AIDA NDI® POV

HD-NDI-CUBE | HD-NDI-IP67 | HD-NDI-MINI

Full-HD NDI®|HX POV Cameras

Version 1.0

AIDA

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*NDI® is a registered trademark of Newtek Inc.**

*The information within this manual is subject to change at any time without prior notice***

Safety Guide:

1. Before operation, please read all the instructions in the manual carefully. For your convenience, please keep this manual.

2. Ensure the power supply input is within the recommended rate before powering on.

3. Camera power voltage = 12VDC, with a rated currency to 2A.

4. Please keep the power cable, video cable, and control cable safe and out of obstructions.

5. Operational temperature of the camera is between 0-50C / 32F-122F. To avoid damage, do not pour anything inside the camera. Avoid direct sunlight or outdoor environments.

5a. For weatherproof models (IP67 and MINI,) Operational temperatures must still be within 0-50C / 32F-122F. Cabling is not weather resistant, and will need to kept away from direct sunlight or outdoor environments. The camera housing is rated for IP67 protection, keeping the internals free from dust, moisture, and even submersion of 1M up to 30 minutes. Note that misuse of this rating will void your warranty.

6. Do not remove the camera housing or cover. For service, please contact our support line.

7. Use a dry, soft cloth to clean the camera housing with a neutral cleaning agent when needed.

Packing List:

Check for the items below when opening the package:

-Camera Model (HD-NDI-CUBE, HD-NDI-IP67, HD-NDI-MINI)

-PoE+ Adapter Cable

-Weatherproof Cabling Adapter (IP67 and MINI)

-Power Adapter (With International Plugs)

-C mount adapter (CUBE)

-Sensor Cap (CUBE)

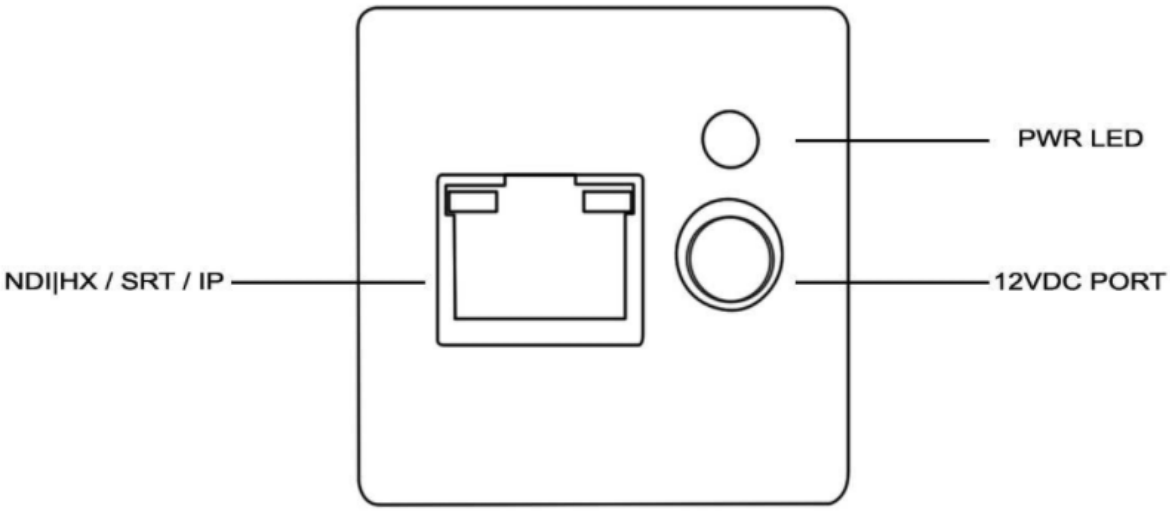
Quick Start:

1. Ensure that all cable connections are secure before powering on the camera.
2. Camera Resolution is set to 1080 30p. Default IP address of the camera will be 192.168.1.188.

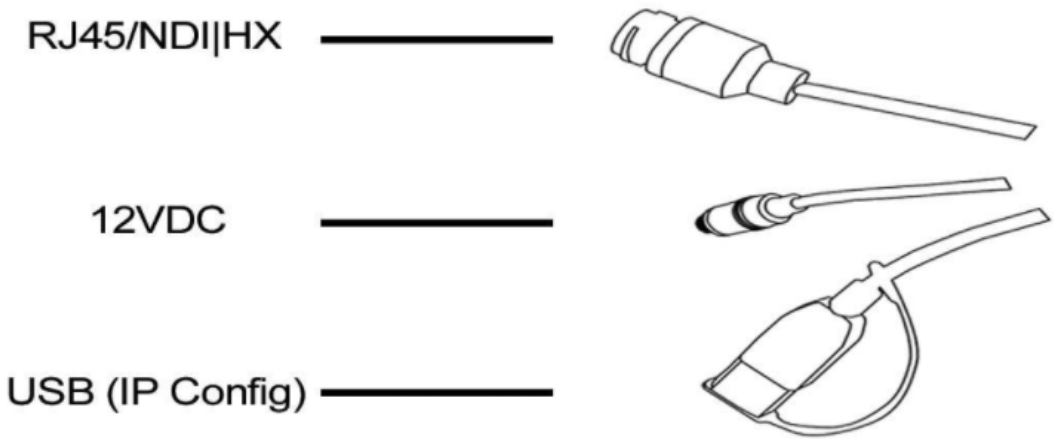
   Please change your PC IP to match the cameras IP address. If you enter the IP address of the camera into a web browser (chrome, edge, opera, firefox, etc) you should get a login panel. From there you can adjust any settings on the camera.

Camera Outputs:

HD-NDI-CUBE



HD-NDI-IP67 & HD-NDI-MINI



Product Highlights:

- Contains a Sony CMOS ISP (1/3” progressive CMOS sensor) providing up to 1920x1080 full HD resolution.
- Utilizes NDI®|HX2 for the lowest latency, quality and compression video over a single network.
- Autodiscover enabled for fast installation over any network.
- Standard CS 6mm 5MP lens (CUBE &IP67) for a standard 72 degree HFOV shot.
- Standard M12 4mm 3MP lens (MINI) for a standard 80 degree HFOV shot.
- Full HD video over NDI®HX, SRT, RTSP and RTMP.
- Fully adjustable camera settings, from White balance, exposure settings, and image parameters.
- PoE+ Adaptable: Utilizing the PoE dongle allows for 1 cable connection.
- Controllable via Sony VISCA over IP or Web UI.
- Free firmware updates when needed.
- Mountable ¼”20 tripod holes on the top and bottom. (Excludes MINI – only has a bottom ¼”20 tripod hole)
- Utilizes a USB tool for hassle-free IP settings.

Shared Specs:

Video Interface	NDI®|HX, SRT, RTSP, RTMP
Sensor	1/3” Sony Progressive CMOS Sensor
Control Port	RJ-45 (VISCA over IP), NDI
Network Speed	1000M
Video Encode	H.264/H.265
Bit-Rate Control	Variable Bit Rate, Constant Bit Rate
Video Bit Rate	1024 kbps (min) ~ 20480 kbps (max)
IP Protocol	IP, RTSP, RTMP, VISCA over IP, NDI®|HX2
POE+	Adaptable with Extension (IEEE802.3at)
Minimum Lux	0.01 Lux
White Balance	Auto/Indoor/Outdoor/One Push/ATW/Manual
Exposure	Auto/Manual
Gamma	Supported
WDR	Supported
BLC	Supported
2D/3D NDR	Supported

HD-NDI-CUBE Specs:

Lens	5MP 6mm CS Mount Lens
Lens Swappable	Supports HD/4K lenses for 1/3” sensors
Weatherproof	N/A
Cable Length	N/A

HD-NDI-IP67 Specs:

Lens	5MP 6mm CS Mount Lens
Lens Swappable	*Not all lenses supported – based on size and angle
Weatherproof	IP67 Rated
Cable Length	3M / 10 ft

HD-NDI-MINI Specs:

Lens	3MP 4mm CS Mount Lens
Lens Swappable	*Not all lenses supported – based on size and angle
Weatherproof	IP67 Rated
Cable Length	3M / 10 ft

Supported Video Formats:

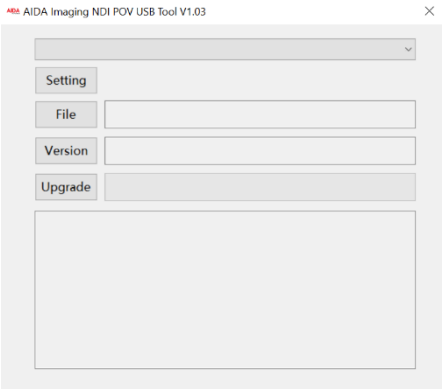
Video Formats Supported	NDI|HX SRT IP (frames)	1920x1080 3~60 Frames 1024x720 3~60 Frames

USB Tool (Configure and Settings):

The USB tool can be downloaded from our website at aidaimaging.com/download (Currently for now, PC only)

1. Establishing a connection:

After downloading the software, you can open the software. It will look like this:



The dropdown menu refers to the camera menu.

Setting allows you to change the camera's IP settings.

The file button allows for accessibility to firmware updating if you don't have access to the webUI.

Version grabs the camera's current firmware.

Upgrade will initiate the firmware update if a file has been selected.

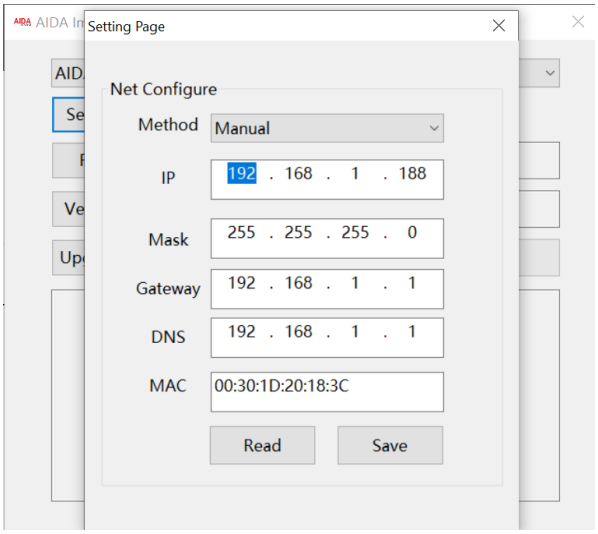
WARNING: Please note that the camera can get damaged if any file is chosen for upgrade. Please follow all instructions provided before trying to upgrade any camera.

Start by powering your camera, and connecting a USB cable (CUBE) or the USB cable off the dongle (IP67, MINI) to a PC. When connected, the camera will automatically populate the field:

If you do not see the field populate, please try another USB cable or USB port. If that doesn't work, please check your device manager, and see if you can find a COM port device. If you do not, please contact our support for further support.

2. Utilizing the tool:

Once the camera has been selected, you can click the Setting button to open the cameras IP settings.



Here you are able to change a couple things:

Method: Allows for toggle of DHCP or Manual Settings.

IP: See or Change the IP address of the camera.

Mask: Set the subnetmask for the camera.

Gateway: Set the default gateway for the camera.

DNS: Set the DNS of the camera

MAC: View or change the MAC address of the camera.

Note that any changes you make on this page will require a restart to apply. Once you have your settings, please click “Save”. From there, unplug both the power and USB cable from the PC.

Wait a couple seconds and then reconnect the camera to the PC.

To check if the settings saved, you can click the “Read” button to gather the cameras current settings. Use this to check if your settings have changed to your desirable ones.

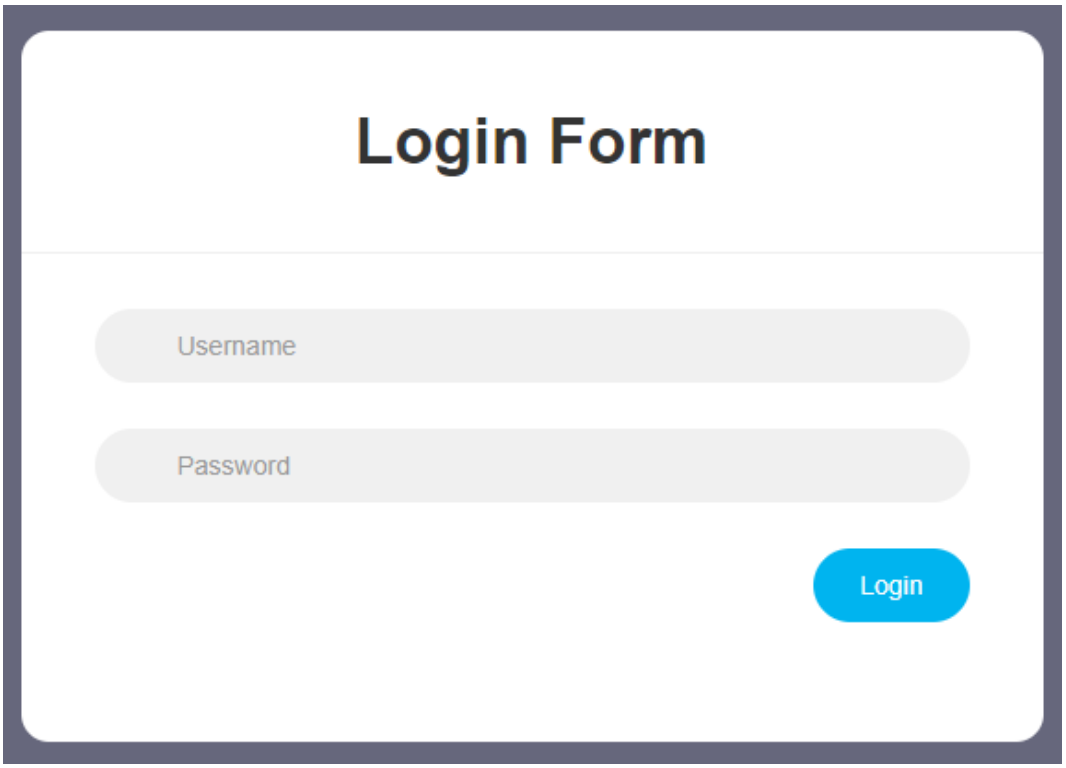
Web Settings:

The camera web interface supports most major browsers such as Chrome, Firefox, IE, Safari, Opera, etc.

1. Login

Open your desired browser and in the address bar, please type the camera's default IP address: 192.168.1.188. (If you are unable to connect, please locate the IP address under the INFO menu, and make sure your device is connected to the same network as it)

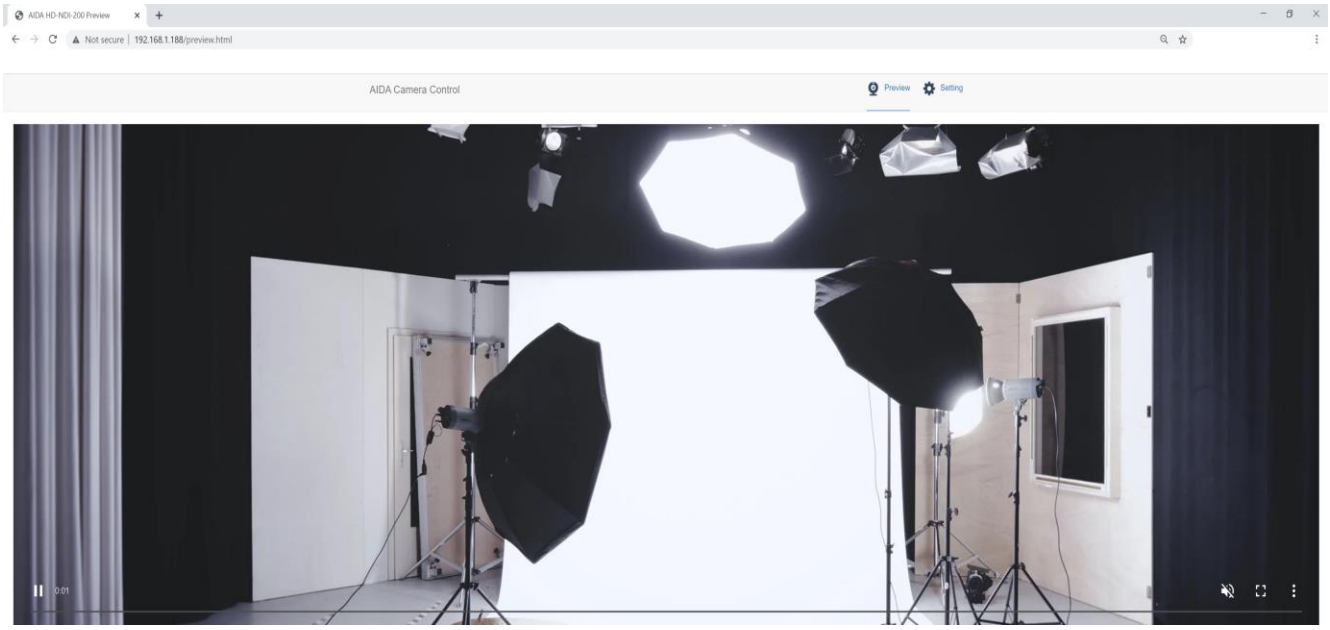
You will be prompted with the following screen. The default username and password for the camera is both **admin**.



Web Settings: (CONTD.)

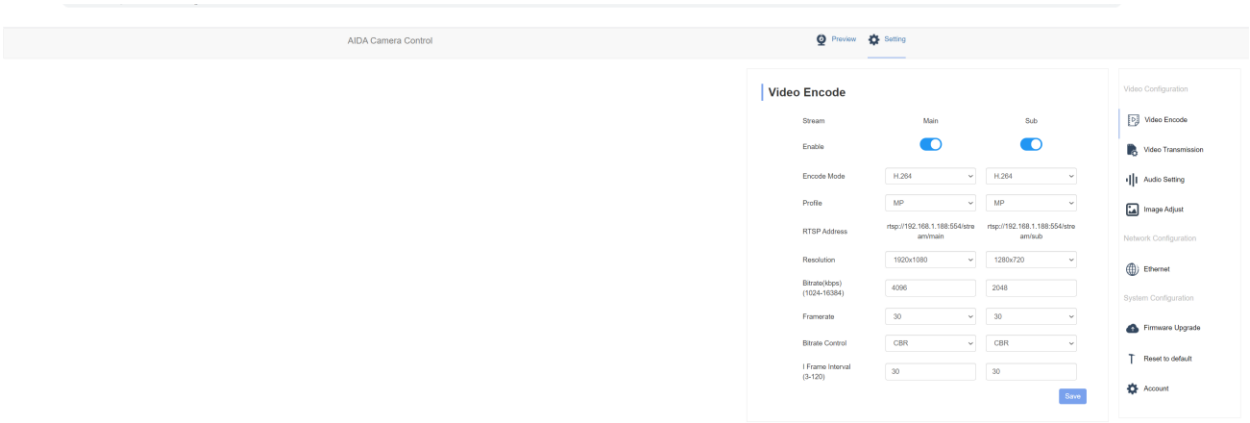
2. Realtime Preview

When logging in the first time, you will see the real-time preview:



Note that the preview is trailing around 1-2 seconds in real-time. This should only be used as a preview screen to see what the camera is seeing, perfect for determining if changes need to be done.

Clicking the settings tab will lead you to the settings menu of the camera as seen below:

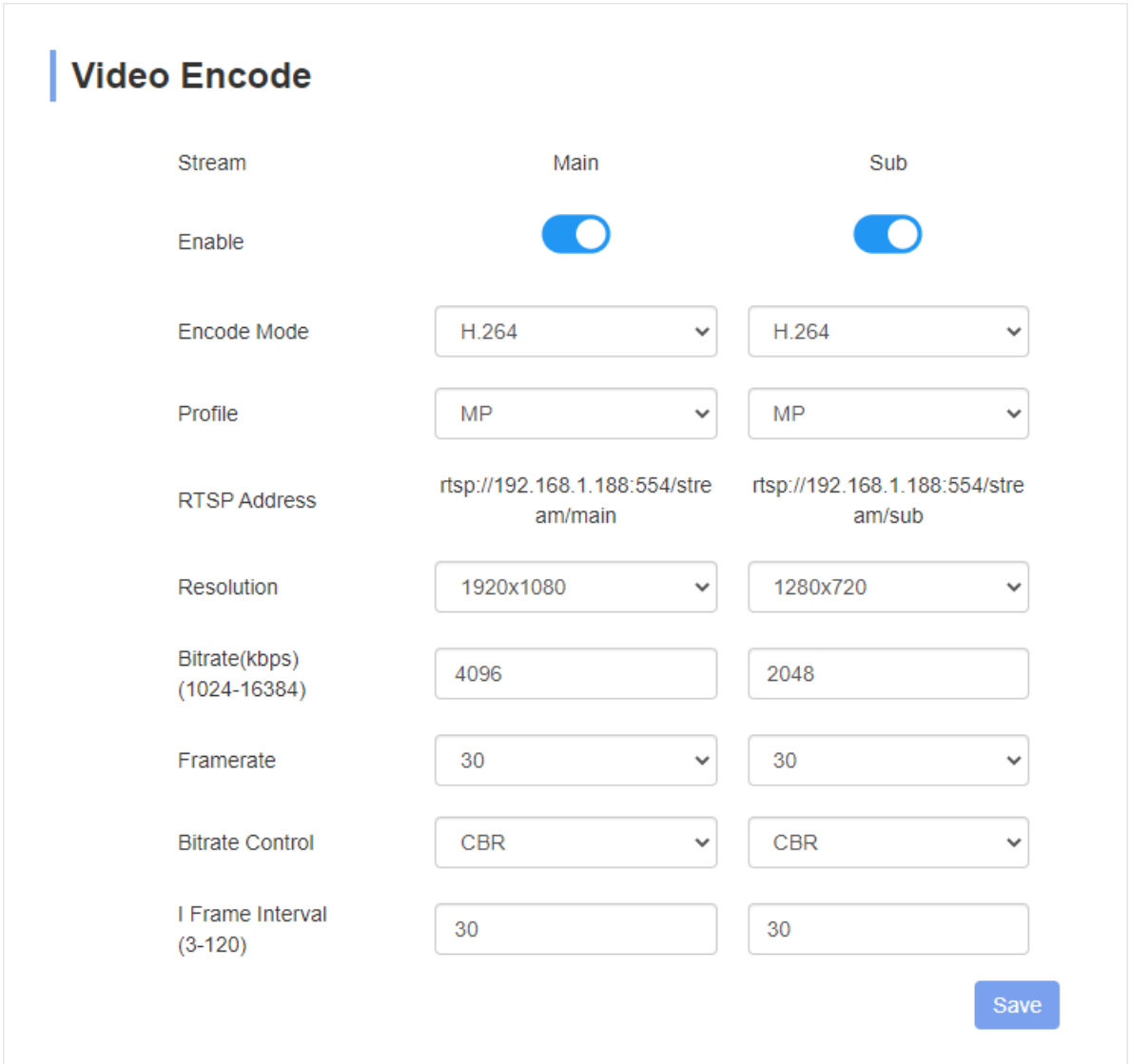


Web Settings: (CONTD.)

3. Camera Parameters

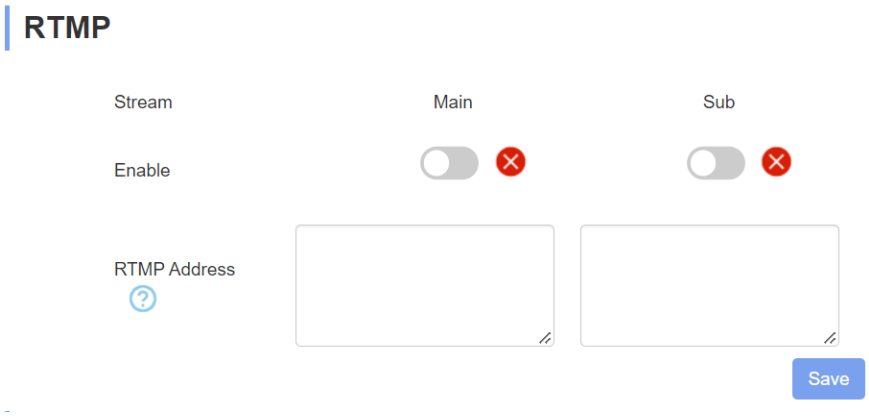
Clicking on the settings tab on the top right allows you to enter the network and image settings of the camera.

The first tab you will encounter is the **video encode**. Under video encode, you can change the encode mode, resolution, bitrate, framerate, bitrate control, and I-frame interval. You may also enable or disable the streams.



Web Settings: (CONTD.)

The **Video Transmission** tab is responsible for the direct streaming protocol: RTMP. Under this tab, you can change the RTMP settings for direct streaming to social media platforms, as well as enable or disable NDI®.



How to stream directly to any RTMP service (Youtube, Facebook, etc)

Streaming directly to these sites are easy with the HD-NDI-POVs built in encoder! Here's how to stream directly with using your camera to any website that utilizes RTMP for streaming:

Step 1: Find the RTMP URL for the website. For ex: Youtube's is rtmp://a.rtmp.youtube.com/live2 Place it in the Main box and check it on.

Step 2:Next, add a forward slash (/) after the URL if it doesn't have it, and then paste your stream key right after. Remember to never give your stream key to anyone!!

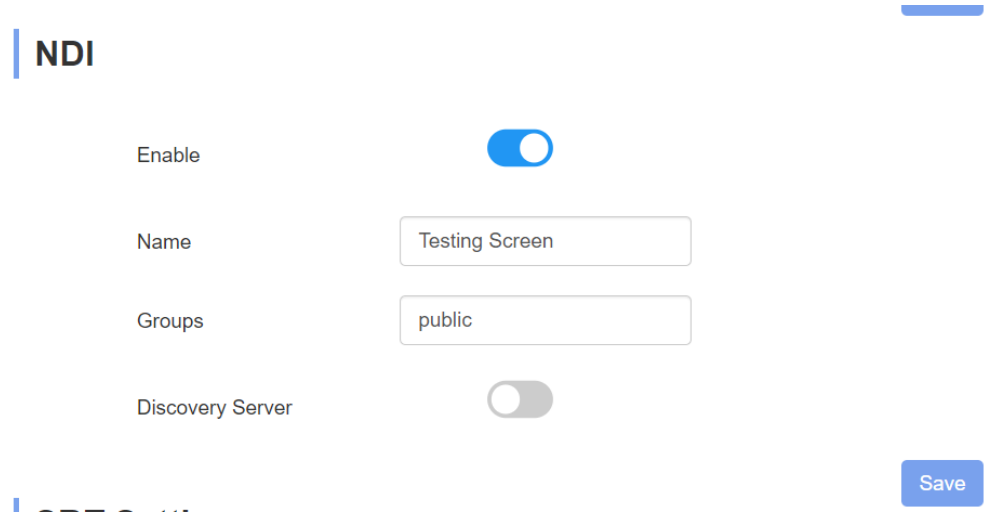
Step 3: Click the save on the bottom right.

Step 4: Complete! If you are embedding audio, audio will also be sent to the stream. Note that the camera will keep sending data to the stream destination until you turn off the stream. Rule of thumb is that if the indicator next to enable is blue, then it is still streaming. If it is a red X, then it is not.

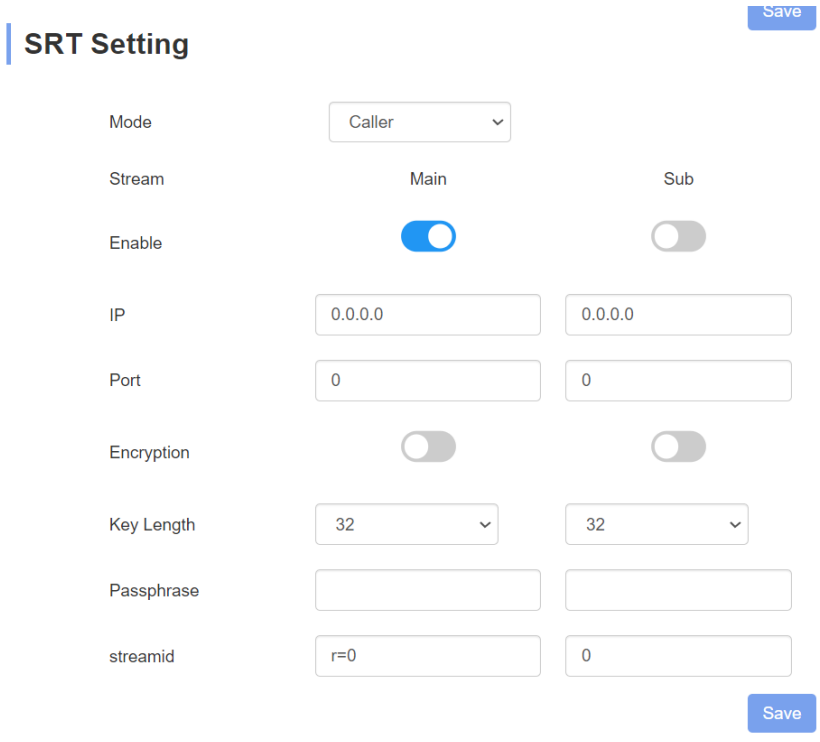
We do have a Youtube tutorial on this as well found here: Video

Web Settings: (CONTD.)

Under the **Video Transmission** tab is the NDI source tab. From here, you are able to change the name, group and allow the possibility of Discovery Server from this menu!

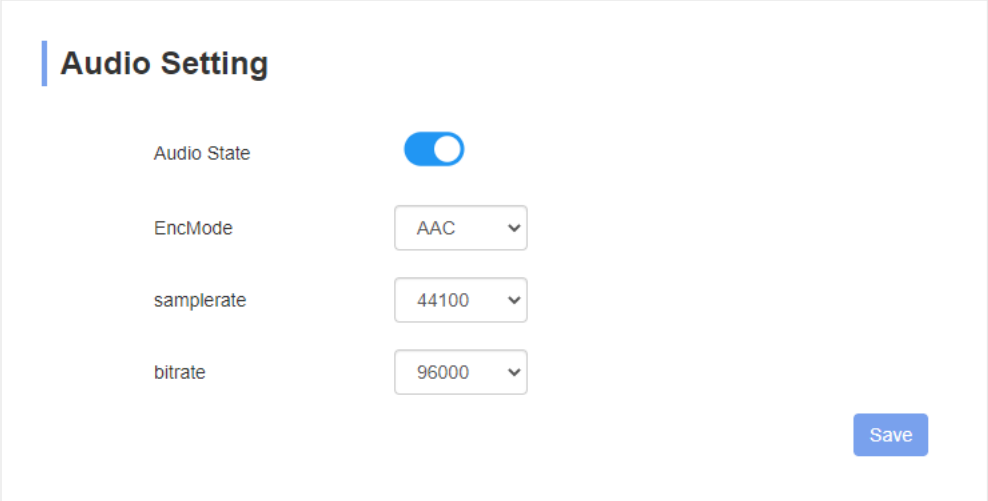


The last tab on the **Video Transmission** page is the SRT Settings. Here, you are able to set up the camera as a Caller, or Listener for the SRT protocol. For more information on how to set this up, please visit our Youtube channel for a tutorial!



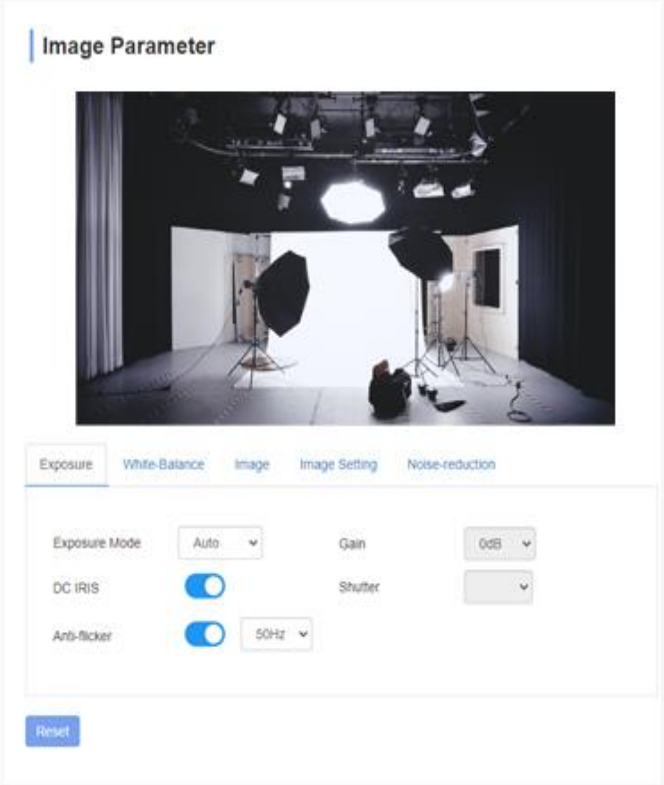
Web Settings: (CONTD.)

The **Audio Settings** tab is responsible for the audio embedment settings. Here you can turn on or off the audio. You are also able to change the encode mode, as well as the sample and bitrate.



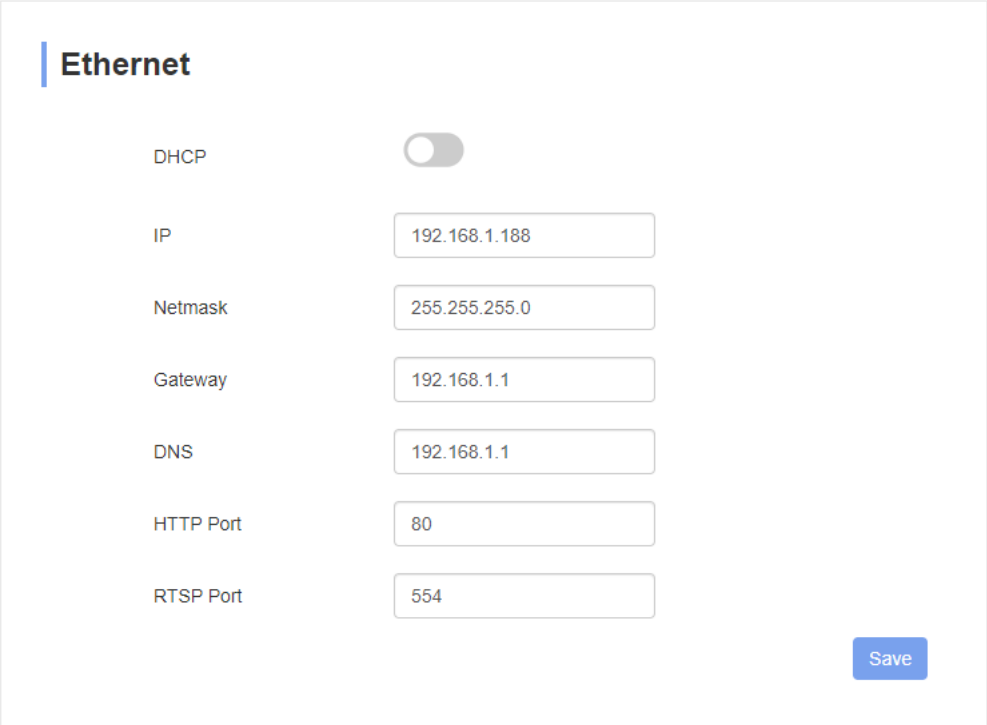
The **Image Parameter** tab allows you to access the camera settings.

Here you are able to change your image settings via the web interface instead of the OSD menu. You have access to all the settings you can normally find on the OSD menu.

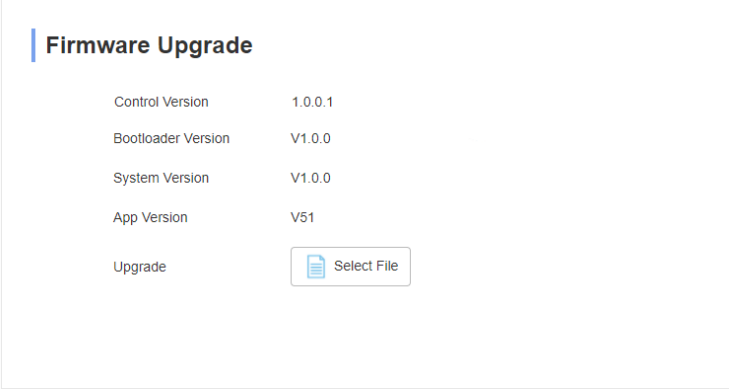


Web Settings: (CONTD.)

The Ethernet tab allows you to change the IP settings of the camera, as well as other settings. We highly recommend not changing anything you don't know, as it can cause irreversible damage not covered by warranty.

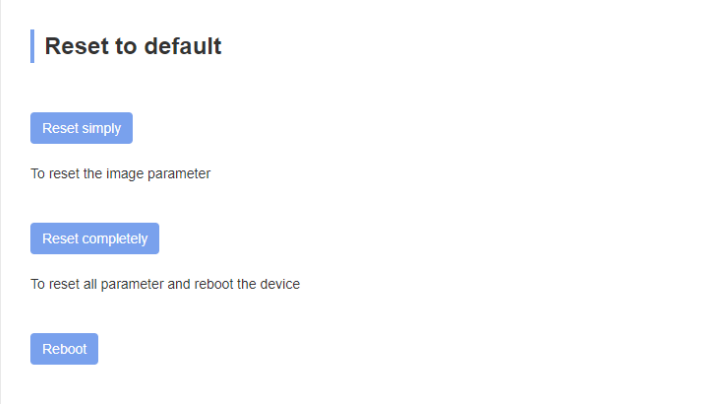


The **Firmware Upgrade** tab allows you to update the firmware of the camera. Stay up to date by signing up for our newsletter, as well as visit our website at aidaimaging.com/download for the latest and greatest firmwares!

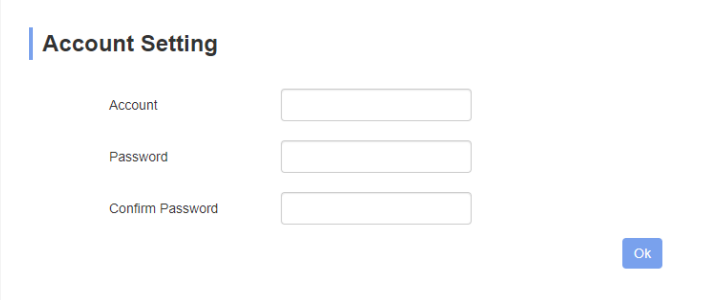


Web Settings: (CONTD.)

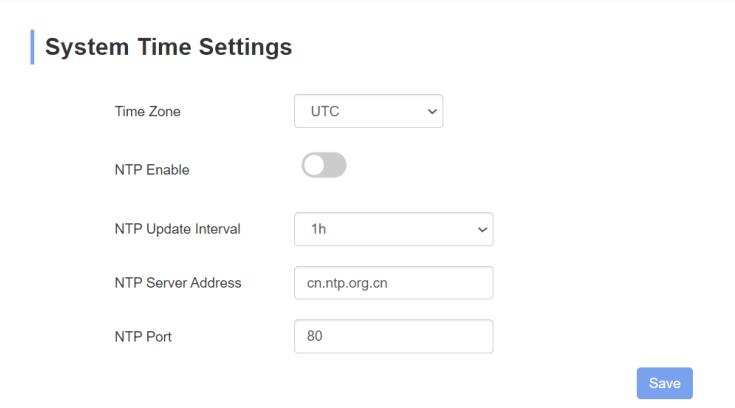
The **Reset to Default** tab allows you to reset the image parameter, or factory reset the camera. It also allows for you to remotely reboot the camera.



The **Account** tab allows you to change the username and password of the camera IP address. If you happen to forget the username or password, please factory reset the camera via the OSD menu to reset the password.



The **System Time** tab allows you to sync cameras based on the NTP protocol. This helps out with general latency timing for your cameras.



VISCA Control:

The HD-NDI-POV series are able to be controlled via VISCA over IP.

To setup VISCA over IP, please use the RJ45 port and connect it to your software or hardware that helps control camera parameters. Here are some specs on controlling the camera over IP:

Control Port: RJ-45 Gigabit LAN

IP Protocol: IPv4

Transmission Protocol: TCP/UDP

IP Address: Default (192.168.1.188) Check OSD menu for more info

Port Address: 52381

Confirm send/transmission control: Depends on software

What is VISCA over IP?

VISCA commands are the communication between the controller and the camera equipment. These commands are sent via UDP on the network. Since UDP transmission isn't that stable, a couple of steps must happen before a setting is executed. The controller first sends out a VISCA command. The camera equipment then receives the VISCA command and returns that message aback to the controller. Once that command is executed, the action will follow suit and the message will be complete. Each VISCA command controls its own setting, so there are no overlaps in existing commands.

VISCA Protocol:

For our VISCA protocol, please head to our download page at aidaimaging.com/download to find the full command packet.

NDI®|HX2 Protocol:

What is NDI®?

NDI® is NewTek's innovative Network Device Interface technology, is a royalty free standard enabling IP video workflows across Ethernet networks. NDI®|HX2 is a bi-directional standard that allows video systems to identify and communicate with one another over IP, and to encode, transmit, and receive multiple streams of broadcast-quality, low latency, frame-accurate video and audio in real time. The NDI®|HX2 encoding algorithm is resolution and frame rate independent, supporting up to 4K and beyond, as well as multi-channel, floating-point audio up to 16 channels and beyond. NDI®|HX2 also includes tools to implement video access and grouping, bi-directional metadata, tally, and more

What about NDI®|HX2?

NDI®|HX2 is the next generation for efficient NDI protocol. It uses H.264, but is also capable of using H.265 (HEVC) for even more efficient compression. There are a couple of differences between NDI®|HX2 and its predecessor, NDI®|HX.

Some differences is that NDI®|HX2 is a true native NDI® stream from the camera source. It is considered a better implementation than the previous generation, allowing for a more reliable, lower latency video. It shares very similar features to true NDI®, such as discovery options, ability to carry metadata, and control of low level network transmission. (TCP)

You will also not need any drivers for NDI®|HX2, as NDI 4 will be used to decode it. This makes it a lot easier on previous versions of equipment. For more info on the differences between the three different types of NDI®, please view the next page.

Warranty and Support:

Warranty:

AIDA Imaging warrants its cameras and items to be free from defects under normal use. With that in mind, we fulfill 2 years of warranty from the date of purchase unless otherwise noted. Please refer to our website for more information at: aidaimaging.com/warranty

Support:

If you would like additional support or explanation on anything on this manual, please feel free to go to our FAQ page on our website at aidaimaging.com/support. If you are in need of additional help, or have any general questions, please feel free to contact us in these various ways:

Telephone: 909.333.7421

Email: Support@aidaimaging.com

Website: aidaimaging.com

We are open yearly, Mon-Fri 8A.M. to 5P.M. PST, excluding major holidays and events.

Also, keep up to date with firmwares and new releases from AIDA Imaging by signing up for our newsletter.

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