



BirdDog X1 Series Manual & Guide

SEP • 2026



FCC REGULATORY CONFORMANCE



This device 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.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

NOTE: The manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications to this equipment. Such modifications could void the user's authority to operate the equipment.

RF Exposure

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance of 20 cm between the radiator and your body. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

IC Regulatory Conformance

This device complies with CAN ICES-003 (B)/NMB-003(B).

This device complies with Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions:

1. This device may not cause harmful interference, and
2. This device must accept any interference received, including interference that may cause undesired operation.

Cet appareil est conforme à la norme CAN ICES-003 (B)/NMB-003 (B).

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes :

1. L'appareil ne doit pas produire de brouillage, et;
2. L'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

RF Exposure

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance of 20 cm between the radiator and your body. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Cet équipement est conforme aux limites d'exposition aux rayonnements de la IC établies pour un environnement non contrôlé. Cet équipement doit être installé et fonctionner à au moins 20cm de distance d'un radiateur ou de votre corps.

EU regulatory conformance

RF exposure information: The Maximum Permissible Exposure (MPE) level has been calculated based on a distance of 20cm between the device and the human body. To maintain compliance with RF exposure requirement, use product that maintain a 20cm distance between the device and human body.

CE DOC

Hereby, BirdDog Australia declares that the radio equipment type X1, X1 30x and X1 Ultra are in compliance with Directive 2014/53/EU. Please refer to your reseller/integrator, should you require the CE DOC.

Manufacturer information:

Company name: BirdDog Technology Ltd
1-9 Sackville Street, Level4, Collingwood, VIC, 3066, Australia

Operation temperature: -10°C +40°C

Operation frequency (Max power)

Bluetooth: 2402-2480 (9dBm)

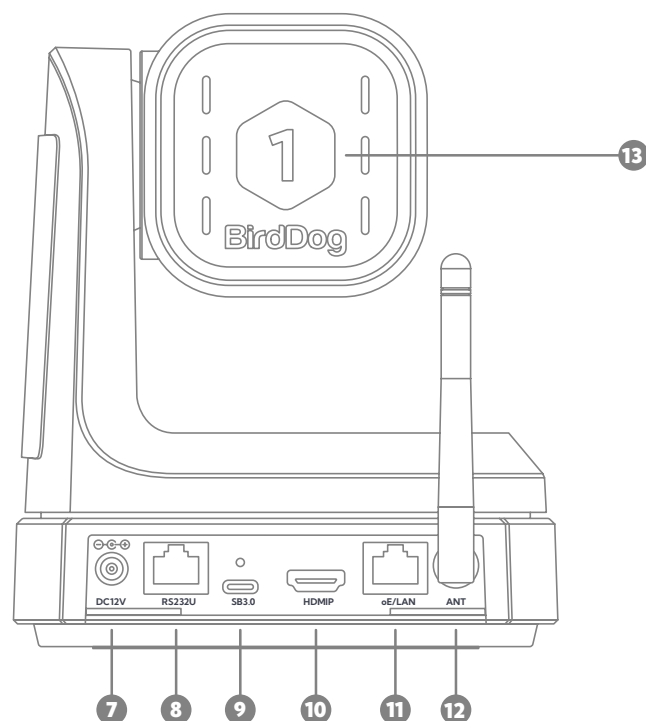
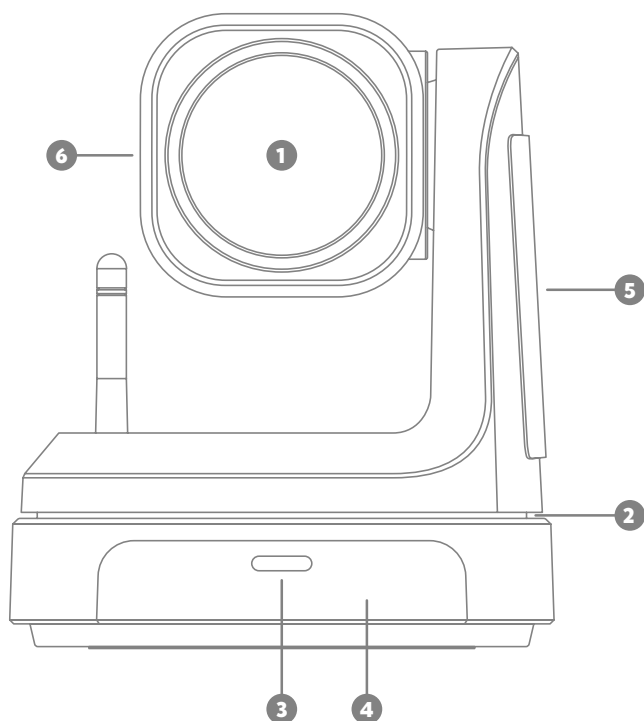


WARNING: Specific frequencies of electromagnetic field may affect the image of the camera!

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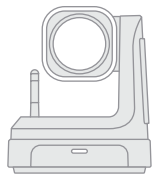
PRODUCT DESCRIPTION



No.	Name
1	Lens
2	Pan & Tilt
3	Power & Standby indicator
4	IR Panel
5	Display (e-ink)
6	Tally Light (Reflects Tally Status of NDI protocol only, not USB)

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

WHAT'S IN THE BOX



1x **PTZ Camera**



1x **Remote Controller**



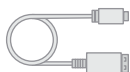
1x **DC 12V Power Supply**



Welcome Pack



Rear Silicon Numbers



USB Cable

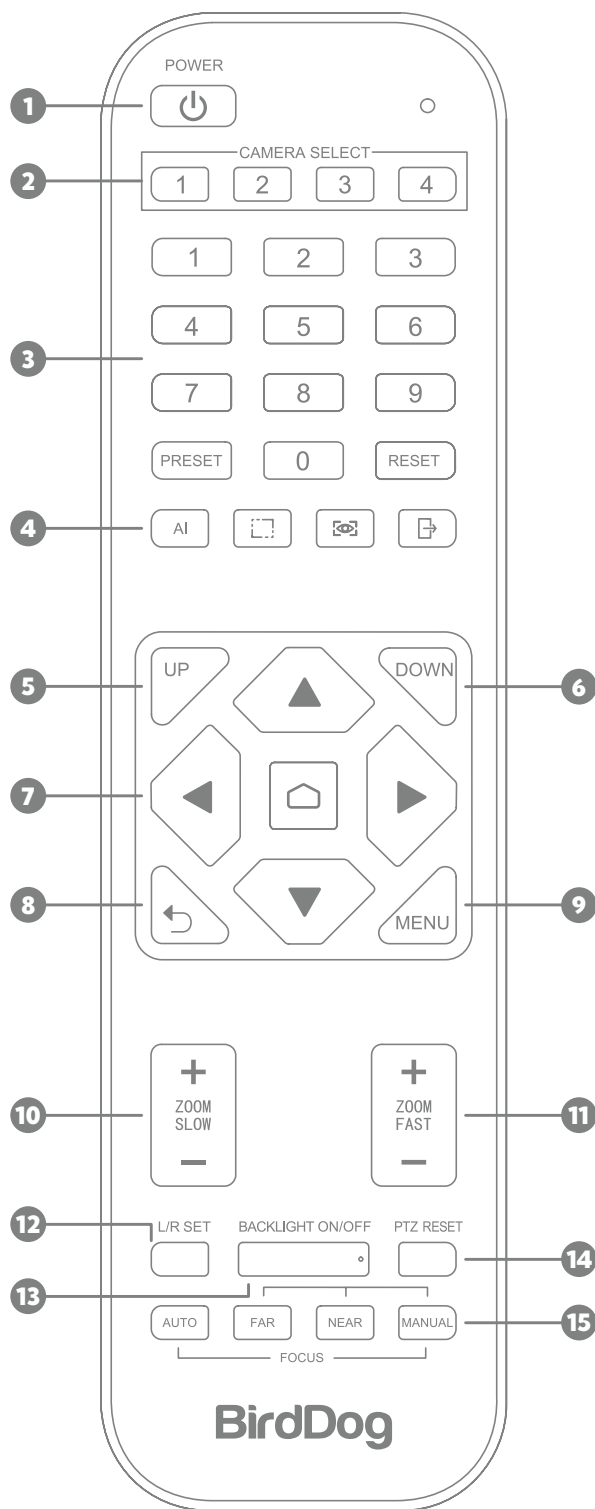
TECHNICAL SPECIFICATIONS

FEATURE	X1	X1 30x	X1 Ultra
IMAGING			
IMAGE SENSOR	Sony 1/2.8" CMOS · FULL HD	Sony 1/2.8" CMOS · FULL HD	Sony 1/2.8" CMOS · ULTRA HD
LENS	f=5.5mm ~ 110mm	f=5.2mm ~ 148.4mm	f=4.1mm ~ 49.2mm
OPTICAL ZOOM	20x	30x	12x
VIDEO FORMAT	1080p @ 60/59.94/50/30/29.97/25fps 720p @ 60/50/30/25fps	1080p @ 60/59.94/50/30/29.97/25fps 720p @ 60/50/30/25fps 608x1080p (9:16 ratio) @60/59.94/50/30/29.97/25fps	2160p @ 30/29.97/25fps 1080p @ 30/29.97/25fps 720p @ 60/50/30/25fps
HORIZONTAL ANGLE OF VIEW	55.8° (W) – 3.2° (T)	58.1° (W) – 2.14° (T)	70.28° (W) – 6.57° (T)
VERTICAL ANGLE OF VIEW	32.2° (W) – 1.8° (T)	33.8° (W) – 1.2° (T)	42.06° (W) – 3.76° (T)
DIAGONAL ANGLE OF VIEW	61° (W) – 3.64° (T)	65.4° (W) – 2.48° (T)	78.36° (W) – 7.5° (T)
APERTURE	F1.6 ~ 3.5	F1.3 ~ 4.8	F1.8 ~ 2.68
FOCUS	Auto, Manual	Auto, Manual	Auto, Manual
EXPOSURE	Auto, Shutter Priority, Iris Priority, Manual		
BACKLIGHT COMPENSATION	Yes		
DIGITAL NOISE REDUCTION	2D and 3D Noise Reduction		
MINIMUM ILLUMINATION	.5 lux		
SNR	>50dB		
EFFECTIVE PIXELS	2.07 MP		8.29 MP
FILTER RING (52MM)	-	YES	-
MECHANICAL			
PAN/TILT ROTATION	±175°, -90°~+90°		
PAN CONTROL SPEED	0.1 ~80°/sec		
TILT CONTROL SPEED	0.1 ~60°/sec		
PRESET NUMBER	255 presets		
INTEGRATED TALLY LIGHT	Halo Style, RGB (Front), Number Style (Rear), ATEM Tally Support		
I/O INTERFACE			
VIDEO OUTPUT INTERFACES	HDMI, USB-C UVC 1.1, Network		
VIDEO COMPRESSION FORMAT	H.264, H.265		
NETWORK INTERFACES	100M adaptive Ethernet port; POE IEEE802.3af, Wi-Fi IEEE 802.11ac		
ENCODER NETWORK PROTOCOLS	NDI HX2, NDI HX3, SRT, RTSP, RTMP		
HDMI DECODER NETWORK PROTOCOLS	NDI HX2, NDI HX3		
CONTROL INTERFACES	10M/100M Ethernet, Wi-Fi IEEE 802.11ac, RS232 (input & output), RS485, TYPE-C(UVC1.1)		
CONTROL PROTOCOLS	VISCA Baud Rate: 38400/9600/4800/2400, VISCA-IP, NDI		
3RD PARTY CONTROL PROTOCOLS	Support for Q-sys, Crestron and BitFocus Companion modules		
GENERAL PARAMETER			
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)	1.35kg/2.05kg (Net/Gross weight)	1.43kg/2.096kg (Net/Gross weight)

Included WiFi antenna 2dBi

REMOTE CONTROL

KEY DESCRIPTION



Shortcut Set

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. **AI Tracking**
Auto-framing, auto-traking, lock, exit.
5. **UP**
Filp image.
6. **DOWN**
Filp image.
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.
10. **ZOOM Slow Key**
Zoom in or out slowly.
11. **ZOOM Fast Key**
Zoom in or out quickly.
12. **L/R Set**
Horizontal control flip, press and hold for 10 sec.
13. **BACKLIGHT Key**
Turn on/off backlight compensation.
14. **PTZ Reset**
Re-calibrate PTZ.
15. **FOCUS Keys**
Auto/Far/Near/Manual.

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.

Privacy Mode: OFF (Camera always on), ON (Camera sleeps after 10s of non operation of USB Webcam or NDI).

HDMI Out: Internal (Camera Output), Decoder (NDI Decoder Output).

5.5 Level 2 Menu-Information

Information	
Model	X1 / X1 ULTRA
Version	1.1.1.1 2024-01-01
→ [Return]	

Model: X1 / X1 30x / 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.

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
	2024-01-01
→ [Return]	

Model: X1 / X1 30x / 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]	

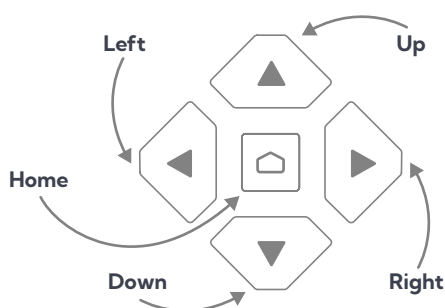
COMMON OPERATIONS

6.1 Camera Select

Select IR Remote camera operation from ALL to a specific number in the Communications setting in the OSD menu.



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: It won't work if there's no preset reserved in the corresponded number.

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

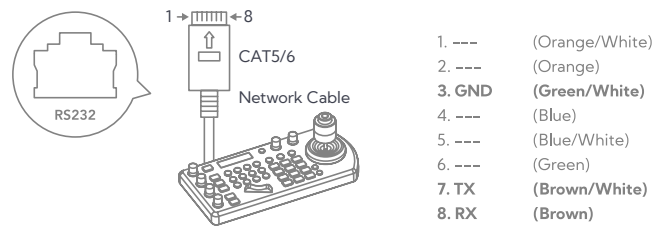
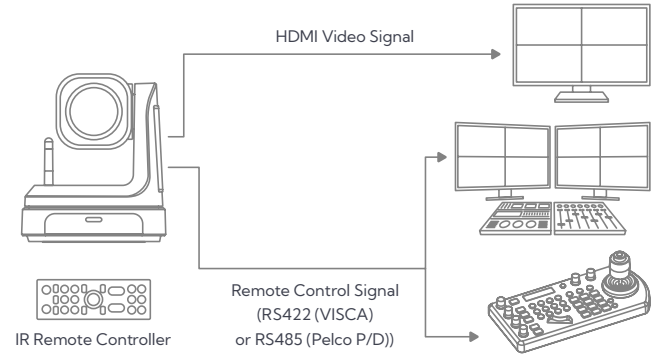
6.6 Using RS-232 (VISCA)

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.

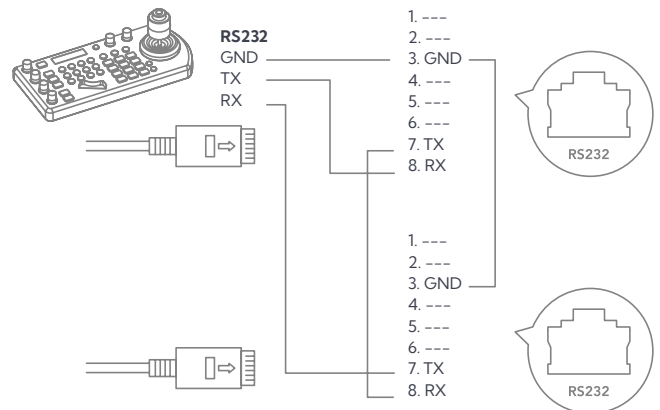
An application software that supports this unit is needed if you use a PC station.

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.



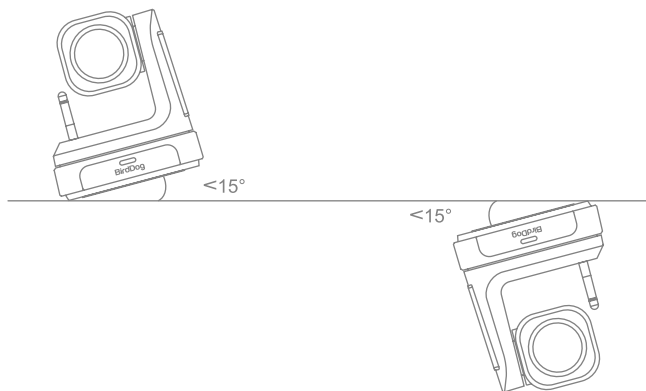
RS232 Serial port connection on controller side.



INSTALLATION INSTRUCTIONS

7.1 Surface Installation

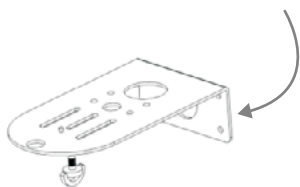
Put the camera on the desk flatly, and make sure the camera is in a horizontal position. If you want to put the camera on an oblique surface, please make sure the angle of inclination is less than 15 degrees to ensure the camera pan and tilt work normally.



7.2 Wall Mount Installation

Step 1: Mounting the wall mount bracket.

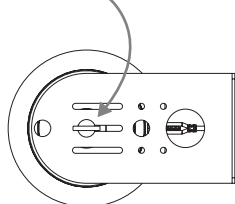
Wall mount bracket (This side is to the wall.)



Mounting the bracket vertically to the wall with screws.

Step 2: Install the camera

Screw hole



Rotate the camera clockwise to install it.

WEB CONFIGURATION PANEL

BirdDog cameras have a web interface (also 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, or, BirdDog.tv/birdui-overview




BirdDog PTZ
X1 Ultra

Device Mode: Encode
Source Status: Streaming NDI

75%
System Utilization

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

Dashboard

Network

System

AV Setup

Cam Control

Logout







BirdDog.tv

NETWORK SETUP





Dashboard
Network
System

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

Ethernet Network
Wi-Fi Network

Configuration Method

STATIC
DHCP

IP Address

192.168.100.100

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-X1-Ultra
.local

APPLY

9.1 Ethernet Network Configuration

Most computer networks provide for both automatic and manual configuration of network devices and the X1 Series 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 Series 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 -'.camera will default to the designated fallback IP address.

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.

9.2 Wi-Fi Network Configuration




Dashboard

Network

System

AV Setup

BirdDog PTZ X1 Ultra

Device Mode: Encode
Source Status: Streaming NDI

Ethernet Network

Wi-Fi Network

Wi-Fi
SSID:

ON

OFF

Custom

BirdDog Office 2.4GHz

WiFi Network 03

WiFi Network 04

WiFi Network 05

WiFi Network 06

WiFi Network 07

Configuration Method

STATIC

DHCP

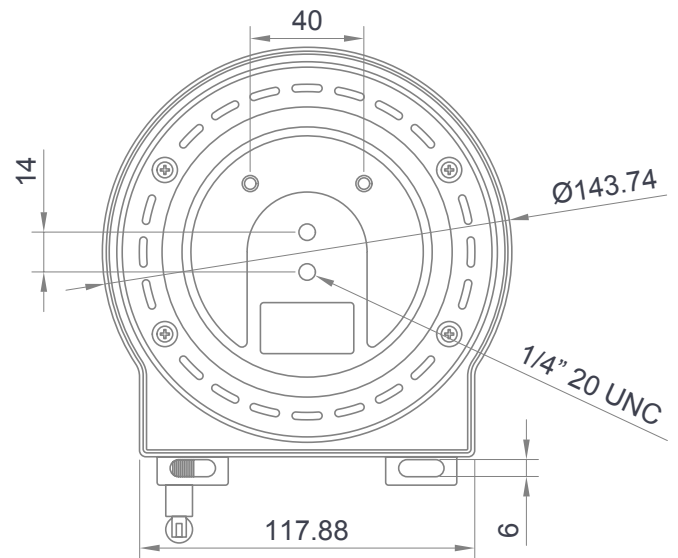
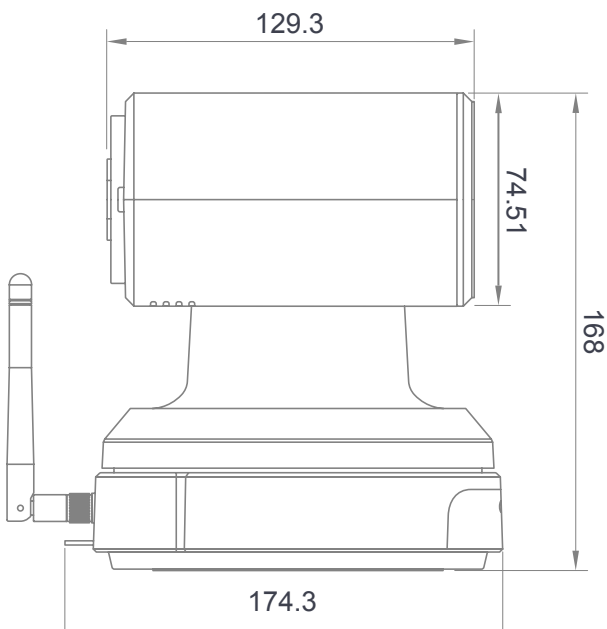
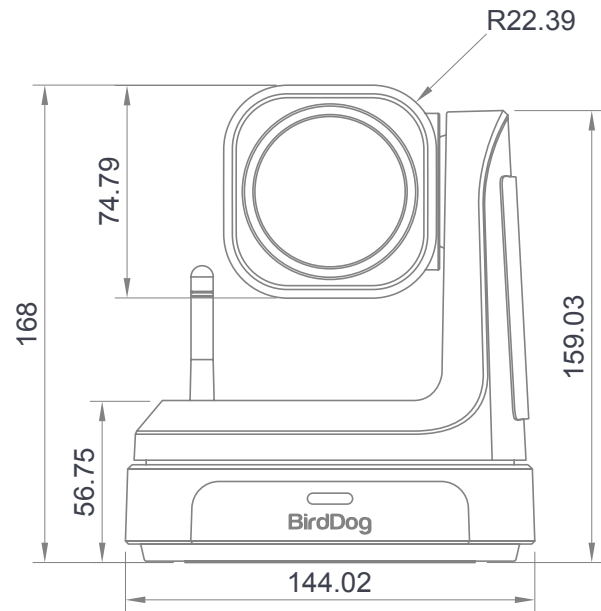
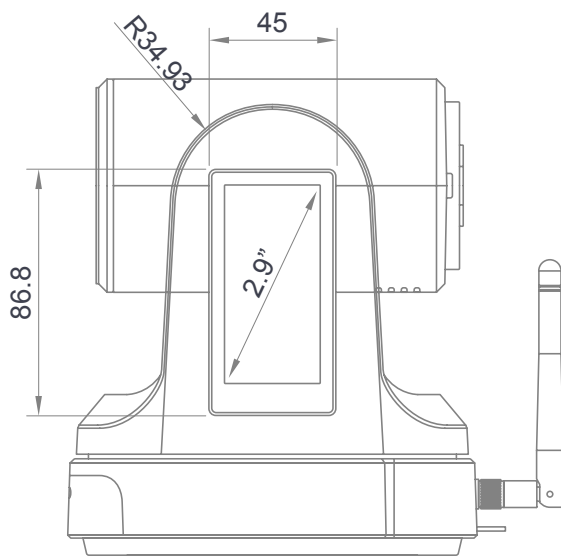
IP Address: 192.168.100.5
Subnet Mask: 255.255.255.0
Gateway Address: 192.168.100.1
BirdDog Name: BirdDog-X1-Ultra.local

APPLY

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.

CAMERA DIMENSIONS



NETWORK TAB

ETHERNET NETWORK

Network Details Section

Configuration Method

Toggle between DHCP (automatic) and STATIC (manual) IP address assignment.

IP Address

Current assigned IP address for BirdUI and the X1 Series's IP protocol streams.

Subnet Mask

Network subnet mask defining IP address range scope.

Gateway Address

Router IP address for network traffic routing.

DNS Server – Primary

Primary Domain Name Server address used for network hostname resolution.

DNS Server – Secondary

Optional secondary DNS server address used as fallback if the primary DNS server is unavailable.

DHCP Timeout

Duration in seconds before reverting to fallback IP when DHCP fails (30 seconds is the default).

DHCP Fallback IP Address

Preconfigured IP address used when DHCP assignment fails.

DHCP Fallback Subnet Mask

Subnet mask applied when using fallback IP configuration.

BirdDog Name

Device hostname identifier visible on the network and in NDI discovery (includes MAC address identifier).

APPLY

Saves and implements network configuration changes.

NDI NETWORK SETTINGS SECTION

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 Preferred Method

Network transport protocol selection. Multicast reduces bandwidth when multiple receivers are present. TCP provides maximum compatibility. RUDP offers reliability with packet recovery. UDP delivers lowest latency. Select the appropriate protocol based on your network environment.

Multicast Net Prefix

First three octets of multicast IP address range (239.255.0.0 standard).

Multicast Net Mask

Subnet mask defining multicast address scope.

Multicast TTL

Time-to-live value controlling how many network hops multicast packets traverse (1–255).

NDI Discovery Server

Toggle to enable/disable a custom NDI discovery server for cross-subnet stream visibility.

NDI Discovery Server IP Address

IP address of the external NDI discovery server when enabled.

APPLY

Saves and implements NDI network configuration changes.

ACCESS MANAGER CONFIGURATION

Remote IP Address List

File upload field for importing a list of approved remote IP addresses permitted to access the camera's NDI streams. Use SAVE to export the current list or UPLOAD to import a new one.

NDI Receive Groups

File upload field for importing NDI receive group assignments. Use SAVE to export the current configuration or UPLOAD to import a new one.

NDI Group Enable

Toggle between DISABLE and ENABLE to activate NDI group-based stream filtering. When enabled, the camera will only send and receive NDI streams within the configured groups.

NDI Send Groups

Text input field defining the NDI group name this camera transmits to (default: BirdDog). Only receivers configured for the same group name will discover this camera's NDI stream.

WI-FI NETWORK

The X1 Series supports wireless network connectivity via IEEE 802.11ac Wi-Fi, providing flexible deployment where running an Ethernet cable is not practical. Click the Wi-Fi Network tab to configure wireless settings.

Wi-Fi

Toggle between OFF and ON to enable wireless network connectivity.

SSID

Dropdown list displaying available Wi-Fi networks detected by the X1 Series. Select your network from the list. Signal strength for each detected network is displayed in dBm. A Custom option is also available for manually entering a network name not shown in the scan results.

When connecting to a WPA2-secured network, a password prompt will appear:

SSID

Displays the name of the selected Wi-Fi network.

Password

Password input field with show/hide toggle for the selected network's WPA2 security key.

CANCEL

Dismisses the password prompt without connecting.

JOIN

Submits credentials and connects the X1 Series to the selected Wi-Fi network.

Configuration Method

Toggle between DHCP (automatic) and STATIC (manual) IP address assignment for the Wi-Fi connection.

IP Address

IP address assigned to the X1 Series on the Wi-Fi network.

Subnet Mask

Network subnet mask for the Wi-Fi connection.

Gateway Address

Router IP address for Wi-Fi network traffic routing.

DNS

Domain Name Server address used for hostname resolution on the Wi-Fi network.

BirdDog Name

Device hostname identifier visible on the network and in NDI discovery.

APPLY

Saves and implements Wi-Fi network configuration changes.

AV SETUP TAB

DEVICE SETTINGS

Preferred NIC

Toggle between ETHERNET and WI-FI to select the preferred network interface for NDI streaming. When both interfaces are connected, this setting determines which one the camera uses for video transmission.

HDMI Output Mode

Toggle between ENCODE (camera outputs its own video signal through HDMI) and DECODE (HDMI displays an incoming NDI stream received over the network).

HDMI Output Format

Dropdown selector for HDMI output resolution and frame rate (e.g. 1080p60, 1080p30). Available options are determined by the active frequency setting.

Privacy Mode

Dropdown selector controlling camera availability. When set to ON, the camera enters a sleep state after 10 seconds of non-operation via USB Webcam or NDI. When set to OFF, the camera remains always on.

Device Restart

Restarts camera services without a full power cycle, applying any pending settings changes.

Color Space

Toggle between YUV and RGB to set the color space for the video signal output.

e-Ink Display

Toggle between CUSTOM (upload a custom logo via the Upload Custom Logo field below) and STANDARD (default BirdDog e-ink display layout showing the device hostname, IP address, and current video format).

Upload Custom Logo

File upload field for importing a custom image to display on the camera's e-ink screen. Click the three-dot menu to browse for the file.

NOTE: Only properly formatted files are supported for Custom E-ink Logos. Please ensure your file meets the following requirements: BMP file, 1-bit Black and White only (not grayscale), 128x296 pixels.

TALLY SETTINGS

Onboard Tally

Toggle to enable or disable the physical tally light from reacting when controlled by a vision switcher for Preview/Program (green, red) tally.

Tally Rest State

Dropdown selector for tally LED behavior when idle (Off, White, Custom RGB Color, RGB Color Cycle).

BMD Atem Tally

Toggle between OFF and ON to enable BlackMagic Design ATEM switcher tally integration, allowing the X1 Series's tally light to reflect the ATEM's preview and program states directly.

ATEM IP Address

IP address input field for the BlackMagic Design ATEM switcher on the network.

ATEM Camera Settings

Dual dropdown selectors for specifying the ATEM Mix Effect (ME) bus and Input number that correspond to this camera in the ATEM configuration.

ATEM Tally Settings – APPLY

Saves and implements ATEM tally integration settings.

PRIMARY ENCODER SETTINGS

Dante AV-H

Toggle between ENABLE and DISABLE to activate Dante AV-H audio-over-IP streaming. Dante AV-H must first be licensed and activated on the device. Once activated, a green checkmark will appear next to the Dante AV-H field in the AV Setup section of the BirdUI, and the ENABLE and DISABLE options will become available.

Streaming Protocol

Dropdown selector for the active IP streaming protocol (NDI HX, SRT, RTSP, RTMP). This determines how the X1 Series encodes and transmits video over the network.

NDI Stream Name

Text input field for the custom NDI stream identifier (default: CAM). This name appears when discovering the camera as an NDI source on the network.

Video Compression

Dropdown selector for codec format (H.264, H.265/HEVC).

Video Format

Dropdown selector for resolution and frame rate combination (1080p60, 1080p59.94, 1080p50, 1080p30, etc.).

Failover Source

Dropdown selector for a backup NDI source that the X1 Series will automatically switch to if the primary camera signal is lost.

Genlock Source

Dropdown selector for an external genlock reference signal to synchronize the camera's output timing with other devices in the production.

Update Source List

RESET — Clears the current source list. REFRESH — Rescans the network to update available NDI sources for Failover and Genlock assignment.

Apply Source – APPLY

Saves and implements source configuration changes.

Video Encoding Settings**Bitrate Control**

Toggle between VARIABLE (VBR, adapts bitrate to content complexity, suited for network-challenged environments) and CONSTANT (CBR, maintains consistent bandwidth).

Mode

Dropdown selector for encoding preset. Options include CUSTOM (for manual bitrate and GOP control), LOW, MEDIUM, HIGH, and a range of pre-configured NDI|HX3 format presets specifying codec and resolution (e.g. NDI|HX3: H264 1080p30, NDI|HX3: H265 1080p60).

GOP Size

Slider control with numeric value setting the Group of Pictures interval (keyframe frequency) for the encoder, affecting compression efficiency and seeking performance.

Bitrate (Mbps)

Slider control with numeric value setting the target bitrate in megabits per second. Only editable when Mode is set to CUSTOM.

Encode Screensaver

Dropdown selector determining what is displayed on the NDI HX stream when Stream to Network is set to OFF.

Capture Screen Frame

CAPTURE button that takes a still frame from the current video output.

Stream to Network

Toggle between OFF and ON to enable or disable NDI HX streaming to the network.

SECONDARY ENCODER SETTINGS

Protocol

Dropdown selector for the secondary streaming protocol (SRT, RTSP, RTMP, or DISABLE). The secondary encoder runs independently from the primary NDI HX stream, allowing the camera to simultaneously output to a secondary destination using a different protocol.

Apply Protocol – APPLY

Saves and activates the secondary encoder protocol configuration.

CAMCONTROL

The CamControl tab is the primary interface for operating the BirdDog X1 Series in real time. A live preview of the camera feed is displayed at the top of the page alongside PTZ joystick and preset controls. Sub-tabs below the preview provide access to motion speed settings, AI tracking, exposure, white balance, picture quality, colour matrix, and advanced focus parameters.

CAMERA CONTROL

Speed Control

Toggle between SUPER FINE and STANDARD to set the PTZ movement speed precision. SUPER FINE provides more granular speed steps for precise repositioning. STANDARD provides general-purpose movement speeds suited to most productions. Default: STANDARD.

Speed Match

Toggle between OFF and ON to enable zoom-relative speed matching. When enabled, pan and tilt movement speeds automatically scale down as the camera zooms in, maintaining proportional and controlled movement at all focal lengths. Default: ON.

Pan Speed

Slider control with numeric value for the pan movement speed. Default: 24.

Tilt Speed

Slider control with numeric value for the tilt movement speed. Default: 20.

Zoom Speed

Slider control with numeric value for the zoom movement speed. Default: 7.

Image Settings Reset

Button to reset all camera image settings to factory defaults. Click RESET to restore default values across the Picture, Exposure, and White Balance parameters.

Menu

Button to toggle the camera's on-screen display (OSD) menu on and off on the video output.

Zoom

Two buttons for direct zoom control. Click TELE to zoom in toward the telephoto end of the zoom range. Click WIDE to zoom out toward the wide-angle end.

Focus Mode

Toggle between AUTO and MANUAL to set the focus control mode. When set to AUTO, the camera continuously adjusts focus automatically. When set to MANUAL, focus is controlled using the Focus buttons below. Default: MANUAL.

Focus

Three buttons to manually adjust focus when Focus Mode is set to MANUAL. Click IN to shift focus to a closer distance. Click OUT to shift focus to a farther distance. Click ONEPUSH to trigger a single automatic focus operation and then return to manual focus control.

PTZ Controls

The PTZ Controls panel is displayed to the right of the live preview and remains accessible across all CamControl sub-tabs. It provides real-time pan, tilt, and zoom operation directly from the BirdUI.

T / W

Two buttons for stepped zoom control. Click T (Tele) to zoom in. Click W (Wide) to zoom out.

AF

Button to trigger a one-time automatic focus operation.

Zoom Slider

Vertical slider for continuous zoom adjustment. Drag toward T (top) to zoom in or toward W (bottom) to zoom out.

1P

Button to trigger a one-push automatic focus operation.

Pan/Tilt Joystick

Interactive joystick for real-time pan and tilt control. Click and drag the control point to move the camera. Movement speed is determined by the Pan Speed and Tilt Speed settings on the Camera Control sub-tab.

Preset Controls

The Select Preset panel to the right of the PTZ joystick provides preset storage and recall for camera positions and image configurations.

Select Preset Mode

Toggle between PTZ ONLY and CAMERA to determine what is stored when saving a preset. PTZ ONLY records only the pan, tilt, and zoom position. CAMERA records the PTZ position together with all current image settings including exposure, white balance, and picture parameters.

Preset Buttons (1–9)

Nine numbered buttons for storing and recalling camera presets. Click a numbered button to recall the stored preset and move the camera to that position. To store a preset, position the camera, select a numbered button, then click SAVE.

HOME

Button to return the camera to its configured home position.

SAVE

Button to save the current camera position and settings to the selected preset number. Select a preset number

first, then click SAVE to store the current state.

Preset Speed

Slider control with numeric value for the speed at which the camera moves when recalling a preset position. Default: 14.

AI TRACKING

AI Tracking

Toggle between ON and OFF to enable or disable AI-powered subject tracking. When enabled, the camera automatically adjusts pan, tilt, and zoom to keep the detected subject within the frame. Default: OFF.

Mode

Toggle between PRESENTER and ZONE to set the tracking behavior. In PRESENTER mode, the camera tracks the nearest or confirmed human subject detected in the scene. In ZONE mode, tracking is restricted to a user-defined zone within the camera's field of view.

Humanoid Frame

Dropdown selector for the tracking overlay display mode during AI Tracking. Options: OFF (no overlay), DEFAULT (standard tracking frame shown around the detected subject), DEBUG (extended diagnostic information overlay). Default: DEFAULT.

Target Selection

Two buttons for managing subject selection when multiple people are present in the frame. Click CONFIRM to lock tracking onto the currently highlighted subject. Click CHANGE to switch tracking to a different detected subject.

Tracking Hint

Toggle between ON and OFF to display an on-screen tracking hint overlay. When enabled, visual cues guide subject positioning within the frame. Default: OFF.

Automations

Two checkboxes that enable automatic camera behaviors during AI Tracking. Check Auto Zoom to allow the camera to automatically adjust zoom level based on the subject's distance and apparent size in frame. Check Auto Tilt to allow automatic tilt adjustment to keep the subject vertically centered.

Target Retention Time

Slider control with numeric value for the number of seconds the camera holds its current position after a tracked subject leaves the frame before returning to the tracking start position. Default: 6.

Figure Size Mode

Dropdown selector for the subject framing preset applied during tracking. Options: FULL (full-body framing), UPPER (upper-body framing), CLOSE (close-up head and shoulders), CUSTOM (manual framing size set via Figure Size Adjustment). Default: FULL.

Figure Size Adjustment

Slider control with numeric value for fine-tuning the tracked subject's framing size. When Figure Size Mode is set to CUSTOM, this directly controls the zoom level applied relative to the subject. Default: 120.

Tracking Start Position

Dropdown selector for the camera position the X1 Series returns to when a tracked subject is lost or tracking times out. Options: CURRENT LOCATION, PRESET 1. Default: CURRENT LOCATION.

Character Position

Dropdown selector for the horizontal screen position at which the tracked subject is framed. Options: Justify Left, Centered, Justify Right. Default: Centered.

NOTE: The following fields appear when Mode is set to ZONE.

Zone Settings

Dropdown selector for the active tracking zone configuration. Options: Zone A, Zone B, Zone C, Zone D. Each zone defines a region of the camera's field of view within which subjects are tracked. Click SAVE to store the current zone boundary configuration to the selected zone. Click DELETE to remove the selected zone configuration.

Tracking Start Area

Dropdown selector and visual area reference for designating which zone is used as the initial tracking entry region when AI Tracking is enabled. The A, B, C, and D markers represent horizontal area divisions across the camera's tracking field of view.

EXPOSURE

Mode

Dropdown selector for the exposure control mode. Options: FULL AUTO, MANUAL, BRIGHT, SHUTTER PRIORITY, IRIS PRIORITY. The fields displayed below this selector update to reflect the parameters available for the active mode. Default: FULL AUTO.

NOTE: The following field is displayed when Mode is set to FULL AUTO.

Exposure Compensation Level

Slider control with numeric value to adjust the overall image brightness while the camera manages all exposure parameters automatically. Positive values increase brightness; negative values reduce it. Default: 0.

NOTE: The following fields are displayed when Mode is set to MANUAL.

Gain

Slider control with numeric value for the image sensor gain level. Higher gain increases image brightness in low-light conditions at the cost of increased noise. Default: 0 dB.

Shutter Speed

Slider control with numeric value for the electronic shutter speed. A faster shutter speed reduces motion blur.

A slower shutter speed increases exposure in low-light environments. Default: 1/30.

Iris

Slider control with numeric value for the lens aperture. A lower f-number (wider aperture) admits more light. A higher f-number (narrower aperture) reduces light and increases depth of field. Default: F1.6.

NOTE: The following field is displayed when Mode is set to BRIGHT.

Bright Level

Slider control with numeric value for the target brightness level in Bright mode. The camera automatically adjusts exposure parameters to reach the specified brightness. Default: 0.

NOTE: The following field is displayed when Mode is set to SHUTTER PRIORITY.

Shutter Speed

Slider control with numeric value for the shutter speed. The camera automatically adjusts iris and gain to maintain correct exposure at the selected shutter speed. Default: 1/30.

NOTE: The following field is displayed when Mode is set to IRIS PRIORITY.

Iris

Slider control with numeric value for the lens aperture. The camera automatically adjusts shutter speed and gain to maintain correct exposure at the selected aperture setting. Default: F1.6.

WHITE BALANCE

Camera White Balance

Dropdown selector for the white balance control mode. Options: AUTO (continuous automatic white balance), MANUAL (direct R Gain and B Gain adjustment), INDOOR (preset optimized for tungsten and fluorescent indoor lighting), OUTDOOR (preset optimized for outdoor daylight), ONE PUSH (single-shot white balance calibration), COLOR TEMP (direct color temperature entry in Kelvin). Default: AUTO.

ONE PUSH

Button to perform a one-push white balance calibration. Point the camera at a neutral white or grey surface filling the frame, then click ONE PUSH to set the white balance based on the current lighting conditions.

NOTE: The following fields are displayed when Camera White Balance is set to MANUAL.

R Gain

Slider control with numeric value for the red channel gain in manual white balance mode. Increasing R Gain adds warmth to the image. Default: 99.

B Gain

Slider control with numeric value for the blue channel gain in manual white balance mode. Increasing B Gain adds cool tones to the image. Default: 99.

NOTE: The following field is displayed when Camera White Balance is set to COLOR TEMP.

Color Temp (k)

Slider control with numeric value for the color temperature in Kelvin. Lower values (e.g. 3200K) produce warmer, more amber tones. Higher values (e.g. 6500K) produce cooler, bluer tones. Default: 5600.

PICTURE

Sharpness

Slider control with numeric value for the image sharpness level. Higher values increase edge definition and fine detail. Lower values produce a softer image. Default: 50.

2D Noise Reduction

Slider control with numeric value for spatial (frame-level) noise reduction. Higher values reduce visible noise at the cost of potential softening of fine detail. Default: 30.

3D Noise Reduction

Slider control with numeric value for temporal (multi-frame) noise reduction. Higher values further reduce noise by comparing content across consecutive frames, and are most effective in low-motion scenes. Default: 30.

Flip

Toggle between OFF and ON to vertically flip the camera image. Enable when the X1 Series is mounted in a ceiling or otherwise inverted position. Default: OFF.

Mirror

Toggle between OFF and ON to horizontally mirror the camera image. Default: OFF.

Backlight Compensation

Toggle between OFF and ON to enable backlight compensation. When enabled, the camera increases exposure on foreground subjects to prevent silhouetting against bright backgrounds. Default: OFF.

Wide Dynamic Range

Toggle between OFF and ON to enable Wide Dynamic Range (WDR) processing. When enabled, the camera captures and blends multiple exposures to retain detail in both highlight and shadow areas of high-contrast scenes. Default: OFF.

Saturation

Slider control with numeric value for the color saturation level. Higher values produce more vivid colors. Lower values reduce color intensity toward monochrome. Default: 50.

Hue

Slider control with numeric value for the color hue offset. Adjusting hue shifts all colors uniformly around the color wheel. Default: 50.

Highlight Compensation

Dropdown selector to enable highlight compensation. When enabled, overexposed highlight areas in the frame are selectively reduced to recover detail. Default: OFF.

Contrast

Slider control with numeric value for the image contrast level. Higher values increase the luminance difference between light and dark areas of the image. Default: 50.

Brightness

Slider control with numeric value for the overall image brightness level. Default: 50.

Gamma

Dropdown selector for the gamma curve applied to the video output. Options: Default, 0.45, 0.50, 0.55, 0.63. Lower gamma values produce a brighter midtone response. Default: Default.

De-Flicker

Dropdown selector for the anti-flicker frequency setting. Options: OFF, 50Hz, 60Hz. Select the frequency matching the local mains power supply to eliminate fluorescent and LED lighting flicker from the image. Default: 50Hz.

COLOUR MATRIX

The Colour Matrix sub-tab provides individual gain and hue adjustment for each of the six color channels: Red, Green, Blue, Cyan, Magenta, and Yellow. A color arc indicator is displayed above each channel as a visual reference for the current gain and hue values. All sliders default to 50.

Red Gain

Slider control with numeric value for the gain applied to the red color channel. Default: 50.

Red Hue

Slider control with numeric value for the hue rotation applied to the red color channel. Default: 50.

Green Gain

Slider control with numeric value for the gain applied to the green color channel. Default: 50.

Green Hue

Slider control with numeric value for the hue rotation applied to the green color channel. Default: 50.

Blue Gain

Slider control with numeric value for the gain applied to the blue color channel. Default: 50.

Blue Hue

Slider control with numeric value for the hue rotation applied to the blue color channel. Default: 50.

Cyan Gain

Slider control with numeric value for the gain applied to the cyan color channel. Default: 50.

Cyan Hue

Slider control with numeric value for the hue rotation applied to the cyan color channel. Default: 50.

Magenta Gain

Slider control with numeric value for the gain applied to the magenta color channel. Default: 50.

Magenta Hue

Slider control with numeric value for the hue rotation applied to the magenta color channel. Default: 50.

Yellow Gain

Slider control with numeric value for the gain applied to the yellow color channel. Default: 50.

Yellow Hue

Slider control with numeric value for the hue rotation applied to the yellow color channel. Default: 50.

ADVANCED

Scene

Dropdown selector for the autofocus scene optimization profile. Options: Normal (general-purpose autofocus for most environments), Macro (optimized for close-up subjects at short focus distances), Live (optimized for live event environments with frequent subject movement). Default: Normal.

AF Zone

Dropdown selector for the autofocus detection region within the frame. Options: All (full frame detection), Top, Center, Bottom, Left, Right, Front. Restricting the AF zone directs focus detection to subjects in the selected region, reducing unwanted focus shifts caused by background movement. Default: Center.

AF Sensitivity

Dropdown selector for the autofocus response speed. Options: Low (reduced sensitivity to minimize focus hunting in stable scenes), Middle, High (fast response to subject movement). Default: Low.

IMAGE

The monitor shows no image.

Ensure that the camera power supply is connected, the voltage is normal, and the power indicator is always on. Turn off the power switch to check that the camera is self-testing. Ensure the cable of video platform and TV that in correct connection.

Image jitters after the camera is properly connected.

Ensure that the camera installation is in stable position. Check that any vibrating machinery or object near the camera.

There is no video image in browser.

It is recommended to use a modern Internet browser such as Google Chrome, Firefox, or Safari to interact successfully with the camera. Other browsers may have unexpected issues.

Unable to access camera through the browser.

Using PC to access the network, test that other network tasks like internet browsing are working correctly.
Reset the network connectors at the camera and your computer, and reboot your camera
Ensure that the IP address, subnet mask and gateway settings match your network configuration.
Check that there are no IP address conflicts.

Forgotten IP address or login password.

The default IP address is: 192.168.100.100;
The default password is: 'birddog'.

If you forget the camera IP address or password, using the supplied IR remote control, press the [*] + [#] + [Manual] keys in sequence to restore system default settings.

After restoring the defaults, you will need to set a strong password again when first logging in to the BirdUI webpage.

CONTROL

Remote control does not work

Check and replace batteries with new batteries.
Ensure that the camera is operating normally.
Ensure that the address key of remote control matches the camera number set in the OSD.

Cannot control camera over the serial port

1. Ensure that the protocol, address and bit rate of the camera are consistent.
2. Ensure that the control cable is properly connected.

WARRANTY

5 Year Warranty

BirdDog 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



BirdDog.tv