NDI® Quick Start Guide

Setting up Your Glow Stream™ Camera with 1-Cable Simplicity

GLOW STREAM™

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Glow Stream™ cameras are sold for use in the United States. Any use of Glow Stream™ products outside the United States voids any warranty in effect, and after sale support is not available outside the United States.

Glow Stream™ NDI Quick Start Guide v1.0.2 (May 2021)

Introduction

Welcome to Glow Stream! With this quick start guide, you'll get your camera set up quickly and ready to use. By the end of the guide, you'll be sending signal from the camera to your video switching software, such as vMix or OBS, while also controlling the camera's movements from that same software.

One-Cable Simplicity

There are three different technologies that are used in your Glow Stream™ camera to bring you 1-cable simplicity:

1. NDI® technology from NewTek delivers broadcast-quality video via a local area network to any connected device.
2. IP VISCA protocol from Sony® sends remote control signals to the camera via a local area network.
3. Power-over-Ethernet, or PoE, sends power to the camera from the network switch, so a DC power adapter is not required.

Time Required

5-10 minutes: Someone with a basic understanding of TCP/IP networking and with all required software already installed.
15-30 minutes: Someone not familiar with networking, or where software must be installed as part of the setup process.

Requirements

In addition to your new Glow Stream™ camera, you'll need the following to complete this quick start guide:

- A Windows 10 computer with vMix or OBS installed. This can be a laptop or a desktop computer.
- A network switch with Power-over-Ethernet (PoE) ports. This will power the camera over the ethernet cable, rather than using a DC power adapter.

Tip: A hardwired network connection offers a more consistent video signal than wireless. So using a computer with an RJ-45 ethernet network port will give better results than a computer using a wireless network connection.

Overview

Here are the 3 steps to setting up your camera:

1. Connect the camera to a PoE network switch
2. Set the camera's IP address
3. Connect to the camera from vMix or OBS

Warning: If you do not have a PoE network switch, use only the provided power adapter. Using a DC power adapter of more than 12V, or with the wrong polarity, may damage the camera's sensitive electronics.

Step 1: Connect to PoE network switch

Using an ethernet cable, plug the camera into a network switch with Power-over-Ethernet. PoE will power the camera without using any other power adapter. **If successful, the orange network light will illuminate and the green light will start flashing.**

Connect your computer to the same network , as shown in Diagram 1.1.

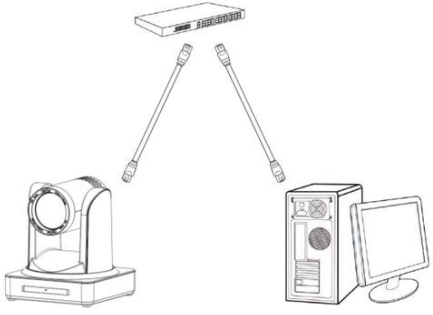


Diagram 1.1

Most low-cost network switches do not have Power-over-Ethernet capability. If your switch does not have PoE, you'll need to use the provided DC power adapter to power the camera.

Alternate Direct Connection

If you do not have a network switch available, alternatively you can connect the camera directly to a computer using the provided ethernet crossover cable, as shown in Diagram 1.2.

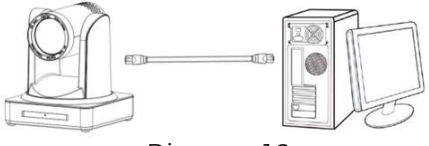


Diagram 1.2

A **crossover cable** is a special type of ethernet cable used to connect two devices directly, without using a network switch. A standard ethernet cable will not work for this purpose. **A crossover cable is included with your camera.**

Step 2: Set the camera's IP address

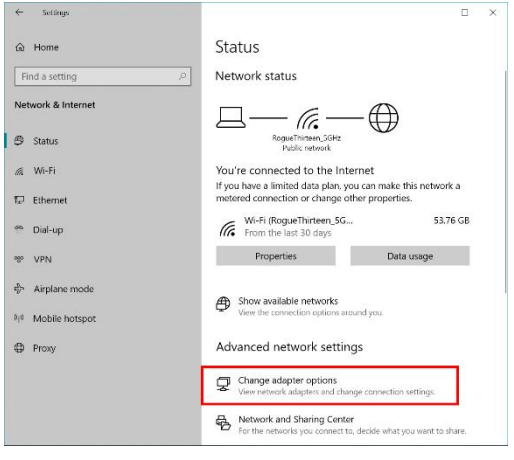
Once your camera and computer are connected, either through a network switch or directly with a crossover cable, you should set your camera's IP address to something compatible with your network. **Your camera's default IP address is 192.168.5.163.** To use the camera on a network, must change this to another address within your network's IP address range.

A. Prepare computer to access camera

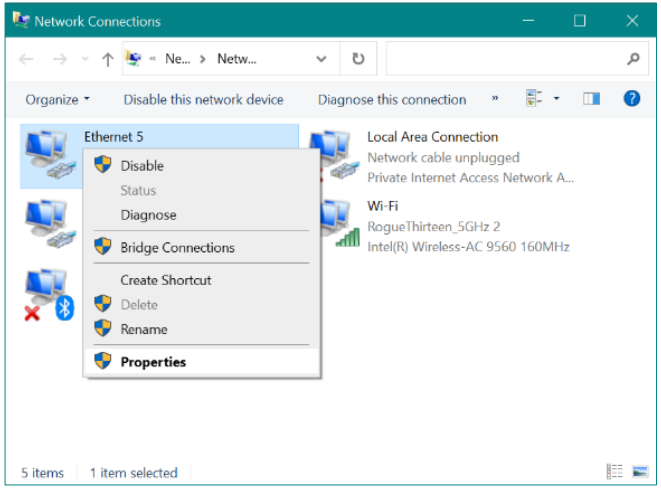
First, you must change the computer's network settings to match the camera, in order to access the camera's settings from the computer. In Windows 10:

1. Open the Network Status window.

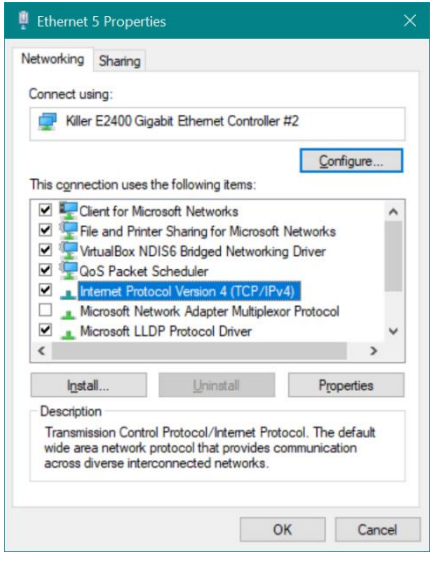
2. Under the Advanced Network Settings section, click Change Adapter Settings.



3. Right click the network adapter connected to the camera, and select Properties.

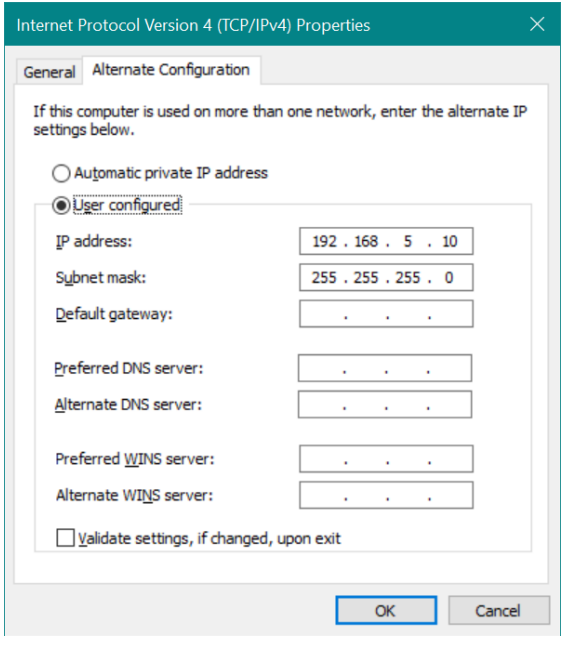


4. Double click the property Internet protocol version 4 (TCP/IPv4).



Tip: In the Internet Protocol Version 4 (TCP/IPv4) Properties window, before you make any changes write down the current settings, so they can be restored in Step D below.

5. In the Internet Protocol Version 4 (TCP/IPv4) Properties window, click the Alternate Configuration tab, then set the IP address to **192.168.5.10** and the Subnet mask to **255.255.255.0.** Uncheck “Validate settings, if changed, upon exit” and click OK.



B. Use web browser to access camera

Open the web browser of your choice and in the address bar enter the default IP address of the camera:

IP Address: **192.168.5.163**

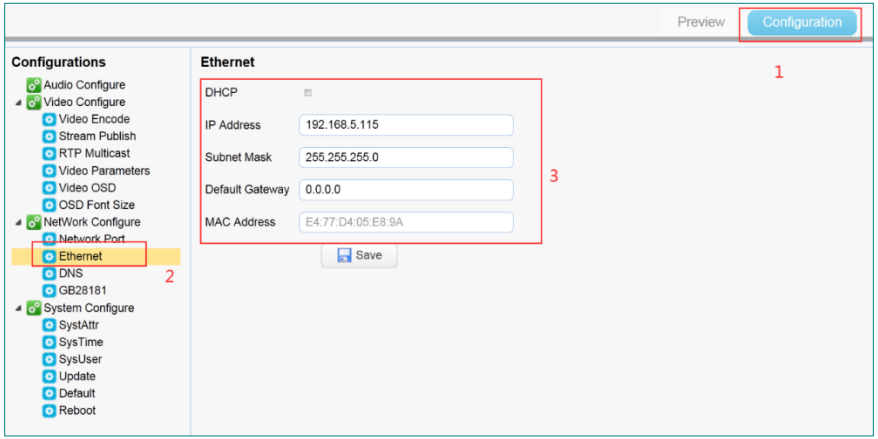
Then log in to the camera with the following default values:

User Name: **admin**
Password: **admin**

Tip: If the camera's IP address has been changed and you want to reset it, this can be done using the infrared remote. This will also reset the username and password. Press these buttons in this sequence: [*] [#] [MANUAL]

C. Set the camera's IP address

Once you're logged in, go to the ethernet configuration settings to set the IP address:



1. Click Configuration in the top right of the screen.
2. Click Ethernet on the left-hand menu.
3. Enter the IP Address, Subnet Mask, and Default Gateway for your network, or check DHCP if you would like the IP address automatically assigned.

Tip: Using DHCP offers compatibility with most networks, because the assignment of IP addresses is handled by the network's DHCP server. This reduces the potential for conflicting IP addresses.

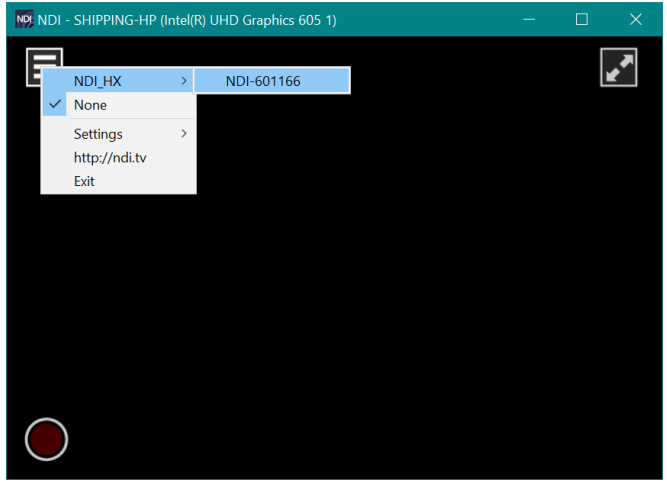
Warning: If you use DHCP, you will not be able to access to camera via the web browser until you have identified the assigned IP address. This can be done using NDI Studio Monitor (see below), or with software such as Advanced IP Scanner.

D. Return computer's IP address to previous setting

Once the camera's IP address has been set, you'll want to return the computer's IP address back to its original setting. Follow the sequence described in Step A of this section, and restore the settings you wrote down earlier.

E. Test the NDI connection (optional)

Before continuing, you may want to confirm that the camera is sending NDI signal and that the computer can access it. The best tool for this is NDI Studio Monitor, from NewTek, available at https://ndi.tv/tools.

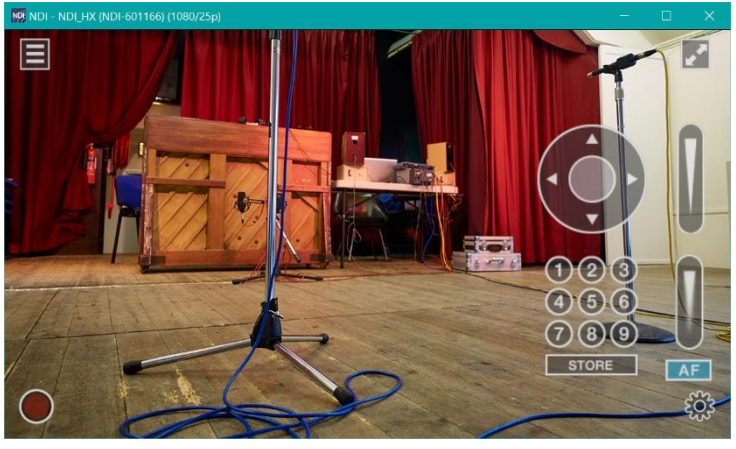


1. Open the Studio Monitor program.

2. In the upper left, click the menu icon and select the camera.

3. When you mouse over the window, various controls appear for panning, tilting, zooming, and focusing the camera. You can also store camera positions for later recall.

4. Click the gear icon in the lower right to open the camera settings in a browser window. **This shows you the new IP address of the camera in the address bar.**



Step 3: Connect to the camera from software

Your camera can be used as a source in broadcast software, such as vMix and OBS.

Using camera in vMix

NDI sources are supported in vMix version 23 and higher. To use your camera as a video source in vMix:

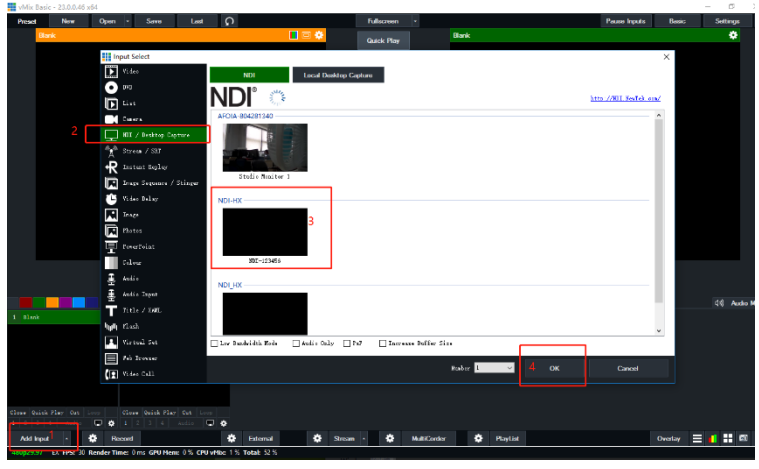
A. Add camera as input

1. Click Add Input in the lower left of the screen.

2. Select NDI / Desktop Capture as the input type.

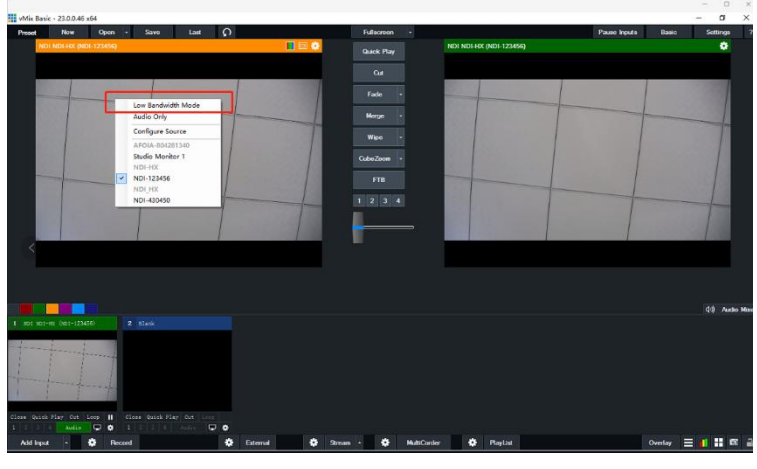
3. Find the camera and select it.

4. Click OK to add the input.



B. Select low bandwidth mode

Select the camera input for preview, and right click. Then select Low Bandwidth Mode.



C. Set up remote control

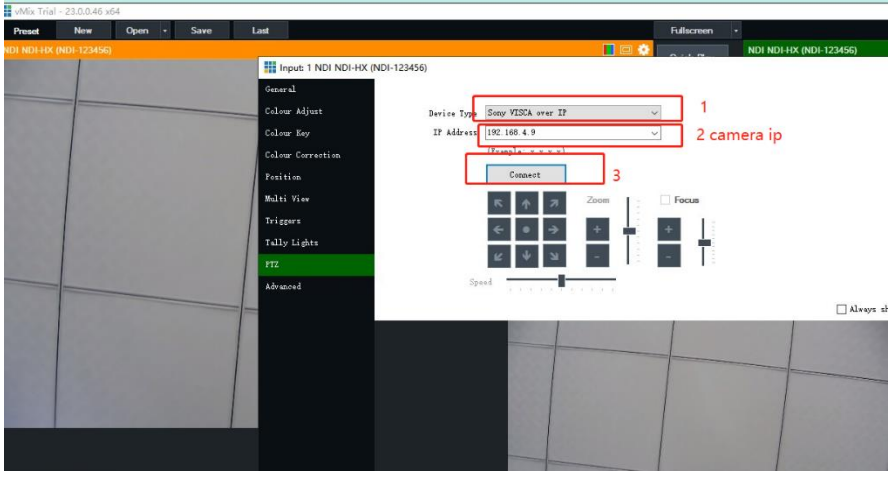
Your camera can be fully controlled from within vMix, including pan, tilt, zoom and focus. In addition, camera positions can be saved as virtual inputs, allowing you to quickly change the camera from one shot to another.

To set up remote control, click the gear icon for the camera input, then select PTZ on the left-hand menu. Use these settings:

1. Device Type: Sony VISCA over IP

2. IP Address: this should already be set to the camera's IP address. If not, enter the correct IP address here

3. Click Connect to begin controlling the camera

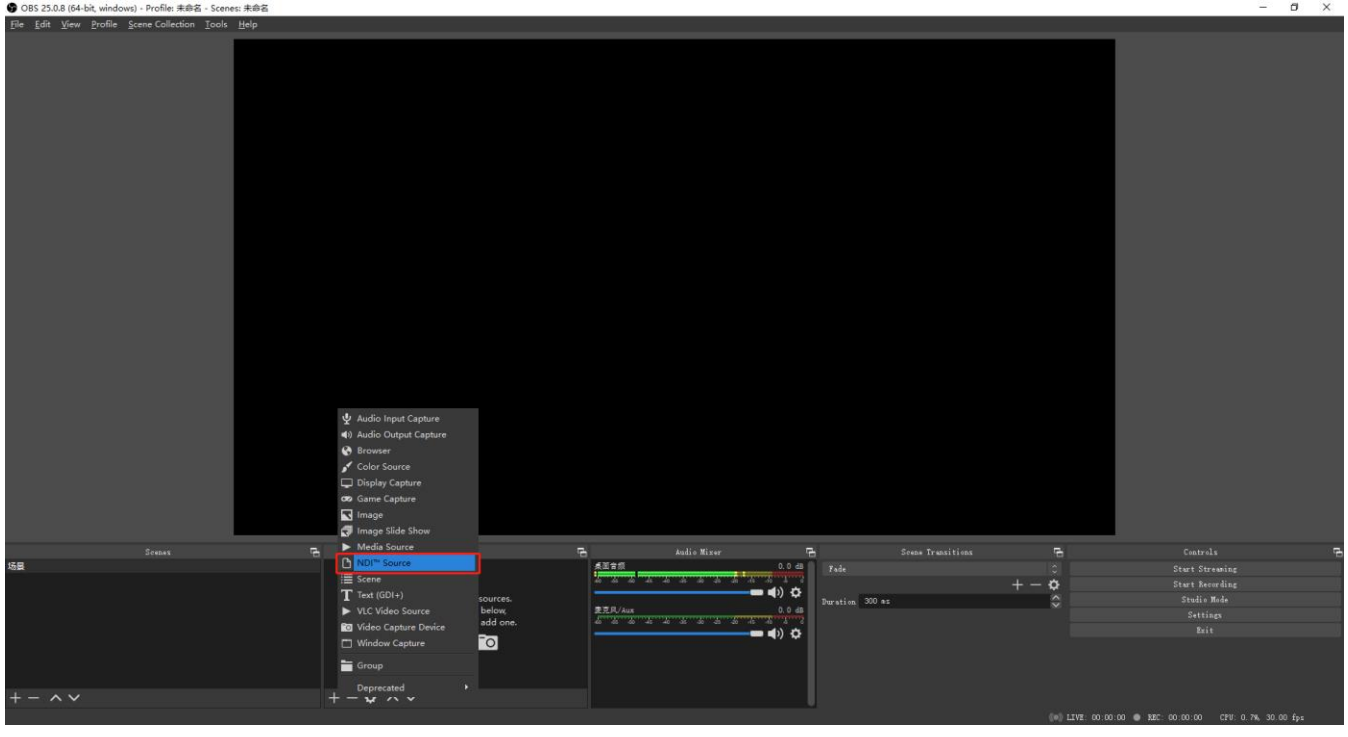


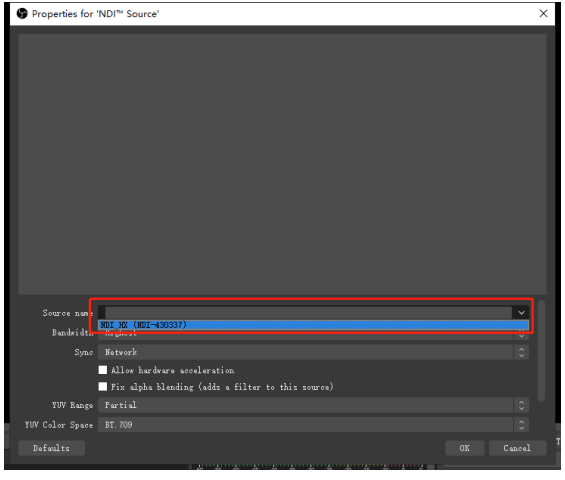
For more information about using your camera in vMix, consult the vMix software documentation.

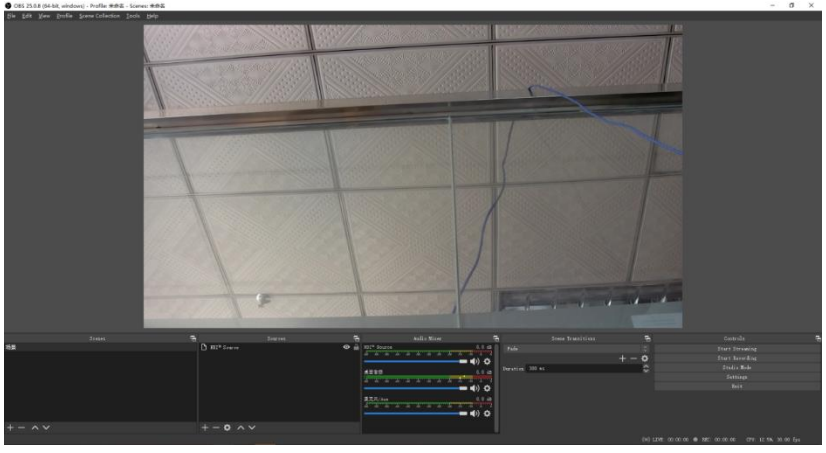
Using camera in OBS

To use NDI sources in OBS, you must install the OBS-NDI plugin found here: https://github.com/Palakis/obs-ndi/releases

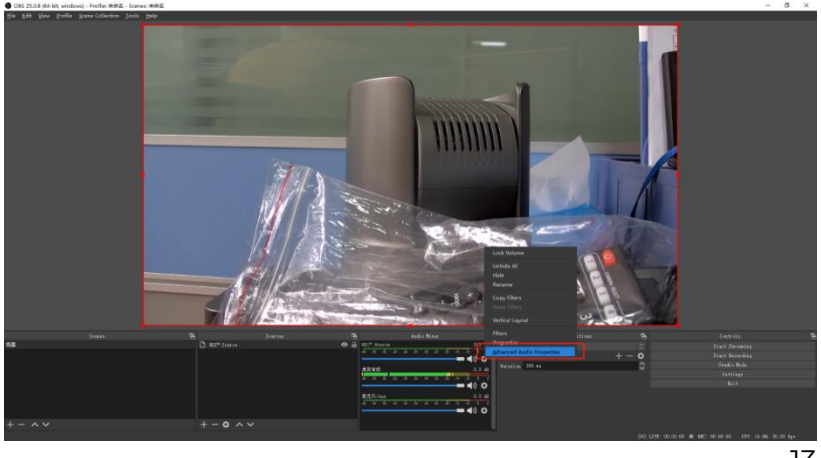
A. Add NDI source

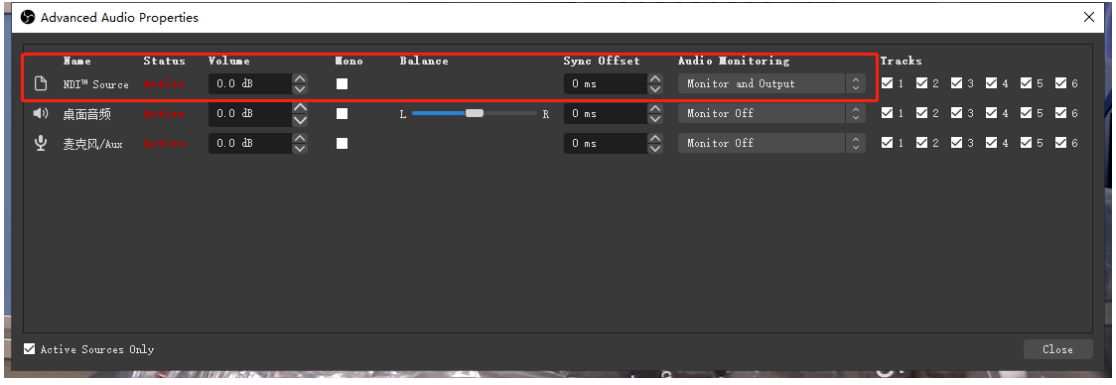






B. Enable audio





More information about the OBS-NDI plugin may be found at this website: https://obsproject.com/forum/resources/obs-ndi-newtek-ndi%E2%84%A2-integration-into-obs-studio.528/

Troubleshooting

My camera won’t power on

If you are trying to use Power-over-Ethernet:

1. Make sure the network switch supports PoE
2. Make sure the network switch is powered on
3. Make sure the total power draw of all connected devices does not exceed the power capacity of the PoE network switch

If you are trying to use DC power:

1. Make sure the DC adapter is plugged in
2. Make sure you are using an adapter with the correct power rating, and correct polarity

My computer won’t connect to the camera

1. Make sure the camera is powered on
2. Make sure the network cable is not bad
3. Make sure the computer and camera IP addresses are in the same network
4. If connecting directly (without a network switch), make sure you are using a crossover cable
5. If the camera’s IP address has been changed and you want to reset it, this can be done using the infrared remote. Press these buttons in this sequence: [*] [#] [MANUAL]

There is high latency in vMix

Latency should be 80-160 ms. If it is higher, try setting the frame rate to 60 to decrease video latency, and ensure you are using progressive scan, not interlaced

The video freezes when using the NDI stream

If the video stutters or freezes, this may be due to network issues. For best network performance:

1. Use a separate network for your video system, to minimize network traffic
2. Avoid using wireless WiFi connections in your network, because radio interference can reduce network performance

How much bandwidth does NDI|HX use?

Bitrate:	Bitrate (mbps)	Resolution	Frame Rate
Lowest	0-6	640×360	30fps
Low	7-8	1280×720	60fps
Medium	9-12	1920×1080	30fps
High	13-22	1920×1080	60fps

Please refer to the separate User Manual for your Glow Stream™ camera for complete installation, configuration, and usage instructions.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