TAO 1tiny v2

User Manual

RGBlink®

# Chapter 1   Product Overview

1.1 Getting to Know TAO 1tiny

RGBlink introduces the new TAO 1tiny Gen 2 UVC to HDMI smart converter, keeping all the great features of the first version while adding important improvements. The upgraded model features a stylish silver-gray metal body with better cooling for more reliable performance, plus a new Gigabit Ethernet port for sending high-quality video over networks (with NDI support). Its easy-to-use web interface lets you control settings and switch signals remotely. It works perfectly with RGBlink mini devices and supports popular UVC cameras - ideal for professional streaming and video production.

The TAO 1tiny converts USB 3.0 (UVC compatible) video to HDMI 2.0 and also handles NDI encoding. It can:
1. Change video from USB cameras or mini devices into HDMI output or NDI streams;
2. Turn NDI signals into HDMI 2.0 output.
This means you can use regular USB cameras as professional NDI sources, or show NDI streams on monitors - a flexible solution for live production, meetings, and more.

1.2 Interface Description
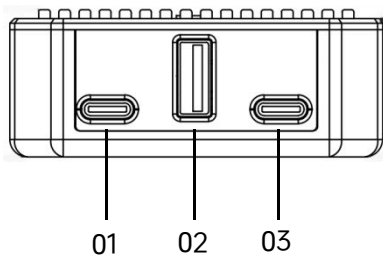
01 Type C Power Input
02 USB 2.0 Control Port
03 USB Type C Input Port
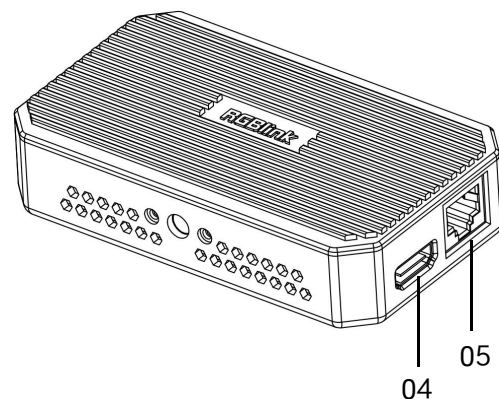
04 HDMI 2.0 Output Port
05 Gigabit Ethernet Port

⚠ The power adapter used must provide at least 5V/2A; using a computer's USB port for power is strictly prohibited.
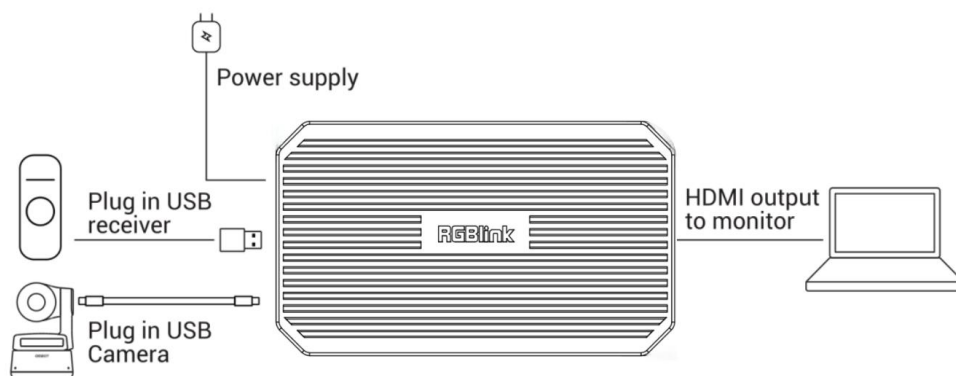
Chapter 2   Use Your Product

2.1 Connect the TAO 1tiny

2.1.1 Connect a USB Camera to TAO 1tiny

Please connect the TAO 1tiny and the USB camera(e.g., DJl PK3, Action 5 and insta360 X5, etc.) as shown in the diagram below :
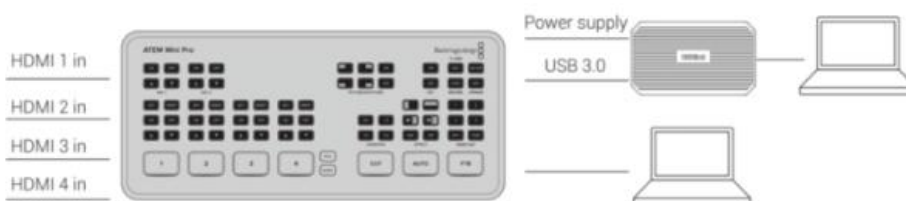

1. Power the TAO 1tiny using a USB-C power cable.
2. Connect the USB camera to the USB-C input port using a USB-C cable (The TAO 1tiny can supply power to the USB camera: 5V/1A).
3. Connect the HDMI 2.0 output port to a display using an HDMI cable.

ⓘ The time interval between powering off and then powering on the TAO 1tiny must be greater than 30 seconds; otherwise, recognition issues may occur.

2.1.2 Using TAO 1tiny with mini Switchers

Please connect the TAO 1tiny and the BMD ATEM as shown in the diagram below:

1. Power the TAO 1tiny using a USB-C power cable.
2. Connect the mini-pro to the USB-C input port using a USB 3.0 to USB-C cable.

3. Connect the HDMI 2.0 output port to a display using an HDMI 2.0 cable.

2.2 Compatible Products

TAO 1tiny is compatible with the following products:

| RGBlink	mini, mini-pro, mini-edge, mini-mx, vue PTZ 2K
Blackmagic Design	ATEM mini
DJI	Osmo Action 5, Osmo Action 4, POCKET 3
Insta 360	insta 360 X3, link UHD4KAI WEBCAM
OBSBOT	tiny 2K, tiny 4K, meet 2K, meet 4K

2.3 Device Management

2.3.1 Access the Device Management Page

The device management page for TAO 1tiny v2 is accessed via the device's IP address. Its default factory IP is 192.168.5.100.

For initial setup, you need to set the IP address of your management computer (e.g., PC) to be in the same LAN as the TAO 1tiny's fixed IP, i.e., 192.168.5.x (the first three segments of the IP must match, x can be any number from 0 to 254).

Proceed as follows:
1. After powering on the TAO 1tiny, connect it to a display's HDMI port using an HDMI cable. The display should show the TAO 1tiny's fixed IP address: ETH: 192.168.5.100
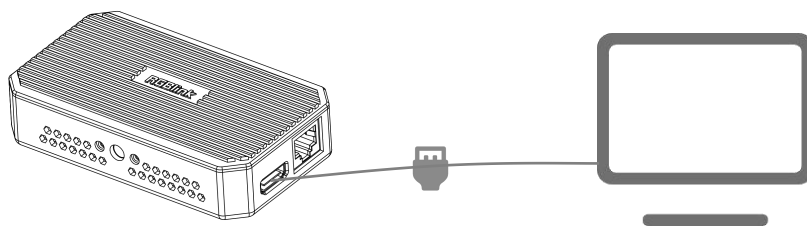
2. Disconnect the computer from other networks and set a static IP address on the computer that is in the same LAN as the TAO 1tiny.
a. Configure the computer's network settings: Go to System Settings > "Network & Internet" > "Network and Sharing Center".
b. Click "Change adapter settings" > Right-click "Ethernet" > "Properties" > Select "Internet Protocol Version 4 (TCP/IPv4)" > Click "Properties".
c. Select "Use the following IP address". Enter an IP address (first three segments matching the TAO 1tiny's IP, e.g., 192.168.5.x), subnet mask (255.255.255.0), and Default gateway (usually the router's IP, e.g., 192.168.5.1). After confirming the settings, the computer and TAO 1tiny will be on the same LAN.
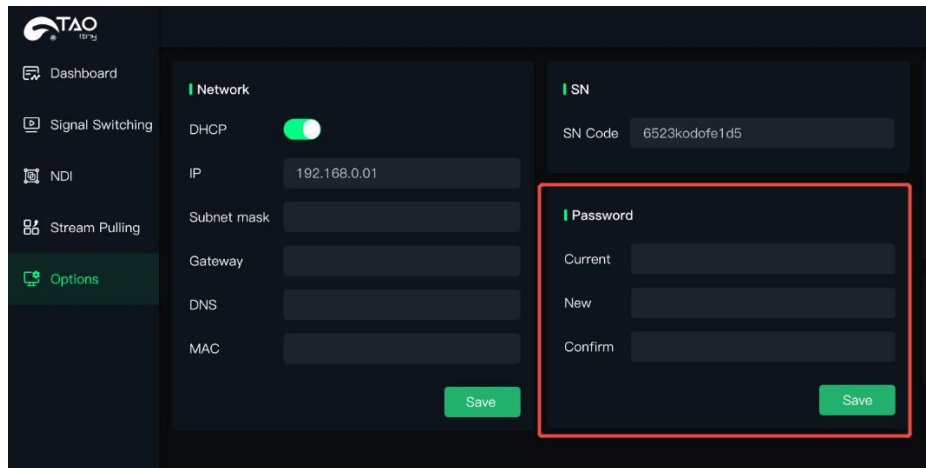
3. Open a web browser, access the web management page using the IP address (192.168.5.100). The default username and password are both: admin.
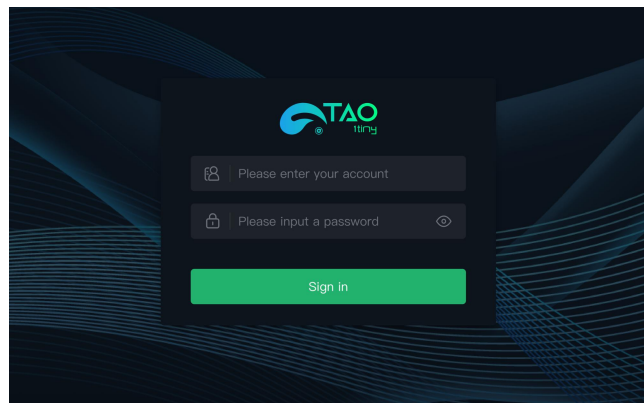
4. It is recommended to change the password after first login to enhance security.

⚠ During device management, ensure the network connection is stable and do not disconnect the router from the TAO 1tiny.

2.3.2 Network Configuration

The TAO 1tiny and the computer must be on the same local area network (LAN), meaning the first three segments of their IP addresses must be identical. Out of the factory, the DHCP function (automatic IP address acquisition) on the TAO 1tiny is disabled by default. After initially logging in using the static IP, you need to go to "Options" page > "Network Port" to enable DHCP. This allows the device to obtain an IP address assigned by the router and join the network.

Wireless Network:
After connecting the router and the TAO 1tiny with an Ethernet cable, set the computer's WiFi to the same SSID as the router. The TAO 1tiny and the computer will then be on the same LAN without further configuration.
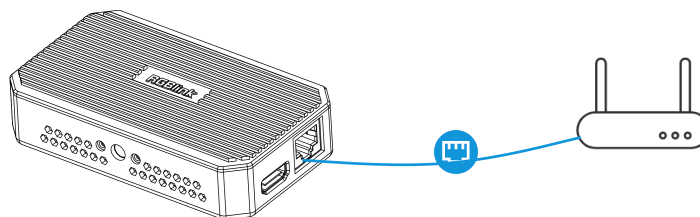

Wired Network:
Connect the router to a switch using an Ethernet cable. Then connect both the TAO 1tiny and the computer to the same switch using Ethernet cables. The TAO 1tiny and the computer will be on the same LAN.
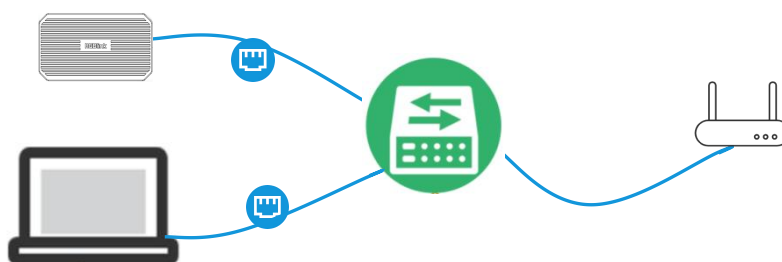
2.3.3 Monitor Device Status

After accessing the device management page, you can monitor the current operational status, port status, signal preview, and network status of the device.
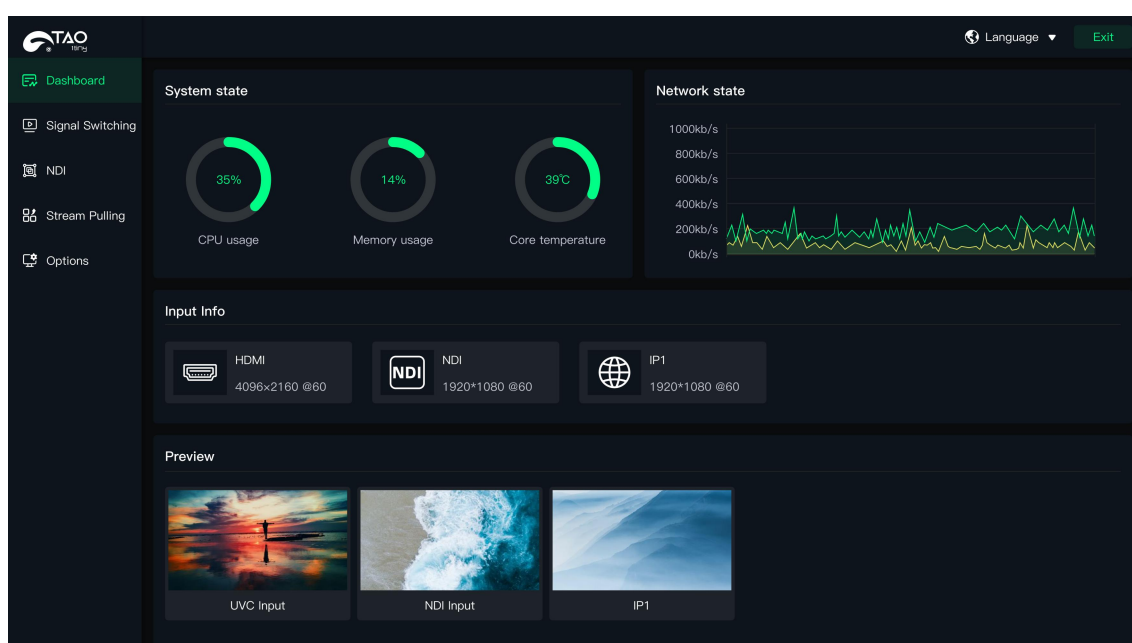

2.3.4 NDI Encoding

The TAO 1tiny adds NDI® encoding function, converting the signal from a USB camera into an NDI signal via the Ethernet port.

Proceed as follows:

1. Connect the USB camera to the TAO 1tiny and ensure the computer and TAO 1tiny are on the same LAN. Refer to 2.3.2 Network Configuration.
2. Configure the NDI encoding settings. Set the NDI resolution, format, compression format, bitrate, etc., and click "Save".

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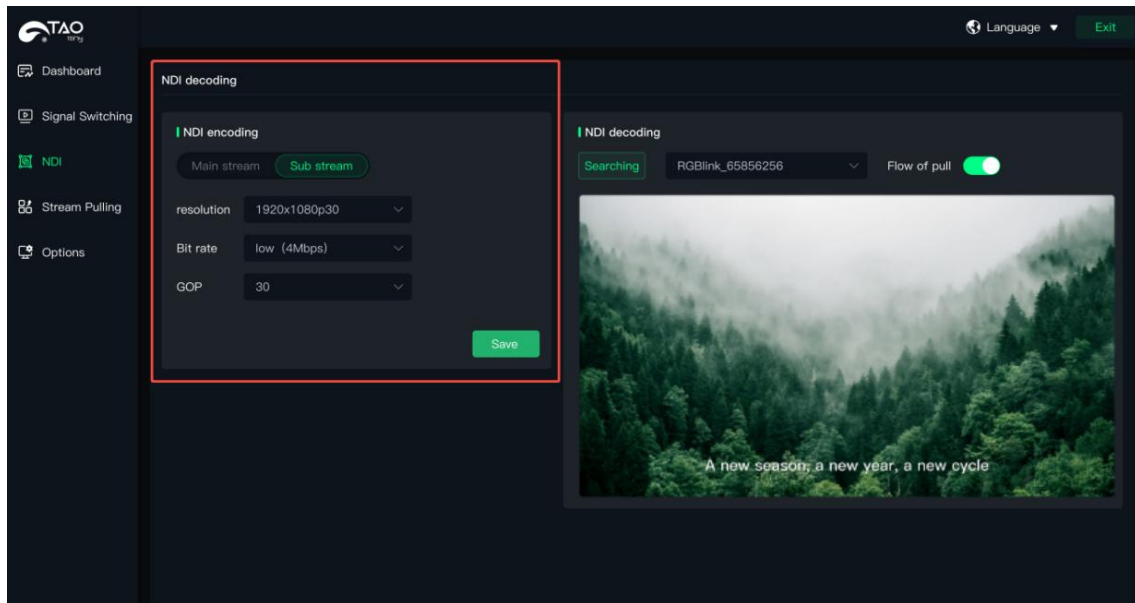
  a. Resolution: Displays the input source resolution, supports 1920x1080p@60Hz.
  b. Encoding Format: Default is NDI|HX.
  c. Compression Format: Default is H.264.
  d. Bitrate: Default is 8Mbps.
3. Use NDI Tools to Receive the NDI Source
a. Download from: (https://www.newtek.com/ndi/tools/)
b. Open the NewTek Studio Monitor software.
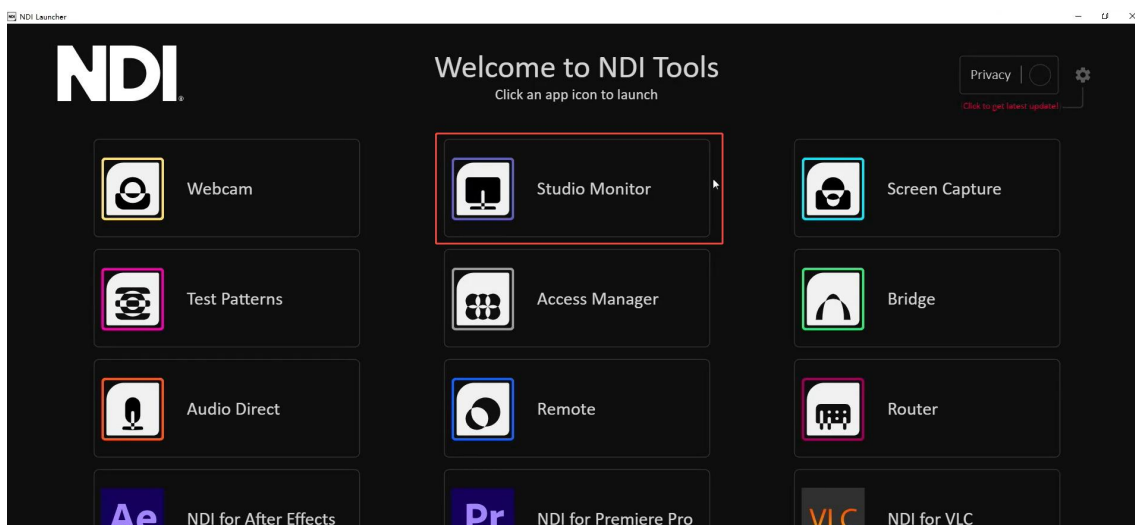
c. Click the icon in the top left corner to display the list of discovered NDI source names. Select the device you want to connect to (TAO 1TINY+IP), and it will begin pulling and playing the selected video stream. After successfully pulling the video stream, you can click on a blank area of the device display to view the NDI resolution.
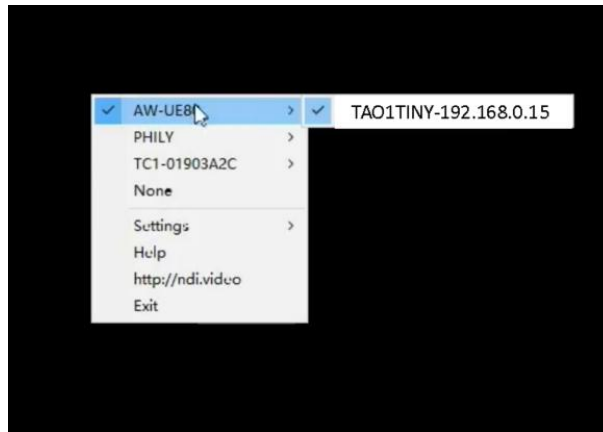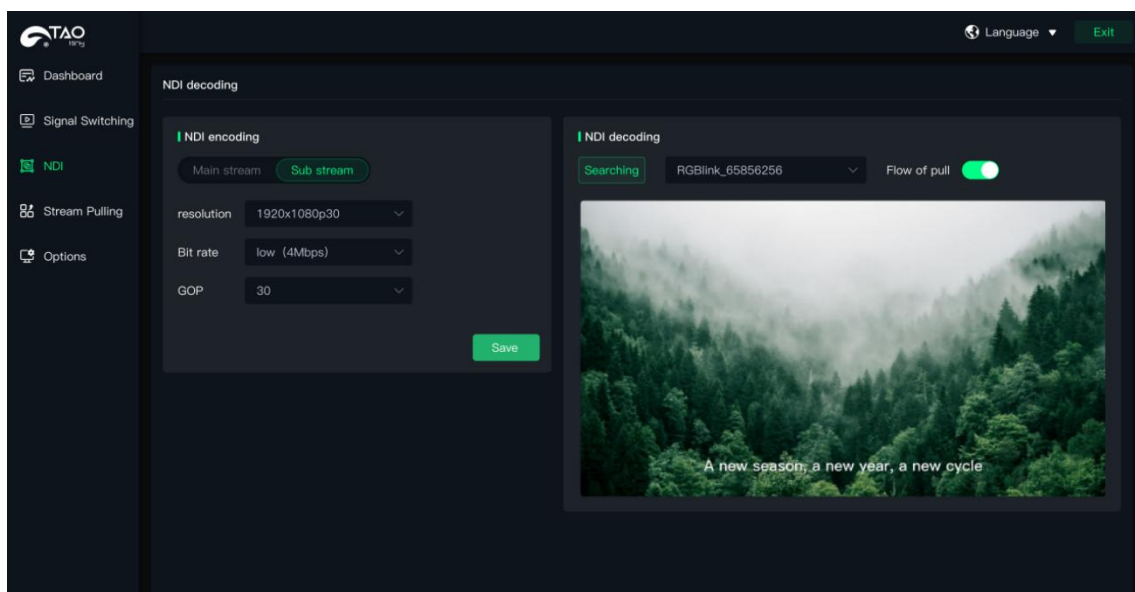
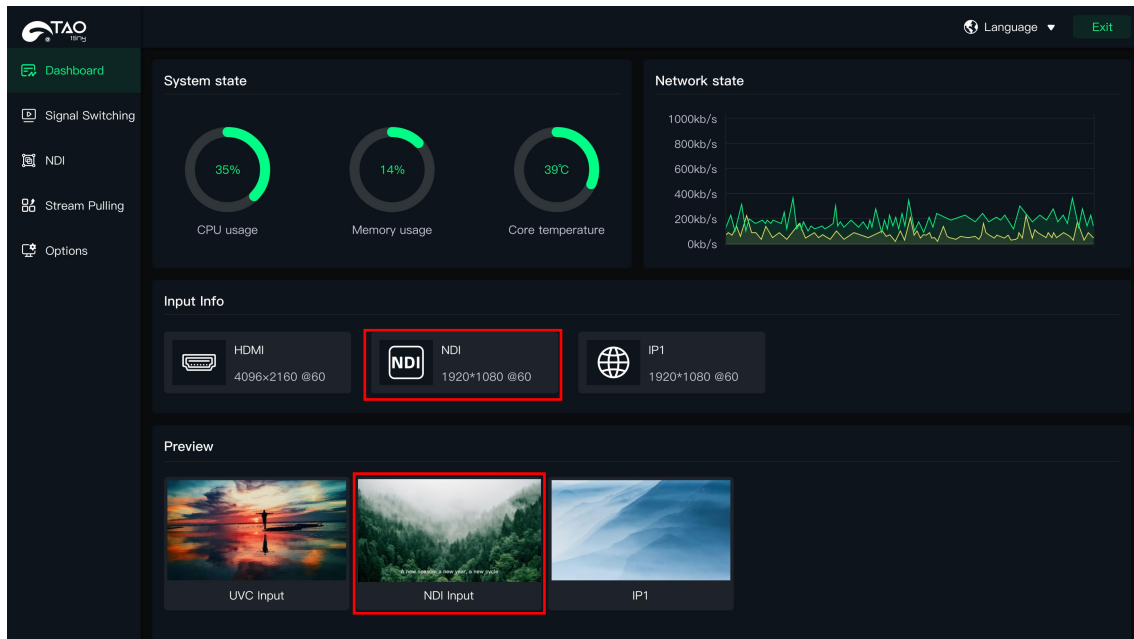(!) NDI encoding and decoding cannot be performed simultaneously.

2.3.5 NDI Decoding

1. Connect a switch and a router with an Ethernet cable. Then connect the TAO 1tiny, NDI camera, and computer to the switch, placing them on the same LAN.
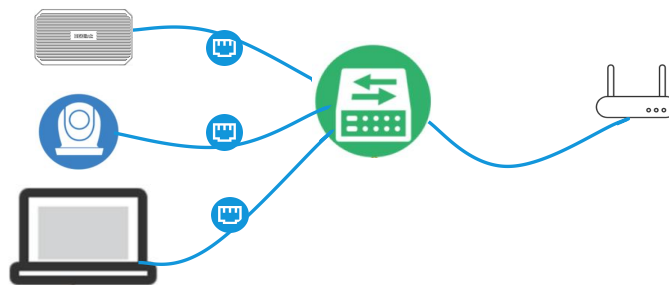
2. On the NDI Encode/Decode page, under NDI Decode, click "Search for NDI Source". Then click "Pull Stream", and the preview window will display the NDI source video.

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3. The decoded NDI video now becomes an input source. You can switch the HDMI main output signal on the "Signal Switching" page.
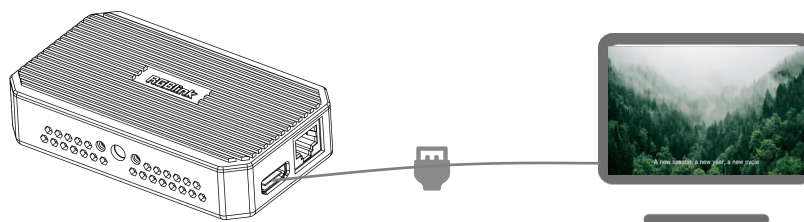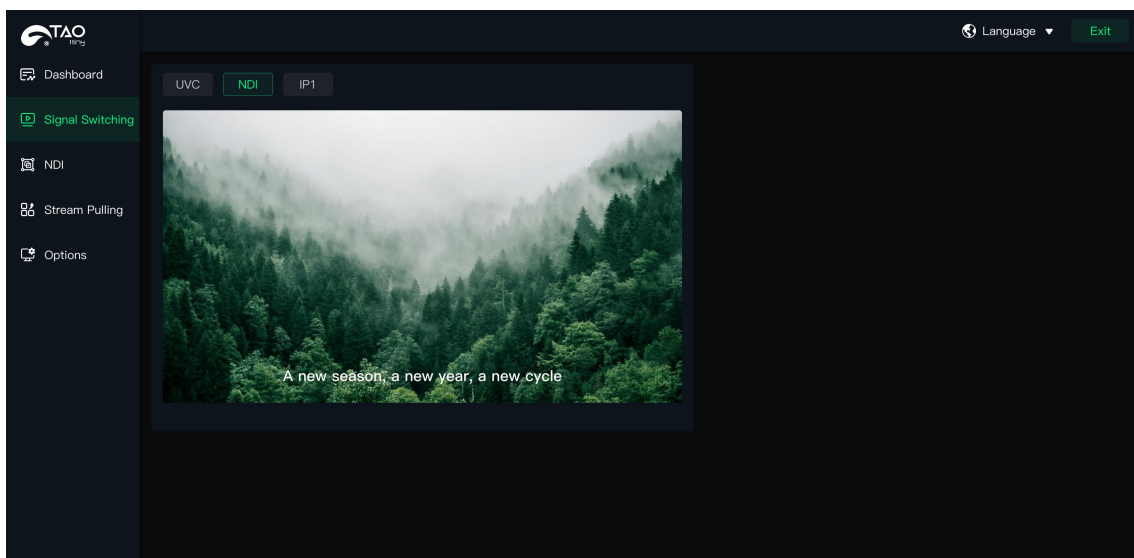
2.3.6 Network Input

The TAO 1tiny also supports network streams as input sources, compatible with RTSP protocol. Enter the corresponding stream URL to retrieve the video. This example demonstrates pulling the video from an IP-enabled PTZ camera into the preview monitor. (The device's IP address must be on the same LAN as the camera's IP address, meaning the first three segments of the IP addresses must match.)

Using Static IP:
1. This method allows the TAO 1tiny to match the PTZ's IP settings. Connect the PTZ and the TAO 1tiny to the same network switch.
2. Obtain the PTZ camera's IP address from its manual or control panel. Access the TAO 1tiny's "Options" page, disable DHCP. Manually configure the TAO 1tiny's IP address so that its first three segments match the PTZ's IP. Click Save after configuration.
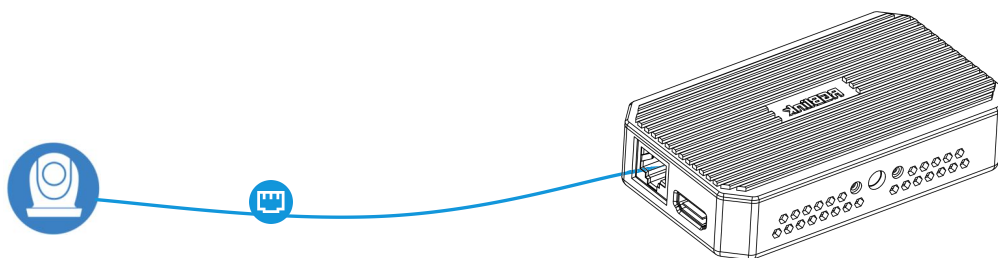

Adding a Stream URL in TAO 1tiny:
If you have confirmed the TAO 1tiny and the PTZ camera are on the same LAN, this device supports accessing the PTZ camera's video feed via standard network protocols. To connect successfully, you need to provide the camera's streaming URL.

1. Most stream URLs follow a common structure, for example: rtsp://[ip_address]:[port]/[path]. You just need to replace the variables. The IP address is the static IP you set for the PTZ or the dynamic IP obtained from the router when connecting it to the same LAN as the device. The username, password, and stream path need to be obtained from the PTZ camera's manual. On the Streaming Pulling page, enter a descriptive name for the stream in the Channel field, then click Save at the bottom.
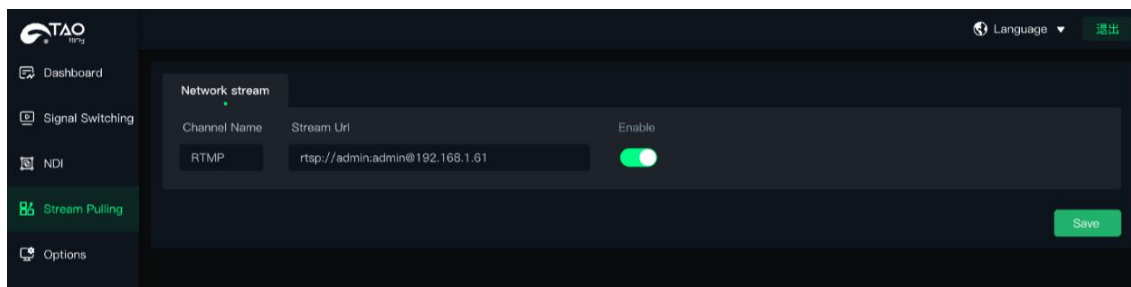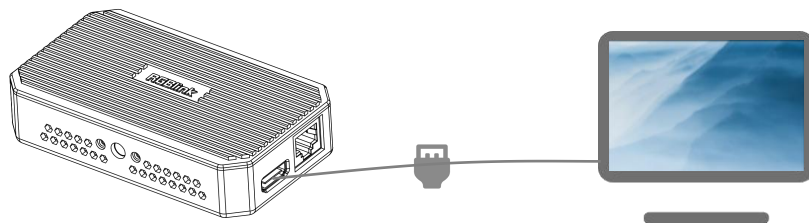

2. After enabling the switch for this stream URL, you can see the video feed in the preview area under the Dashboard page.
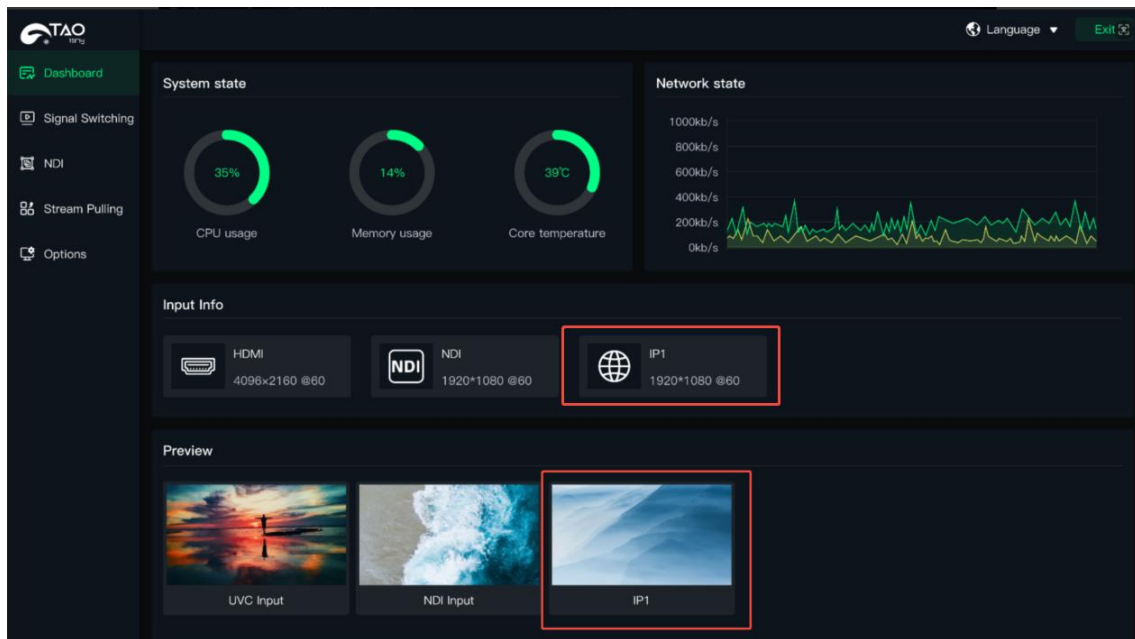
3. On the "Signal Switching" page, select IP1.
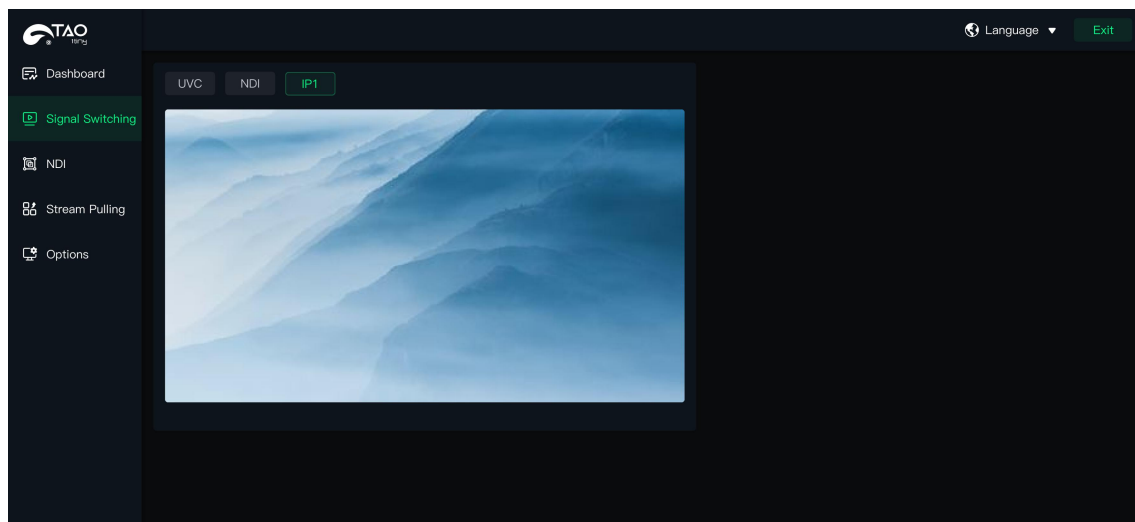
4. The HDMI output will switch to the camera feed.

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2.4 Firmware Upgrade

The TAO 1tiny is upgraded via USB drive. Proceed as follows:

1. Download the latest TAO 1tiny v2 firmware from the RGBlink website (http://www.rgblink.com) and copy it to a USB drive.
2. Insert the USB drive (containing the latest upgrade package) into the USB 2.0 port. The device will upgrade automatically. Upon successful upgrade, the device will reboot automatically. The USB drive will automatically generate a prompt file indicating a successful upgrade. You can also see "Upgrade Done" and the version number information on the HDMI output display.
⚠ Do not disconnect the device during the firmware upgrade process.

Upgrade Done!
V1.6 –> 1.7

Content is subject to change without notice. Please download the latest version of the User Manual from the RGBlink Technology website: [www.rgblink.cn](http://www.rgblink.com)

Warranty

All products are designed and tested to the highest quality standard and backed by 1 years parts and labor warranty. Warranties are effective upon delivery date to customer and are non-transferable. RGBlink
warranties are only valid to the original purchase/owner. Warranty related repairs include parts and labor, but do not include faults resulting from user negligence, special modification, lighting strikes, abuse(drop/crush),
and/or other unusual damages.Warranty is return to base.Return for repairs are accepted only where shipping charges are prepaid.

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