



AIBOX PRO

Large Model Edge Computing Box



V1.0 2026-6-5

FIREFLY TECHNOLOGY

Product features



Dual-core Heterogeneous Design

Adopt a split heterogeneous architecture consisting of primary and secondary modules interconnected at high speed via PCIe. The primary module handles overall task scheduling and data preprocessing, while the secondary module focuses on core AI inference computing to enable model parallelism and multi-task coordination.



8K Codec & Multi-channel 4K Parallel Processing

The host module integrates high-performance VPU for hardware-based 8K encoding and decoding, with hardware-accelerated image scaling and cropping to run multi-channel 4K streams in parallel. Cooperating with the RK182X co-processor's AI capability, it delivers real-time video AI analysis to satisfy edge-side intelligent HD video processing demands.



High-Compute Module for Diverse Scenarios

The slave module is compatible with high-compute high-bandwidth modules like RK1820, RK1828 and Houmo LQ50, providing solid computing base for LLM, VLM, MoE and AI Agent. Its processing-in-memory structure lifts DRAM bandwidth to boost large model inference TPS and reduce initial frame latency.



Low-latency Edge Computing with Millisecond-level Response

Local AI processing eliminates cloud upload and network dependency, avoiding bandwidth fluctuation impacts to deliver millisecond response and robust data privacy. All business data is stored and computed locally to comply with data security and industry privacy regulations.

Product features



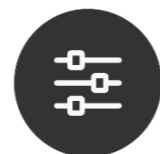
Onboard PCIe Interface for Mass Storage Expansion

Equipped with onboard high-speed M.2 PCIe port compliant with NVMe for SSD expansion. Users can install high-speed SSDs to scale storage up to TB level, accommodating local storage of large model packages and massive business data.



Full Aluminum Enclosure with Efficient Heat Dissipation

Featuring an industrial full aluminum casing plus built-in cooling fans, it ensures stable 7x24h continuous operation. The unit maintains reliable computing performance even under high ambient temperatures, fitting diverse industrial applications.



Abundant Expansion Interfaces

It features dual Gigabit Ethernet, USB3.0, USB2.0, HDMI, M.2, Mini PCIe, RS485, CAN-FD and opto-isolated DI/DO ports for flexible access to industrial peripherals and extended industry applications.



Wide Application Scenarios

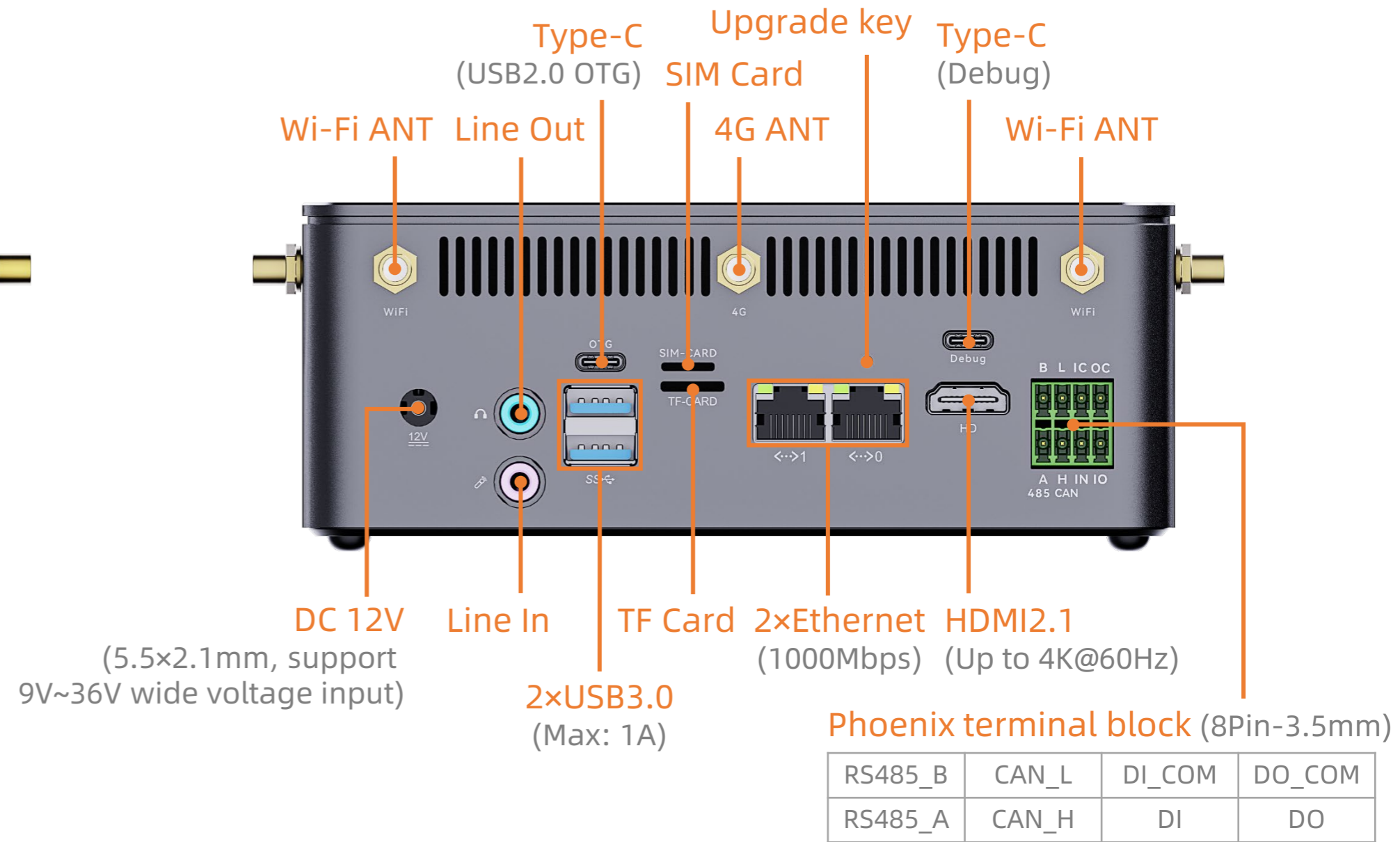
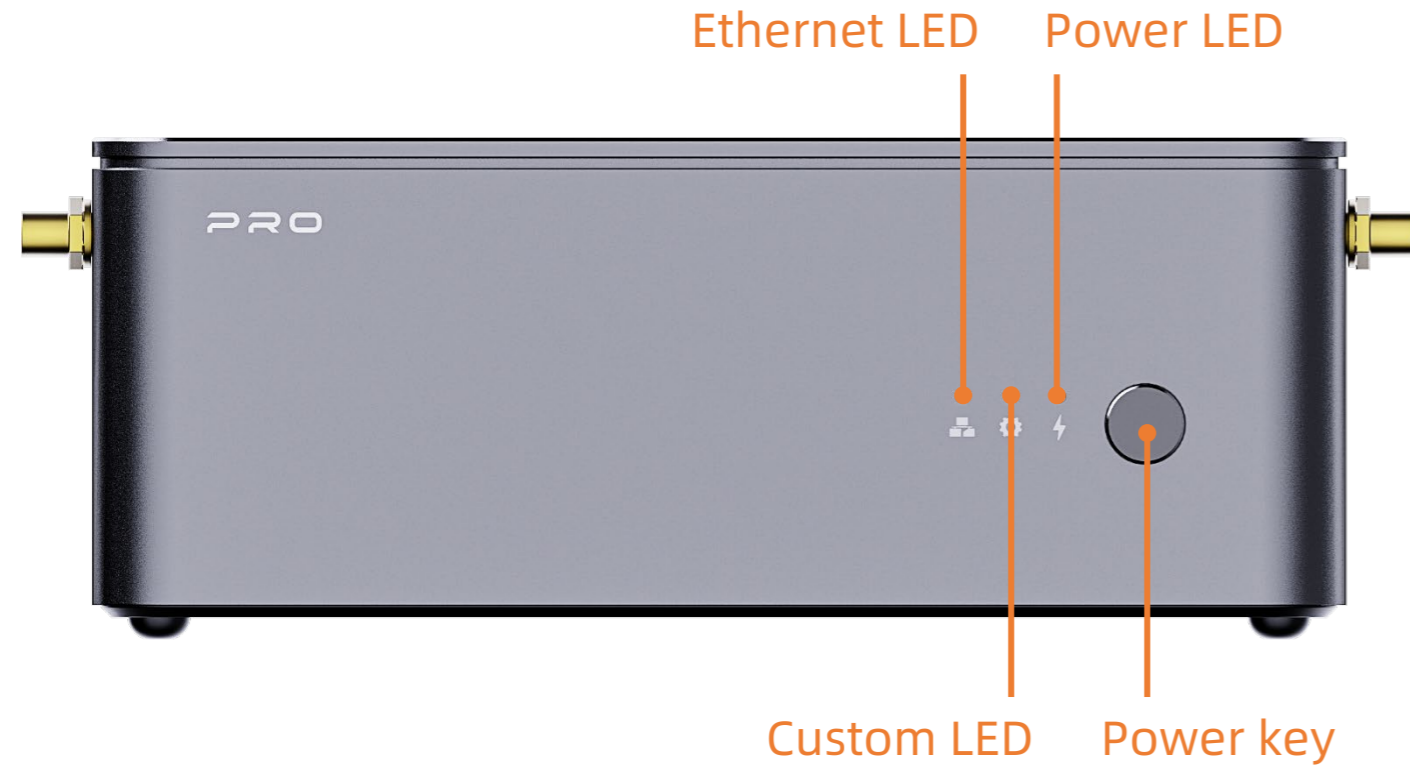
It applies to robotics, edge AI computing, industrial automation, intelligent security, autonomous driving, traffic management, smart city, home storage and retail automation.

Specifications

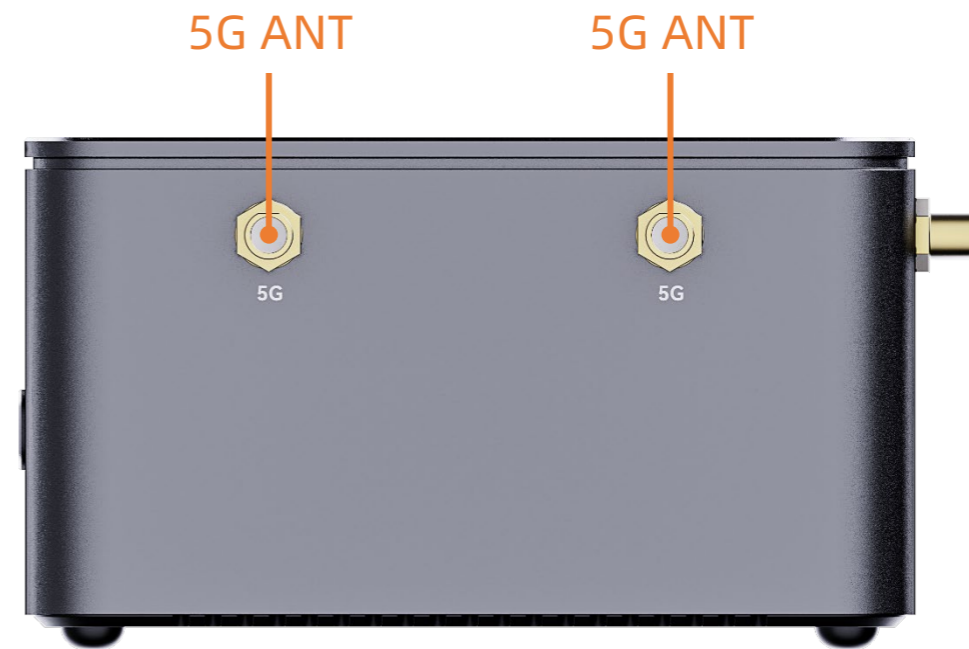
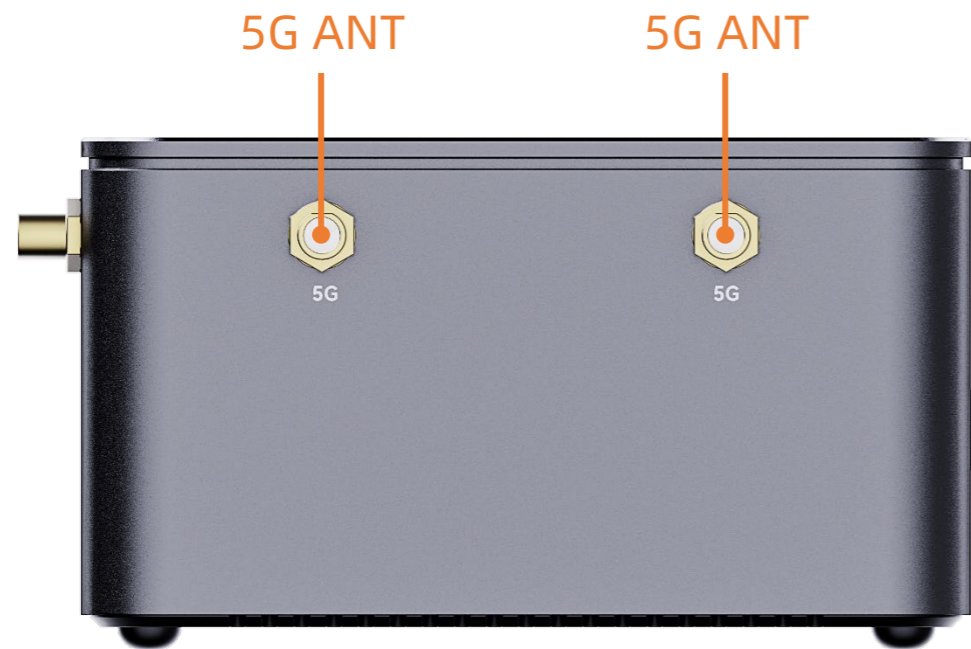


Specifications		
Basic Specifications	Host module	RK3588 module (Core-3588JD4): LPDDR4/LPDDR4x (4/8/16/32GB) + eMMC (32/64/128/256GB), 6TOPS(INT8)
	Video encoding	RK3588: 8K@30fps H.265/H.264
	Video decoding	RK3588: 8K@60fps H.265/VP9/AVS2, 8K@30fps H.264 AVC/MVC, 4K@60fps AV1, 1080P@60fps MPEG-2/-1/VC-1/VP8
	Accelerator expansion (Slave module)	2 × M.2 M-KEY (Supports 2260/2280 accelerator cards & other M.2 modules, inside the device) * Users can install any brand M.2 M-KEY accelerators; standard equipped with RK1820/RK1828 modules ○ RK1820: Onboard 2.5GB DRAM, 20TOPS(INT8), runs LLMs up to 3B smoothly ○ RK1828: Onboard 5GB DRAM, 20TOPS(INT8), runs LLMs up to 7B smoothly
	Storage expansion	1 × M.2 M-KEY (Expandable with PCIe4.0 x4 NVMe 2280 SSD, inside the device) 1 × SATA3.0 (Expandable with SATA3.0 SSD, inside the device, not populated by default) 1 × TF Card
	Device power	DC 12V/5A(5.5×2.1mm, support 9V~36V wide voltage input)
	Accelerator power	2 × 12V (2pcs 4Pin-1.25mm wafer sockets)
	OS	Linux
	Dimension	160mm × 111mm × 61mm
	Environment	Operating Temperature: -20°C ~ 60°C, Storage Temperature: -20°C ~ 70°C, Storage Humidity: 10%~90%RH (non-condensing)
Interface Specifications	Network	2 × Gigabit Ethernet (1000Mbps/RJ45) Wi-Fi & Bluetooth: Support dual-band 2.4GHz/5GHz Wi-Fi and Bluetooth 5.2 (Expandable via M.2 E-KEY inside the device) 4G/5G: Expandable via Mini PCIe inside the device
	Video output	1 × HDMI2.1 (Up to 4K@60Hz)
	Audio	1 × Line In (3.5mm audio jack), 1 × Line Out (3.5mm audio jack)
	USB	2 × USB3.0 (Max: 1A), 1 × Type-C (USB2.0 OTG), 1 × Type-C (Debug)
	Button	1 × Power key, 1 × Upgrade key
	Antenna	2 × Wi-Fi Antenna, 1 × 4G Antenna, 4 × 5G Antenna
Others	1 × SIM Card, 1 × Phoenix terminal block (8Pin-3.5mm): 1 × RS485, 1 × CAN-FD, 2 × Opto-isolated DI/DO	

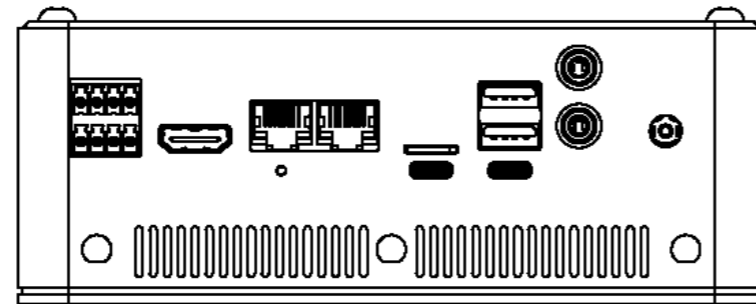
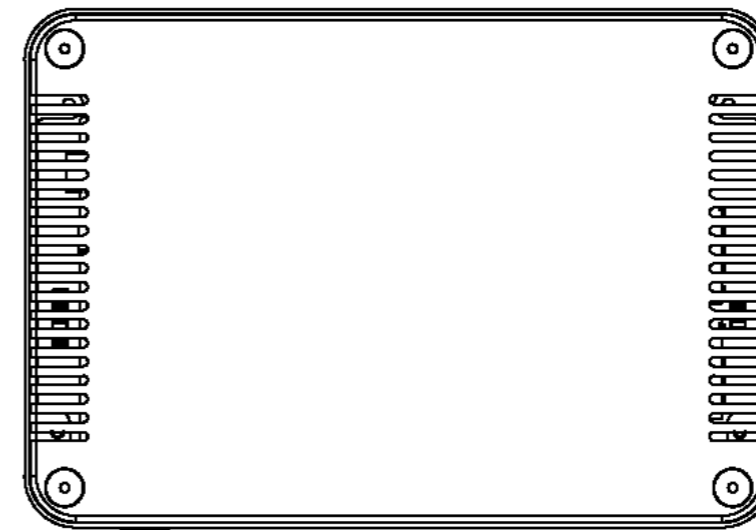
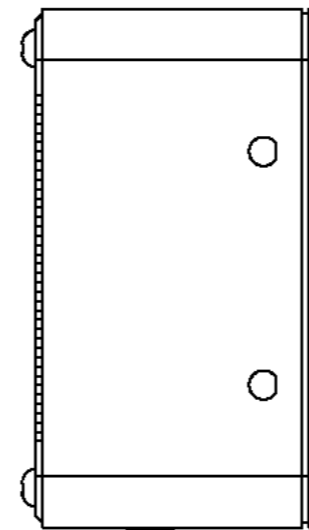
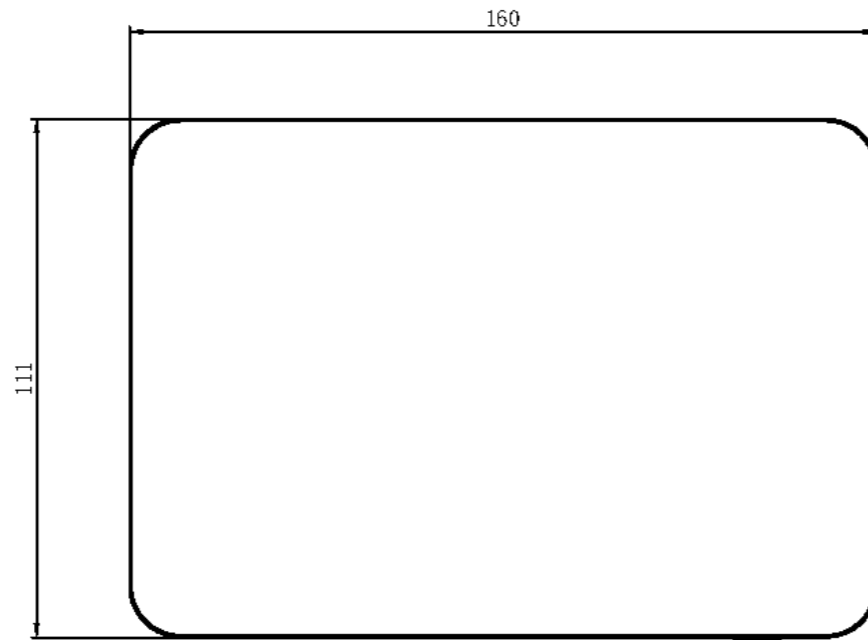
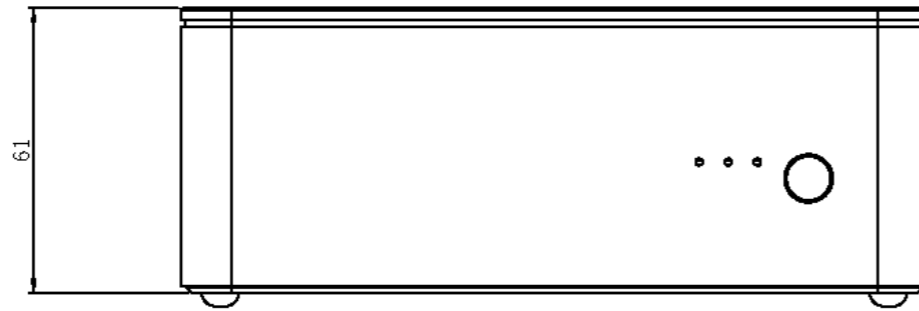
Interface description



Interface description





Dimension







FIREFLY 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.