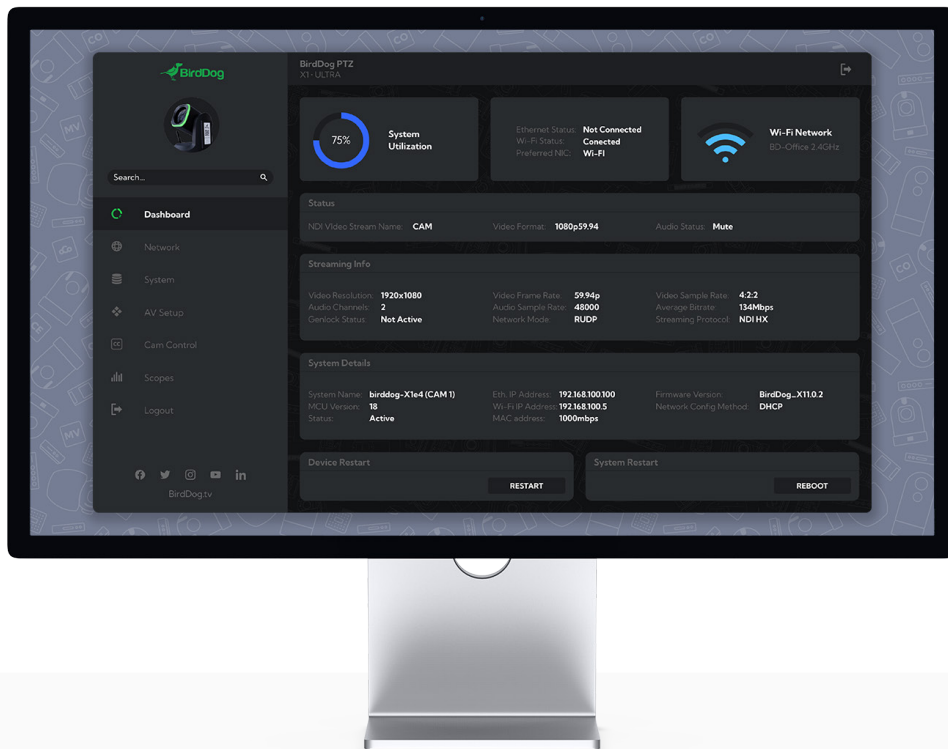




# BirdUI User Guide

April 2024



NDI

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**Note:** some features are available on specific models.  
Check tech specs for your camera model to confirm capabilities.



# Web Configuration Panel

The web configuration panel (BirdUI) offers remote access to the settings of the Camera. It also allows you to apply firmware updates to your camera.

### Access via a web browser (URL)

The Camera is configured to automatically receive a network IP address from the computer network via DHCP (Dynamic Host Configuration Protocol). Most corporate, education and home networks have a DHCP server present on the network to allow this to occur. Usually your Internet Router provides this.

If the Camera receives an IP address automatically from this server (DHCP), the IP address can be discovered in several ways, including BirdDog Central Lite software available from [here](#).

**NOTE:** Your computer will need to have 'Bonjour' services loaded in order to access the unit via it's user defined name. Apple devices come pre-installed with Bonjour, while Windows devices need a plugin available from [here](#).

### Accessing the Camera on a network without a DHCP server

Some standalone or private networks may not have a DHCP server. After 30 seconds of waiting for an automatically assigned IP address, the Camera will reassign to the designated fallback address (the default is 192.168.100.100).

In order to access the BirdUI on a network which is configured to a different subnet, change your computers IP address to match the BirdDog unit. Once you gain access to the BirdUI, choose your IP address to match the rest of the devices on your network.

For instructions on setting your computer's IP address, please consult your computer operating system manual or IT support resources.

**NOTE:** If you are using an X Series Camera, you can access the BirdUI by scanning the QR Code displayed on the e-ink screen.

## Password Management

Once you direct your web browser to the BirdUI you will be presented with the Dashboard. To make changes to any settings, you'll need to log in.

### Default Password

The BirdUI is secured by a user-selectable password. The default password is: birddog (one word, lower case).

### Password Reset

To change the password simply login using the default password, navigate to the Network tab in the BirdUI, and select Change Password.

It is recommended to change this password in a network environment where the Camera is shared with other users (e.g. not private). By entering this password, the user is granted full access to the Camera configuration settings and could interrupt a live program.



Enter Password

OK



# BirdUI Layout

The BirdUI is organized into the following panels:

## 1. Dashboard

Overall view of important information such as the network connection type and video stream format and resolution.

## 2. Network

General network settings such as DHCP IP Address details, timeout fall-back address and camera network name, as well as NDI® specific network settings

## 3. System

System admin functions such as updates, password change, designation of group access and camera reboot.

## 4. AV Setup

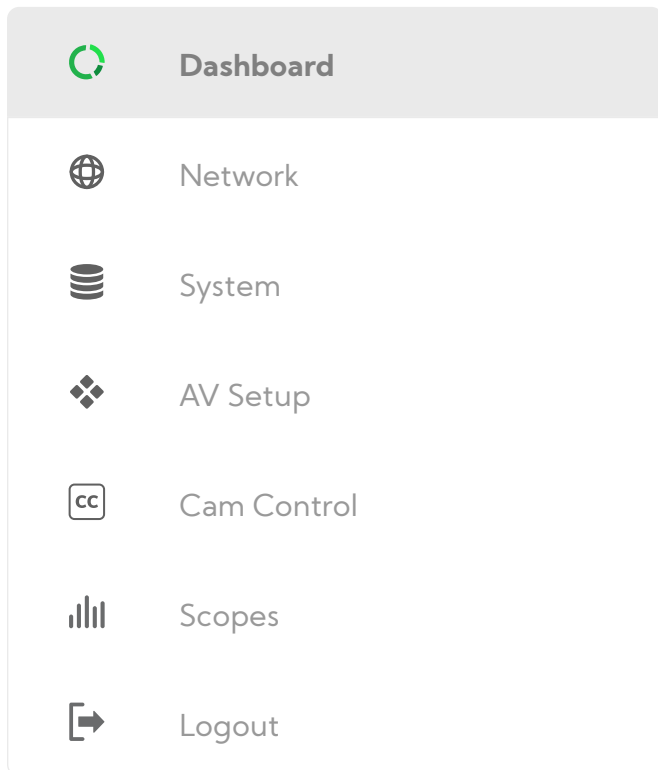
Full NDI® encode management and audio settings.

## 5. Cam Control

Exposure, white balance, picture and color settings and Scopes.

## 6. Logout

BirdUI logout.





# Dashboard

The Dashboard displays an overall view of important information.

The dashboard for BirdDog PTZ X1 ULTRA shows the following information:

- 1. Device Mode/Source Status/Wi-Fi Strength:** Device Mode: Encode, Source Status: Streaming NDI, Wi-Fi strength icon.
- 2. System Utilization:** 75% CPU utilization.
- 3. Connection Status:** Ethernet Status: Not Connected, Wi-Fi Status: Connected, Preferred NIC: Wi-Fi.
- 4. WiFi Network:** Wi-Fi Network: BD-Office 2.4GHz.
- 5. Status:** NDI Video Stream Name: CAM, Video Format: 1080p60, Audio Status: Mute.
- 6. Stream Info:** Video Resolution: 1920x1080, Video Frame Rate: 60, Video Sample Rate: 4:2:2, Audio Channels: 2, Audio Sample Rate: 48000, Average Bitrate: 134Mbps, Genlock Status: Not Active, Network Mode: RUDP, Streaming Protocol: NDI HX.
- 7. System Details:** System Name: birddog-X1ULTRA, MCU Version: 1, Status: Active, Eth. IP Address: 192.168.100.100, Wi-Fi IP Address: 192.168.100.5, MAC address: e8:eb:1b:49:a6:78, Firmware Version: BirdDog\_X1\_1.0.2, Network Config Method: DHCP.
- 8. Device Restart:** RESTART button, System Reboot: REBOOT button.

## 1. Device mode/Source Status/Wi-Fi Strength

Encode or Decode. For the Camera this is fixed at Decode.

## 2. System Utilization

Current computer system CPU utilization.

## 3. Connection Status

WiFi and Ethernet connection status and the preferred network interface.

## 4. WiFi Network

WiFi Network name and strength.

- Full: > -30dBm
- Good: between 30dBm and -50dBm
- Medium: between -50dBm and -67dBm
- Poor: between -67dBm and -90dBm
- No signal: <-90dBm



FULL



GOOD



MEDIUM



POOR



NO SIGNAL



OFF



## 5. Status

- a. NDI Video Stream Name.
- b. Selected video format.
- c. NDI audio status as set.

## 6. Stream Info

- a. Video resolution as set. Number of audio channels of the camera.
- b. Video frame rate as set. The audio output sample rate of the camera.
- c. Video chroma subsample rate and average NDI® bitrate of the camera. The Camera has a fixed chroma subsample rate.
- d. Streaming protocol. Select from NDI or NDI HX.

## 7. System Details

- a. System name as set.
- b. Network details as set.
- c. Online status of the camera.
- d. current firmware and MCU version of the camera.
- e. Ethernet and WiFi IP address and camera MAC address.
- f. Network Configuration Method (preferred transmission method).

## 8. Device Restart and System Reboot

Click the Device Restart button to restart the NDI® stream. This may be necessary after changing key image settings e.g., resolution. Click the Reboot button to perform a camera reboot.

# Network

## Ethernet Network tab

### Network Details

Configuration Method	<input type="radio"/> STATIC <input checked="" type="radio"/> DHCP	DHCP Timeout	<input type="text" value="20s"/>
IP Address	<input type="text" value="192.168.100.100"/>	DHCP Fallb. IP Address	<input type="text" value="192.168.100.100"/>
Subnet Mask	<input type="text" value="255.255.255.0"/>	SHCP Fallb. Sub. Mask	<input type="text" value="255.255.255.0"/>
Gateway Address	<input type="text" value="192.168.100.1"/>	BirdDog Name	<input type="text" value="BirdDog-00122"/> .local

## Configuration Method

Here you can set the network configuration to either DHCP (default) or Static. DHCP simplifies the management of IP addresses on networks. No two hosts can have the same IP address, so assigning them manually can potentially lead to errors. If your network is set up for DHCP, this is generally the best configuration to choose.



If you do choose to go with a Static IP address, you'll need to add the IP Address, Subnet Mask and Gateway Address information according to the requirements of your network.

### DHCP Timeout, Fallback IP address, Fallback Subnet Mask

You can set the timeout period during which the Camera will look for a DHCP IP address. After this period, the camera will default to the designated fallback IP address.

This can be useful if you use your camera in other network environments. For example, if a DHCP server is available in your normal office or studio application, the camera will use the DHCP supplied IP address. If you then use the camera in another application without a DHCP server, your camera will always default to the known fallback IP address. NOTE: Do not set the fallback IP address the same as the camera IP address. It is recommended to keep the fallback IP address.

### BirdDog Name

You can give your camera a meaningful name to make identification easier when viewing NDI® sources on a receiver such as a TriCaster, vMix or Studio Monitor. Be sure to make the name unique, as no two devices on the network should have the same name. The name can be any combination of a-z, 0-9, and '-'.

After renaming your camera, navigate back to the System menu and click the REBOOT button. The camera will re-initialize and you'll be good to go.

## Wi-Fi Network tab

Wi-Fi	<input checked="" type="checkbox"/> ON <input type="checkbox"/> OFF	Configuration Method	<input type="checkbox"/> STATIC <input checked="" type="checkbox"/> DHCP
SSID:	<ul style="list-style-type: none"><li>WiFi Network Name 01  </li><li><b>BirdDog Office 2.4GHz</b> </li><li>WiFi Network Name 03 </li><li>WiFi Network Name 04  </li><li>WiFi Network Name 05  </li><li>WiFi Network Name 06 </li><li>WiFi Network Name 07  </li></ul>	IP Address	192.168.100.5
	<input type="checkbox"/> Set selected SSID as favourite	Subnet Mask	255.255.255.0
		Gateway Address	192.168.100.1
		DHCP Timeout	20s
		DHCP Fallb. IP Address	192.168.100.100
		SHCP Fallb. Sub. Mask	255.255.255.0
		BirdDog Name	BirdDog-00122 .local
			<input checked="" type="button" value="APPLY"/>

## Wi-Fi

Turn the WiFi on or off.

## SSID

WiFi Network Name 01
<b>BirdDog Office 2.4GHz</b>
WiFi Network Name 03

- Select the network from the list of SSIDs (network names). The selected network is identified in blue.
- Click the cross to remove a network from the list.



- c. A lock icon denotes a password protected network. If selected, you'll be prompted for a password

**New Wi-Fi Network**

The Wi-Fi selected requires a WPA2 password.

Password

The other settings are same as above for the Ethernet Network tab.

## NDI Network Settings

**NDI Network Settings**

**NOTE:** Changing of NDI network settings can have a major impact on system compatibility and performance across your network. You should carefully consider the need to change these settings. Consult the user guide for more details.

Transmit Pref. Method	<input type="text" value="TCP"/>	⋮	NDI Discovery Server	<input type="text" value="ON"/>	<input type="button" value="OFF"/>
Multicast Net Prefix	<input type="text" value="239.255.0.0"/>		NDI Discovery Server IP	<input type="text" value="192.168.1.123"/>	
Multicast Net Mask	<input type="text" value="255.255.0.0"/>				
Multicast TTL	<input type="text" value="1"/>				<input type="button" value="APPLY"/>

The Camera operates with the latest NDI® Libraries. There are several options to configure the Camera behavior NDI® network. Each configuration has its benefits, however it is recommended to utilize the default in an TCP transmit method unless you have reason to change.

### Preferred Transmit Method

#### TCP

TCP is the default method of transmission for NDI®. It operates well within local networks with predictable latency and limited jitter. BirdDog recommends that TCP be used for typical applications, and only using alternative transports for specific reasons.

#### UDP

UDP is recommended for networks where there is extended latency from one end to the other. The nature of UDP means that it does not receive a confirmation of each packet being successfully received – vastly improving performance on busy networks. UDP can have some consequences if there are other issues on the network such as jitter or lost packets as it will not inherently re-sent a lost packet.

#### R-UDP (Reliable UDP)

This protocol bridges the performance of TCP and UDP. Compared to TCP, it reduces overall network load (allowing more NDI® streams) by not requiring every packet to be ‘acknowledged’ by every receiver – has error correction built in for smoothness and reliability.





## Multicast

Multicast is especially useful for use-cases that require a single source to be received on multiple receivers simultaneously. Utilizing Multicast offloads the distribution of the NDI® A/V packets from the Camera to the network infrastructure. You should take care to ensure your network is specifically configured to support Multicast as using it on an ill-prepared network can create unintended network problems.

## NDI Discovery

If you choose to use a NDI® discovery server, you can configure it in this tab. By default, NDI® utilizes mDNS (multicast Domain Name System) to create the zero configuration environment for discovery. Unless the network is specifically configured to not allow mDNS, NDI® sources will be discovered.

The NDI® discovery service is designed to replace the automatic discovery NDI® uses with a server that operates as an efficient centralized registry of NDI® sources that requires much less bandwidth. Multiple servers can be specified for failover redundancy. NDI® discovery server also helps with location of devices that reside on different subnets. The NDI® Discovery Server is available in the free [NDI SDK](#).

1. If you are using one or more NDI® Discovery Servers, click the ON button.
2. Enter a comma delimited list of the IP address(es) of your NDI® Discovery Server(s).
3. Click the APPLY button to save your changes.

## System

### Password Settings

**Password Settings**

Current Password	.....	Confirm New Password	.....
New Password	.....		<b>APPLY</b>

The BirdUI is secured by a user-selectable password. To make changes to any settings, you'll need to log in. The default password is `birddog` (one word, lower case). It is recommended that the default password be changed, since the BirdUI grants full access to the camera configuration settings.

You can change the password in the Password Settings tab.

1. Enter the current password.
2. Enter the new password. It is recommended that you change this password to retain administration rights to prevent unauthorized changes in a network environment where PTZ Keyboard is shared with other users (e.g. not private). Confirm the new password and click the APPLY button.

### System Update

We are always adding new features and improving the performance of our products, so installing the latest firmware will provide you with the best user experience.

To upgrade the firmware, [download the firmware](#) and follow the Firmware Upgrade Instructions located in the download folder.

**System Update**

CHOOSE FILE...

**UPDATE**

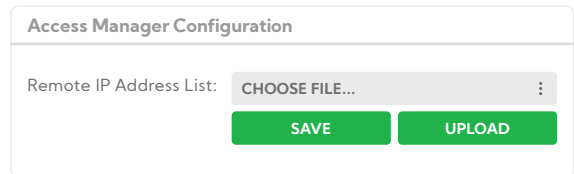
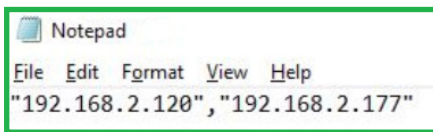


## Access Manager Configuration

### Remote IP List

By default, NDI® devices are visible to each other only when they're on the same VLAN. If you want visibility or control of a device on a different VLAN, you need to add it's address manually as a Remote IP. You can upload and save Remote IP Lists for sharing with other cameras. To upload a list:

1. Click the CHOOSE FILE button to load your Remote IP List in UTF-8 encoded string format.
2. Click the UPLOAD button. Do not upload a blank list.

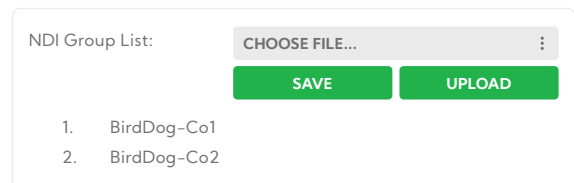
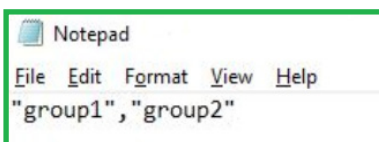


### NDI Group List

Set the NDI® group list. NDI® groups allow you to restrict communication to only devices that belong to the same NDI® group. NDI® Groups can be very useful in larger environments to control visibility and access amongst various groups. You can upload and save NDI Group Lists for sharing with other cameras. Groups also need setting up in NDI Access Manager, available in [NDI Tools](#).

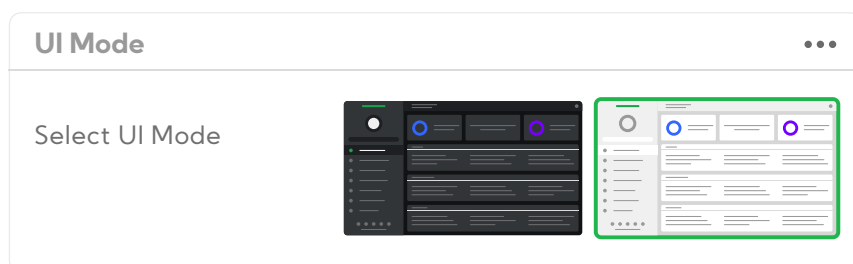
To upload a list:

1. Click the CHOOSE FILE button to load your NDI® Group List in UTF-8 encoded string format.
2. Click the UPLOAD button. Do not upload a blank list.



## UI Mode

Click on an icon to choose your desired UI colour scheme.





# AV Setup

## Device Settings

Device Settings			
Preferred NIC	<input type="button" value="ETHERNET"/>	<input checked="" type="button" value="Wi-Fi"/>	Onboard Tally <input type="button" value="ON"/>
HDMI Output Mode	<input checked="" type="button" value="ENCODE"/>	<input type="button" value="DECODE"/>	Device Restart <input type="button" value="RESTART"/>
HDMI Output Format	<input type="button" value="1080p60"/>	<input type="button" value="⋮"/>	Color Space <input type="button" value="YUV"/> <input checked="" type="button" value="RGB"/>

### Preferred NIC

Although you may have Ethernet and WiFi both enabled, you can set the preferred NIC for streaming. However, both networks remain available for control, BirdUI and API use.

### HDMI Output Mode (Enc/Dec)

Select the mode of operation (Encode or Decode) of the HDMI port.

### OLED

Off/On: Enables or disables the camera OLED display.

Invert: Inverts the display for use during inverted camera mounting.

### Onboard Tally

You can choose to enable or disable the onboard Tally light.

## Encode Settings

Select from either NDI HX or UVC USB for the streaming protocol. You can also choose to disable the NDI HX output stream.

**Primary:** Select from either NDI HX or UVC USB for the primary streaming protocol.

**Secondary:** Select from either SRT or RTMP/RTSP for the secondary streaming protocol.

Primary Encode Settings	
Protocol	<input type="button" value="NDIHX"/>
Connection Type	<input checked="" type="button" value="DISABLE"/> <input type="button" value="ENABLE"/>
Port	<input type="button" value="BirdDog"/>
Latency (Milliseconds)	<input type="button" value="CAM HX"/>
Encryption	<input type="button" value="H.264"/>
Encryption Key Length	<input type="button" value="1080p60"/>
Passphrase	<input type="button" value="None"/>
Connection URL	<input type="button" value="None"/>
Apply Protocol	<input type="button" value="RESET"/> <input type="button" value="REFRESH"/>
	<input type="button" value="APPLY"/>



## Streaming Protocol

Select NDI HX or UVC as the streaming protocol. NDI HX is a lower bandwidth version of full NDI® and you can choose to use either H.264 or H.265 video compression to reduce the required network bandwidth. Choose UVC for applications where standard webcam video is required.

## NDI Groups

NDI® supports Grouping which allows you to hide the visibility of video sources to viewers that are not part of the group. If disabled (default), the video source is public and viewable by any receiver on your network. Click on the field and type a group name. Receivers can then scan for, and select your group.

## NDI Stream Name

You can give the camera NDI® output stream a meaningful name to make identification easier on any NDI®-capable receiver, particularly on networks where there are a large number of NDI® streams.

## Video Compression

Select either the H.264 or H.265 codec.

## Video Format

The Camera is capable of outputting independent video formats for both NDI® HX and SDI/HDMI. This setting affects only the NDI® video output. Please note that the video rate you select here must be of the same family as the SDI/HDMI video output, for example, 720p50 aligns with 1080i50/1080p50 but will not co-exist with any 29.97/30 fps based camera setting.

## NDI Failover Source

NDI® has a failover function where you can designate an alternate camera or NDI® source for the receiver, should this camera become disconnected or otherwise unavailable on the network. Click on the AvailableNDI Sources field to select your alternate source.

## Genlock Source

Click the dropdown to select the NDI genlock source.

## Update Source List

Pressing the REFRESH button will add new sources to the list, whereas pressing the RESET button will populate the list with only active NDI® sources. Click the APPLY button to apply your failover source change.

## Bitrate Control

Variable

Encodes the stream segments at different bitrates according to their complexity. Capable of producing higher quality streams but takes longer to process data, leading to higher latency and quality can be less consistent. When Variable is selected, you can choose settings for the I-frame or P-frame Quant Factor.

Constant

Encodes the stream at a single, set bitrate. Can be more suitable for mobile delivery and result in more reliable audio quality. When Constant is selected you can adjust the target bitrate.

## Mode

To accommodate the available bandwidth, you can choose from three bitrate control presets – Low, Medium, High and Ultra. The fifth selection, Custom, allows you to manually adjust the settings.

## GOP Size

Sets the number of frames between two consecutive I-frames in the temporal compression scheme of h.264.

## Quant Factor

Sets the level of I-frame or P-frame quantisation during video compression. Higher values result in higher compression but reduced image quality.



### Bitrate

Set the desired target bitrate for constant bitrate control. Higher bitrates result in a higher quality stream.

### Encode Screensaver

Assign a captured frame, black frame, or BirdDog logo as a screensaver.

### Capture Screensaver Frame

Click the CAPTURE button to capture the current frame for use as a screensaver.

### Stream to Network

You can choose to disable the NDI HX output stream.

## Decode Settings

### Decode Screensaver

Assign a captured frame, black frame, or the BirdDog logo as a screensaver.

### Capture Screen Frame

Click the CAPTURE button to capture the current frame for use as a screensaver. The video frame must be progressive. Interlaced frames cannot be captured.

### NDI Decode Source

To select an NDI® decode source, click the dropdown and select a source. The source will be displayed in the NDI Decode Source field. Click the link icon to navigate to a webpage if applicable. The RESET button will delete the current list and display only current NDI® sources. The REFRESH button will add newly discovered sources to the list but not remove older, currently non-active sources.

### Failover Source

If the generated NDI® stream is interrupted for any reason the receiver can automatically switch to a nominated alternative NDI® stream. This is particularly useful for live 'on air' productions where there can be no risk of still frames or black being broadcast should any source no longer be available. Pressing the REFRESH button will add new sources to the list, whereas pressing the RESET button will populate the list with only active NDI® sources.

### Update Source List

Pressing the REFRESH button will add new sources to the list, whereas pressing the RESET button will populate the list with only active NDI® sources. Click the APPLY button to apply your failover source change.

### Apply Source Change

Click the APPLY button to apply changes of source

**Device Settings**

Preferred NIC	ETHERNET	Wi-Fi	Onboard Tally	ON
HDMI Output Mode	ENCODE	DECODE	Device Restart	RESTART

**Decode Settings**

Decoder Screensaver	OFF	ON
Capture Screen Frame	ENTER	EXIT

◀ ⏪ ⏩ ▶



# Cam Control

## Camera Control Tab

### Menu On / Off

To adjust cameras settings via the OSD (On Screen Display), click the Menu ON/OFF button.

The OSD is visible on both the NDI® output and SDI/HDMI, and can also be accessed via the included remote control. Since it uses the same controls for menu navigation, PTZ control of the camera movement will not be possible until the OSD menu is closed again.

### Zoom

Click the TELE button to zoom in and the WIDE button to zoom out.

### Focus Mode

Select between Auto and Manual focus modes.

### Focus

Click the IN button to focus on nearer subjects and the OUT button to focus on subjects further from the camera.

### Speed Control

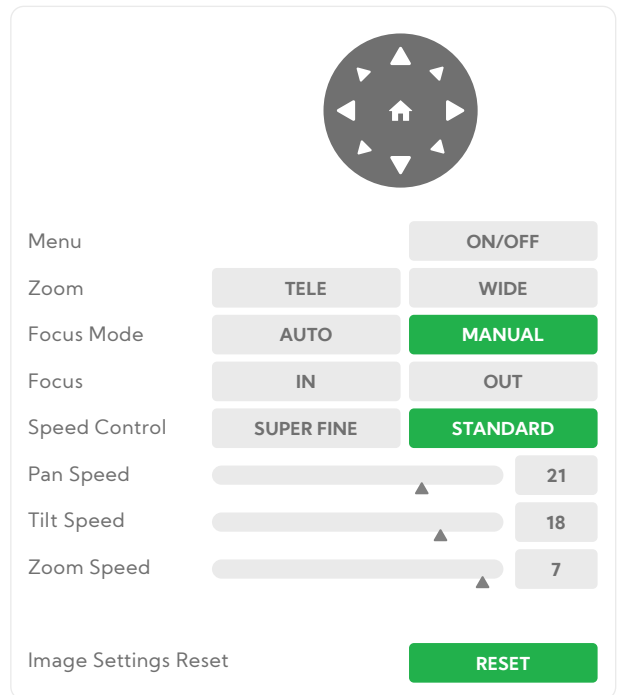
Allows selection of either a Superfine or Standard setting for the joystick. Superfine provides less coarsely quantised movement resulting in more precise control.

### Pan / Tilt / Zoom Speed

When controlling the Camera over NDI® you can individually set the maximum speed of PTZ movements. Higher numbers produce faster and more sensitive movements of the camera.

### Image Settings Reset

Click this button to reset all image settings to their factory default.





## AI Tracking Tab

### AI Auto Tracking Instructions:

To activate AI Auto Tracking, press the 'AI' button on the IR remote or select the AI Tracking ON button on BirdUI. Once activated, the AI Auto Framing icon will appear on the NDI low bandwidth stream.

Press the 'Frame Select Enter' button on the IR Remote or BirdUI to enter the tracking subject selection mode. Once enabled, a blue-framed rectangle on the NDI low bandwidth stream indicates the position of the tracking target.

Use the 'Left' or 'Right' buttons on the IR remote or BirdUI to toggle between tracking subjects. Press the 'Frame Select' or Enter button to confirm selection.

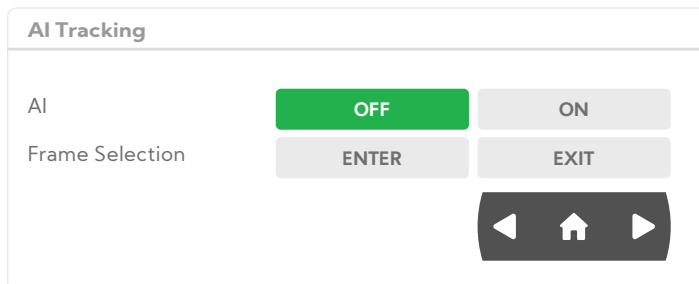
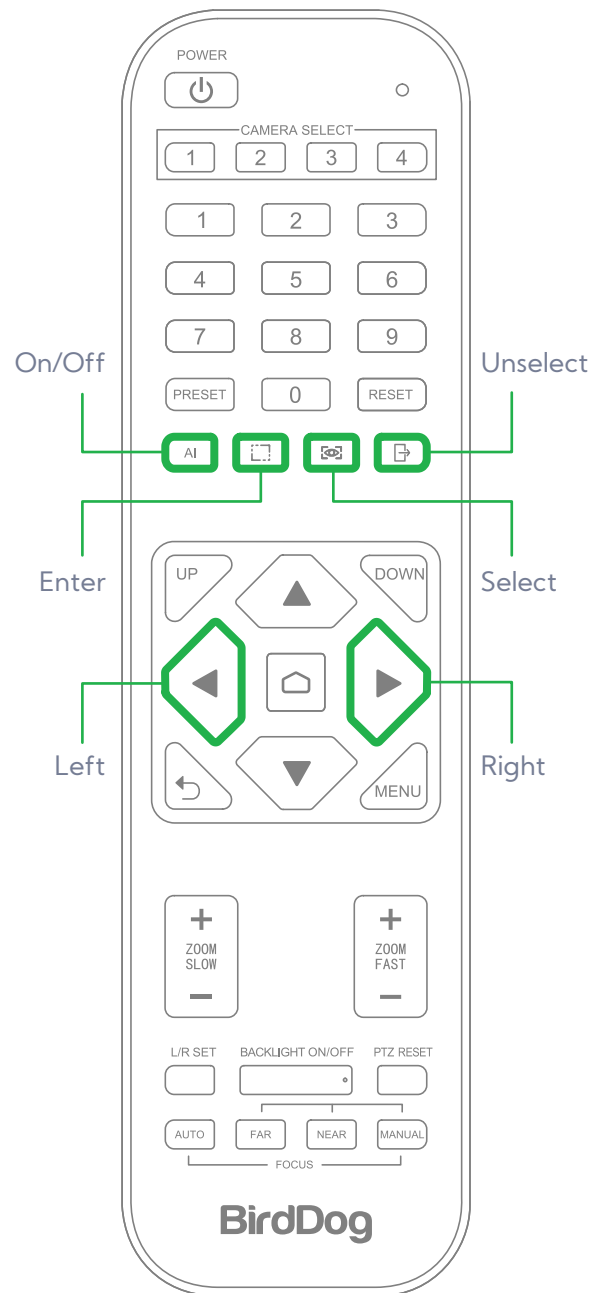
To cancel subject selection, press the Exit button. To deactivate AI Auto Tracking, press the 'AI' button on the IR remote or select the AI Tracking OFF button on BirdUI.

### AI Auto Framing Instructions:

To activate AI Auto Framing, press the 'AI' button on the IR remote or select the AI Tracking ON button on BirdUI. Once activated, the AI Framing icon will be visible on the NDI low bandwidth stream.

With AI Auto Framing enabled, the camera will automatically identify individuals within its field of view and adjust zoom levels accordingly to maintain optimal framing.

To cancel subject selection, press the Exit button. To deactivate AI Auto Tracking, press the 'AI' button on the IR remote or select the AI Tracking OFF button on BirdUI.



**Note:** some features are available on specific models. Check tech specs for your camera model to confirm capabilities.



## Preset Tab

To save a Preset select a number, make your desired changes, click the Save button and then click a Preset number. To recall a Preset, click the Preset number. You can save two separate and different types of Presets:

**BirdDog:** Saves only PTZ information with the Preset.

**Camera:** If System/Preset Memory is enabled in the camera Menu via the OSD, image parameters such as picture, white balance, exposure, focus mode, zoom positions will also be saved with the Preset.

## Exposure Tab

### Mode

**Full Auto:** The exposure is adjusted automatically using the values set for EXPOSURE COMPENSATION.

**Manual:** Allows manual adjustment of the GAIN, IRIS and SPEED (shutter speed).

**Shutter Priority:** The shutter speed can be set freely by the user, and the iris and gain are set automatically, according to the brightness of the subject. The exposure is adjusted automatically using the values manually set for SPEED (shutter speed), GAIN and EXPOSURE COMPENSATION.

**Iris Priority:** The iris can be set freely by the user. The gain and shutter speed are set automatically according to the brightness of the subject. Use the Gain Limit control to restrict the amount of automatic gain.

In all modes you can choose Smart Exposure which uses a analytical engine to help set facial exposure.

Mode		MANUAL ▼
Gain	<input type="range"/>	6 DB
Iris	<input type="range"/>	F4.0
Shutter Speed	<input type="range"/>	1/30
Shutter Control Overwrite	<input type="button" value="OFF"/>	<input type="button" value="ON"/>

### Gain

Select the gain from 0–30dB.

### Iris

Select the iris from CLOSE – F1.8.

### Shutter Speed

When video format is set to 720P25, 1080P50, 1080P25 or 720P50 shutter speed can be selected from the following:

- 1/1, 1/2, 1/3, 1/6, 1/12, 1/25, 1/50, 1/75, 1/100, 1/120, 1/150, 1/215, 1/300, 1/425, 1/600, 1/1000, 1/1250, 1/1750, 1/2500, 1/3500, 1/6000, 1/10K.

When video format is set to 720P30, 1080P29.97, 720P59.94, 1080P59.94, 1080P30, 1080P60 or 720P60, shutter speed can be selected from the following:

- 1/1, 1/2, 1/4, 1/8, 1/15, 1/30, 1/60, 1/90, 1/100, 1/125, 1/180, 1/250, 1/350, 1/500, 1/725, 1/1000, 1/1500, 1/2000, 1/3000, 1/4000, 1/6000, 1/10K.

### Shutter Control Overwrite

You can set an optional shutter speed for use when monitor screens are visible in the camera image. Click the ON button to activate the Shutter Speed Overwrite shutter speed value.

### Exposure Compensation

When MODE is set to FULL AUTO, SHUTTER PRI or IRIS PRI, setting EXPOSURE COMPENSATION to ON allows exposure compensation levels to be set.





## White Balance Tab

### Cam White Balance

Auto: This mode computes the white balance value output using color information from the entire frame with a range of values from 2500K to 7500K. This mode is the default setting.

Indoor: Sets the color temperature to 3200K.

Outdoor: Sets the color temperature to 5800K.

OPW (One Push White Balance): The One Push White Balance mode is a fixed white balance mode that may be automatically readjusted only at the request of the user (One Push Trigger), assuming that a white subject, in correct lighting conditions can occupying more than 1/2 of the image. One Push White Balance data is lost when the power is turned off. If the power is turned off, you'll need to reset One Push White Balance.

To select OPW:

1. Place a white subject (i.e., sheet of white paper) in the center of the frame.
2. Press the remote controller HOME button to activate the one-push white balance adjustment.

ATW (Auto Tracking White Balance): Auto Tracking White balance (2000K to 10000K), allows the camera to adjust the white balance according to the temperature of the light source illuminating the subject.

User: This is a mode that enables you to manually set the control of Red and Blue gain up to 256 steps.

Manual: Allows manual setting of the color temperature.

SVL (Sodium Vapor Lamp): This is a white balance mode specifically for the orange sodium vapor lamps.

### White Balance Sensitivity

Sets the sensitivity of the camera's reaction to detected colour changes in a scene.

### R, G, B Tuning

This option adjusts the temperature or phase of Red, Green and Blue.

### Color Temperature

Sets the color temperature of the image in degrees Kelvin.

### R, B Gain

Sets the intensity of red and blue colors in the image.

## Picture Tab

Sharpness		3
Effect		B&W
Noise Reduction		1
Flip		ON
Mirror		ON
Wide Dynamic Range		OFF
Saturation		8
Hue		7
Contrast		8
Gamma		0



## Sharpness

Adjusts the picture sharpness value from 0 to 15.

## Effect

Select from Monochrome Image (B&W) or Color image (OFF).

## Noise Reduction

Can reduce the level of image noise. Select from 6 levels – OFF, 1 – 5 (MAX).

## Flip

Flips the image upside down for ceiling mounted cameras. Select from upright mode (OFF) or ceiling mount (ON).

## Mirror

Displays a mirror image of the video image.

## WDR (Wide dynamic range mode)

The WDR feature is available on certain product models. The camera adjusts the image brightness for both the extreme dark and bright areas of the image.

## Saturation

Adjusts the intensity of colours in the image from a range of 1-15.

## Hue

Adjusts the color phase from 1-15.

## Contrast

You can adjust the contrast level in the range from 0 (00h) to 255 (FFh). The initial setting is 128 (80h). The smaller the value lowers the contrast.

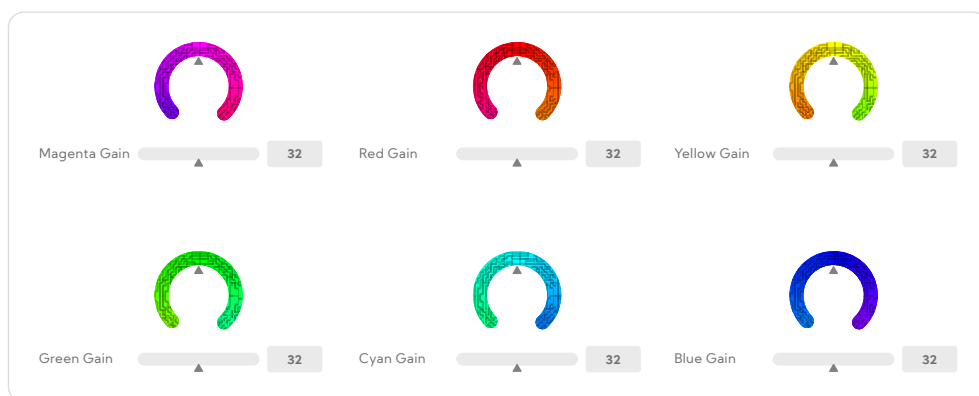
## Gamma

Adjusts the gamma of the image from 0 to 1.

## Colour Matrix Tab

The Color Matrix features 64 levels of adjustment of Gain (Intensity) across six color sections, Red, Green, Blue, Cyan, Magenta and Yellow, and allows individual fine-tuning of each of these without affecting the response of other color components.

You can also view an online [video](#) that covers this section.



## Colour Gain

The Gain control of each colour component defines how intense that colour is represented in the image. The default level (32) is a moderate gain which shows an even bias between all pixels that contain the colour. For example, a dark red with have the red component shown as vividly as a bright red, this generally gives a balanced look to your colour representation.

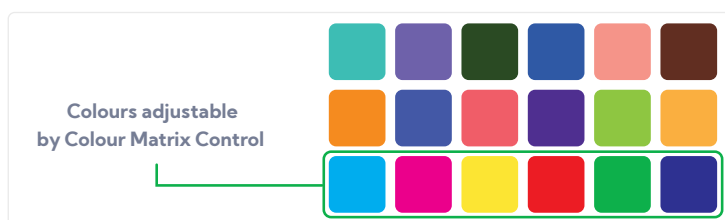


Increasing the gain value will add additional intensity to all parts of the image pertaining to this colour. For example, if you increase the Red gain value to 64, all pixels that are red in the image will display more intensity compared to other colours in the image resulting in a more vivid representation of this colour.

Conversely reducing the colour gain will reduce intensity of the target colour. This can be useful in some lighting conditions where certain colours appear over saturated to the camera.

## Using a Colour Chart

It is recommended to utilise a colour chart or colour chip chart when adjusting the Colour Matrix controls. These charts are available readily and have colour chips for each of the colours that the camera can adjust. By utilising a colour chip chart you are more easily able to see the impact of any adjustment you are making.



Using a colour chip chart such as the Datacolor SpyderCheckr can be beneficial to fine-tuning adjustments in the Camera Colour Matrix.

## Advanced

Scene	Default	⋮
Hot Pixel	<input type="range" value="50"/>	50
AF Zone	Default	⋮
Near Limit	30cm	⋮
AF Sensitivity	High	⋮
Smart Focus	OFF	ON

### Scene

You can choose a preset that will combine various Picture parameters for different results. Experiment!

### Hot Pixel

You can reduce the visibility of any hot pixels by adjusting this slider. The overall image clarity may be affected at extreme settings.

### AF Zone

Set the area of the frame that will influence auto focussing.

### Near Limit

You can set the camera to ignore focusing on subjects that are closer than a designated distance.

### AF Sensitivity

When set to HIGH, autofocus response will be fast and suited for frequently moving subjects. When set to LOW, the autofocus response is slowed which can improve the stability of the focus in low light conditions.

### Smart Focus

Smart Focus uses a analytical engine to help set facial focus on human subjects.



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