BirdDog | PTZ KEYBOARD

THE WORLD'S FIRST NDI PTZ KEYBOARD.

USER MANUAL

PART 1

Contents

Operating Instructions

Thank you for purchasing our product. If there are any questions, please contact your authorized dealer.

Before operating the unit, please read this manual thoroughly and retain it for future reference.

Copyright

Trademark Acknowledgement

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IMPORTANT INFORMATION

Legal Notice

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

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

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

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

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

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

> ⚠ **WARNING!**
> Installation and removal of the unit and its accessories must be carried out by qualified personnel. You must read all of the Safety Instructions supplied with your equipment before installation and operation.

Warnings:
• If the product does not work properly, please contact your dealer. Never attempt to disassemble the camera yourself. (We will not assume any responsibility for problems caused by unauthorized repair or maintenance.)

• This installation should be made by a qualified service person and should conform to all the local codes.

• When shipping, the camera should be packed in its original packaging.

• Make sure the power supply voltage is correct before using the camera.
• Do not drop the camera or subject it to physical shock.

• Do not touch sensor modules with fingers. If cleaning is necessary, use a clean cloth with a bit of ethanol and wipe it gently. If the camera will not be used for an extended period of time, put on the lens cap to protect the sensor from dirt.

• Do not aim the camera lens at the strong light such as sun or incandescent lamp. The strong light can cause fatal damage to the camera.

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

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

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

Regulatory Compliance
FCC Part 15
This equipment has been tested and found to comply with the limits for digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

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

This device may not cause harmful interference.

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

CE **LVD/EMC Directive**
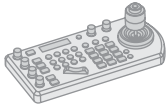This product complies with the European Low Voltage Directive 2006/95/EC and EMC Directive 2004/108/EC.
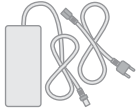
WEEE Directive–2002/96/EC
The product this manual refers to is covered by the Waste Electrical & Electronic Equipment (WEEE) Directive and must be disposed of in a responsible manner.

WHAT'S IN THE BOX

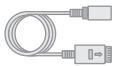
1x BirdDog PTZ Keyboard

1x Power Adaptor & Power Cord
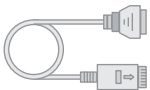

1x Junction box

1x RJ45 Control Cable
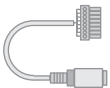

1x Tally light Terminal Contact

1x User Manual

Accessories (Optional)

1x RJ45 to Phoenix Breakout

1x RJ45 Coupler

1x RS232 8 Pin Mini Din to Phoenix Terminal Block

When the "Optional" Accessories will be needed:

- When RS422, RS485 and RS232 cameras are being controlled simultaneously.

- When more than one group of RS422/RS485 cameras is being controlled simultaneously.

- When a 8 Pin Mini Din RS232 connector camera needs to be connected to and controlled.

OVERVIEW

Key Features:

- Cross protocol mix-control with RS232/RS422 and IP

- Protocol support: VISCA, PELCO D/P, VISCA over IP, CGI*

- Quick Access Control

- High-quality sync-6-way joystick control

Independent wide range dual power input: 12VDC, POE

Functionalities:

- Easy, ergonomic PTZ control of multiple remote cameras for live event production and content creation. Applications: Education, Broadcast, Video Conferencing, House of Worship etc.

- This compact remote controller features a high-quality joystick that allows effortless one-handed pan, tilt and zoom adjustments. Zoom can also be controlled via the joystick or a supplementary seesaw lever; dedicated knobs and control buttons simplify direct access to frequently-needed camera functions without needing to use the camera menus.

- Quick Access features include the control of Exposure, Shutter Speed, Iris, Compensation, White Balance, Focus, PT Speed, Zoom Speed.

- The controller supports serial RS232/RS422 and IP mix-control. It allows you to use RS232/RS422/IP control on one controller to control cameras in a single system.

- With IP control, automatically search available IP cameras in the network and assign IP addresses easily. IP control supports CGI* and VISCA Over IP.

- Up to 256 camera presets with memory of image parameters and 8 patterns/cruises to recall camera moves. (Requires camera support)

- Tally Indicator: Includes Normal Tally/On-Air Tally/Contact Modes

- Supports 2 groups (7 cameras per group) via VISCA RS422 daisy chain control. Unlimited number of controllers can operate on a single network to control up to 255 IP cameras. Controls up to total 255 cameras (Combine using PELCO/VISCA/VISCA-Over-IP Protocol).

- Up to 6 selectable ASSIGN function key, additional functions can be assigned to ASSIGN buttons.

- Multi-color Key/Button illumination indicator.

- Full compatibility is provided with all BirdDog PTZ cameras and Sony BRC, SRG series PTZ cameras and most

PTZ cameras in the market that support RS232/RS422/RS485/IP control.

- Control firmware upgrade is available via USB to keep the performance of the controller up to date.

- * Available via firmware upgrade.

Keyboard Diagrams
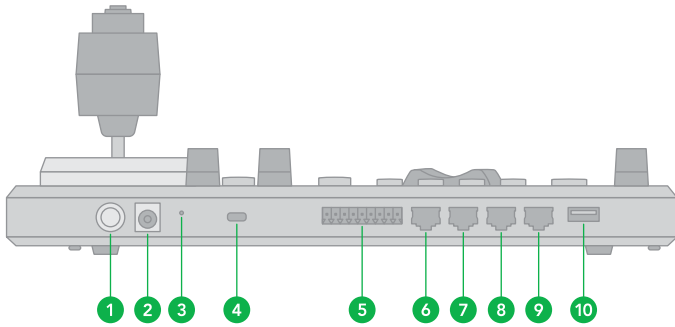
1. **Power Button**
   Power on / Power off the keyboard

2. **12V DC Power Port (range input tolerance: 5V-48V DC)**
   Connect the supplied DC power adaptor and cord

3. **Firmware Interface Button**
   Engages firmware update mode on the keyboard

4. **Kensington Security slot**
   Use a lock to physically secure the keyboard in place

5. **Tally / Contact (GPI I/O connector)**
   Tally control interface

6. **RS232 interface / RJ-45 port**
   Connect RS232 adapter

7. **IP Interface / RJ-45 port**
   Connect the keyboard to a network

8. **RS422 (B) interface, use for RS485 as well / RJ-45 port**
   Connect an RS422 adapter to control up to 7 daisy-chained RS422 cameras (Group A)

9. **RS422(A) interface, use for RS485 as well / RJ-45 port**
   Connect an RS422 adapter to control up to 7 daisy-chained RS422 cameras (Group B)

10. **Firmware Upgrade USB port**

Home Screen
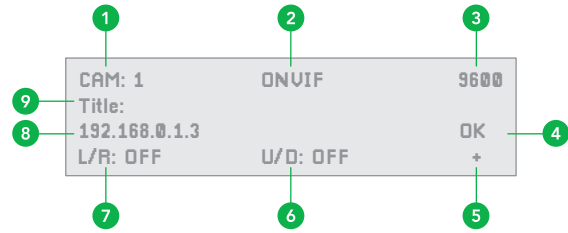
1. Camera Identifier – Identifies which camera is being controlled, and the protocol being used

2. Protocol

3. Baud Rate

4. Communication indicator for current device

5. Network Connectivity indicator

   a. If the "+" appears, this means that the network is successfully connected

   b. If the "+" does not appear, this means that the network is not connected

6. Tilt Reversal Indicator

7. Pan Reversal Indicator

8. IP Address

9. Camera Title

Keyboard
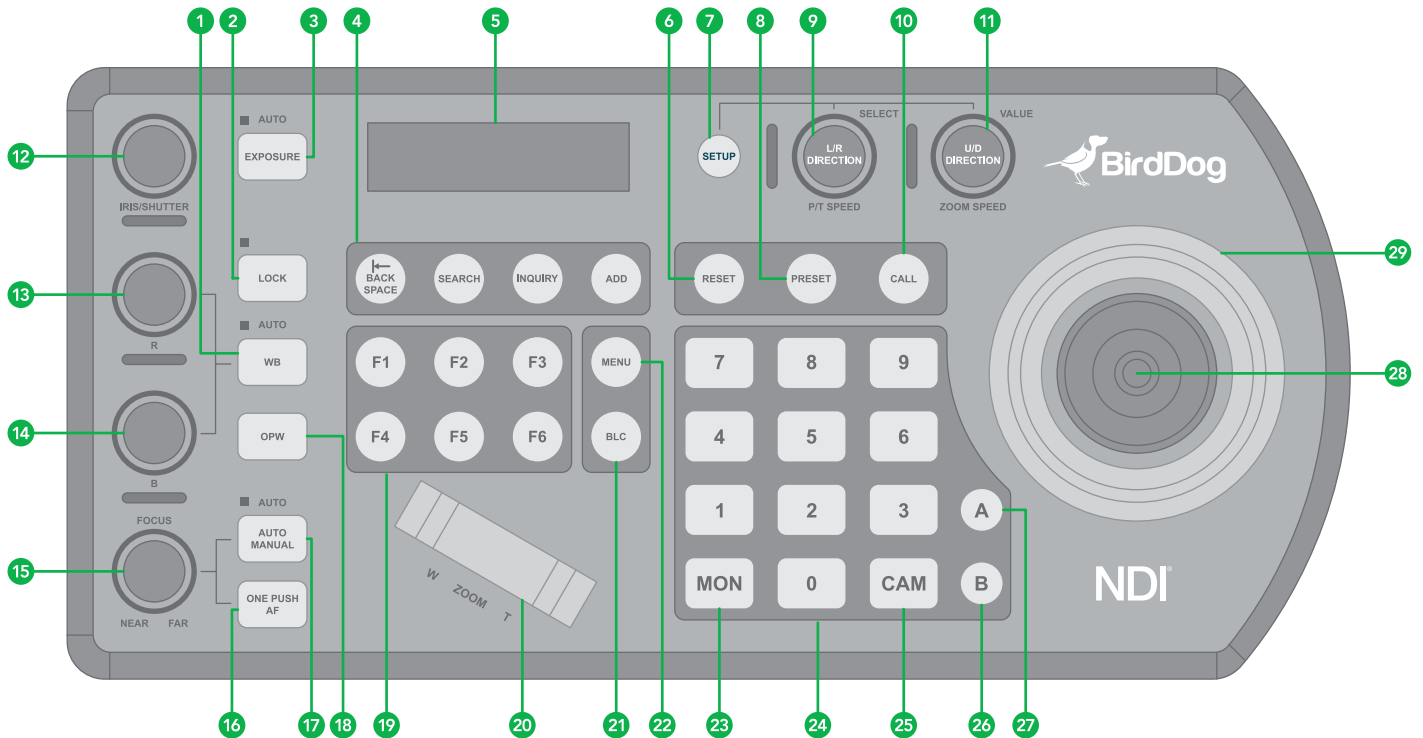
1. **White Balance, (Auto, Manual)**
    - Press once for Auto
    - Press again to activate manual adjustments

2. **Lock – locks all image adjustment buttons and dials**

3. **Exposure, (Auto, Iris PRI, Shutter PRI)**

4. **IP Interface Buttons – used to interact with IP cameras**

5. **LCD Screen – Display for navigating keyboard settings**

6. **Reset – used for clearing presets**

7. **Setup – used for keyboard menu setting**

8. **Preset – used for saving camera presets**

9. **Pan Tilt Speed knob**
    - Rotate: Speed adjustment / Navigate (in menu)
    - Press: Select (in menu)
    - Long press: Invert L/R direction

10. **Call – used for calling camera presets**

11. **Zoom Speed knob**
    - Rotate: Zoom speed adjustment / adjust value (in menu)
    - Press: Save (in menu)
    - Long press: Invert U/D Direction

12. **IRIS / Shutter Adjustment for Exposure**

13. **Manual Red Adjustment for White Balance**

14. **Manual Blue Adjustment for White Balance**

15. **Manual Focus**

16. **One-Push Focus**

17. **Focus Auto/ Manual Toggle**

18. **OPW (One Push WB) For White Balance**

19. **Assign Keys – used to assign quick access to commands**

20. **Zoom Seesaw – For zoom in / zoom out**

21. **BLC (Back Light Compensation) – Toggles Back Light Compensation setting in camera**

22. **Menu for pulling out camera OSD menu**

23. **MON: For calling monitor number (* Not activated for current versions)**

24. **Alphanumeric Keypad – used for camera call, preset call, entering data (in menu)**

25. **CAM: For calling camera number**

26. **RS422 Group B Selection**

27. **RS422 Group A Selection**

28. **Enter Button for menu setting to Enter/Confirm data.**

29. **PTZ Joystick**

Junction Box
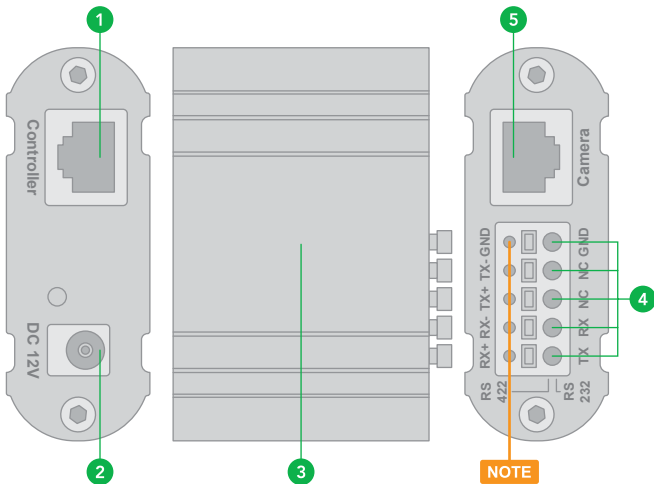
1. RJ45 port for connection between Junction Box and The Keyboard Controller

2. 12V DC Power Port
   Connect the supplied DC power adaptor and cord

3. Junction Box body

4. Terminal Contact connection for RS422 or RS232

5. RJ45 port for connection between Junction Box and the camera. Use Network cable to connect directly

NOTE: Do not use the top row of holes, as these are not contact ports. All labels apply to the bottom row (Item #4 in the chart).

System Overview

Cross Protocol Mix-control with RS232/RS422 and IP in one single system.

VISCA RS422 Group A: 7 cameras

VISCA RS232: 7 cameras

VISCA RS422 Group B: 7 cameras

Pelco RS485: 255 cameras

PoE

IP
VIsca over IP
CGI

Up to Multiple Controllers, up to 255 cameras in a single network
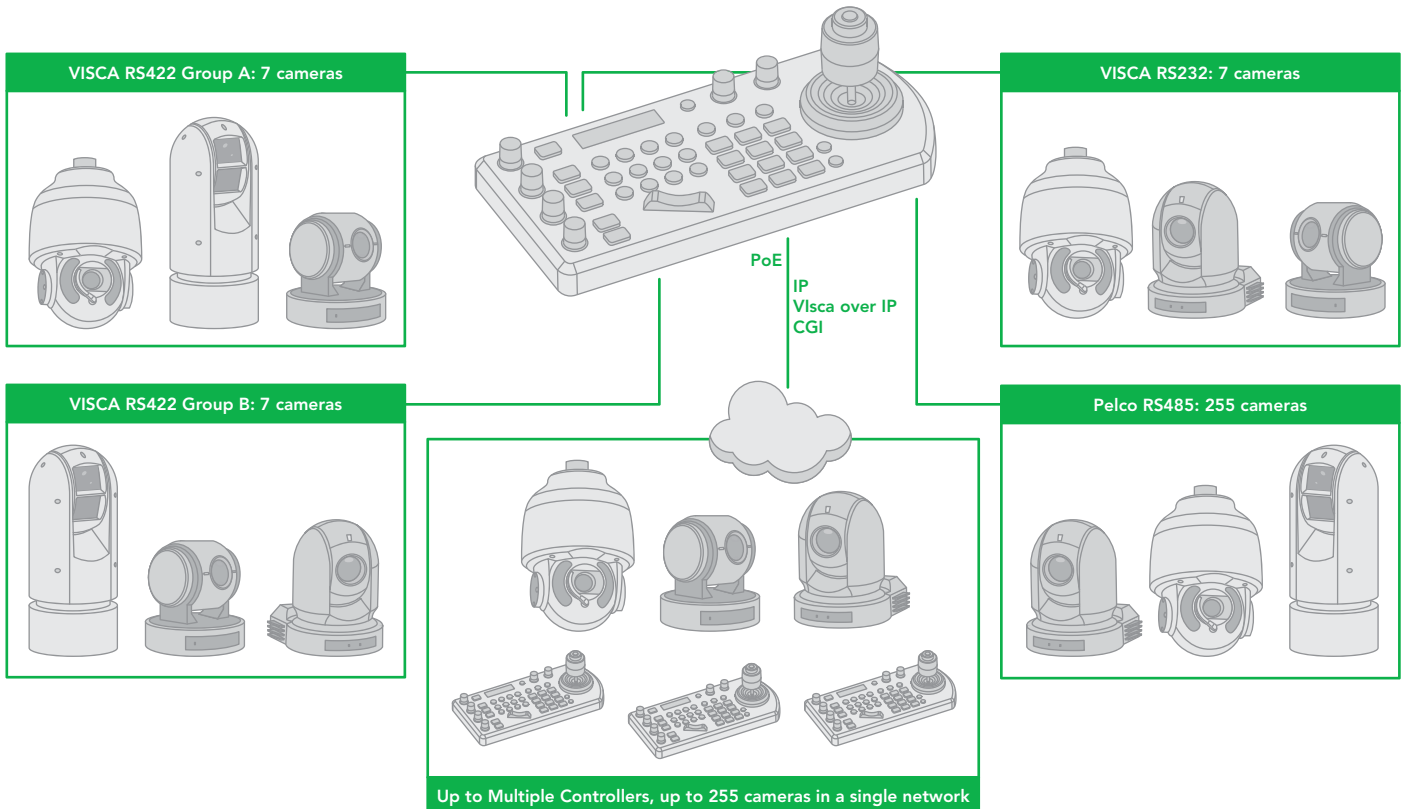
Cross Protocol Mix Control

Cross Protocol Mix-control and Power Over Control.
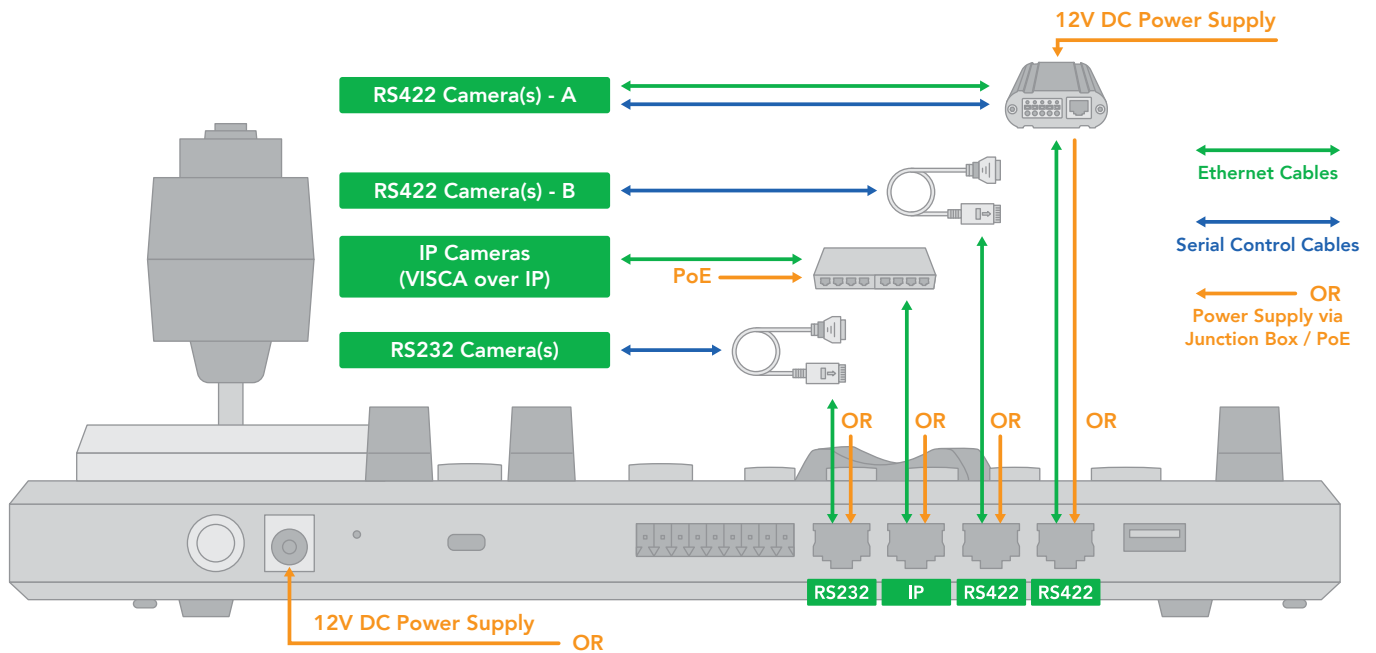
When the junction box is powered, it will provide power to the keyboard via any port that it is connected to --RS232, IP, RS422(A), RS422(B). **No additional power supply is required for the keyboard a powered junction box is being used.**

Please Note regarding Serial Control protocols (RS422/RS485 and RS232):

- When controlling only RS232 cameras, the keyboard can control a total of 7 RS232 cameras

- When controlling RS422 and RS232 cameras simultaneously, the keyboard can control a total of 7 RS232 and RS422 cameras.

- When controlling only RS422 cameras, the keyboard can control up to 14 RS422 cameras (2 daisy chains of 7)

- When controlling only RS485 cameras, the keyboard can control up to 255 RS485 cameras.

The keyboard is capable of simultaneously controlling up to 255 cameras, between mixed protocols (RS422, RS232, and IP).

Connection

The controller supports serial RS232/RS422 and IP Cross protocol mix-control. It allows you to use RS232/RS422/IP control on one controller to control cameras (Protocol support: VISCA, PELCO D/P, VISCA over IP, CGI*) in a single system.

Power

Power up the controller using one of the following options:

1. Power supply (included)

    - Power Voltage Tolerance 5V - 48V
    - The keyboard can be powered with at least 5VDC. This allows for longer power runs between the power source and the keyboard.
    - The keyboard can also tolerate 48VDC power, which makes the keyboard suitable for vehicle use (Broadcast vans, commercial vehicles, etc.)

2. Use PoE (Connect Ethernet IP port to PoE switch).

    - Maximum distance 80m using CAT6 Plus cable

3. Use included junction box

    - Connect junction box to power supply
    - Connect Ethernet cable from "Controller"port on the junction box to the RS422 or RS232 port on the Keyboard.
    - When using Junction Box to provide power to the keyboard via RS422 or RS232 port on the Keyboard. Does not need extra power supply for Keyboard.
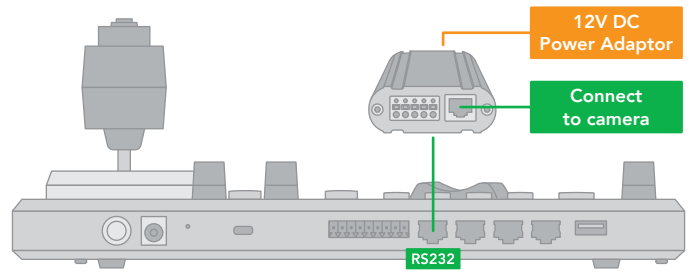
Power using Junction Box Power Over RS232
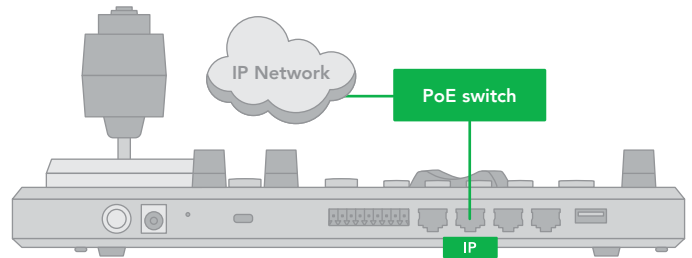
Power using PoE
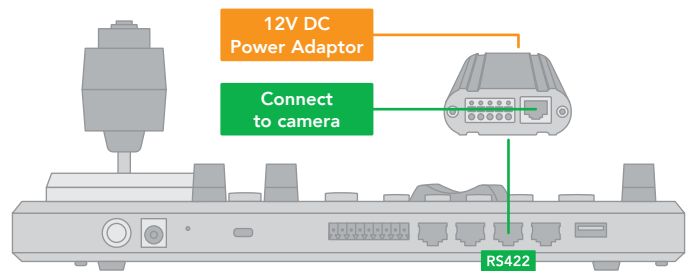
Power using Junction Box Power Over RS422
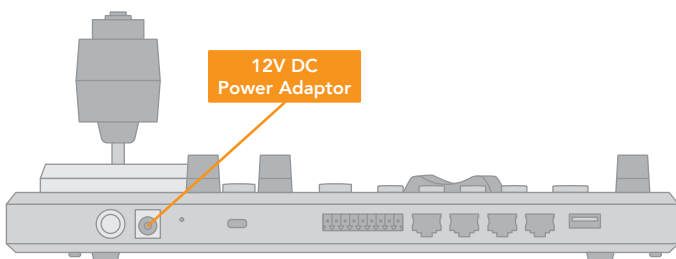
Power using Power Adaptor
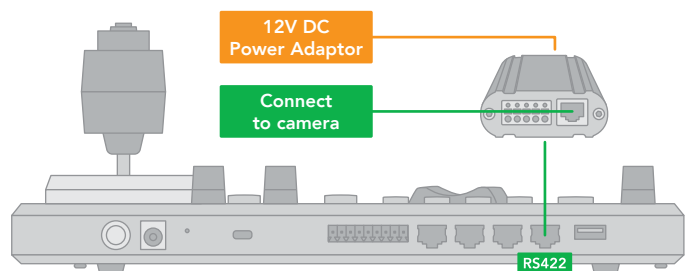
Power using Junction Box Power Over R422

Power supply is required at EITHER the keyboard OR the Junction Box. If the junction box is powered, no additional power supply is needed for the keyboard, as the junction box will provide power to the keyboard via the control port.

Connector Pinout Definition
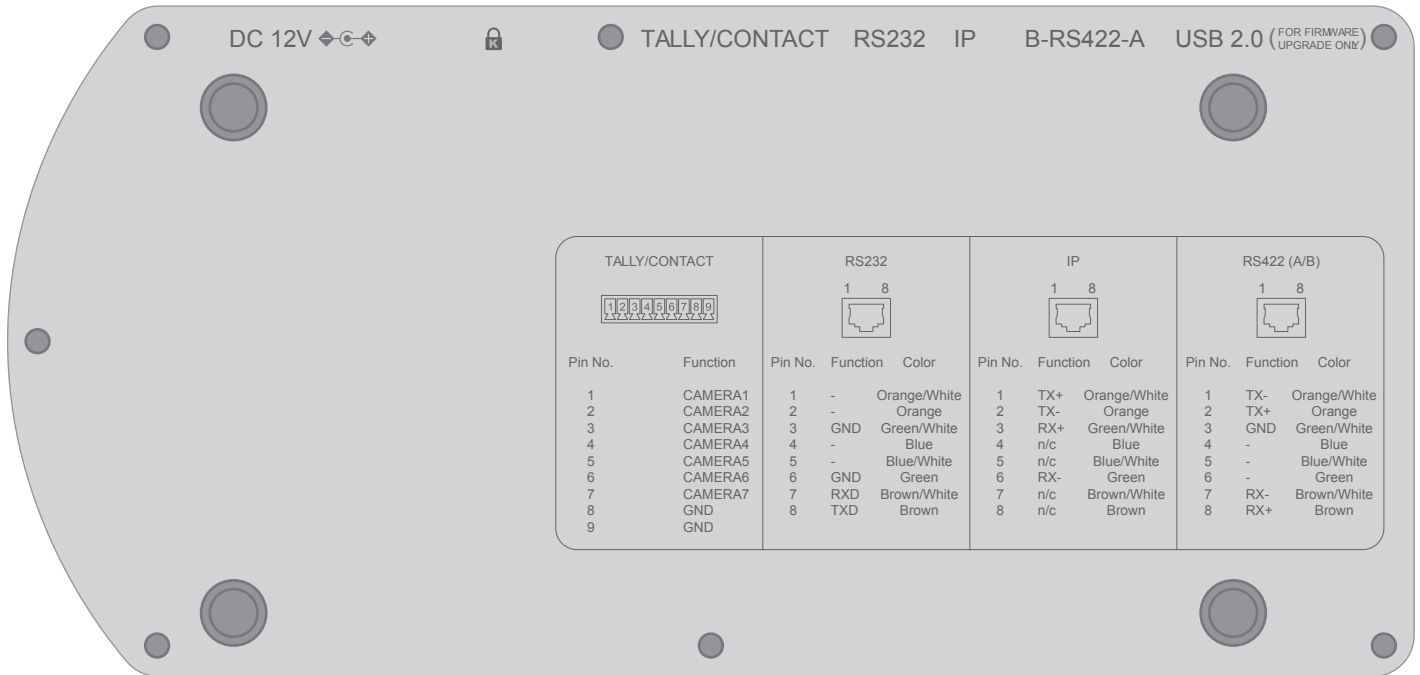
TALLY/CONTACT		RS232			IP			RS422 (A/B)		
Pin No.	Function	Pin No.	Function	Color	Pin No.	Function	Color	Pin No.	Function	Color
1	CAMERA1	1	-	Orange/White	1	TX+	Orange/White	1	TX-	Orange/White
2	CAMERA2	2	-	Orange	2	TX-	Orange	2	TX+	Orange
3	CAMERA3	3	GND	Green/White	3	RX+	Green/White	3	GND	Green/White
4	CAMERA4	4	-	Blue	4	n/c	Blue	4	-	Blue
5	CAMERA5	5	-	Blue/White	5	n/c	Blue/White	5	-	Blue/White
6	CAMERA6	6	GND	Green	6	RX-	Green	6	-	Green
7	CAMERA7	7	RXD	Brown/White	7	n/c	Brown/White	7	RX-	Brown/White
8	GND	8	TXD	Brown	8	n/c	Brown	8	RX+	Brown
9	GND									

IP Connection

Connect the keyboard's "IP" port to a port on an Ethernet switch.

For more information regarding adding VISCA over IP cameras to be controlled by the keyboard, please see the section on Keyboard IP Configuration.
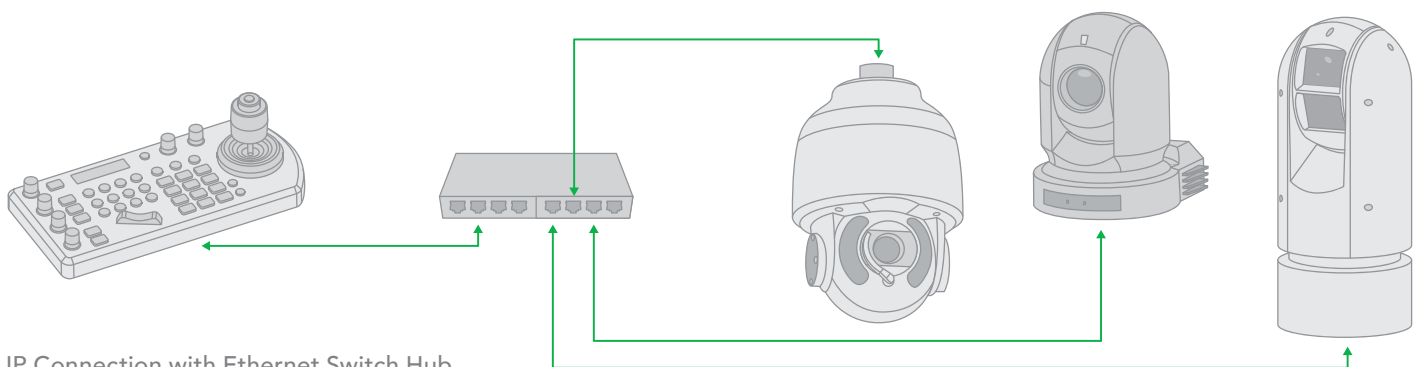

IP Connection with Ethernet Switch Hub

Make Serial Port Connection

The controller supports serial RS232/RS422 and IP Cross protocol mix-control. It allows you to use RS232/RS422/IP control on one controller to control cameras (Protocol support: VISCA, PELCO D/P, VISCA over IP, CGI*) in a single system.

Depending on the protocol being used to control the cameras, you may need to connect one or more of the following:

IP port to network switch

• Used for logging in to web interface of PTZ Keyboard

• Used to control the following PTZ protocols: VISCA over IP

RS232 Connection

• RS232 Connection 1 to 1 connection with keyboard and camera

• Keyboard connection to RS232 daisy chain

RS422 Connection

• Keyboard RS422 (A or B) RJ45 port to RS422 adapter to RS422 cameras (daisy chain)

• Keyboard RS422 (A or B) RJ45 port to RS422 adapter to RS485 cameras.

RS232 Connection

Use for the controller with Non-BirdDog camera connection. BirdDog camera connection see the separate section following.

Follow the diagram below for the following options:

1. RS232 connection using network cable (follow T-568B standard pinout at keyboard end):

a. 1 to 1 connection - Follow the pinout for the RS232 port on the keyboard to use CAT5/6 cable to make a cable suitable for controlling your camera.

Pin No.	Function	Color
1	-	Orange/White
2	-	Orange
3	GND	Green/White
4	-	Blue
5	-	Blue/White
6	GND	Green
7	RXD	Brown/White
8	TXD	Brown
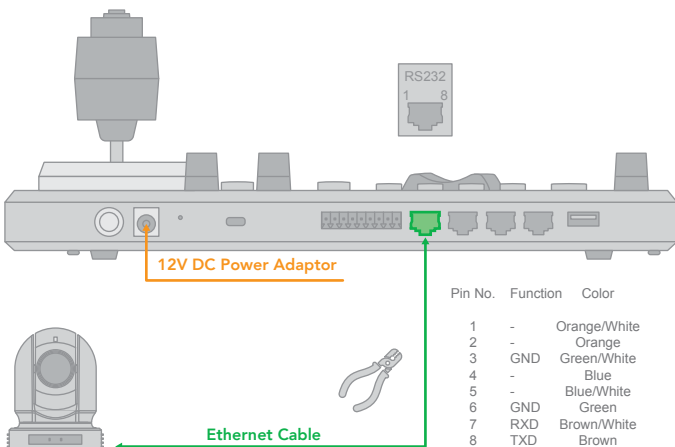
b. Use Junction Box, 1 to 1 connection - Follow the pinout for the RS232 port on the keyboard and Junction Box to use CAT5/6 cable (follow T-568B standar pinout between keyboard and Junction Box) to make a cable sutable for controlling your camera via Junction Box.

RS232 connection - Via Junction Box to make a network cable - Camera with RS232-Serial connector.

Pin No.	Function	Color
1	-	Orange/White
2	-	Orange
3	GND	Green/White
4	-	Blue
5	-	Blue/White
6	GND	Green
7	RXD	Brown/White
8	TXD	Brown

2. RS232 connection using multicore control cable

RS232 connection - Via Junction Box - Camera with RS232-Serial connector.
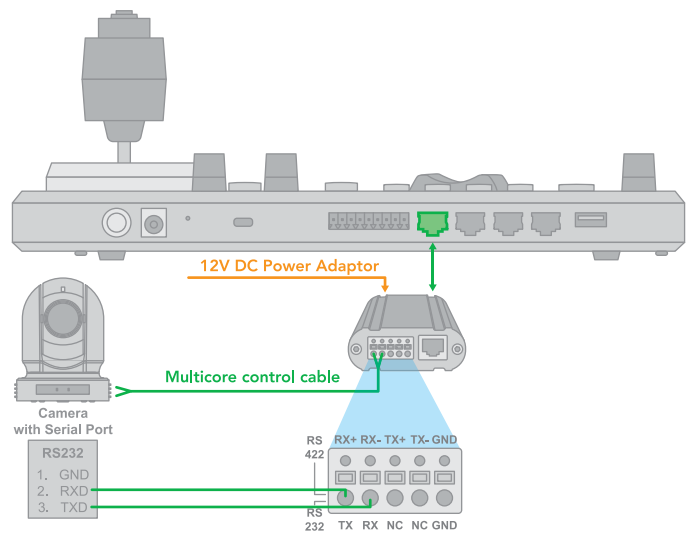
3. RS232 connection with the camera having 8 Pin Mini Din RS232 connector.

   RS232 connection - Via Junction Box - Camera with 8 Pin MIni Din RS232 serial connector.

8 Pin Mini Din TO Phoenix Control Adaptor (Not Included)

12V DC Power Adaptor

Multicore control cable

Camera with Serial Port

(Orange/White)	1. DSR
(Orange)	2. DTR
(Green/White)	3. RXD
(Blue)	4. GND
(Blue/White)	5. TXD
(Green)	6. NC
(Brown/White)	7. NC
(Brown)	8. NC

RS 422 RX+ RX- TX+ TX- GND
RS 232 TX RX NC NC GND

4. RS232 Daisy Chain Multiple Camera connection:

   RS Daisy Chain Connection - Via Junction Box - Camera with RS232 serial connector

12V DC Power Adaptor

Daisy Chain up to 7 cameras

Camera with Serial Port   Camera with Serial Port

Multicore control cable

RS232
1. GND
2. RXD
3. TXD

RS 422 RX+ RX- TX+ TX- GND
RS 232 TX RX NC NC GND

5. RS232 connection using RJ45 to Phoenix connector adaptor.

   RS232 Daisy Chain Connection - Using RJ45 to Phoenix connector adaptor (not included).

12V DC Power Adaptor

Keyboard RJ45 to RS232/422 (adaptor not included)

Daisy Chain up to 7 cameras

Camera with Serial Port   Camera with Serial Port

RS232	Multicore control cable	RS232
1. GND		1. GND
2. RXD		2. TXD
3. TXD		3. RXD

RS422 connection

Use for the controller with Non-BirdDog camera connection. For BirdDog camera connection see the separate section following.
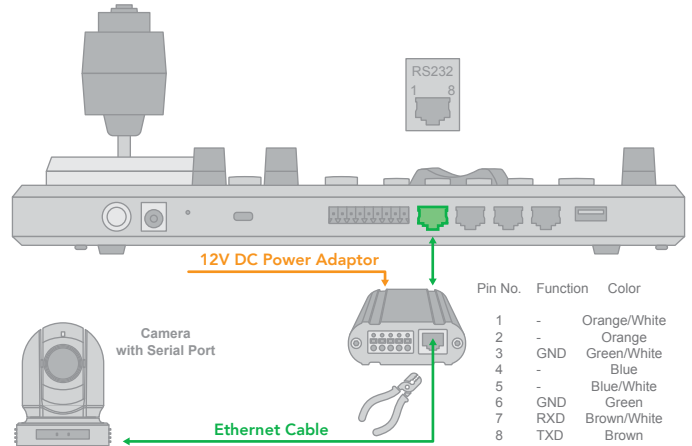
Follow the diagram below for the following options:

1. RS422 Connection using network cable (follow T-568B standard pinout at keyboard end):

a. 1 to 1 connection - Follow the pinout for the RS422 port on the keyboard to use CAT5/6 cable to make a cable suitable for controlling your camera.
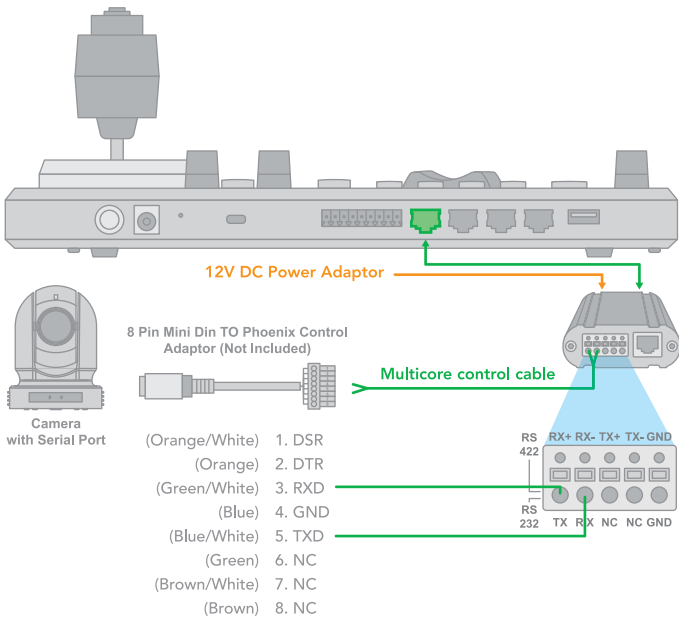

Toggle
A   B
RS422

RS422 (A/B)
1   8

12V DC Power Adaptor

A or B

Pin No.	Function	Color
1	TX-	Orange/White
2	TX+	Orange
3	GND	Green/White
4	-	Blue
5	-	Blue/White
6	-	Green
7	RX-	Brown/White
8	RX+	Brown

Camera with Serial Port

Ethernet Cable
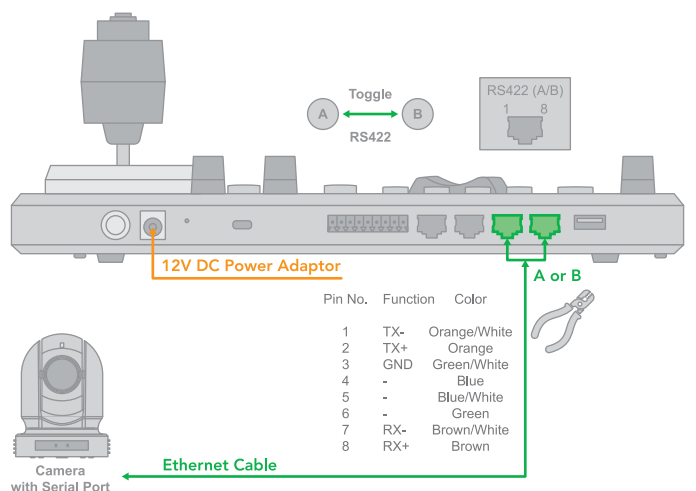
b. Use Junction Box, 1 to 1 connection - Follow the pinout for the RS422 port on the keyboard and Junction Box to use CAT5/6 cable (follow T-568B standar pinout between keyboard and Junction Box) to make a cable sutable for controlling your camera via Junction Box.

RS422 connection - Via Junction Box to make a network cable - Camera with R422-Serial connector.

Pin No.	Function	Color
1	TX-	Orange/White
2	TX+	Orange
3	GND	Green/White
4	-	Blue
5	-	Blue/White
6	-	Green
7	RX-	Brown/White
8	RX+	Brown

RS422 (A/B)
1   8

12V DC Power Adaptor

Pin No.	Function	Color
1	RX-	Orange/White
2	RX+	Orange
3	GND	Green/White
4	-	Blue
5	-	Blue/White
6	-	Green
7	TX-	Brown/White
8	TX+	Brown

Ethernet Cable
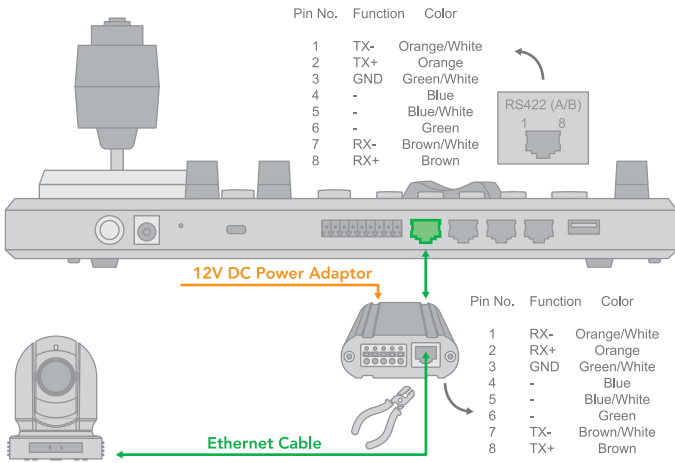
2. RS422 connection using multicore control cable

RS422 Connection - Via Junction Box - Camera with RS422 serial connector

Toggle
A ← RS422 → B
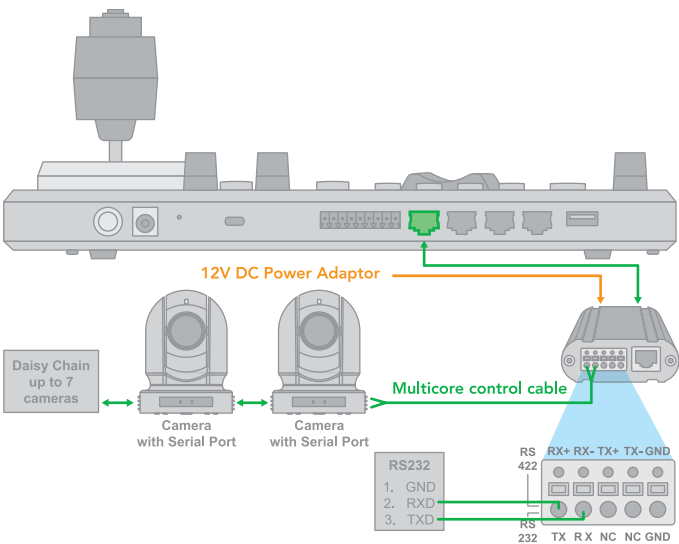RS422 (A/B)
1   8

12V DC Power Adaptor

A or B

Multicore control cable

Camera with Serial Port

RS422
1. GND
2. RX+
3. RX-
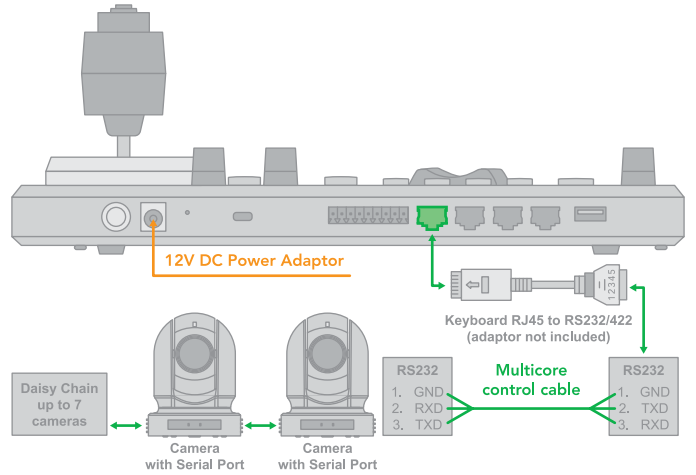4. TX+
5. TX-

RS 422   RX+ RX- TX+ TX- GND
RS 232   TX RX NC NC GND

3. RS422 Daisy Chain Multiple Cameras connection

RS422 Daisy Chain Connection - Via Junction Box - Camera with RS422 Serial Port

Multicore control cable

Camera with Serial Port
5. R –
4. R +
3. T –
2. T +
1. GND

Camera with Serial Port
5. R –
4. R +
3. T –
2. T +
1. GND

Camera with Serial Port
5. R –
4. R +
3. T –
2. T +
1. GND

Toggle
A ← RS422 → B
RS422 (A/B)
1   8

A or B

12V DC Power Adaptor

RS 232   TX RX NC NC GND
RS 422   RX+ RX- TX+ TX- GND

RS422 (VISCA) Daisy Chain Multiple Cameras Connection

KEYBOARD
| RX – | RX + | TX – | TX + | GND |

CAM 1
| RX – | RX + | TX – | TX + | GND |

CAM 2
| RX – | RX + | TX – | TX + | GND |

CAM 7
| RX – | RX + | TX – | TX + | GND |

4. RS422 1 to 1 connection using RJ45 to Phoenix connector adaptor (Not Included)

RS422 Connection - Use RJ45-RS422 adapter - Camera with RS422 serial connector.

Toggle
A ← RS422 → B
RS422 (A/B)
1   8

12V DC Power Adaptor

A or B

Keyboard RJ45 to RS232/422 (adaptor not included)

Multicore control cable

Camera with Serial Port

RS422
1. GND
2. RX+
3. RX-
4. TX+
5. TX-

RS422
1. GND
2. RX+
3. RX-
4. TX+
5. TX-

5. RS422 Daisy Chain connection using RJ45 to Phoenix connector adaptor (Not Included).

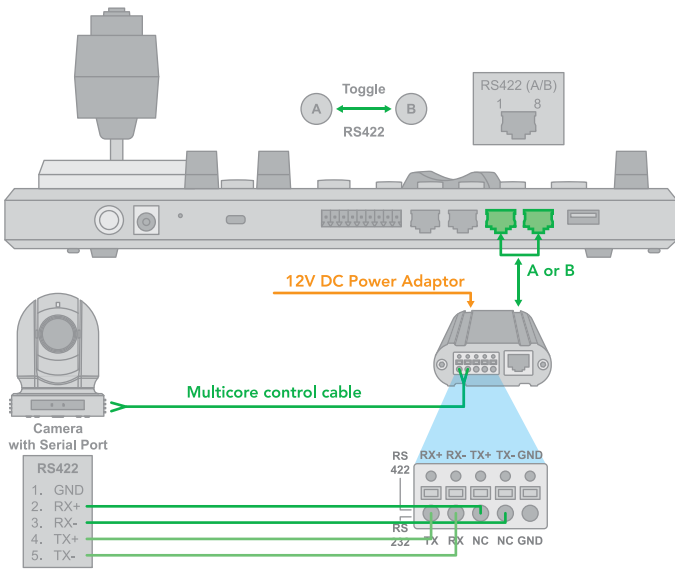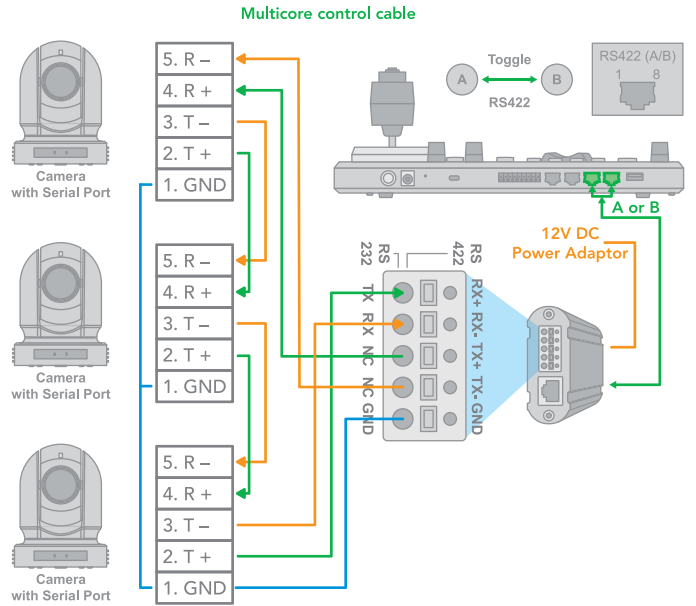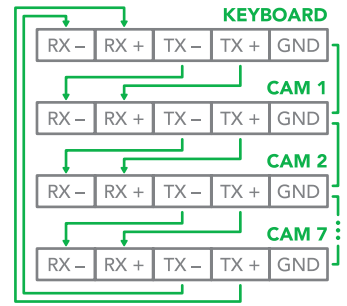   RS422 Daisy Chain connection - Via RJ45 to RS422?232 Adaptor - Camera with RS422 Serial Port.
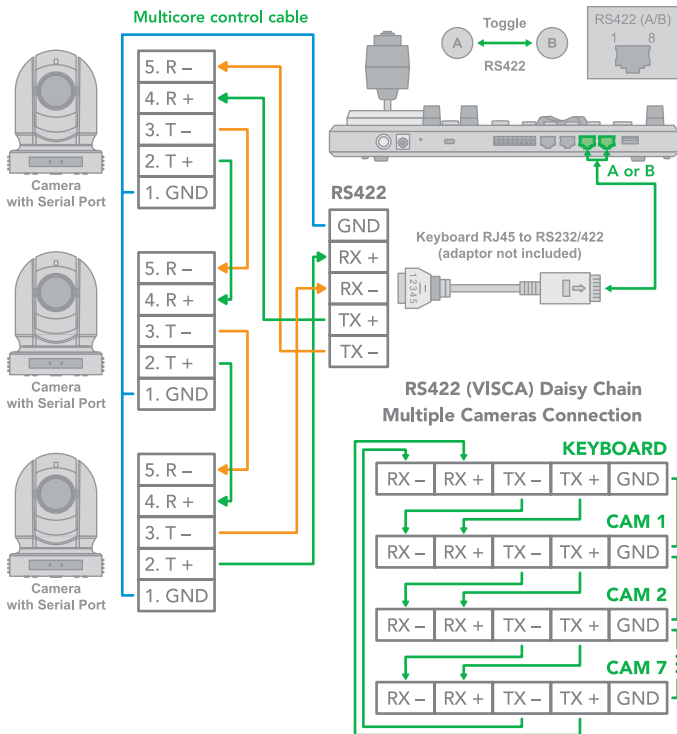
b. Use Junction Box, 1 to 1 connection - Follow the pinout for the RS485 port on the keyboard and Junction Box to use CAT5/6 cable (follow T-568B standar pinout between keyboard and Junction Box) to make a cable sutable for controlling your camera via Junction Box.

   RS485 connection - Via Junction Box to make a network cable - Camera with R485-Serial connector.
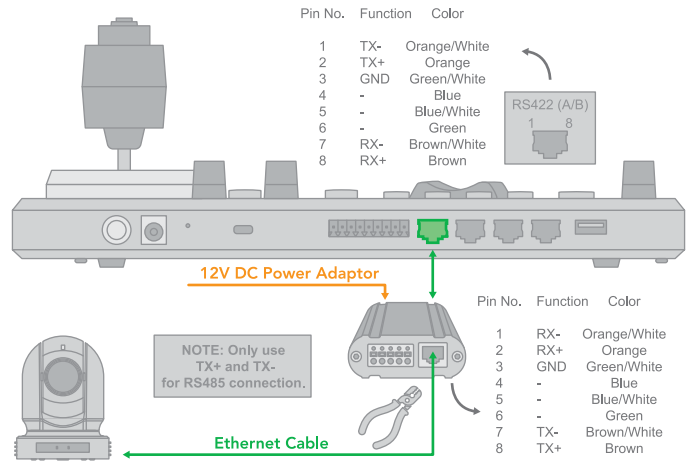
2. RS485 connection using multicore control cable

   RS485 Connection - Via Junction Box - Camera with RS485 serial connector

RS485 connection

Use for the controller with Non-BirdDog camera connection. BirdDog camera connection see the separate section following.

Follow the diagram below for the following options:

1. RS485 Connection using network cable (follow T-568B standard pinout at keyboard end):

a. 1 to 1 connection - Follow the pinout for the RS485 port on the keyboard to use CAT5/6 cable to make a cable suitable for controlling your camera.
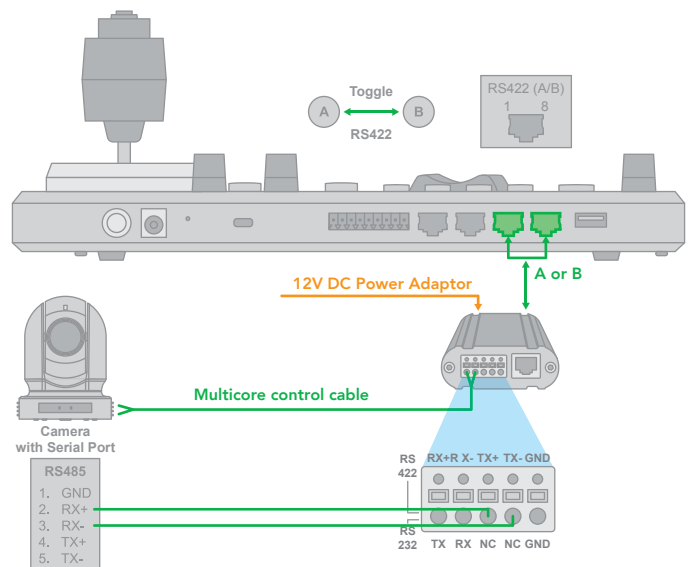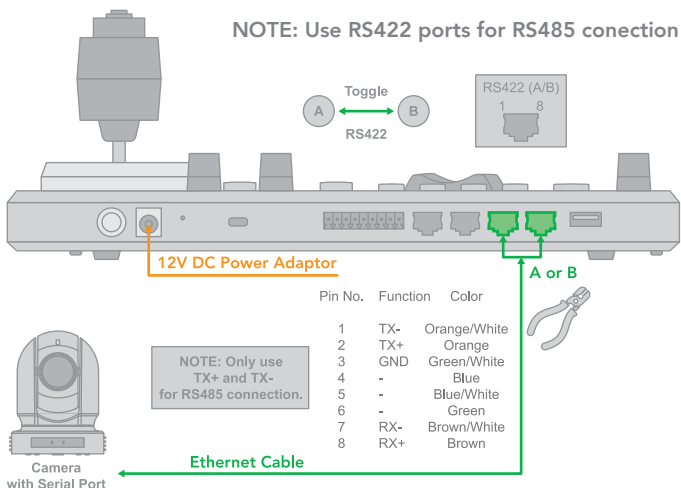
3. RS485 Daisy Chain Multiple Cameras connection

   RS485 Daisy Chain Connection - Via Junction Box - Camera with RS485 Serial Port.

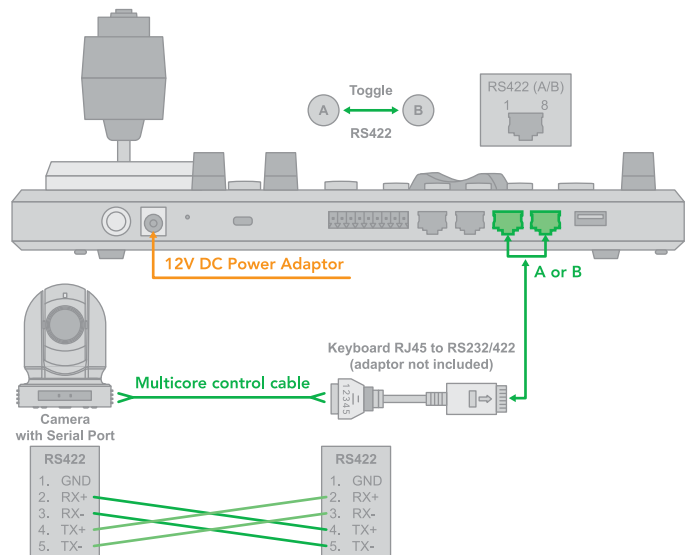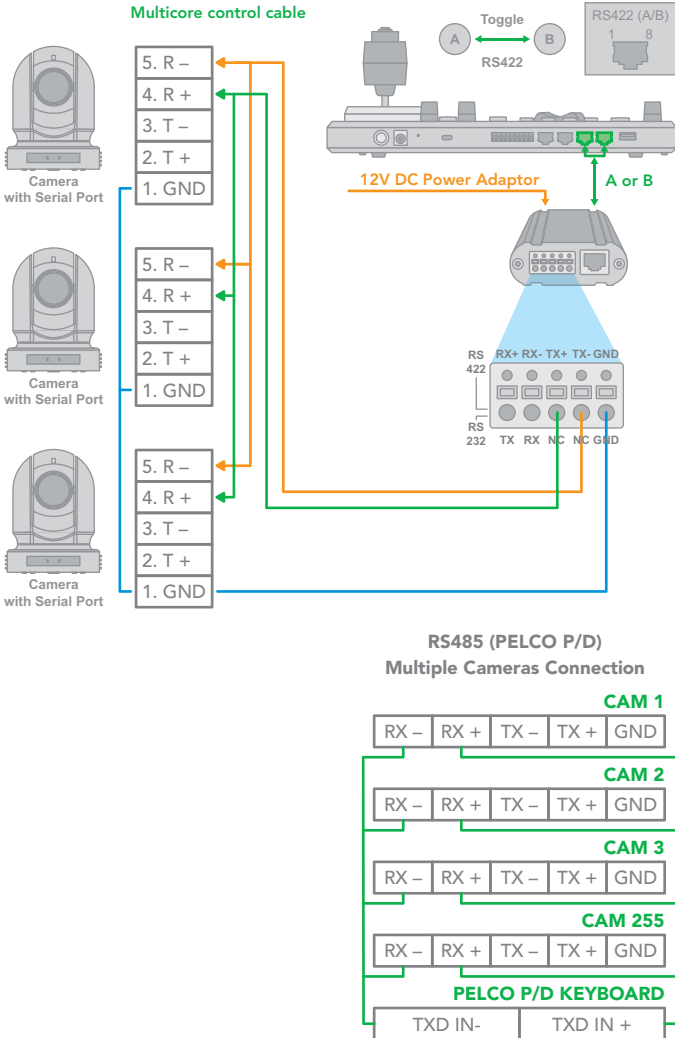**RS485 (PELCO P/D)**
Multiple Cameras Connection

				CAM 1
RX –	RX +	TX –	TX +	GND

				CAM 2
RX –	RX +	TX –	TX +	GND

				CAM 3
RX –	RX +	TX –	TX +	GND

				CAM 255
RX –	RX +	TX –	TX +	GND

PELCO P/D KEYBOARD	
TXD IN-	TXD IN +

4. RS485 Daisy Chain connection using RJ45 to Phoenix connector adaptor (Not included)

   RS485 Daisy Chain Connection - Via RJ45 to RS422 Adaptor - Camera with RS485 Serial Port.

RS485 (PELCO P/D)
Multiple Cameras Connection

				CAM 1
RX –	RX +	TX –	TX +	GND

				CAM 2
RX –	RX +	TX –	TX +	GND

				CAM 3
RX –	RX +	TX –	TX +	GND

				CAM 255
RX –	RX +	TX –	TX +	GND

PELCO P/D KEYBOARD	
TXD IN-	TXD IN +
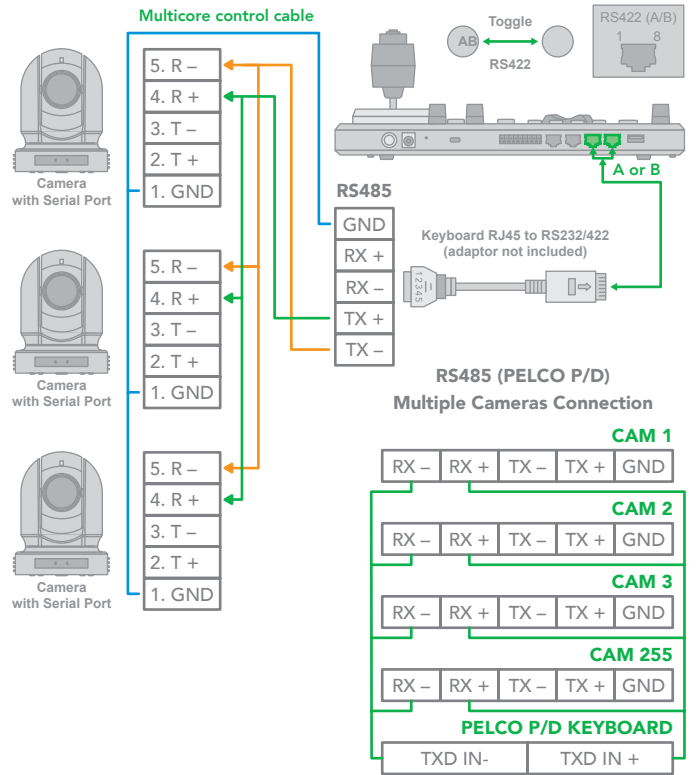
IP Control

Use VISCA OVER IP Control:

IP Connection - Using VISCA OVER IP Control Protocol - with Visca Over IP ready Camera.

Video Switcher
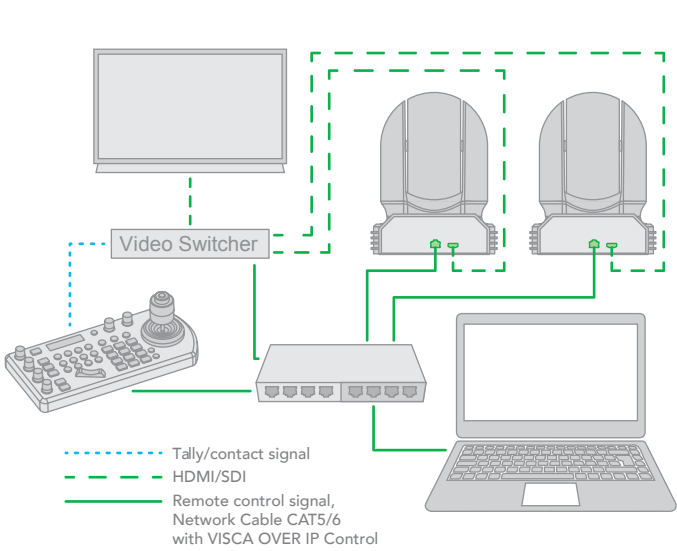
.... Tally/contact signal
– – – – HDMI/SDI
———— Remote control signal,
Network Cable CAT5/6
with VISCA OVER IP Control

Cross-Protocol Mix Control

Using VISCA, PELCO, VISCA OVER IP, NDI® in one single system.

.... IP Signal
– – – – VISCA OVER IP remote control signal
———— NDI®
.... RS232 VISCA protocol control signal
– – – – RS422 VISCA protocol control signal
———— RS485 PELCO protocol control signal
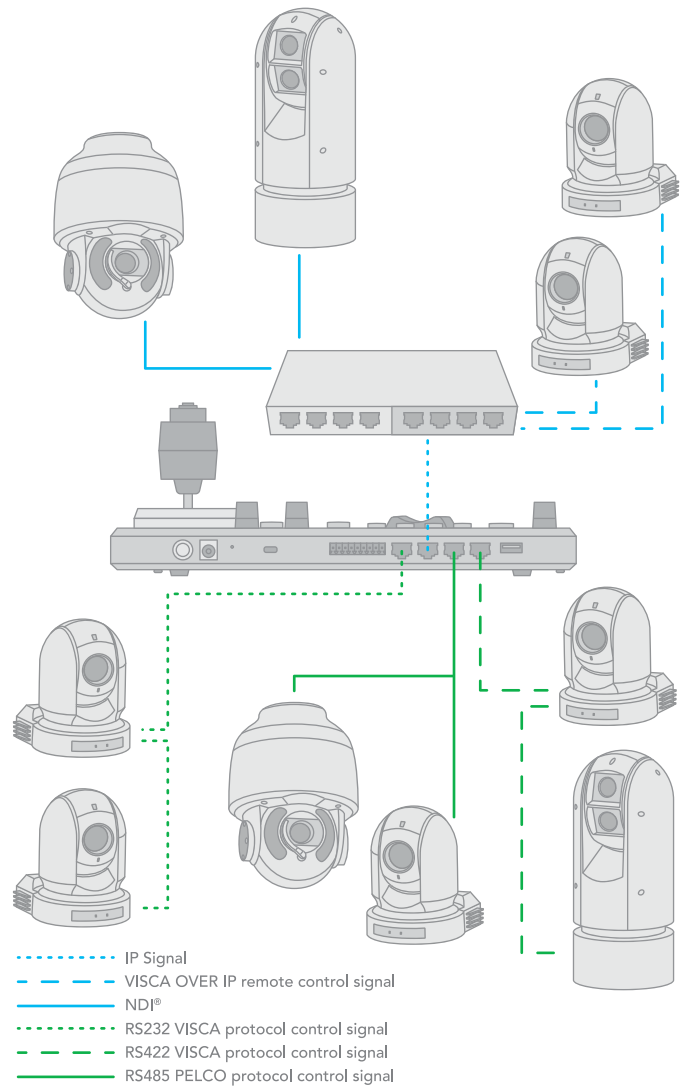
Tally Light GPI I/O connection

GPI connection with RS422 VISCA control connection

Tally Light GPI Connection

- - - - - Tally/contact signal
- - - - - HDMI/SDI
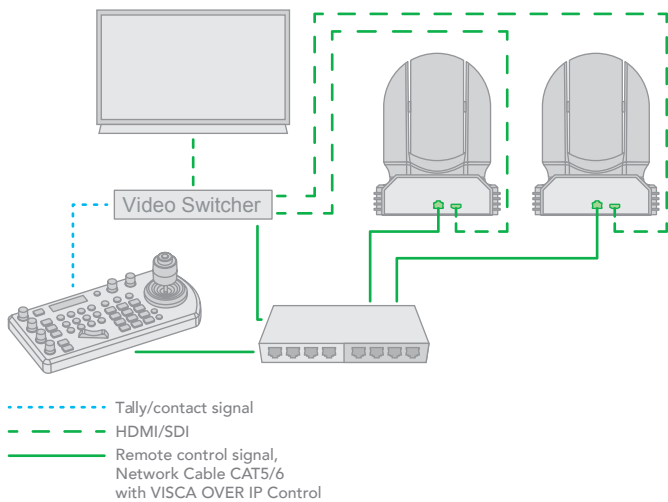———— RS422 control signal
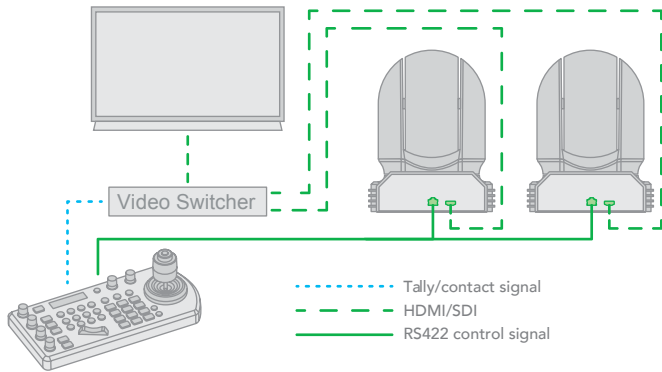
GPI connection with VISCA OVER IP control connection

- - - - - Tally/contact signal
- - - - - HDMI/SDI
———— Remote control signal,
Network Cable CAT5/6
with VISCA OVER IP Control

Keyboard Configuration

Interacting with the BirdDog PTZ Keyboard

Setup:

P/T Speed Dial:

- Rotate: Move Cursor
- Click: Select
- Long Press: Invert L/R (pan axis)

Zoom Speed Dial:

- Rotate: Select Value
- Click: Save
- Long Press: Invert U/D (Tilt axis)

Setup button

Default Password: 0000
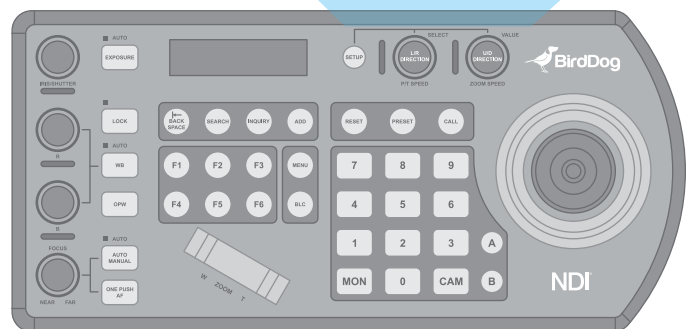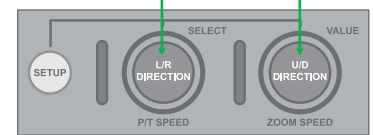
The password can be changed under

Setup > Keyboard Setting > Password

Setting opens Menu on LCD screen

The Setup button opens the setup menu on the LCD screen.

Hold 3 sec.
To invert U/D (Tilt axis)

Hold 3 sec.
To invert L/R (Pan axis)

IP Setup

The IP address can be set to either STATIC or DHCP.

MAIN SETUP MENU	KBD SETTING MENU
▶ CAMERA SETTING	▶ IP CONFIGURATION
KEYBOARD SETTING	BUTTON LIGHT
EXIT	ASSIGNED KEY: F1
	FACTORY DEFAULT
	GPI I/O
	PASSWORD SETTING
	JOISTICK ZOOM: ON
	MODEL INFO
	EXIT

- If setting the IP address to DHCP, move the cursor to the Type field, and rotate the Zoom Speed dial to change the value to DHCP. Click the Zoom Speed dial to save.

- If setting the IP address to a STATIC address, ensure that the Type field shows STATIC, and then rotate the P/T Speed dial to move the cursor between the IP address octets. Move the cursor to each octet and use the alphanumeric keypad to enter its value. Rotate the P/T Speed dial to move to the next octet and repeat until all IP address octets are set to the desired values.

- Click the Zoom Speed dial to save.

- Edit the Subnet Mask and Gateway as necessary to communicate on your network.

- Click the Zoom Speed dial to save.

- Exit this menu.

| KBD SETTING MENU	IP CONFIGURATION MENU
▶ IP CONFIGURATION	▶ TYPE: STATIC
BUTTON LIGHT	IP ADDRESS:
ASSIGNED KEY: F1	192.168.0.100
FACTORY DEFAULT	SUBNET MASK:
GPI I/O	255.255.255.0
PASSWORD SETTING	GATEWAY:
JOISTICK ZOOM: ON	192.168.0.1
MODEL INFO	EXIT
EXIT	

Button Light

The Button Light value affects the brightness of the button backlight.

- Rotate the Zoom Speed dial to adjust the value.

- Click the Zoom Speed Dial to save.

- Exit this menu.

KBD SETTING MENU	BUTTON LIGHT MENU
IP CONFIGURATION	▶ LEVEL: 0
▶ BUTTON LIGHT	EXIT
ASSIGNED KEY: F1	
FACTORY DEFAULT	
GPI I/O	
PASSWORD SETTING	
JOISTICK ZOOM: ON	
MODEL INFO	
EXIT	

Assign keys

Assigned keys can be configured as shortcuts to activate camera functions
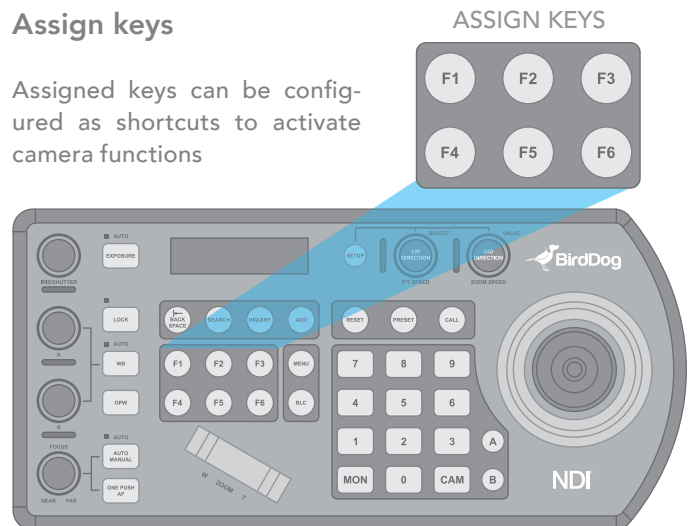
ASSIGN KEYS

- From the keyboard Setup Menu, move the cursor to the ASSIGNED KEY field.

- Rotate the Zoom Speed dial to select which Assigned key to configure.

- Click the P/T Speed button to apply the function to the assign key.

- Assigned key can be assigned to camera features from following:

  - **Home** – Command the selected camera to activate its 'Home' preset

  - **P/T Reset** – Reset the selected camera

  - **Power** – Power off the selected camera

- **Mute** – Mute the audio from the selected camera

- **Picture Freeze** – Freeze the image of the selected camera

- **Picture Flip** – Flip the image of the selected camera

- **Picture LR Reverse** – Invert the L/R (pan direction) of the selected camera

- **None** – No function will be assigned to the key

- Exit

KBD SETTING MENU	ASSIGNED KEY MENU
IP CONFIGURATION	▶ HOME
BUTTON LIGHT	EXIT
▶ ASSIGNED KEY: F1	
FACTORY DEFAULT	
GPI I/O	
PASSWORD SETTING	
JOISTICK ZOOM: ON	
MODEL INFO	
EXIT	

Factory Default

Clear all keyboard settings, and restore factory default

- From the Keyboard Setup Menu,
  select FACTORY DEFAULT

- Select Yes

NOTE: DO NOT move the Joystick nor the Zooming Seesaw and leave them at original DEFAULT is processing.

KBD SETTING MENU	FACTORY DEFAULT
IP CONFIGURATION	▶ YES?
BUTTON LIGHT	NO?
ASSIGNED KEY: F1	
▶ FACTORY DEFAULT	
GPI I/O	
PASSWORD SETTING	
JOISTICK ZOOM: ON	
MODEL INFO	
EXIT	

Tally - GPI I/O

GPI I/O Menu is used to configure the Tally settings

KBD SETTING MENU	TALLY SETTING MENU
IP CONFIGURATION	▶ SETTING: INPUT
BUTTON LIGHT	TALLY MODE: NORMAL
ASSIGNED KEY: F1	COMMAND SEL: STANDAR
FACTORY DEFAULT	CAMERA LINK: ON
▶ GPI I/O	EXIT
PASSWORD SETTING	
JOISTICK ZOOM: ON	
MODEL INFO	
EXIT	

- Setting:

  - Input - Sets the control signal direction of the GPI I/O connector to INPUT. In this case, connect a tally control input signal to the connector.

  - Output - Sets the control signal direction of the GPI I/O connector to OUTPUT. In this case, the connector functions as a contact output connector which outputs the camera number of the target camera.

- Tally Mode

  - Normal - Displays the tally input lamp corresponding to the number of the camera with tally input ON, and automatically selects the camera as the target camera.

  - NORMAL TALLY mode: The following actions are performed for the number that is input from the TALLY/ CONTACT connector only while receiving the commands.

    - The selected camera switches to the camera matching the number of the command from the TALLY/CONTACT connector.

      1. When the selected camera number matches that of the command from the TALLY/CONTACT connector: The selected camera is not switched and can continue to be operated.
      2. When the selected camera does not receive its own number command from the TALLY/ CONTACT connector: The selected camera switches to the camera whose number matches that of the command from the TALLY/CONTACT connector.
      3. If two or more numbers are received from the TALLY/ CONTACT connector, the camera with the smallest number is selected. You can operate the selected camera after returning the joystick to the neutral position. (If you switch cameras and the camera group number changes, the GROUP/ POSI-

TION button lights up for about 1 second.)
4. The selected CAMERA button will flash in red and yellow alternately.

- If two or more numbers are received from the TALLY/ CONTACT connector, CAMERA buttons which are not selected will light in red. You can select a camera by pressing its respective CAMERA button (lit in red).

- The tally lamp of the camera receiving a command from the TALLY/CONTACT connector lights. *

- On Air - Displays the tally input lamp corresponding to the number of the camera with tally input ON.

- ON AIR TALLY mode: The following actions are performed for the number that is input from the TALLY/CONTACT connector only while receiving the commands.

  - The corresponding CAMERA button lights in red.

  - A camera can be selected arbitrarily. Selecting a CAMERA button lit in red will make it flash in red and yellow alternately.

  - The tally lamp of the camera receiving a command from the TALLY/CONTACT connector lights. *

- Command Select

  - Standard - Sets the input/output method to STANDARD method. The camera numbers and input/output pin numbers have a 1:1 correspondence.

    1. If the unit and cameras are connected by serial connection, cameras 1 to 7 correspond to input/outputs 1 to 7.
    2. If the unit and cameras are connected by LAN connection, cameras 1 to 10 in group 1 correspond to input/outputs 1 to 10.

  - Expand - Handles camera numbers as binary numbers.

    1. Tally input numbers 8 and higher in a serial connection are ignored. In this case, the response is equivalent to no input.
    2. Numbers in a LAN connection, corresponding to cameras 1 to 10 in groups 1 to 10, are handled as the numbers 1 to 100. Tally input numbers 101 and higher are ignored. In this case, the response is equivalent to no input.

- Camera Link - Turns tally lamp control on/off. The tally lamp control operation varies depending on the combination of the SETTING and CAMERA LINK settings.

Password Setting

- Old Password: Enter the current password.

- New Password: Enter the password you would like to set.

- Confirm: Enter the new password again to confirm.

- Save: Select this to apply the password. "OK" will appear, confirming that the new password has been applied.

KBD SETTING MENU	PASSWORD SETTING MENU
IP CONFIGURATION	▶ OLD PASSWORD:
BUTTON LIGHT	NEW PASSWORD:
ASSIGNED KEY: F1	CONFIRM:
FACTORY DEFAULT	SAVE
GPI I/O	EXIT
▶ PASSWORD SETTING	
JOISTICK ZOOM: ON	
MODEL INFO	
EXIT	

Joystick Zoom Setting

The joystick ring can control the camera's zoom. This can be toggled under Setup/Joystick Zoom.

This setting can be changed by rotating the Zoom Speed knob while the setting is selected.

Click the Zoom Speed knob to save this setting if changed.

If this setting is set to "OFF", the Zoom Seesaw will remain active and can be used to control zoom.

KBD SETTING MENU
IP CONFIGURATION
BUTTON LIGHT
ASSIGNED KEY: F1
FACTORY DEFAULT
GPI I/O
PASSWORD SETTING
▶ JOISTICK ZOOM: ON
MODEL INFO
EXIT

Model Info

The Model info screen contains the current IP address and Firmware Version of the unit.

KBD SETTING MENU	MODEL INFO MENU
IP CONFIGURATION	▶ IP ADDRESS:
BUTTON LIGHT	192.168.0.100
ASSIGNED KEY: F1	FW VERSION: X.X.X
FACTORY DEFAULT	EXIT
GPI I/O	
PASSWORD SETTING	
▶ JOISTICK ZOOM: ON	
MODEL INFO	
EXIT	

How to assign camera

Manually adding cameras

The keyboard can store settings to control up to:

- 255 cameras by RS485 PELCO protocol separately

- 7 cameras by VISCA via RS422 group A separately

- 7 cameras by VISCA via RS422 group B separately

- 255 cameras by VISCA-Over-IP protocol separately

- Total 255 cameras by cross protocol mix-controlling.

With the cursor on the Camera Selection, use the Zoom Speed dial to select which camera slot to assign a camera. Each camera can be configured to be controlled using any of the following protocols: VISCA, PELCO-D, PELCO-P, VISCAIP (VISCA over IP), CGI*.

If VISCA, PELCO-D, or PELCO-D are selected as the protocol, the Baud Rate Setting screen will appear. Use the Zoom Speed dial to set the baud rate. Click the Zoom Speed dial to save, and then exit this menu.

MAIN SETUP MENU	CAMERA SETTING MENU
▶ CAMERA SETTING	▶ CAM001
KEYBOARD SETTING	TITLE: -
EXIT	PROTOCOL: VISCA
	EXIT

CAMERA SETTING MENU	BAUD RATE SETTING
CAM001	▶ BAUD RATE: 9600
TITLE: -	EXIT
▶ PROTOCOL: VISCA	
EXIT	

Adding a VISCA over IP camera to Keyboard

Adding manually from Local Area Network (LAN)

Selecting VISCAIP (VISCA over IP) as the protocol and clicking the P/T Speed dial will cause the VISCAIP configuration menu to appear

CAMERA SETTING MENU	VISCAIP CONFIGURATION MENU
CAM001	▶ IP ADDRESS:
TITLE: -	192.168.0.100
▶ PROTOCOL: VISCAIP	EXIT
EXIT	

- Rotate the P/T Speed dial to move the cursor between the IP address octets. Move the cursor to each octet and use the alphanumeric keypad to enter its value. Rotate the P/T Speed dial to move to the next octet and repeat until all IP address octets are set to the desired values.

- Click the Zoom Speed dial to save

- Exit this menu

Repeat this process for each camera that you wish to control with the PTZ Keyboard.

Scanning local network for available VISCA over IP cameras

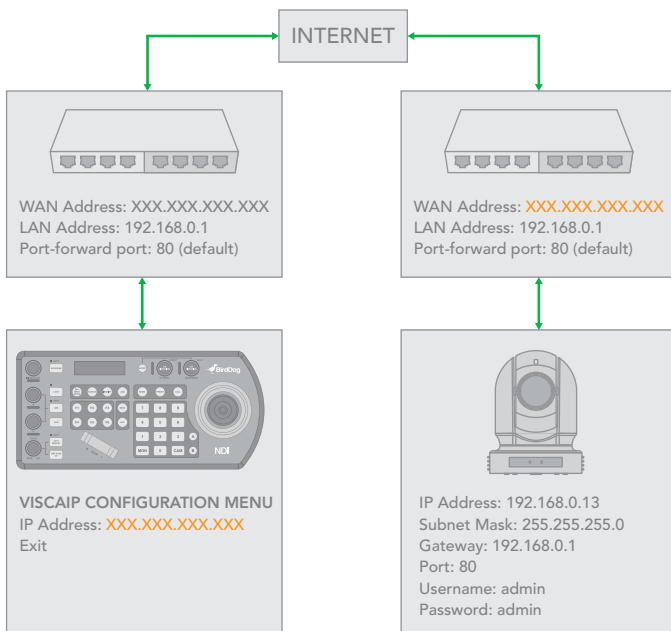| KBD SETUP MENU	STATUS MENU	DISCOVERED CAM.
SELECT PROTOCOL	START SEARCH?	SEARCHED CAM: 1/5
▶ VISCA-IP	▶ YES	▶ 192.168.0.101
ONVIF-IP	NO & EXIT	EXIT
EXIT		

- Press the Search button to bring up the Auto Search menu

- Move the cursor to VISCA-IP

- Select Yes to start the search

- A list of discovered cameras will appear showing the cameras that have been discovered. Scroll through the discovered cameras using the Zoom Speed dial

- To add a camera to be controlled by the Keyboar, press the ADD button

- With the cursor on CAM ID, Assign the camera to a CAM ID by rotating the Zoom Speed dial

- Click the Zoom Speed dial to save

- Move the cursor to the Title, and use the alphanumeric keypad to give the camera a title

- Click the Zoom Speed dial to save

Repeat this process for each discovered camera that you wish to add to the PTZ Keyboard.

Adding VISCA over IP cameras to be controlled via WAN

INTERNET

WAN Address: XXX.XXX.XXX.XXX
LAN Address: 192.168.0.1
Port-forward port: 80 (default)

WAN Address: XXX.XXX.XXX.XXX
LAN Address: 192.168.0.1
Port-forward port: 80 (default)

VISCAIP CONFIGURATION MENU
IP Address: XXX.XXX.XXX.XXX
Exit

IP Address: 192.168.0.13
Subnet Mask: 255.255.255.0
Gateway: 192.168.0.1
Port: 80
Username: admin
Password: admin

1. At Camera Location:

- For commands to flow from outside the network in to a camera, ports must be opened

- Contact the network administrator at the camera location to create a port-forwarding rule in the router allowing commands to flow through the necessary ports using these values:

  - Source/ external port: 52381

  - Destination / internal port: 52381

  - IP Address: IP Address of the camera

 - Protocol: Both (TCP and UDP)

2. At Keyboard location:

- Set the keyboard to DHCP

- Contact the network administrator at the Keyboard location to create a port-forwarding rule in the router allowing commands to flow through the necessary ports using these values:

  - Source/ external port: 52381

  - Destination / internal port: 52381

  - IP Address: IP Address of the keyboard

  - Protocol: Both (TCP and UDP)

- Within the Setup menu of the Keyboar, add the VISCA over IP camera using the WAN IP of the camera location as the IP Address

- Click the P/T Speed dial to save

Interacting with Cameras

Dual RS422 button A/B

There are 2 RS422 ports on the back panel of the Keyboard. Up to 7 cameras can be daisy chained off of each RS422 port. You can toggle between these by using the A and B buttons.
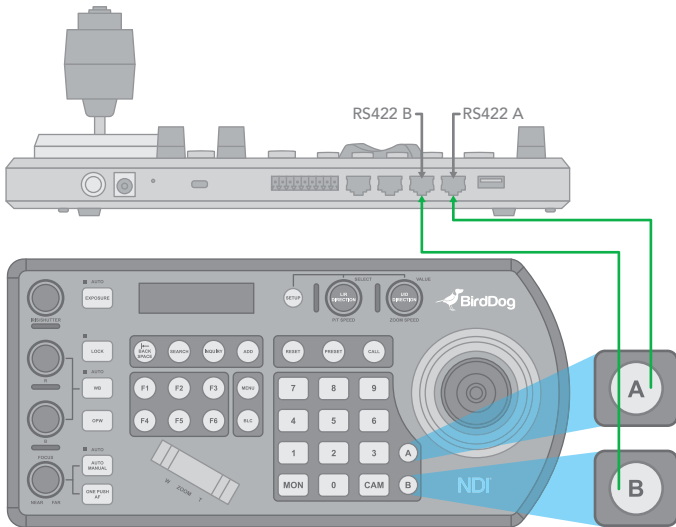
Options for calling camera

1. Use the keypad to call the camera by CAM ID

   a. Enter the CAM ID on the keypad

   b. Press CAM

3. Call the IP cameras by selecting from a list of available devices

   a. Press the Inquiry button

   b. Select a protocol

   c. Scroll through the list using the Zoom Speed dial

   d. Move the cursor to "Call", and click the P/T Speed dial

Controlling a Camera

Engaging the Camera OSD Menu for non-IP cameras

1. Press the Menu button on the keyboard to send a command to the camera to engage the OSD menu

2. Navigate the menu by using the joystick

   a. Move up / down to navigate through menu options

   b. Move the joystick to the right to send an "enter" command

   c. Move up / down to adjust values

   d. Move the joystick to the left to send an "exit" command

Engaging the Camera OSD Menu for PELCO-D Cameras

- On the alphanumeric keypad, call preset 95 to engage the menu (type 95, and then press the "Call" button)


Manual Movements

- Pan, Tilt, and Zoom movements can be executed simultaneously.

- The joystick can be used to pan / tilt the camera in any direction

- The joystick handle can be rotated to zoom in / zoom out

- When not in a menu, the P/T Speed and Zoom Speed dials control how fast the camera Pans, Tilts, and Zooms in

- response to commands from the keyboard

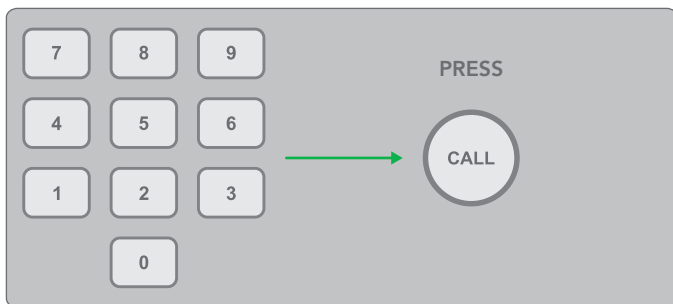- The Zoom Seesaw can be engaged to zoom in / Zoom out
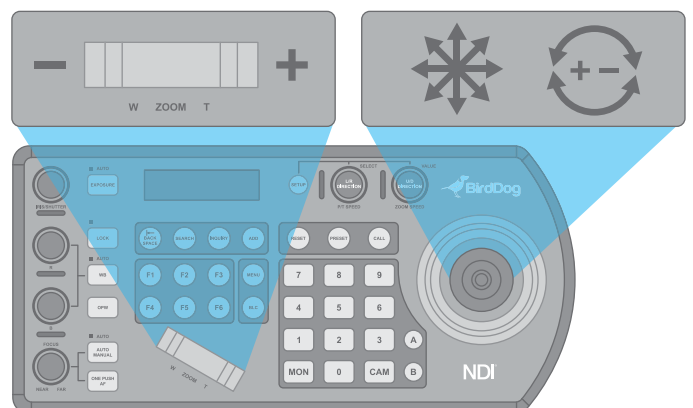
Setting and calling presets
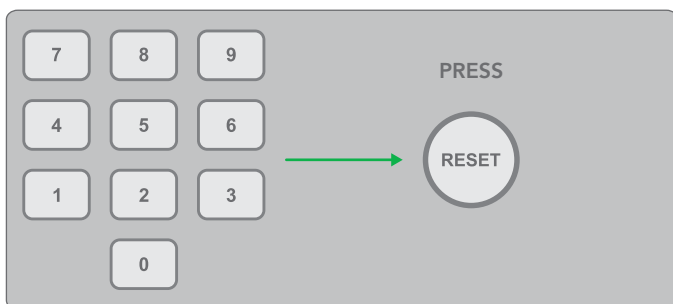
Setting / creating presets:
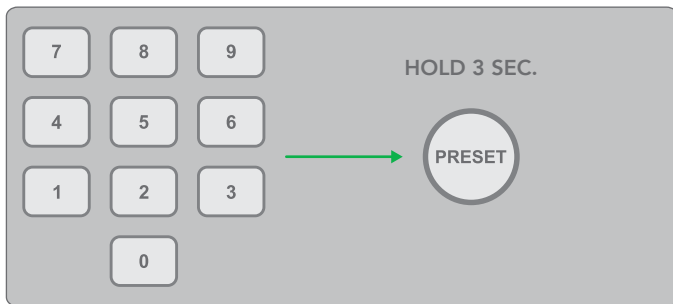
1. Move the camera to the desired position

2. Enter the desired preset number on the alphanumeric keyboard, and then hold the Preset button for 3 seconds to save

Calling presets:

1. Enter the desired preset number on the alphanumeric keypad

2. Press the Call button

Resetting / Clearing presets:

1. Enter the number of the preset you would like to clear

2. Press the Reset button

Adjusting image parameters

The following image parameters can be set/adjusted by using the Image Adjustment Panel

IRIS/SHUTTER

Adjust manually by rotating the IRIS/SHUTTER knob.

Auto-adjust by engaging the EXPOSURE button.

RED/BLUE/WHITE BALANCE

Adjust RED/BLUE values manually by rotating the R/B knobs, respectively.

Auto-adjust by engaging the WB button.

FOCUS NEAR/FAR

Adjust manually by rotating the FOCUS knob (NEAR/FAR).

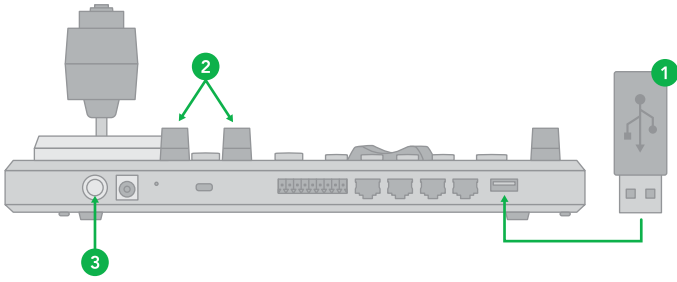Auto-adjust by engaging the ONE PUSH AF (Auto Focus) button.

Toggle the exposure between IRIS priority & SHUTTER priority by pressing the EXPOSURE button.

Lock the image adjustment panel buttons by engaging the LOCK button.

Engage the ONE PUSH WHITE BALANCE by pressing the ONE PUSH WB button.
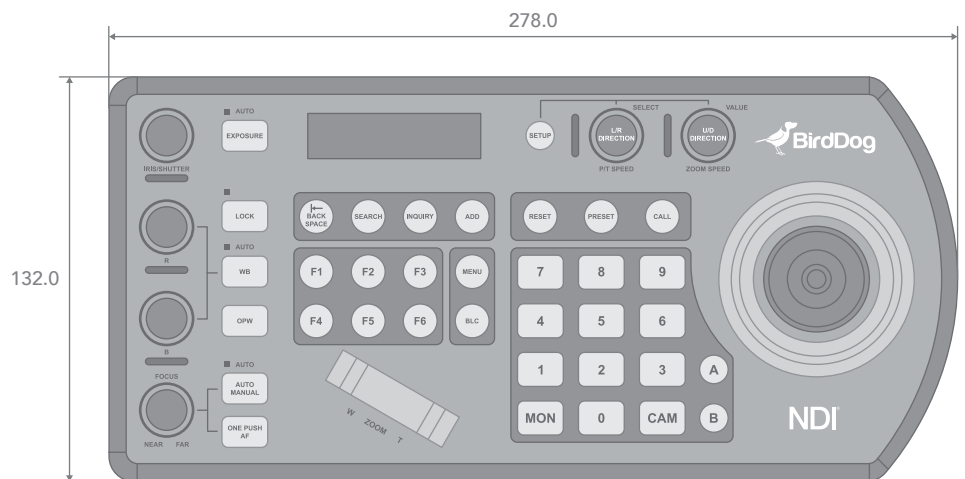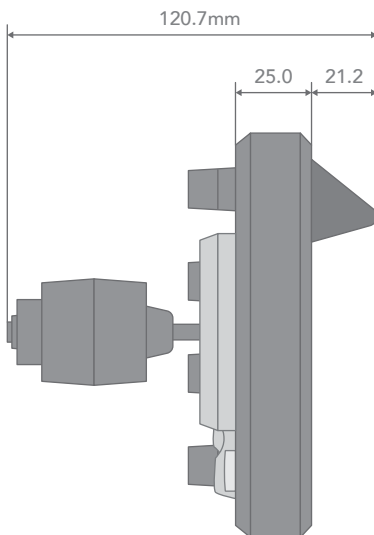
Firmware Upgrade

The latest firmware files are available for download at **www.bird-dog.tv**

This process begins with the keyboard powered off.

• Load a flash drive with the ".bin" firmware file in the root directory (not inside of a folder), and place the flash drive into the USB port on the back panel of the PTZ Keyboard

• Hold down the L/R Direction knob and the U/D Direction Knob

• While holding the knobs down, power on the keyboard by clicking the power button into the "On" position the PTZ Keyboard will display a confirmation that the upgrade is taking place

• When the upgrade is finished, power cycle the keyboard

Dimensions

Unit: mm

WELCOME TO THE FUTURE.