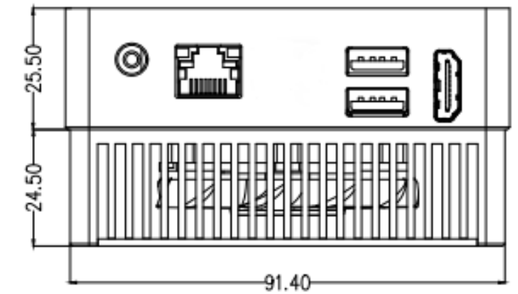
HDMI2.1
(4K@60fps)

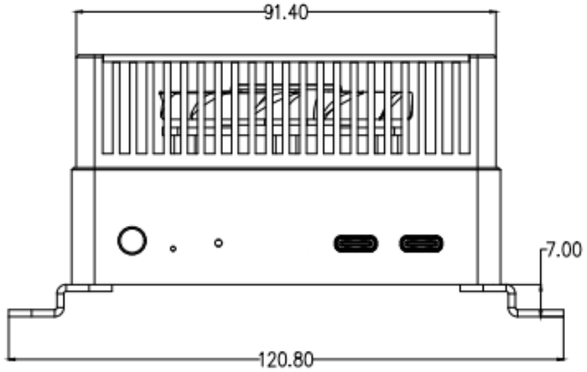
2×USB3.0
(Max: 1A)

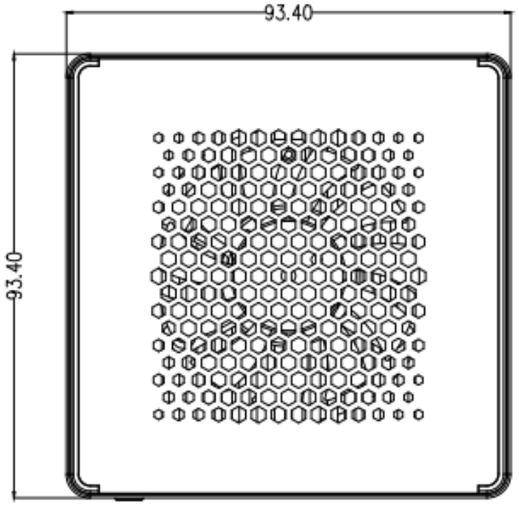
Ethernet
(1000Mbps)

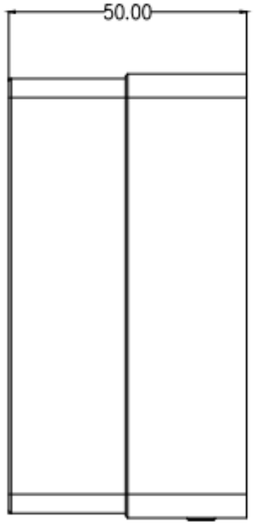
DC 12V
(5.5×2.1mm)

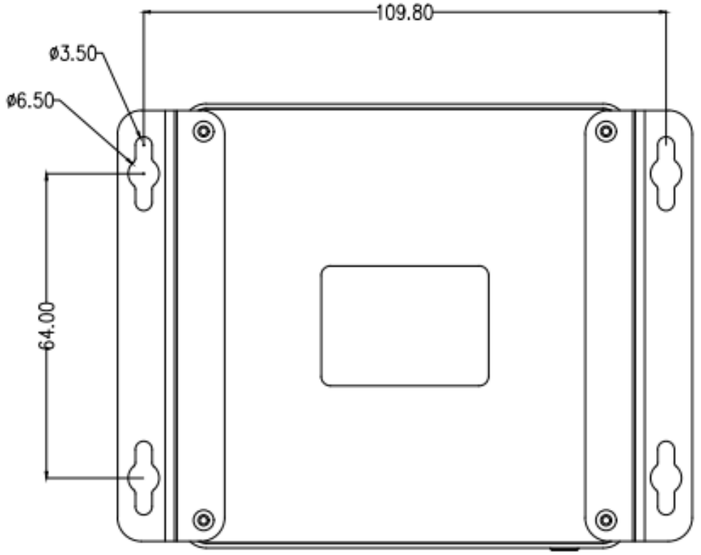
Dimension


25.50
24.50
91.40


91.40
7.00
120.80


93.40
93.40


50.00


109.80
ø3.50
ø6.50
64.00

T-CHIP INTELLIGENCE TECHNOLOGY

Contact Us
(+86)18688117175

E-mail
global@t-firefly.com

Website
www.t-firefly.com

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