BirdDog | PF120

UNBOX YOUR NEW NDI® BOX CAM.

NDI

USER GUIDE

NDI 5   2022

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Important Information

Legal Notice

To ensure account security, please change the password after your first login. You are recommended to set a strong password (no less than eight characters).

The contents of this document are subject to change without prior notice. Updates will be added to the new version of this manual. We will readily improve or update the products or procedures described in the manual.

Best effort has been made to verify the integrity and correctness of the contents in this document, but no statement, information, or recommendation in this manual shall constitute formal guarantee of any kind, expressed or implied. We shall not be held responsible for any technical or typographical errors in this manual.

The product appearance shown in this manual is for reference only and may be different from the actual appearance of your device.

Due to uncertainties such as physical environment, discrepancy may exist between the actual values and reference values provided in this manual.

Use of this document and the subsequent results shall be entirely on the user's own responsibility.

Warnings

- If the product does not work properly, please contact your dealer. Never attempt to disassemble the camera yourself. (We will not assume any responsibility for problems caused by unauthorized repair or maintenance.)
- This installation should be made by a qualified service person and should conform to all the local codes.
- When shipping, the camera should be packed in its original packaging.
- Ensure the power supply voltage is correct before using the camera.
- Do not drop the camera or subject it to physical shock.
- If the camera will not be used for an extended period of time, attach the lens cap to protect the lens.
- Do not aim the camera lens directly at the sun. This may cause irreversible damage to the camera.

Maintenance Precautions

- If there is dust on the front glass surface, remove the dust gently using an oil-free brush or a rubber dust blowing ball.

- If there is grease or a dust stain on the front glass surface, clean the glass surface gently from the center outward using anti-static gloves or an oil-free cloth. If the grease or the stain still cannot be removed, use anti-static gloves or an oil-free cloth dipped with detergent and clean the glass surface gently until it is removed.

- Do not use organic solvents, such as benzene or ethanol when cleaning the front glass surface.

Regulatory Compliance

FCC Part 15

This equipment has been tested and found to comply with the limits for digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment.

This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

This product complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- This device may not cause harmful interference.

- This device must accept any interference received, including interference that may cause undesired operation.

LVD/EMC Directive

This product complies with the European Low Voltage Directive 2006/95/EC and EMC Directive 2004/108/EC.

Welcome to BirdDog!

Thank you for purchasing your PF120 camera. If you have any questions regarding the camera, please contact your authorized dealer or view our Knowledge Base.

Our website also has a User Stories page to help inspire you to get the most out of your camera.

Using This Manual

Your PF120 is a powerful and sophisticated device, so please read this manual before use and retain for future reference.

If you are new to the world of NDI® or BirdDog cameras, begin with the Quick Start Guide. This will give you a good introduction to the setup of your new camera.

Tip

You can use the controls in your browser or PDF reader to increase the page size when viewing the diagrams to reveal much more detail.

First Step

Firmware Upgrade

Before you use your new PF120, it's a good idea to upgrade to the lastest firmware. 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, please follow the **Firmware Upgrade Instructions** located in your firmware download folder and perform upgrade process.

The latest firmware files are available for download here.

We're Invested In Your Success

We pride ourselves on being approachable and easily contactable. We'd love to hear from you.

Dan Miall	**Eamon Drew**
Co-Founder and CEO	Co-Founder and CMO
dan@bird-dog.tv	eamon@bird-dog.tv

BirdDog PF120 Overview

Camera Features

- Resolution: Up to 1080P60, 1080i60.

- Zoom: Optical 20X.

- Image stabilizer and true WDR 130dB.

- Video Output: HDMI, NDI®, USB video simultaneously.

- 128 presets.

- Standard mounting and ceiling mounting with E-Flip function

- Control supports RS-232 control, RS-422/485 control, Pelco D/P, VISCA-over-IP, NDI® Control

- Presets store camera directions and image parameters.

- Image parameter setting restore with presets and quick access operation

- Supports Audio input, Audio output with NDI® streaming.

- Power: DC 12V, PoE+(IEEE802.3af)

Specifications

Please refer to the product webpage for complete specifications.

Welcome to the Future

What is NDI®?

Your new PF120 camera has been designed to support the cutting edge NDI® video transmission standard.

NDI® (Network Device Interface) is a high–quality, low–latency, frame–accurate standard that enables compatible devices to communicate, deliver, and receive high definition video over your existing Gigabit Ethernet network.

Operating bi–directionally, NDI® devices can be auto–detected, powered and controlled over the same Ethernet cable used to send the video and audio. If you have a Gigabit network, you have the potential for a streamlined, interconnected, video production environment.

With the introduction of NDI® 5, you can now securely share network sources between remote sites anywhere in the world – on a single network port. Even a smartphone can be a NDI® source.

Transitioning to NDI® can also occur gradually. Existing SDI or HDMI signals can easily be converted to an NDI® stream and piped where required on your network and then converted back only at the neccessary endpoints.

BirdDog has been on the NDI® journey since the very beginning, and your PF120 is just one of our products designed to take advantage of the features and potential of NDI®.

For more information on NDI®, please refer to this page on our website.
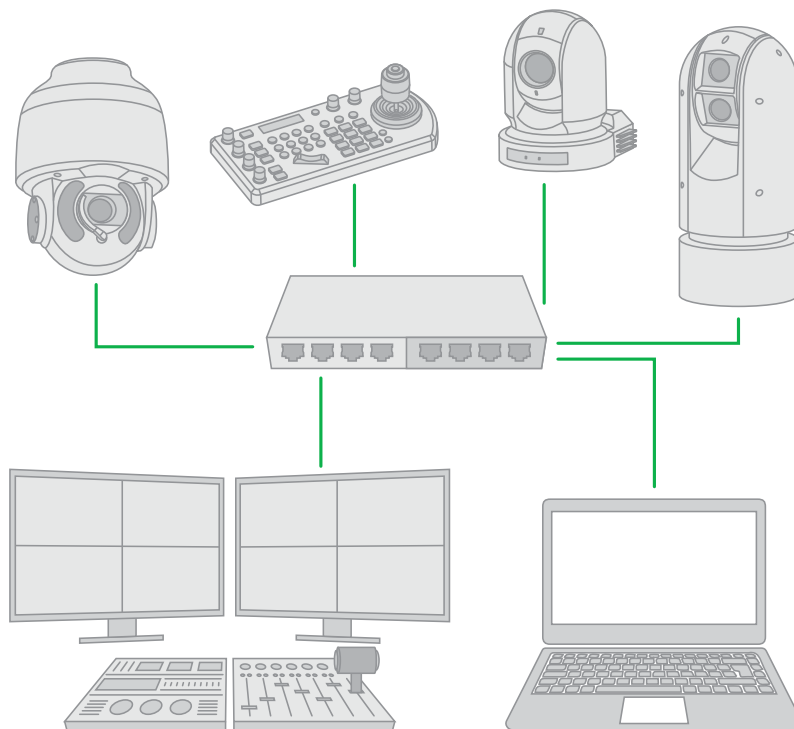
What's in the Box?

NOTE: The camera color may be white or black in colour depending on the item purchased.

1x BirdDog PF120

1x Camera Power Adaptor

Quick Start Guide

If you are new to the world of NDI® or BirdDog cameras, please follow this quick start guide to become familar with the basic setup of your new camera. You can also view a similar online video.

Basic Connections

Power

To start using your new camera, you'll have to decide how you are going to power the device. You have two choices. You can use PoE+ (Power over Ethernet) or, if your network doesn't support PoE+, you can use the included 12VDC power adaptor. If available, PoE is the easier choice, since you can use the same Ethernet cable to power and control the camera, as well as send the video. For the purposes of this quick start guide, we'll use the power adaptor, so plug the jack into the 12VDC power port on the back of the camera.

Network

Since we're supplying power via the adaptor, the NDI®/PoE Ethernet connection will be used purely for NDI® video. Let's keep things simple and plug an Ethernet cable directly from your computer into the camera NDI®/PoE Ethernet port.

Power Up

Once you've made the power and Ethernet connections, turn on the adapter power. When first powered up, the camera will perform it's initialization routine by rotating to the left and then centering again. When this is finished, the indicator light on the front of the camera will display green (and occassionally amber) and the camera is ready to be accessed.

Computer, say hello to PF120

Since we're connecting your camera directly to your computer, we need to configure the network settings of your computer to allow communication with the camera.

Navigate to the Network Properties in your computer Preferences and make the following settings.

Select **Use the following IP address:** and enter an IP address. The default IP address of the camera is 192.168.100.100, so we need to enter an address where the first three number groups are the same as the camera IP address, i.e., 192.168.100 but the last number group is a different number, in the range of 0 – 255, that is not currently assigned. Usually numbers less than 200 are more likely to be available. The subnet mask and default gateway can be set as shown.

Your camera and the computer are now configured on the same subnet and should be able to communicate with each other.
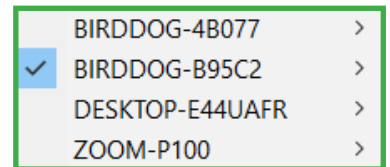
Basic Configuration

NDI® Tools

NDI® Tools is a free suite of applications designed to introduce you to the world of IP video and is available here. Once installed, launch the Studio Monitor (Video Monitor, if using a Mac) application. This simple application allows you to view all NDI® sources on your network. Right click on the Studio Monitor window to view your camera as an NDI® source. In the example to the right, three cameras and a desktop computer are shown as NDI® sources.

Tip

By default, the displayed sources have names that include the last five digits of your camera MAC address which is displayed on the bottom of the camera.

Clicking on your camera in the source list will display the image from your camera with the default automatic settings.

The BirdUI

BirdDog cameras have a web interface (BirdUI) that is displayed by your computer brower and can be used to configure your camera remotely.

1. Click on the gear icon on the bottom right of the Studio Monitor window.
2. In the displayed window, type the default password 'birddog' (all lower case) and click the OK button. The Dashboard window is displayed.
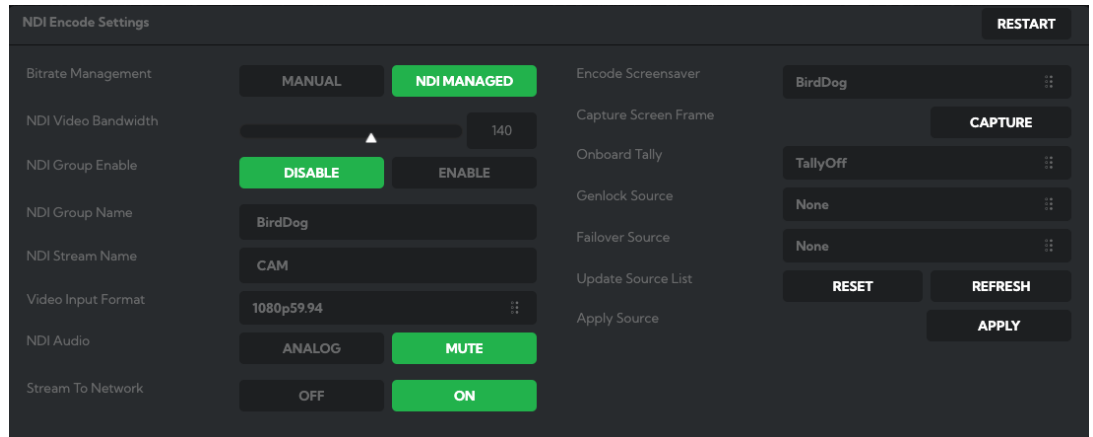
The Dashboard shows important basic camera settings. For now, check that the displayed Status is Active and take note of the frame rate that is currently output from the camera (displayed under NDI® connection info). This frame rate should be set identically for all cameras according to the requirements of your production. Let's see how to change this and other important camera settings.

NDI Encode Settings

Bitrate Management

Because you're sending NDI® video over your computer network, you may need to be mindful of the amount of bandwith your video will consume. By setting Bitrate Management to NDI MANAGED, the target bitrate will be set in accordance with the NDI® standard. This will achieve an optimum balance between bandwith consumption and video quality. In this mode, the video bitrate will be around 120– 140 Mbps. If you do opt for Manual management, you may select a bitrate within a range of 60–360 Mbps. Do this with care, as the actual bitrate may be greater, straining the capacity of the network and the receiving device, and lower settings may result in reduced image quality.

NDI Video Format Selection

Here you can set the frame rate of the camera to match that of your production. All cameras should be set to the same frame rate.

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, the video source is public and viewable by any receiver on your network.

Stream Name

Give the output video stream of the camera a memorable name to make identification easier on NDI® receiving devices.

NDI Audio

You can choose to embed audio from the audio input connector into the NDI® stream or mute it.

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 Available NDI® Sources field to select your alternate source.

Network Configuration

For the final part of this quick start guide, let's set up the network configuration of your camera so it can work with your wider network. Most computer networks provide for both automatic and manual configuration of network devices and the PF120 can accomodate both.
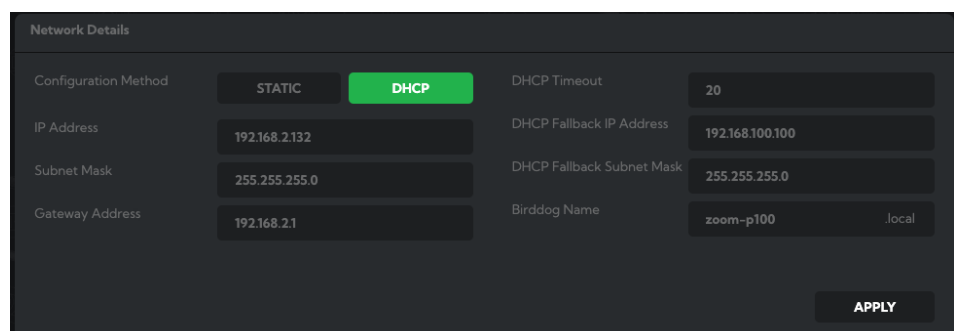
Static or DHCP

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 PF120 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 fallover 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 Dashboard and click REBOOT DEVICE. The camera will re-initialize and you'll be good to go.

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.

You're Done!

That concludes our quick start guide for the PF120. Your camera has many other features, so to get the most out of your camera, please review the rest of this manual.

To learn about more advanced camera configuration options, such as colour management, please refer to here in this manual.

Camera Connections

1. **PoE / NDI® Ethernet port.**

   For VISCA over IP control and NDI® output. Supports PoE+(IEEE802.3at).

2. **Power LED Indicator**

3. **12VDC Power Port**

   Connect the supplied DC power adaptor and cord.

4. **RS232 Control Port (RJ45)**

5. **HDMI Port (HDMI 1.4)**

6. **USB (Type B) 3.0 Port**

   For USB video and firmware updates.
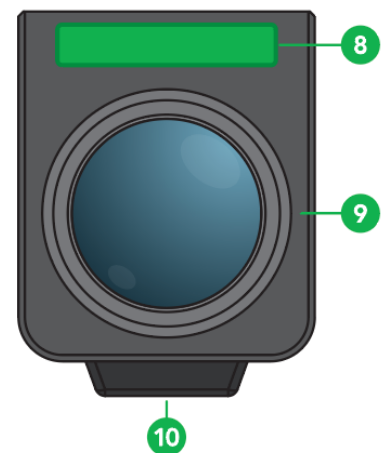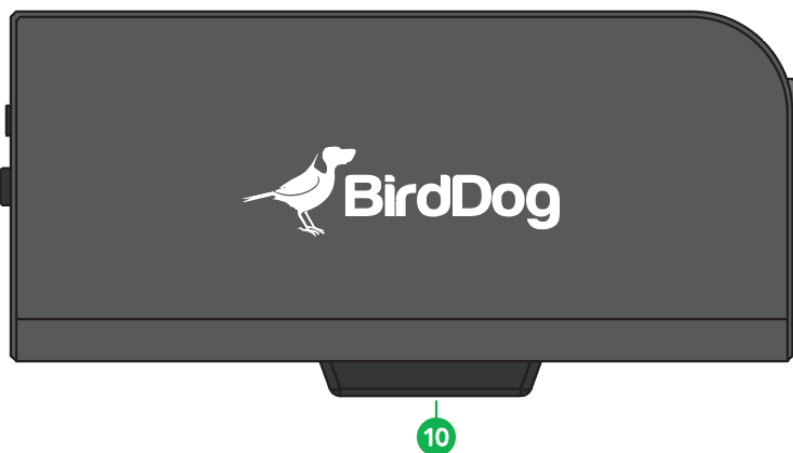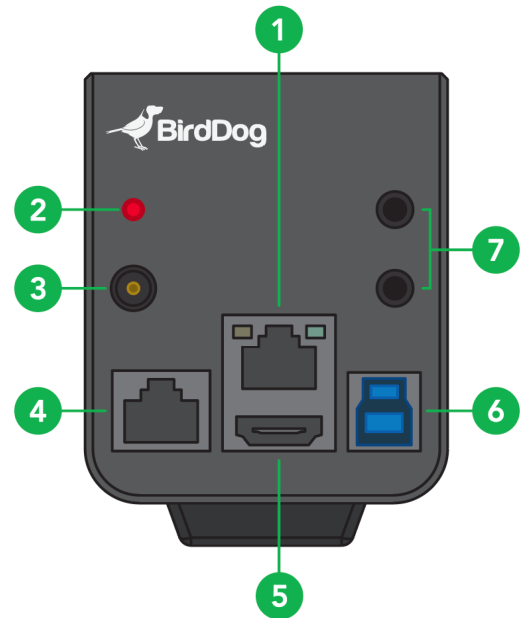
7. **Audio Output/Input**

   Analog 3.5mm audio In\Out ports. The Audio Out will output any audio that is captured on the Audio In port. Audio out format is stereo, unbalanced line level.

8. **Tally Indicator**

9. **Lens**

   20X magnification optical zoom lens.

10. **Tripod mounting holes**

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Powering PF120

PF120 can be powered by two ways.

- **PoE+ (Power over Ethernet)**

    PoE+ is a convenient way to power PF120 as it allows both data and power to be sent through the same standard Ethernet cable. The network switch must support PoE+ (802.3af) .

- **DC Connection**

    Located at the rear of the PF120 is a 12VDC connection port. Use only the DC power adaptor (JEITA type4) supplied with the unit.

WARNING

Do not attempt to manually move the camera head when the device is powered up. Doing so may damage the camera.

Thermal Management

Although the camera is equipped with a fan, the entire enclosure is designed to dissipate heat. The main processor is capable of operating up to 100° C / 212° F. Various factors can affect how much heat the camera will produce, and it is normal for it to feel warm to the touch. In extreme circumstances (a hot day/direct hot sun) it is advised to power PF120 via DC as this produces less heat than PoE.

Video Output

The camera can simultaneously produce HDMI, NDI® and USB (UVC) video output.

NDI® Signal

1. Connect the camera to the network using Cat5/Cat6 network cable.
2. You'll need to use web browser on a connected computer for camera configuration.
3. To configure NDI® video, please refer to <u>NDI Network Settings.</u>

HDMI Signal

1. Connect the camera to a HD monitor/TV using HDMI cable.
2. Turn on the camera. After initialization, video will display on the monitor.
3. Information of the camera initial setting status will display on the monitor for 5 seconds.
4. You can set the displayed video format in the camera System menu.

USB Signal

1. Connect the camera to your USB device/display with a type B cable.

Audio Output/Input

Analog 3.5mm audio In\Out ports. The Audio Out will output any audio that is captured on the Audio In port. Audio format is stereo, unbalanced line level.
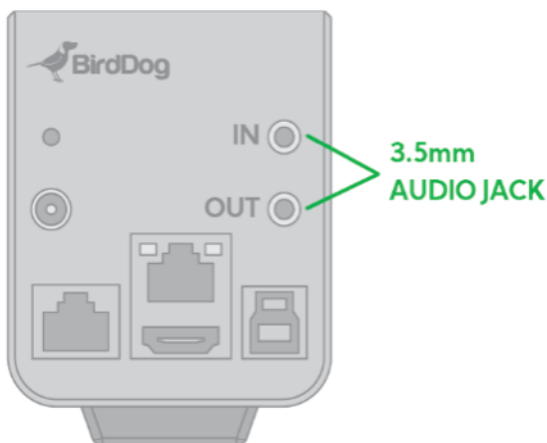
Using the Camera Menus

You can use the infrared remote controller to change camera settings while viewing the On Screen Display (OSD) menus on a connected monitor. The OSD is viewable over NDI, SDI or HDMI.

However, the Web Configuration Panel (BirdUI) affords greater control of your camera with more parameters as well as allowing remote adjusting of camera settings over NDI, and is the recommended method of adjusting your camera.

This section explains how to navigate the menus. The menu parameters may vary according to the different product model numbers.

1. To display the main menu, press the MENU button on the supplied infrared remote controller. The main menu is displayed.

OSD
▶ EXPOSURE
WHITE BALANCE
PICTURE 1
PICTURE 2
PAN TILT ZOOM
SYSTEM

2. Use the "↑, ↓" buttons to navigate between main menu items. For example, clicking the "↓" button once will move the cursor to the item below.

OSD	WHITE BALANCE MENU	
EXPOSURE	WB MODE	AUTO
▶ WHITE BALANCE		
PICTURE 1		
PICTURE 2		
PAN TILT ZOOM		
SYSTEM		

3. To enter the sub menu of a selected item, click either the "→" button or the HOME button. In the example below, we are navigating between two sub menus of the Exposure main menu. Sub menus can also be navigated vertically to select sub menu items.

OSD	EXPOSURE MENU: FULL AUTO	
▶ EXPOSURE	MODE	FULL AUTO
WHITE BALANCE	SLOW SHUTTER	OFF
PICTURE 1	S. SHUTTER LIMIT	1/4
PICTURE 2	AE RESPONSE	01
PAN TILT ZOOM	GAIN LIMIT	21.4dB
SYSTEM	EX COMP	OFF

OSD	EXPOSURE MENU: MANUAL	
▶ EXPOSURE	MODE	MANUAL
WHITE BALANCE	GAIN	12dB
PICTURE 1	GAIN LIMIT	21.4dB
PICTURE 2	SPEED	1/60
PAN TILT ZOOM	IRIS	F1.6
SYSTEM	HIGH SENSITIVITY	OFF

4. Once you've navigated to a setting value, use the "←, →"buttons to increment or decrement the value.

5. Press the MENU button to exit the menus.

NOTE: When you are operating the menu using the infrared remote controller, you cannot set IR– RECEIVE in the SYSTEM menu to OFF. To set IR– RECEIVE to OFF, use the appropriate VISCA command.

Camera Menus

Exposure Menu

The Exposure menu sets items related to exposure.

Mode

Full Auto: IRIS, GAIN and SPEED (shutter speed) are set automatically using the values set for SLOW SHUTTER, S. SHUTTER LIMIT, AE RESPONSE, GAIN LIMIT, and EX-COMP.

Manual: Allows manual adjustment of the GAIN, GAIN LIMIT, shutter speed (SPEED), iris (IRIS), and HIGH SENSITIVITY.

Iris Pri: Iris Priority mode. This mode allows you to set a fixed IRIS with exposure achieved by automatic setting of SPEED, GAIN LIMIT, and EX-COMP.

Shutter Pri: Shutter Priority mode. This mode allows you to set a fixed shutter SPEED with exposure achieved by automatic setting of IRIS, GAIN LIMIT, and EX-COMP. When you select one from various exposure modes, some of the following setting items that are required for the selected mode will be displayed.

Bright: The bright control function adjusts both gain and iris using an internal algorithm, according to a brightness level freely set by the user. Exposure is controlled by gain when dark, and by iris when bright. As both gain and iris are fixed, this mode is used when exposing at a fixed camera sensitivity. When switching from Full Auto or Shutter Priority Mode to Bright Mode, the current status will be retained for a short period of time.

Gain

Select the gain from 0dB, 3.6 dB, 7.1 dB, 10.7 dB, 14.3 dB, 17.8 dB, 21.4 dB, 25 dB, 28.6 dB, 32.1 dB, 35.7 dB, 39.3 dB, 42.8 dB, 46.4 dB, 50 dB

Speed

When video format is set to 720P25, 1080P50, 1080i50, 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, 1080i59.94, 1080P29.97, 720P59.94, 1080P59.94, 1080I60, 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.

Iris

Select the iris the following: CLOSE, F14, F11, F9.6, F8.0, F6.8, F5.6, F4.8, F4.0, F3.4, F2.8, F2.4, F2.0, F1.6.

Ex-Comp (Exposure Compensation)

When MODE is set to FULL AUTO, SHUTTER PRI or IRIS PRI, setting EX-COMP to ON allows exposure compensation levels to be set from the following values:

- −10.5, −9, −7.5, −6, −4.5, −3, −1.5, 0, +1.5, +3, +4.5, +6, +7.5, +9, +10.5.

Setting the level to 0 disables exposure compensation. Level +10.5 is the brightest and −10.5 is the darkest compensation value. When EX-COMP is set to OFF, exposure compensation is disabled.

White Balance Menu

WB Mode (White balance mode)

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): This is a fixed mode that may be automatically readjusted 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: In this mode you can manually set the color temperature in degrees Kelvin.

Picture Menu

Sharpness
Adjusts the picture sharpness from 0 to 15.

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

Noise Reduction
Can reduce the level of image noise. Select 6 levels from 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 color saturation.

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.

De-Flicker

Turning this on can help reduce the image flicker that can occur if the camera frame rate is different to the frequency of the local electricity supply that is powering the scene lighting.

Color Matrix

Adjusts of hue and gain for magenta, red, yellow, green, cyan and blue.

Zoom Menu

Digital Zoom

On: 16X digital zoom is activated. Digital zoom activates after the optical zoom reaches MAX (20X).

Off: Only optical zoom is available.

Zoom Ratio OSD

Determines whether the zoom ratio displays on screen.

MF Speed

Choose between eight manual focus speeds.

Preset Speed

Set the preset recall movement speed from 0 to 5.

Tally Mode

Acivate the Tally light.

System Menu

Pelco ID

When using RS232 control, set Camera ID to the controlled address. This value is from 001–255.

Display Info

When this item is set to ON, the camera configuration is displayed for approx. 3 seconds on the screen when the camera is powered on or rebooted.

Audio

Set to ON to enable camera MIC / Audio IN to capture an audio signal source. Set to OFF by default.

Preset Memory

This feature allows you to save the image parameters to PRESET memory. Parameters such as picture, white balance, exposure, focus mode, zoom positions can be saved with the preset.

Factory Reset

Select this item to set camera back to the factory default setting. Press the HOME button to confirm the action. All user settings for the camera will be deleted.

BaudRate

This feature sets the RS232 baudrate. The default value is 9600.

Reload Preset 1

When set to ON, preset 1 is set to the Home position. The camera goes to the Home position when it is powered on or reset.

Video Format

Depending on the video client software you are using, some video software may need to be restarted to obtain the new video format.

Available video formats are: 1080P: 60/59.94/50/30/29.97/25, 1080I: 60/59.94/50, 720P: 60/59.94/50/30/25

SV

Software Version Number that is currently running on the camera, you may need this information for technical support.

Status Menu

Two pages of various key settings are displayed.

Web Configuration Panel

The web configuration panel (BirdUI) allows you to alter key settings of PF120, such as A/V settings, video frame rates, restarting the video processing engine, changing networking parameters, recalling PTZ presets and applying firmware updates.

Access via web browser (URL)

PF120 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 PF120 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 PF120 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.

Password Management

Once you direct your web browser to the BirdUI you will need to log in to change any settings.

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 System tab in the BirdUI, and click the APPLY button.
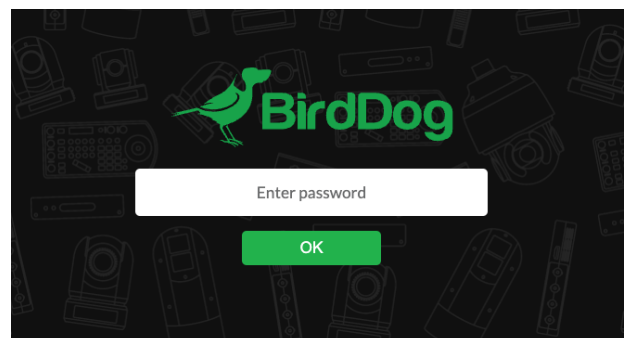
It is recommended to change this password in a network environment where PF120 is shared with other users (e.g. not private). By entering this password, the user is granted full access to the PF120 configuration settings and could interrupt a live program.

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 fallback ad- dress 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**

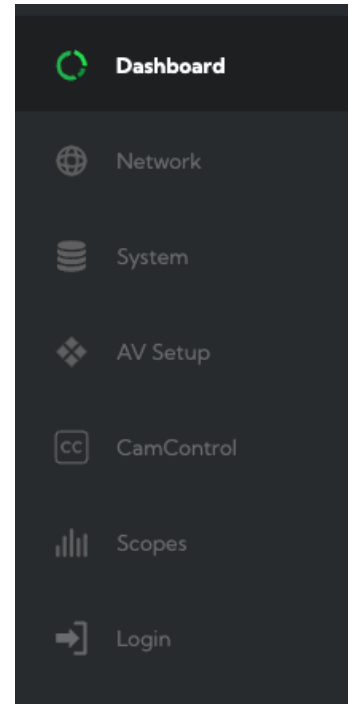   Full NDI® encode management and audio settings.

5. **CamControl**

   Exposure, white balance, picture and color settings.

6. **Scopes**

   Settings for the Histogram, Waveform, RGB Parade and Vectorscope.

7. **Logout**

   Click to logout from the BirdUI.

Dashboard

The Dashboard displays an overall view of important information.

1. **System Info**

   Current computer system CPU utiliza-tion.

2. **Device mode**

   Encode or Decode. For PF120 this is fixed at Decode.

3. **Network Bandwidth**

   Network bandwidth consumption of the current device output.

4. **Status**

   a. NDI Video Stream Name as set <u>here</u>.

   b. Selected Video Format as set <u>here</u>.

   c. NDI Audio Status as set <u>here</u>.

5. **Stream Info**

   a. Video Resolution as set <u>here</u>. Number of audio channels of the camera.

   b. Video Frame Rate as set <u>here</u>. The audio output sample rate of the camera.

   c. Video Sample Rate (chroma subsample rate) and average NDI® bitrate of the camera. PF120 has a fixed chroma subsample rate.

6. **System Details.**

   a. Camera name as set <u>here</u>.

   b. Network details as set <u>here</u>.

   c. Online status of the camera.

   d. MAC address and current firmware version of the camera.

Network

Network Details

Most computer networks provide for both automatic and manual configuration of network devices and the PF120 can accomodate both.

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 PF120 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 fallover 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 Dashboard and click REBOOT DEVICE. The camera will re-initialize and you'll be good to go.

NDI Network Settings

PF120 operates with the latest NDI® Libraries. There are several options to configure PF120 behavior in an NDI® network. Each configuration has its benefits, however it is recommended to utilize the default 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 received successfully – vastly improving performance on busy networks. UDP can have some consequences f 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)

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 BirdDog PF120 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 reduntancy. 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

The BirdUI is secured by a user-selectable password. 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 to 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, please download the firmware and follow the **Firmware Upgrade Instructions** located in your firmware folder.
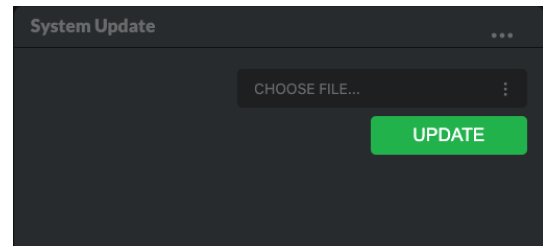
# Access Manager Configuration

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 download 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 UPDATE button. Do not upload a blank list.
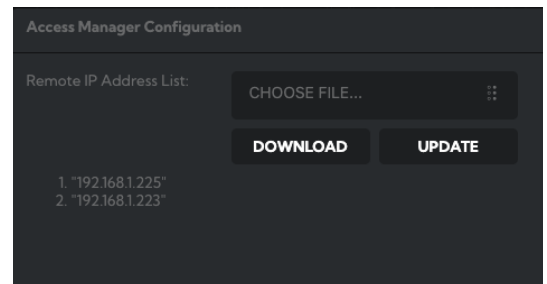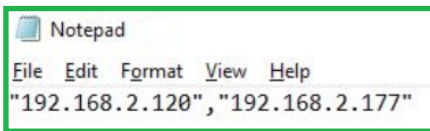
NDI Group List

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 download 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.
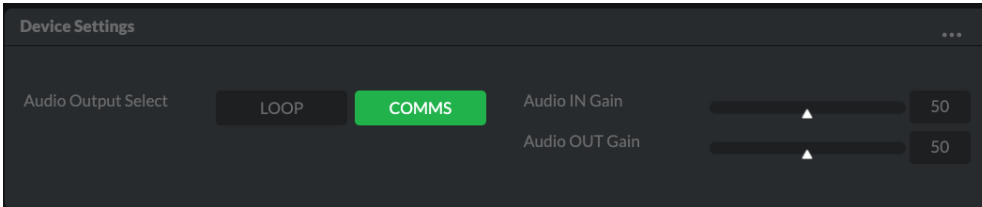2. Click the UPDATE button. Do not upload a blank list.
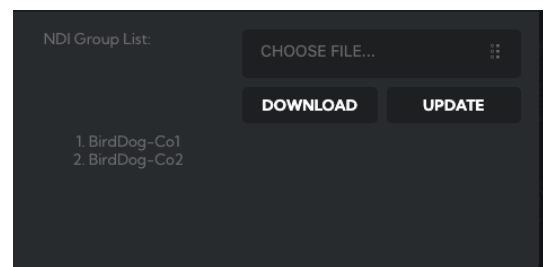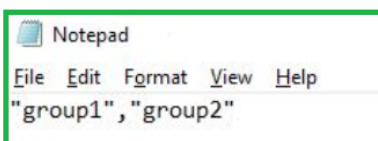
System Reboot

Click the REBOOT button to perform a camera reboot.

AV Setup

## Device Settings

Audio Output Select

Loop: Audio from the Audio In port, for example, from a connected microphone, is directed to the Audio Out port for monitoring.

Comms: Audio from NDI®stream is directed to the audio out for camera operator comms. You'll need software such as BirdDog Comms Lite/Pro to use this function.

Audio In / Out Gain

Controls for adjusting the audio in/out gain.

NDI Encode Settings
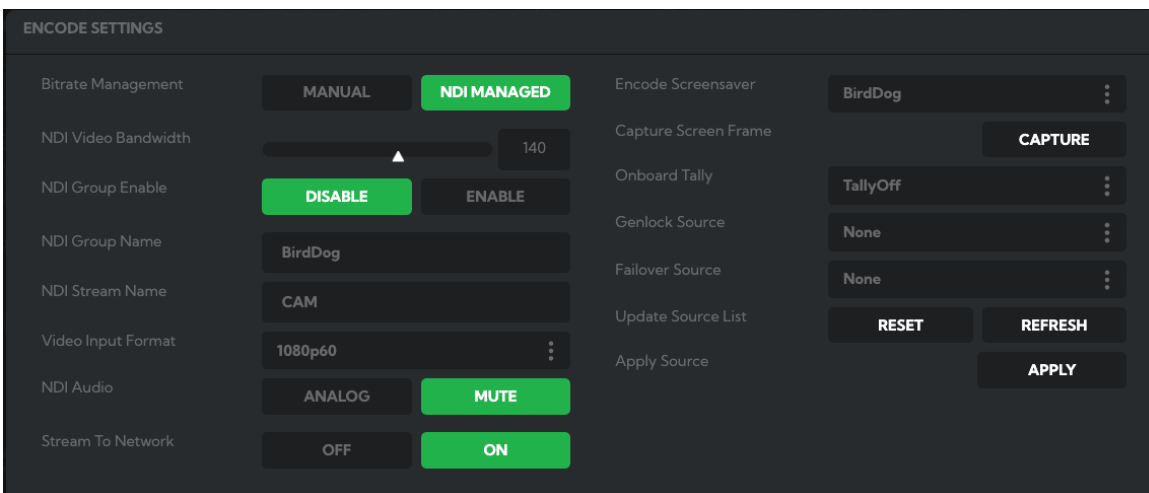
Bitrate Management

Birddog Devices allow you to set your target NDI® output bitrate. This allows you to select a compression ratio that is more efficient for your networking infrastructure (lower bandwidth) or higher image quality for critical footage. The scale allows you to select the range of 60 – 360 Mbps.

By setting Bitrate Management to NDI MANAGED, the target bitrate will be set in accordance with the NDI® standard. By selecting MANUAL you are able to manually select a target bitrate. Select MANUAL with care, as you will need to account for the capacity of the network and the receiving device.

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.

Stream Name

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

NDI Video Format

PF120 is capable of outputting independent video formats for both NDI® 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 29.97/30fps based camera setting.

NDI Audio

Select MUTE to disable the NDI® audio. Select ANALOG to receive audio from the audio inputs.

Stream to Network

You can choose to disable the NDI® output stream.

Encoder 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.

Onboard Tally

Enable the camera Tally lights.

NDI® Genlock Source

Select the genlock source from the dropdown list.

Failover Source

NDI® has a failover function whewre 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 *Available NDI Sources* field to select your alternate 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.

Device Restart

Restarts the NDI® stream. This may be necessary after changing key image settings e.g., resolution.

CamControl

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.

Zoom Speed

When controlling PF120 over NDI® you can set the maximum speed of zooming.

Image Settings Reset

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

FreeD Tab

Enable or disable FreeD. FreeD is a protocol for real time camera PTZ position query. Any application that uses FreeD can use this data, usually in a virtual environment, where a physical camera move (i.e. pan, tilt, zoom or iris change) can trigger the virtual environment to follow that move in real time. For PF120, zoom and iris data is transmitted.

Host IP Address / Port

Enter the IP address of the host and the port that the data package will be sent to.

Apply FreeD Settings

Click the APPLY button to save your changes.

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.
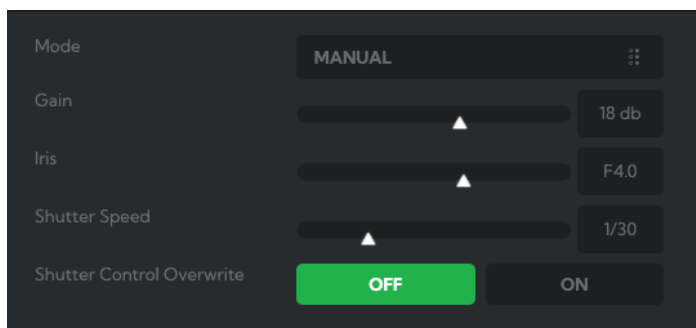
Exposure Tab

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. The exposure is adjusted automatically using the values manually set for SPEED, GAIN and EXPOSURE COMPENSATION.

Bright: The bright control adjusts both gain and iris using an internal algorithm, according to a brightness level set by the user. Exposure is controlled by gain when in dark conditions, and by iris in bright conditions. As both gain and iris are fixed, this mode is used when exposing at a fixed camera sensitivity.

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, 1080i50, 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, 1080i59.94, 1080P29.97, 720P59.94, 1080P59.94, 1080I60, 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 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.

Manual 1 / Manual 2: These two user modes allow you to manually set the following color balance parameters.

Cam Red/Blue Gain

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

Cam Color Temp

Sets the color temperature of the image in degrees Kelvin.

Picture Tab

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 6 levels from 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.

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

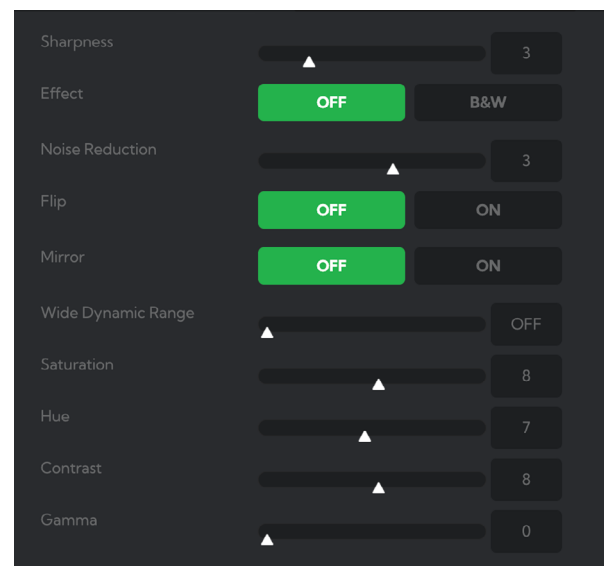Adjusts the intensity of colors in the image from a range of 1–15.

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). Smaller values lower contrast.
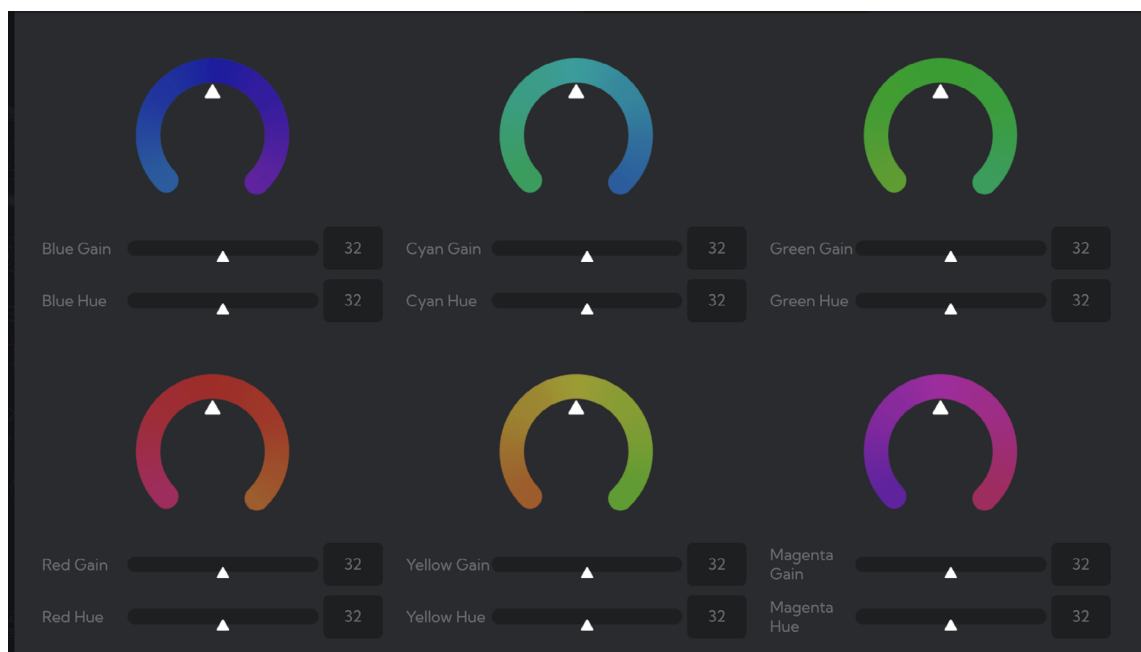
Gamma

Adjusts the gamma of the image from 0 to 1.

Color Matrix Tab

The Color Matrix features 64 levels of adjustment of Gain (Intensity) and Hue (offset) 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.

Color Gain

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

By increasing the gain value, the camera will add additional intensity to all parts of the image pertaining to this color. Conversely, reducing the color gain will take some intensity out of the target color. This can be useful in some lighting conditions where certain colors appear over saturated to the camera.

Color Hue

The Color Hue option adjusts the temperature or phase in which any color is represented. When looking at the color spectrum, beyond the true color points (Red, Green, Blue, Cyan, Magenta and Yellow), there are areas where the colors transition to their neighboring color point. Color Matrix controls allow you to adjust the color offset in a negative (counter clockwise) or positive (clockwise) direction, effectively moving the cameras response to any color towards its neighboring color transition point.

Adjusting individual color Hue can assist dramatically in matching color representation from the camera to true-to like colors or matching P120 to other cameras in your production.

Using a Color Chart

It is recommended to utilize a color chart or color chip chart when adjusting the Color Matrix controls. These charts are available readily and have color chips for each of the colors that the camera can adjust. By utilizing a color chip chart you are more easily able to see the impact of any adjustment you are making.

Using a color chip chart such as the Datacolor SpyderCheckr can be beneficial to fine-tuning adjustments in the camera Color Matrix.

Scopes

Since there is variation in both the eyesight of individuals and video monitors, Cam Control offers NDI® video scopes to assist in evaluating the color and tonal qualities of your image.

Program / Preview Enable: Choose to overlay the scopes on either the program output, the preview output or both.
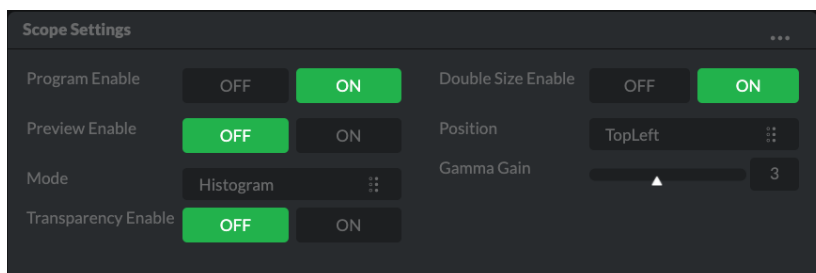
Transparency Enable: Click the ON button to enable scope transparency, allowing the video image to be visible behind the scopes.

Double Size Enable: Click the ON button to select the large scope size.

Position: Selects the position of the overlayed scope on the video image. Select from Top Left, Top Right, Bottom Left and Bottom Right.

Gamma Gain: Adjusts the brightness of the displayed scopes.

Mode

Histogram: The Histogram shows the distribution of luminance (brightness) in the image, from darker pixels on the left of the scope, to brighter pixels on the right. The height of the curve is a measure of the number of pixels in the image with a particular luminance value. Unlike the Waveform or RGB Parade scope, the Histogram does not indicate the left to right physical position of the luminance values in the image.
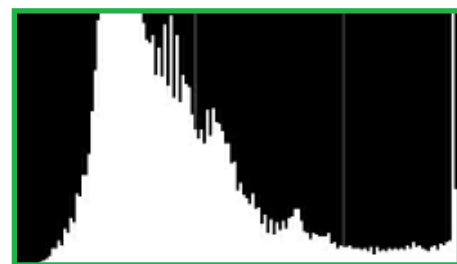
Waveform: The Waveform scope shows the distribution of luminance in the image as a waveform that ranges from zero at the lower horizontal line, to 100 % intensity at the upper horizontal line. The left to right position of the values match their position in the image.
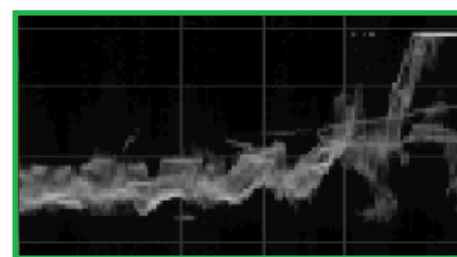

RGB Parade: The RGB Parade shows the intensity of Red, Green and Blue in the image as separate waveforms that ranges from zero at the lower horizontal line, to 100 % intensity at the upper horizontal line. For each waveform, the left to right position of the values match their position in the image.
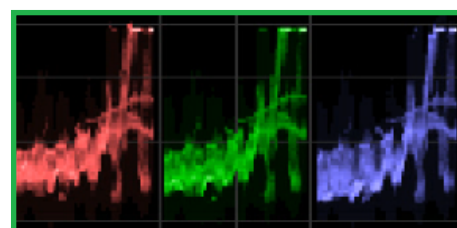
Vector: The Vectorscope is a circular graph that displays the chrominance (hue and saturation) of the image colors. The distance from the center indicates the degree of color saturation, from zero intensity at the center of the circle, to 100% intensity at the edge of the circle.

The graph is divided into color segments, each indicated by the colored perimeter of the circle, showing the dispersion of color in the image. A Waveform scope is also displayed on the left side of the Vectorscope.
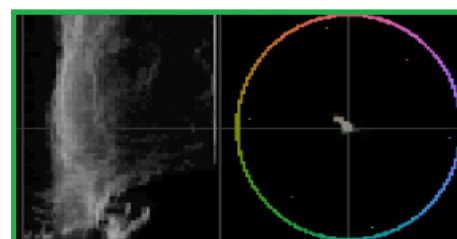
Receiving NDI® Video

There are many applications that support receiving the NDI® signal that PF120 produces. Each application will vary slightly on how you choose your source.

NewTek Studio Monitor: NDI® Tools is a free suite of applications designed to introduce you to the world of IP video and is available here.

The included Studio Monitor application allows you to monitor many NDI® sources on a standard Windows computer. Once Studio Monitor is launched on your computer, simply right click anywhere in the interface and select your camera from the drop–down list.

Once connected to PF120, a configuration gear icon is displayed on the bottom right–hand side of the video display providing shortcut access the PF120 BirdUI.

NewTek TriCaster Series: NewTek TriCaster series devices allow several NDI® sources to be received simultaneously, the amount of simultaneous connections varies by what model TriCaster you have. Consult your TriCaster user manual to determine how many connections are available on your device.

To select PF120 as a source on your TriCaster, click on the configuration gear icon below your desired source location which will then display the Input Setting dialog. Select your PF120 source from the dropdown list.

Once connected to PF120, a configuration gear icon displays next to the source dropdown window that provides shortcut access the PF120 BirdUI.

NDI® Camera Control

The easiest way to control your camera is via the BirdDog PTZ Keyboard!

BirdDog PTZ Keyboard supports NDI®, NDI®|HX, Visca over IP, RS422, and RS232. By harnessing BirdDog's next generation NDI® and IP technology, it's never been easier to discover, connect, and control your PTZ cameras.

IP Connection

IP Port to Network Switch

1. Connect the camera NDI® Ethernet port to a port in a Ethernet switch on your network. The switch must provide PoE+ if you are not using the power adaptor.

2. Connect the PTZ Keyboard's IP port to a port on the Ethernet switch (or other connected switch on the same network subnet).

3. Login to the web interface (BirdUI) of the camera and PTZ Keyboard to configure the appropriate settings.
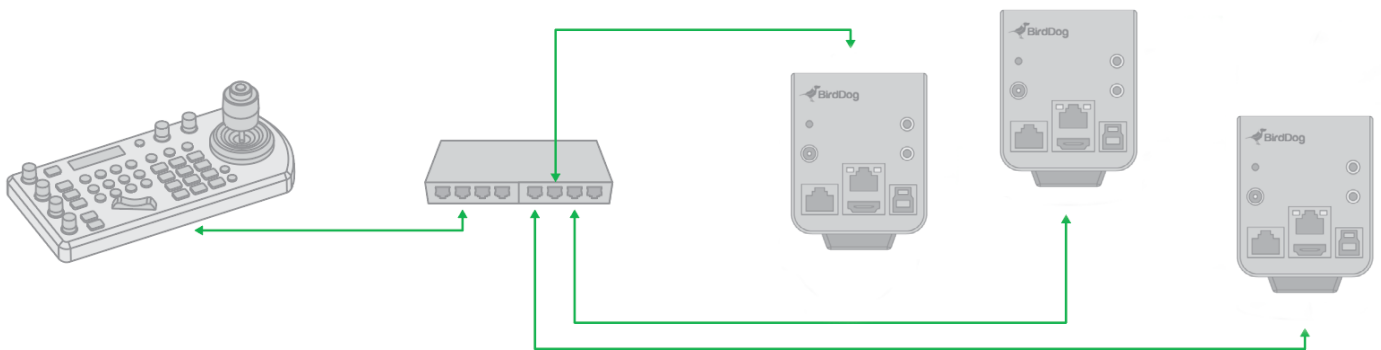
Controlling Your Camera Via Other Protocols

PF120 also supports control via:

- VISCA–over–IP (VISCA/PELCO P/D)
- RS–232 (VISCA).

When the camera is connected to a computer and joystick keyboard with a VISCA cable (cross type, RS–232), you can operate the camera with the computer and the joystick keyboard.

When the camera is connected to a joystick keyboard a control cable (cross type, RS–422/485), you can operate zoom with the joystick keyboard.

In this connection configuration, a HDMI cable, SDI video cable, data cable and network cable is required. To obtain these third–party components or accessories, consult the dealer where you bought your camera.
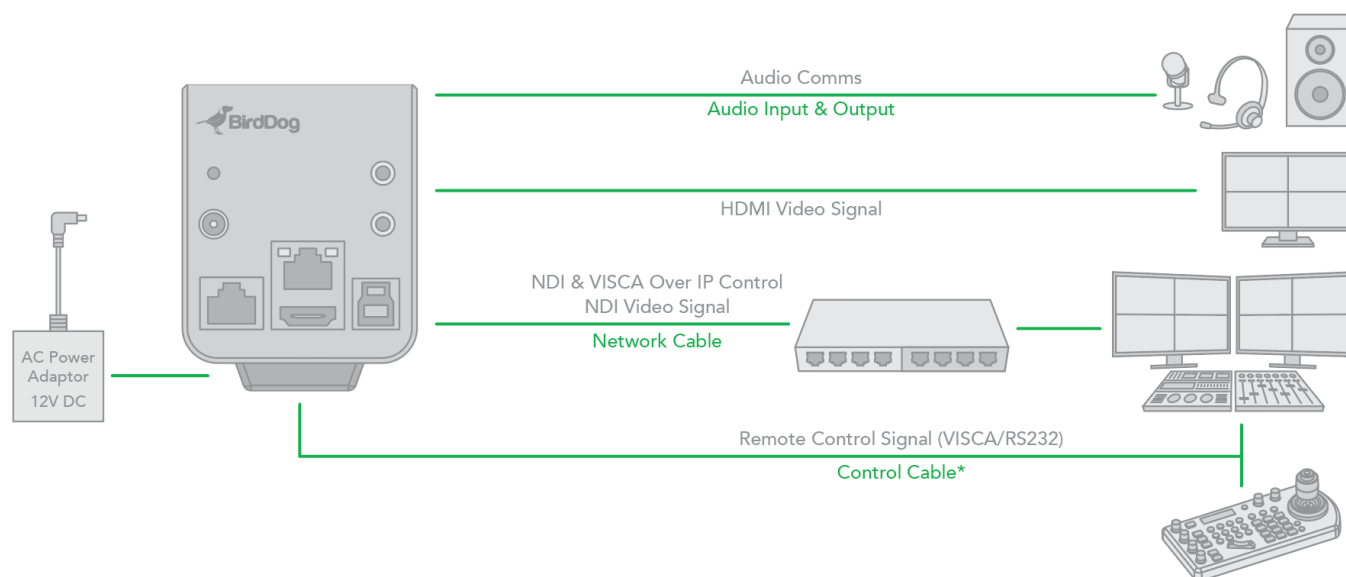
Camera Initial Setting Status Information

Upon bootup, the following information of the camera initial setting status will display on the monitor for 5 seconds.

1. Camera PELCO ID for RS–232 control.
2. Baud Rate current setting.
3. Control COMM Port current setting.
4. Video format current setting.
5. HDMI current setting.
6. Model number.
7. Firmware version.

CAMERA STATUS INFO DISPLAY	
PELCO ID	001
BAUD RATE	9600
COMM TYPE	232
FORMAT	1080p29.97
HDMI OUT	YUV
MODEL TYPE	PF120
SV	V0B1100S36[...]

VISCA over IP Control

With VISCA over IP, you can control the camera using the VISCA protocol on a controller equipped with IP communication capabilities via LAN.
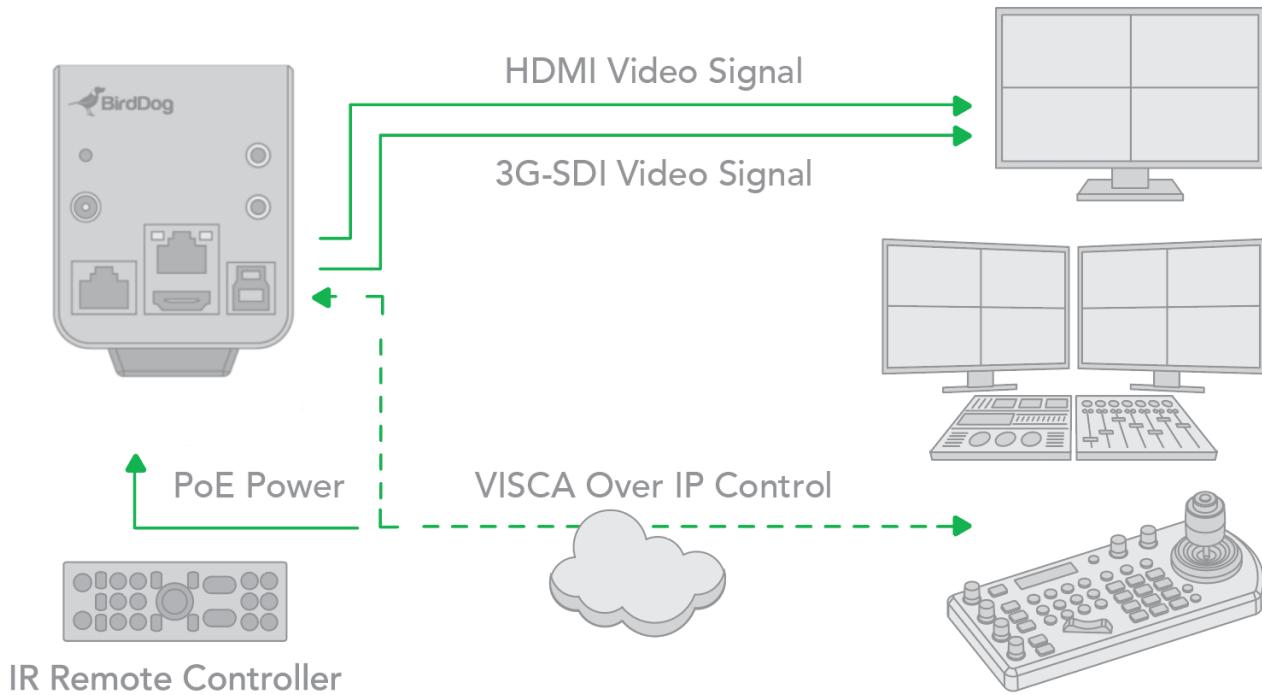
VISCA over IP communication specifications:

- Interface: RJ–45 10/100/1000 Mbps
- Interface protocol: IPv4
- Transport protocol: UDP
- IP address: 192.168.100.100 By default
- Port: 52381

Controlling via VISCA over IP

1. Connect the network port on the camera to the network switch.
2. Set the IP address and other network information appropriately to communicate on your network.
3. Connect the VISCA over IP compatible controller to the network.
4. Configure the controller to access the camera's IP address and VISCA over the IP port.
5. The IP port within on your control must be set to 52381 to communicate with the camera.
6. Select VISCA protocol on your IP control device.

Using RS-232 (VISCA)

You can use the RS-232 port to connect to optional controllers, such as joystick control keyboard or control PC station, to operate the camera, perform zoom operations (using the joystick of the control keyboard), and use the Preset function using the control buttons.

An application software that supports this unit is needed if you use a PC station.
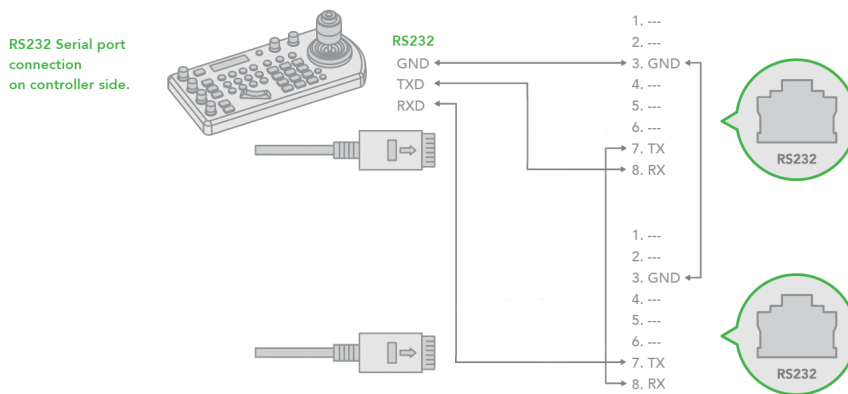
RS232 Connection

You can make RS232 connections in the following ways. The camera supports Daisy Chain connection of up to 7 cameras.

1. Set the camera Baud Rate to the same setting as the keyboard you are using.
2. Set the specific camera address for camera control in the camera On-Screen-Display (OSD) System menu.
3. If you want to have the camera address to be automatically assigned by VISCA controller, set the camera DIP switch address to 0.
4. Reboot the camera.

Use one of the connection methods below.

    a. Use an RJ45 to RS232 (VISCA) control cable. The controller must be VISCA compatible.
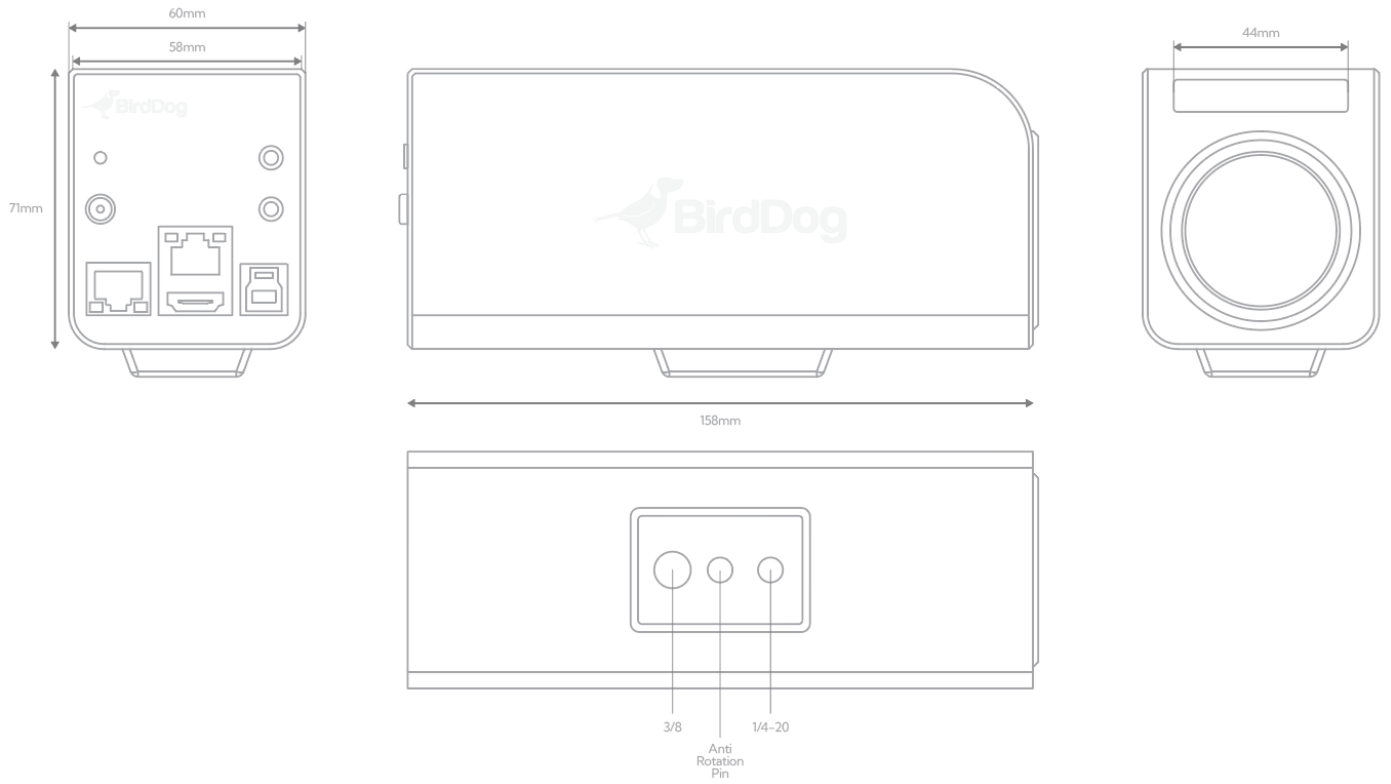

    b. Use a CAT5/6 network cable (T-568B standard pinout) to make an RS232 connection by following the pin definition below:
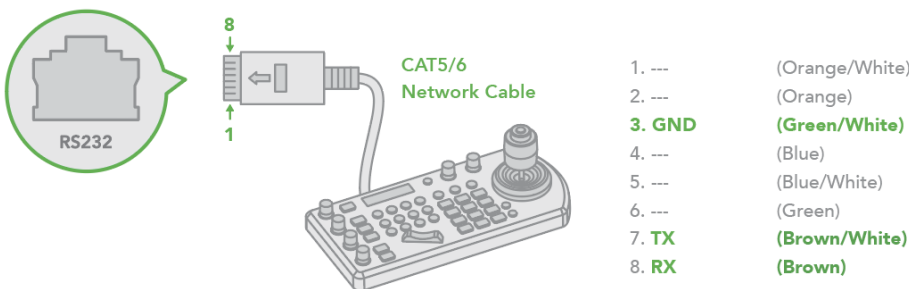
Camera Dimensions

Unit: mm

60mm
58mm
71mm

158mm

44mm

3/8
Anti
Rotation
Pin
1/4–20

Glossary

Domain

A domain contains a group of computers that can be accessed and administered with a common set of rules. Domain can also refer to the IP address of a website on the Internet.

DNS

DNS (Domain Name System) is a system used by the Internet and private networks to translate domain names into IP addresses.

mDNS

mDNS (Multicast DNS) refers to the use of IP multicast with DNS to translate domain names into IP addresses and provide service discovery in a network that does not have access to a DNS server.

Ethernet

Ethernet, standardized as IEEE 802.3, refers to a series of technologies used to connect computers and other devices to a LAN (Local Area Network) or wide area network (WAN).

Firmware

Firmware is a class of software held in non-volatile memory that provides the low-level control for a device's hardware.

Gigabit Ethernet (GigE)

An Ethernet capable of transmitting frames at a rate of a gigabit per second. A Gigabit capable Ethernet network is recommended for NDI® production workflows.

IP

IP (Internet Protocol) is the communications protocol for the Internet, many wide area networks (WANs), and most local area networks (LANs) that defines the rules, formats, and address scheme for exchanging datagrams or packets between a source computer or device and a destination computer or device.

LAN

LAN (Local Area Network) is a network that connects computers and devices in a room, building, or group of buildings. A system of LANs can also be connected to form a WAN (Wide Area Network).

Mbps

Mbps (Megabits per second) is a unit of measurement for data transfer speed, with one megabit equal to one million bits. Network transmissions are commonly measured in Mbps.

NDI®

NDI® (Network Device Interface) is a standard allowing for transmission of video using standard LAN networking. NDI® comes in two flavours, NDI® and NDI®|HX. NDI® is a variable bit rate, I-Frame codec that reaches rates of around 140Mbps at 1080p60 and is visually lossless. NDI®|HX is a compressed, long-GOP, H.264 variant that achieves rates around 12Mbps at 1080p60.

PELCO

PELCO is a camera control protocol used with PTZ cameras. See also VISCA.

PoE

Power over Ethernet

Port

A port is a communications channel for data transmission to and from a computer on a network. Each port is identified by a 16-bit number between 0 and 65535, with each process, application, or service using a specific port (or multiple ports) for data transmission. Port can also refer to a hardware socket used to physically connect a device or device cable to your computer or network.

PTZ

Pan, tilt and zoom.

RJ45

A form of standard interface commonly used to connect computers onto Ethernet-based local area networks (LAN).

RS422, RS485, RS232

Physical layer, serial communication protocols.

Subnet

Subnet or subnetwork is a segmented piece of a larger network.

Tally

A system that indicates the on-air status of video signals usually by the use of a red illuminated lamp.

TCP

TCP (Transmission Control Protocol) is a network communications protocol.

UDP

UDP (User Datagram Protocol) is an alternative protocol to TCP that is used when reliable delivery of data packets in not required.

VISCA

VISCA is a camera control protocol used with PTZ cameras. See also PELCO.

WAN

WAN (Wide Area Network) is a network that spans a relatively broad geographical area, such as a state, region, or nation.

White Balance

White balance (WB) is the process of ensuring that white objects and by extension, all colour, in your video are rendered accurately. Without correct white balance, objects in your video display unrealistic color casts.

WELCOME TO THE FUTURE.

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