

T-CHIP TECHNOLOGY

Station P2

Geek PC

V1.0



T-CHIP INTELLIGENCE TECHNOLOGY CO.,LTD.
www.t-firefly.com

Update history

Version	Date	Details
V1.0	2021-6-15	Original version

Directory

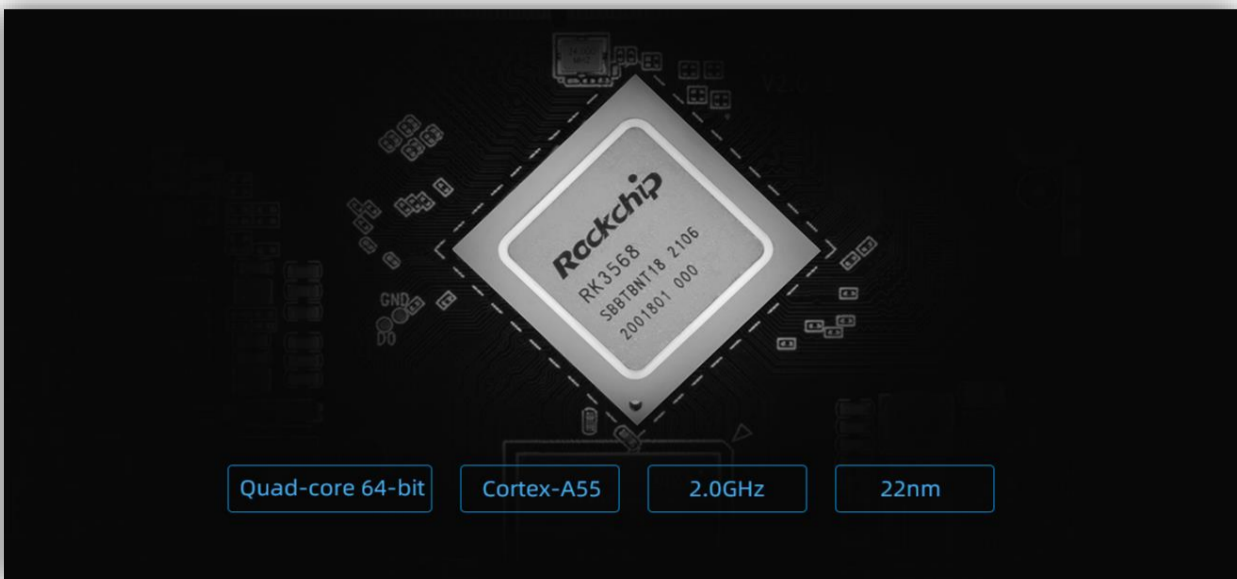
1. Overview.....	4
2. Technical Parameter.....	7
3. Size.....	8
4. Interface definition.....	9
5. Hard Disk Installation Guide.....	10
6. About us	11

1. Product Overview

Station P2 supports 8G large RAM. M.2 and SATA3.0 interfaces enables expansion with large hard drives. Providing dual Gigabit Ethernet ports, P2 supports WiFi 6 wireless transmission. Control Port can be connected with RS485/RS232 devices. Various systems and boot ways are supported — with the dedicated application programs and forums, geek fun is endless.

RK3568 quad-core 64-bit processor

RK3568 quad-core 64-bit Cortex-A55 processor, with brand new ARM v8.2-A architecture, has frequency up to 2.0GHz — the efficiency is greatly improved. With 22nm lithography process, it features low power consumption and high performance.



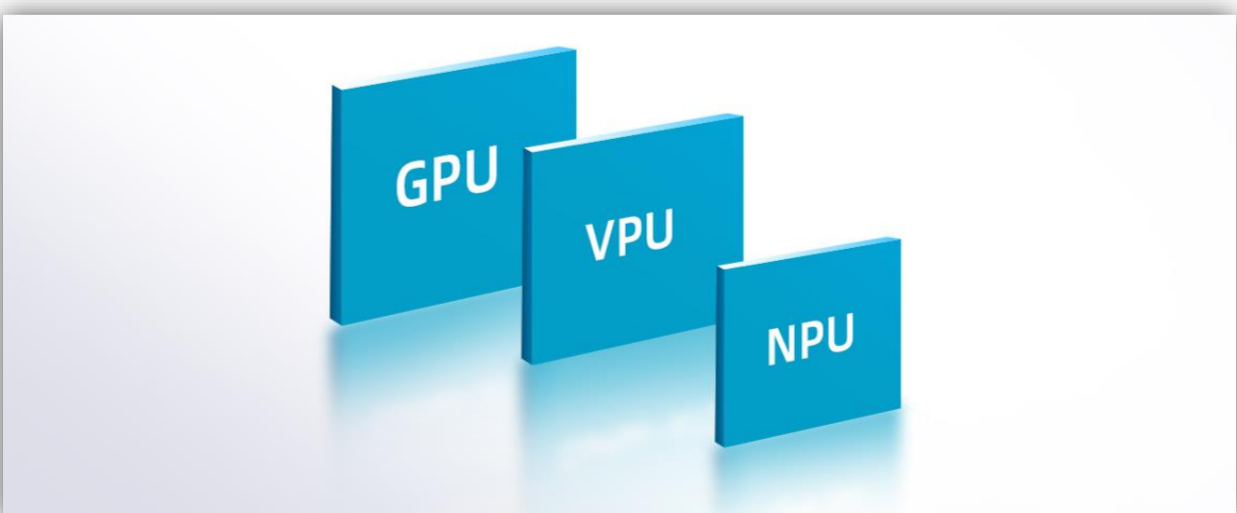
8GB large RAM, all-data-link ECC

Supporting up to 8GB RAM, The large RAM fits the needs of smoothly running apps with large amount of data and high speed requirements.



Integrated co-processors — GPU, VPU, NPU

It is integrated with dual-core GPU, high-performance VPU and high-efficiency NPU. The GPU supports OpenGL ES3.2/2.0/1.1, Vulkan1.1. The VPU can achieve 4K 60fps H.265/H.264/VP9 video decoding and 1080P 100fps H.265/ H.264 video encoding. The NPU supports one-click switching of mainstream frameworks like Caffe/TensorFlow.



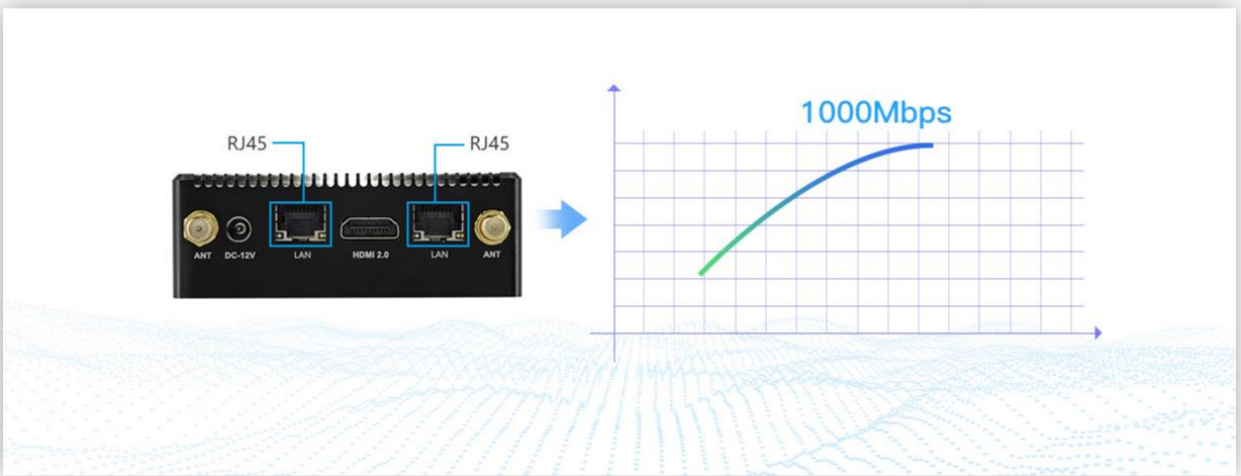
4K HDR vision

The new video engine VPU can easily decode H.265/HEVC/VP9 4K HDR videos, supports 3840x2160@60Hz ultra-HD output and HDR10 — optimizes the dynamic range and details of the image frame by frame, enhances the image quality and color performance, delivering clear and vibrant vision experience.



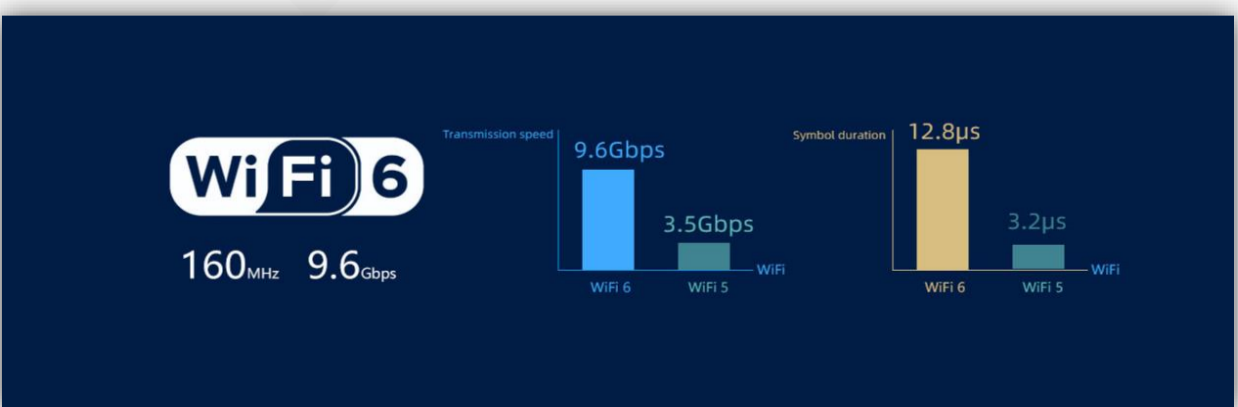
Dual Gigabit Ethernet ports

The dual adaptive RJ45 Gigabit Ethernet ports, through which internal and external network data can be accessed and transmitted, improves the network transmission efficiency. Dual Gigabit Ethernet ports deliver better network scalability, and can be used in scenarios such as setting up family gigabit network, DIY gigabit router, soft router, OpenWrt.



Powerful wireless network communication

WiFi 6 (802.11ax) wireless network communication is supported, with the maximum bandwidth reaches 160MHz and the highest speed reaches 9.6Gbps — the speed is greatly improved than WiFi 5. And, WiFi 6 delivers lower packet loss rate and retransmission rate, making the transmission more stable and secure.



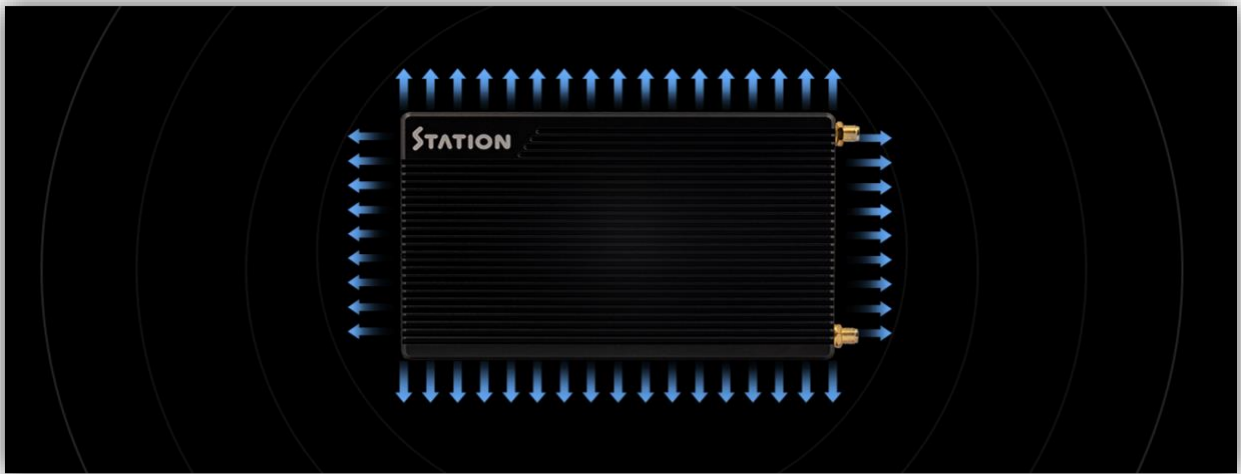
Onboard M.2 and SATA3.0 interfaces

The onboard M.2 PCIe3.0 and SATA3.0 interfaces can be connected with an M.2 NVMe SSD and a 2.5-inch SATA SSD/HDD respectively, owning the advantages of high-speed reading and writing and large capacity.



Excellent heat dissipation

Toothed aluminium alloy case in matte black under high-precision CNC machining and with good air flow design makes excellent heat dissipation, even without fans.



Configured with Geek System

Station OS (Firefly Geek System) brings you living room playing experience. Just connect the TV or display at home to build a home entertainment center to enjoy movies and games with high-definition and big-screen viewing.



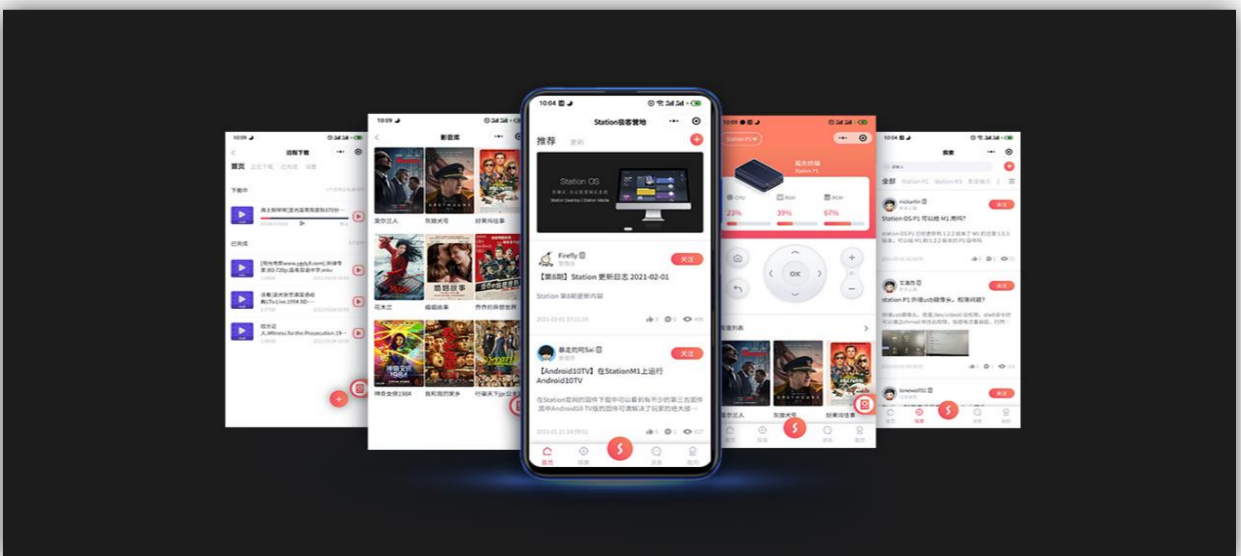
Various systems and boot ways supported

It supports to upgrade to Android, Ubuntu, Buildroot+QT, Station OS and other systems, and supports to boot the system via TF card, U disk, EMMC, etc. Diverse supporting systems make entertainment, work, programming learning, creative development all easy.



Station application programs and forums

Station application programs, including WeChat mini program, app and website, through which you can play videos, remotely control, remotely download and so on, enable you to play the geek computer anywhere anytime. Besides, forums with tremendous creative ideas and fun are waiting for you.



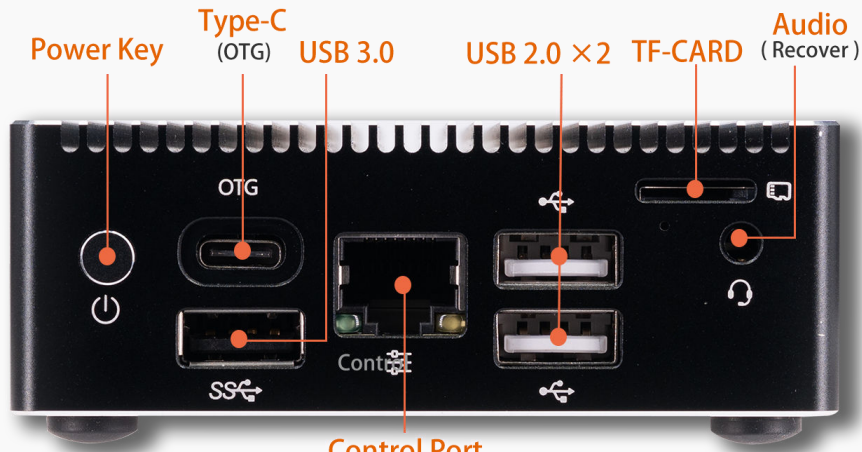
2. Specifications

Specifications	
SOC	RockChip RK3568
CPU	Quad-core 64-bit Cortex-A55, 22nm lithography process, frequency up to 2.0GHz
GPU	ARM G52 2EE Supports OpenGL ES 1.1/2.0/3.2, OpenCL 2.0, Vulkan 1.1 Embedded high-performance 2D acceleration hardware
NPU	0.8Tops@INT8, integrated high-performance AI accelerator RKNN NPU Supports one-click switching of Caffe/TensorFlow/TFLite/ONNX/PyTorch/Keras/Darknet
VPU	4K 60fps H.265/H.264/VP9 video decoding 1080P 100fps H.265/H.264 video encoding 8M ISP, supports HDR
RAM	2GB / 4GB / 8GB LPDDR4
Storage	32GB / 64GB / 128GB eMMC Support NVMe SSD (Expand with 2242 / 2280 NVMe SSD, M.2 PCIe 3.0) Support 2.5" SSD/HDD (SATA 3.0) TF-Card Slot x1 (Expand with TF card)
Hardware Features	
Ethernet	2× RJ45 Gigabit Ethernet ports (1000 Mbps) LAN (PoE) port supports POE+ (802.3 AT, output power 30W) power supplying
WiFi	2.4G/5G Dual-band WiFi, 802.11a/b/g/n/ac/ax ,WiFi6 Bluetooth 5.0
Display	1 × HDMI2.0, supports 4K@60fps output
Audio	1 × HDMI audio output 1 × Earphone output
Camera	2-channel MIPI-CSI camera interface (MIPI CSI 0 / MIPI CSI 1) Supports dual cameras and HDR, image remains clear under backlight or strong light conditions
Interface	1 × M.2 PCIe3.0 (Expand with NVMe SSD) , 1 × SATA 3.0 (Expand with 2.5" SATA SSD/HDD) , 1 × USB 3.0, 2 × USB 2.0, 1 × Type-C 1 × RJ45 (Expand with 1 × RS485 + 2 × RS232) 1 × Phone
OS/Software	
OS	Supports Android 11.0 , Ubuntu 18.04, Buildroot+QT, Station OS
Boot Way	Supports TF card, EMMC, U disk bootup
General	
Power	DC 9V~24V
Size	142 mm * 89 mm * 31.5 mm
Appearance	Toothed aluminium alloy case in matte black under high-precision CNC machining and with good air flow design
Temperature	Operating Temperature : -10°C ~ 60°C Storage Temperature: -20°C ~ 70°C
Humidity	Storage Humidity: 10% ~ 80 %

3. Size

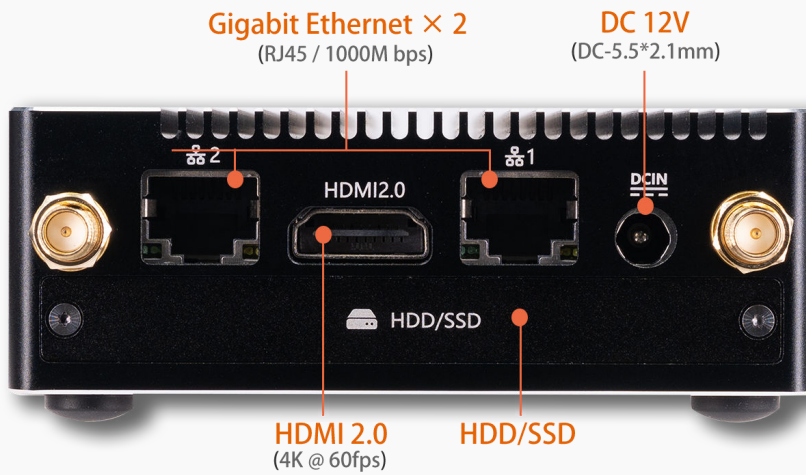


4. Interface description



Control Port

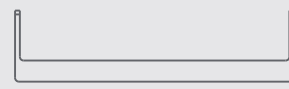
1	2	3	4	5	6	7	8
RS232_TX3	RS232_RX3	RS232_TX2	GND	GND	RS232_RX2	RS485_A	RS485_B



5. Hard Disk Installation Guide

1. 如何安装硬盘?

How to Install a Hard Disk ?



硬盘支架
HDD bracket

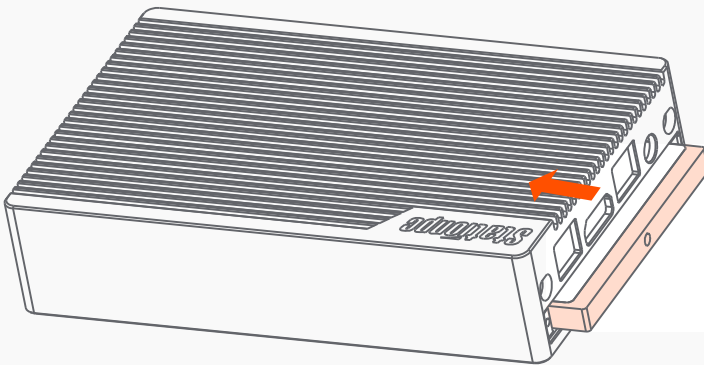


① 将硬盘支架固定到硬盘

Fix the HDD bracket to the HDD.



硬盘螺钉x2
HDD screw x2



② 将硬盘插入到Station P2

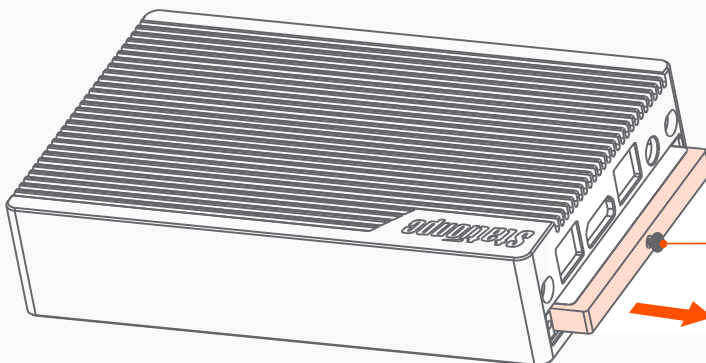
Insert the HDD to the Station P2

2. 如何拆卸硬盘?

How to Remove Hard Disk ?



硬盘螺丝手柄
HDD screw handle



① 把硬盘螺丝手柄拧到硬盘支架的螺丝孔上，即可抽出硬盘

Install HDD screw handle to HDD bracket; pull out Hard Disk.

* 硬盘螺丝手柄仅在拆卸硬盘时才使用

HDD screw handle is only used when removing Hard Disk.

Company profile

T-Chip Intelligent Technology (Zhongshan) Co., Ltd. , established in 2005, has more than ten years of technological product research and development capabilities, and has nearly 100 patents and software copyrights. As a national high-tech enterprise, we focus on the research and development, production and sales of open source smart hardware, Internet of Things, and digital audio products, while also provide overall solutions with smart hardware products.

T-Chip is an IDH (Independent Design House) officially authorized by Rockchip in Fuzhou, and also a strategic partner of Rockchip, with a close cooperative relationship for more than 10 years. Firefly is a brand established by T-Chip, with open source community and online store. Firefly products include core boards, mainboards, embedded computers, cluster servers, development kits and other products. Currently, we have more than 100,000 users, including more than 10,000 enterprise users such as Arm, Google, Baidu, Tencent and Alibaba.

Firefly team has more than 70 R&D members, with excellent research and development capabilities of schematic design, PCB layout, board mass production, embedded development, system development, application development and so on. We accelerate the research and development process for many technology entrepreneurs and start-ups, and provide professional technical services.

Make technology simpler, Make life smarter - is the idea of Firefly team. We hope that through Firefly's open source products and technical services, the research and development of various technological products will become efficient and simple, and intelligent technology can be integrated into life.

Firefly is committed to providing enterprise customers with long-term stable and reliable industrial products and services, and continuously creating value for customers.

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