# NDI|HX PTZ Camera

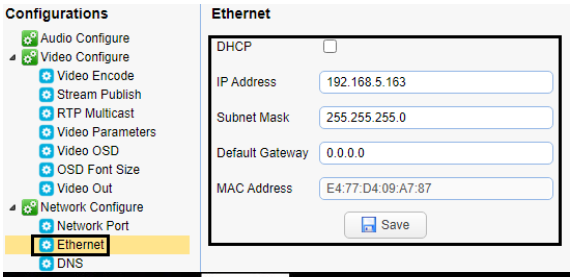
# Quick Installation Guide

**Notes: This is only quick installation for NDI Usage. For more information about this camera, please find the other manual from Camera Box.**

Zowietek Electronics, Ltd.
Printed in China.

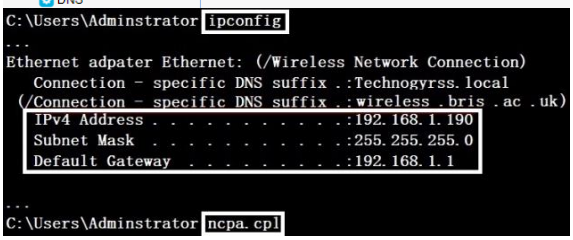
# 1. Login

1) Launch Browser, for example Google Chrome, enter IP address of NDI camera: default “192.168.5.163”. Login with username and password: both are “admin”. Please select English in the upper right corner before you login.

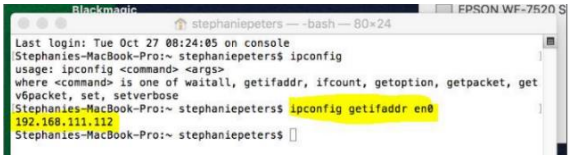



2) It is suggested for users to change IP Address of their camera. The camera has a default static IP address “192.168.5.163”. The IP address has to be changed to *the same network segment as current LAN*.

3) Extra: Check your Network IP segment. ***NOTE***: Changing the IP address without talking to your network administrator may cause IP conflicts in the network. Make sure the IP address is unique in the LAN. If the first three segment of IP Address changed to be one that is already used, it will cause communication problems.



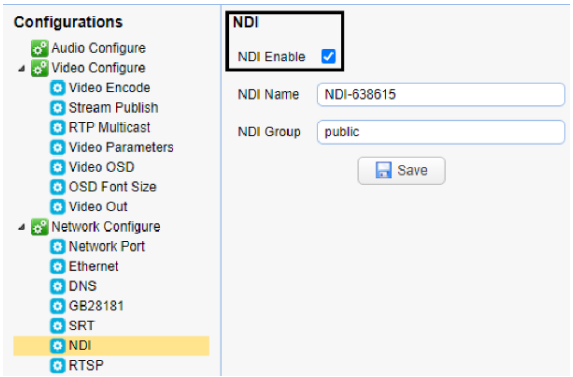

a. Check the IP Address segment of network: press Win + R, then type “CMD” in the appear window and press Enter key. You should see a black box pop up with the ability to type in the box.
b. If you type “ipconfig” in the black box and press Enter key, you will see a bunch of information pop up in your command prompt.
c. When you see “IPv4 Address” that is your computers IP address on your current network. So, you would use the first three sets of numbers from this as your IP segment.




***NOTE***: If need to find the IP Address segment of MAC computer, first to open a new finder window and then go to Applications, and then Utilities. Program “Terminal” can be found in this menu and then select it.
Now, you would type in “IP config get if addr en0”. Once you type this string and click “Enter” on your keyboard you will receive back an IP address.

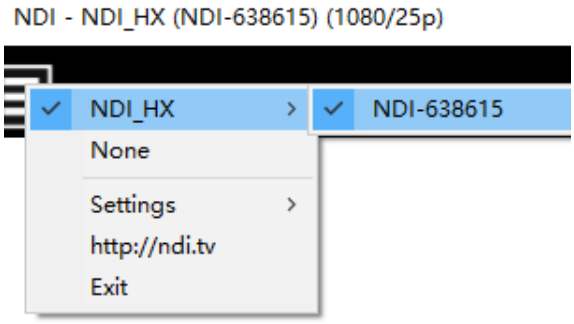
So, the IP segment of network as shown in the picture below according to MAC is 192.168.111.xxx, which can be used to figure out the IP segment in which camera need to be set.

# 2. Enable NDI | HX on Admin Web page




Login on the web page by NEW camera IP address, and check NDI Enable to enable the NDI.

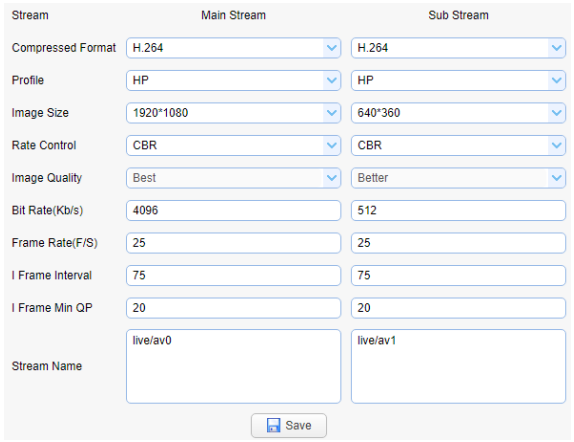
## 3. Test NDI|HX Camera with NDI Studio Monitor




The software is available on NewTek website: https://www.ndi.tv/tools/

Launch NDI Studio monitor, find the NDI name and check it.

## 4. NDI|HX Camera Video Encode and Audio Configuration

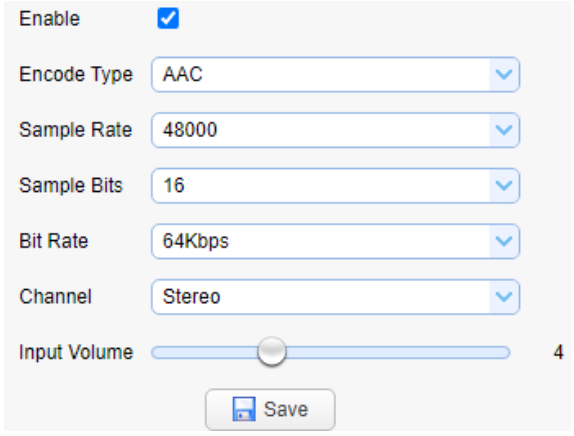



Video Encode

High bandwidth mode: Main Stream
Low bandwidth mode: Sub Stream

Recommended Video Encode settings:
1920 * 1080: 4096 kb/s
1280 * 720: 2048 kb/s
640 * 480: 1024 kb/s
640 * 360: 1024 kb/s
320 * 180: 512 kb/s
320 * 240: 512 kb/s
***Note***: The higher the Bitrate, the better the image quality.

## 5. Audio Configure

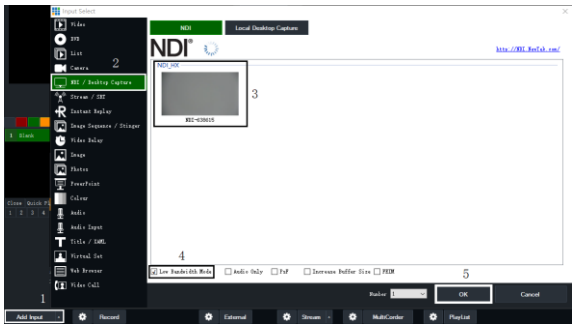



Recommended audio settings: AAC 48000KHz / 64kbps
NDI | HX supports AAC format only

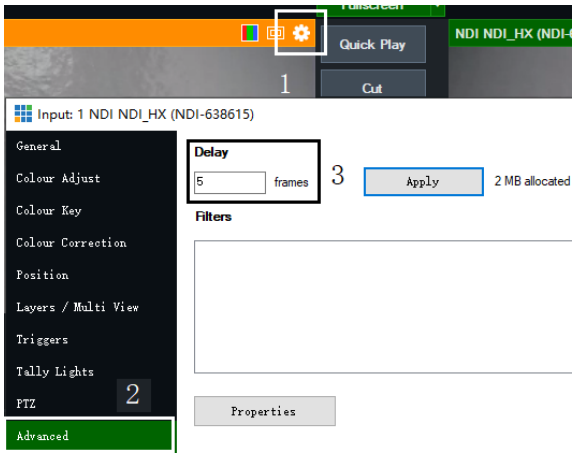
## Notes:

- Users can switch according to different occasions with high and low bandwidth mode are open at the same time.
- The frame rate will affect the video latency. With the same resolution, the higher the frame rate, the smaller the delay of the video.
- The current version NDI 4.1 supports H.264 and HEVC (H.265) format.
- The video frame rate is up to 60 frames. Open two streams at the same time at most.
- To make sure NDI video smooth, please do not open other stream when NDI streaming is on.
- SDI and HDMI video out are turned on by default. It's recommended to adjust the Video Out Format to 720PX when you don't need SDI/HDMI video. "X" represents the frame rate in 720PX.
- To configure 60fps Video, Video Out Format must be set as 1080P60 or 720P60. Otherwise, the frame rate of the Video encode part of 60 cannot be configured successfully.
- Keep the frame rate of the video encoding part is consistent or multiple with the video out.
- Such as: Video encoding frame rate is 25, then set the video out format as 1080P25, 1080P50 or 720P25, 720P 50.
- Video encoding frame rate is 30, then set the video out format as 1080P30 or 720P30.
- Video encoding frame rate is 60, then set the video out format as 1080P60 or 720P60.

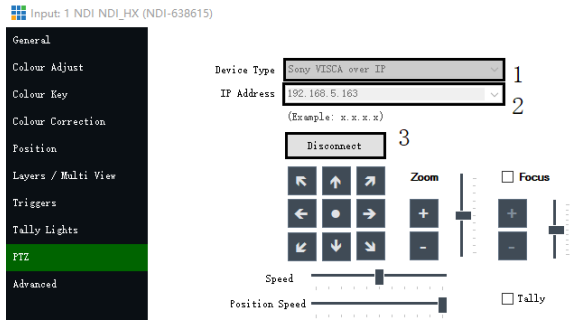
## 6. NDI|HX Camera & vMix




Firmware requirement: vMix23 and above
1) Open vMix23, add NDI source
Click "Add Input" on the bottom left of the vMix window and select "NDI/ Desktop Capture" in the appear window, and then choose "your camera: NDI-XXXX". Then select "Low Bandwidth Mode" and click "OK" to finish the adding steps.

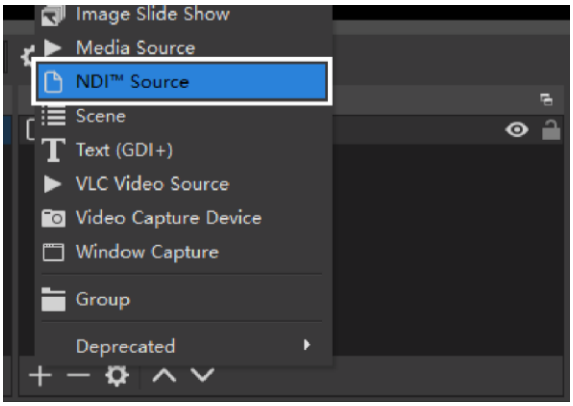



2) Latency setting: the frames numbers are related to frame rate.
Click "gear" on the upper right corner of the image. Select "Advanced" on the appear window and type to change default frame number "0". For example, the frame rate is 25fps, then the frame interval is 40ms, set the frames number as 5, so the network latency is about 200ms.




3) PTZ – Device type: Sony VISCA over IP – IP Address: camera IP – connect
Select "PTZ" on the same window as step 2, and then choose the right "Device Type" and "IP Address". Click the "Connect", after which can operate the camera by vMix.

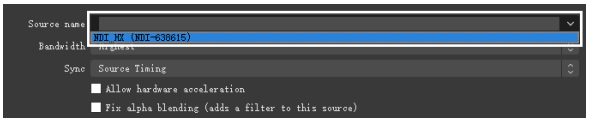
## 7. NDI|HX Camera & OBS

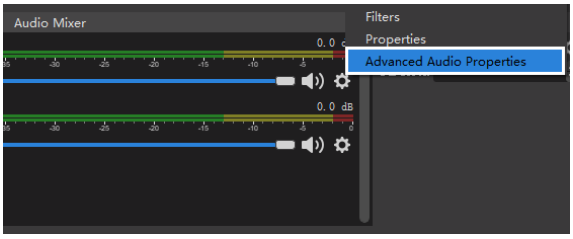



1) Using OBS, please download OBS-NDI plug-in via the link below, and install.
https://github.com/Palakis/obs-ndi/releases/tag/4.7.0
Find more information about OBS-NDI here:
https://obsproject.com/forum/resources/obs-ndi-newtek-ndi%E2%84%A2-integration-into-obs-studio.528/

2) Add NDI source
Click "+" in the "Source" window on the bottom of OBS and select "NDI™ Source" to add NDI source.

Choose "Source name" in the appear window and click "OK".




3) Enable Audio
Click "gear" of "NDI™ Source" in the "Audio Mixer" window. And then click "Advanced Audio Properties" and change "Audio Monitoring" to be "Monitor Only (mute output)".

## 8. Q&A (Trouble Shooting)

- Q: Big latency with vMix and NDI|HX camera.
  A: 1. Latency is increased due to the cache configured on client.
  2. Set the frame rate to 60 to decrease video latency.

- Q: NDI|HX camera latency.
  A: The tested average latency is about 130ms, the lowest delay is about 80ms.
  With the following settings:
  NDI|HX setting: 1920* 1080 | 4096kbs | 60fps;
  Video out setting: 720P60
  Testing software: NDI Studio Monitor (select low latency mode)

- Q: How to modify network video and audio parameters on NDI|HX camera?
  A: Please refer to the No.4 part (NDI|HX Camera Video Encode and Audio Configuration) on page 3.

- Q: NDI|HX is able to search the source, but it can't get the image?
  A: Please refer to the No. 1 Part on page 2.

- Q: Can't get video out with vMix.
  A: vMix23 and above firmware is able to output NDI|HX video.

- Q: Video is frozen when I use NDI stream.
  A: NDI signal transmitting is over IP/network, when video is frozen, which means NDI signal is lose while network transmitting, so please make sure your network is stable. Good network will give you well performance.

- How much Bandwidth does NDI HX use?

| Bitrate: 0Mbps | Bitrate(mbps) | Resolution | Frame Rate |
|---|---|---|---|
| Lowest | 0-6 | 640x360 | 30fps |
| Low | 7-8 | 1280x720 | 60fps |
| Medium | 9-12 | 1920x1080 | 30fps |
| High | 13-22 | 1920x1080 | 60fps |

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A professional
video camera, streaming, recording
solution provider
Since 2004

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User Manual at https://www.zowietek.com/uploads/PTZ/NDIUserManual.pdf

FAQ at https://www.zowietek.com/ptz-faq/