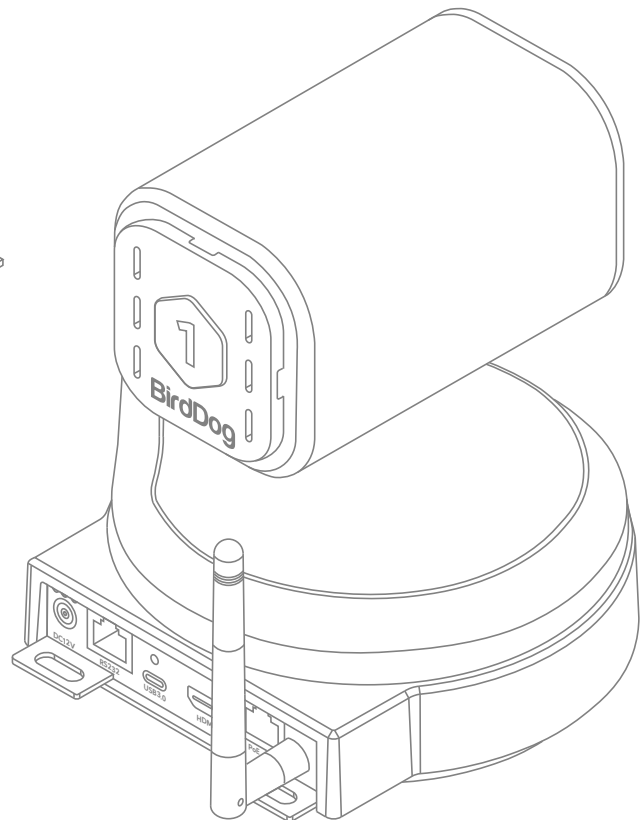


**X1**

**X1**  
ULTRA



## Wi-Fi HD and 4K PTZ Cameras



# 1 TABLE OF CONTENTS

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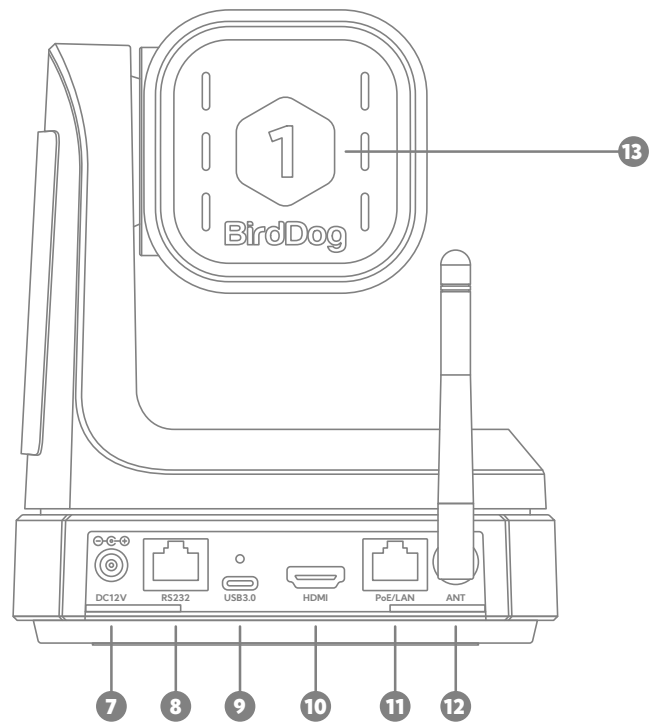
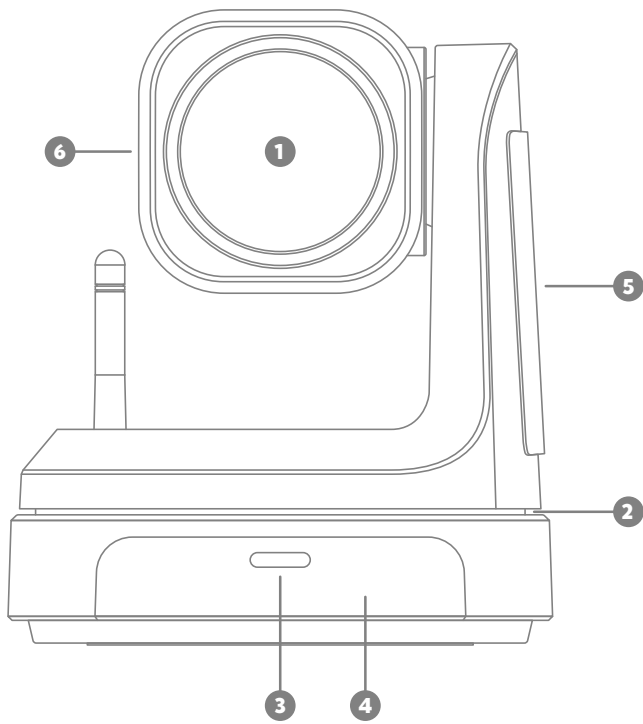
|                                   |    |
|-----------------------------------|----|
| Product description               | 2  |
| What's in the box                 | 3  |
| Technical specifications          | 4  |
| Remote control button description | 5  |
| Camera menu                       | 6  |
| Common operations                 | 9  |
| Installation instructions         | 11 |
| Web configuration panel           | 12 |
| Network setup                     | 13 |
| Camera dimensions                 | 15 |
| Warranty                          | 16 |



## NOTICE!

Specific frequencies of electromagnetic field may affect the image of the camera!

# 1 PRODUCT DESCRIPTION



| No. | Name                      |
|-----|---------------------------|
| 1   | Lens                      |
| 2   | Pan & Tilt                |
| 3   | Power & Standby indicator |
| 4   | IR Panel                  |
| 5   | Display (e-ink)           |
| 6   | Tally Light               |

| No. | Name                      |
|-----|---------------------------|
| 7   | DC 12V                    |
| 8   | RS232                     |
| 9   | USB 3.0                   |
| 10  | HDMI                      |
| 11  | PoE/LAN                   |
| 12  | Wi-Fi Antenna             |
| 13  | Rear Tally Silicon Number |

## 2 WHAT'S IN THE BOX

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PTZ Camera



Remote Controller



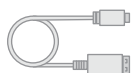
DC 12V Power Supply



Mounting Screws



Rear Silicon Numbers

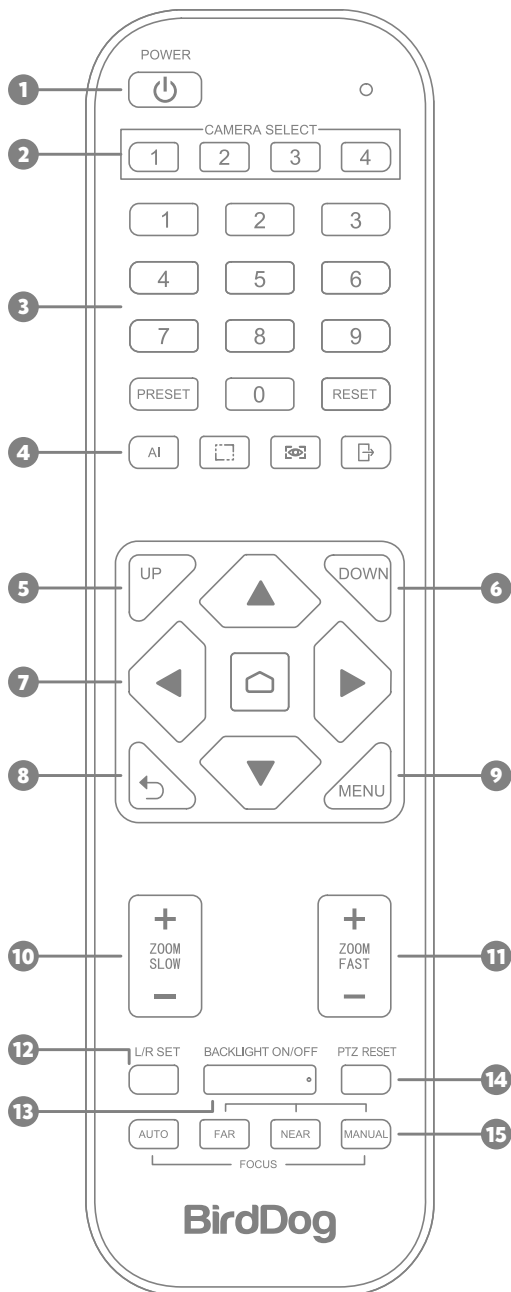


USB Cable

### 3 TECHNICAL SPECIFICATIONS

| Feature                        | X1  | X1 Ultra  |
|--------------------------------|---|---|
| <b>IMAGING</b>                 |   |   |
| Image Sensor                   | Sony 1/2.8" CMOS · FULL HD  | Sony 1/2.8" CMOS · ULTRA HD   |
| Lens                           | f=5.5mm - 110mm   | f=4.1mm - 49.2mm  |
| Optical Zoom                   | 20x   | 12x   |
| Video Format                   | 1080p @ 60/50/30/25fps<br>720p @ 60/50/30/25fps                                       | 2160p @ 30/29.97/25fps<br>1080p @ 30/29.97/25fps<br>720p @ 30/29.97/25fps |
| Horizontal angle of view       | 55.8° (W) - 3.2° (T)  | 70.28° (W) - 6.57° (T)  |
| Vertical angle of view         | 32.2° (W) - 1.8° (T)  | 42.06° (W) - 3.76° (T)  |
| Diagonal angle of view         | 61° (W) - 3.64° (T)   | 78.36° (W) - 7.5° (T)   |
| Aperture                       | F1.6 - 3.5  | F1.8 - 2.68   |
| Focus                          | Auto, Manual  |   |
| Exposure                       | Auto, Shutter Priority, Iris Priority, Manual   |   |
| Backlight Compensation         | YES   |   |
| Digital Noise Reduction        | 2D and 3D Noise Reduction   |   |
| SNR                            | >50dB   |   |
| Effective Pixels               | 2.07 MP   | 8.29 MP   |
| <b>MECHANICAL</b>              |   |   |
| Pan/Tilt Rotation              | ±175°, -90° ~ +90°  |   |
| Pan Control Speed              | 0.1 - 80°/sec   |   |
| Tilt Control Speed             | 0.1 - 60°/sec   |   |
| Preset Number                  | 255 presets   |   |
| <b>I/O INTERFACE</b>           |   |   |
| Video Output Interfaces        | HDMI, USB-C, Network  |   |
| Video Compression Format       | H.264, H.265  |   |
| Network Interfaces             | 100M adaptive Ethernet port; POE IEEE802.3af, Wi-Fi IEEE 802.11ac                     |   |
| Encoder Network Protocol       | NDI HX2, NDI HX3, RTSP, RTMP  |   |
| HDMI Decoder Network Protocols | NDI HX2, NDI HX3  |   |
| Control Interface              | 10M/100M Ethernet, Wi-Fi IEEE 802.11ac, RS232 (input & output), RS485, TYPE-C(UVC1.1) |   |
| Control Protocol               | VISCA Baud Rate: 38400/9600/4800/2400, VISCA-IP, NDI                                  |   |
| <b>GENERAL PARAMETER</b>       |   |   |
| Input Voltage                  | DC 12V, PoE IEEE802.3af   |   |
| Input Current                  | 2.0A (Max.)   |   |
| Power Consumption              | 13W (Max.)  |   |
| Working Temperature            | -10°C ~ +40°C   |   |
| Working Humidity               | 20% ~ 80%   |   |
| Dimension (W*H*D)              | 171.6*192.6*171.6mm / 260*217*197mm (before / after packing)                          |   |
| Net and Gross Weight           | 1.35kg/2.05kg (Net/Gross weight)  | 1.43kg/2.096kg (Net/Gross weight)   |

## 4 REMOTE CONTROL



### KEY DESCRIPTION

- 1. Standby/Power Key:**  
 In standby, press to power on; After power on, press to enter standby.
- 2. CAMERA SELECT Keys**  
 Press to control the camera.
- 3. Position**  
 Preset position setup keys, include PRESET and RESET.  
 Set the preset position.  
 Reset the preset position.
- 4. Special Keys**  
 AI Tracking.
- 5. UP**  
 Camera rotates horiz. in regular installed direction.
- 6. DOWN**  
 Camera rotates horiz. in reversed installed direction.
- 7. PTZ Control Keys**  
 PTZ move according to the arrow indicates.  
 Press to move PTZ back to the middle position.
- 8. Return/EXIT**  
 Return to previous menu or exit menu.
- 9. MENU**  
 Enter or exit OSD Menu after pressed it.
- 10. ZOOM Slow Key**  
 Zoom in or out slowly.
- 11. ZOOM Fast Key**  
 Zoom in or out quickly.
- 12. L/R Set**  
 Support, press this key for 10 Sec.
- 13. BACKLIGHT Key**  
 Turn on/off backlight compensation.
- 14. PTZ Reset**  
 Resets PTZ position.
- 15. FOCUS Keys**  
 Auto/Far/Near/Manual.

**Note:**

1. Please check whether the indicator corresponding to the camera selection area is ON or not.
2. If the remote control doesn't work, please replace batteries.
3. Make sure the key numbers on the camera selection area are consistent with the remote control address in the menu.

## 5 CAMERA MENU

Press [MENU] on the remote control to enter main menu of the ptz camera.

### 5.1 Level 1 Menu - Main Menu

| Main Menu       |         |
|-----------------|---------|
| → Exposure      |         |
| Color           |         |
| Image           |         |
| Information     |         |
| Restore Default |         |
| Language        | English |
| [Home]          | Enter   |
| [Menu]          | Back    |

Language: Support Chinese/English.  
Click the Home button on the Remote to enter level 2 sub-menu.  
Click the Menu button on the Remote to exit menu.

### 5.2 Level 2, Menu - Exposure

| Exposure  |         |
|-----------|---------|
| → Mode    | Auto    |
| Backlight | On/Off  |
| ExpComp   | 0-15    |
| Flicker   | 50/60Hz |
| [Return]  |         |

Mode: Auto/Manual  
Backlight Comp. : You can turn On/Off the backlight. When the background of the subject is too bright, or when the subject is too dark, backlight comp. will make the subject appear clearer.  
Exp. Comp. (exposure compensation): When mode is set to Auto, set this item to ON to enable exp. comp. When you set it to ON, you can select the exp. comp. level from 0 to 15.  
Flicker: Support 50Hz/60Hz.  
When changing the exposure mode to Manual, the sub-menu is the following

| Exposure |               |
|----------|---------------|
| → Mode   | Manual        |
| Iris     | F1.6          |
| Shutter  | 1/100000~1/25 |
| Gain     | 50            |
| Flicker  | 50Hz/60Hz     |
| [Return] |               |

Iris: F No. Setting, the value should be F1.6/F2.0/F2.4/F2.8/F3.4/F4.0/F4.8/F5.6/F6.8/F8.0/F9.6

Shutter: Shutter value setting, the value is between 1/100000 and 1 Gain, exposure gain setting, optional item is 0 to 99

### 5.3 Level 2 Menu-Color

| Color        |      |
|--------------|------|
| → Brightness | 50   |
| Contrast     | 50   |
| Hue          | 50   |
| Saturation   | 50   |
| Sharpness    | 50   |
| WB Mode      | Auto |
| Rtuning      | 50   |
| Btuning      | 50   |
| [Return]     |      |

Brightness: Set image brightness Dynamically. Default 50, optional item 0-99

Contrast: Set image contrast Dynamically. Default 50, optional item 0-99  
Hue: Set the relative brightness of the image. Default 50, optional item 0-99

Saturation: Set image color effect. Default 50, optional item 0-99  
Sharpness: Set sharpness level. Default 50, optional item 0-99  
WB mode: Auto/Manual/VAR

When the WB mode is Auto, the R-tuning and B-tuning value can be tuning, the range is 0 to 99;



When the WB mode is Manual, the sub menu will be the following:

| Color        |        |
|--------------|--------|
| → Brightness | 50     |
| Contrast     | 50     |
| Hue          | 50     |
| Saturation   | 50     |
| Sharpness    | 50     |
| WB Mode      | Manual |
| Rtuning      | 50     |
| Btuning      | 50     |
| Rgain        | 50     |
| Bgain        | 50     |
| [Return]     |        |

In manual WB mode, the followings value can be adjusted. The Rgain and Bgain value can be turned, the range is 0 to 99;

When the WB mode is VAR, the sub menu will be the following:

| Color        |             |
|--------------|-------------|
| → Brightness | 50          |
| Contrast     | 50          |
| Hue          | 50          |
| Saturation   | 50          |
| Sharpness    | 50          |
| WB Mode      | VAR         |
| Color Temp   | 2500K~9000K |
| Rtuning      | 50          |
| Btuning      | 50          |
| [Return]     |             |

The range for the color temp can be adjusted between 2500K to 9000K.

### 5.4 Level 2 Menu Image

| Image        |                  |
|--------------|------------------|
| → Flip       | Off/On           |
| Mirror       | Off/On           |
| Video Format | 1090P60          |
| USB Mode     | ISOC/BULK        |
| Style        | Normal/PC/Bright |
| [Return]     |                  |

Flip: Enable/disable the picture up/down flip

Mirror: Enable/disable the picture left/right flip

Video Format: 1080P60/1080P50/1080P30/1080P25/720P/60/720P/50

USB Mode: ISOC/BULK

USB mode: Adjust between Isochronous transfers mode and Bulk transfers mode

Style Mode: Normal, PC, Bright

### 5.5 Level 2 Menu-Information

| Information |                       |
|-------------|-----------------------|
| Model       | X1 / X1 ULTRA         |
| Version     | 1.1.1.1<br>2024-01-01 |
| → [Return]  |                       |

Model: X1 / X1 ULTRA

Version: 1.1.1.1

Date: 2024-01-01

Notice: The version number here is just an example, the actual parameters shall prevail.

| Restore Default |        |
|-----------------|--------|
| Restore?        | No/Yes |
| → [Return]      |        |

When the WB mode is Manual, the sub menu will be the following:

| Communication |             |
|---------------|-------------|
| → Protocol    | Pelco-D     |
| Address       | 1~255       |
| Baudrate      | 9600        |
| RC Address    | All/1/2/3/4 |
| [Return]      |             |

| Communication |             |
|---------------|-------------|
| → Protocol    | Pelco-P     |
| Address       | 1~32        |
| Baudrate      | 9600        |
| RC Address    | All/1/2/3/4 |
| [Return]      |             |

Protocol: Auto/Visca/Pelco-D/Pelco-P

Baudrate: 2400/4800/9600/38400

RC Address: All/1/2/3/4

### 5.6 Level 2 Menu-Information

| Information |                       |
|-------------|-----------------------|
| Model       | X1 / X1 ULTRA         |
| Version     | 1.1.1.1<br>2024-01-01 |
| → [Return]  |                       |

Model: X1 / X1 ULTRA

Version: 1.1.1.0

Date: 2024-01-01

Notice: The version number here is just an example, the actual parameters shall prevail.

| Restore Default |        |
|-----------------|--------|
| Restore?        | No/Yes |
| → [Return]      |        |

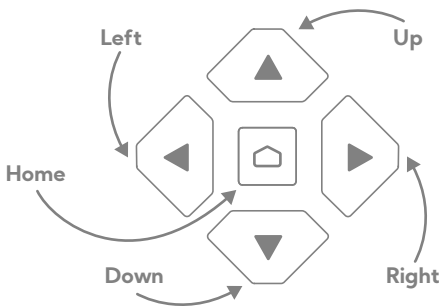
## 6 COMMON OPERATIONS

### 6.1 Camera Select



Refer to the dial-up at the bottom of the camera and choose camera address number that you want to control (1-4).

### 6.2 Camera Direction Control



### 6.3 Camera Focusing Mode Control



[AUTO FOCUS]

Switch the focus mode to AUTO

[MANUAL FOCUS]

Switch the focus mode to MANUAL

[FAR] Far focus manually

[NEAR] Near focus manually

### 6.4 Camera Zoom Control



Press any one of the 4 [ZOOM] to make the zoom functioning. These 4 keys are not applicable for fixed focus cameras.

### 6.5 Preset Setup, Call, Cancel



Reserve Preset: Press [PRESET], then press one of the numbers (0- 9) to reserve a preset that correspond to the NUMBER.

Note: You can setup 10 presets at most by the remote control.

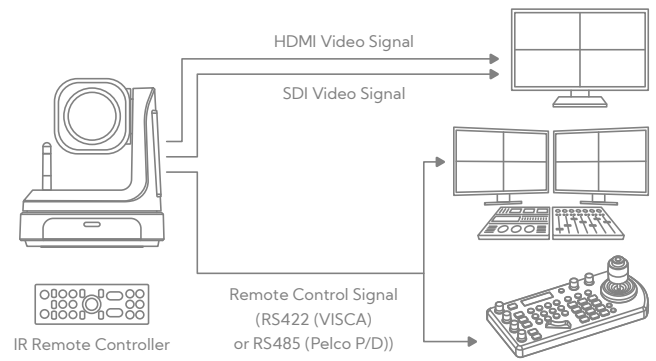
Call Preset: Press the NUMBER (0-9) directly to call the reserved preset. Note: Itwon't work ifthere's no preset reserved in the correspond-ed number.

Remove Preset: Press [ RESET], then press one of the number (0-9) to remove a preset that corresponds to the NUMBER.

### 6.6 Using RS-232 (VISCA)

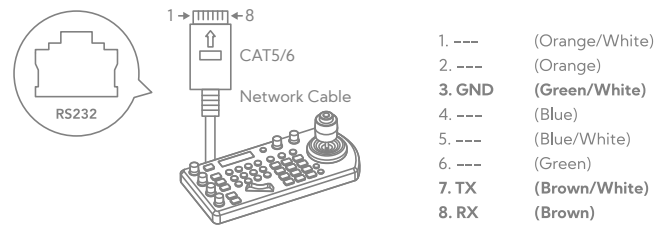
You can use the RS-232 port to connect to optional controllers, such as a joystick control keyboard, or control PC station, to operate the camera, perform pan, tilt and zoom operations and to use the Preset function using the control buttons.

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

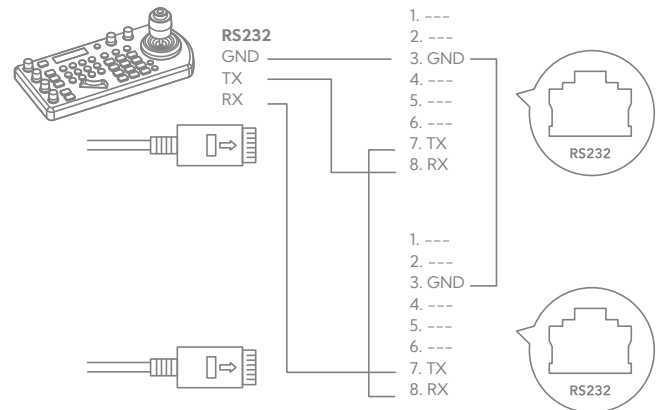


#### RS232 Connection:

- In order to use a RJ45 to RS232 (VISCA) cable, the controller must be VISCA compatible.
- You can use CAT5/6 cable (T-568B standard pinout) to make an RS232 connection by following the pin definition here on the right side.
- You can use RS232 to daisy chain multiple camera connection with a standard RS232 serial port controller as on the right side.



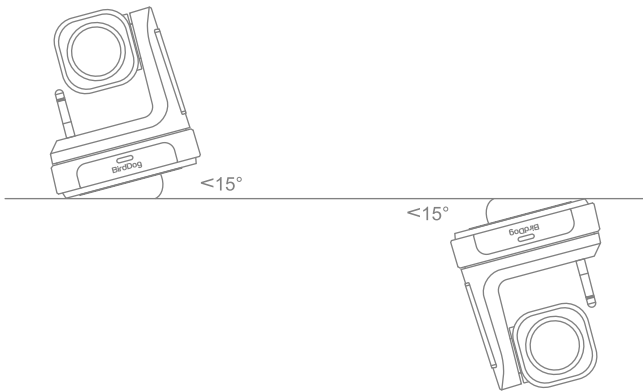
RS232 Serial port connection on controller side.



## 7 INSTALLATION INSTRUCTIONS

### 7.1 Surface Installation

Put the camera on the desk flatly, and make sure the camera is in a horizontal position. If you want to put the camera on an oblique surface, please make sure the angle of inclination is less than 15 degrees to ensure the camera pan and tilt work in normal operation.



### 7.2 Wall Mount Installation

Step 1: Mounting the wall mount bracket

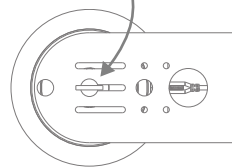
Wall mount bracket  
(This side is to the wall.)



Mounting the bracket vertically to the wall with screws.

Step 2: Install the camera

Screw hole



Rotate the camera clockwise to install it.

## 8 WEB CONFIGURATION PANEL

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

In order to access to the dedicated panel, you will need to scan the QR Code present on your camera e-ink screen, or via web browser by inserting the correct address IP as a web link.

An alternative way is through NDI Studio Monitor application:

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.



**Note:**

For more information about the BirdUI, please visit [BirdDog.tv/downloads](https://BirdDog.tv/downloads), or, [BirdDog.tv/birdui-overview](https://BirdDog.tv/birdui-overview)

**BirdDog PTZ X1 Ultra** Device Mode: Encode Source Status: Streaming NDI

**System Utilization**: 75%

Ethernet Status: **Not Connected**  
 Wi-Fi Status: **Connected**  
 Preferred NIC: **Wi-Fi**

**Wi-Fi Network**: BD-Office 2.4GHz

**Status**  
 NDI Video Stream Name: **CAM** Video Format: **1080p60** Audio Status: **Mute**

**Stream Info**  
 Video Resolution: **1920x1080** Video Frame Rate: **59.94** 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**

**System Details**  
 System Name: **birddog-newHX-x1** Eth. IP Address: **192.168.100.100** Firmware Version: **BirdDog\_X1.0.2**  
 MCU Version: **8** Wi-Fi IP Address: **192.168.100.5** Network Config Method: **DHCP**  
 Status: **Active** MAC address: **e8:eb:1b:49:a6:78**

**Device Restart** [RESTART] **System Reboot** [REBOOT]

## 9 NETWORK SETUP

### 9.1 Ethernet Network Configuration

Most computer networks provide for both automatic and manual configuration of network devices and the X1 can accommodate 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 the X1 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.

#### 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 its user defined name. Apple devices come pre-installed with Bonjour, while Windows devices need a plugin.

## 9.2 Wi-Fi Network Configuration

**BirdDog PTZ X1 Ultra** Device Mode: Encode Source Status: Streaming NDI

**Wi-Fi Network**

Wi-Fi:

SSID:

- Custom
- BirdDog Office 2.4GHz**
- WiFi Network 03
- WiFi Network 04
- WiFi Network 05
- WiFi Network 06
- WiFi Network 07

Configuration Method:

IP Address:

Subnet Mask:

Gateway Address:

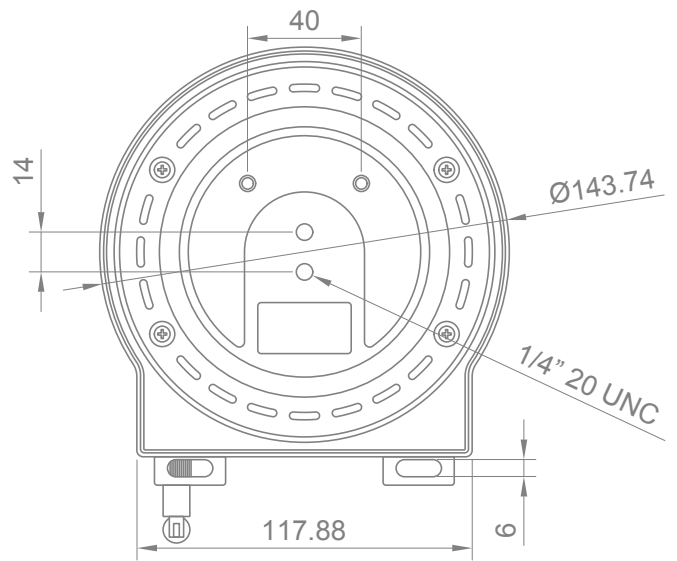
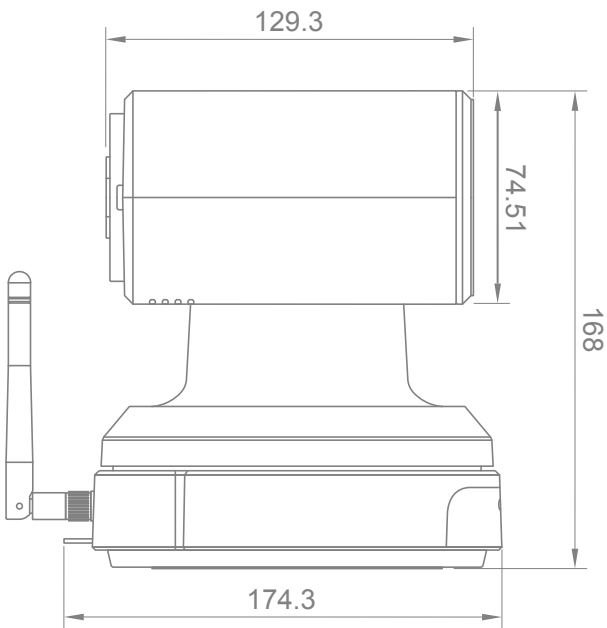
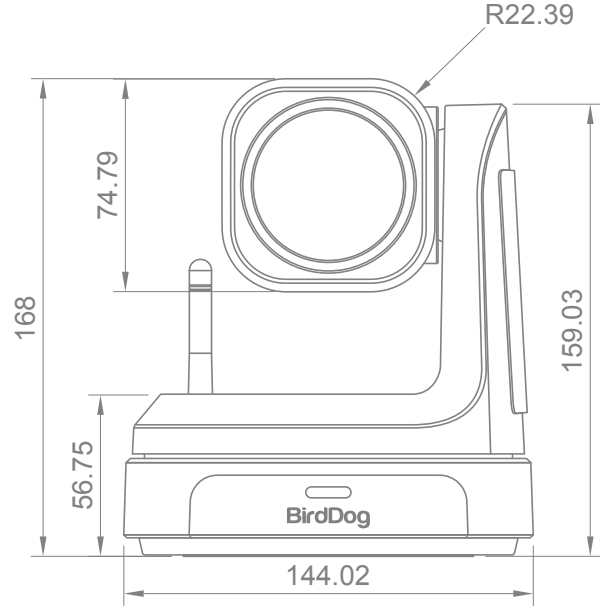
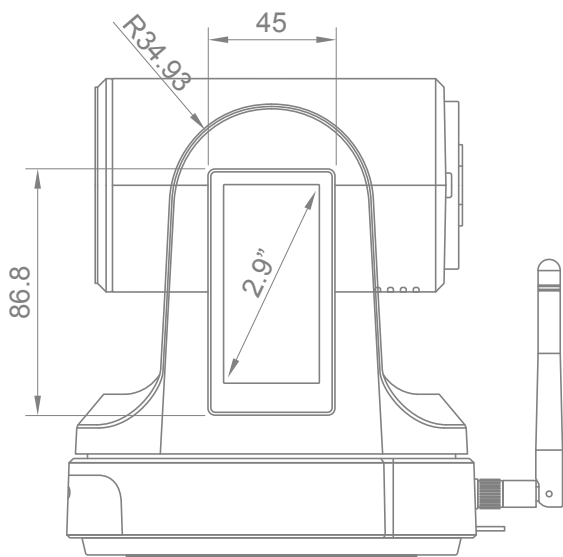
BirdDog Name:

From the dedicated tab:

1. Click the Wi-Fi On button to enable Wi-Fi operation.
2. Select your network.
3. Complete the rest of the Wi-Fi configuration as for Ethernet Network Configuration above.
4. Click the Apply button to save your changes.



# 10 CAMERA DIMENSIONS



## 11 WARRANTY

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### 5 Year Warranty

BirdDog P-series and X-series cameras feature a 5 year, global warranty. BirdDog prides itself on delivering the best possible products to customers, but if something was to go wrong, you can rest assured knowing that no matter where in the world you are, BirdDog has your back.

Read more at [birddog.tv/warranty-terms](https://birddog.tv/warranty-terms)





**BirdDog**

BirdDog.tv