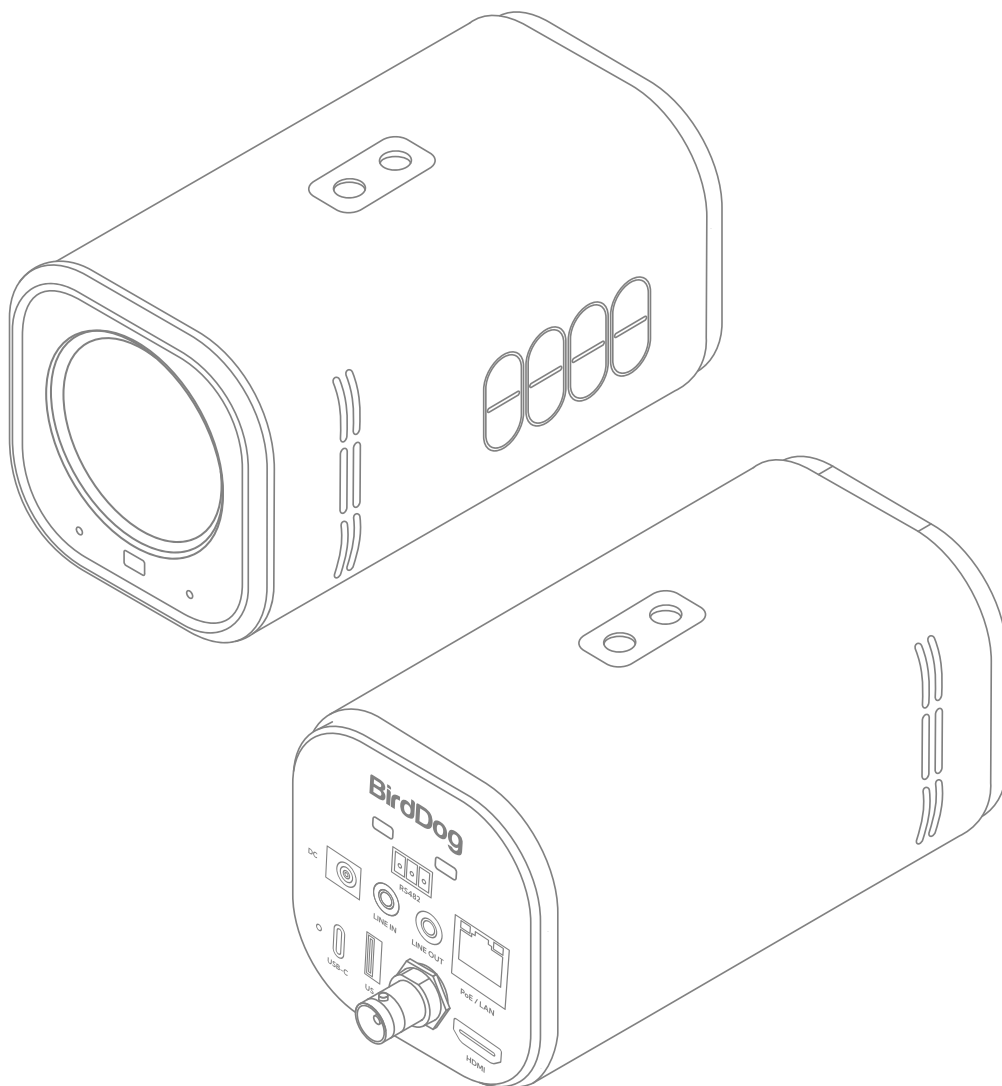




# MAKI

## ULTRA



**4K UHD BOX CAMERA**

**USER MANUAL**



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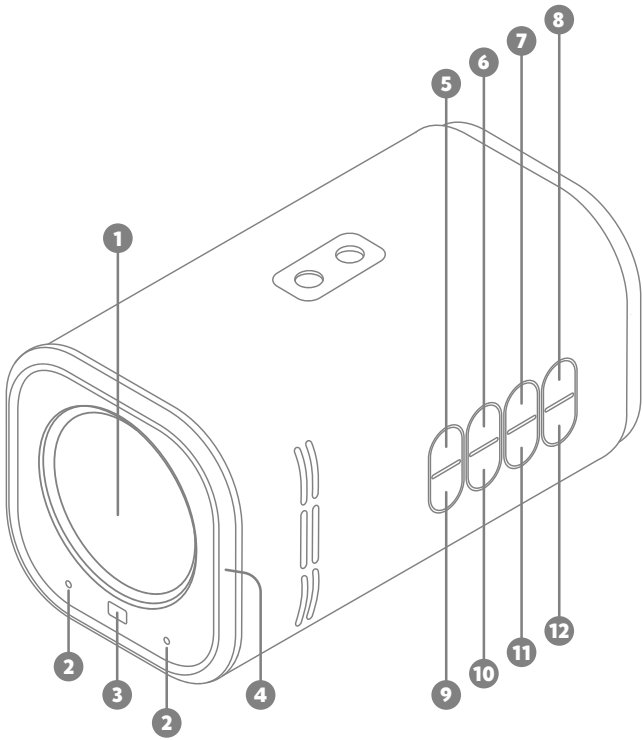
|                          |   |
|--------------------------|---|
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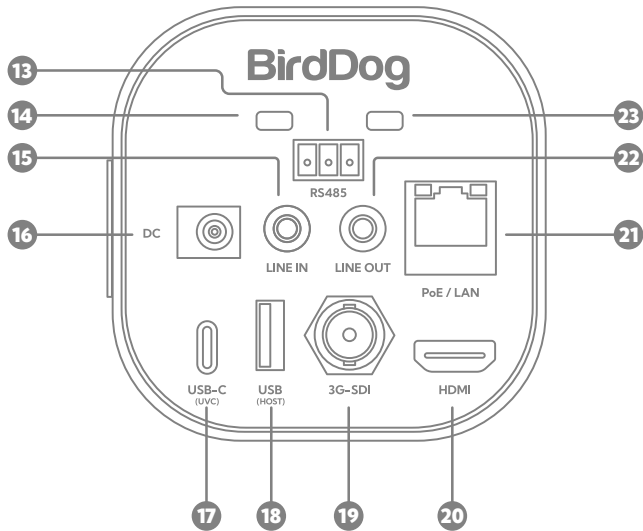
**NOTICE!**

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

2 PRODUCT DESCRIPTION



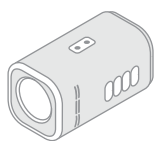
| No. | Name                   |
|-----|------------------------|
| 1   | Lens                   |
| 2   | Mics                   |
| 3   | ToF Sensor (autofocus) |
| 4   | Halo Tally             |
| 5   | Zoom+/Menu Key         |
| 6   | Zoom-/Menu Key         |
| 7   | Bri+/Menu Key          |
| 8   | 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  | USB-C UVC        |
| 18  | USB Host         |
| 19  | 3G-SDI Connector |
| 20  | HDMI Connector   |
| 21  | PoE / LAN        |
| 22  | Line Out         |
| 23  | Power LED        |

### 3 WHAT'S IN THE BOX

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Box Camera



Remote Controller



DC 12V Power Supply

### 4 SAFETY PRECAUTIONS

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- 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

---

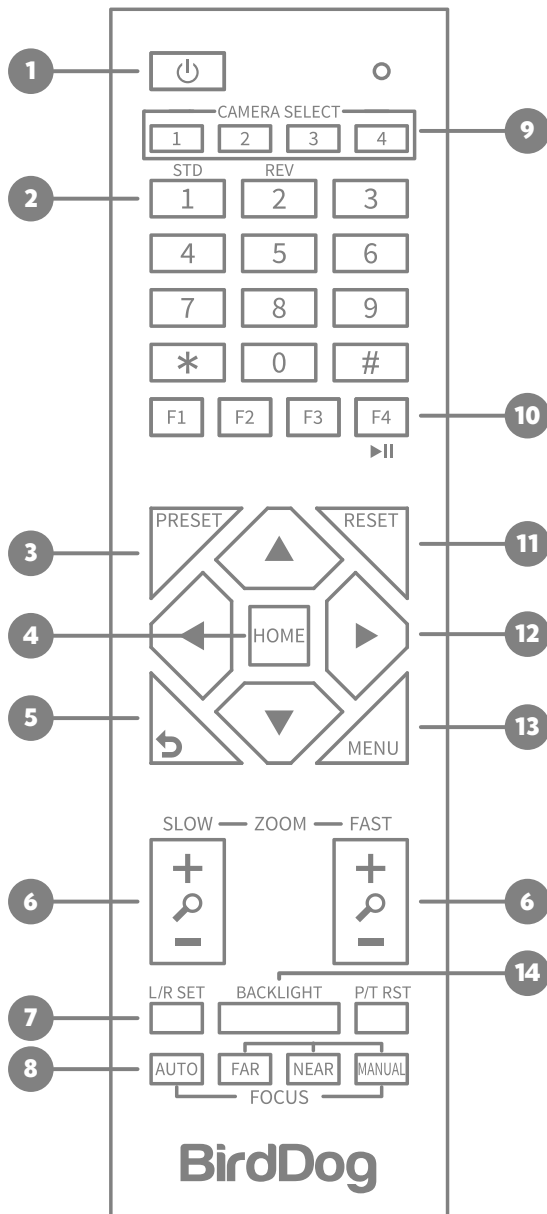
- **4Kp60 UHD**  
A full-frame rate ultra-high-definition solution for clearer and smoother visuals.
- **12x/20x Optical Zoom**  
MAKI Ultra comes in two models: 12x or 20x optical zoom.
- **On-body Buttons**  
Conveniently control common camera functions directly.
- **Multiple Interfaces**  
Supports 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<br>1080p @ 60/59.94/50/30/29.97/25fps<br>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 × Line In, 3.5mm Jack; 1 × Line Out, 3.5mm Jack, Built-in Mic                                                                  |                       |
| USB                      | 1 × 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)                                                                                                   |                       |

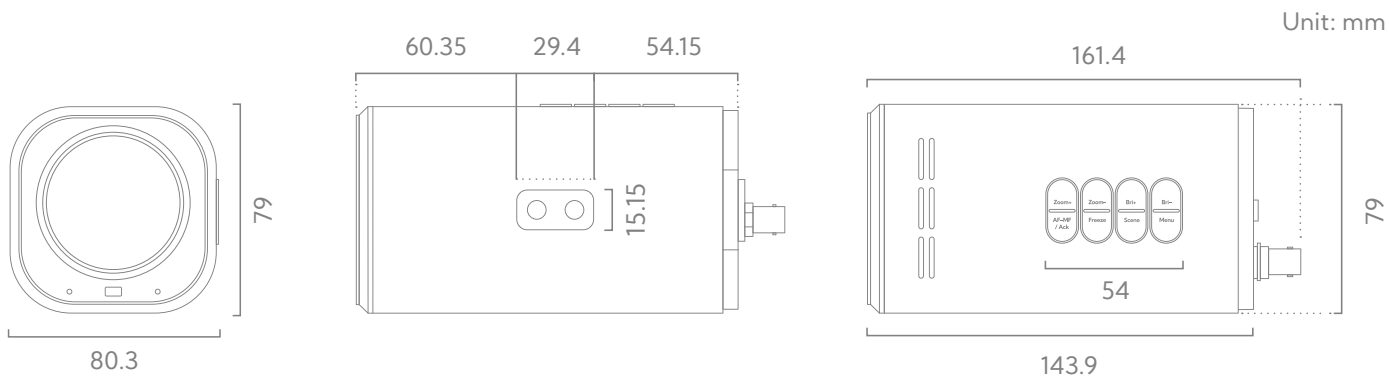
## 7 REMOTE CONTROL

### KEY DESCRIPTION

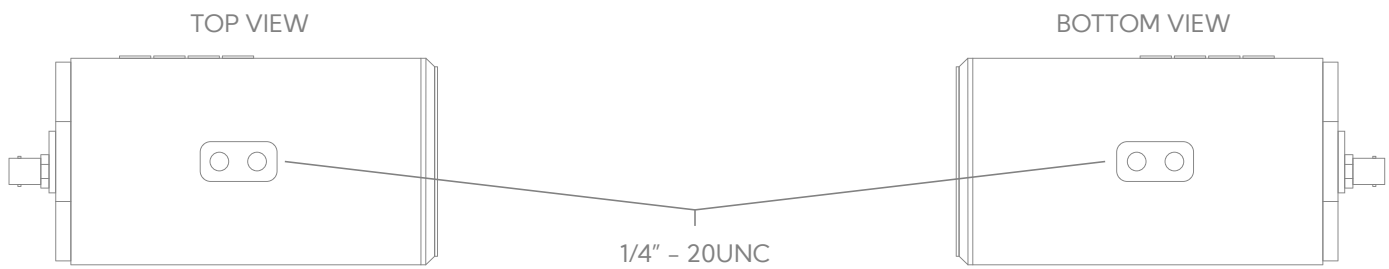


- 1. Standby/Power On Key**  
Press to toggle power functions.
- 2. Number Keys**  
Set and recall presets.
- 3. PRESET Key**  
Set preset: press [PRESET] + Number key (0-9).
- 4. HOME Key**  
Confirm selection or press to reset camera to default position.
- 5. Return Key**  
Press to return to the previous 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.

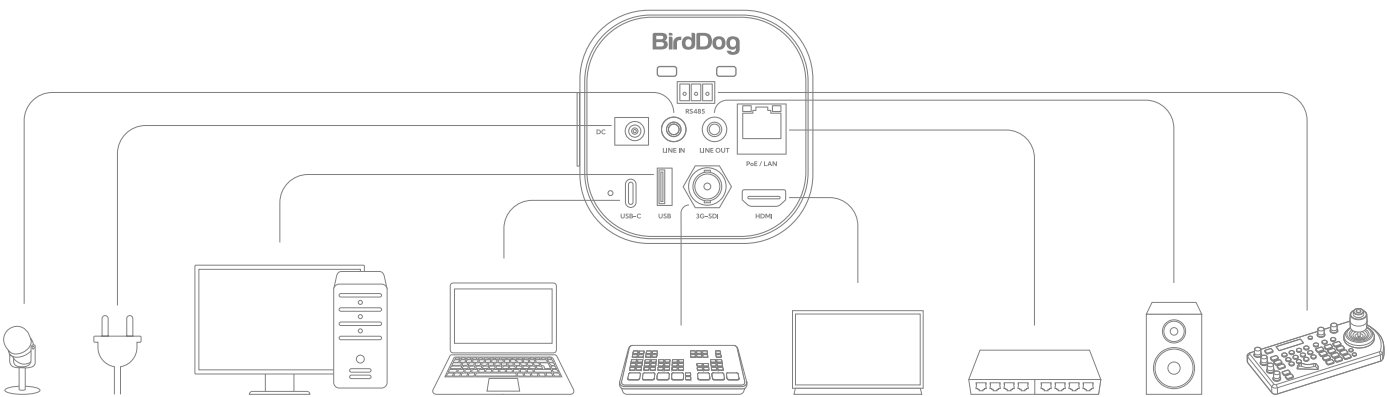
8 DIMENSIONS



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**

Dashboard

Network

System

AV Setup

Cam Control

Logout

BirdDog.tv

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

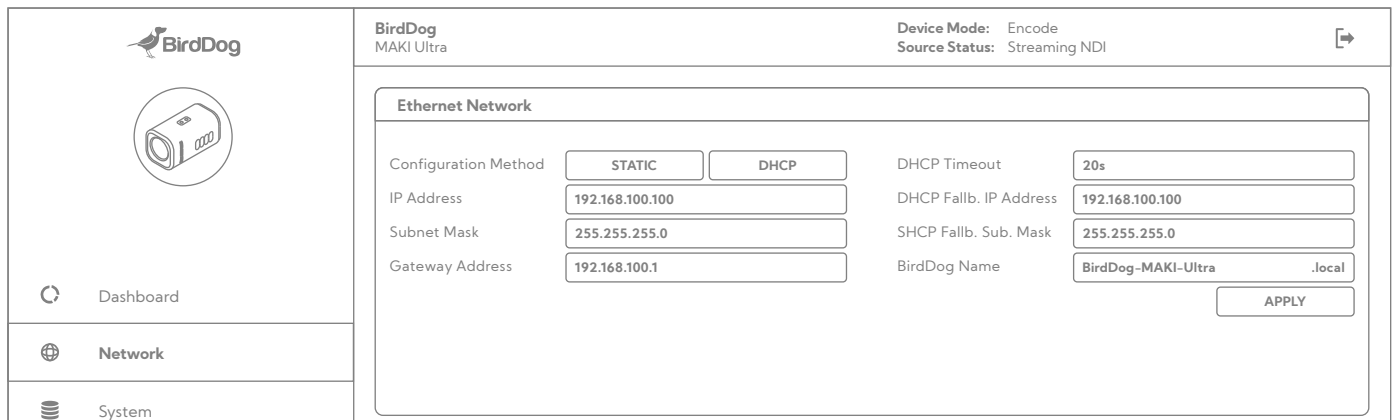
Device Restart

RESTART

System Reboot

REBOOT

## 12 NETWORK SETUP



| BirdDog<br>MAKI Ultra                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  | Device Mode: Encode<br>Source Status: Streaming NDI |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-----------------------------------------------------|
| <div>  </div> <div> <div>Dashboard</div> <div><b>Network</b></div> <div>System</div> </div>                                                                                                                                                                                                                                                                                                                                                                                                                   |  |                                                     |
| <h3>Ethernet Network</h3> <div> <div> Configuration Method <div>STATIC</div> <div>DHCP</div> </div> <div> DHCP Timeout <div>20s</div> </div> </div> <div> <div>IP Address</div> <div>192.168.100.100</div> </div> <div> <div>DHCP Fallback IP Address</div> <div>192.168.100.100</div> </div> <div> <div>Subnet Mask</div> <div>255.255.255.0</div> </div> <div> <div>DHCP Fallback Sub. Mask</div> <div>255.255.255.0</div> </div> <div> <div>Gateway Address</div> <div>192.168.100.1</div> </div> <div> <div>BirdDog Name</div> <div>BirdDog-MAKI-Ultra.local</div> </div> <div>APPLY</div> |  |                                                     |

### 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

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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)**

For support please contact  
**[Help@BirdDog.tv](mailto:Help@BirdDog.tv)**



**BirdDog**

BirdDog.tv