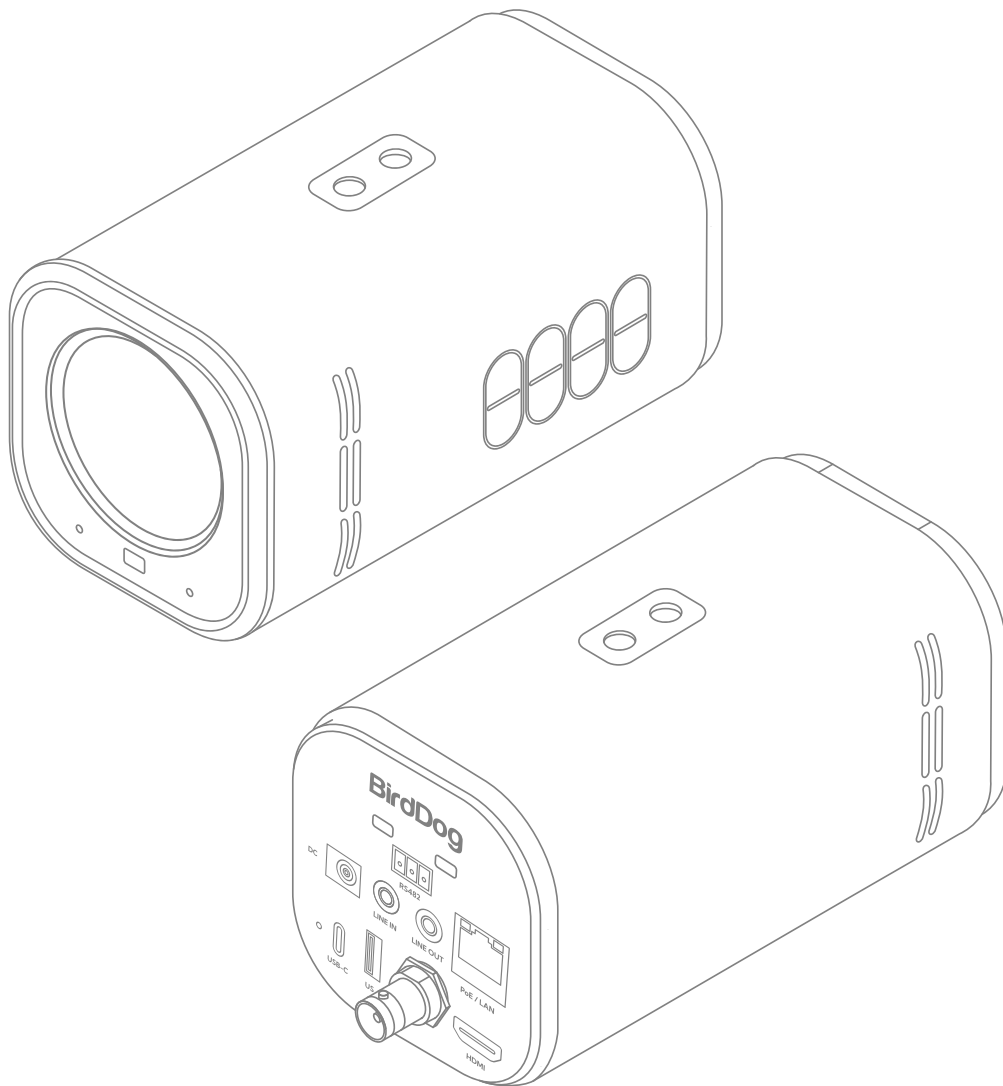




MAKI

ULTRA



4K UHD BOX CAMERA

USER MANUAL

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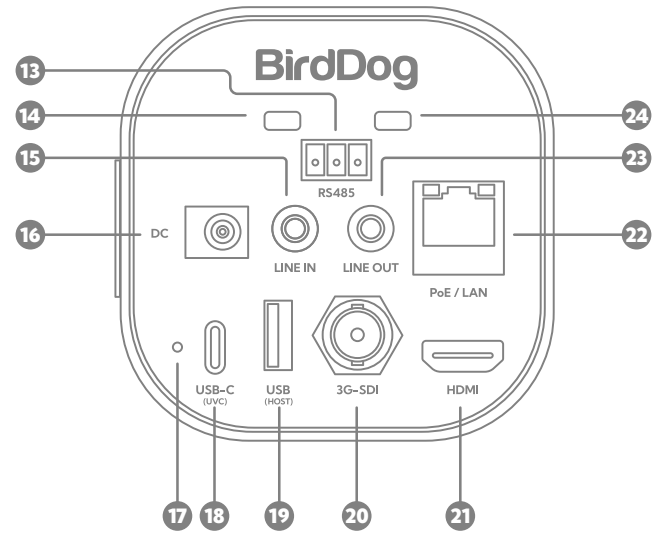
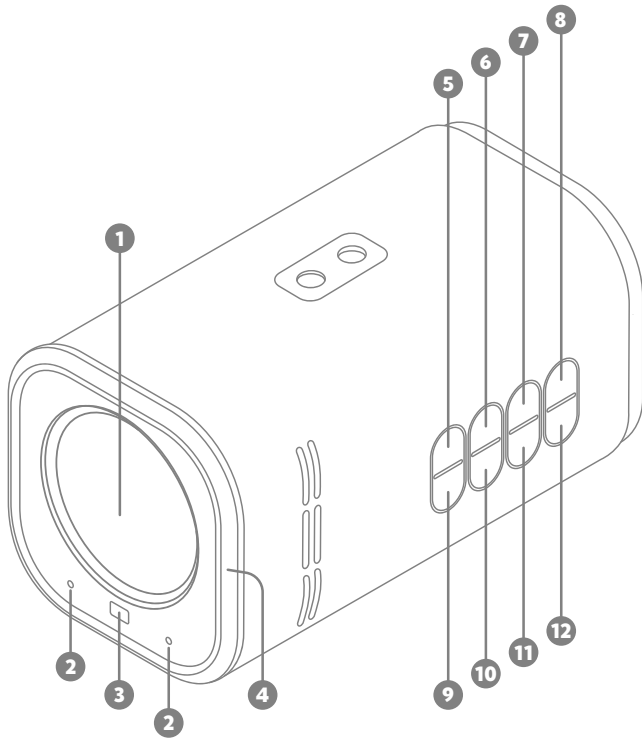
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NOTICE!

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

2 PRODUCT DESCRIPTION



No.	Name
1	Lens
2	Mics
3	ToF Sensor (autofocus)
4	Halo Tally
5	Zoom+/Menu Key
6	Zoom-/Menu Key
7	Bri+/Menu Key
8	Bri-/Menu Key
9	Auto/Manual Focus Key
10	Freeze Key
11	Scene Key
12	Menu Key

No.	Name
13	RS485 Interface
14	Standby LED
15	Line In
16	DC 12V Interface
17	Reset Key
18	USB-C UVC
19	USB Host
20	3G-SDI Connector
21	HDMI Connector
22	PoE / LAN
23	Line Out
24	Power LED

3 WHAT'S IN THE BOX



Box Camera



Remote Controller



DC 12V Power Supply

4 SAFETY PRECAUTIONS

- During the installation and use of the product, strict compliance with the electrical safety regulations of the country and the specific region is required.
- Please use the power adapter provided with this product.
- Do not connect multiple devices to the same power adapter (exceeding the adapter's load capacity may generate excessive heat or cause a fire).
- When installing this product with a tripod, ensure that the product is securely fixed, and do not power it on until all installations are complete.
- To prevent heat buildup, maintain proper ventilation around the product.
- If the product emits smoke, strange odors, or unusual noises, immediately turn off the power, unplug the power cord, and contact the dealer promptly.
- This product is not waterproof; please keep it dry.
- This product has no user-serviceable parts. Damages resulting from user disassembly are not covered by the warranty.

5 FEATURES DESCRIPTION

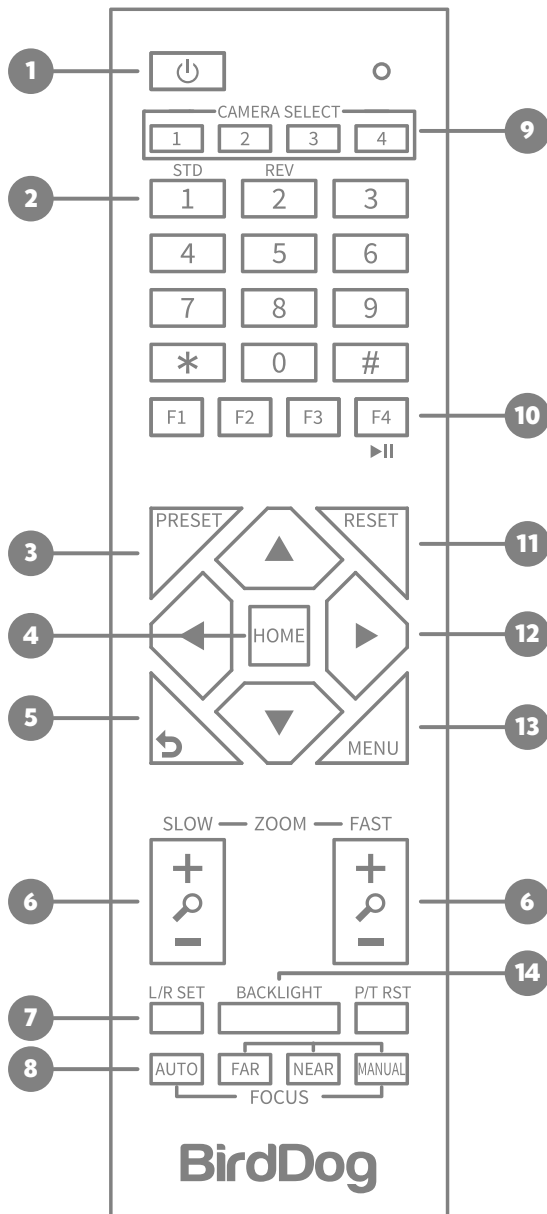
- **4Kp60 UHD**
A full-frame rate ultra-high-definition solution for clearer and smoother visuals.
- **12x/20x Optical Zoom**
MAKI Ultra comes in two models: 12x or 20x optical zoom.
- **On-body Buttons**
Conveniently control common camera functions directly.
- **Multiple Interfaces**
Supports HDMI, SDI, USB, and network outputs, adapting well to diverse application scenarios.
- **TOF**
Time-of-Flight (TOF) module to improve close-range focusing speed, enhancing the user experience.
- **Halo Tally**
The most visible and effective Tally system available. Up front with a large, daylight visible border.
- **Built-in Microphone**
Integrated microphone array with omnidirectional sound pickup, pickup range of up to 6 meters, and a unique noise suppression algorithm for perfect voice reproduction.
- **Dual Infrared Receivers**
Front and rear infrared sensors significantly expand the infrared reception range.

6 TECHNICAL SPECIFICATIONS

Feature	MAKI ULTRA 12x	MAKI ULTRA 20x
IMAGING		
Image Sensor	1/2.8 inches, CMOS	1/2.8 inches, CMOS
Optical Zoom	12x	20x
Video Format	2160p @ 60/59.94/50/30/29.97/25fps 1080p @ 60/59.94/50/30/29.97/25fps 720p @ 60/59.94/50/30/25fps	
Horizontal angle of view	72.8° (W) ~ 6.8° (T)	61.2° (W) ~ 3.38° (T)
Vertical angle of view	44.1° (W) ~ 3.8° (T)	35.3° (W) ~ 1.9° (T)
Aperture	F1.8 ~ 2.68	F1.6 ~ 3.6
Focus	TOF, Auto, Manual	
Exposure	Auto, Shutter Priority, Iris Priority, Manual	
Backlight Compensation	Yes	
Digital Noise Reduction	Yes	
SNR	>55dB	
Effective Pixels	8.4 Megapixels	
MECHANICAL		
Physical Buttons	Quantity: 8; Features: Zoom operation, focus operation, brightness adjustment, menu control, image freezing, and mode switching.	
I/O INTERFACE		
Video Interfaces	1 x HDMI: Version 2.0; 1 x 3G-SDI: BNC , 800mVp-p, 75Ω, as per SMPTE 424M standard, USB-C UVC 1.1	
Video Compression Format	H.264 / H.265	
LAN	100M/1000M adaptive Ethernet Support: PoE(802.3af)	
Network Protocol	NDI HX2, NDI HX3, RTMP	
Control Protocol	VISCA Baud Rate: 38400/19200/9600/4800/2400, VISCA-IP, NDI	
Control Interface	RS485: 2 pin phoenix port, TYPE-C (UVC1.1)	
Audio I/O	1 x Line In, 3.5mm Jack; 1 x Line Out, 3.5mm Jack, Built-in Mic	
USB	1 x USB3.0, Type-C (UVC 1.1)	
GENERAL PARAMETER		
Power Input	DC 005-2.0mm type (DC IN 12V)	
Input Voltage	DC 12V / PoE(802.3af)	
Input Current	1A(Max)	
Power Consumption	12W (Max)	
Dimension (W*H*D)	145mm 79mm 80mm (SDI connector excluded)	
Net and Gross Weight	0.8kg/1.3kg (Net/Gross weight)	

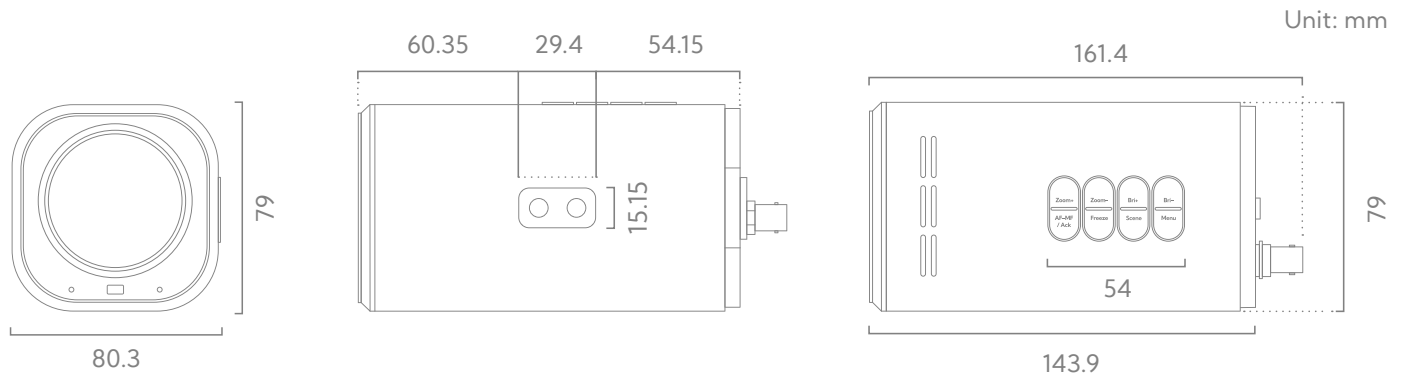
7 REMOTE CONTROL

KEY DESCRIPTION

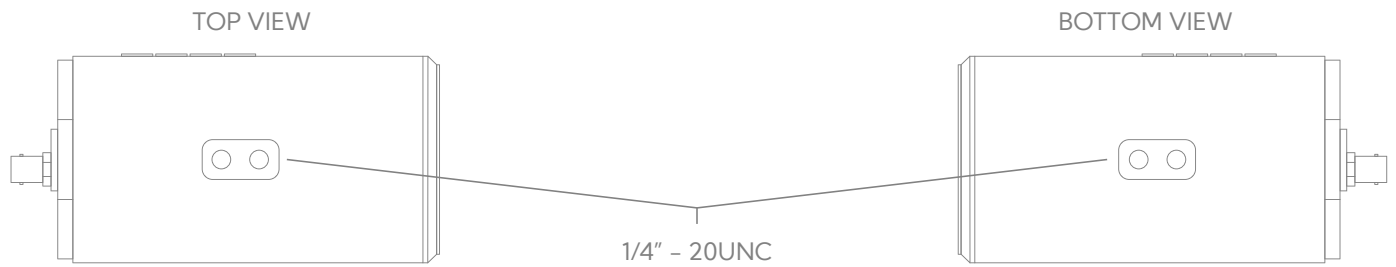


- 1. Standby/Power On Key**
Press to toggle power functions.
- 2. Number Keys**
Set and recall presets.
- 3. PRESET Key**
Set preset: press [PRESET] + Number key (0-9).
- 4. HOME Key**
Confirm selection or press to reset camera to default position.
- 5. Return Key**
Press to return to the previous menu.
- 6. ZOOM Keys**
SLOW: Zoom In [+] or Zoom Out [-] slowly.
FAST: Zoom In [+] or Zoom Out [-] fast.
- 7. L/R SET Key**
Standard: Simultaneously press [L/R SET] + 1.
Reverse: Simultaneously press [L/R SET] + 2.
- 8. FOCUS Keys**
Auto/Manual/Far/Near Focus.
- 9. CAMERA SELECT Keys**
Press 1/2/3/4 to select camera.
- 10. IR Remote Control Key**
Press [*] + [#] + [F1]/[F2]/[F3]/[F4] to set the address of the camera.
- 11. RESET Key**
Clear preset position: press [RESET] + Number key (0-9).
- 12. Menu Control Keys**
Navigate OSD in the direction of the arrows.
- 13. MENU Key**
Press to enter or exit OSD Menu.
- 14. BACKLIGHT Key**
Turn on/off backlight compensation.

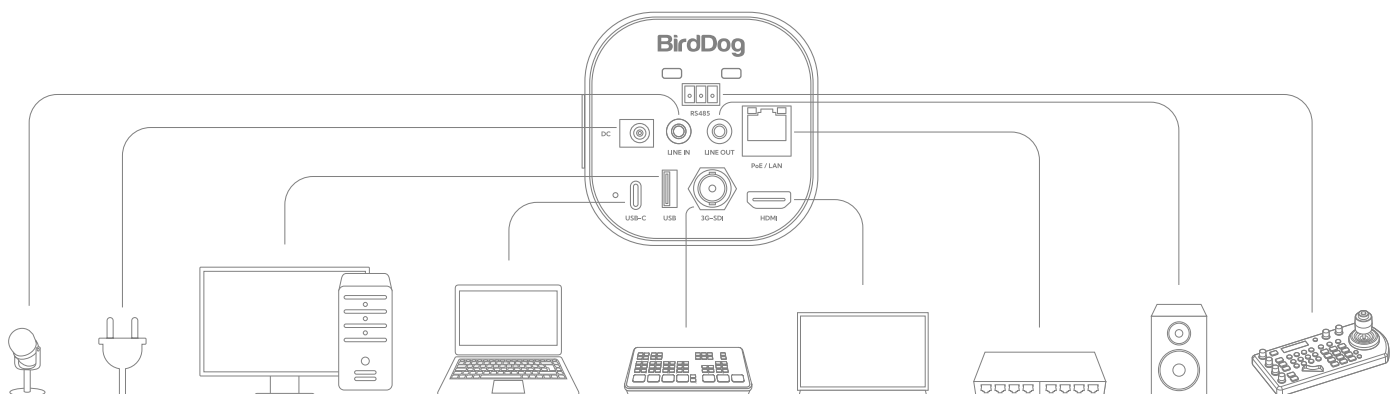
8 DIMENSIONS



9 INSTALLATION



10 PRODUCT CONNECTIONS



11 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 login 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.

Default camera IP: **192.168.100.100**

Default password: **birddog**



Note:

For more information about the BirdUI, please visit BirdDog.tv/downloads, or, BirdDog.tv/birddui-overview

BirdDog
MAKI Ultra

75% **Network Bandwidth**

Device Mode: **Encode**
Source Status: **Streaming NDI**

Status
NDI Video Stream Name: **CAM** Video Format: **1080p59.94** 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-MAKI** Eth. IP Address: **192.168.100.100** Firmware Version: **BirdDog_MKU1.0.2**
MCU Version: **1** Wi-Fi IP Address: **192.168.100.5** Network Config Method: **DHCP**
Status: **Active** MAC address: **e8:eb:1b:49:a6:78**

Device Restart **System Reboot**

RESTART **REBOOT**

BirdDog.tv

12 NETWORK SETUP

  Dashboard Network System	BirdDog MAKI Ultra	Device Mode: Encode Source Status: Streaming NDI	
	Ethernet Network		
Configuration Method	<input type="radio"/> STATIC <input checked="" type="radio"/> DHCP	DHCP Timeout	<input type="text" value="20s"/>
IP Address	<input type="text" value="192.168.100.100"/>	DHCP Fallb. IP Address	<input type="text" value="192.168.100.100"/>
Subnet Mask	<input type="text" value="255.255.255.0"/>	SHCP Fallb. Sub. Mask	<input type="text" value="255.255.255.0"/>
Gateway Address	<input type="text" value="192.168.100.1"/>	BirdDog Name	<input type="text" value="BirdDog-MAKI-Ultra"/> <input type="text" value=".local"/>
			<input type="button" value="APPLY"/>

9.1 Ethernet Network Configuration

Most computer networks provide for both automatic and manual configuration of network devices and MAKI Ultra 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 camera will look for a DHCP IP address. After this period, the camera will default to the designated fallback IP address.

This can be useful if you use your camera in other network environments. For example, if a DHCP server is available in your normal office or studio application, the camera will use the DHCP supplied IP address. If you then use the camera in another application without a DHCP server, your camera will always default to the known fallback IP address.

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.

14 WARRANTY

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

For support please contact
Help@BirdDog.tv



BirdDog

BirdDog.tv