
PTZOptics

IP Joystick Controller



Third Generation IP Joystick Controller

Installation & Operation Manual

Please visit www.ptzoptics.com for the most up to date version of this manual

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Precautions

Safety Tips

- Please read this manual carefully before using the joystick controller.
- Avoid damage from stress, violent vibration or liquid intrusion during transportation, storage, or installation.
- Do not apply excessive voltage, use only the specified voltage. Otherwise, you may experience an electrical shock.
- Keep the joystick controller away from strong electromagnetic sources.
- Do not clean the joystick controller with any active chemicals or corrosive detergents.
- Do not disassemble joystick controller or any of the joystick's components. If problems arise, please contact your authorized dealer.
- After long term operation, moving components can wear down. Contact your authorized dealer for repair.

Requirements

- The joystick controller will require the presence of a DHCP server on your network for initial configuration (*IP address is set to DHCP by default*)
- The joystick controller is unable to span subnets; the IP camera and joystick controller must be in the same subnet of the LAN (*example – 192.168.1.123 & 192.168.1.111 belong to the same subnet; 192.168.1.123 & 192.168.0.125 do not*)
- The joystick controller requires that the IP camera being controlled is fully VISCA over IP compliant, with VISCA capabilities enabled, or the joystick will not properly control the camera.
 - Please reboot the camera if these settings were originally in the incorrect state.

What's in the Box

Supplied Hardware

- *PT-JOY-G3*
 - PT-JOY-G3 Joystick Controller
 - Power Supply
 - User Manual (*This Document*)

Physical Descriptions

Top View of Joystick Controller



1. Status / Menu LCD
2. Quick Camera Select
3. PTZ & Preset Control
4. Numeric Keypad
5. 4D Joystick
6. Focus Control Keys
7. Camera Image Control

Back View of Joystick Controller



1. **Power LED Light (red) and Connection LED Light (green)**
2. **RS-232 Port (Not active on this model)**
3. **LAN Port (PoE enabled to power joystick controller from an 802.3af switch)**
4. **RS-485 Port (Not active on this model)**
5. **12 VDC Power Input**

Hardware Setup

Power

Note: the joystick controller has a long boot-up procedure that can sometimes take up to 60 seconds to complete

- Standard Outlet
 - Using the supplied power adaptor connected the 12 VDC Power Input port
- Power over Ethernet (PoE) complying with the 802.3af standard via the RJ45 port on the joystick controller

Network

Note: The joystick controller will require the presence of a DHCP server on your network for initial configuration (IP address is set to DHCP by default)

- Connect a network cable from the RJ45 port on the joystick controller to your LAN

NOTE: Failure to follow these sequences may result in no connection.

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“Quick Start” Basic Operation

Initial setup for joystick controller on a LAN

Please ensure you have followed the steps on the previous pages for properly connecting your joystick controller to a proper power source (outlet or PoE)

Please ensure you have followed the steps on the previous pages for properly connecting your joystick controller to a LAN that has a DHCP server present

- After everything is connected please wait for the joystick controller to complete its bootup cycle (*up to 60 seconds*)
 - Once the bootup cycle has completed the LCD panel will display the joystick controllers current IP address as assigned by the local DHCP server on the LAN
- The joystick controller is now ready to have cameras added

Adjusting the default language

- If the joystick controller displays the incorrect language please follow the steps below to adjust to the desired language
 - Press the “SET UP” button to enter configuration mode
 - The second MENU displayed on the LCD is the language setting
 - Using the joysticks “Pan,” left / right, capability adjust the current setting to your desired language
Example: English is displayed as EN
 - Press the “ENTER” button
 - Press the “ESC” button

Assigning a static IP to the joystick controller

Using the joystick controller

Note: When using the joystick controller with a static IP address you must ensure that the joystick controller is assigned to the same subnet as the IP cameras to be controlled

- Once you have completed the steps above to add your joystick controller to a LAN with a DHCP server you can assign a static IP for the joystick controller
- Press the “SET UP” button to enter configuration mode
- Use the joystick (*up / down*) to navigate the menu on the LCD screen to menu item “03/05” or “IP”
 - Use the joystick (*right / left*) to navigate the menu on the LCD screen to change the current setting of “DHCP” to “STATIC”
 - Press the “Enter” button
 - You will now be prompted to enter a static “IP ADDRESS:” using the alpha-numeric keypad
 - Enter the static IP address using the “.” between octets as appropriate
Example: “192.168.100.88”
 - *Note: the joystick controller MUST be on the same subnet as the IP cameras to be controlled*
 - Press the “Enter” button
 - You will now be prompted to enter your static “SUBNET MASK:” using the alpha-numeric keypad
 - Enter the subnet mask using the “.” between octets as appropriate
Example: “255.255.255.0”
 - Press the “Enter” button
 - You will now be prompted to enter your static “GATEWAY:”, or Default Gateway, using the alpha-numeric keypad
 - Enter the gateway using the “.” between octets as appropriate
Example: “192.168.100.1”
 - Press the “Enter” button
- The joystick controller will now ask you to confirm that you want to apply these settings
 - Press the “ENTER” button to confirm and allow the device to reboot
 - Press the “ESC” button to cancel the entry of the static IP
- You will now see the static IP address displayed on the LCD once the joystick controller has completed its bootup cycle

Assigning a static IP to the joystick controller (Cont.)

Note: You can also set the static IP address through the web interface after the joystick has completed its boot up cycle.

- Select the Network Type dropdown and choose “Static Address”
 - Input the IP Address, Subnet Mask, & Gateway you would like set for the joystick
- Upon saving the IP settings, you will be prompted to reboot the device to save IP settings

NET KEYBOARD

LAN

Users

Upgrade

Restore Factory

Reboot

LAN				
Network Type	Static Address ▾			
IP Address	192	168	1	212
Subnet Mask	255	255	255	0
Gateway	192	168	1	1
DNS Server	192	168	111	1
Media Port	8009	Port range: 2000-65534		
Web Port	80	Port range: 80-65534		
ONVIF Port	8010	Port range: 2000-65534		
RTSP Port	554	Port range: 554-65534		

Save
Update

Using the Joystick

Adding Cameras

Please ensure you have followed the steps on the previous pages for properly connecting your joystick controller to a LAN

- Once the joystick controller has completed its bootup cycle press the “SET UP” button
- The SET UP button opens a menu on the LCD screen. Press the “ENTER” button to add a camera on setting “01/05” or “Add Camera”
 1. Set a Device ID for the corresponding camera
 2. Input the camera’s IP address into the joystick including the “.” between octets.
Example: IP = 192.168.100.88
 3. Choose UDP or TCP control
 4. Input control Port number
 - PTZOptics Default UDP Port #: 1259
 - PTZOptics Default TCP Port #: 5678
- You have now successfully added the cameras for IP control

Removing Cameras

Note: You must delete a camera from the joystick to free it's Device ID.

- Press the “SET UP” button and use the pan function of the joystick to cycle over to the “DEL DEVICE”
- Press the “ENTER” key & enter the camera ID you would like to remove from the joystick
- Confirm removing device by pressing “ENTER”
- You have now successfully removed a camera from the joystick

Using the web interface

Please ensure you have followed the steps on the previous pages for properly connecting your joystick controller to a LAN; in this instance, your PC must also be in the same subnet as your joystick controller on the LAN.

- Using the IP address displayed on the LCD screen of the joystick controller, after bootup, you can access the IP interface of the joystick controller
- Please enter the IP into a standard web browser (Chrome, IE, Firefox, Safari, etc...)
Example: joystick controller IP = 192.168.100.88 → <http://192.168.100.88>
- Please enter the default login credentials into the available fields
 1. Default user name is “admin”
 2. Default password is empty / nothing “”
- You can now click the “Login” button on the web interface
- You will be greeted with the “main page” as displayed below

NET KEYBOARD

LAN

Users

Upgrade

Restore Factory

Reboot

LAN	
Network Type	Dynamic Address ▾
DNS Server	192 168 1 1
Media Port	8009 <small>Port range: 2000-65534</small>
Web Port	80 <small>Port range: 80-65534</small>
ONVIF Port	8010 <small>Port range: 2000-65534</small>
RTSP Port	554 <small>Port range: 554-65534</small>

Save
Update

Switching between cameras

- Please ensure you have followed the steps on the previous pages for properly connecting your joystick controller to a LAN and then for properly adding cameras to the joystick controller with unique addresses / IDs provided for each device*
- Once multiple devices have successfully been added to the joystick controller you have two (2) options for switching between these devices
 1. The "CAM 1" through "CAM 6" keys will allow for quick switching between the cameras you currently have provided an Address or "ID" for in the "Equipment Details Section"

Example an assigned Address / ID of 1 would be "CAM 1"

 - Once selected, you can control pan, tilt, zoom and more for the selected camera using the joystick controller
 2. The "CAM ID" key will allow discrete camera selection based on the assigned Address / ID
 - Press the "CAM ID" key and enter the address / ID you have assigned to the camera you wish to control
 - Click the "Enter" button
 - Once selected, you can control pan, tilt, zoom and more for the selected camera using the joystick controller

Note: Press the "ESC" key to return to the top LCD menu at any time.

Note: The "LINK" LED on rear of keyboard will illuminate green any time a camera is successfully connected to.

Controlling cameras

Please ensure you have followed the steps on the previous pages for properly connecting your joystick controller to a LAN and then for properly adding cameras to the joystick controller with unique addresses / IDs provided for each device

- Connect to one (1) of your added cameras using the steps provided above
 1. Use the joystick on the joystick controller in the up and down directions to TILT
 2. Use the joystick on the joystick controller in the left and right directions to PAN
 3. Use the joystick on the joystick controller to move in diagonal directions allowing for PAN and TILT simultaneously
 - The Pan, Tilt, Zoom, Focus, & Preset speed can be adjusted by pressing the “SPEED” button
 - Use the tilt function to cycle through Pan, Tilt, Zoom, etc.
 - Use the pan function to adjust the speed
 4. Use the joystick on the joystick controller and twist it clockwise to ZOOM IN
 5. Use the joystick on the joystick controller and twist it counter-clockwise to ZOOM OUT
 6. You can manually adjust the focus using the “Focus+” or “Focus-“ buttons
 - When pressed these buttons will automatically put the camera into a “Manual Focus” mode
 - To return to an auto-focus mode simply press the “AUTO FOCUS” button, or use the Zoom in or Zoom out button or from the joystick
 7. You can manually adjust the exposure settings using the “IRIS+” or “IRIS-“ buttons
 - When pressed these buttons will automatically put the camera into a “Manual Exposure” mode
 - To return to an auto-exposure mode simply press the “AUTO EXP” button
 8. Use the A.Focus Lock key to lock the focus in the current position
 - There is no focus control whatsoever until set back into A.Focus Unlock
 9. Use the A.Focus Unlock key to unlock the focus, allowing for the auto focus to take control

Setting and Calling Presets

Please ensure you have followed the steps on the previous pages for properly connecting your joystick controller to a LAN and then for properly adding cameras to the joystick controller with unique addresses / IDs provided for each device

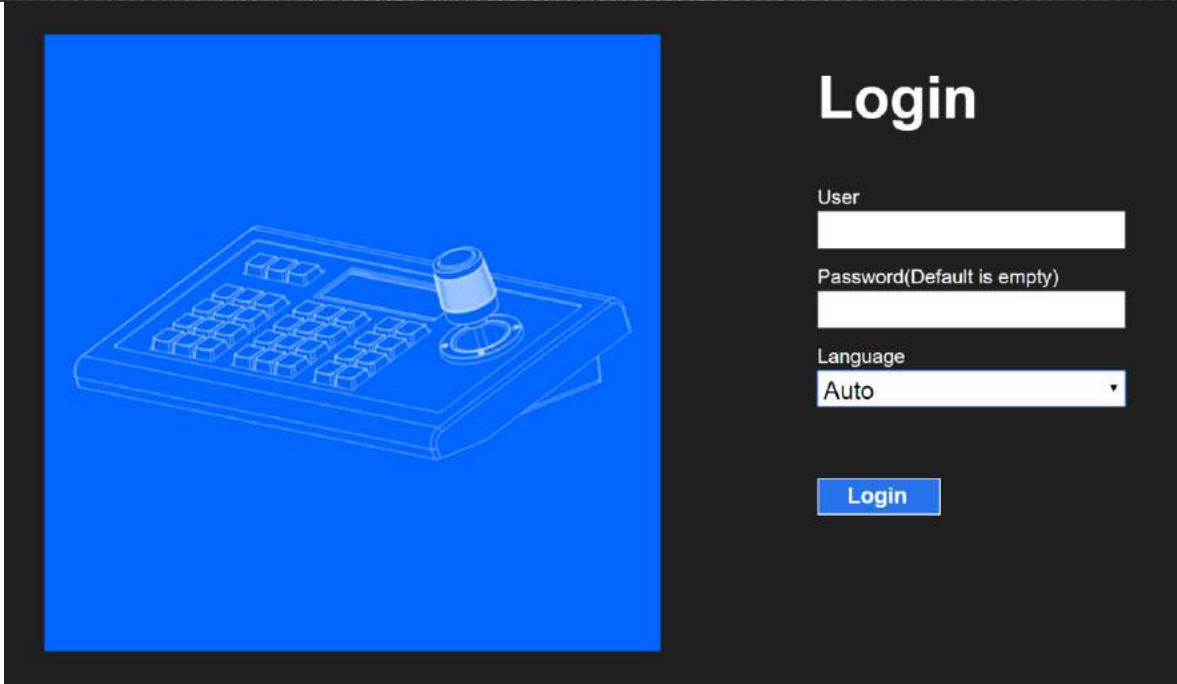
- Connect to one (1) of your added cameras using the steps provided above
 1. To set a preset move your camera to the desired location for your preset
 2. Press the “SET” button
 - Enter a Preset Number for that camera [0-254] using the alpha-numeric keypad
 - Press “ENTER” to commit the preset to the camera
 3. To recall a preset press the “CALL” button
 - Using the alpha-numeric keypad enter the preset number associated with the preset you want to use
 - Press the “ENTER” button to call the preset and have the camera move to that preset location
- Connect to one (1) of your added cameras using the provided steps above
 1. To set a preset move your camera to the desired location for your preset
 2. Press and hold one of the numeric keys for three (3) seconds
 - The corresponding numeric key will show on the LCD screen.
 3. Once the numeric key has flashed, your preset has now successfully been set
 4. Press the numeric key associated with your preset to call the corresponding preset

Web interface

Logging in

Please ensure you have followed the steps on the previous pages for properly connecting your joystick controller to a LAN; in this instance, your PC must also be in the same subnet as your joystick controller on the LAN.

- Using the IP address displayed on the LCD screen of the joystick controller, after bootup, you can access the IP interface of the joystick controller
- Please enter the IP into a standard web browser (Chrome, IE, Firefox, Safari, etc...)
Example: joystick controller IP = 192.168.100.88 → <http://192.168.100.88>
Note: If incorrect language is displayed, click the bottom dropdown and choose “English”



- Please enter the default login credentials into the available fields
 1. Default user name is "admin"
 2. Default password is empty / nothing ""
- You can now click the "Login" button on the web interface

LAN

- Click on "LAN" on the left side of the page
- You can change the joystick from a Dynamic Address to a Static Address using the steps

NET KEYBOARD

LAN

Users

Upgrade

Restore Factory

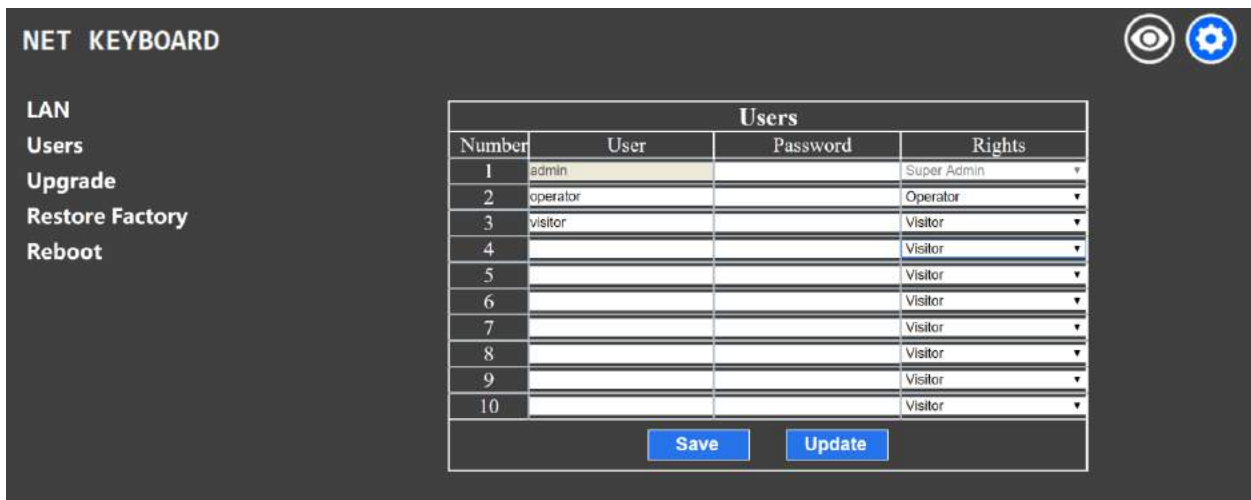
Reboot

LAN			
Network Type	Static Address ▾		
IP Address	192	168	1 212
Subnet Mask	255	255	255 0
Gateway	192	168	1 1
DNS Server	192	168	111 1
Media Port	8009	<small>Port range: 2000-65534</small>	
Web Port	80	<small>Port range: 80-65534</small>	
ONVIF Port	8010	<small>Port range: 2000-65534</small>	
RTSP Port	554	<small>Port range: 534-65534</small>	
<div style="display: flex; justify-content: center; gap: 10px;"> Save Update </div>			

- Select the network type (Static IP or Dynamic Addressing / DHCP) from the drop down menu
 1. Dynamic addressing (or DHCP, is the default): The keyboard will automatically request an IP address from a DHCP server on the connected LAN.
 - The auto-assigned address will be displayed on the LCD after the request to the DHCP server is successful
 - You can always check the assigned IP address by viewing screen 05/05 of the keyboard’s SETUP menu as described previously
Note: Changing IP settings will require a reboot of the keyboard
 2. Static Address: When the user needs to set up a network without a DHCP server or wants to manually assign an IP address, even if there is a DHCP server, the network type should be set to “Static Address”.
 - A new field containing 4 boxes for the 4 octets of an IP address will become available for entering this info.
 - Similarly, you will be required to manually enter the Subnet Mask and Default Gateway for the network.
Note: If you are unsure of what to enter, please see your IT staff for this information.
Note: Changing IP settings will require a reboot of the keyboard.
 3. Ports: You may assign default network ports to handle various features of the connection. The allowable port ranges are shown to the right of the field. It is recommended to use the default port values (8009, 80, 8010, 554).
Note: Changing Port settings will require a reboot of the keyboard.

User management

- Click on “Users” on the left side of the page



The screenshot shows the 'NET KEYBOARD' web interface. On the left sidebar, there are menu items: LAN, Users, Upgrade, Restore Factory, and Reboot. The main content area is titled 'Users' and contains a table with the following data:

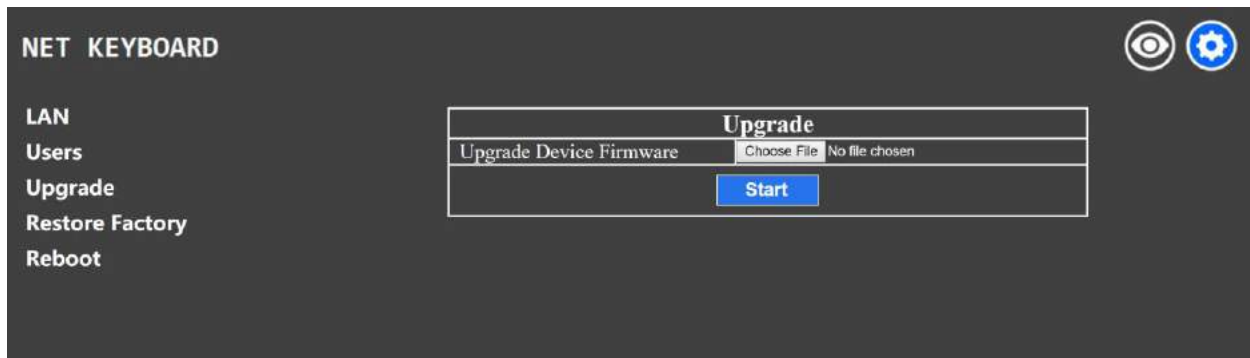
Number	User	Password	Rights
1	admin		Super Admin
2	operator		Operator
3	visitor		Visitor
4			Visitor
5			Visitor
6			Visitor
7			Visitor
8			Visitor
9			Visitor
10			Visitor

At the bottom of the table, there are two buttons: 'Save' and 'Update'.

- You can store up to ten (10) unique accounts on the joystick controller; below we will discuss the attributes of each set of access rights. The default user is “Admin” with “Super Admin” rights.
 1. Super Admins
 - May add a new “Admin” account.
 - Full permission to add, revise or delete any type of account.
 - Configure and revise the keyboard, including all camera parameters.
 2. Administrator
 - Full permission to add, revise or delete any type of account, except Super Admin.
 - Configure and revise the keyboard, including all camera parameters.
 3. Operator
 - No permissions to manage accounts or configuration.
 - Add, delete and set camera parameters.
 4. Visitor
 - No permissions to manage accounts, configuration or camera parameters.
 - May only browse pages and parameters.

Upgrade

- Click on “Upgrade” on the left side of the page



- The “Upgrade” function is used to update the keyboard’s firmware
- Click the “Choose File” button
 1. Browse your computer to select the appropriate firmware file
CAUTION: Only select a file provided directly from PTZOptics for this keyboard
 2. Click the “Start” button to initiate the file transfer
 3. The keyboard will automatically reboot after successfully updating

CAUTION: During update, please do not attempt to operate, shut off the keyboard’s power or disconnect the LAN connection to the keyboard. An incomplete transfer could result in a damaged and unusable keyboard!

Restore Factory

- Click on “Restore Factory” on the left side of the page



- Click the “Restore” button to return the keyboard to all of its default settings for the current firmware.
 1. The keyboard will automatically reboot after successfully defaulting

Note: This will erase any saved cameras and their configurations.

Note: This will erase any saved keyboard configurations, including returning the IP address type to DHCP.

Reboot

- Click on “Reboot” on the left side of the page



- Click the “Reboot” button to restart the keyboard
 - Click “OK” to confirm
- Note: Joystick controller takes approximately 60 seconds to completely reboot.*
- Note: This is useful when changing IP settings of the keyboard*

Troubleshooting

- **LCD Display shows “Network Broken”**

This can occur when the joystick controller is not properly connected to a network

1. Please check that the network jack you are using is active
2. Please check that the network cable is not failing

Please contact PTZOptics support <https://help.ptzoptics.com/> for further help

- **A camera is slow to respond to commands from the joystick controller**

This can occur when the network is congested or has improper routing

1. Please try testing a camera with the joystick controller on an isolated network to see if congestion or routing on your network is causing a problem

Please contact PTZOptics support <https://help.ptzoptics.com/> for further help

- **A camera refuses to connect after being added**

1. Please make sure that the outlet powering the camera is on
2. Please make sure the IP camera power switch is in the “on” position
3. Please make sure the network connection is still active to the camera
4. Please make sure the controller and camera are still on the same subnet

Please contact PTZOptics support <https://help.ptzoptics.com/> for further help

- **The joystick controller buttons CAM 1 – 6 don’t do anything!**

This can occur when the camera IDs have not been set in the Web Interface

1. Please reference pages 12 – 13 for more information on assigning CAM IDs

Please contact PTZOptics support <https://help.ptzoptics.com/> for further help

- **The camera will not Zoom and Pan at the same time using this controller!**

This can occur when the camera itself is not capable of receiving such commands using VISCA for control

1. It is worth trying variations of the control combinations you are looking to use as sometimes a camera cannot start zooming and then pan at the same time HOWEVER they will be able to start panning and then zoom at the same time.

Please contact PTZOptics support <https://help.ptzoptics.com/> for further help

Notes
