



Share Your Vision

PTZOptics PT-JOY-G4 User Manual

MODEL No.

PT-JOY-G4



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Preface

Before installation and usage, please read the manual thoroughly. If you have any questions or issues with this process, please contact our [Support Team](#).

Precautions

- Do not subject the joystick to rain or moisture.
- Never operate outside of the specified operating temperature range or humidity.
- The power supply included in the box is the only power supply to be used with this joystick. To purchase a the replacement, please visit [ptzoptics.com/where-to-buy/](#).
- Please use a soft cloth to clean the unit. If the unit is very dirty, clean it with diluted neutral detergent; do not use solvents which may damage the surface.

Warning

- Electrical safety
Installation must be in accordance with national and local electric safety standards.
- Polarity of Power Supply
The power supply output for this product is 12V DC with a maximum current supply of 2A. The polarity of the power supply plug is critical and is as follows:



- Handling
 - Avoid subjecting the joystick to stress, vibration, or moisture during transportation, storage, installation, and operation.
 - Do not expose the joystick to any corrosive solid, liquid, or gas.
 - Please make sure the joystick is placed on a level surface.
 - Do not dismantle the joystick. Do not remove any portions of the case, cover, or interfaces. - PTZOptics is not responsible for any unauthorized modification or dismantling.
 - Dismantling of any kind will void the manufacturer's warranty.
 - If you need to clean the surface of the product please use a soft dry cloth.
 - Do not use any type of solvents, which may damage the surface of the product.
- This is an FCC Class-A product. In a domestic environemt, this camera may cause radio interference. In the event of radio interference, the user may be required to adequately mitigate it.

Packing List

Please make sure the items below are included in your camera box:

- o **PT-JOY-G4**
- o **12V 2A International Power Supply**
- o **RS-232C / DB9 female to 8-pin mini-din male cable**
- o **Quick Start Guide**
- o **Grounding Pin**

Warranty

PTZOptics includes a limited parts & labor warranty for all PTZOptics manufactured products. The warranty is valid only if PTZOptics receives proper notice of such defects during the warranty period. PTZOptics, at its option, will repair or replace products that prove to be defective. PTZOptics manufactures its hardware products from parts and components that are new or equivalent to new in accordance with industry-standard practices.

[Here is the link](#) to the PTZOptics Hardware Warranty Documentation. This product has a 2-year warranty.



Covered by one or more claims of
the HEVC patents listed at
patentlist.accessadvance.com.

Certifications

This joystick has been tested and certified for the standards shown below

FCC Class B - Tested under FCC 47 CFR Part 15 Subpart B, Class B(sDoC), ANSI C63.4 -2014

CE - Tested under EMC Directive 2014/30/EU

EN 55032: 2015+A11:2020

EN 55035:2017+A11:2020

EN IEC 61000-3-2:2019

EN 61000-3-3:2013/A1:2019

RoHS - Tested under RoHS Directive 2011/65/EU

FCC Statement

This equipment has been tested and found to comply with the limits for a Class A 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. FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment. Operation is subject to the following two conditions: This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Copyright Notice

The entire contents of this manual / guide, whose copyright belongs to PTZOptics, may not be cloned, copied, or translated in any way without the explicit permission of the company. The product specifications referred to in this document are for reference only and as such are subject to updating at any time without prior notice.

Features

- **Custom Control Across a Variety of Cameras and Devices**

The PTZOptics PT-JOY-G4 Joystick Controller is a comprehensive solution supporting serial or network-based control for PTZ cameras of any generation.

- **Software Customizable Buttons**

The Web User Interface for the PT-JOY-G4 offers custom buttons to expert users looking to automate their production. Use Automatic Triggers to automate your video production workflow to effortlessly queue up your next camera or prepare your next scene.

- **Multi-Brand Compatibility**

Pan, tilt and zoom control across IP, and serial cameras from multiple brands including PTZOptics, HuddleCamHD, Sony, BirdDog, Lumens, and Marshall.

- **Intuitive Ergonomic Design**

Pressure-sensitive dials for precise, on-the-fly-tuning, with no OSD adjustments required.

- **Multiple Supported Protocols**

VISCA over IP (PTZOptics & Sony), Serial Control (RS-232, RS-485, Pelco-D, & Pelco-P), & Websockets.

- **Multiple Control Options**

IP & Serial Control for a Range of PTZ Cameras

- **Customizable Joystick Button**

Assign a custom command to the joystick button to streamline your production.

- **HTTP-CGI Command Stub**

Optimized software custom buttons using the new `{{CURRENT_CAM}}` stub instead of a hard-coded IP address. This allows you to send a custom command to the currently selected camera. This new option allows you to use custom button commands with a vastly larger amount of cameras.

Technical Specifications

Model	PT-JOY-G4
General Specifications	
Protocols	PTZOptics VISCA and VISCA over IP PELCO-D and PELCO-P via Serial Ports Limited Sony VISCA and VISCA over IP support Limited ONVIF support WebSockets
Baud Rate	1200 to 19200 bps
Maximum Cameras	253 channels / cameras
Maximum Recommended Distance	Ethernet: 328 feet 100 Meters RS-232: 50 feet 15 Meters RS-485: 3,937 feet 1200 Meters RS-422: 50 feet 15 Meters
Connections	
Power Connector	12DC Power Connection
Power Requirements	12V DC
Power Consumption	6W
Communication Interface	RS-232 Control Connection RS-422 / RS-485 Control Connection Ethernet / RJ-45 (PoE) Network Connection Supports 802.3af PoE power Network: NIC (TCP and UDP) Serial/Analog: RS-232 Full Duplex, RS-485 Semi Duplex, RS-422 Full Duplex

Physical Specifications	
Product Material	Aluminum
Dimensions	11.938" W x 9.25" D x 4.25" H 303mm W x 234mm D x 107.95mm H
Weight	4.45 lbs 2.02 kg
Box Dimensions	14.2" W x 10.75" D x 5.81" H 360.36mm W x 273.05mm D x 147.64mm H
Box Weight	6.75 lbs 3.06 kg
Operating Environment	Indoor
Operating Temperature	14° F ~ 122° F (-10° C ~ +50° C)
Operating Humidity	10% ~ 90% (non condensation)
Warranty	2 Year Manufacturer Warranty

Dimensions

W 11.93 in

D 9.25 in

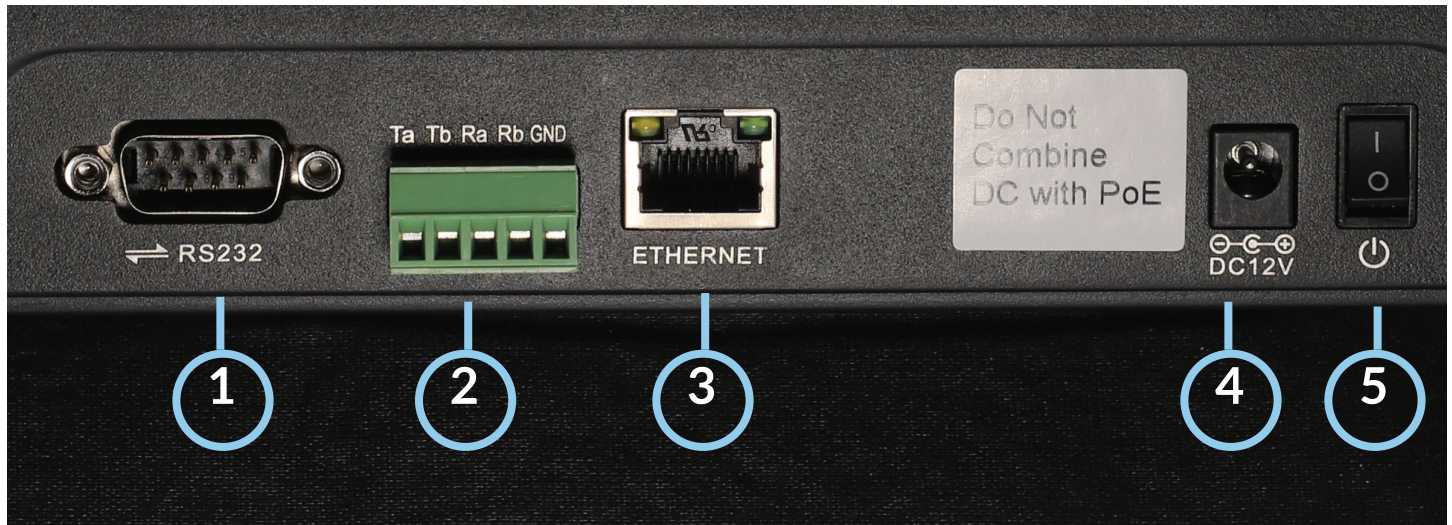
H 4.25 in



Connection Guide

You can power your joystick using the included power supply or Power over Ethernet (802.3af). After applying power make sure that the I/O switch is flipped to "I" for "On".

(Do not power the joystick controller using PoE and the power supply at the same time.)



1. RS-232 Control Connection	4. 12VDC Power Connection
2. RS-422 / RS-485 Control Connection	5. Power Switch
3. Ethernet / RJ-45 (PoE) Network Connection Supports 802.3af PoE power	

Network Connection: To control your camera(s) over a network, connect an ethernet cable from your Local Area Network (LAN) to the controller and another one to the camera. Afterwards, add the camera's IP address to the joystick's list of cameras and designate a control address.

Network Setup

The PT-JOY-G4 will dynamically obtain an IP address upon connection to your LAN. If your network is not able to supply DHCP addresses you must assign a static IP address to the controller.

To set a static IP address, follow the steps below.

1. Obtain the IP address scheme of your network.
2. Connect your joystick to power and to your network.
3. Press the [SETUP] button, and move down to option 4. Network Connection.
4. Move the joystick left or right to "Static", and press the [ENTER] key to set the static IP address.
5. Enter an available IP address similar to the IP address scheme of your network using the alpha-numeric keypad.
6. Enter the Gateway and Subnet Mask of your network.
7. When all the fields are filled, press the [ENTER] key to restart the joystick with the assigned static IP address.

Analog RS-232 Control: To control your camera(s) over a serial/analog connection, use the included RS-232C cable to connect the joystick and the camera. Then, designate a control address for the camera.

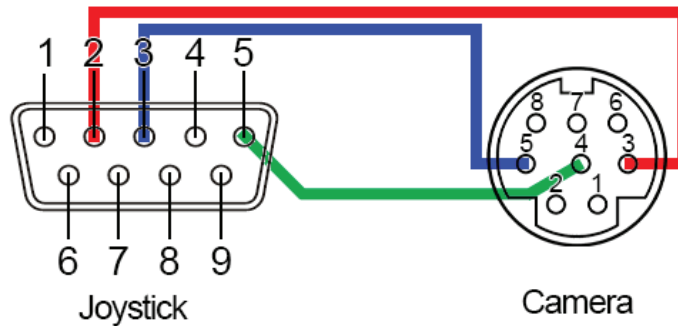


Fig 1. RS-232 Connection: Joystick to Camera

Once you have selected a serial/analog communications method, connect the appropriate cable to the joysticks selected control port, and then to the camera's matching control input (RS-232 or RS-485).

When controlling multiple cameras via analog, you can use the "Daisy Chain" method of connection.

Daisy-Chain Connection:

To utilize a Daisy-Chaining setup, connect the joystick to camera 1, then connect camera 1 to camera 2, etc. Daisy-Chaining can be used with both RS-232 & RS-485. Please use the figures below for reference.

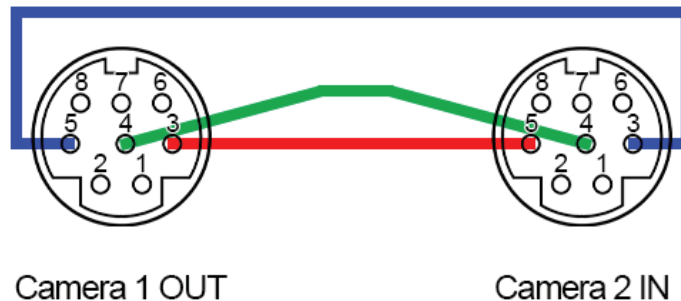


Fig 2. RS-232 Connection: Camera to Camera



Fig 3. RS-232 Daisy Chain

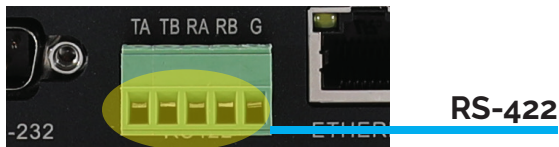
Serial/Analog RS-485 Control: Connection should be made in the two left most ports. To control your camera(s) over an RS-485 connection, see below.

- Joystick Ta - Pin 1 - Camera (+)
- Joystick Tb - Pin 2 - Camera (-)
- Joystick GND - Pin 5 - Camera (G) (If present. Some cameras won't require ground)

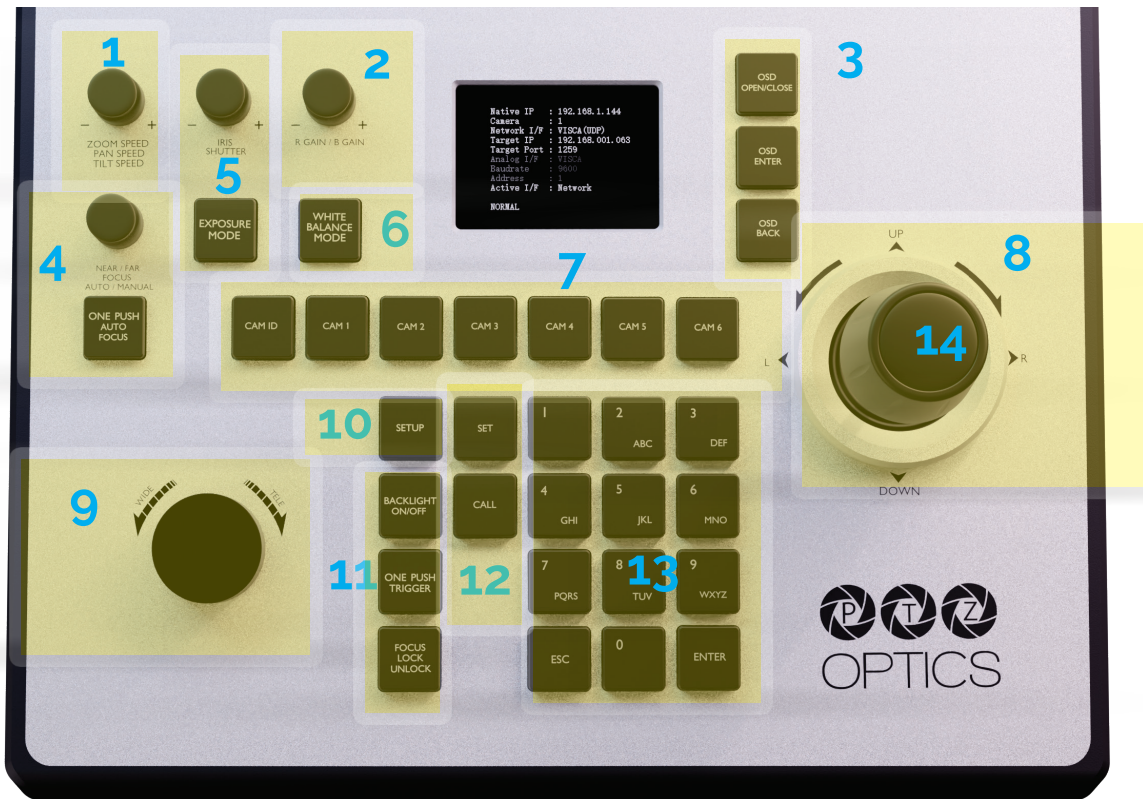


Serial/Analog RS-422 Control: Utilizes all 5 ports. To control your camera(s) over an RS-422 connection, see below.

- Joystick Ta - Pin 1 - Camera (Rx-)
- Joystick Tb - Pin 2 - Camera (Rx+)
- Joystick Ra - Pin 3 - Camera (Tx-)
- Joystick Rb - Pin 4 - Camera (Tx+)
- Joystick GND - Pin 5 - Camera (G) (If present. Some cameras won't require ground)



PT-JOY-G4 Button Layout & Display



1. Speed Control	8. Joystick Control
2. R Gain / Blue Gain Control	9. Zoom Control Dial
3. Camera OSD Control	10. System setup
4. Focus Mode Control	11. Focus Lock/Unlock, Backlight, One Push
5. Exposure Control & Iris Shutter	12. Preset Control Buttons
6. White Balance Mode	13. Alpha-Numeric Keypad
7. Camera Select Buttons	14. Unique Custom Button

Main Menu PT-JOY-G4 Display

Native IP: Displays the Joystick's IP address. Type this into a web browser to reach the web UI.

Camera: Shows the currently selected camera ID and the group it's assigned to.

Network I/F: Shows the protocol the joystick and the currently selected camera use to communicate for control.

IP/Domain: Shows the IP address of the currently selected camera.

Target Port: Shows the camera control port.

Analog I/F: Shows the Analog Control Method.

Baudrate: The communication speed between the joystick and the currently selected camera.

Address: Shows the camera channel.

Active I/F: Shows the active control method. Choose Network or Analog

Button & Dial Descriptions

The below descriptions will describe the buttons and dials available on the controller.

1. Speed Control

The Speed Control section allows you to adjust the speed at which you pan, tilt, and zoom the camera.

a. [SPEED] Knob

Twist the Speed Control knob to increase or decrease the set control speed.

Press the Speed Control knob in to cycle through zoom, pan, and tilt speeds options.

Zoom Speed Range: 1 - 7

Pan Speed Range: 1 - 24

Tilt Speed Range: 1 - 20

2. Red GAIN / Blue GAIN Control

The White Balance Control section allows you to adjust the white balance settings of the camera.

a. [R GAIN / B GAIN] Dial

Twist the [R GAIN / B GAIN] knob to adjust the Red Gain / Blue Gain value.

Press the [R GAIN / B GAIN] knob to toggle red gain and blue gain adjustment control.

3. Camera OSD Control

The Camera OSD Control section allows you to open and adjust the camera's on screen display menu.

a. [OSD OPEN / CLOSE] Button

Press the [OSD OPEN / CLOSE] button to open and close the on screen display menu.

Move the joystick up, down, left, and right to traverse the camera's OSD menu.

b. [OSD ENTER] Button

Press the [OSD ENTER] button to select an OSD menu option.

c. [OSD BACK] Button

Press the [OSD BACK] button to go back an OSD menu option.

Refer to the [Camera OSD Menu Control](#) section of this guide for more information.

4. Focus Control

The Focus Control section allows you to adjust the focus value of the camera.

a. [NEAR / FAR FOCUS] Dial

Twist the [NEAR / FAR FOCUS] dial to focus the camera's image on your scene.

Press the [NEAR / FAR FOCUS] dial in to toggle Auto Focus and Manual focus modes.

b. [ONE PUSH AUTO FOCUS] Button

Press the [ONE PUSH AUTO FOCUS] button to automatically focus the image on the scene while staying in Manual Focus mode.

5. Exposure Control

The Exposure Control section allows you to adjust the exposure settings of the camera.

a. [IRIS / SHUTTER] Knob

Twist the [IRIS / SHUTTER] knob to adjust the Iris / Shutter value.

Press the [IRIS / SHUTTER] knob to toggle between Iris and Shutter adjustments.

Controls the camera's Gain. Press in the knob to change from Iris > Shutter > Gain

b. [EXPOSURE MODE] Button

Press the [EXPOSURE MODE] button to cycle through Exposure modes.

Options include: Auto, Manual, Shutter Priority, Iris Priority, & Brightness Priority.

6. [WHITE BALANCE MODE] Button

Press the [WHITE BALANCE MODE] button to cycle through the White Balance Modes.

Options include: Auto, Indoor, Outdoor, One Push, & Manual.

7. Camera Select

The Camera Select section allows you to select a camera to control.

a. [CAM ID] Button

The [CAM ID] button allows you to select any camera on the controller using the alpha-numeric keypad.

b. [CAM #] Button

The [CAM #] button allows you to quickly select a camera to control.

Options include: 1 - 6

8. Joystick Controller

The joystick controller allows you to pan, tilt, and zoom (twist) the camera. The control speed is affected by the Speed Control dial settings.

9. Zoom Control

The Zoom Control sections allow you to zoom the camera in and out of the scene.

a. [FINE TUNE ZOOM] Knob

The [FINE TUNE ZOOM] knob allows you to finely zoom the camera in and out at the lowest speed (1) setting.

10. Controller OSD Setup

The Controller OSD Setup allows you to adjust the settings of the controller.

a. [SETUP] Button

Press the [SETUP] button to open the joystick's OSD menu.

Refer to the [Joystick OSD Menu Control](#) section of this guide for more information.

11. Fine Tune Video

The Fine Tune Video section allows you to quickly change the camera's video settings.

a. [BACKLIGHT ON / OFF] Button

Press the [BACKLIGHT ON / OFF] button to toggle the camera's backlight compensation mode.

b. [ONE PUSH TRIGGER] Button

Press the [ONE PUSH TRIGGER] button to trigger the camera to calculate the scene's white balance value.

c. [FOCUS LOCK / UNLOCK] Button

Press the [FOCUS LOCK / UNLOCK] button to lock or unlock the camera's focus value from the current position.

12. Preset Control

The Preset Control section allows you to set and call presets of the cameras.

a. [SET] Button

Press the [SET] button to set a camera preset. Use the alpha-numeric keypad to set a preset number.

b. [Call] Button

Press the [CALL] button to call a camera preset. Use the alpha-numeric keypad to call a preset number.

c. Quick set preset shortcut

Press and hold a number on the alpha-numeric keypad for 3+ seconds to set a camera preset in the current location for that preset number.

d. Quick call preset shortcut

Quickly press a number on the alpha-numeric keypad to call a camera preset. Refer to the [Setting and Recalling Presets](#) section of this guide for more information.

13. Alpha-numeric Keypad

The alpha-numeric keypad allows you to use many of the controller features that require numbers and letters, such as adding a camera from the controller OSD.

14. Unique Custom Button

Customizable button located on the top of the joystick controller. This is best utilized for the most frequently needed custom commands.



Adding a Camera using the Joystick

To add a camera to the joystick from using the OSD setup menu, follow the steps below.

1. Adding an IP camera

- a. Press the [SETUP] button, and select option one (1) "Network Device" for IP
- b. Fill out the Network Device fields to connect your camera.

Channel: Joystick Camera Address [CAM ID]. Options include 1 - 7.

Protocol: Options include VISCA (UDP), VISCA (TCP), Sony VISCA (UDP), ONVIF.

*Note for PTZOptics Cameras: One easy way to find the protocol for the camera you would like to add, is to enter the camera's Web UI. To do this, type your camera's IP address into a web browser and log in. **Username:** admin. **Password:** admin. From the camera settings menu, click the Control tab, then click the Ports tab below. Here you can see the available control protocols.*

IP: Camera IP address

Ctrl Port: Camera control port.

- c. Once the above fields are filled, press the [ENTER] button to save the camera to the controller.

For PTZOptics and HuddleCamHD cameras, by default, the port assignments are 1259 for UDP control and port 5678 for TCP control. The Sony VISCA Protocol always utilizes port 52381.

2. Adding a Serial/Analog camera

- a. Press the [SETUP] button, and select option two (2) "Analog Device"
- b. Fill out the Serial/Analog Device fields to connect your camera.

Channel: Joystick Camera Address [CAM ID]. Options include: 1 - 7.

Protocol: Control protocol. Options include: VISCA, PELCO-D, & PELCO-P

Address: Camera control address. For best results, set the Joystick & Camera control address to the same value.

Baud Rate: Baud rate. Options include: 1200, 2400, 4800, 9600, 19200, 38400, & 115200. For best results, use 9600.

- c. Once the above fields are filled, press the [ENTER] button to save the camera to the controller.

Adding a Camera using the Web Interface

Device

Control

Search

Matrix Mode

Custom

Settings

URL

Logout

<input type="checkbox"/>	Camera	IP	Port	Protocol(network)	Baudrate	Address	Protocol(analog)	Operate
<input type="checkbox"/>	1	192.168.21.57	1259	VISCA(UDP)	9600	1	VISCA	
<input type="checkbox"/>	2	192.168.21.58	1259	VISCA(UDP)	9600	2	VISCA	
<input type="checkbox"/>	3	192.168.21.61	1259	VISCA(UDP)	9600	3	VISCA	
<input type="checkbox"/>	4	192.168.21.63	1259	VISCA(UDP)	9600	4	VISCA	
<input type="checkbox"/>	5	192.168.100.88	1259	VISCA(UDP)	9600	5	VISCA	
<input type="checkbox"/>	6	192.168.100.88	1259	VISCA(UDP)	9600	6	VISCA	
<input type="checkbox"/>	7	192.168.100.88	1259	VISCA(UDP)	9600	7	VISCA	


Add

Batch Edit

<< 1/1page >>

To add a camera to the controller from the web interface, follow the steps below.

1. Type the PT-JOY-G4's IP address into a web browser. You can find the joystick's IP address listed on the main menu of the display next to **Native IP**.
2. Type in the login credentials to access the joysticks WebUI configuration page.
 - a. Default username: "admin"
 - b. Default password: (there is no password by default)
3. Click the "Modify" Icon under the "Operate" column of the camera address you wish to configure a camera for. This will open up the editor window shown below.

Edit


Camera:

Connection
Custom

Network/Analog:

Protocol:

Address:

Port:

5. At the top of the editor window, you can see the field titled, **Camera:** Here, you can input the camera number to help differentiate between cameras.

6. Below the three main attributes there are three separate tabs for configuring the selected camera.

Connection Tab Options:

- **Network/Analog:** Choose between a network or analog connection for the selected camera.
- **Protocol:** Selectable Control protocol Options include: VISCA, VISCA UDP, VISCA TCP, VISCA UDP SONY, VISCA WEBSOCKET, ONVIF, PELCO-D, & PELCO-P
- **Address:** The IP address of your camera.
- **Port:** The control port for the control protocol being used.

Custom Tab Options:

- **Custom Button:** Assign a custom button to trigger, upon selecting this camera. A custom button must be assigned a command in order for this feature to work.

7. Once the above fields are filled, click the Save button to finish adding the camera to the controller.

Joystick OSD Menu Control

Pressing the Setup button will open up the PT-JOY-G4 on screen menu. You can use the joystick to navigate, the enter button to select an options, and the escape button to return to the previous window. Below is a list of available options from the OSD:

- **Add Network Device**
Used to add a network device
- **Add Analog Device**
Used to add an analog device
- **Device List**
Move the joystick to see the current configuration of the 28 channels.
Move the joystick up or down to traverse the menu by increments of 1.
Move the joystick left or right to traverse the menu by increments of 5.
- **Network Connection**
Select the type of network configuration. Move the joystick left or right to choose between DHCP or Static.
- **Language**
Move the joystick left or right to adjust the language.
Options include: English
- **Button Tone**
Move the joystick left or right to select On or Off.
After making a selection, press the **[ENTER]** button to apply.
- **Restore Factory**
Press the **[ENTER]** button to restore the joystick to factory default settings.
You will be prompted to confirm, press the **[ENTER]** key again to restore to factory default, or press the **[ESC]** button to cancel. Restoring the joystick to factory default settings will remove all cameras, set all control speeds back to default, and reset network information.
- **System Info**
Press the **[ENTER]** button to view the controller's system information. Includes: Software Version, Hardware Version, Web Version, Gateway, & Subnet Mask.
- **Visca Response**
Disable or Enable
- **Invert Tilt**
Invert the tilt control of the joystick
After making a selection, press the **[ENTER]** button to apply.
- **Invert Pan**
Invert the pan control of the joystick
After making a selection, press the **[ENTER]** button to apply.
- **Joystick Button**
A customizable button which can be enabled or disabled.

Operating the Camera

To begin remotely operating a camera, you will first need to use the Camera Select buttons to begin using the controller. Once selected, you will have full remote operation of the camera from the controller.

Pan, Tilt, and Zoom Operation

The controller supports variable speed pan / tilt / zoom control, which allows you to set the control speeds prior to use.

You can adjust the control speed using the Speed knob located on the left of the LCD screen. Once the control speeds are set to a comfortable value, you can use the joystick controller to move the camera.

In addition to the joystick itself, you can use the Fine Tune Zoom Dial to zoom in and out at the slowest possible speed.

Setting and Recalling Presets

Using the Quick Presets you can set and call presets 0 - 9 using the Alpha-Numeric keypad by following the steps below.

Quick Presets:

1. Move the camera to the location you wish to set the preset.
2. Press and hold one of the Alpha-Numeric buttons for 3+ seconds to set the corresponding preset.

Note: The controller OSD will notify you upon successfully storing a quick preset.

3. To call a Quick Preset, tap one of the Alpha-Numeric buttons.

Alternatively, you can use the Set and Call buttons to set or call presets 0 - 255.

Set and Call:

1. Move the camera to the location you wish to set the preset.
2. Press the **[SET]** button
3. Using the Alpha-Numeric keypad, type in a preset number to associate with the preset. Press **[ENTER]** to save the preset.
4. To call a preset, press the **[CALL]** button, and type in a preset number. Press the **[ENTER]** key to call the preset.

When using a PTZOptics camera, you can call a preset at a specific focus value by setting the preset while in manual focus mode.

Adjusting the Camera's Image

There are many options for adjusting the camera's image which we will detail below.

You can adjust White Balance & Exposure settings, Red & Blue Gain, Iris, Shutter, Focus, & Backlight Compensation to achieve the desired image style and quality.

- **White Balance Control:** Use the **[WHITE BALANCE MODE]** button to cycle through the camera's White Balance modes. Options include: Indoor White Balance, Outdoor White Balance, One Push White Balance, Manual White Balance, & Auto White Balance respectively.

You can use the **[R GAIN / B GAIN]** Knob to adjust the Red & Blue Gain values. Press the knob to toggle between Red Gain and Blue Gain. For adjustment when in supporting White Balance Modes.

*When the camera is in One Push White Balance, you can press the **[ONEPUSH TRIGGER]** button from the White Balance Control section of the controller to calibrate the white balance.*

- **Exposure Control:** Use the **[EXPOSURE MODE]** button to cycle through the camera's Exposure modes. Options include: Manual Exposure, Shutter Priority, Iris Priority, Brightness Priority, & Auto Exposure respectively.

You can use the **[IRIS / SHUTTER]** Knob to adjust the Iris and Shutter values. Press in the knob to toggle between Iris and Shutter. For adjustment when in supporting Exposure Modes.

The camera will automatically change to Manual Exposure upon twisting the Iris / Shutter Knob.

- **Focus Control:** Twist the **[FOCUS]** Dial towards Near or Far to focus the camera on a subject. You can press the **[AUTO FOCUS]** Button to enable AutoFocus mode.

*PTZOptics cameras will return to Auto Focus mode upon zooming in or out. You can lock the camera's focus from returning to Auto Focus mode by pressing the **[AUTO FOCUS LOCK]** button. While the focus is locked, you have full manual focus control from the **[FOCUS]** Dial. Press the **[AUTO FOCUS UNLOCK]** button to return to normal focus control.*

- **Backlight Compensation:** Press the **[BACKLIGHT]** button to enable or disable Backlight Compensation.

Camera OSD Menu Control

To access the camera's On Screen Display, OSD, menu and fine tune the camera, follow the steps provided below.

1. Press the **[OSD ON / OFF]** button.
2. Move the joystick up or down to traverse the camera's OSD menu.
3. Press the **[OSD ENTER]** button to select a specific option.
4. Move the joystick left and right to adjust the settings.
5. Press the **[OSD BACK]** button to return to the previous window.
6. Press the **[OSD ON / OFF]** button again to close the camera's OSD menu.

PTZ Optics cameras will automatically close their OSD Menu after 2 minutes 30 seconds of inactivity by default.

Joystick Control Modes

Basic Mode

Basic Mode allows you to disable most of the capabilities of the PT-JOY-G4 and limit the control to the joystick and/or calling presets. With this mode enabled, the button backlights on the joystick will illuminate only the buttons the operator needs.

1. Press the **[BASIC MODE]** button to enable Basic Mode with Joystick.
2. Press the **[BASIC MODE]** button again to enable Basic Mode without Joystick.
3. Press the **[BASIC MODE]** button again to disable Basic Mode.

Matrix Mode

Matrix Mode allows you to disable most of the capabilities of the PT-JOY-G4 and limit the controls to calling presets 1 - 3 of cameras 1 - 3. The illuminated buttons on the joystick, will be the only buttons available while in matrix mode.

1. Press 1 - 3 on the alpha-numeric keypad to call camera 1 presets 1 - 3 respectively.
2. Press 4 - 6 on the alpha-numeric keypad to call camera 2 presets 1 - 3 respectively.
3. Press 7 - 9 on the alpha-numeric keypad to call camera 3 presets 1 - 3 respectively.

You can change modes by holding the "ESC" button for 3+ seconds. You will cycle from Normal Mode > Matrix Mode > Basic Mode > Normal Mode etc.

Joystick Web Interface

Device Management

The Device Management page, available from the controllers web interface, allows you to define new cameras and adjust already configured cameras.

Device

Control

Search








Matrix Mode

Custom

Settings

URL

Logout

<input type="checkbox"/>	Camera	IP	Port	Protocol(network)	Baudrate	Address	Protocol(analog)	Operate
<input type="checkbox"/>	1	192.168.21.57	1259	VISCA(UDP)	9600	1	VISCA	
<input type="checkbox"/>	2	192.168.21.58	1259	VISCA(UDP)	9600	2	VISCA	
<input type="checkbox"/>	3	192.168.21.61	1259	VISCA(UDP)	9600	3	VISCA	
<input type="checkbox"/>	4	192.168.21.63	1259	VISCA(UDP)	9600	4	VISCA	
<input type="checkbox"/>	5	192.168.100.88	1259	VISCA(UDP)	9600	5	VISCA	
<input type="checkbox"/>	6	192.168.100.88	1259	VISCA(UDP)	9600	6	VISCA	
<input type="checkbox"/>	7	192.168.100.88	1259	VISCA(UDP)	9600	7	VISCA	

Add

Batch Edit

<< 1/1page >>

Camera: Joystick control address.

Base options include: 1 - 7 (IP & Serial)

Expanded options include 1 - 255 (IP only)

IP: The IP address of the saved network camera.

Port: The network control port of the saved network camera.

Protocol (Network): The control protocol of the saved network camera.

Baud Rate: The baud rate of the saved serial camera.

Address: The camera control address of the saved serial camera.

Protocol (Serial): The control protocol of the saved serial camera.

Operate: Click this pencil to edit the settings of the saved camera.

For more information on editing already configured cameras from the Device Management interface, check out the Adding a Camera > From the Web Interface section.

Control

The Control page, available from the controllers web interface, allows you to call presets of the connected cameras. This page acts similarly to Basic Mode without Joystick. This is a very limited control interface ideal for volunteers.

Device

Control

Search

Matrix Mode

Custom

Settings

Camera ID

Input Cam ID

1

2

3

4

5

6

Position Preset

Input Preset

Preset1

Preset2

Preset3

Preset4

Preset5

Preset6

Preset7







Preset8

Preset9

Search

To find cameras on your network, go to the search tab and click the "Search" button. This will provide you with a list of all the available cameras on your network, controllable by the PT-JOY-G4.

To add a camera to the PT-JOY-G4, click the "Add" button next to the corresponding camera. Check the camera connection settings in the pop-up window, give it a camera number, and click "Save."

 Device
  Control
  Search
  Matrix Mode
  Custom
  Settings

PTZOptics Search

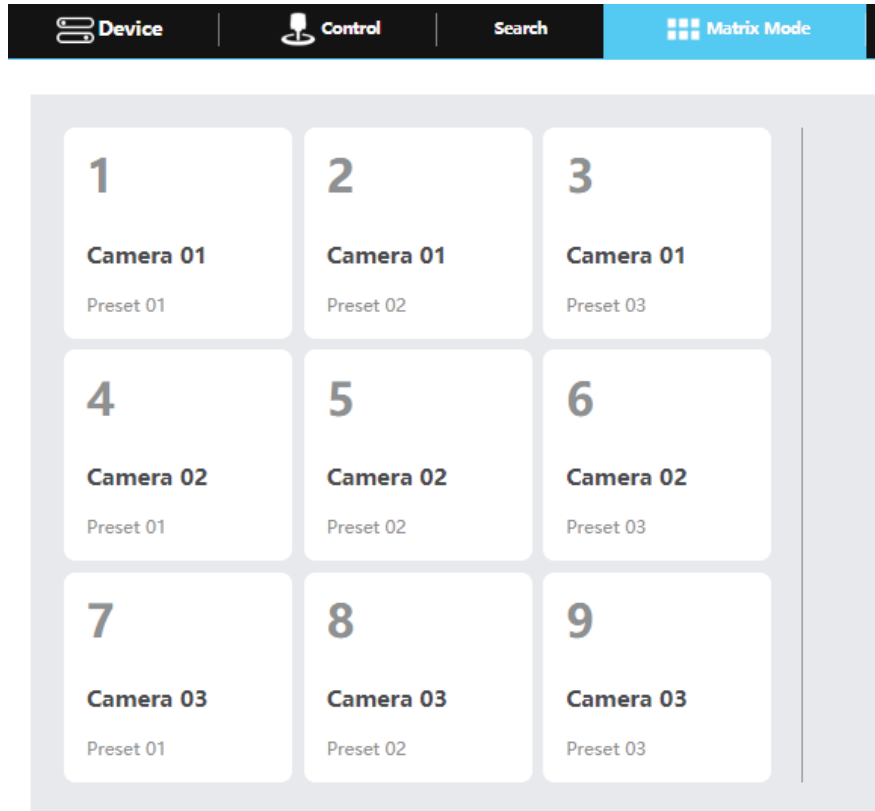
IP	Version	Model	Operate
192.168.21.55	2.0.39	F53.HI	Add
192.168.21.57	9.1.18	F64.HI	Add
192.168.21.58	9.1.21	F63.HI	Add
192.168.21.59	9.1.27	F59.HI	Add
192.168.21.60	0.0.50	F51.HI	Add
192.168.21.61	0.0.56	F51.HI	Add
192.168.21.63	0.0.32	F60.HI	Add
192.168.21.65	0.0.32	F60.HI	Add
192.168.21.66	0.0.32	F60.HI	Add
192.168.21.67	0.0.50	F51.HI	Add

Search

<< 1/2 >>

Matrix Mode

The Matrix Mode page, available from the controllers web interface, allows you to call presets 1-3 of cameras 1-3. This page acts similarly to Matrix Mode.



Custom

The Custom Interface allows you to configure the Custom Buttons. These buttons allow for HTTP Trigger, UART, TCP, & UDP commands, as well as PTZOptics Super Presets. Use the drop down tab to select the command type.

The PTZOptics Super Preset allows you to call multiple camera presets simultaneously. You can call up to 8 camera presets this way, in addition to an optional custom HTTP-CGI command. Here are the steps for calling a super preset.

- Select the camera group, the camera ID, and the preset you would like that individual camera to call.
- Repeat the this process for up to 8 cameras. Keep in mind that each camera will need to have a presets previously assigned.
- Click save.

The HTTP Trigger, UART, TCP, & UDP custom each allow for up to 10 unique commands. You can also set a delay, in seconds, for each of these commands if needed.

Please see the examples for the custom buttons on the next page.

Super Preset

Only one type can be selected for a custom button!

<input checked="" type="checkbox"/>	Group: GROUP1	Camera ID: 1	Preset: 1
<input checked="" type="checkbox"/>	Group: GROUP1	Camera ID: 2	Preset: 1
<input checked="" type="checkbox"/>	Group: GROUP1	Camera ID: 3	Preset: 1
<input checked="" type="checkbox"/>	Group: GROUP1	Camera ID: 4	Preset: 1
<input type="checkbox"/>	Group: GROUP		

Example of Super Preset screen.

Device

Control

Search

Matrix Mode

Custom

Settings

Custom1

Custom2

Custom3

Custom4

Joystick(Custom5)

Custom Add

HTTP Trigger

Only one type can be selected for a custom button!

☐ Enable Toggle

URL: E.g:http://ip:port/cgi-bin/ptzctrl.cgi?ptzcmd&zoomin&7

+

Time delay: ≥0 s

+

Example of HTTP command entry screen.

UART

Only one type can be selected for a custom button!

Ibaud rate:

1200

Command:

E.g:81 01 04 07 02 FF

+

1

HEX Command

0

s

-

Example of UART command entry screen.

Save

HTTP-CGI STUB Command or Current Camera Command

This feature allows you to save an http command to the unique custom button. When ever you press the custom button, the command will be sent to the currently selected camera.

In the example below, the unique custom button is assigned the Current Camera Command.

`http://{{CURRENT_CAM}}/cgi-bin/ptzctrl.cgi?ptzcmd&home`

With this command, you can press the custom button and the currently selected camera will return to it's home position.

The joystick can send out any TCP, UDP, or HTTP-CGI command in the custom command so long as the attached device supports them. To view our PTZOptics commands, please follow [this link](#).

HTTP Trigger

Only one type can be selected for a custom button!

☐ Enable Toggle

URL:

+

Time delay:

s

+

`http://{{CURRENT_CAM}}/cgi-bin/ptzctrl.cgi?ptzcmd&home`

Save

Settings

The Settings interface allows you to adjust the configuration settings of the joystick.

Network: Allows configuration of the joystick's network configuration (DHCP / Static IP)

Options include: DHCP or Static IP Address, Subnet Mask, Gateway, DNS1, & DNS2.

DNS: Allows you to configure Dynamic DNS on the joystick.

Upgrade: Upgrade the joystick's firmware to the latest version.

Factory Restore: Restored the joystick to factory default settings.

Restart: Restart the joystick.

Import: Import joystick settings from PC.

Export: Export joystick settings to PC.

User: Add or edit admin and guest login credentials.

System Settings: Invert Pan and/or Tilt, Set HDMI Output Anti-Flicker, Disable Pan, Tilt, and/or Zoom on the joystick, & disable knob zoom and/or focus.

Version: Displays the Hardware, Software, and Web firmware versions on the joystick.

For more information on how to obtain an IP address, Default Gateway, & Subnet Mask, see the following PTZOptics Knowledgebase Article: [Discovering your Network IP Information](#)

HTTP-CGI Commands to the Controller

The PT-JOY-G4 has the ability to receive HTTP-CGI commands from a web browser, as an additional way to trigger the controllers capabilities such as HDMI Output, Presets, and more.

Direct Preset Recall

`http://[joystick-ip]/cgi-bin/joyctrl.cgi?f=directpresets&action=recall&group=[group]&camid=[camera id]&preset=[preset]&presetspeed=[preset speed]`

[group]: 1 ~ 5

[camera id]: 1 ~ 7 (groups 1 ~ 4), 1 ~ 170 (group 5)

[preset]: 0 ~ 255

[preset speed]: 1 ~ 24

Current Preset Recall

`http://[joystick-ip]/cgi-bin/joyctrl.cgi?f=presets&action=recall&preset=[preset]&presetspeed=[preset speed]`

[preset]: 0 ~ 255

[preset speed]: 1 ~ 24

Inquiry

Joystick Status Inquiry

`http://[joystick-ip]/cgi-bin/joyctrl.cgi?f=inquiry&action=[action]`

[action]: status

Response example (json format):

```
{
  Group:ww, (ww: 1 ~ 5)
  Camid:xx, (xx: 1 ~ 7, 1 ~ 170)
  Preset:yy, (yy: 0 ~ 255)
  Hdmi:zz (zz: on, off)
}
```

Troubleshooting and Additional Information

Troubleshooting

LCD Display shows “Control Failure”

This can occur when the controller doesn't receive a response from the camera.

1. Please check that the network jacks you are using are active.
2. Please check that the network cable you are using is not failing.
3. Please check that the camera is supplying an Acknowledgement and Completion response.

The joystick isn't controlling any cameras at all

This can occur when the camera(s) and/or joystick aren't properly set up.

1. Check that the network jacks you are using are active.
2. Check that the network or serial cables you are using are not failing.
3. Check that the camera control address matches the joystick control address.

Multiple cameras are being controlled at once

This can occur when multiple cameras are set to the same joystick control address.

1. Check the camera's control addresses and ensure that each camera has a unique address.
 - a. Log into the WebUI and select Devices. Check that none of the connected cameras have the same control address.
 - b. Press the [INQUIRE] button to view the devices added to the joystick. Check that none of the added cameras have the same control address.

Camera doesn't stop moving when the joystick controller is upright

This can occur when the joystick is in OSD Menu control mode or when the network is congested.

1. Move the joystick left and check that the LCD display says “Left”. LCD display will say “CAM Menu Left” while in OSD Menu control mode.
 - a. Power cycle the joystick.
 - b. Press [OSD OPEN/CLOSE], then [OSD ENTER], then press [OSD OPEN/CLOSE] twice.
2. Move the joystick to an isolated network and test again. If the issue ceases, the original network is congested and/or overloaded.
3. The joystick controller may have a power issue from your environment. To resolve this issue, install the grounding pin / wire to the base of the controller, and the other end to a grounded source.



Certain functions don't work with my camera

This can occur when you are not using a PTZOptics camera, or your camera's firmware isn't up to date.

1. Some functions do not work with non-PTZOptics cameras as each camera manufacturer has some of their own unique commands that may not be fully compatible with the design of this controller.
2. For PTZOptics cameras use the PTZOptics Firmware Finder to update your camera's firmware.

Check out the PTZOptics [Firmware Finder](#) to always have the latest features using your serial number.

Check out the [PTZOptics Support Community](#) for troubleshooting.

Contact the PTZOptics Support Team, [Submit a Ticket](#) if you need some extra assistance.