PTZOptics

IP Joystick Controller

Second Generation IP Joystick Controller

Installation & Operation 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 joysticks'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 ONVIF-S compliant, with ONVIF capabilities enabled, or the joystick will not properly control the camera.
  - When being used with a PTZOptics camera please make sure that in the web interface of the camera you have enabled "ONVIF:" to "On" under the "Network" section.
  - When being used with a PTZOptics camera please make sure that in the web interface of the camera you have enabled "ONVIF AUTH:" to "Off" under the "Network" section.
  - Please reboot the camera if these settings were originally in the incorrect state.

What's in the Box

Supplied Hardware

- *PT-JOY-G2*
  - PT-JOY-G2 Joystick Controller
  - Power Supply
  - User Manual *(This Document)*

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Physical Descriptions

Top View of Joystick Controller

1. **Status / Menu LCD**
2. **Command Keypad**
3. **Alpha-numeric Keypad**
4. **Tuning Keypad**
5. **4D Joystick**

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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**

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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)*
    - o 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
    - o Press the "SETUP" button to enter configuration mode
    - o The first MENU displayed on the LCD is the language setting
    - o Using the joysticks "Pan," left / right, capability adjust the current setting to your desired language
      Example: English is displayed as EN
    - o Press the "ENTER" button
    - o Press the "ESC" button

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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 "SETUP" button to enter configuration mode
- Use the joystick *(up / down)* to navigate the menu on the LCD screen to menu item "02/04" 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 your 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

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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
  Note: If the language is not displayed properly please use the third (3rd) drop down menu to select the appropriate language
- Please enter the default login credentials into the available fields
  - *Default user name is "admin"*
  - *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

- The "main page" has a button with a gear for a logo in the top right corner
- Click the gear button to be taken to the "Setup" page

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- Using the drop down menu labled "Network Type" set that option to "Static Address" to enable the static IP capabilities of the joystick controller
- Once you have entered all the necessary network credentials please click the "Save" button
- Reboot the joystick controller, using the "Reboot" option from the Setup page for the new IP address to fully commit

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Adding cameras

Using the joystick controller

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 "SEARCH" button
- Once the search has completed the LCD will display a list of all ONVIF-S compatible devices, such as PTZOptics cameras, on your LAN
  - Use the joysticks tilt capability to scroll, up / down, through the list of devices
  - Press the "ADD" button when you have found the device you wish to use
    Note: The device username and password may be required
    Example: For a PTZOptics camera with default credentials you would use a username of "admin" and a password of "admin"
  - Please enter the login credentials when prompted using the alpha-numeric keypad
    Example: to enter the letter "c" you would press the "2" button three (3) times
    Note: The username & password is typically set on the IP camera
  - Press the "ENTER" button to finish
- Use the joysticks tilt capability to scroll, up / down, through the list of devices discovered on your network and continue adding, per the steps above, any additional cameras for IP control
- When all desired cameras have been added press the "ESC" button to return to the main menu
- You have now successfully added the cameras for IP control

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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 you PC must also be in the same subnet as your joystick controller on the LAN.

- Using the IP address displayed, after boot up, on the LCD screen of the joystick controller you can access the IP interface of the joystick controller
- Please enter the IP into a standard web browser (Chrome, IE, Firefox, Safari, etc...)
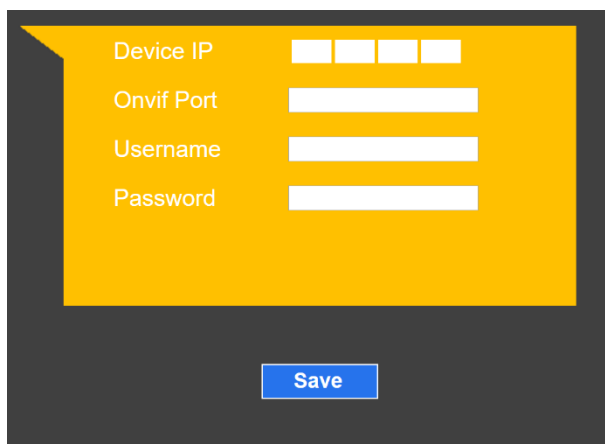 *Example: joystick controller IP = 192.168.100.88 → http://192.168.100.88*
  Note: If the language is not displayed properly please use the third (3rd) drop down menu to select the appropriate language
- Please enter the default login credentials into the available fields
  - *Default user name is "admin"*
  - *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
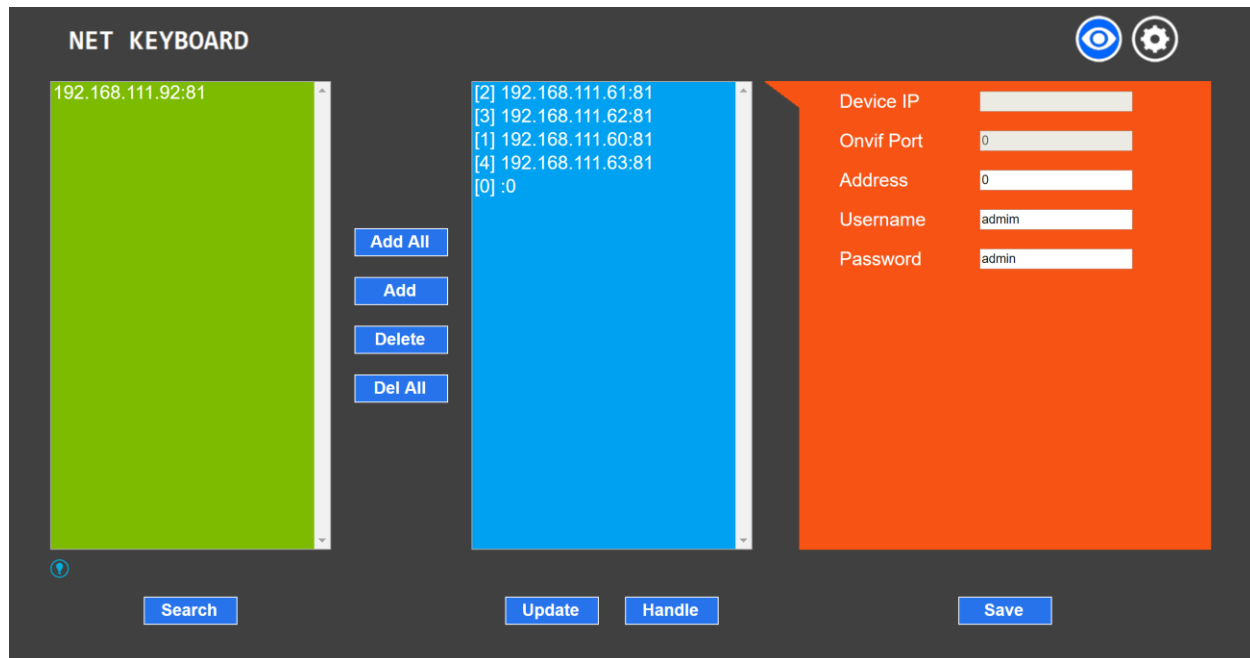
- The "main page" contains three (3) sections
  - A "search results list" (green pane)
  - An "added devices list" (blue pane)
  - An "equipment details" section (orange pane)
  - There is a fourth section for manually adding cameras, without a search, that can be accessed by clicking the "Handle" button

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- Click the "Search" button under the "Search Results List"
  - You should now see the status of "Scanning" under the "Search Results List"
  - Once completed you should see any available ONVIF devices on the same network displayed in the green pane
  - *Note: if you do not see any devices in the search list please make sure that ONVIF is enabled on the desired device(s) and that you are on the same subnet as those devices*
  - Highlight the camera you wish to add and click the "Add" button
    - If you want to add more than one (1) camera at a time please highlight your first device in the "Search Results List," hold the "Ctrl" key and use the mouse to select any additional devices. Click the "Add" button when you are done making your selection
    - If you wish to add all discovered devices to the "Added Devices List" please click the "Add All" button
  - When the camera(s) you wish to add are all in the "Added Devices List" click the "Save" button under the "Equipment Details" section
    - You may have noticed that each device is assigned a [0] in front by default; this is your camera ID for quick switching. If you wish to use this feature you must simply highlight the device in the "Added Devices List" and change the "Address" field to a unique ID between 0 and 253. Don't forget to click "Save" when you're finished.
      Note: this will be helpful when trying to switch between cameras from the joystick controller interface
- To manually add a device on the same subnet as yourself please click the "Handle" button at the bottom of the "Added Devices List"

  - Enter the IP address of the device
  - Enter the ONVIF port that the device uses
  Note: each device may use a unique ONVIF port a PTZOptics camera will use port 81 by default
  - Enter any login credentials required for an ONVIF connection
  Note: PTZOptics camera will use a login of admin and a password of admin in a defaulted state
  - Once all information has been properly added click the "Save" button

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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
  - o The "CAM 1" through "CAM 4" 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
  - o The "IP" key will allow discrete camera selection based on the assigned Address / ID
    - ▪ Press the "IP" 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: If the LCD displays "Equipment offline" for a particular camera, please check if the LAN connection to the camera is live and that the camera is powered on

Note: If the LCD displays "Username or Password Error", please check that the added device's user name and password have been added in that device's configuration. For PTZOptics cameras please ensure that the "ONVIF AUTH:" is set to "Off" in the "Network" settings found on thwe web interface.

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

Note: Press the "INQUIRE" key, while in the top LCD menu, to see the saved cameras at any time. Use the joystick Tilt controls to scroll through the cameras.

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

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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
  - Use the joystick on the joystick controller in the up and down directions to TILT
  - Use the joystick on the joystick controller in the left and right directions to PAN
  - Use the joystick on the joystick controller to move in diagonal directions allowing for PAN and TILT simultaneously
    - The "SPEED" button will cycle through 3 variations of PAN and TILT maximum speeds.
    - The LCD will display which speed you have selected as a quantity of arrows (1-3).
      Note: The joystick is progressive, i.e. you can also pan and tilt at varied rates without changing max speed by moving joystick nearer or further from its center position.

  - Use the joystick on the joystick controller and twist it clockwise to ZOOM IN
    - You can also use the "ZOOM+" button on the joystick controller
  - Use the joystick on the joystick controller and twist it counter-clockwise to ZOOM OUT
    - You can also use the "ZOOM-" button on the joystick controller
    Note: You can begin panning or tilting with the joystick and then begin zooming in or out on an object but you cannot start zooming and then try to pan or tilt.
  - 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
  - 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

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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
  - To set a preset move you camera to the desired location for your preset
  - Press the "SET" button
    - Enter an ONVIF Preset Number for that camera [1..255] using the alpha-numeric keypad
    - Press "ENTER" to commit the preset to the camera
  - 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

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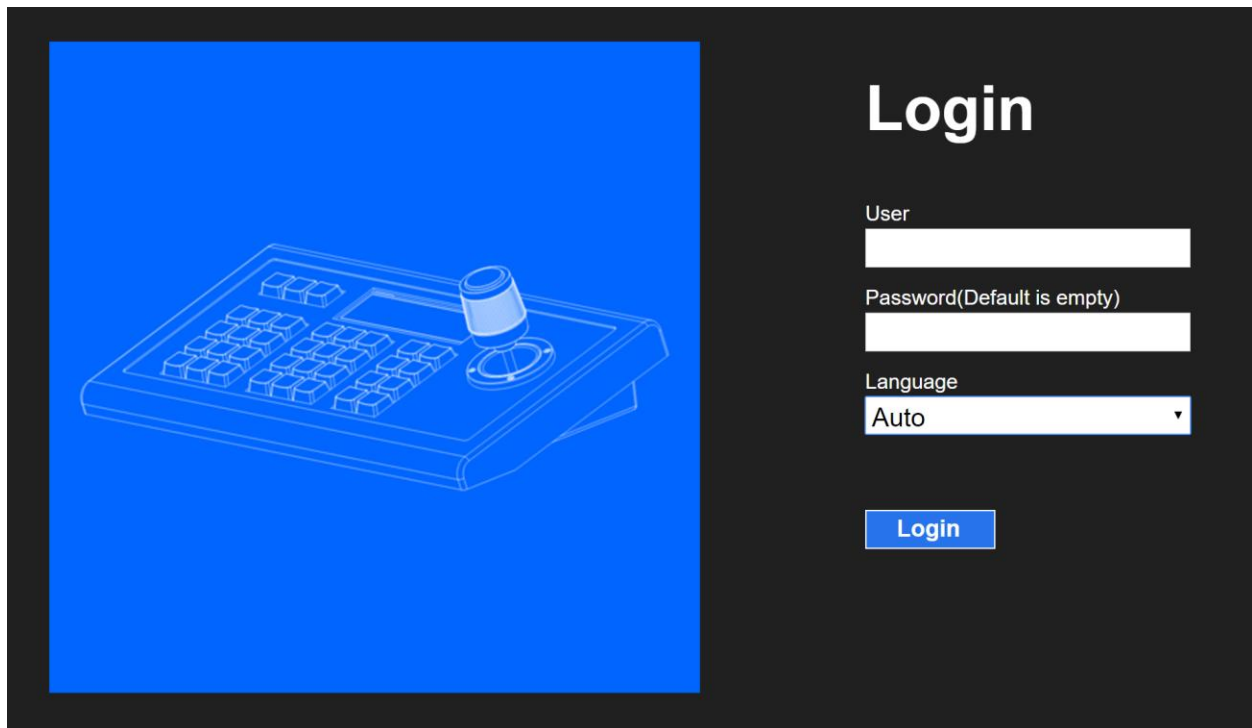
Web interface

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
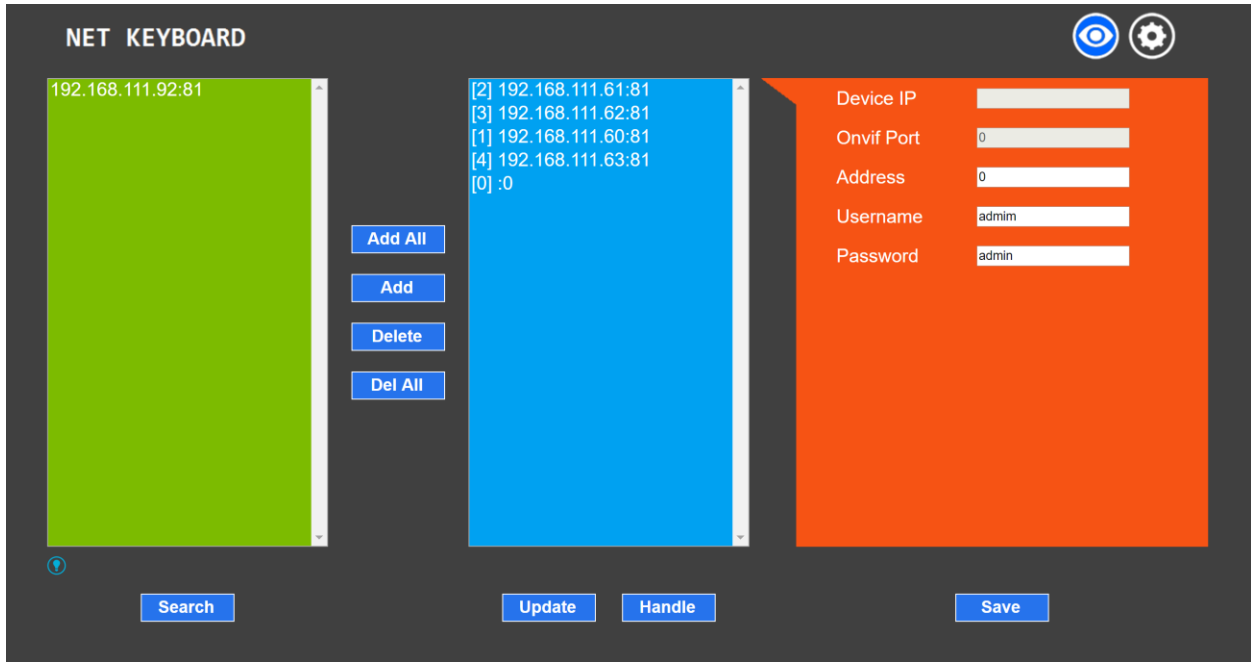- Please enter the IP into a standard web browser (Chrome, IE, Firefox, Safari, etc…)
  Example: joystick controller IP = 192.168.100.88 → http://192.168.100.88
  Note: If the language is not displayed properly please use the third (3rd) drop down menu to select the appropriate language

- Please enter the default login credentials into the available fields
  - *Default user name is "admin"*
  - *Default password is empty / nothing ""*
- You can now click the "Login" button on the web interface
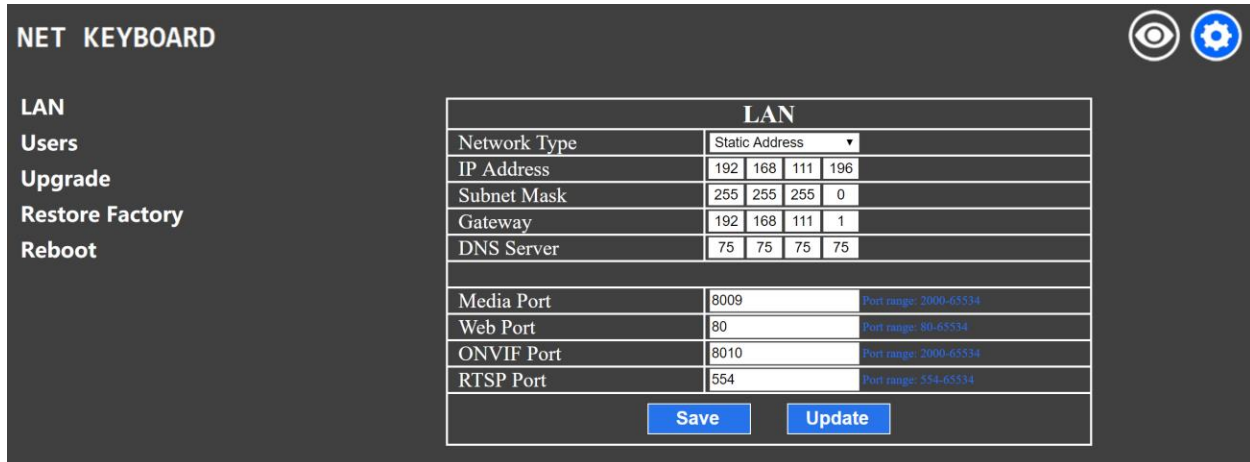
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- You will be greeted with the "main page" as displayed below

- We have covered the operation of the "main page" in the earlier section for "Adding Cameras" and will now look into the "Setup" page in more detail
- The "main page" has a button with a gear for a logo in the top right corner
- Click the gear button
  Note: The "main page" can always be reached by clicking the viewing button that looks like an eye in the upper right of the screen next to the gear button.

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LAN

- Click on "LAN" on the left side of the page
- You can modify the IP address type and parameters in LAN settings, as follows:

- Select the network type (Static IP or Dynamic Addressing / DHCP) from the drop down menu
    - o 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 03/04 of the keyboard's SETUP menu as described previously
        Note: Changing IP settings will require a reboot of the keyboard
    - o 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.
    - o 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.

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User management

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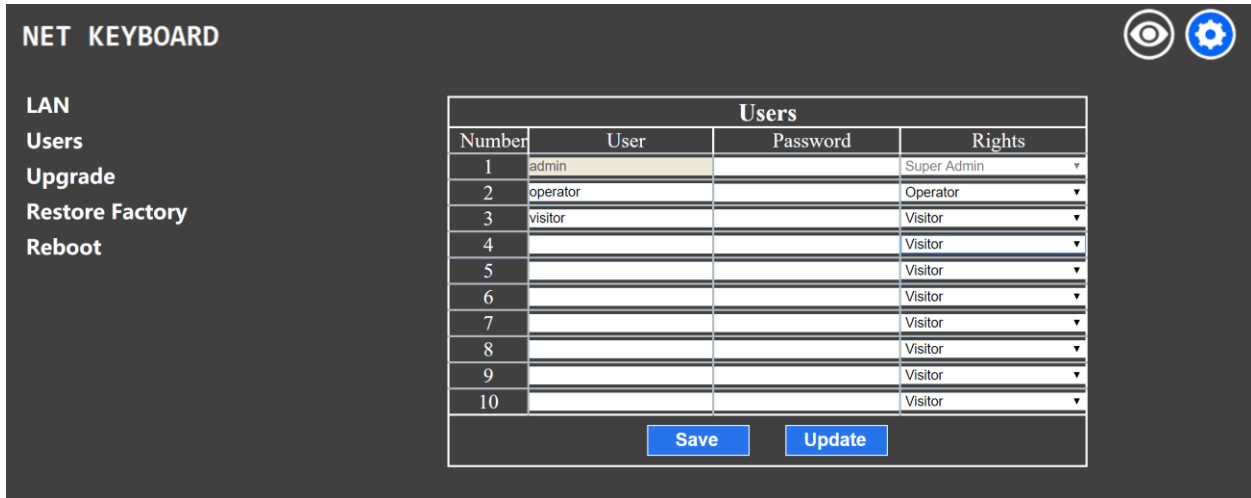
- You can store up to ten (10) unique accounts on the joystick controller; below we will discuss the attributes of each set of access rights. The default user is "Admin" with "Super Admin" rights.
    - Super Admins
        - May add a new "Admin" account.
        - Full permission to add, revise or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

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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
  - Browse your computer to select the appropriate firmware file
  CAUTION: Only select a file provided directly from PTZOptics for this keyboard
  - Click the "Start" button to initiate the file transfer
  - 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.
  - 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.

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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

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Troubleshooting

- **LCD Display shows "Network Broken"**
  This can occur when the joystick controller is not properly connected to a network
  - o Please check that the network jack you are using is active
  - o Please check that the network cable is not failing

  Please contact PTZOptics support https://help.ptzoptics.com/ for futher 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
  - o 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 futher help

- **A camera refuses to connect after being added**
  - o Please make sure that the outlet powering the camera is on
  - o Please make sure the IP camera power switch is in the "on" position
  - o Please make sure the network connection is still active to the camera
  - o Please make sure the controller and camera are still on the same subnet

  Please contact PTZOptics support https://help.ptzoptics.com/ for futher help

- **The joystick controller has difficulty searching for ONVIF compatible IP cameras**
  This can occur when the network is congested or has improper routing
  - o 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 futher help

- **The joystick controller buttons CAM 1 – 4 don't do anything!**
  This can occur when the camera IDs have net been set in the Web Interface
  - o Please reference pages 12 – 13 for more information on assigning CAM IDs

  Please contact PTZOptics support https://help.ptzoptics.com/ for futher 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 ONVIF for control
  - o 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 futher help

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Notes

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