



Complete Manual for the

EasyIP PCC and PCC Mini

Four-Camera Joystick Controllers

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Overview

This guide provides information about:

- EasyIP PCC four-camera joystick controller, 999-57755-000 (worldwide)
- PCC Mini four-camera joystick controller, 999-57750-000 (worldwide)

About this guide

This guide covers:

- Physical features and user interfaces
- Administration, configuration, and maintenance tasks
- Operation
- Command reference
- Troubleshooting
- Glossary



The EasyIP PCC and PCC Mini are very similar, but installation differs somewhat. For your convenience, installation information is also available in these short guides:

- **[Installation Guide for the EasyIP PCC Four-Camera Joystick Controller](#)**
- **[Installation Guide for the PCC Mini Four-Camera Joystick Controller](#)**

The installation guides cover only the physical features, installation, and initial power-up.

Features

- Simple control of up to four cameras:
 - EasyIP PCC for EasyIP cameras
 - PCC Mini for other Vaddio cameras
- Three-axis Hall effect joystick
- Illuminated pushbuttons for camera selection
- Web interface for operation and administrative control
- Use with the Vaddio Device Controller or manage from your PC
- Your EasyIP Switch powers the EasyIP PCC; a PoE+ mid-span power injector powers the PCC Mini

A quick look at the camera controller

The EasyIP PCC and PCC Mini look identical except for the model information.



Camera buttons (lower row) – Select the camera to use for the next shot (the preview camera). The buttons are only illuminated if they are assigned to cameras.

Preset buttons (upper row) – Use these buttons to select presets 1 through 4 on the selected preview camera. The buttons are only illuminated if the corresponding presets have been stored on the camera.

Joystick – Left/right to pan, forward/back to tilt, twist to zoom.



Kensington lock slot – Keep your joystick from adventuring away into the wide, wonderful world.

PoE+ Gigabit Ethernet port – Power and network connectivity, including access to cameras.

Courtesy HDMI output – Video from the camera you are currently controlling.

IP button – Press to overlay the device's IP address on the HDMI video output display.

Installation

This section covers how to install and connect the product. It also provides safety information and other guidance related to installing the product.

Note

This product is intended for installation and use only in environments where all RS-232 and PoE/PoE+ connections originate within the building.

Or in UL's preferred phrasing...

PoE-type networks connected to this equipment are for intra-building use only and should not be connected to lines that run outside the building in which this product is located.

Don't void your warranty!

Caution

This product is for indoor use. Do not install it outdoors or in a humid environment without the appropriate protective enclosure. Do not allow it to come into contact with any liquid.

Do not install or operate this product if it has been dropped, damaged, or exposed to liquids. If any of these things happen, return it to Vaddio for safety and functional testing.

Cabling notes

Best practices for making cables:

- Use Cat-5e or better cable. We recommend shielded cabling if the cables will be coiled, run tightly with other cables, or placed close to sources of electromagnetic interference such as power lines or fluorescent light fixtures.
- Use high-quality standard RJ-45 connectors; 568B termination recommended.
- Use a high-quality crimping tool.



Caution

When building cables for Vaddio products, do not use pass-through RJ-45 connectors. If they are crimped incorrectly, they can cause intermittent connections and degrade signal quality. Incorrectly crimped pass-through connectors can also damage the connectors on the product, which will void your warranty.



Intact – will make reliable contact with the cable connector



Damaged – Bent contact fingers will NOT make reliable contact with the cable connector

Caution

Check your cables. Connecting a cable to the wrong port or using the wrong pin-out can result in equipment damage and will void the warranty.



Pro tip

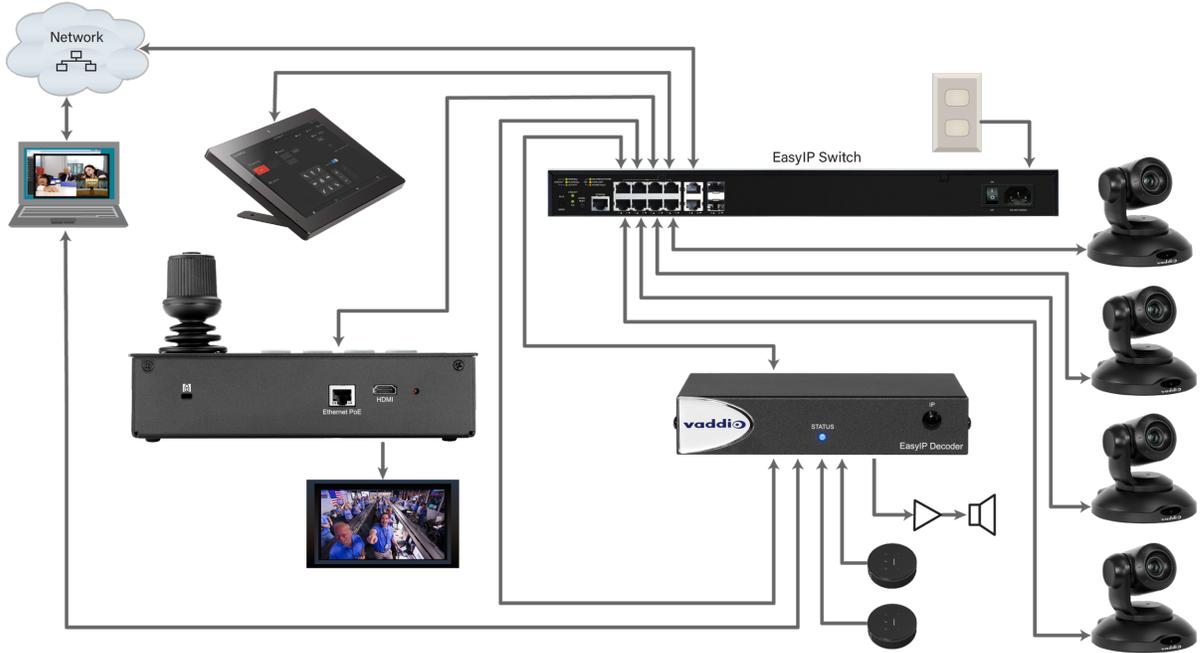
To prevent tragic mishaps, label both ends of every cable.

Basic connections

Because the EasyIP PCC and PCC Mini are for different environments, the connections are different.

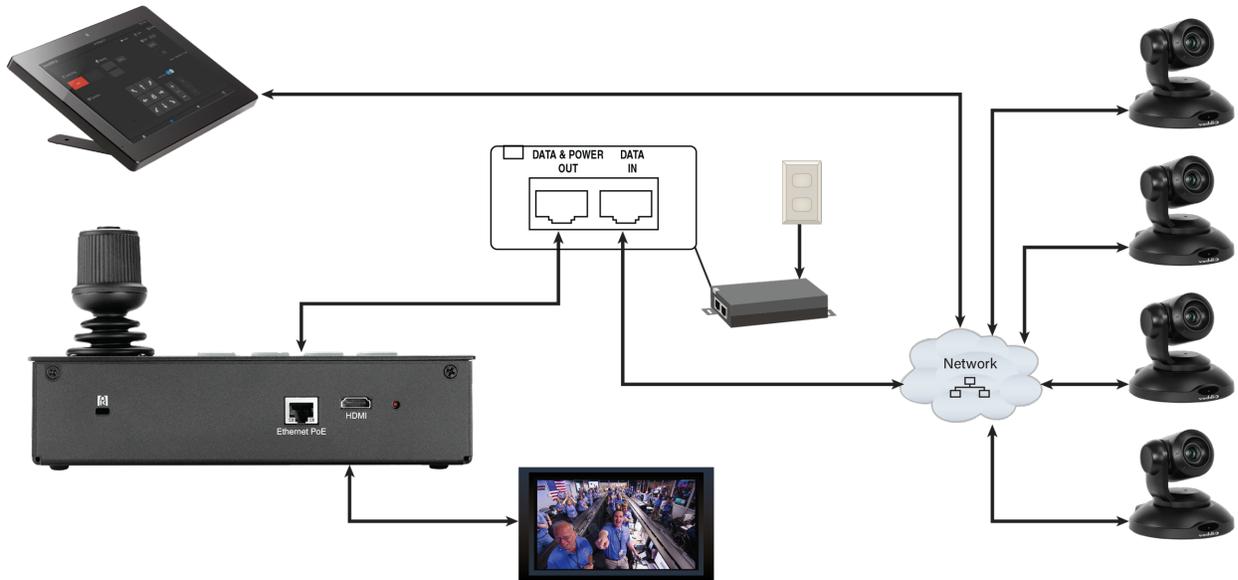
Connecting the EasyIP PCC controller

The EasyIP PCC connects to the EasyIP Switch that powers the rest of the EasyIP installation. A Vaddio Device Controller provides access to the web interfaces of all the EasyIP products connected to the switch.



Connecting the PCC Mini controller

The PCC Mini connects to the network via a PoE+ mid-span power injector. A Vaddio Device Controller provides access to Vaddio products on the same subnet.



Ensuring compatibility

The controller may be unable to communicate with Vaddio cameras if their firmware is out of date. When you set up the controller, be sure the associated cameras have been updated to the latest firmware.

Powering up

When you power up the device for the first time, you will need to access the web interface to configure it for operation.

Initial device set-up and system administration tasks

When any Vaddio product is shipped from the factory, there is no admin password and the web interface controls are not available. You will need to access the web interface and set the admin password. You will then have access to the system administration tasks to define how the device behaves as an element of your network.

Browser support

Supported web browsers:

- Chrome®
- Firefox®
- Microsoft® Edge®
- Safari®

Other browsers may also work.

Initial device set-up using the Vaddio Device Controller

The Vaddio Device Controller is a stand-alone tablet for working with Vaddio products' web interfaces.

To complete the initial device set-up with the Vaddio Device Controller:

1. Connect the touch-panel to the network on the same subnet as the products you need to work with – for example, connect both to the same PoE+ switch.
2. Go to the touch-panel's Configuration page (gear icon) and select Scan.
3. Locate the device you need to work with, and select Use.
4. Select Exit to leave the Configuration page and open the device's web interface.

Note

The first time you access a device at a specific IP address, the Vaddio Device Controller's screen may remain blank for 20 seconds or more.

5. Set the admin password.

If the Vaddio Device Controller does not find the device, verify that the Vaddio Device Controller and the device are connected to the same subnet.

Initial device set-up using the Vaddio Deployment Tool

Be sure you have the current version of the Vaddio Deployment Tool. If you have a copy of the tool already, compare its version information to the version shown on the release notes. This tool is available as a free download at <https://info.legrandav.com/VaddioDeploymentTool>.

To complete the initial device set-up with the Vaddio Deployment Tool:

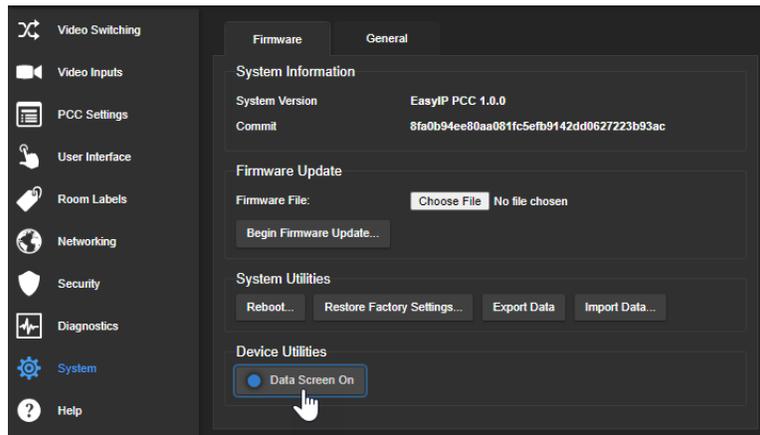
1. Power up the device if you have not done so already.
2. On the Find Devices page, click Scan. If the scan does not locate the device, your computer may be on a different subnet. Click Advanced and specify the appropriate portion of the network to scan.
3. In the list of equipment that the scan discovers, locate the devices marked Not Set Up.
4. For each device that you need to work with, click the Not Set Up button and set the admin password on the device detail page that opens.

The device shows up as unlocked after you set the admin password. You will then be able to log in to the administrative web interface to complete system administration and other configuration tasks.

Manual access and initial device set-up

If you do not use a Vaddio Device Controller or the Vaddio Deployment Tool, you will need to complete the initial device set-up manually, which requires you to discover the device's IP address and browse to the device's web interface.

1. Press the recessed IP button on the back of the device to view the IP and MAC addresses on the HDMI output display.
If the device is at 169.254.1.1, go to [If the device is at 169.254.1.1](#).
2. Navigate to the IP address shown on the display.
3. Set the Admin password.
4. Press the IP button again to dismiss the information display, or navigate to the System page and select Data Screen Off.



If the device is at 169.254.1.1

The device's default IP address is 169.254.1.1. When it is at this address, it has not been configured with an IP address or received one automatically. This usually means one of these things:

- The device is not connected to the network – check the cable connected to the Network/PoE+ port.
- The network does not automatically assign IP addresses, and you need to configure the device for the network.

If you encounter this issue when working with an EasyIP PCC that is connected to an EasyIP Switch, please call Vaddio technical support.

To communicate directly with the device, connect your computer's network port directly to the DATA IN port of the device's mid-span power injector. You do not need to disconnect other devices.

After completing the initial device set-up, you will need to configure the device with a static IP address. Work with your network administrator.

Device administration

The web interface provides access to all administrative tasks.

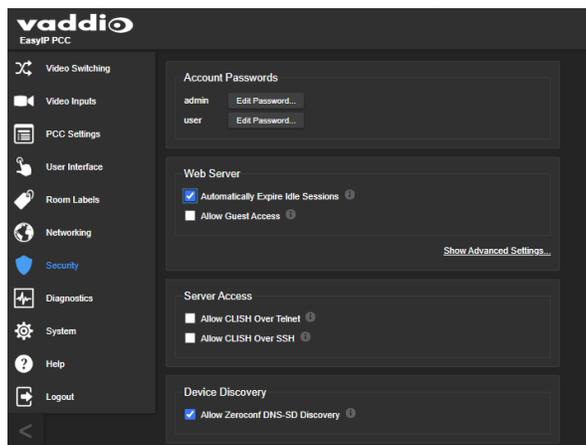
The web interfaces for EasyIP PCC and PCC Mini controllers are nearly identical. Most of the screen shots in this manual are from the EasyIP PCC.

Configuring access and other security settings

SECURITY PAGE

The Account Passwords and Web Server areas of the Security page provide basic security for the web interface:

- **Admin Password** – Required for access to the admin pages of the web interface and for CLISH access to the device.
- **User Password** – Allows password-protected access to the non-administrative operator's web interface.
- **Automatically Expire Idle Sessions** – Logs you out after 30 minutes of inactivity.
- **Allow Guest Access** – Allows access to the non-administrative operator's web interface without a password. This also allows people to control the device using the Vaddio Device Controller.



Other security settings include:

- **Allow CLISH over Telnet** and **Allow CLISH over SSH** – For security reasons, access to the Command Line Interface Shell is disabled by default.
- **Allow Zeroconf DNS-SD Discovery** – Allows other Vaddio devices and tools to detect the device. Enabled by default.
- Advanced Settings – **Enable HTTP Access** (disabled by default) and **Manage SSL Certificate**.

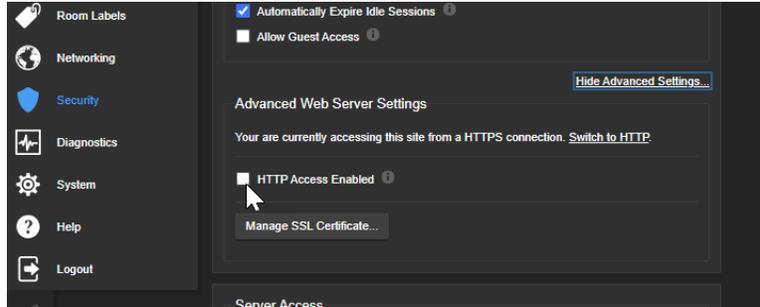
Note

Consult your network security specialist before changing any of these settings. Seek explicit guidance concerning the SSL certificate.

Compatibility with OBS Studio

OBS Studio does not recognize Vaddio's self-signed SSL certificate. To use OBS Studio with your EasyIP PCC, you will need to do one of these things:

- Install an SSL certificate, or
- Connect using HTTP rather than HTTPS.

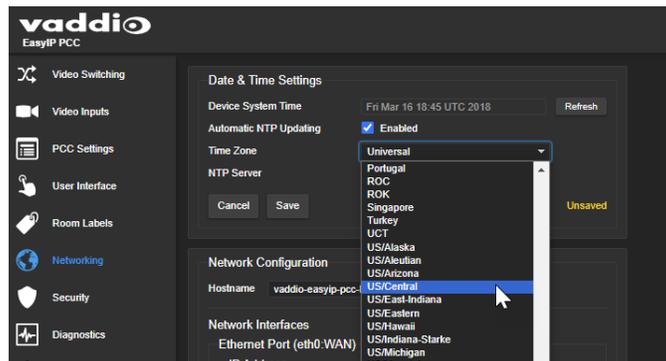


Specifying time zone and NTP server

NETWORKING PAGE

Using automatic NTP updating ensures that the timestamps in the device's diagnostic log are accurate. Specifying your time zone may make it easier to match logged events with other actions and external events.

1. To make the time zone and NTP server editable, enable Automatic NTP Updating.
2. Select the desired time zone from the list.
3. Optional: Specify the NTP server to use. If you are not sure about this, use the default.
4. Save your changes.
5. To update the system time immediately, select Refresh. Otherwise, the time will update the next time the device contacts the NTP server.



Configuring a static IP address for a device currently at 169.254.1.1

NETWORKING PAGE

If the device is currently at an IP address other than 169.254.1.1, skip this section.

By default, the device is set to DHCP, and will receive an IP address automatically if your network assigns IP addresses. However, if no DHCP server is available to automatically assign an address, the device uses its default IP address of 169.254.1.1. Other devices may default to the same IP address. If you install more than device on this network, you must follow this procedure to prevent IP address conflicts.

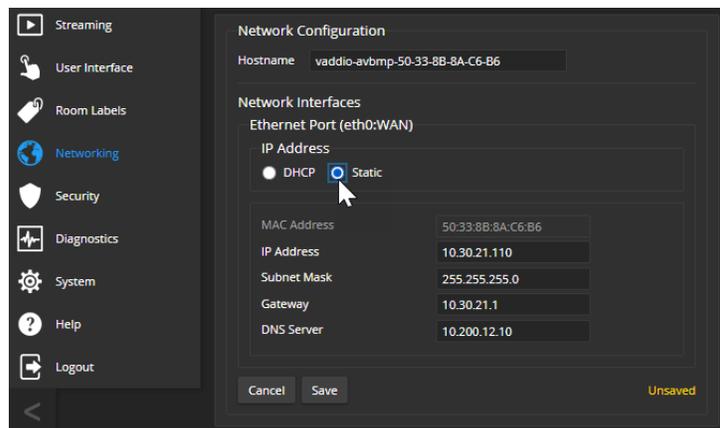
Caution

Consult your IT department before editing network settings. Errors in network configuration can make the device inaccessible from the network. Do not change DHCP/Static addressing, IP address, subnet mask, or gateway unless you are very familiar with the characteristics and configuration of the network where you install the device.

To access the device's Networking page after initial device setup:

1. Leave the device connected as for initial device setup.
2. Log in to the web interface as admin, if you have not done so already.
3. On the Networking page, set IP Address to Static; then enter the IP address, subnet mask, and gateway as directed by the network specialist. You will need to log in again after saving your changes.

The device is now ready to be connected to the network.



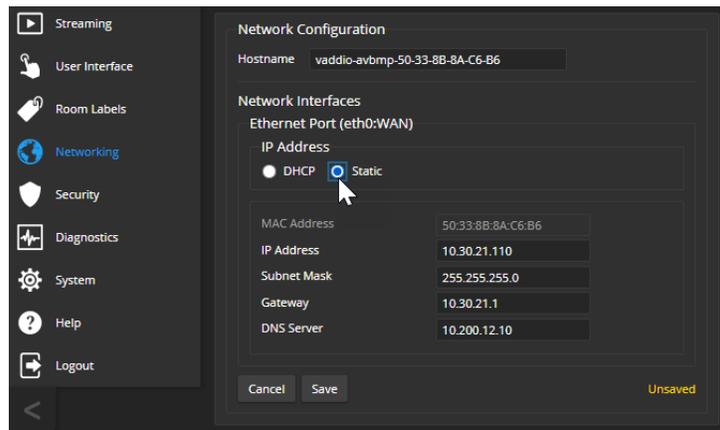
Changing from an automatically assigned address to a static IP address

NETWORKING PAGE

In a network that assigns IP addresses automatically, the device's IP address may change from time to time. Setting a static IP address will keep this from happening,

You may wish to change the IP addresses of other connected equipment to static addresses as well. The process is the same for all Vaddio products with web interfaces.

1. Consult your network specialist to determine what the IP address should be.
2. Set the IP address to Static. If this is the only change you make, you will not be logged out.
3. If necessary, enter the IP address, subnet mask, and gateway that your network specialist instructs you to use. You will need to browse to the new IP address and log in again.



Changing the device's hostname

NETWORKING PAGE

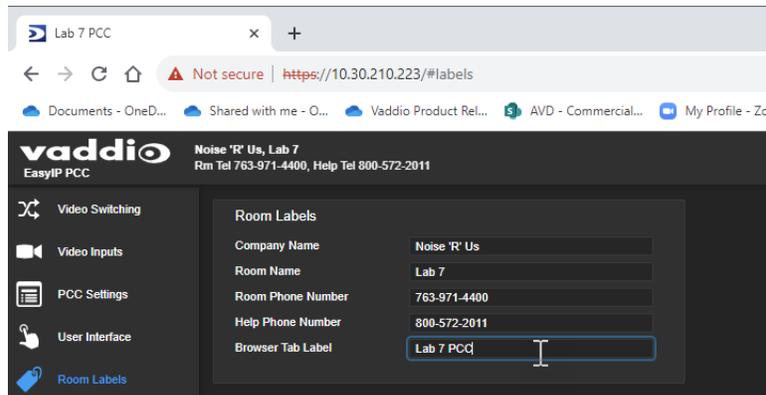
If your network supports hostname resolution, you may find it convenient to change the device's hostname to something easy to remember. This allows you to access the device by its hostname instead of its IP address – for example, by entering `https://ginger` to open the web interface of the device named **ginger**.

Work with your IT department to ensure that the new hostname conforms to the organization's naming conventions.

Adding room information

ROOM LABELS PAGE

Enter information about the location of the equipment and the local IT or A/V help line. This information will be displayed on all pages of the web interface and in the Location column of the Vaddio Deployment Tool.



Performance and behavior settings

Performance and behavior settings are on these pages of the web interface, shown in the upper portion of the left navigation panel:

- **Video Switching** – Select a paired video input to work with.
- **Video Inputs** – Pair or unpair to cameras and other video sources.
- **PCC Settings** – Configure joystick behavior, courtesy HDMI output, and the pattern on the courtesy HDMI output when video is muted.
- **User Interface** – Customize the non-administrative web interface to suit your operator's preferences.

The screen shots in this chapter may look different from your device's web interface. Some may be from other products within the same product family, and may lack features that your device offers or show features that are not available on your device.

Setting camera controller behavior

PCC SETTINGS PAGE

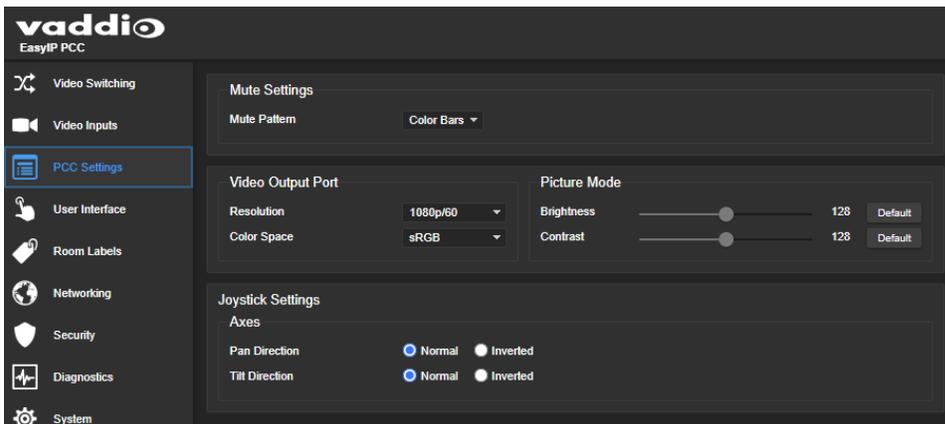
Mute Pattern – Specifies what you see (color bars or black video) when a non-streaming camera is selected. If you select a streaming camera that is muted, the HDMI output is that camera's mute pattern (often blue or black video).

Video Output Port settings for the courtesy HDMI output:

- **Resolution** – Set the resolution and frame rate.
- **Color Space** – sRGB or YCbCr.

Picture Mode settings **Brightness** and **Contrast** adjust the video for the courtesy HDMI output.

Pan Direction and **Tilt Direction** – Set the joystick behavior to match the operator's preferences. You can make these controls available to the operator as appropriate. See [Customizing the operator's interface](#).

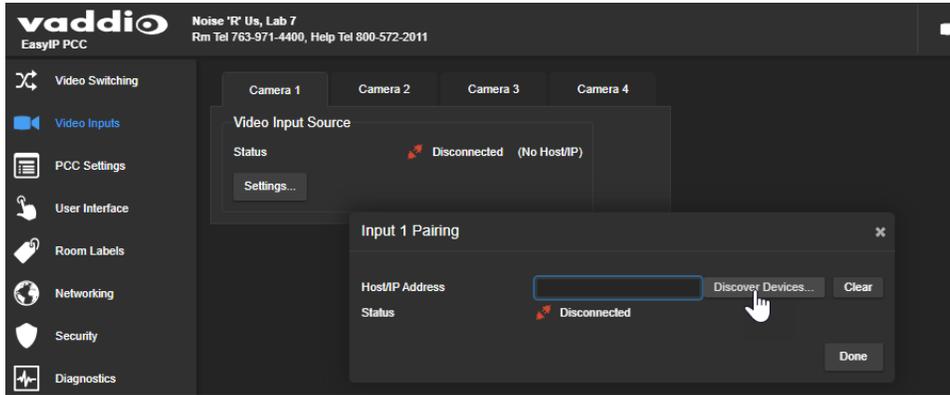


Pairing to cameras

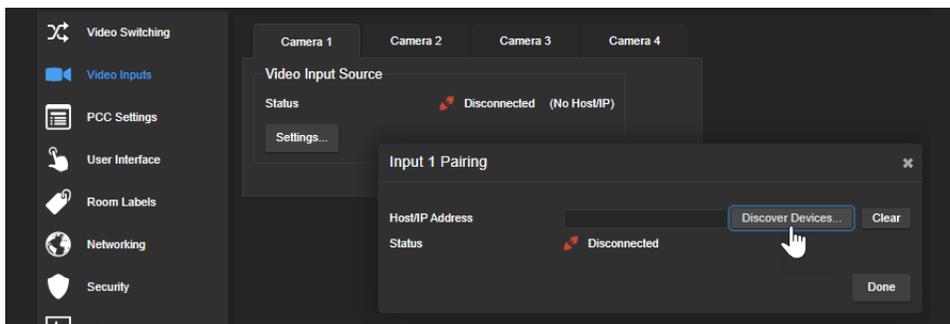
VIDEO INPUTS PAGE

Pairing is the process of associating a video input with a Camera button on the controller.

The EasyIP PCC can control up to four EasyIP cameras. The PCC Mini can control up to four Vaddio cameras from non-EasyIP product lines.



1. On the Video Inputs page, select one of the Camera tabs.
2. If the status is Disconnected (No Host/IP), then no camera has been paired to that input. Select Settings to open the Pairing box.



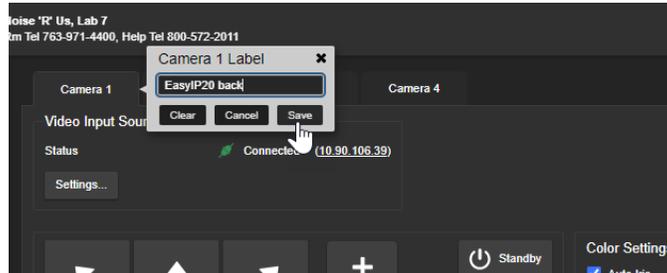
3. Select Discover devices.
4. Select a camera from the Discovered Devices list, and select Done.
5. If the Pairing box shows the status as Unauthenticated, select Authenticate and log in to the camera using the admin password. The camera information and controls populate into the page.
6. Repeat this for all the cameras you need to pair to the controller.

Renaming video inputs

You can assign meaningful names to the paired video inputs, instead of trying to remember which camera is Camera 1.

To rename a camera:

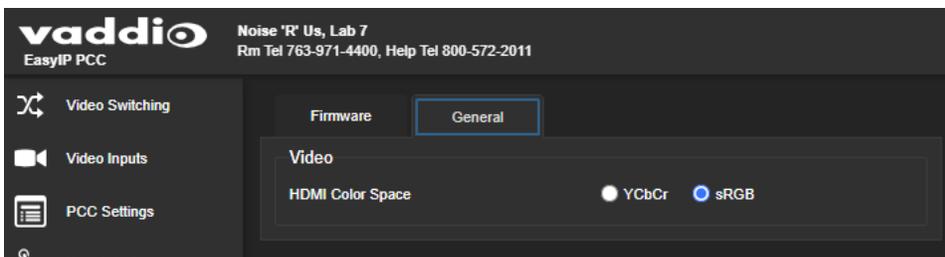
Right-click the top of the tab to open the Label box. Then enter and save the new name.



Courtesy HDMI output settings

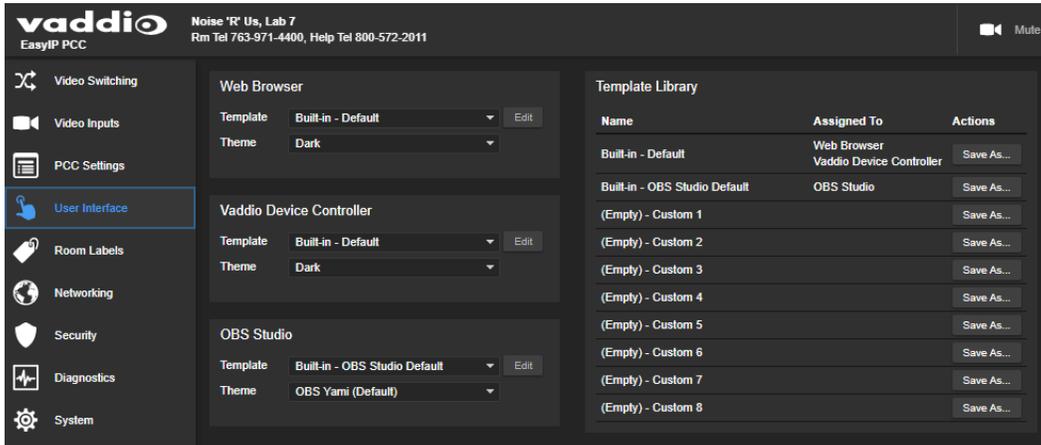
SYSTEM PAGE, GENERAL TAB

The default color space for the courtesy HDMI output is sRGB. If necessary, you can change it to YCbCr on the System page's General tab.



Customizing the operator's interface

The User Interface page enables you to create simple, streamlined operator's page templates customized to your preferred platforms and operators' tasks and preferences.



You can always change back to the built-in default page template for any platform you use. The default templates are not editable.

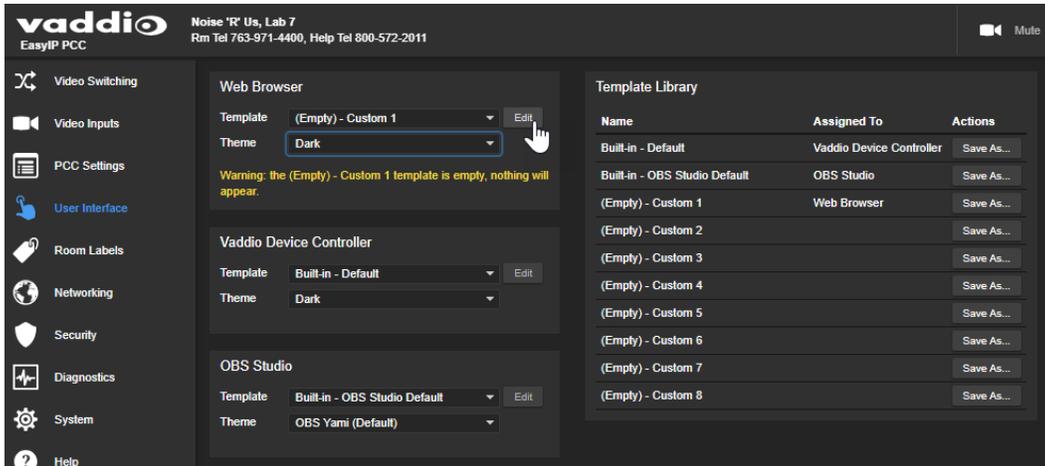
Notes

Some user interface elements are not applicable to OBS Studio. If you design a template for use on more than one platform, elements will be hidden if they are not applicable to the platform.

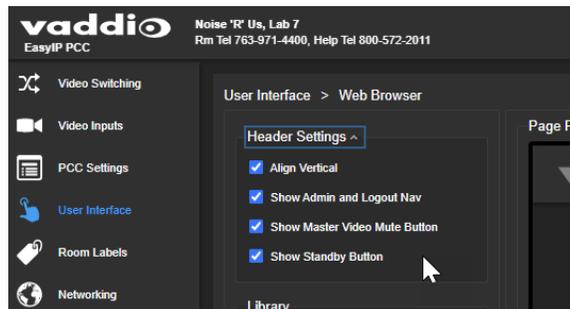
If you do not use OBS Studio, the OBS-specific themes might not be optimal for the platform you use.

Creating an operator's page template

1. Choose the primary platform for the customized page template – web browser, Vaddio Device Controller, or OBS Studio.
2. Select the theme (color scheme) for the new template. You may find the OBS themes jarring if you use them outside of OBS, but that's up to you.



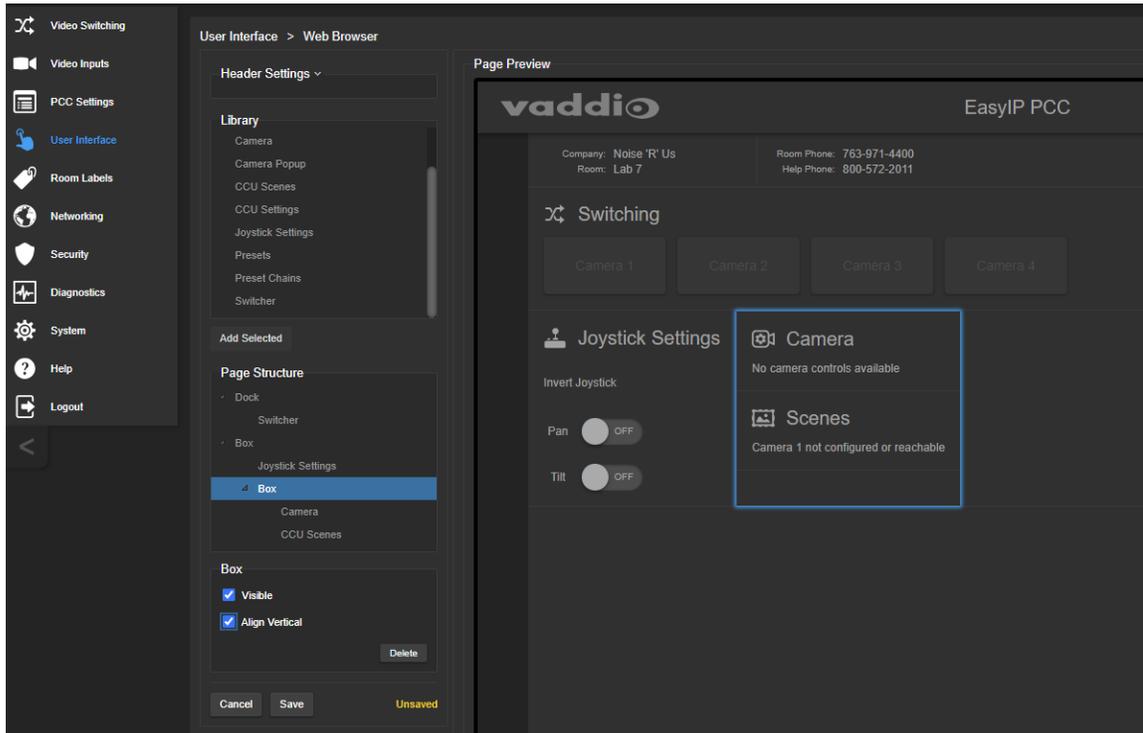
3. Select Edit to open the template editor.
4. Ignore the "Empty Template" error message in the Page Preview.
5. Decide which elements you want to keep available in the page header – video mute, standby, logout, and the pull-down to access the admin login.



6. Save your work.

Adding controls to the page template

1. From the library, select Dock and either select Add Selected to place it in the Page Structure, or drag it into the Page Preview.
The dock is the container for all the items you add to the page.
2. Add controls from the library.
You can use boxes to organize them.



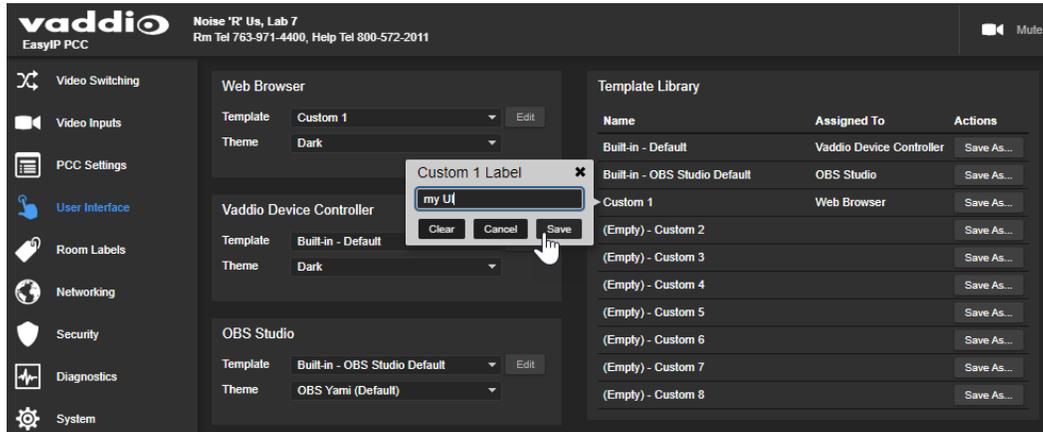
3. Save your work when you're done.

Note

If you add too many items to the page template, the web interface will present an error message.

Naming your page template

On the main User Interface page, right-click the name of the template to open the Label box, then enter and save the name.



System maintenance

This chapter covers the tasks on the System page:

- Exporting (backing up) and importing configuration data
- Updating firmware
- Rebooting

The screen shots in this chapter may look different from your device's web interface. Some may be from other products within the same product family, and may lack features that your device offers or show features that are not available on your device.

It also covers information that may help if you need to contact Vaddio Technical Support.

Exporting and importing configuration data

SYSTEM PAGE, FIRMWARE TAB

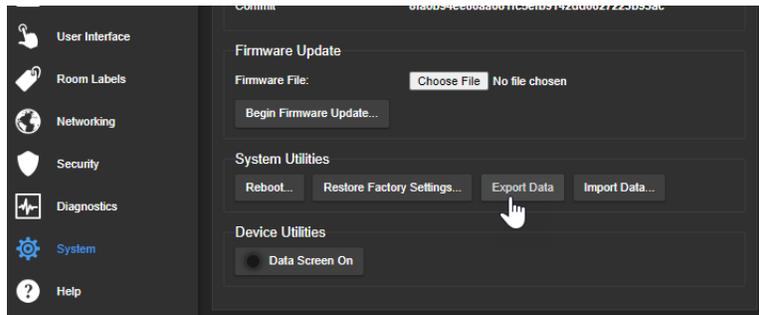
You can export a device's configuration and save it as a backup. This allows you to quickly restore customized information if you need to [restore factory defaults](#) or replace the unit.

The export includes the date/time settings, room label, camera pairing, joystick settings, and user interface page templates and settings.

The export file does not include security settings or network settings.

When importing a configuration to multiple devices:

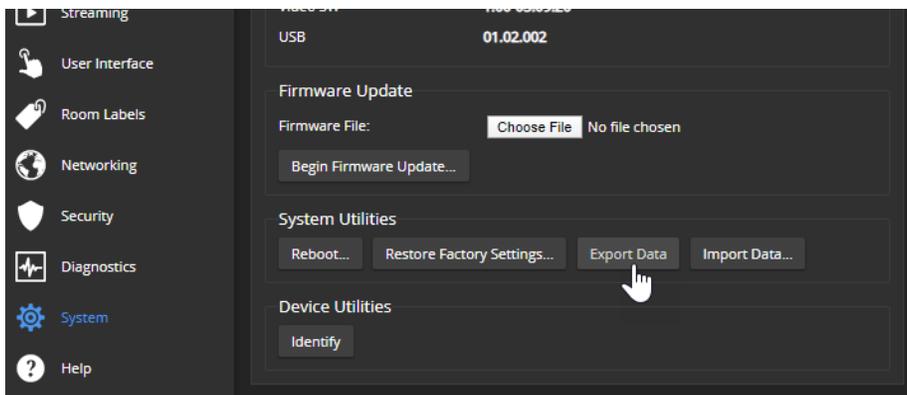
- All the devices must be of the same model.
- All the devices must have compatible firmware versions installed.



To export a configuration:

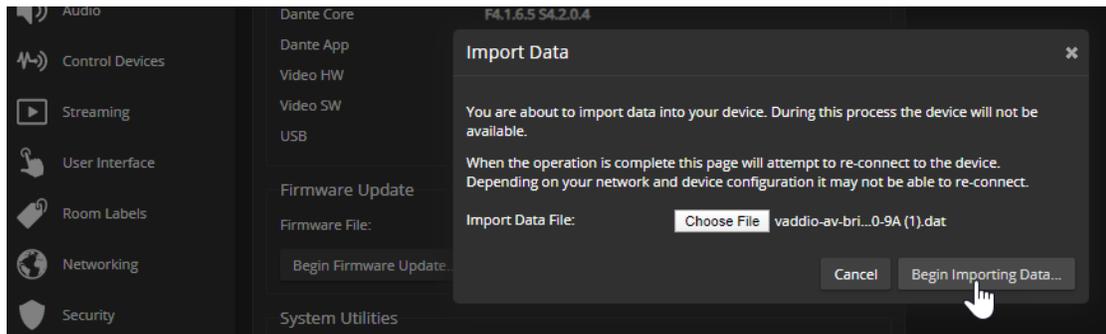
To save a copy of the current configuration, select Export Data.

The configuration exports as a `.dat` file and downloads to your default file download location. The filename is the device's hostname followed by the `.dat` file extension.



To import a configuration:

1. Select Import. The Import Data box opens.



2. Select Choose File, and browse to the .dat file to be imported.
 3. Select Begin Importing Data. When the import is complete, the device reboots.
- When you import a configuration, you must re-authenticate to all paired cameras.

Updating the firmware

SYSTEM PAGE, FIRMWARE TAB

From time to time, we issue new firmware to introduce new features and other product improvements, and to fix issues that turn up. We recommend keeping all your Vaddio products up to date, to get the most out of them.

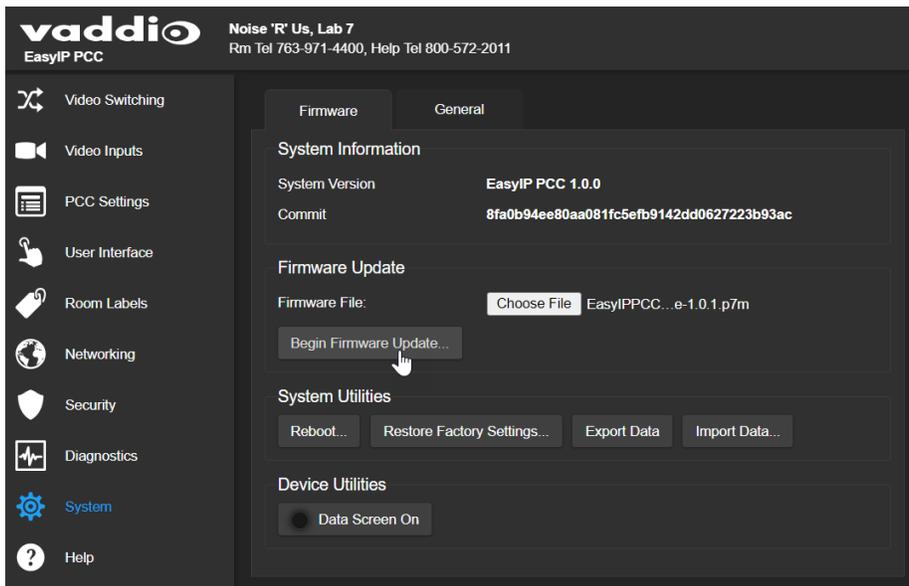
Note

*It is rare for an update to generate errors. If this happens, please read them carefully and record them. Screen shots of the error message may be very helpful in troubleshooting the problem. If the update does not finish successfully, **do not remove power**. Contact Vaddio technical support immediately.*

1. Go to the appropriate product page and download the firmware update file.
2. Select the firmware file that you downloaded.
3. Select Begin Firmware Update.
4. Read the information in the Confirm dialog box, then select Continue.

The device reboots as the last step in the update process.

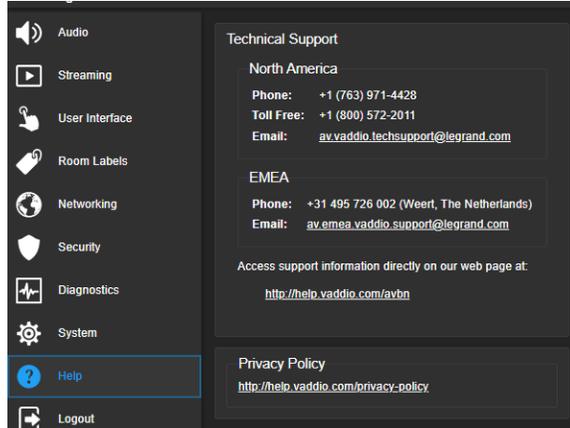
We recommend also checking for firmware updates for all connected or paired Vaddio products.



Contacting Vaddio Technical Support and viewing diagnostic logs

HELP AND DIAGNOSTICS PAGES

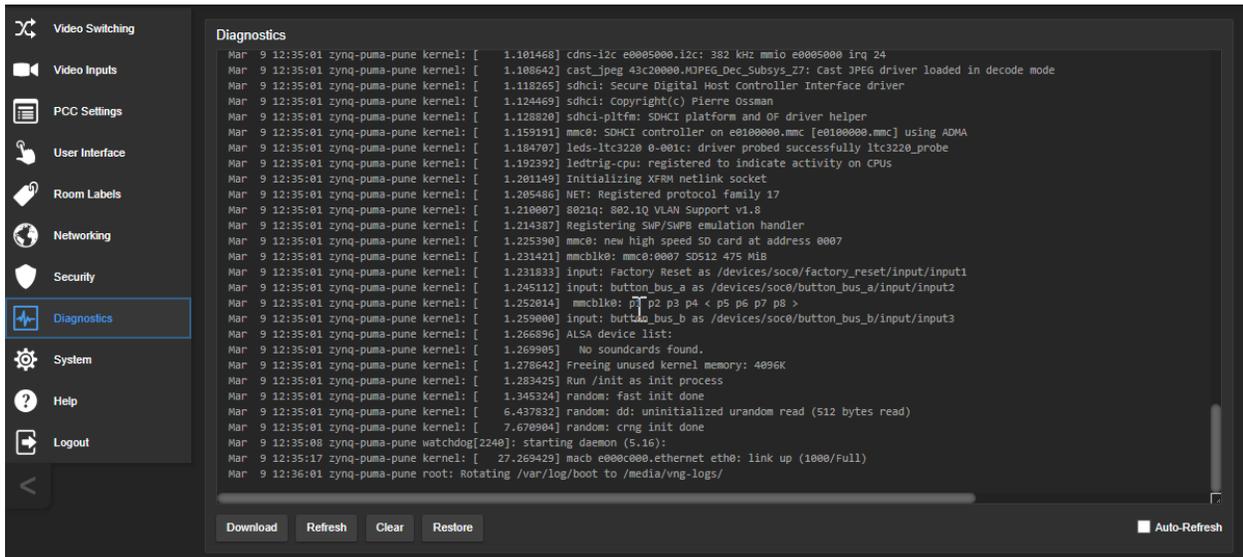
If you can't resolve an issue using your troubleshooting skills (or the Troubleshooting table in this manual), we are here to help. Technical support contact information is on the Help page.



Note

The Help page provides a link to our standard privacy notice. This product does not record or save audio or video files, and it does not store any identifying information other than what you may choose to enter on the Room Labels page of the web interface. However, the device's IP address is considered "personally identifiable information" for the purposes of the privacy notice. This information is stored for display to the user, but not otherwise shared or transmitted.

Your technical support representative may ask you to download and email the event log file available from the Diagnostics screen. The event log may include large numbers of internal events even when no errors have occurred. Rebooting generates over 100 log entries.



Operating the four-camera joystick controller

We'd like to think the joystick controller is so intuitive to use that you won't need instructions, but the author is rather compulsive about writing instructions. You can skip this part and just have fun getting familiar with the joystick controller, and we'll still like you.

Returning from standby

When the joystick controller is in standby mode, the Preset 1 button is illuminated red and the other buttons are dark. Press it to return from standby.

Controlling the preview camera

The buttons and joystick provide basic camera control.

- Use the Camera buttons to select the desired preview camera.
- Use the Preset buttons to go to the camera's stored presets. Preset buttons are illuminated if the corresponding presets are available on the selected camera.
- If the presets don't include the shot you want, use the joystick to set up the shot. Twist the knob to zoom.

Storing a new preset on the camera

Set up the shot, then press and hold a preset button until it flashes. If you choose a button for an existing preset, this will overwrite the existing preset.

Doing more with the web interface

Depending on how the joystick controller is configured, you may have access to additional controls in the web interface or via the Vaddio Device Controller.

The Vaddio Device Controller and the web interface on your computer may present different subsets of the available controls. In some cases, they might not present any controls at all.

Controls you may have available

Depending on how the user interface is configured, the Vaddio Device Controller or the web interface available from your computer may present some or all of these controls:

- Camera selection – Same as the Camera buttons on the joystick controller.
- Controls for the selected camera – May include camera presets, preset chains, CCU scenes and CCU settings (color and lighting adjustments). Controls are not available unless they have been configured to appear on the operator's page, and the camera supports the functionality.
- Joystick settings – Adjust the joystick to fit the way you work.

Status lights cheat sheet

Whenever the components of your system don't do what you expect, check the status lights.

Camera controller status lights

Location	State	Meaning
Preview buttons	Not illuminated	The button corresponds to a preset that has not been saved on the selected camera
	Blue	The button corresponds to a preset that has been saved on the selected camera.
	Cyan	The selected camera is at the corresponding preset.
	Red	The camera is currently at the preset that the button corresponds to.
Camera buttons	Not illuminated	No camera is available on this video input.
	Blue	A camera has been paired to this video input and is available.
	Red	The corresponding camera is currently selected.
Network and PoE+ port	Blinking	Normal operation; receiving power and connected to the network.
	Not illuminated	<ul style="list-style-type: none"> ▪ The power injector's Data In port is not connected to the network. ▪ The camera controller is not receiving power.

Power injector status light

State	Meaning
Orange	Power connection is good. No connection from the Data and Power Out port to the camera controller.
Green	The power connection is good, and the connection from the Data and Power Out port to the camera controller is good.

Note

The status light does not provide information about the connection from the Data In connector to the network.

Camera status lights

Status light codes vary among models of cameras. Consult the camera documentation.

EasyIP Switch status lights

Not applicable to the PCC Mini.

Light	State	Meaning
System (front and back)	Blinking green Steady green Red Off	Normal operation Malfunction Device is booting Power is off or the device has not finished booting
Link/Act (front and back)	On	Lights on the individual ports are showing link activity. This light is off if the PoE light is on.
PoE (front and back)	On	Lights on the individual port are showing PoE status. This light is off if the Link/Act light is on.
Port number (front)	On	A device is connected to this port.
Ethernet/PoE+ port lights (back), Link/Act mode	Green on Yellow on Green or yellow blinking Lights off	1000Mbps device connected 10/100Mbps device connected Receiving or transmitting data Nothing connected
Ethernet/PoE+ port lights (back), PoE mode	Green on Yellow on Lights off	The connected device is receiving PoE/PoE+ power. PoE fault or device is drawing too much power. No device connected, or connected device does not require PoE power, or link failure.

Command Line Interface SHell (CLISH) reference

Requirements

- SSH (recommended) or Telnet must be enabled on the Security page of the device's web interface.
- Your computer or third-party control system must have a suitable SSH or Telnet client.
- Your computer or third-party control system must be able to connect to the device over the network.

When you start a CLISH session, you must log in using the admin account.

Usage notes

- The > character is the command prompt.
- In addition to the control commands, session management commands are available – help, history, and exit.
- CTRL-5 clears the current serial buffer on the device.

Getting more information

*Use a question mark as a command or command parameter to display a list of available commands, subcommands, or command parameters. For example, ? returns all top-level commands; **network ?** returns the valid subcommands for the `network` command; and **network ping ?** returns the parameters available for the `network ping` command.*

Firmware updates sometimes implement new command parameters. We do not update the manuals for every firmware update. Querying will help you discover any command parameters that have been added since the last update.

Typographical conventions

- { x | y | z } – Choose x, y, or z.
- <variable> – The named variable (such as <ip address>) is required.
- < x.y > – A value in the range of x through y is required.
- [parameter] – The parameter (such as [speed]) is optional.

Camera and video management commands

The following commands are available for controlling connected cameras:

- camera home
- camera pan
- camera tilt
- camera zoom
- camera focus
- camera preset
- camera ccu
- camera standby
- video mute
- video source
- video resolution

You must specify the camera to be controlled, and the camera must be able to execute the command. For example, only PTZ and ePTZ cameras can respond to the `camera pan` and `camera tilt` commands.

Refer to the camera's Complete Manual for detailed information on available parameters and value ranges. Some camera command parameters may be unavailable to the camera controller, although they are available when controlling the camera directly via CLISH.

camera home

Moves the specified camera to its home position.

Synopsis	camera <1..4> home	
Required	<1..4>	Specify the camera to control.
Example	camera 1 home Moves camera 1 to its home position.	

camera pan

Moves the specified camera horizontally.

Synopsis	<code>camera <1..4> pan { left [<speed>] right [<speed>] stop }</code>	
Required	<code><1..4></code>	Specify the camera to pan.
Options	<code>left</code>	Moves the camera left.
	<code>right</code>	Moves the camera right.
	<code><speed></code>	Optional: integer specifies the speed for right or left movement. Range and default speed depend on the camera.
	<code>stop</code>	Stops the camera's horizontal movement.
Examples	camera 2 pan left Pans camera 2 left at the default speed.	
	camera 2 pan right 5 Pans camera 2 right using a speed of 5.	
	camera 1 pan stop Stops camera 1's horizontal motion.	

camera tilt

Moves the specified camera vertically.

Synopsis	<code>camera <1..4> tilt { up [<speed>] down [<speed>] stop }</code>	
Required	<code><1..4></code>	Specify the camera to tilt.
Options	<code>up</code>	Moves the camera up.
	<code>down</code>	Moves the camera down.
	<code><speed></code>	Optional: integer specifies the speed for up or down movement. Range and default speed depend on the camera.
	<code>stop</code>	Stops the camera's vertical movement.
Examples	camera 1 tilt up Tilts camera 1 up at the default speed.	
	camera 2 tilt down 20 Tilts camera 2 down using a speed of 20.	
	camera 1 tilt stop Stops camera 1's vertical motion.	

camera zoom

Moves the specified camera in toward the subject or out away from the subject.

Synopsis	camera <1..4> zoom { in [<speed>] out [<speed>] stop }	
Required	<1..4>	Specify the camera to zoom.
Options	in	Zooms the camera in.
	out	Zooms the camera out.
	<speed>	Optional - integer specifies the speed for zoom movement. Range and default speed depend on the camera.
	stop	Stops the camera's zoom movement.
Examples	camera 1 zoom in Zooms camera 1 in at the default speed.	
	camera 2 zoom out 7 Zooms camera 2 out using a speed of 7.	
	camera 2 zoom stop Stops camera 2's zoom motion.	

camera preset

Moves the camera to the specified preset, or stores the current camera position and optionally CCU information, either with or without specifying that Tri-Synchronous Motion is to be used when moving to this position.

Synopsis	camera <1..4> preset { recall store} <1..16> [tri-sync <1..24>] [save-ccu]	
Required	<1..4>	Specify the camera to control.
Options	recall <1..16>	Moves the camera to the specified preset, using Tri-Synchronous Motion if this was saved with the preset. If CCU information was saved with the preset, the camera switches to the CCU setting associated with the preset.
	store <1..16>	Stores the current camera position as the specified preset.
	tri-sync <1..24>	Optional: Specifies that the camera uses Tri-Synchronous Motion to move to this position, using the specified speed. Valid only for cameras that have the Tri-Synchronous Motion feature.
	save-ccu	Optional: Saves the current CCU settings as part of the preset. If not specified, the last color settings are used when recalled.
Examples	<pre>>camera 2 preset recall 3 OK > Moves camera 2 to its stored preset 3. >camera 2 preset store 1 OK > Saves camera 2's current position as its preset 1. >camera 2 preset store 4 tri-sync 15 OK > Stores camera 2's current position as preset 4. The camera will use Tri-Synchronous Motion at speed 15 when it is recalled to this preset. >camera 2 preset store 2 tri-sync 10 save-ccu OK > Stores camera 2's current position as preset 2. The camera applies the current CCU settings and uses Tri-Synchronous Motion at speed 10 when it is recalled to this preset.</pre>	

camera focus

Changes the camera focus.

Synopsis	<code>camera <1..4> focus {{ mode { get auto manual }} {{ near far } <speed>} stop }</code>	
Required	<code><1..4></code>	Specify the camera to focus.
Options	<code>mode</code>	Sets or returns the focus mode.
	<code>auto</code>	Sets auto-focus mode.
	<code>manual</code>	Sets manual focus mode.
	<code>get</code>	Returns the current focus mode.
	<code>near</code>	Brings the focus nearer to the camera. Cannot be used when auto-focus is selected.
	<code>far</code>	Moves the focus farther from the camera. Cannot be used when auto-focus is selected.
	<code><speed></code>	Optional: integer specifies the speed for changing focus. Range and default speed depend on the camera.
	<code>stop</code>	Stops the camera's focus movement.
Examples	<p>camera 3 focus near OK > Brings the focus near at the default speed.</p> <p>camera 3 focus far 7 OK > Moves the focus farther from the camera at a speed of 7.</p> <p>camera 3 focus mode get auto_focus: on OK > Returns the current focus mode.</p>	



video mute

Gets or sets the video mute status. When video is muted, the device sends black video. This can be desirable when preparing the room or when privacy is needed.

Synopsis	video mute { get off on toggle }	
Options	get	Returns the current video mute status.
	off	Unmutes the video. (Normal video resumes.)
	on	Mutes the video. (Black screen with message)
	toggle	Changes the video mute status.
Examples	<pre> video mute get mute: off OK > Video is not muted. video mute on Transmits black video. </pre>	

video source

Gets or sets the active video source.

Synopsis	video source { get set }	
Options	get	Returns the current video input.
	set	Selects the video input.
Source channels	input1 through input4	Camera 1 through Camera 4
Examples	<pre> video source get source: input2 OK > video source set input1 Sets the video source to Camera 1. </pre>	

video resolution

Get or set the resolution and frame rate for the device's courtesy HDMI output.

Synopsis	<code>video resolution { get set <value> }</code>	
Parameters	<code>get</code>	Returns the current video resolution and frame rate.
	<code>set <value></code>	Sets the video resolution and frame rate. Valid values depend on the capability of the display, and are in the format <code><resolution>/<rate></code>
Examples	<pre>video resolution set 1080p/60</pre> <p>Sets the video resolution to 1080p/60.</p> <pre>video resolution get</pre> <pre>1080p/60</pre> <pre>>OK</pre> <p>Returns the current video resolution for the HDMI output.</p>	

Communication commands

The following commands are available for managing communication and discovering communication-related settings:

- camera comm host
- camera authenticate
- network settings get

camera comm host

Pair to or unpair from the specified camera, identify the currently paired camera, or discover cameras available for pairing.

Synopsis	camera <n> comm host { get discover set <IP address> unset }	
Parameters	get	Returns the IP address and model of the camera currently paired
	discover	Returns IP address and model for each camera available for pairing
	set <IP address>	Pairs to the specified camera
	unset	Removes the current pairing
Examples	<pre>camera 1 comm host unset</pre> <p>Unpairs the camera currently paired as Camera 1.</p> <pre>camera 1 comm host set 10.90.106.39</pre> <p>Pairs to 10.90.106.39 as Camera 1.</p>	

camera authenticate

Authenticate to the paired camera.

Synopsis	camera <1..4> authenticate <password>	
Parameters	<1..4>	The paired camera
	<password>	The admin password set on the camera.
Example	<pre>camera 1 authenticate Pa\$\$w0rd</pre> <p>Authenticates to Camera 1 using Pa\$\$w0rd as the admin password. Authentication fails if the password is incorrect or if no password is set.</p>	

network settings get

Returns the device's current network settings, including MAC address, IP address, netmask, and gateway.

Synopsis	<code>network settings get</code>
Example	<pre>network settings get Name: eth0:WAN MAC Address: 00:04:a3:85:0a:ee IP Address: 10.30.240.187 Netmask: 255.255.255.0 VLAN: Disabled Gateway: 10.30.240.254 Hostname: bergstrom OK ></pre>

Maintenance and troubleshooting commands

The following commands are available for maintenance and troubleshooting:

- network ping
- monitor buttons
- version
- system reboot
- system factory-reset

network ping

Sends an ICMP ECHO_REQUEST to the specified IP address or hostname.

Synopsis	network ping [count <count>] [size <size>] <destination-ip>	
Options	<count>	The number of ECHO_REQUEST packets to send. Default is five packets.
	<size>	The size of each ECHO_REQUEST packet. Default is 56 bytes.
	<destination-ip>	The IP address where the ECHO_REQUEST packets will be sent.
Examples	<pre>>network ping 192.168.1.66 PING 192.168.1.66 (192.168.1.66): 56 data bytes 64 bytes from 192.168.1.66: seq=0 ttl=64 time=0.476 ms 64 bytes from 192.168.1.66: seq=1 ttl=64 time=0.416 ms 64 bytes from 192.168.1.66: seq=2 ttl=64 time=0.410 ms 64 bytes from 192.168.1.66: seq=3 ttl=64 time=0.410 ms 64 bytes from 192.168.1.66: seq=4 ttl=64 time=3.112 ms --- 192.168.1.66 ping statistics --- 5 packets transmitted, 5 packets received, 0% packet loss round-trip min/avg/max = 0.410/0.964/3.112 ms ></pre> <p>Sends five ECHO_REQUEST packets of 56 bytes each to the host at 192.168.1.66.</p>	
	<pre>>network ping count 10 size 100 192.168.1.1 Sends 10 ECHO_REQUEST packets of 100 bytes each to the host at 192.168.1.1. The command returns data in the same form as above.</pre>	

monitor buttons

Returns information each time a button is pressed on the device console. To stop monitoring, issue Ctrl-C. You may have to do this more than once.

Synopsis	monitor buttons
Examples	<pre>>monitor buttons camera1 preset1 ^C ></pre> <p>Returns button-press information until you enter Ctrl-C.</p>

system standby

Gets, sets, or toggles the camera controller's current standby status.

Synopsis	<code>system standby { get on off toggle }</code>	
Options	<code>get</code>	Returns the device's current standby status.
	<code>on</code>	Sets the device to standby mode.
	<code>off</code>	Brings the device out of standby mode.
	<code>toggle</code>	Changes the device's standby status.
Examples	<code>system standby get</code> Returns the standby status in this form: <pre>standby: off</pre> (the device is not in standby mode.)	
	<code>system standby on</code> Immediately sets the device to standby mode.	

system reboot

Reboots the system either immediately or after the specified delay. Note that a reboot is required when resetting the system to factory defaults (`system factory-reset`).

Synopsis	<code>system reboot [<seconds>]</code>	
Options	<code><seconds></code>	The number of seconds to delay the reboot.
Examples	<code>>system reboot</code> Reboots the system immediately.	
	<code>>system reboot 30</code> Reboots the system in 30 seconds. The response is in the same form; the system message appears at the end of the delay.	

system factory-reset

Gets or sets the factory reset status. When the factory reset status is on, the system resets to factory defaults on reboot.

Synopsis	system factory-reset { get on off}	
Options	get	Returns the device's current factory reset status.
	on	Enables factory reset on reboot.
	off	Disables factory reset on reboot.
Examples 	<pre>>system factory-reset get factory-reset (software): off factory-reset (hardware): off OK ></pre> <p>Returns the factory reset status.</p> <p>This evaluates the most recent <code>system factory-reset on</code> or <code>off</code> command, if one has been received, then reads the rear panel DIP switches and returns the status <code>on</code> if they are all in the down position.</p> <pre>>system factory-reset on factory-reset (software): on factory-reset (hardware): off OK ></pre> <p>Enables factory reset upon reboot.</p> <p>Note <i>This command does not initiate a factory reset. The factory reset takes place on the next reboot.</i></p>	

version

Returns the current firmware version, which includes the model information. Your device may return different information than what the example shows.

Synopsis	version
Example	<pre>version Commit 8fa0b94ee80aa081fc5efb9142dd0627223b93ac System Version EasyIP PCC 1.0.0 OK ></pre> <p>Returns current firmware version information.</p>

Information and session management commands

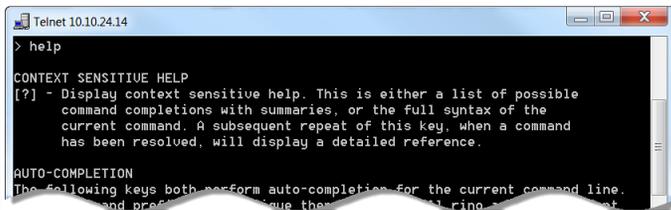
The following commands are available for CLISH help and session management:

- help
- history
- exit

Use a question mark as a command or command parameter to display a list of available commands, subcommands, or command parameters. For example, `?` returns all top-level commands; `system ?` returns system subcommands; and `system reboot ?` returns parameters available for the system reboot command.

help

Displays an overview of the CLI syntax.

Synopsis	help
Example	<p>help</p> 

Note

Use `?` as a command parameter to see information about a given command's syntax.

history

Returns the most recently issued commands from the current session. Since many of the programs read user input a line at a time, the command history is used to keep track of these lines and recall historic information.

Synopsis	history <limit>	
Options	<limit>	Integer value specifying the maximum number of commands to return.
Examples	history Displays the current command buffer.	
	history 5 Sets the history command buffer to remember the last 5 unique entries.	
Additional information	<p>You can navigate the command history using the up and down arrow keys. This command supports the expansion functionality from which previous commands can be recalled from within a single session. History expansion is performed immediately after a complete line is read.</p> <p>Examples of history expansion:</p> <ul style="list-style-type: none"> * <code>!!</code> Substitute the last command line. * <code>!4</code> Substitute the 4th command line (absolute as per 'history' command) * <code>!-3</code> Substitute the command line entered 3 lines before (relative) 	

exit

Ends the command session.

Synopsis	<code>exit</code>
Example	<code>exit</code>



Troubleshooting and care

If the equipment does not power up as expected, use this table to determine whether to call Vaddio Technical Support.

Note

If the equipment behaves in a way that suggests even a remote possibility of a bad cable, please try a known good cable with the same pin-out. Factory-made cables can be defective. Cables can appear to be good but only work part of the time. A cable may pass a standard continuity check but be unable to pass enough power to the connected device. Crimping tools can crimp unevenly, contacts can break internally, and individual conductors in the cable can break inside the jacketing material. Any of these can result in a cable that passes a continuity check but does not work reliably.

(The author would like to confess having made more than a few almost-good cables. It happens.)

Power issues

What is it doing?	Possible causes	Check and correct
EasyIP PCC: Nothing. The buttons do not light up.	The network/PoE+ cable from the EasyIP Switch is not connected, or is bad.	Check using known good cables.
	The EasyIP PCC is connected to an unpowered port on the EasyIP Switch.	Connect the device to one of the PoE+ ports.
	The EasyIP Switch is not powering the device.	Check that the EasyIP Switch is on, and in PoE mode the port lights do not indicate an overload or over PoE budget condition.
	The device is bad.	Contact your reseller or Vaddio Technical Support.
PCC Mini: Nothing. The buttons do not light up.	Power is not connected.	Connect the mid-span power injector's power cord.
	The network/PoE+ cable from the mid-span power injector is bad.	Check using known good cables.
	The wall outlet is not active. (Check by finding out if it powers something else, such as a laptop or phone charger.)	Use a different outlet.
	The device or its mid-span power injector is bad.	Contact your reseller or Vaddio Technical Support.
A connected camera is not working.	Check the camera's power connection. Refer to the camera's manual for detailed troubleshooting information.	

Network and communication issues

What is it doing?	Possible causes	Check and correct
Unable to access the web interface.	The device is not at the IP address you browsed to.	If you are using a Vaddio Device Controller, go to the Settings screen and scan for the device. If not, press the IP button and browse to the address shown on the courtesy display.
Unable to log in successfully.	The password has been changed.	Contact your system administrator. If you are the system administrator, you will need to restore factory defaults and set the password again.
No communication with a specific IP-connected camera (button blinks blue).	The camera is not available.	Wait a few minutes. This happens during camera firmware updates. Check whether the camera's power is connected.
	The camera is not at that IP address.	Unpair the camera, determine its IP address, and then pair to it again.
	The camera requires a firmware update to communicate with the camera controller.	Download and install the latest firmware for the camera.

Video issues

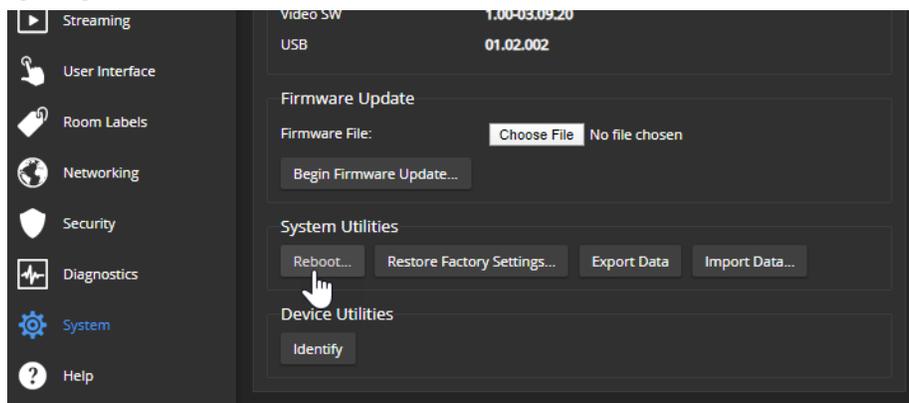
What is it doing?	Possible causes	Check and correct
The display connected to the camera controller's HDMI output shows a pattern of color bars.	No camera is selected.	This is normal.
	No video stream is available from the selected camera. Video may be muted, IP streaming may not be enabled on the camera, or the camera may lack IP streaming capability.	Unmute video. Verify that the camera is capable of streaming. Verify that IP streaming is enabled on the camera.
The display connected to the camera controller's HDMI output shows a black screen.	The display is powered off.	Power on the display.
	The camera controller's video mute pattern is set to "black screen" and no video stream is available from the selected camera, or no camera is selected.	This is normal.
The display connected to the camera controller's HDMI output shows a blue screen.	The selected camera's video is muted.	Unmute the video.
Unresponsive camera (no video, unable to control the camera, or both)	The camera's IP address has changed.	Pair to the camera again.
	Camera problem	Refer to the camera's manual for troubleshooting information.

Rebooting

SYSTEM PAGE, FIRMWARE TAB

This can help if the device stops responding as you expect.

In the System Utilities section, select Reboot, then confirm and enjoy the brief but trippy light show. You will need to log in again after the reboot.



If rebooting the device doesn't fix the problem, you may need to [restore factory defaults](#). Before you take that step, [back up the configuration](#).

Restoring factory defaults

This operation returns the device to its original state.

- Any settings you have customized will be lost.
- Anyone who is logged in to the web interface is logged out.
- You will need to do the initial device setup again to be able to communicate with the device.

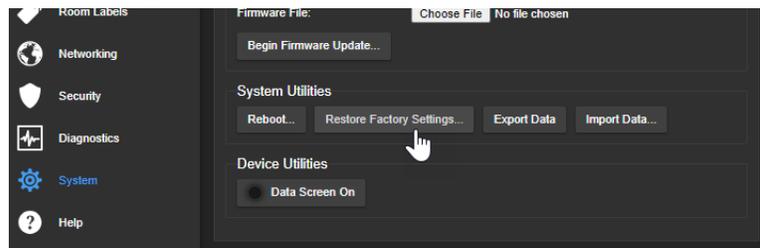
To save and restore your customized settings, export the device configuration before restoring factory defaults. See [Exporting and Importing Configuration Data](#). Then import the configuration after completing the initial device configuration. Device behavior settings are preserved in the configuration file; identity settings such as passwords, device hostname, and IP streaming path and URL are not.

You can restore factory defaults from the web interface, CLISH, Vaddio Deployment Tool, or using the device's IP button.

If you cannot access the device's web interface, use the IP button.

To restore factory defaults from the web interface:

1. Go to the System page.
2. If you have customized the device's room label or behavior settings and will want to restore them, export the configuration.
3. Select Restore Factory Settings.



4. A confirmation message informs you that the action cannot be undone. This is your cue to make sure you have successfully exported the configuration before you confirm.

To restore factory defaults using the IP button:

1. Disconnect power.
2. Hold down the IP button while reconnecting power, and continue to hold it for 15 seconds.

The device returns to factory defaults and reboots.

If you hold down the IP button for more than 45 seconds, there is a small but nonzero risk that a portal may open in the space-time continuum. If this occurs, please exercise good judgment. Vaddio is not responsible for what happens next.

When the process is complete, you will need to access the web interface and complete the initial device set-up, plus any other configuration that may be needed.

Operation, storage, and care

For smears or smudges on the product, wipe with a clean, soft cloth. Do not use any abrasive chemicals.

Keep this device away from food and liquids.

Do not operate or store the device under any of the following conditions:

- Temperatures above 40°C (104°F) or below 0°C (32°F)
- High humidity, condensing or wet environments
- Inclement weather
- Severe vibration
- Corrosive atmosphere
- Dry environments with an excess of static discharge
- As a shield while dueling (the dimensions are all wrong for that)

Do not attempt to take this product apart. There are no user-serviceable components inside.

Glossary

D

DHCP

Dynamic Host Configuration Protocol. A network management protocol that assigns an IP address to a device automatically when it is connected to the network.

E

EasyIP

Vaddio's proprietary AV-over-IP format.

F

felis catus

What the internet is made of.

G

gateway

Network information automatically assigned in a DHCP network. If installing equipment on a non-DHCP network, get this information from the network administrator.

H

HDMI

(High-Definition Multimedia Interface) A video output format; may also carry audio information.

HTTP

HyperText Transfer Protocol. The magic that makes websites work.

HTTPS

HyperText Transfer Protocol Secure. The magic that uses encryption to make websites work securely. See "SSL certificate" for more information.

I

IP address

Where a given device is on the IP network, logically. The IP address enables the network to route data to the right device – and that's why IP address conflicts are bad.

IP address conflict

Two or more devices attempting to use the same IP address on a network. Results are unpredictable but never good.

L

LED

Light-Emitting Diode. A status light.

N

NTP

Network Time Protocol. Ensures that NTP-enabled devices on the network all show the same system time, so timestamps are accurate.

P

PoE, PoE+, PoE++

Power over Ethernet; a means of powering a device using its network connection. Requires a mid-span power injector. PoE+ and PoE++ deliver more power than PoE.

R

RCLB

Really Cool Logo Badge. A visual cue that the device is a genuine Vaddio product. Accept no substitutes!

S

SSL certificate

A file used with HTTPS proving that a web page really originates from its purported source. Vaddio devices use self-signed SSL certificates. Since these are not issued by a recognized certificate authority, your browser will pop up security warnings the first time you try to browse to the device's web interface.

subnet mask

Network information automatically assigned in a DHCP network. If installing equipment on a non-DHCP network, get this information from the network administrator.

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