WayPonDEV NanoKVM-USB Operations Maintenance Tool

WayPonDEV Sipeed NanoKVM-USB KVM Kit3 Instruction Manual

Model: NanoKVM-USB Operations Maintenance Tool

1. Introduction

The Sipeed NanoKVM-USB is a compact and versatile tool designed for operations and multi-device collaboration. It enables users to perform maintenance and management tasks on servers and Single Board Computers (SBCs) without requiring a dedicated keyboard, mouse, or monitor. All operations can be initiated graphically through a Chrome browser on a connected PC, eliminating the need for software downloads.
This device captures HDMI video signals and transfers them to a host computer via USB 3.0. Unlike standard USB capture cards, the NanoKVM-USB also captures keyboard and mouse input from the host and synchronizes it to the target machine in real-time. It supports HDMI loop-out up to 4K 30Hz for external display connections and includes a USB-A port for data transfer between two computers.

2. Product Overview

2.1 Key Features

- **Portable Design:** Finger-sized form factor for easy portability.
- **Multi-Device Collaboration:** Facilitates operations and maintenance across multiple devices.
- **1080P Video Capture:** Captures HDMI signals up to 1080P at 60 frames per second via USB 3.0.
- **Real-time KVM Functionality:** Synchronizes keyboard and mouse input from the host to the target.
- **4K HDMI Loop Out:** Supports HDMI video loop-out up to 4K 30Hz for connecting an external monitor.
- **USB-A (ISO Udisk) Switch:** Allows switching the additional USB port between host and target for data transfer.
- **Browser-based Operation:** No software installation required; operates directly via Chrome browser.

2.2 Package Contents (KVM Kit3)

The KVM Kit3 typically includes the NanoKVM-USB device and necessary cables. Please refer to the image below for a visual representation of the included items.

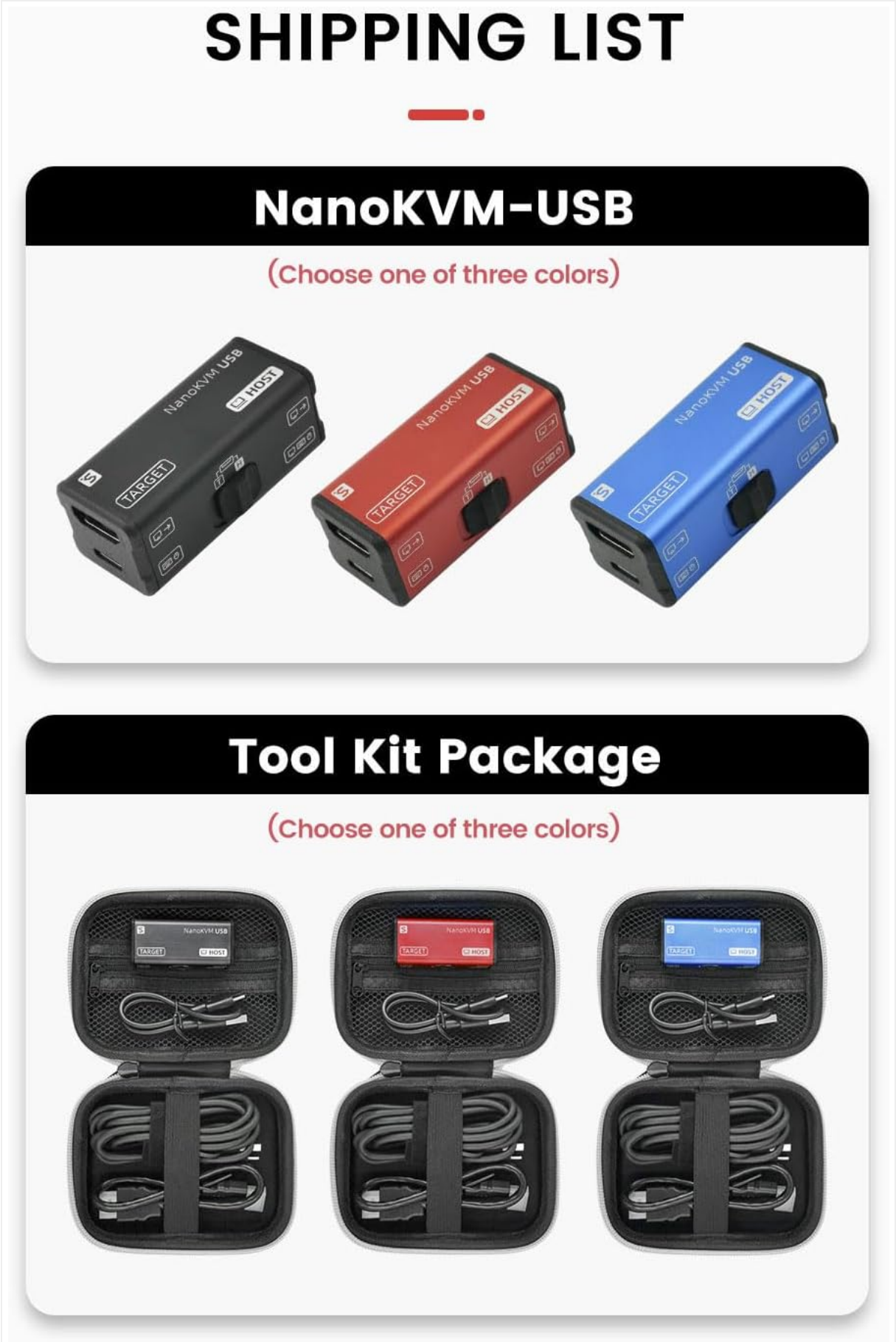


Figure 1: Contents of the NanoKVM-USB KVM Kit3 package. The image displays the NanoKVM-USB device in three colors (black, red, blue) and corresponding toolkit packages, each containing the device and various cables.

Figure 2: A hand holding the compact Sipeed NanoKVM-USB device, illustrating its small, finger-sized form factor.

3. Setup

3.1 Interface Overview

Before connecting, familiarize yourself with the device interfaces:

Figure 3: Diagram illustrating the various ports and switches on the NanoKVM-USB. It shows HDMI Input (connected to target video output), HDMI Output (loop output to monitor), Target USB (connected to target for KVM), Host USB (connected to host for video/KVM), Additional USB Interface (switchable between host/target), and a USB switch.

3.2 Connection Steps

Follow these steps to connect your NanoKVM-USB device:

1. **Connect Host USB:** Use a USB 3.0 cable to connect your host computer (e.g., laptop) to the **HOST USB** port on the NanoKVM-USB.
2. **Connect Target HDMI:** Connect the HDMI output of your target machine (e.g., server, SBC) to the **HDMI INPUT** port on the NanoKVM-USB.
3. **Connect Target USB:** Use a USB 2.0 cable to connect a USB port on your target machine to the **TARGET USB** port on the NanoKVM-USB. This enables keyboard and mouse virtualization.
4. **(Optional) HDMI Loop Out:** If you wish to connect an external monitor to view the target's display directly, connect it to the **HDMI OUTPUT** port on the NanoKVM-USB.

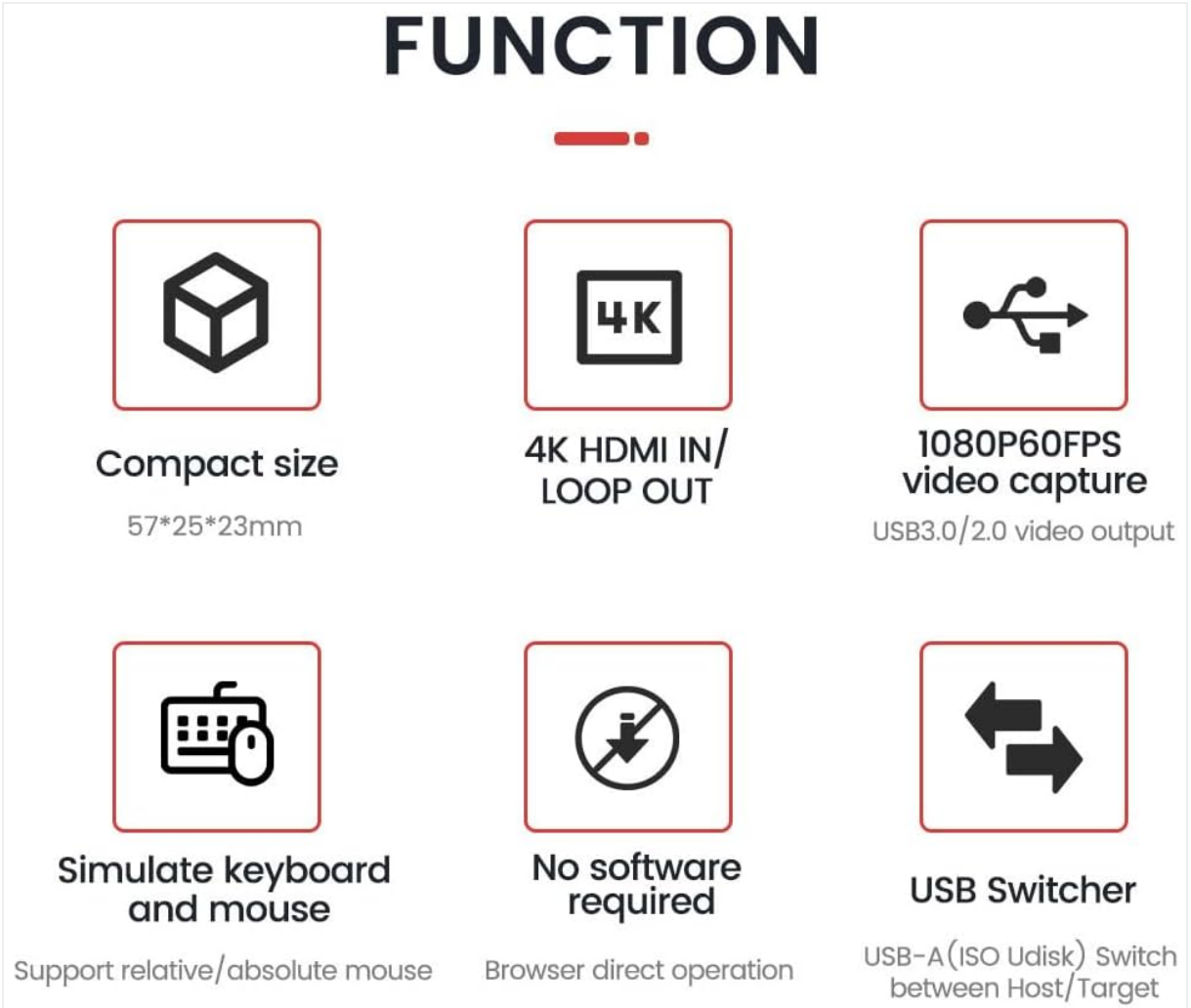
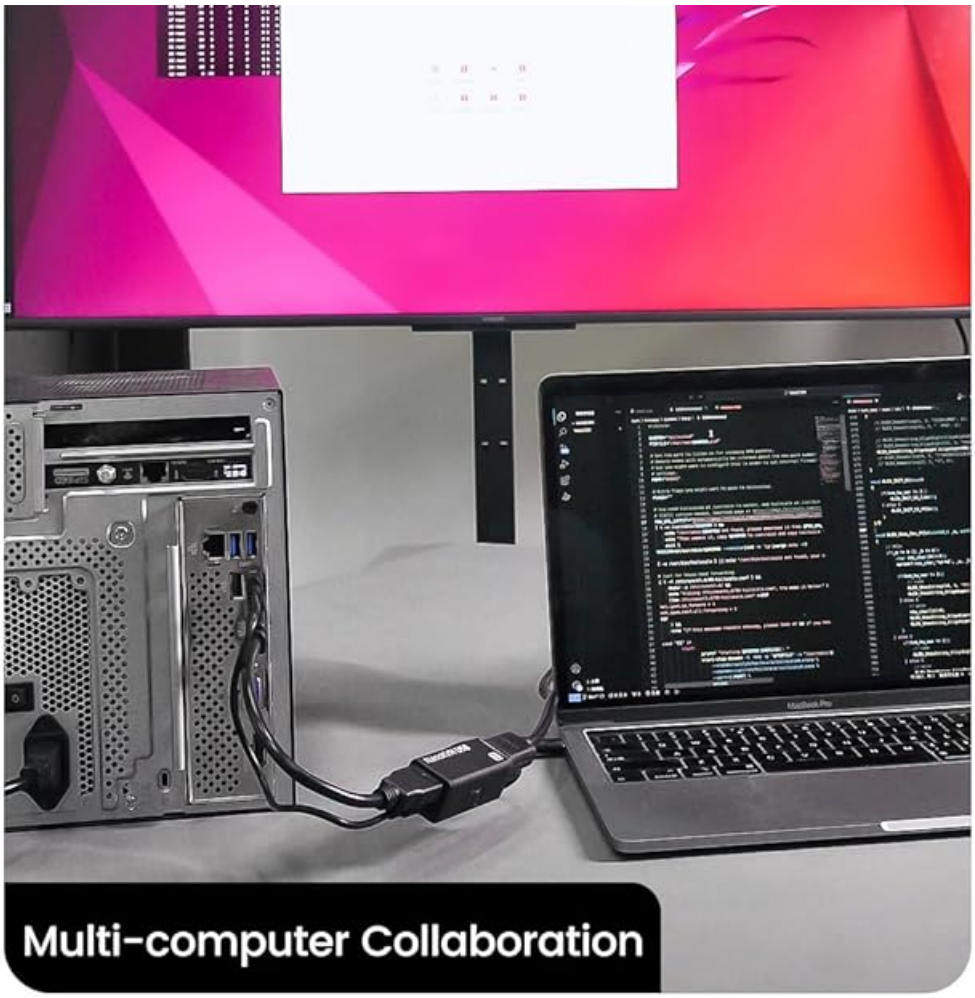
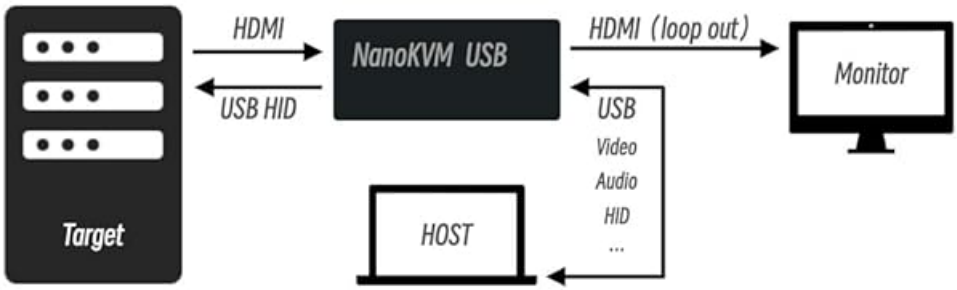


Figure 4: Image showing a USB 3.0 cable connecting a laptop (Host) to the NanoKVM-USB's HOST USB port.



INSTRUCTIONS



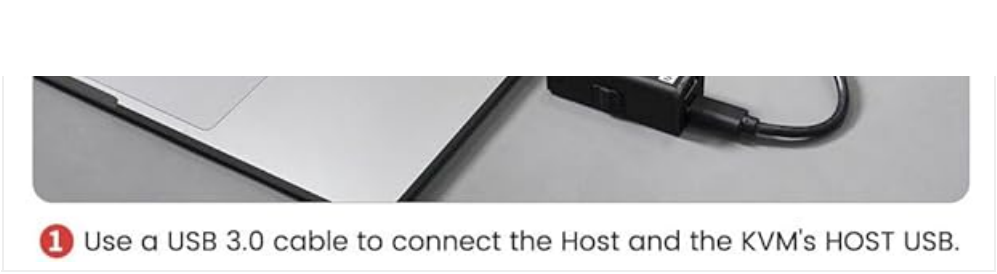


Figure 5: This image illustrates multiple connection steps. It shows the HDMI output of a target PC connected to the KVM's HDMI IN. An optional monitor is connected to the KVM's HDMI OUT for loop-out video. The image also depicts a laptop displaying the web-based management interface for the KVM.

[redacted]

Video 1: A demonstration of connecting the NanoKVM-USB. The video shows how to connect the USB cable from the host machine to the KVM, then the USB cable from the KVM to the target machine, and finally the HDMI cable from the target machine to the KVM. It also briefly shows testing 4K HDMI passthrough.

4. Operating Instructions

4.1 Accessing the Web Interface

Once connected, open your Chrome browser on the host PC and navigate tohttp://usbkvm.sipeed.com. From the management interface, select the appropriate video and serial port to begin using the KVM functionality.

4.2 KVM Functionality

The NanoKVM-USB captures keyboard and mouse inputs from your host PC and transmits them to the target machine. This allows you to control the target machine as if you were directly connected to it with a physical keyboard and mouse.

4.3 USB-A (ISO Udisk) Switch

The device features an additional USB-A port that can be switched between the host and target. This is useful for transferring data between the two connected computers using an external USB drive.

4.4 HDMI Loop Out

The HDMI output port allows you to loop the video signal from the target machine to an external monitor, supporting resolutions up to 4K 30Hz. This provides a direct visual output of the target system.

4.5 Video Capture

The NanoKVM-USB functions as a 1080P video capturer, transferring HDMI image signals from the target to your host computer via USB 3.0. This enables recording or streaming of the target's display.

4.6 Application Scenarios

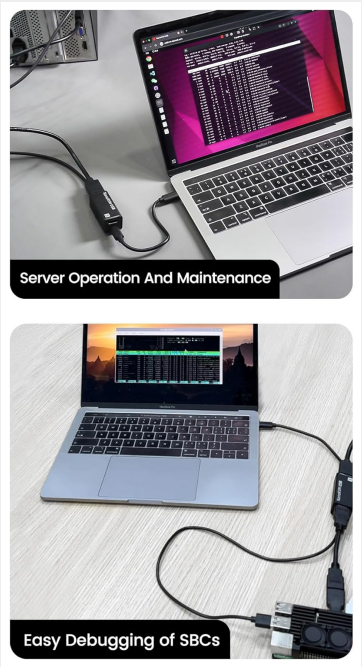


Figure 6: Image depicting the NanoKVM-USB being used for server operation and maintenance, with a laptop connected to a server.

Figure 7: Image showing the NanoKVM-USB facilitating easy debugging of Single Board Computers (SBCs) using a laptop.

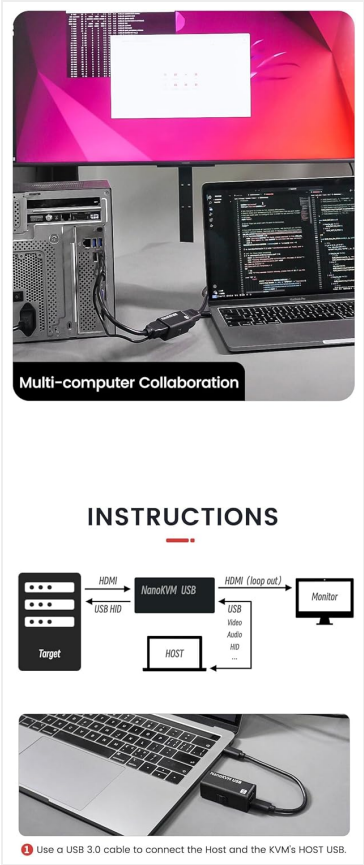


Figure 8: Image illustrating multi-computer collaboration using the NanoKVM-USB, connecting a desktop PC and a laptop.

5. Maintenance

To ensure optimal performance and longevity of your NanoKVM-USB, keep the device clean and free from dust. Avoid exposing it to extreme temperatures or moisture. Regularly check cable connections for secure fit. No specific user-serviceable parts are inside the device.

6. Troubleshooting

- **No Video Signal:** Ensure all HDMI and USB cables are securely connected. Verify the target machine is powered on and outputting video. If using HDMI loop-out, check the external monitor connection.
- **Keyboard/Mouse Not Responding:** Confirm the TARGET USB cable is properly connected to both the NanoKVM-USB and the target machine. Ensure the host PC's browser interface is correctly configured to send KVM signals.
- **Resolution Issues:** While the device supports 4K 30Hz loop-out, optimal performance for KVM control and capture is often achieved at 1080P resolution. Adjust the target machine's display settings if experiencing clarity issues.
- **BIOS/Boot Screen Access:** Some users have reported inconsistent display of BIOS or boot screens. This may vary depending on the target system's hardware and firmware. Refer to the official SDK documentation for potential workarounds or advanced configurations.
- **Web Interface Not Loading:** Ensure your Chrome browser is up-to-date. Try clearing browser cache or using an incognito window. Verify the device is powered and connected to your host PC.

For advanced troubleshooting and development information, please refer to the official SDK Document

linked in the Support section.

7. Specifications

Feature	Detail
Brand	WayPonDEV
Model Name	NanoKVM-USB Operations Maintenance Server Tool Kit
Item Model Number	NanoKVM-USB Operations Maintenance Tool
Connectivity Technology	HDMI, USB
Operating System Support	Linux (and browser-based for host)
Item Weight	1.76 ounces
Package Dimensions	5.91 x 5.31 x 1.69 inches
Color	KVM Kit3 (Red)
Number of Processors	1
HDMI Input	4K@30fps
HDMI Loopback	4K@30fps
USB Capture	1080P@60fps
USB Interface	USB 3.0
USB Switch	Yes
Keyboard & Mouse	Yes
Clipboard	Yes
Software	No setup needed, works in Chrome
Latency	50-100ms

8. Support and Warranty

For detailed technical documentation, SDK information, and quick start guides, please visit the official wiki:
wiki.sipeed.com/hardware/en/kvm/NanoKVM_USB/quick_start.html
For all after-sales questions or support inquiries, please contact WayPonDEV directly via email at **wpd@youyeetoo.com** or by clicking on the "WayPonDEV" store link on the product page to ask a question.
Information regarding product warranty is typically provided at the point of purchase or within the product packaging. Please retain your proof of purchase for warranty claims.