



Complete Manual for the

## **EasyIP 30 ePTZ**

AV-over-IP ePTZ Camera

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# Contents

Overview .....	1
EasyIP 30 ePTZ Camera Features .....	1
The EasyIP Ecosystem .....	1
A Quick Look at the EasyIP 30 ePTZ Camera .....	2
Front View .....	2
Connector Panel .....	2
Installation .....	3
Don't Void Your Warranty! .....	3
Before You Start .....	3
Cabling Notes .....	4
Connecting EasyIP Products .....	4
Basic Connections for Cameras and Audio with EasyIP Decoder .....	5
Basic Connections for Cameras and Audio with EasyIP Mixer .....	6
Installing the Wall Mount .....	7
Installing the Camera .....	7
About Inverted Cameras .....	7
Powering Up the EasyIP System .....	8
Next Steps .....	8
Initial Set-Up and Access to Administrative Controls .....	9
Browser Support .....	9
Access and Initial Device Set-Up Using the Vaddio Device Controller .....	9
Initial Device Set-Up and Access Using the Vaddio Deployment Tool .....	10
Manual Access and Initial Device Set-Up .....	11
Access the Web Interface of an EasyIP Camera Manually .....	11
System Administration .....	12
Configuring Access and Other Security Settings .....	12
Changing Device Hostname .....	13
Other Network Settings .....	13
Specifying Time Zone and NTP Server .....	13
Adding Room Information to the Device's Web Interface .....	14
Configuring and Adjusting Cameras .....	15
Fine-Tuning Autoframing Behavior .....	15
How It Works: Digital Pan/Tilt/Zoom .....	15
How It Works: Autoframing .....	16
Basic Autoframing Adjustments .....	17
Advanced Autoframing Adjustments .....	18
Masking Unwanted Motion .....	19
Autoframing Adjustment Quick Reference .....	20
Setting the Home Position and Other Preset Shots .....	21
Renaming Presets .....	21

Initial Lighting and Color Settings .....	22
Color and Image Quality Adjustments .....	23
Saving Color and Lighting Settings .....	24
Lighting and Image Quality Quick Reference .....	24
Color Adjustment Quick Reference .....	25
Setting the Speeds for Manual Camera Movements .....	26
Setting the Direction for Camera Movements .....	26
Adjusting the Focus .....	27
About Pairing Cameras and Configuring Streaming .....	28
Video and Control Settings .....	28
Indicator Light Behavior .....	28
System Maintenance .....	29
Saving (Exporting) or Restoring (Importing) a Configuration .....	29
Installing a Firmware Update .....	30
Rebooting the Device .....	31
Operating the Camera .....	32
Installing the Batteries .....	32
Pairing the Remote to the Camera .....	32
Other Things to Know About the Remote .....	32
RF Remote cheat sheet .....	33
Unpairing the Remote .....	33
Serial Command API .....	34
Camera Commands .....	35
camera home .....	35
camera pan .....	36
camera tilt .....	37
camera zoom .....	38
camera ptz-position .....	39
camera focus .....	40
camera preset .....	41
camera ccu get .....	42
camera ccu set .....	43
camera ccu scene .....	44
camera led .....	44
video mute .....	45
camera standby .....	46
Autoframing commands .....	47
autoframer enabled .....	47
autoframer paused .....	48
autoframer default-wide .....	48
autoframer buffer-zone .....	49

autoframer shot-margin .....	49
autoframer sensitivity .....	50
autoframer responsiveness .....	50
autoframer initial-persistence .....	51
autoframer persistence .....	51
autoframer max-electronic-zoom .....	52
autoframer max-speed .....	52
autoframer noise-threshold .....	53
autoframer tri-sync-motion .....	53
autoframer history .....	54
autoframer forced-wait-time .....	54
Maintenance and Troubleshooting Commands .....	55
network settings get .....	55
network ping .....	55
system reboot .....	56
system factory-reset .....	56
version .....	57
Information and Session Management Commands .....	58
history .....	58
help .....	58
exit .....	58
Troubleshooting and Care .....	59
Status Indicator Light .....	59
System and Power Issues .....	59
Camera Issues .....	60
Restoring Factory Default Settings .....	61
Contacting Vaddio Technical Support .....	62
Viewing Diagnostic Logs .....	62
Operation, Storage, and Care .....	63
Glossary .....	64
Photo Credits .....	67
Index .....	68

## Overview

This manual covers:

EasyIP 30 ePTZ AV-over-IP ePTZ camera, 999-30250-000 (black, worldwide)

EasyIP 30 ePTZ AV-over-IP ePTZ camera, 999-30250-000W (white, worldwide)



What's in this manual:

- Features
- Installation
- System administration and performance/behavior configuration
- Operation and maintenance
- Telnet API reference
- Troubleshooting

## EasyIP 30 ePTZ Camera Features

- Ideal for small to medium conference rooms
- Pairs with an EasyIP Decoder or EasyIP Mixer; may be paired to two host devices
- IntelliFrame™ intelligent framing algorithm keeps participants in view reliably, without facial recognition
- 30x zoom, horizontal field of view of 70.2°
- Up to 1080p/30 video
- Integration-ready Telnet control
- Full administrative control via web interface
- Presenter-friendly RF remote control

## The EasyIP Ecosystem

Vaddio® EasyIP products are designed to be used together.

- EasyIP cameras deliver video in Vaddio's proprietary EasyIP format. A host device is required to convert the cameras' output signal to an IP and/or USB stream.
- EasyIP host devices can control EasyIP cameras but not other cameras.
- EasyIP host devices automatically detect EasyIP cameras on the host device's subnet.
- EasyIP products require PoE+ power. Typically the EasyIP system is powered by a PoE+ switch such as the EasyIP Switch.
- EasyIP microphones and speakers use Dante networked audio.

## A Quick Look at the EasyIP 30 ePTZ Camera

The camera is available in black or white.

### Front View



- **Camera and zoom lens** – Up to 30x zoom.
- **Integrated microphone** – Picks up the voices of participants up to 10 ft. (3 m) away. Built-in echo cancellation.
- **Status lights** – Show the camera's current state. Can be turned off in the administrative web interface.
- **Pivoting head** – Manually tilt the head as needed.

### Connector Panel

The connectors are on the underside of the camera.



- **PoE+** – RJ-45 connector. Connect to a powered port on the PoE+ switch.
- **IP button** – Press to display the camera's IP address on video outputs.

## Installation

This section covers:

- Tips for selecting camera locations
- Cabling notes
- Installing the camera mount and mounting the camera
- System connection diagrams with cameras and audio peripherals

Cameras and network-connected audio peripherals must be paired to the host device after the installation is complete.

Contact Vaddio Technical Support if you have questions or encounter any problems. Phone 800.572.2011 / +1.763.971.4400, email [av.vaddio.techsupport@legrand.com](mailto:av.vaddio.techsupport@legrand.com).

And a required safety note here:

### **Note**

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

## Don't Void Your Warranty!

### **Caution**

*EasyIP products are for indoor use. Do not install these products outdoors or in a humid environment without the appropriate protective enclosure.*

### **Caution**

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

## Before You Start

***Work with the network administrator to plan your EasyIP deployment. A typical EasyIP system includes network equipment that serves DHCP addresses.***

Do these things before installing any Vaddio product:

- Be sure you can identify all cables correctly.
- Check Cat-5 cables for continuity.
- Talk to the network administrator.
  - Inform the network administrator if you are installing the EasyIP system with a PoE+ switch. The switch sold as part of the EasyIP ecosystem is configured for DHCP operation. The network administrator may need to take steps to ensure a trouble-free installation.
  - If you will be responsible for configuring the devices that you install, ask what hostnames (if any) you should assign to them.

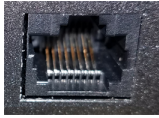
Things to keep in mind when deciding where to install the camera:

- Consider camera viewing angles, lighting conditions, line-of-sight obstructions, and in-wall obstructions where the camera is to be mounted.
- Ensure that the camera will point away from the ceiling and lights. The camera will not perform well if it is pointed toward a light source such as a light fixture or window.

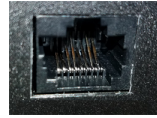
## Cabling Notes

### Caution

When building cables for Vaddio products, do not use pass-through RJ-45 connectors. Incorrectly crimped pass-through connectors can damage the connectors on the product, which will void your warranty.



**Intact** – will make reliable contact with cable connector



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

Use Cat-5e or better cable. We recommend using high-quality connectors and a high-quality crimping tool. If connectors are crimped incorrectly, they can cause intermittent connections and degrade signal quality.



We recommend shielded cabling if the cables will be coiled, run tightly with other cables, or routed near sources of electromagnetic interference such as power lines or fluorescent light fixtures.

### 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

Label all cables at both ends.

## Connecting EasyIP Products

EasyIP cameras and audio products require an EasyIP host device to decode the AV-over-IP signal and originate a USB stream.

EasyIP devices can be powered using mid-span PoE+ power injectors (sold separately), or they can be connected to a PoE+ switch such as the EasyIP Switch, which ensures that the room's EasyIP installation is on its own subnet. The EasyIP Switch is preconfigured for use with Vaddio EasyIP products. The connection diagrams in this section each show an EasyIP Switch powering the installation. Make all connections while the PoE+ switch is turned off.

### Caution

The EasyIP Switch serves DHCP addresses. Do not connect the EasyIP Switch to the network without guidance from an on-site network specialist.

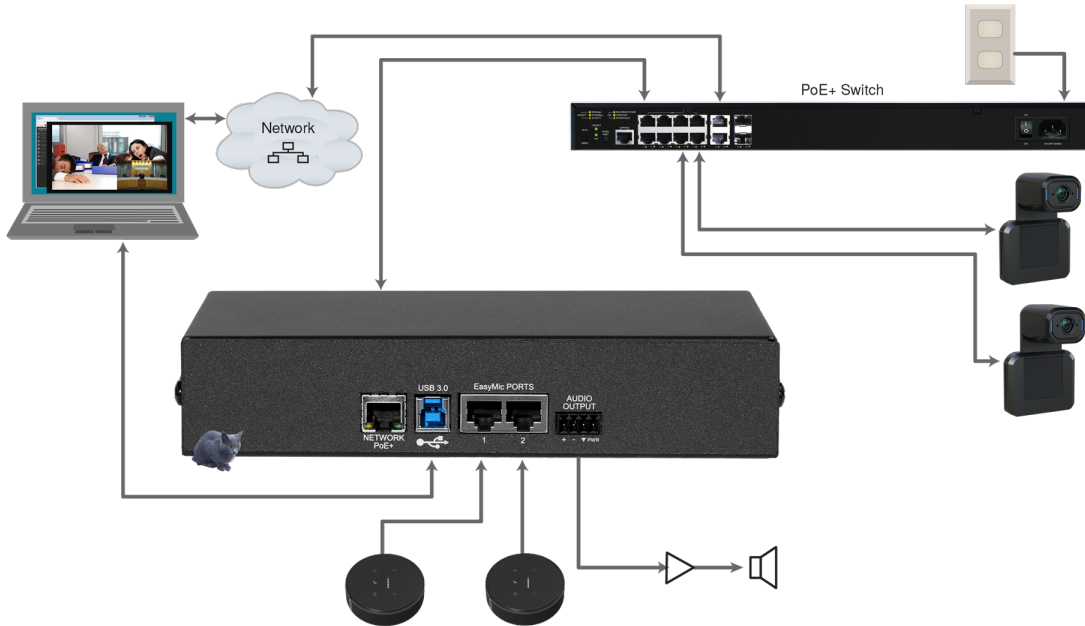


## Basic Connections for Cameras and Audio with EasyIP Decoder

Here is an example of a simple EasyIP deployment.

- Each camera connects to a PoE+ port on the switch. This is the only connection that the cameras require.
- The EasyIP Decoder manages up to four EasyIP cameras and provides hard-wired audio connections for two EasyMic microphones and an analog speaker with amplifier.
- The EasyIP Decoder connects directly to a computer as a USB conferencing device.
- Any model of EasyIP camera may be used.
- The microphones may be Vaddio TableMIC or CeilingMIC microphones.

This diagram shows EasyIP 30 ePTZ cameras and TableMIC microphones.



## Basic Connections for Cameras and Audio with EasyIP Mixer

Here is an example of an EasyIP deployment using an EasyIP Mixer.

- Each camera connects to a PoE+ port on the switch. This is the only connection that the cameras require.
- The EasyIP Mixer manages up to four EasyIP cameras.
- The EasyIP Mixer is paired to two network-connected EasyIP CeilingMIC D microphones. It also provides hard-wired audio connections for two microphones and two amplified analog speakers.
- Any model of EasyIP camera may be used.
- EasyIP CeilingMIC D and EasyIP TableMIC D microphones can pair with the EasyIP Mixer.
- A computer connects to the system as a USB conferencing device, and can be connected to the HDMI input as an HDMI content source.

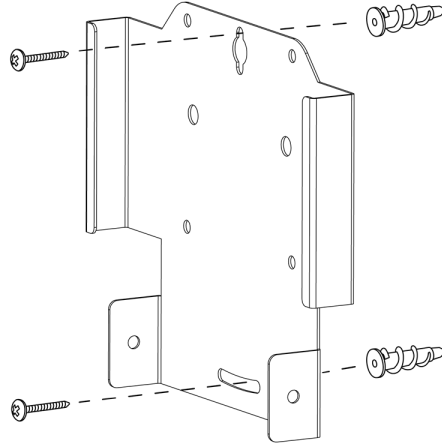
This diagram shows EasyIP 20 and EasyIP 30 ePTZ cameras with EasyIP CeilingMIC D microphones.



## Installing the Wall Mount

The camera is shipped with a wall mount, which can be inverted.

You can install the camera wall mount to a display mount or directly to drywall. If you mount it to drywall, use wall anchors. A drop-down ceiling mount adapter is also available.



## Installing the Camera

### **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.*

1. Slide the camera into the mount. It should be a tight fit.
2. Connect all required cables to the camera.
3. Secure the cable cover to the mount.



## About Inverted Cameras

If you use an inverted mount, set the camera's Image Flip mode ON for inverted operation. This orients the video image correctly and sets the tilt motors to respond appropriately to tilt up and down commands from the remote, web interface, and connected control devices. This control is available to the administrator on the web interface's System page. See [Video and Control Settings](#).

## Powering Up the EasyIP System

Vaddio recommends making all connections while the EasyIP Switch is turned off. To power the system, turn on the EasyIP Switch.

- Systems built around an EasyIP Decoder: The device's status light turns blue when the device is ready.
- Systems built around an EasyIP Mixer: The power light in the Reset button illuminates immediately when power is connected. The device's web interface is available after it finishes booting. This takes about 20 seconds.
- The EasyIP cameras initialize if they are powered from the same PoE+ switch. This takes a few seconds. The cameras are ready to accept control information when they finish initializing.

### **Note**

*If a camera has already been in use and is paired with the host device, its indicator light may change to red when it finishes booting. This happens if the camera is the selected video input and is using the pro A/V color scheme. Pro A/V is the default color scheme for EasyIP 20 and EasyIP 30 ePTZ cameras.*

### **Note**

*No video is available from the EasyIP system until it is configured and at least one camera is paired to the host device.*

## Next Steps

Refer to the Complete Manual for the EasyIP System for information on initial device set-up and pairing cameras to the host device.

## Initial Set-Up and Access to Administrative Controls

EasyIP cameras and host devices have a web interface for initial device set-up, administrative control, and operation. Initially, no password is set and the controls are not available. Initial device set-up includes setting the password for the `admin` account, and may include additional tasks. The `admin` account then has access to password-protected pages for administrative access to tasks such as configuring network and security settings, customizing device behaviors, and installing firmware updates. The administrator can configure access to the operator's pages.

### **Note**

*Because restoring factory defaults returns the product to a "like new" condition, you will need to do the initial device set-up again if you restore factory defaults.*

After initial device set-up is complete, you will need to complete system administration tasks to define how each device behaves as an element of your network.

### **Note**

*Many pages of the web interface are nearly the same across large groups of Vaddio products. Some of the screen shots in this section may be from other EasyIP products.*

## Browser Support

We have tested this product with these web browsers:

- Chrome®
- Firefox®
- Microsoft® Edge and Internet Explorer®
- Safari®

We test using the browser version available from the vendor at that time. Other browsers (including older versions of the ones on this list) are likely to work also.

## Access and Initial Device Set-Up Using the Vaddio Device Controller

The Vaddio Device Controller provides a shortcut to Vaddio products' web interfaces.

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

1. Be sure the touch-panel is installed 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 and select Scan. You will need to enter the Vaddio Device Controller's PIN to access the Configuration page.
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.*

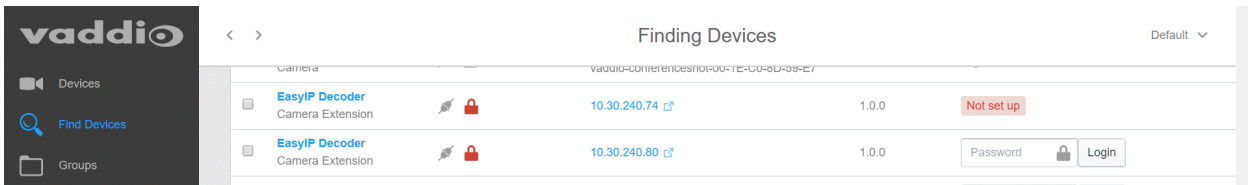
5. Complete the initial set-up.

## Initial Device Set-Up and Access Using the Vaddio Deployment Tool

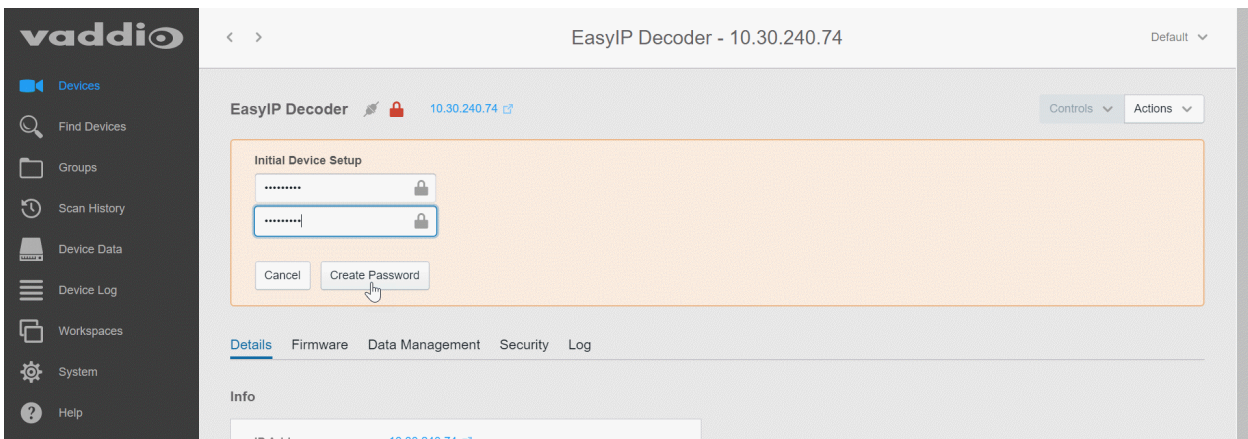
As Vaddio introduces new products, we issue updates to the Vaddio Deployment Tool. Be sure you have the latest version of the tool, to ensure that it supports the products you are working with. This tool is available as a free download at <https://info.legrandav.com/VaddioDeploymentTool>.

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

1. Power up the EasyIP system if you have not done so already.
2. On the Find Devices page of the Vaddio Deployment Tool, click Scan. If the scan does not locate EasyIP devices, click Advanced and specify the appropriate portion of the network to scan – your computer may be on a different subnet from the EasyIP devices.
3. In the list of equipment that the scan discovers, locate the EasyIP devices marked Not Set Up.



4. For each device, click the Not Set Up button. The device detail page opens.
5. Set the admin password. If there are other initial set-up tasks, they are also available here.



The device now shows up as unlocked.

### **Pro tip**

*On the Groups page of the Vaddio Deployment Tool, you can create a group containing only the EasyIP products.*

### To access EasyIP devices' web interfaces from the Vaddio Deployment Tool:

Select the device's IP address from any page where it appears. The Vaddio Deployment Tool logs you in to the web interface as `admin`.

## Manual Access and Initial Device Set-Up

For EasyIP installations, you will need to complete the initial set-up for the host device. Then you can use the device to access the cameras' web interfaces.

### Access the Web Interface of an EasyIP Camera Manually

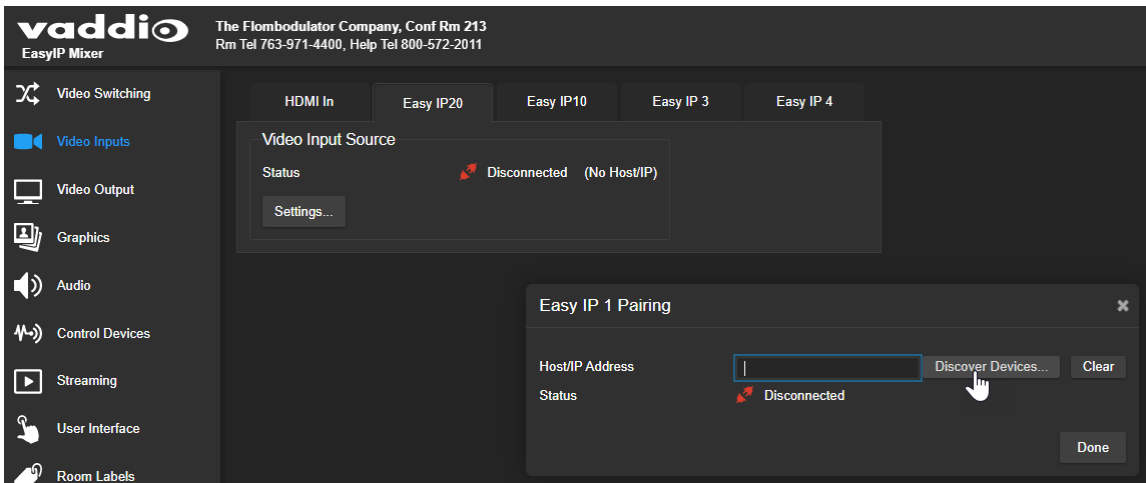
After you have done the initial device set-up for the host device, you will be able to use its web interface to locate and browse to your EasyIP cameras.

#### To access a camera's web interface from an EasyIP Decoder:

1. Go to the Directory page.
2. If the system is already in service and cameras are paired to it, select their IP addresses to go directly to their web interfaces.
3. If the device does not yet have paired cameras, follow the instructions for [setting up the directory](#).

#### To access a camera's web interface from an EasyIP Mixer:

1. Go to the Video Inputs page.
2. If the system is already in service and you need to discover a paired camera's IP address or access its web interface, select the appropriate EasyIP tab to display its information.
3. If the camera is not already paired to the device (for example, if you are in the process of doing initial set-up and system administration for a new installation), select an EasyIP tab.
4. Select Settings to open the pairing dialog.
5. Select Discover Devices.



The web interface returns a list of EasyIP cameras on the EasyIP Mixer's subnet.

6. Select the camera's IP address to go directly to its web interface.

## System Administration

System administration tasks define how each device behaves on your network. Although you may change device passwords regularly, other system administration tasks are usually needed only when installing the equipment.

The tasks in this chapter must be done separately on each device.

### Note

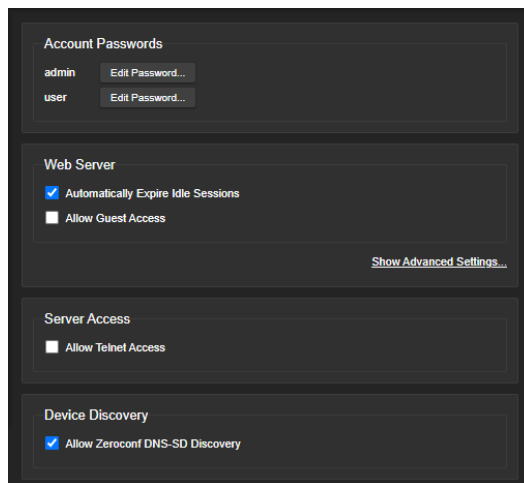
Many pages of the web interface are nearly the same across large groups of Vaddio products. Some of the screen shots in this section may be from other EasyIP products.

## 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 Telnet access to the device.
- **User password** – When set, allows password-protected, non-administrative access to the operator's web interface.
- **Guest access** – When enabled, allows non-administrative access to the operator's web interface without a password.
- **Expire idle sessions** – By default, the web interface automatically logs you out after 30 minutes of inactivity.



Other security settings include:

- **Allow Telnet Access** – disabled by default. When selected, the device accepts Telnet connections.
- **Allow Zeroconf DNS-SD discovery** – allowed by default.
- **Advanced Settings** – **HTTP Access Enabled** (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.

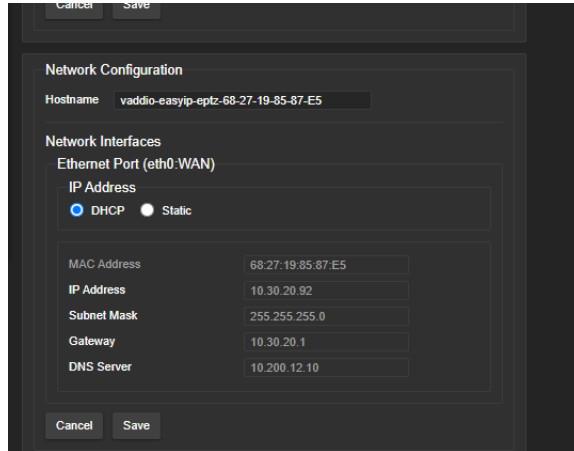


## Changing Device Hostname

### NETWORKING PAGE

*Do not change network settings without guidance from an on-site network specialist.*

If your network supports hostname resolution, you may find it convenient to change each device's hostname to something easy to remember. Work with your IT department to ensure that new hostnames conform to the organization's naming conventions.



If additional network changes are required, work with the site's network specialist to configure the PoE+ switch. Refer to Luxul's manual for the switch.

## Other Network Settings

If you use an EasyIP Switch for power and network connectivity, the host device and cameras do not typically need any additional network configuration. Work with your organization's network specialist if changes are required.

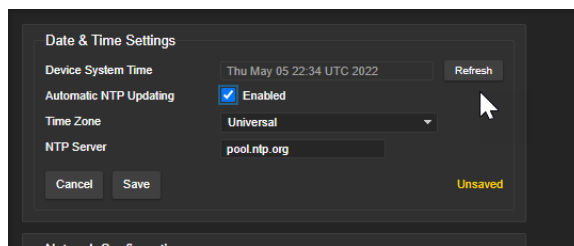
## Specifying Time Zone and NTP Server

### NETWORKING PAGE

Using automatic NTP updating on each device 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. If desired, specify the NTP server to use. If you are not sure about this, use the default.

You may need to refresh the system time display.

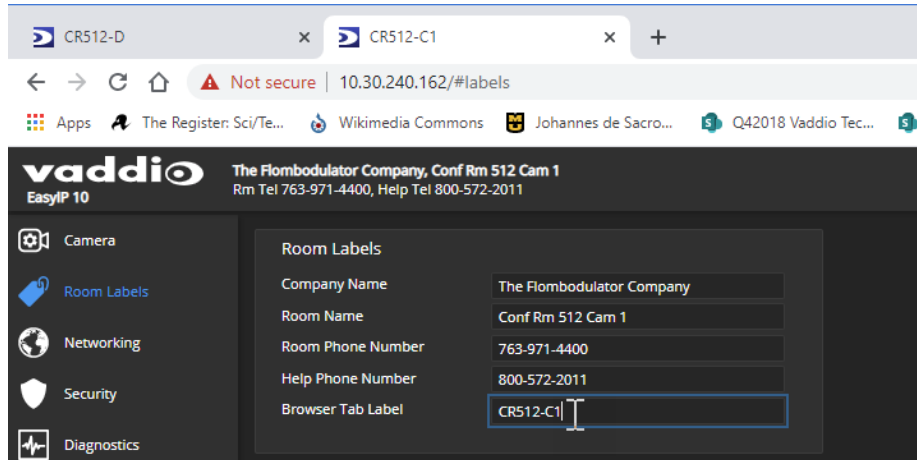


## Adding Room Information to the Device's Web Interface

### ROOM LABELS PAGE

The information you enter on this page is displayed on every page of the device's web interface. You may also wish to specify what appears on the device's browser tab.

This screen shot is from an EasyIP 10 camera. The Room Labels page on EasyIP host devices and other EasyIP cameras looks virtually the same.



## Configuring and Adjusting Cameras

Image-related settings and adjustments are on the Camera page of the camera's administrative web interface. Autoframing settings and adjustments are on the Autoframing page. Video and control settings are available from the System page.

### Note

*Many pages of the web interface are nearly the same across large groups of Vaddio products. Some of the screen shots in this section may be from other Vaddio cameras.*

## Fine-Tuning Autoframing Behavior

The Autoframing feature can be tuned to your specific installation. This includes defining areas where the camera does not evaluate motion (masking), adjusting the area where Autoframing occurs, and adjusting speed, sensitivity, and responsiveness.

### How It Works: Digital Pan/Tilt/Zoom

Optical Zoom and Electronic Zoom are the names of two Autoframing adjustments, in addition to being simple terms for the two ways that a camera can zoom. This section talks about how zooming works.

The lenses in a camera control how much of the room can be in the shot – the image area. Zooming in optically makes the image area smaller by moving the lenses. Zooming in digitally makes the image area smaller by using the pixels from a smaller portion of the image sensor. Either way, the effect is the same: When the image area is smaller, everything in the shot looks bigger.

Digital pan and tilt work when the camera is zoomed in. If some image area is available outside the shot, the camera can pan and tilt by moving the image area to use pixels outside the current shot. As the camera zooms in, the image area is a smaller part of the total field, so more pan and tilt is available. But if the current shot uses all the pixels, there's no room to pan or tilt.

The unmasked portion in each frame of the diagram represents the zoomed image while the camera pans from the Mars globe to Dr. Sagan.



## How It Works: Autoframing

Autoframing uses digital pan, tilt, and zoom to center the source of motion, so the image is almost always zoomed in at least slightly.

Vaddio's Autoframing is based on motion detection. It won't mistake pictures for people, it still works if you turn away from the camera, and you don't have to wear a special device. But with no special device to follow, Autoframing does not necessarily keep the shot on its original subject.

- Autoframing is enabled by default.
- The camera tries to keep the frame centered on the source of motion.
- If the motion is small, the camera zooms in.
- When the camera does not detect any motion, by default it zooms out. This behavior is configurable.
- If the motion is near the edge of the field of view, it can't be centered in the frame.
- If the motion is mostly outside the field of view, the camera can only detect the small part of the motion within its field of view.

In this diagram, the unmasked area represents the framed area. The area of motion is large (which limits the zoom) and the two people on the left are near the edge of the total field of view, so the camera cannot pan far enough to center the people in the frame.



## Basic Autoframing Adjustments

### AUTOFRAMING PAGE

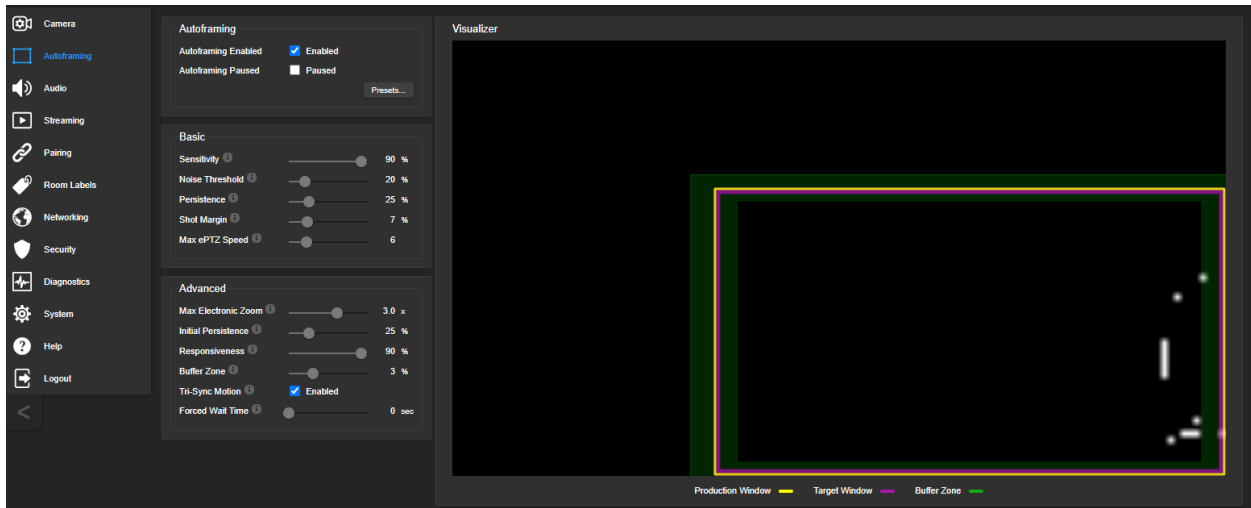
When making adjustments, compare the Visualizer's image to the video output.

**Optical Zoom** – Sets the area in which motion can be tracked. Adjust this first.

**Autoframing Presets** – Factory configurations. "Conservative" settings are less sensitive and track at lower speeds than "responsive" settings. Select the one closest to the room's requirements, then make other adjustments if needed.

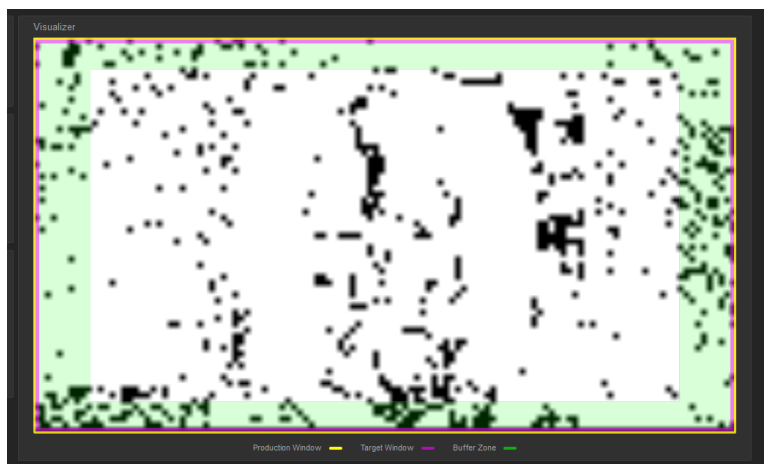
### Note

*In many cases, the camera delivers good Autoframing performance with no adjustments beyond setting the optical zoom and selecting the appropriate Autoframing preset.*



**Sensitivity** – How quickly the camera responds to new motion. High sensitivity may respond to brief, unwanted motion, such as people walking past an open door. Typically 70% to 90% for conferencing, 95% or higher for lecture capture.

**Noise Threshold** – The minimum change recognized as motion. Default value is 20%. If Noise Threshold is high, the Visualizer shows less movement data (white dots). If Noise Threshold is too low, the Visualizer shows pixel changes that are not motion, such as individual pixels' color values being reinterpreted in each frame – which is typical camera behavior. This screen shot is an example.



**Persistence** – How long the camera remembers motion and stays on its source after other trackable motion starts. Typically 25% to 100% for conferencing, below 15% for lecture capture.

**Shot Margin** – Controls how tight or wide the shot will be around the people in the camera's field of view. A high value will result in a wider shot and a low value results in a tighter shot around the person or group of people. Default value is 7% for conferencing and 13% for lecture capture.

**Max ePTZ Speed** – The maximum speed for pan, tilt, and zoom while framing. Low speed may lose fast-moving motion sources. High speed may seem jumpy. Typically 5 to 6 for conferencing, 12 to 18 for lecture capture.

## Advanced Autoframing Adjustments

### AUTOFRAMING PAGE

**Max Electronic Zoom** – Sets the default size of the frame relative to the area defined by Optical Zoom. Default value is 3x for all Autoframing presets.

**Initial Persistence** – How the camera remembers motion when it starts; similar to Persistence. Typically 25% to 100% for conferencing, 0 for lecture capture or presenter framing.

**Responsiveness** – How quickly Autoframing reacts to new motion. Typically 70% to 90% for conferencing, 95% or higher for lecture capture.

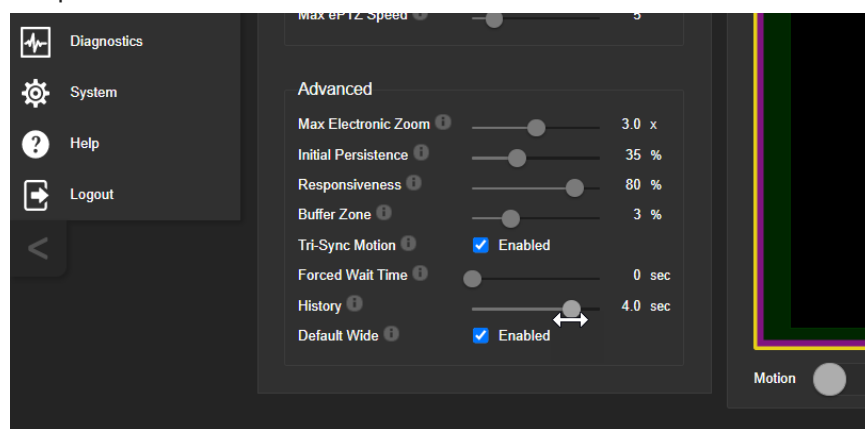
**Buffer Zone** – The area around the edge of the frame where new motion causes the image to re-center. Typically 3% for conferencing, 7% for lecture capture. Adjust this value higher to make the camera move less.

**Tri-Sync Motion** – Smooth pan/tilt/zoom. When Tri-Sync Motion is disabled, the camera snaps to position presets. Enabled by default.

**Forced Wait Time** – Minimum number of seconds between camera movements. Default is 0. Increasing Persistence often provides better performance than setting a Forced Wait Time.

**History** – History data is used for motion detection. High settings are best for conferencing and other low-motion situations, because they allow the camera to detect small motions such as changes in expression; but they increase latency. Low History settings provide more reactive framing, with the possible drawback that the camera moves away from a motion source that pauses, and may not respond to small motions. Low History settings are best for lecture capture and other high-motion uses.

**Default Wide** – In Default Wide mode, the camera widens the shot (zooms out) when it detects no motion. This is best for conferencing or other situations with low motion. When Default Wide is not enabled, the camera remains where it last detected motion. We recommend disabling Default Wide mode for lecture capture.



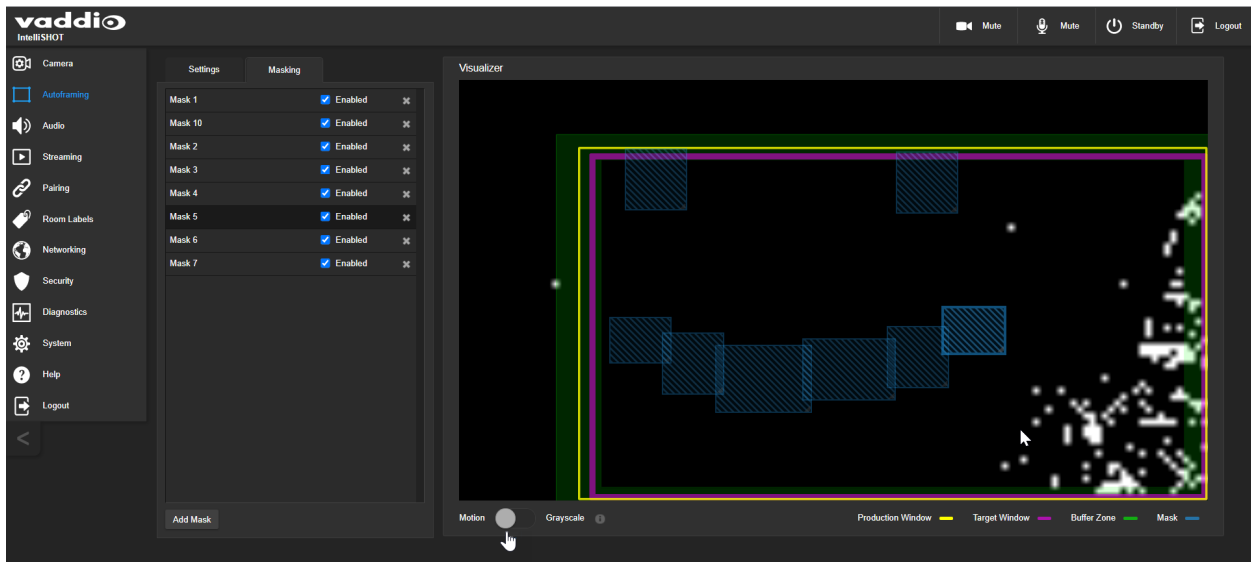
## Masking Unwanted Motion

### AUTOFRAMING PAGE, MASKING TAB

Masks are areas where the camera ignores motion. For example, if a door is within the camera's field of view, a mask can prevent the camera from responding to the movement of the door or people in the doorway. You can create multiple masks to fine-tune the camera's performance.

#### Things to know about masks:

- When you select the Masking tab, the Autoframing Visualizer mode automatically switches to a view of the room, so you can see what part of the room each mask affects.
- After you select Add Mask, drag the new mask to the desired location. Adjust its dimensions by dragging its corners or edges.
- Right-click the mask name to rename it.
- Clear a mask's Enabled check box to disable the mask without deleting it.
- Set the Visualizer mode to Motion to test the mask.



## Autoframing Adjustment Quick Reference

Set Optical Zoom and select the Autoframing preset that is most similar to the room's requirements. Then adjust Autoframing to meet the unique demands of your space. These tables may help.

### Not Responding Enough

To correct this	Do this	For this effect
Autoframing isn't working	Resume Autoframing; avoid using manual controls	Manual controls override Autoframing
Autoframing takes too long to start	Increase Responsiveness and Sensitivity	"Notice" motion sooner
	Decrease Initial Persistence	Respond to motion sooner
The camera only frames participants who move frequently	Increase Sensitivity	Recognize smaller movements, such as participants who don't gesture or fidget
	Decrease Noise Threshold	Recognize brief motion
The presenter moves faster than the camera	Increase Max ePTZ Speed and Shot Margin	Pan, tilt, and zoom faster
The presenter keeps moving out of the frame	Increase Responsiveness	"Notice" motion sooner
	Decrease Initial Persistence	Respond to motion sooner
	Decrease Optical Zoom	Enlarge the area where Autoframing can occur

### Responding Too Much

To correct this	Do this	For this effect
The camera keeps moving away from the person who is speaking	Increase Persistence	Stay on the last source of motion longer
	Increase Noise Threshold	Require movements to be bigger before they are evaluated
Movement seems jumpy	Decrease Max ePTZ Speed	Slower camera movements
	Increase Buffer Zone	Fewer camera movements
The camera keeps zooming in too far	Reduce Max Electronic Zoom	Limits how far the camera can zoom in while framing
The camera recenters even when the presenter is still within the frame	Increase the Buffer Zone	Enlarges the area where new movement does not cause the camera to recenter



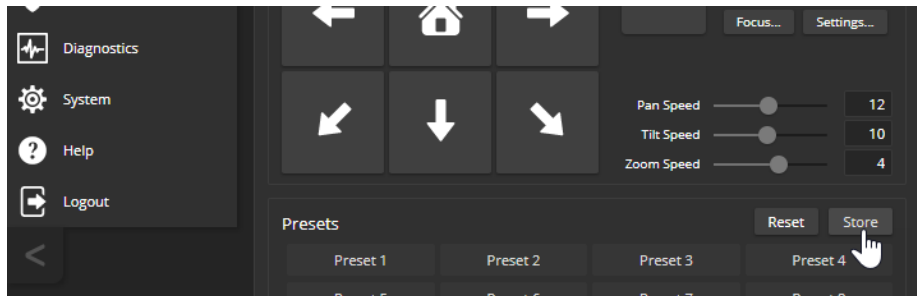
## Setting the Home Position and Other Preset Shots

### CAMERA PAGE

Presets are saved shots that you expect to use repeatedly. They work the same way they do on conventional PTZ cameras – you store and recall presets either with the remote or using the web interface. A preset may include color and lighting adjustments, and specifies whether the camera cuts to the shot or emulates camera motion to arrive at the preset.

When you reboot the camera or bring it out of standby, it returns to the Home preset. Home and presets 1 through 6 are available with the remote; the others are only available from the web interface.

1. Set up the shot.
2. In the Presets area, select Store to open the Store Preset dialog.



3. Select the preset to store. The preset button changes color.

#### Note

*The Store Preset dialog box does not indicate whether presets have already been defined, but the main display dims the preset buttons if they have no preset information stored.*

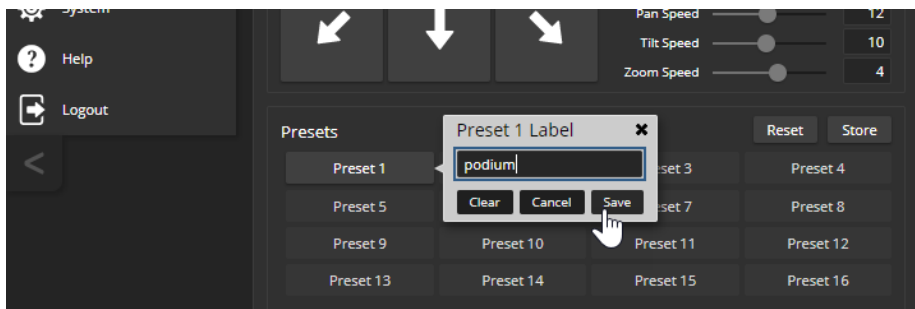
4. To save the current color settings along with the camera position, check Store with Current Color Settings.
5. Store the preset.

## Renaming Presets

### CAMERA PAGE

You can rename presets to identify them. This also helps you avoid overwriting them when you store new ones.

Right-click the button for the preset, and edit the label.



## Initial Lighting and Color Settings

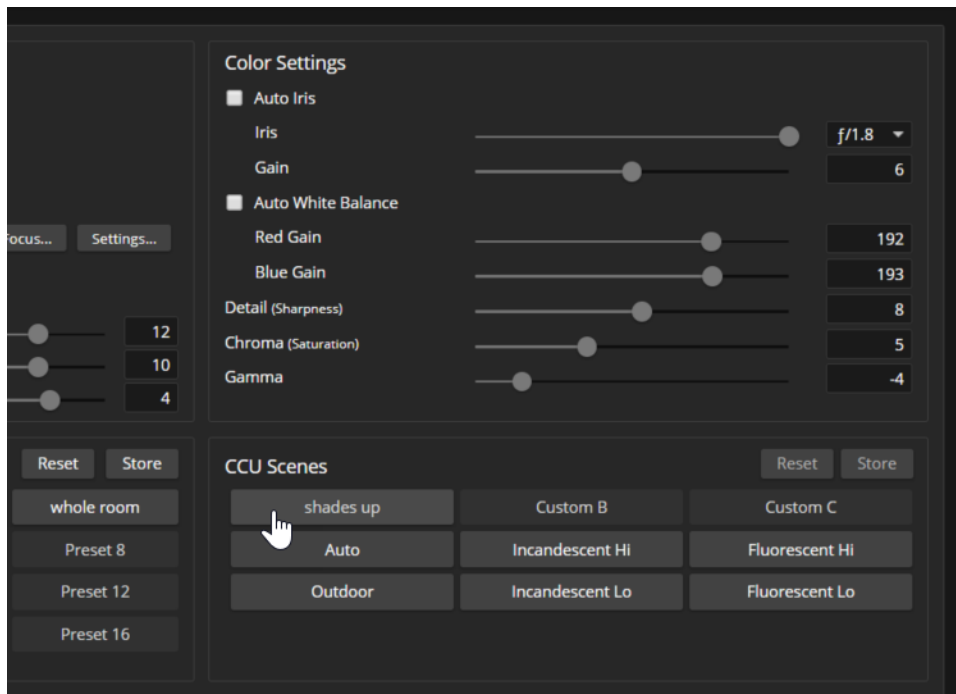
### CAMERA PAGE

No two rooms are exactly alike – but a lot of rooms are a lot alike. The technical folks at Vaddio (Scott, to be specific) have already set up adjustments for common lighting scenarios (CCU scenes) – Incandescent Hi, Incandescent Lo, Fluorescent Hi, Fluorescent Lo, and Outdoor. The Auto setting allows the camera to determine the appropriate adjustments.

Adjust the camera for the lighting in use by selecting the CCU scene that best fits your environment. Some adjustments to lighting and color may be necessary.

**Note**

*Color adjustments are not available when the Auto scene is selected.*



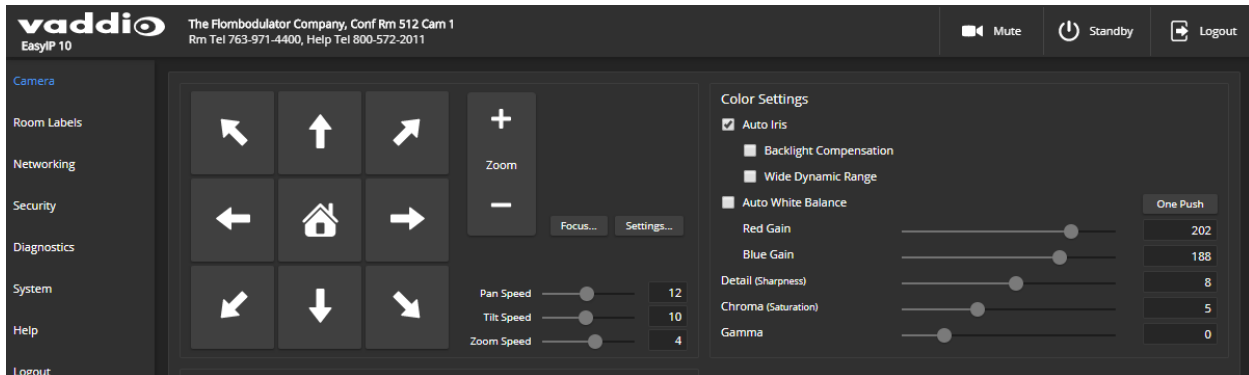
## Color and Image Quality Adjustments

### CAMERA PAGE

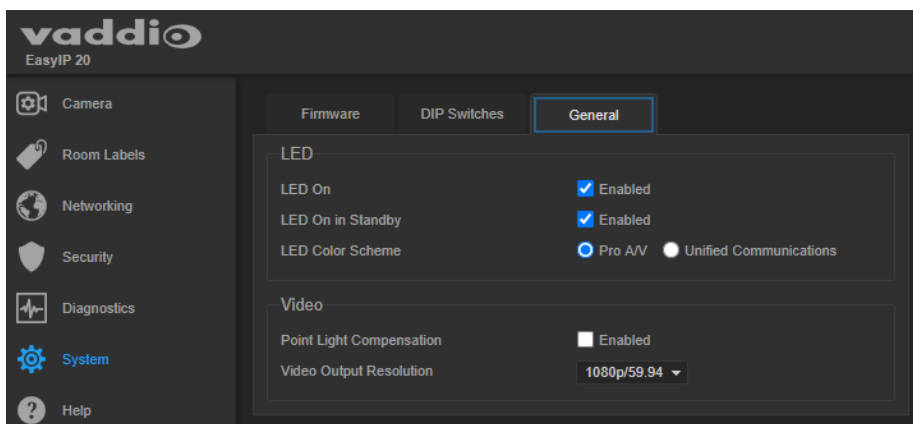
EasyIP cameras provide several color and lighting adjustments. Fine-tune the color and lighting as needed using the Color Settings controls.

- **Auto Iris** allows the camera to compensate automatically for the light level. Clear this box to adjust iris and gain manually.
- **Backlight Compensation** (available when Auto Iris is selected) reduces contrast to adjust for bright light behind the main subject of the shot. This setting can't be used with Wide Dynamic Range.
- **Wide Dynamic Range** (available when Auto Iris is selected) increases the contrast between the brightest and darkest areas. This setting can't be used with Backlight Compensation.
- **Auto White Balance** adjusts color automatically. Clear this box to adjust red gain and blue gain manually.
- **Red Gain** and **Blue Gain** (available when Auto White Balance is not selected) provide manual color adjustment.
- **Detail** adjusts the image sharpness. If the video looks grainy or “noisy,” try a lower Detail setting.
- **Chroma** adjusts the color intensity.
- **Gamma** adjusts the range (gray density) between bright areas and shadows.

The [Lighting and Image Quality Quick Reference](#) and [Color Adjustment Quick Reference](#) may be helpful. If you make a change that you don't like, start over by selecting and then deselecting Auto Iris (lighting) or Auto White Balance (color).



This camera also offers **Point Light Compensation**, which reduces the intensity of small, extremely bright areas (point light sources) that would otherwise swamp the camera with light and make it difficult to see details in areas with less intense lighting. This is on the General tab of the System page.

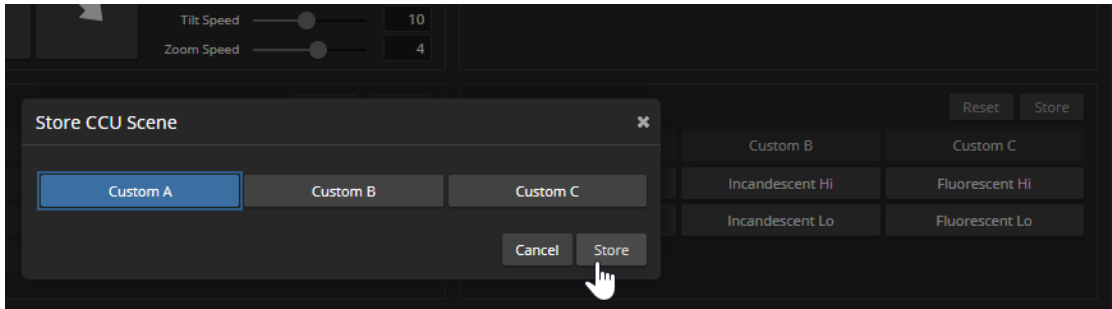


## Saving Color and Lighting Settings

### CAMERA PAGE

If you are adjusting the camera for lighting conditions that are likely to recur, you can save your adjustments as a custom CCU scene.

1. Adjust lighting, image quality, and color.
2. When the scene looks the way you want it to, click Store CCU Scene.
3. In the Store CCU Scene dialog box, select which custom scene to store (Custom A, B, or C) and select Save.



4. Optional: Name the new scene by right-clicking its button. A dialog box opens. Enter the name and save it.






## Lighting and Image Quality Quick Reference

Here are some tips for using the lighting and image quality settings.

What do you need to correct?	Make this adjustment:
The image is too dark	Increase Iris (lower F-stop value)
	Increase Iris Gain
The image looks washed out or faded	Decrease Iris (higher F-stop value)
	Decrease Iris Gain
	Increase Chroma
	Decrease Gamma
The subject is silhouetted against a bright background	Enable Backlight Compensation
Small sources of bright light (point sources) make it hard to see details in areas with less intense lighting.	Enable Point Light Compensation
Highlights and shadows look right, but mid-tones are too dark.	Increase Gamma
Shadows are too dark	Enable Wide Dynamic Range (WDR)
	Decrease Gamma
The image looks grainy	Decrease Detail
	Decrease Iris Gain
"Soft focus" effect; the image looks unrealistically smooth	Increase Detail

## Color Adjustment Quick Reference

Here are some tips for using the color-related CCU settings.

What do you need to correct?	Make this adjustment:
Colors look less vivid than they should	Increase Chroma
Colors look too vivid	Decrease Chroma
Colors look wrong; white objects do not appear white	Enable Auto White Balance
	One Push White Balance
	Disable Auto White Balance and... <ul style="list-style-type: none"> <li>▪ adjust Red Gain (decrease for less red, increase for less green)</li> <li>▪ adjust Blue Gain (decrease for less blue, increase for less yellow)</li> </ul>
<div style="display: flex; justify-content: space-around; text-align: center;"> <div> <p>Too much red</p>  </div> <div> <p>Not enough red</p>  </div> <div> <p>Too much blue</p>  </div> <div> <p>Not enough blue</p>  </div> <div> <p>Balanced</p>  </div> </div>	

If you are adjusting for lighting conditions that are likely to recur, you can store presets with color settings.

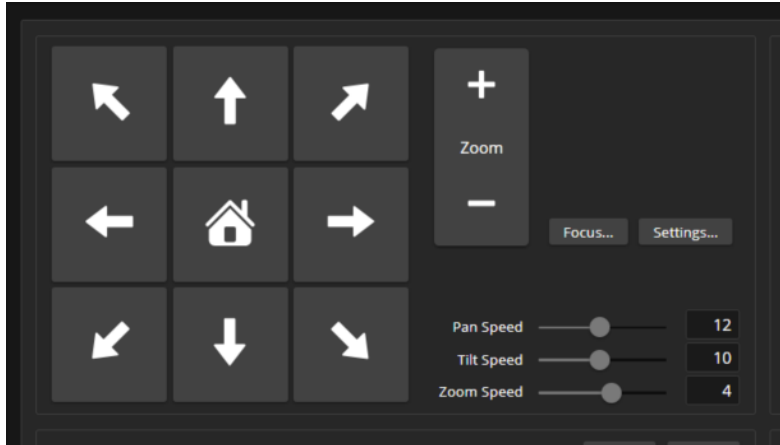
## Setting the Speeds for Manual Camera Movements

### CAMERA PAGE

The Pan Speed, Tilt Speed, and Zoom Speed sliders control how fast the camera moves in response to the direction and zoom controls on the IR remote and in the web interface.

#### To set speeds for movements using the arrow buttons:

Use the speed sliders to adjust the speed of movements that you control with the buttons for pan, tilt, and zoom. For tight shots, slower is usually better.

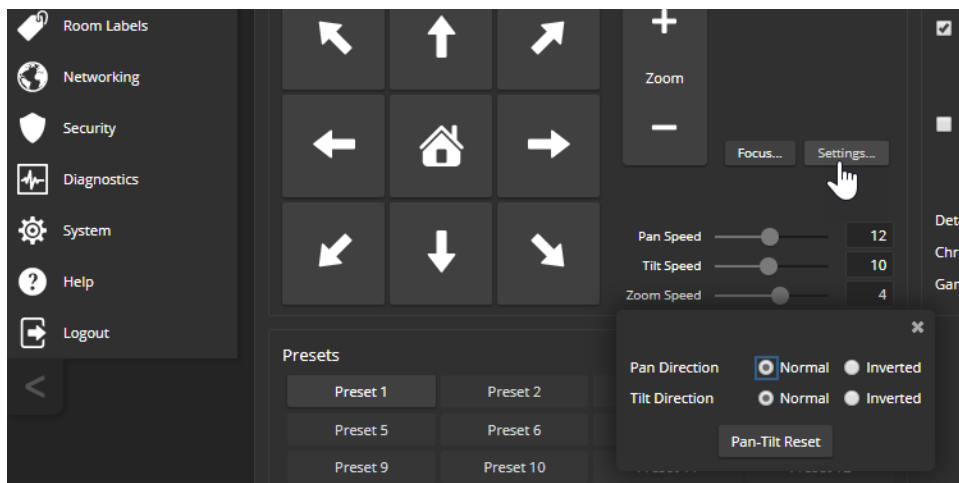


## Setting the Direction for Camera Movements

### CAMERA PAGE

By default, the arrow buttons on the remote and in the web interface show the direction you would see the camera move if you were looking the same direction as the camera. If a person facing the camera is controlling it with the remote, using the right arrow pans the camera to the person's left.

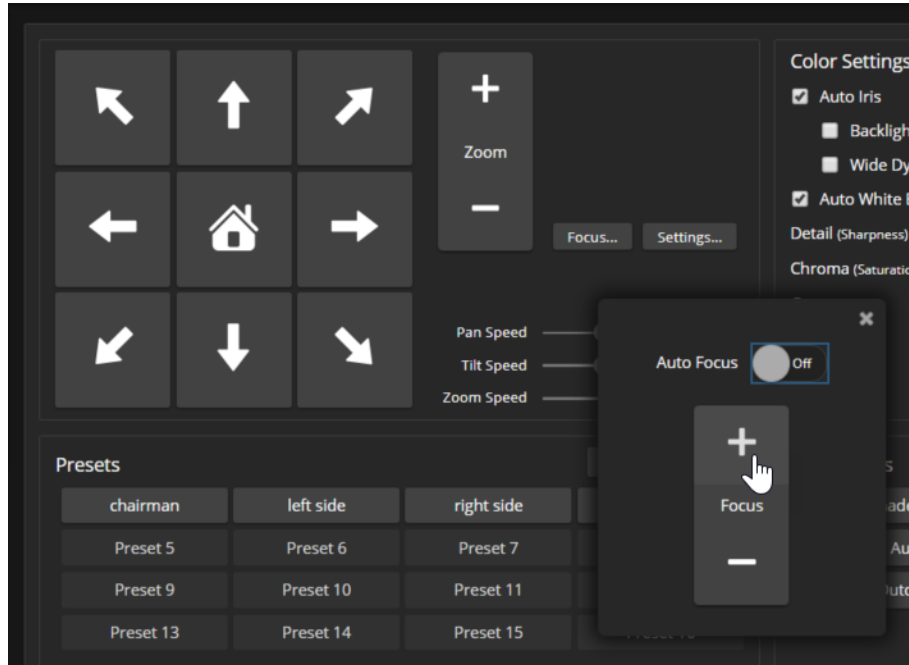
To make the arrow buttons indicate camera movement from the perspective of a person facing the camera, open the Settings control and invert the pan direction.



## Adjusting the Focus

### CAMERA PAGE

Open the Focus control to select Auto-focus, or set manual focus with the + (near) and – (far) buttons. The + and – buttons only work when Auto Focus is not selected.



For users who are not logged in as admin, focus control is available via the RF Remote.

## About Pairing Cameras and Configuring Streaming

The camera becomes part of an EasyIP system when it is paired to a host device – EasyIP Decoder or EasyIP Mixer. The host device originates the stream, using the video from the camera and audio from connected microphones.

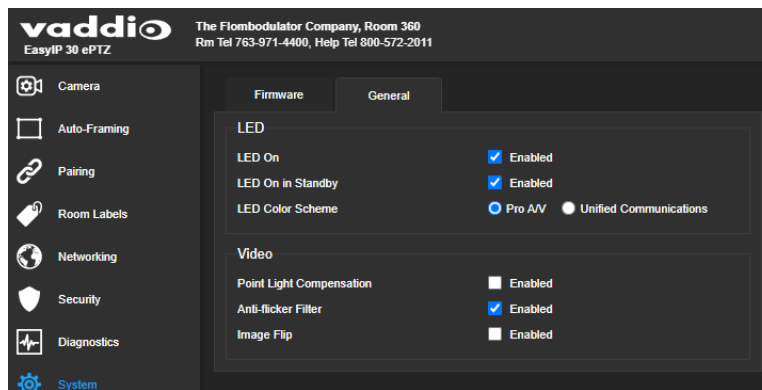
Refer to the manual for your host device for information on pairing and unpairing cameras and on streaming settings.

## Video and Control Settings

SYSTEM PAGE, GENERAL TAB

Video and control settings for the EasyIP 30 ePTZ camera are:

- **Point Light Compensation** – Reduces the intensity of small, extremely bright areas (point light sources) that would otherwise swamp the camera with light and make it difficult to see details in areas with less intense lighting.
- **Anti-Flicker Filter** – If the host device uses 50 Hz mains power and the image flickers, enable this setting.
- **Image Flip** – Corrects the video orientation from inverted cameras.

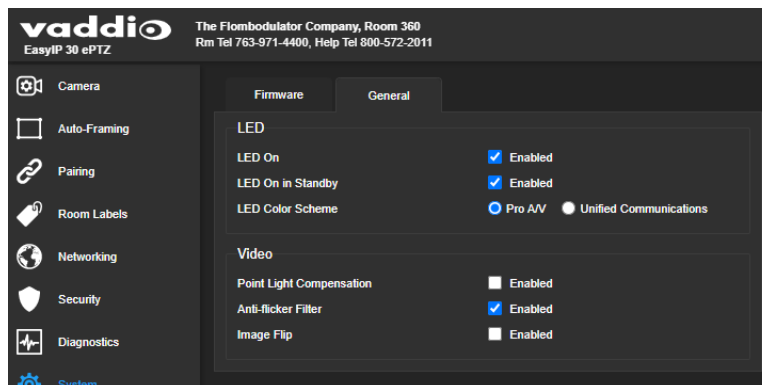


## Indicator Light Behavior

SYSTEM PAGE, GENERAL TAB

Indicator light behaviors include:

- **LED On** – By default the indicator is on when the camera has power.
- **LED On In Standby** – By default the indicator remains on while the camera is in standby (low-power mode).
- **LED Color Scheme** – By default the camera uses the Pro AV color scheme, so its indicator light is red when it is the selected video input.





## System Maintenance

This chapter covers maintenance tasks for EasyIP cameras and host devices. Most of these are done from the affected device.

### Note

Many pages of the web interface are nearly the same across large groups of Vaddio products. Some of the screen shots in this section may be from other EasyIP products.

## Saving (Exporting) or Restoring (Importing) a Configuration

SYSTEM PAGE, FIRMWARE TAB

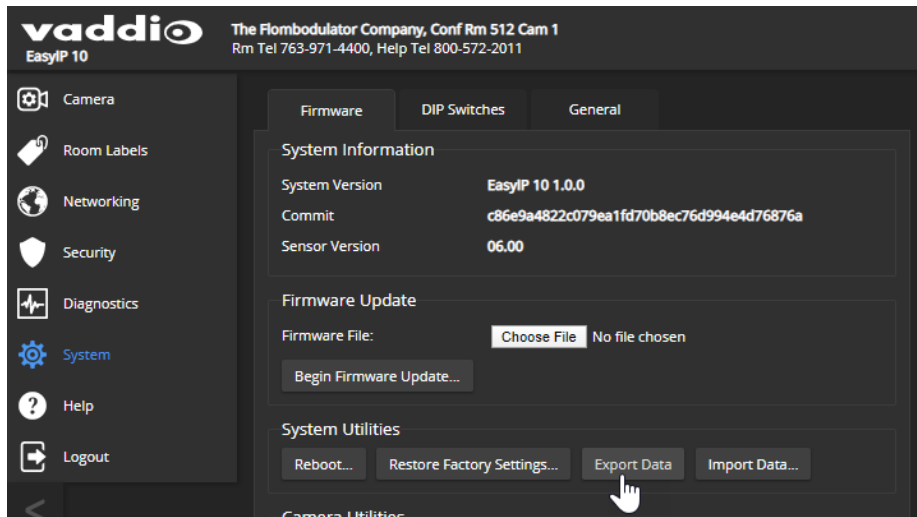
You can save and restore configuration data for any Vaddio device with a web interface. This lets you import a configuration to several devices of the same model, or save a configuration to restore after returning the device to its factory default settings.

To import a configuration from another device, the devices must be of the same model and must have compatible firmware versions installed.

Exported configuration data for cameras includes presets including Home, color settings, speed settings, room labels, and date/time settings.

### To save and restore a configuration:

1. Configure the device.
2. Export the configuration (Export Data button). The export downloads to your computer as a .dat file. The filename is the device's hostname.



3. When you are ready to restore the configuration, select Import Data. The web interface prompts you to browse to the .dat file that will be imported.

To copy the configuration to a different device, do this step from the web interface of the device you need to configure.

## Installing a Firmware Update

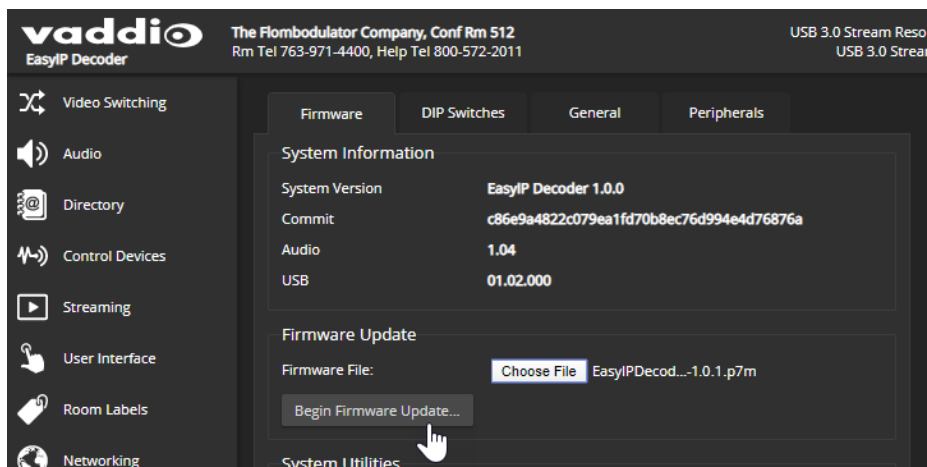
SYSTEM PAGE, FIRMWARE TAB

We release firmware updates from time to time. Some of them will be of interest to your organization; others might not be. The release notes provided with each update can help you to decide whether to install the update. The latest firmware and release notes are available on the product's web page at [www.legrandav.com](http://www.legrandav.com).

### Caution

*The device must remain connected to power and to the network during the update. Interrupting the update could make the device unusable.*

1. Read the release notes and download the firmware.
2. Select Choose File, then browse to the downloaded firmware and select it. The filename ends with .p7m.
3. Select Begin Firmware Update.



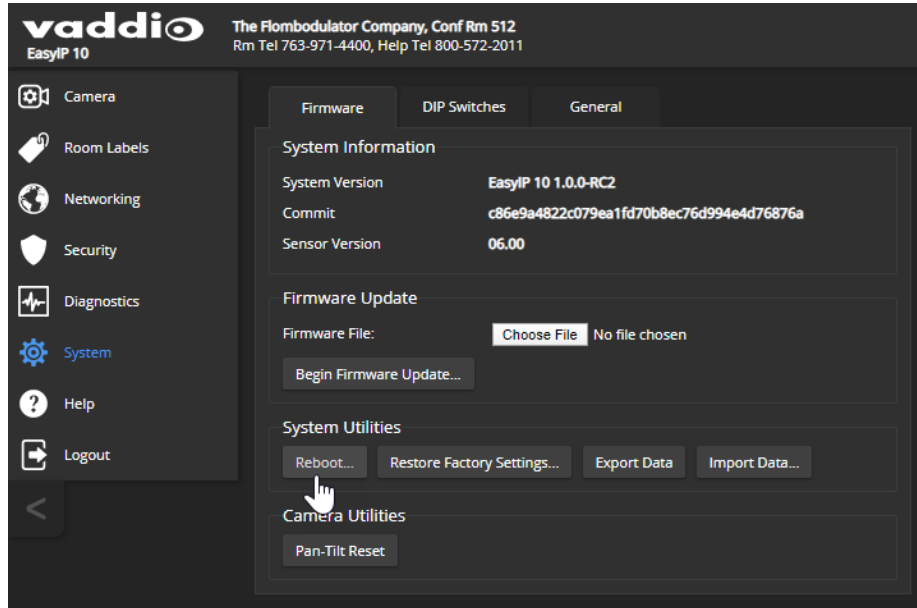
4. Read and understand the information in the Confirm dialog box.
5. Select Continue. A progress message box opens. If you are updating a camera, the indicator light on the front of the camera turns yellow. If the update process presents warnings or error messages, read them carefully.

The device reboots when the update is complete, and the web interface prompts you to log in again. Contact Vaddio Technical Support if you encounter any problems with the update.

## Rebooting the Device

### SYSTEM PAGE

This can help if a camera or other device stops responding as you expect. In the device's System Utilities section, select Reboot.



## Operating the Camera

The RF Remote provides basic camera and conference functionality – pan, tilt, zoom, presets, volume control, and muting, as applicable. You can also use the remote to get the camera's IP address. This remote is a radio-frequency device, and is not compatible with products that use IR (infrared) remotes. Although the camera can be operated from its web interface, this provides very limited control. If it is not practical to use the RF Remote to control the camera, you can use the host device's web interface to control all the cameras in an EasyIP system.

Before you can use the RF Remote, you will need to:

- Install the batteries
- Pair the remote with the camera

EasyIP 30 ePTZ cameras are not compatible with IR remotes.

### Installing the Batteries

The RF Remote uses two AAA batteries.

1. Remove the cover from the back of the remote. You may need to press down on the inner edge while sliding it off.
2. Install the batteries as shown in the diagram in the battery compartment.
3. Slide and snap the cover back into place.

### Pairing the Remote to the Camera

The camera does not recognize or respond to the remote until they are paired. Do this after the camera is turned on and its status light is white.

#### To pair the remote using the camera's IP button:

1. Press and hold the camera's IP button until the status light blinks cyan.
2. While the camera's status light blinks cyan, press the pairing button on the remote. The camera's status light changes to steady white when the remote is paired. You may need to press the remote's pairing button more than once.
3. If the status light changes color and keeps blinking, the pairing was not successful. Reboot the camera and go back to step 1. If the problem persists, contact Vaddio Technical Support.

#### To pair the remote using the camera's administrative web interface:

1. On the Pairing page of the web interface, select Pair Remote.
2. When the camera's status light blinks cyan, press and hold the pairing button on the remote until the status light changes to steady white.

### Other Things to Know About the Remote

Here are some common situations in which the RF Remote can behave in ways you don't expect.

- **Environments with cameras in adjacent rooms** – If the remote is currently paired to a camera and within range of that camera, it will not pair with another camera.
- **The remote goes to standby mode after a brief period of inactivity.** Press a button to wake it up.
- **The remote is no longer paired after restoring the camera's factory defaults.** If you restore factory defaults on the camera, pair it with the remote again.

## RF Remote cheat sheet

The RF Remote may have controls for capabilities that your camera does not have. Some buttons behave in different ways depending on the model of camera.

	<b>Indicator and Power button</b> – Set the camera to standby mode, or return to full-power mode.	
	<b>Function buttons</b> – Reserved for future use.	
	<b>Arrow buttons</b> – Pan and tilt. For cameras with Autoframing capability, Autoframing pauses if you use these buttons.	
	<b>Home button</b> – Function depends on the model of camera. For cameras with Autoframing capability, Autoframing resumes when you press this button.	
	<b>Network button</b> – Display the camera's IP address on the video output.	
	<b>Pairing button</b> – Use when pairing the remote with the camera.	
	<b>Mute button</b> – Mute the microphone(s).	
	Reserved for future use.	
	<b>Volume +/- button</b> – Increase or decrease the volume from the connected speaker.	
	<b>Focus +/- buttons</b> – Adjust the focal distance in or out, when Manual focus mode is selected.	
	<b>Zoom +/- button</b> – Increase or decrease the zoom.	
	<b>Auto and Man buttons</b> – Select automatic or manual focus.	
	<b>Preset buttons</b> – Set, clear, or select preset shots. For cameras with Autoframing capability, Autoframing pauses if you use these buttons.	

## Unpairing the Remote

### PAIRING PAGE

If you need to unpair the remote from the camera that currently recognizes it, you will need to log in to the camera's web interface as **admin**. On the Pairing page, select Forget Remote.



## Camera Commands

The following commands can be sent to the camera; some can also be sent to the host device, which forwards them to the specified camera:

- camera home
- camera pan
- camera tilt
- camera zoom
- camera ptz-position
- camera focus
- camera preset
- camera ccu
- camera led
- video mute
- camera standby

### camera home

Moves the camera to its home position.

*When sending the command to a host device, you must specify the camera input.*

Synopsis (host)	camera <input> home	
Synopsis (camera)	camera home	
Options	<input>	Specifies the camera to control. EasyIP Decoder: 1 to 4. EasyIP Mixer: 2 to 5.
Example (sent to the host device)	<pre>camera 2 home OK &gt;</pre> <p>Moves the camera to its home position. For EasyIP Decoder, this is camera 2. For EasyIP Mixer it is camera 1.</p>	
Example (sent to the camera)	<pre>camera home OK &gt;</pre> <p>Moves the camera to its home position.</p>	

## camera pan

Moves the camera horizontally.

*When sending the command to a host device, you must specify the camera input.*

Synopsis (host)	camera <input> pan { left [<speed>]   right [<speed>]   set <position> [<speed>]   stop   get }	
Synopsis (camera)	camera pan { left [<speed>]   right [<speed>]   set <position> [<speed>]   stop   get }	
Options	<input>	Specifies the camera to control. EasyIP Decoder: 1 to 4. EasyIP Mixer: 2 to 5.
	left	Moves the camera left.
	right	Moves the camera right.
	speed <1 - 24>	Optional: Specifies the pan speed (integer 1 to 24). Default speed is 12.
	stop	Stops the camera's horizontal movement.
	get	Returns the camera's absolute pan position in degrees, as a floating point value.
	set <position>	Sets the camera's absolute pan position in degrees, as a floating point value. Minimum ranges – EasyIP 10: -155.00 to 155.00; EasyIP 20: -150 to 150.  Individual cameras may have slightly more travel before they reach their physical limits.  The camera pan set command blocks execution of subsequent commands until the camera reaches the specified position.
Example (sent to the host device)	<pre>&gt;camera 2 pan right 20 OK &gt;</pre> <p>Pans the specified camera right using a speed of 20.</p>	
Examples (sent to the camera)	<pre>&gt;camera pan left OK &gt;</pre> <p>Pans the camera left at the default speed.</p> <pre>&gt;camera pan set -15 OK &gt;</pre> <p>Pans the camera to 15° left of its centerline at the default speed.</p>	



## camera tilt

Moves the camera vertically.

*When sending the command to a host device, you must specify the camera input.*

Synopsis (host)	camera <input> tilt { up [<speed>]   down [<speed>]   stop   get   set <position> [<speed>] }	
Synopsis (camera)	camera tilt { up [<speed>]   down [<speed>]   stop   get   set <position> [<speed>] }	
Options	<input>	Specifies the camera to control. EasyIP Decoder: 1 to 4. EasyIP Mixer: 2 to 5.
	up	Moves the camera up.
	down	Moves the camera down.
	<speed >	Optional: Integer 1 to 20; Specifies the tilt speed. Default speed is 10.
	stop	Stops the camera's vertical movement.
	get	Returns the camera's absolute tilt position in degrees, as a floating point value. Note that the range is reversed if Image Flip is selected; negative is always down.
	set <position>	Sets the camera's absolute tilt position in degrees, as a floating point value. Minimum ranges EasyIP 10: -30.00 to 93.00; EasyIP 20: -30.00 to 90.00.  The <code>camera tilt set</code> command blocks execution of subsequent commands until the camera reaches the specified position.
Example (sent to the host device)	<pre>&gt;camera 1 tilt down 20 OK &gt;</pre> <p>Tilts the specified camera down at a speed of 20.</p> <pre>&gt;camera tilt set -5 OK &gt;</pre> <p>Tilts the camera 5° down from level at the default speed.</p>	
Examples (sent to the camera)	<pre>&gt;camera tilt up OK &gt;</pre> <p>Tilts the camera up at the default speed.</p>	

## camera zoom

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

*When sending the command to a host device, you must specify the camera input.*

Synopsis (host)	camera <input> zoom { in [<speed>]   out [<speed>]   stop   get   set <position> }	
Synopsis (camera)	camera zoom { in [<speed>]   out [<speed>]   stop   get   set <position> }	
Options	<input>	Specifies the camera to control. EasyIP Decoder: 1 to 4. EasyIP Mixer: 2 to 5.
	in	Zooms the camera in.
	out	Zooms the camera out.
	<speed>	Optional: Integer 1 to 7; specifies the zoom speed.
	stop	Stops the camera's zoom movement.
	get	Returns the camera's zoom setting as a floating point value.
	set	Sets the camera's zoom level as a floating point value.
	<position>	Floating point value; specifies the zoom level. Range is 1.00 to 10.00 for EasyIP 10, 1.00 to 20.00 for EasyIP 20.
Example (sent to the host device)	<pre>&gt;camera 2 zoom set 7 OK &gt;</pre> <p>Zooms the specified camera to zoom level 7.</p>	
Examples (sent to the camera)	<pre>&gt;camera zoom in OK &gt;</pre> <p>Zooms the camera in at the default speed.</p> <pre>&gt;camera zoom stop OK &gt;</pre> <p>Stops the zoom motion.</p>	

## camera ptz-position

### CAMERA ONLY

Specifies a shot by zoom and pan/tilt coordinates. The amount of pan and tilt available depend on the zoom level. (See [How It Works: Digital Pan/Tilt/Zoom](#).) Pan, tilt, and zoom may be specified in any order.


Autoframing pauses when the camera receives this command.

Synopsis	camera ptz-position pan <position> tilt <position> zoom <position> [<speed>] [no_wait]	
Options	pan <position>	The pixel column to center the shot on. Range may vary by model.
	tilt <position>	The pixel row to center the shot on. Range may vary by model.
	zoom <position>	<position> is a floating-point value; range varies by model.
	<speed>	Optional; speed of movements (integer) if the camera should not snap to the specified position.
	no_wait	Optional; when speed is specified, allows the command to return the command prompt immediately, while the command is in progress.
Examples	<pre>&gt;camera ptz-position pan -150 tilt 200 zoom 3 OK &gt;</pre> <p>Centers the shot at pixel column -150, row 200, at a zoom level of 3. The camera snaps to the shot, because no speed is specified. At this zoom level, the shot can be centered exactly as requested.</p> <pre>&gt;camera ptz-position pan -1470 tilt 200 zoom 2 speed 5 no_wait OK &gt;</pre> <p>Attempts to center the shot at pixel column -1470, row 200, at a zoom level of 2. The camera moves at speed 5 and returns the command prompt before the motion is finished. The shot cannot be centered exactly as requested, because it is relatively wide and the requested center is close to the leftmost column of pixels.</p>	

## camera focus

Changes the camera focus.

*When sending the command to a host device, you must specify the camera input.*

Synopsis (host)	camera <i>&lt;input&gt;</i> focus { near [ <i>&lt;speed&gt;</i> ]   far [ <i>&lt;speed&gt;</i> ]   stop   mode {get   auto   manual} }	
Synopsis (camera)	camera focus { near [ <i>&lt;speed&gt;</i> ]   far [ <i>&lt;speed&gt;</i> ]   stop   mode {get   auto   manual} }	
Options 	<i>&lt;input&gt;</i>	Specifies the camera to control. EasyIP Decoder: 1 to 4. EasyIP Mixer: 2 to 5.
	near	Brings the focus nearer to the camera. Can only be used when camera is in manual mode.
	far	Moves the focus farther from the camera. Can only be used when camera is in manual mode.
	<i>&lt;speed&gt;</i>	Optional: integer (1 to 8) specifies the focus speed.
	mode [get   auto   manual]	Returns the current focus mode, or specifies automatic or manual focus.
	stop	Stops the camera's focus movement.
Example (sent to the host device)	<pre>camera 2 focus mode get auto_focus:    on OK &gt;</pre> <p>Returns the current focus mode of the specified camera.</p>	
Example (sent to the camera)	<pre>camera focus near 2 OK &gt;</pre> <p>Brings the focus near at a speed of 2.</p>	

## camera preset


Moves the camera to the specified preset, or stores the current camera position.  
*When sending the command to a host device, you must specify the camera input.*

Synopsis (host)	camera <input> preset { recall   store} [1 - 16] [save-ccu]	
Synopsis (camera)	camera preset { recall   store} [1 - 16] [save-ccu]	
Options	<input>	Specifies the camera to control. EasyIP Decoder: 1 to 4. EasyIP Mixer: 2 to 5.
	recall <1 - 16>	Moves the camera to the specified preset.
	store <1 - 16>	Stores the current camera position as the specified preset.
	save-ccu	Optional: Saves the current CCU (color and lighting) settings as part of the preset. If not specified, the last color settings are used when recalled.
Example (sent to the host device)	<pre>&gt;camera 3 preset store 1 OK &gt;</pre> <p>Saves the specified camera's current position as preset 1.</p>	
Example (sent to the camera)	<pre>&gt;camera preset recall 3 OK &gt;</pre> <p>Moves the camera to preset 3.</p>	

## camera ccu get

Returns CCU (lighting and color) information.

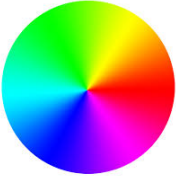
When sending the command to a host device, you must specify the camera input.

Synopsis (host)	camera <input> ccu get <param>	
Synopsis (camera)	camera ccu get <param>	
Options  	<input>	Specifies the camera to control. EasyIP Decoder: 1 to 4. EasyIP Mixer: 2 to 5.
	auto_white_balance	Returns the auto white balance state (on or off).
	red_gain	Returns the red gain value (integer 0 to 255).
	blue_gain	Returns the blue gain value (integer 0 to 255).
	backlight_compensation	Returns the backlight compensation state (on or off).
	auto_iris	Returns the auto-iris state (on or off).
	iris	Returns the iris value (integer 0 to 11).
	gain	Returns the gain value (integer 0 to 11).
	detail	Returns the detail value (integer 0 to 15).
	chroma	Returns the chroma value (integer 0 to 14).
	gamma	Returns gamma (integer -16 to 64)
	wide_dynamic_range	Returns the current Wide Dynamic Range state (on or off).
all	Returns all current CCU settings.	
Example (sent to the host device)	<pre>&gt;camera 1 ccu get all auto_iris          on auto_white_balance on backlight_compensation off blue_gain          0 chroma             5 detail             8 gain               1 gamma              -4 iris               11 red_gain           0 wide_dynamic_range off OK &gt;</pre> <p>Returns current CCU settings for the Input 1 camera.</p>	
Example (sent to the camera)	<pre>&gt;camera ccu get iris iris 6 OK &gt;</pre> <p>Returns the current red gain value.</p>	

## camera ccu set

Sets the specified CCU (lighting) information.

*When sending the command to a host device, you must specify the camera input.*

Synopsis (host)	camera <input> ccu set <param> <value>	
Synopsis (camera)	camera ccu set <param> <value>	
Options  	<input>	Specifies the camera to control. EasyIP Decoder: 1 to 4. EasyIP Mixer: 2 to 5.
	auto_iris {on   off}	Sets auto-iris on or off. Auto-iris disables manual iris and gain when it is on.
	auto_white_balance {on   off}	Sets auto white balance on or off. Auto white balance overrides red gain and blue gain manual settings.
	backlight_compensation {on   off}	Sets backlight compensation on or off. Can only be used when wide dynamic range is off.
	blue_gain <0..255>	Sets blue gain (integer 0 to 255). Can only be used when auto white balance is off.
	chroma <0..14>	Sets chroma (integer 0 to 14).
	detail <0..15>	Sets detail (integer 0 to 15).
	gain <1..11>	Sets gain (integer 1 to 11). Can only be used when auto-iris is off.
	gamma <-16..64>	Sets gamma (integer -16 to 64)
	iris <0..11>	Sets iris (integer 0 to 11). Can only be used when auto-iris is off.
	red_gain <0..255>	Sets red gain (integer 0 to 255). Can only be used when auto white balance is off.
	wide_dynamic_range {on   off}	Sets Wide Dynamic Range on or off. Can only be used when backlight compensation is off.
Example (sent to the host device)	<pre>&gt;camera 2 ccu set red_gain 10 OK &gt;</pre> <p>Sets red gain to 10 for the specified camera.</p>	
Example (sent to the camera)	<pre>&gt;camera ccu set auto_iris off OK &gt;</pre> <p>Turns off auto-iris, returning the camera to manual iris control.</p>	

## camera ccu scene

Available for the EasyIP 20 camera. Stores the current CCU scene or recalls the specified ccu scene. *When sending the command to a host device, you must specify the camera input.*

Synopsis (host)	camera <input> ccu scene {recall {factory <1 – 6>   custom <1 – 3>}   store custom <1 – 3>}	
Synopsis (camera)	camera ccu scene {recall {factory <1 – 6>   custom <1 – 3>}   store custom <1 – 3>}	
Options	<input>	Specifies the camera to control. EasyIP Decoder: 1 to 4. EasyIP Mixer: 2 to 5.
	recall factory <1 – 6> recall custom <1 – 3>	Recalls the camera to the specified scene (factory 1 to 6 or custom 1 to 3).
	store custom <1 – 3>	Saves the current scene as the specified custom scene.
Examples	<pre>&gt;camera ccu scene recall factory 2 OK &gt;</pre> <p>(Sent to the camera) Sets the camera to use factory CCU scene 2.</p> <pre>&gt;camera 2 ccu scene store custom 1 OK &gt;</pre> <p>(Sent to the host device) Saves the current CCU scene as custom CCU scene 1.</p>	

## camera led

### CAMERA ONLY

Set or change the behavior of the indicator light.

Synopsis	camera led { get   off   on }	
Options	get	Returns the indicator light's current state (on or off).
	off	Disables the indicator light.
	on	Enables the indicator light.
Examples	<pre>&gt;camera led off OK &gt;</pre> <p>Disables the indicator light. When the LED is off, you cannot tell by looking at the camera whether it is sending video.</p> <pre>&gt;camera led get led:  on OK &gt;</pre> <p>Returns the current state of the indicator light.</p>	



## video mute

Gets or sets the video mute status. Muted video displays as a blue screen. This can be desirable when preparing the room, or when privacy is needed.

This camera may be sent to a host device or directly to a camera. When the host device receives a video mute command, the command applies to all paired cameras.

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. (Blue screen)
	toggle	Changes the video mute status.
Examples	<pre>&gt;video mute get mute:  off OK &gt;</pre> <p>Returns video mute status.</p> <pre>&gt;video mute on OK &gt;</pre> <p>Transmits blue or black video.</p>	

## camera standby

Set or change camera standby status.

*When sending the command to a host device, you must specify the camera input.*

Synopsis (host)	camera <input> standby { get   off   on   toggle }	
Synopsis (camera)	camera standby { get   off   on   toggle }	
Options	<input>	Specifies the camera to control. EasyIP Decoder: 1 to 4. EasyIP Mixer: 2 to 5.
	get	Returns the camera's current standby state.
	off	Brings the camera out of standby (sleep) mode.
	on	Stops video and puts the camera in standby mode.
	toggle	Changes the camera's standby state - if it was not in standby mode, it enters standby; if it was in standby mode, it "wakes up."
Example (sent to the host device)	<pre>&gt;camera 3 standby get standby:      on OK &gt;</pre> <p>Returns the current standby state of the specified camera.</p>	
Example (sent to the camera)	<pre>&gt;camera standby off OK &gt;</pre> <p>Brings the camera out of standby mode.</p>	

## Autoframing commands

Commands to manage and adjust Autoframing fall roughly into three categories.

Status commands:

- autoframer enabled
- autoframer paused

Shot definition commands:

- camera optical-zoom
- autoframer shot-margin
- autoframer max-electronic-zoom
- autoframer buffer-zone

Autoframing behavior adjustment commands:

- autoframer sensitivity
- autoframer responsiveness
- autoframer initial-persistence
- autoframer persistence
- autoframer max-speed
- autoframer noise-threshold
- autoframer tri-sync-motion
- autoframer forced-wait-time

### autoframer enabled

Enable or disable Autoframing. This is normally on. Use the `autoframer paused` command to switch to manual mode with the intent of resuming Autoframing.

Synopsis	<code>autoframer enabled { get   off   on   toggle }</code>	
Options	<code>get</code>	Returns the current enable state for Autoframing.
	<code>off</code>	Turns off Autoframing.
	<code>on</code>	Turns on Autoframing.
	<code>toggle</code>	Changes the Autoframing state.
Examples	<pre>&gt;autoframer enabled off OK &gt;  Stops Autoframing, placing the camera in manual mode.  &gt;autoframer enabled get autoframer enabled:    false OK &gt;</pre> <p>Returns the current state of Autoframing.</p>	

## autoframer paused

Pause or resume Autoframing. Autoframing pauses automatically when the camera receives a pan, tilt, zoom, or preset recall command from any source.

Synopsis	autoframer paused { get   off   on   toggle }	
Options	get	Returns the pause state for Autoframing.
	off	Turns off the pause state (restarts Autoframing).
	on	Pauses Autoframing.
	toggle	Changes the Autoframing pause state.
Examples	<pre>&gt;autoframer paused on OK &gt;</pre> <p>Pauses Autoframing, placing the camera in manual mode.</p> <pre>&gt;autoframer paused get autoframer paused:      true OK &gt;</pre> <p>Returns the current pause state of Autoframing.</p>	

## autoframer default-wide

Specify how the camera behaves when it detects no motion. This setting is on by default.

Synopsis	autoframer default-wide { get   off   on }	
Options	get	Returns the state of the Default Wide setting (on or off).
	off	Turns off Default Wide mode. The camera remains on the shot where it last detected motion.
	on	Turns on Default Wide mode. The camera zooms all the way out when it detects no motion.
Examples	<pre>&gt;autoframer default-wide off OK &gt;</pre> <p>Turns off Default Wide mode. The camera does not zoom out to "search" for motion.</p> <pre>&gt;autoframer default-wide get default wide:  false OK &gt;</pre> <p>Returns the current state of the Default Wide setting.</p>	

## autoframer buffer-zone

Get or set the size of the Autoframing buffer zone.

Synopsis	autoframer buffer-zone { get   set <value> }	
Options	get	Returns the current value for the Autoframing buffer zone.
	set <value>	Sets the Autoframing buffer zone.
Examples	<pre>&gt;autoframer buffer-zone set 10 OK &gt;  Sets the buffer zone to 10.  &gt;autoframer buffer-zone get autoframer buffer-zone:      10 OK &gt;  Returns the current size of the buffer zone.</pre>	

## autoframer shot-margin

Get or set the size of the Autoframing shot margin.

Synopsis	autoframer shot-margin { get   set <value> }	
Options	get	Returns the current value for the Autoframing shot margin.
	set <value>	Sets the Autoframing shot margin.
Examples	<pre>&gt;autoframer shot-margin set 15 OK &gt;  Sets the shot margin to 15.  &gt;autoframer shot-margin get autoframer shot-margin:      15 OK &gt;  Returns the current size of the shot margin.</pre>	

## autoframer sensitivity

Get or set Autoframing sensitivity.

Synopsis	autoframer sensitivity { get   set <value> }	
Options	get	Returns the current value for sensitivity.
	set <value>	Sets Autoframing sensitivity.
Examples	<pre>&gt;autoframer sensitivity set 95 OK &gt;  Sets the sensitivity to 95.  &gt;autoframer sensitivity get autoframer sensitivity:      95 OK &gt;</pre> <p>Returns the current sensitivity value.</p>	

## autoframer responsiveness

Get or set Autoframing responsiveness.

Synopsis	autoframer responsiveness { get   set <value> }	
Options	get	Returns the current value for responsiveness.
	set <value>	Sets Autoframing responsiveness.
Examples	<pre>&gt;autoframer responsiveness set 95 OK &gt;  Sets responsiveness to 95.  &gt;autoframer responsiveness get autoframer responsiveness:  95 OK &gt;</pre> <p>Returns the current responsiveness value.</p>	

## autoframer initial-persistence

Get or set the initial persistence value.

Synopsis	<code>autoframer initial-persistence { get   set &lt;value&gt; }</code>	
Options	<code>get</code>	Returns the current value for initial persistence.
	<code>set &lt;value&gt;</code>	Sets initial persistence.
Examples	<pre>&gt;autoframer initial-persistence set 15 OK &gt;  Sets the initial persistence to 15.  &gt;autoframer initial-persistence get autoframer initial-persistence:      15 OK &gt;</pre> <p>Returns the current initial persistence value.</p>	

## autoframer persistence

Get or set Autoframing persistence.

Synopsis	<code>autoframer persistence { get   set &lt;value&gt; }</code>	
Options	<code>get</code>	Returns the current value for persistence.
	<code>set &lt;value&gt;</code>	Sets persistence.
Examples	<pre>&gt;autoframer persistence set 15 OK &gt;  Sets persistence to 15.  &gt;autoframer persistence get autoframer persistence:      15 OK &gt;</pre> <p>Returns the current persistence value.</p>	

### autoframer max-electronic-zoom

Get or set the value for the Autoframing maximum electronic zoom. This limits how far the camera zooms in for Autoframing.

Synopsis	autoframer max-electronic-zoom { get   set <value> }	
Options	get	Returns the current value for the maximum electronic zoom.
	set <value>	Sets the maximum electronic zoom.
Examples	<pre>&gt;autoframer max-electronic-zoom set 4 OK &gt;</pre> <p>Sets the maximum electronic zoom to 4.</p> <pre>&gt;autoframer max-electronic-zoom get autoframer max-electronic-zoom:      4 OK &gt;</pre> <p>Returns the current maximum electronic zoom.</p>	

### autoframer max-speed

Get or set the value for the Autoframing maximum ePTZ speed. This limits pan, tilt, and zoom movements during Autoframing.

Synopsis	autoframer max-speed { get   set <value> }	
Options	get	Returns the current value for the maximum speed.
	set <value>	Sets the maximum speed.
Examples	<pre>&gt;autoframer max-speed set 7 OK &gt;</pre> <p>Sets the maximum speed to 7.</p> <pre>&gt;autoframer max-speed get autoframer max-speed: 7 OK &gt;</pre> <p>Returns the current maximum speed.</p>	



## autoframer noise-threshold

Get or set the value for the Autoframing noise threshold. This helps the camera to identify motion.

Synopsis	autoframer noise-threshold { get   set <value> }	
Options	get	Returns the current value for the noise threshold.
	set <value>	Sets the noise threshold.
Examples	<pre>&gt;autoframer noise-threshold set 4 OK &gt;</pre> <p>Sets the noise threshold to 10.</p> <pre>&gt;autoframer noise-threshold get autoframer noise-threshold: 10 OK &gt;</pre> <p>Returns the current noise threshold.</p>	

## autoframer tri-sync-motion

Enable or disable Tri-Sync Motion. This allows the camera to pan, tilt, and zoom smoothly. When Tri-Sync Motion is off, the camera snaps to the new position.

Synopsis	autoframer tri-sync-motion { get   off   on   toggle }	
Options	get	Returns the current state for Tri-Sync Motion.
	off	Turns off Tri-Sync Motion.
	on	Turns on Tri-Sync Motion.
	toggle	Changes the state of Tri-Sync Motion.
Examples	<pre>&gt;autoframer tri-sync-motion on OK &gt;</pre> <p>Turns on Tri-Sync Motion, so the video pans, tilts, and zooms like a motorized camera.</p> <pre>&gt;autoframer tri-sync-motion get autoframer tri-sync-motion: on OK &gt;</pre> <p>Returns the current state of Tri-Sync Motion.</p>	

## autoframer history

Get or set the value for the Autoframing History setting. This is the number of seconds of data that the camera evaluates for motion. Increase the value if the camera does not reliably detect motion in a low-motion environment.

Synopsis	autoframer history { get   set <value> }	
Options	get	Returns the current value for the history.
	set <value>	Sets the history as a floating-point value from 0 to 5 seconds.
Examples	<pre>&gt;autoframer history set 2 OK &gt; Sets History to 4 seconds.  &gt;autoframer history get autoframer history:    2 OK &gt; Returns the current History value.</pre>	

## autoframer forced-wait-time

Get or set the value for the Autoframing forced wait time. This sets a minimum time to hold the shot before responding to new motion. Increasing persistence and reducing responsiveness may produce more satisfactory results.

Synopsis	autoframer forced-wait-time { get   set <value> }	
Options	get	Returns the current value for forced wait time.
	set <value>	Sets the forced wait time.
Examples	<pre>&gt;autoframer forced-wait-time set 0 OK &gt; Sets the forced wait time to 0 (the default value).  &gt;autoframer forced-wait-time get autoframer forced-wait-time:  0 OK &gt; Returns the current forced wait time.</pre>	

## Maintenance and Troubleshooting Commands

The following commands are valid for all Telnet-capable Vaddio devices:

- network settings
- network ping
- system reboot
- system factory-reset
- version

### network settings get

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

Synopsis	network settings get
Example	<pre>network settings get Name          eth0:WAN MAC Address   00:1E:C0:F6:CA:7B IP Address    192.168.1.67 Netmask       255.255.255.0 VLAN          Disabled Gateway       192.168.1.254 OK &gt;</pre>

### network ping

Sends an ICMP ECHO\_REQUEST to the specified hostname or IP address.

Synopsis	network ping [count <count>] [size <size>] <string>	
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.
	<string>	The hostname or IP address where the ECHO_REQUEST packets will be sent.
Examples	<pre>&gt;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 &gt;</pre> <p>Sends five ECHO_REQUEST packets of 56 bytes each to the host at 192.168.1.66.</p>	
	<pre>&gt;network ping count 10 size 100 192.168.1.1</pre> <p>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.</p>	

## system reboot

Reboots the device either immediately or after the specified delay.


Synopsis	system reboot [<seconds>]	
Options	<seconds>	The number of seconds to delay the reboot.
Examples	<pre>&gt;system reboot OK &gt; The system is going down for reboot NOW!p-decoder-D8-80-39-62-A7-C5  Reboots the device immediately.  &gt;system reboot 30  Reboots the system in 30 seconds. The response is in the same form; the system message appears at the end of the delay.</pre>	

## system factory-reset

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

### Note

Factory reset does not affect settings managed in the Dante Controller application.

Synopsis	system factory-reset { get   on   off }	
Options	get	Returns the device's current factory reset status.
	on	Enables factory reset on reboot and returns the device's current factory reset status.
	off	Disables factory reset on reboot and returns the device's current factory reset status.
Examples	 <pre>&gt;system factory-reset get factory-reset (software):      off factory-reset (hardware):     off OK &gt;  Returns the factory reset status.  This evaluates the most recent system factory-reset on or off command, if one has been received.  &gt;system factory-reset on factory-reset (software):      on factory-reset (hardware):     off OK &gt;  Enables factory reset upon reboot.  <b>Note</b> This command does not initiate a factory reset. The factory reset takes place on the next reboot.</pre>	

## version

Returns the current firmware version.

Synopsis	<code>version</code>
Example	<pre>&gt;<b>version</b> Audio          1.04 Commit         c867266822c63caa1fd2a6cec76f641068af509 System Version EasyIP Decoder 1.0.0 USB            01.02.00 OK &gt;</pre>

## Information and Session Management Commands

The following commands are available on all Vaddio devices for Telnet help and session management:

- history
- help
- exit

### history

Returns the most recently issued commands from the current Telnet 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	<p><b>history</b> Displays the current command buffer.</p> <p><b>history 5</b> Sets the history command buffer to remember the last 5 unique entries.</p>	
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"> <li>* !! Substitute the last command line.</li> <li>* !4 Substitute the 4th command line (absolute as per 'history' command)</li> <li>* !-3 Substitute the command line entered 3 lines before (relative)</li> </ul>	



### help

Displays an overview of the CLI syntax.

Synopsis	help
Example	<p><b>help</b></p>



```
Telnet 10.10.24.14
> help
CONTEXT SENSITIVE HELP
[?] - Display context sensitive help. This is either a list of possible
command completions with summaries, or the full syntax of the
current command. A subsequent repeat of this key, when a command
has been resolved, will display a detailed reference.

AUTO-COMPLETION
The following keys both perform auto-completion for the current command line.
and press the space key to complete the command line.
```

### exit

Ends the command session and closes the socket.

Synopsis	exit
Example	<b>exit</b>

## Troubleshooting and Care

When the system doesn't behave as you expect, check the status lights first. If this does not help you to resolve the issue, use the troubleshooting tables to determine whether it's time to call Vaddio Technical Support.

### Status Indicator Light

The light in the camera's base indicates its current state.

- White – Camera is active
- Purple – Standby mode or booting
- Yellow – Firmware update is in progress
- Blinking red – Video mute is on (UC color scheme)

#### Caution

*Do not disconnect the camera cable while the indicator is yellow, showing a firmware update in progress. Interrupting a firmware update can make the camera unusable.*

#### Note

*The camera's status indicator light can be configured to remain off when the camera is powered up. The camera may be sending video even if the light is off.*

### System and Power Issues

What is it doing?	Possible causes	Check and correct
All the EasyIP devices are unresponsive.	The PoE+ switch is turned off or not connected to power.	Make sure the PoE+ switch has power and is turned on.
	The PoE+ switch is bad.	Contact your reseller or Vaddio Technical Support.
An EasyIP device is unresponsive and not available in the Vaddio Deployment Tool.	The cable is bad.	Check using a known good cable.
	The device is connected to a bad port on the PoE+ switch. Try another PoE+ port.	Contact your reseller or Vaddio Technical Support.
	The device is bad.	Contact your reseller or Vaddio Technical Support.
Cameras have power but the host device is unresponsive.	The host device is connected to a bad port on the PoE+ switch. Try another PoE+ port.	Contact your reseller or Vaddio Technical Support.

## Camera Issues

What is it doing?	Possible causes	Check and correct
The status light is off but it responds to controls.	The status light is turned off. This is normal.	Turn the light on from the General tab of the System page, or with the <b>camera led on</b> command.
The camera is not responding to controls and the light is yellow.	A firmware update is in progress. This is normal.	Wait a few minutes, and try again when the light turns white.
The camera does not respond to the remote, but can be controlled using the web interface.	The remote is not paired to the camera.	Pair the remote to the camera. See <a href="#">Pairing the Remote to the Camera</a> .
The camera does not appear in the host device's list of inputs.	The camera is not paired to the host device.	Pair the camera. Refer to the host device's manual.
The camera is not listed among the cameras available to the host device.	The camera and managing device are on different subnets.	Add the camera by entering its IP address manually in the Input Pairing dialog box.
The camera is operating normally but its status light is red.	The camera is using the pro A/V LED color scheme, and is the currently selected video input.	This is normal.
The camera responds to the remote but the web interface is not available.	The camera is not using the IP address you browsed to.	Access the camera's web interface from the host device's web interface, or locate it using the Vaddio Deployment Tool.



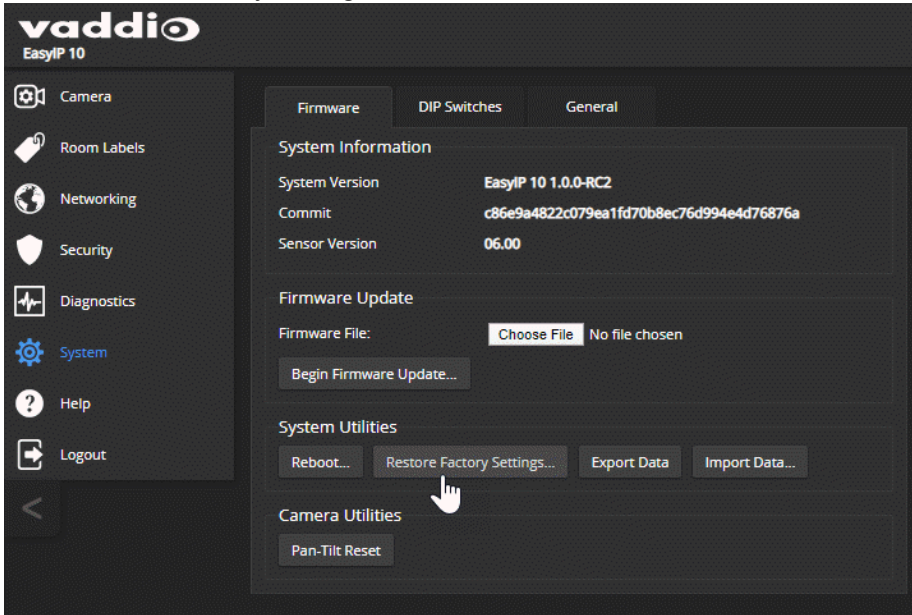
## Restoring Factory Default Settings

This returns the device to its original state. If you export the device's configuration before restoring factory defaults, you will be able to restore the room label, time zone information, and home information by importing the configuration afterward.

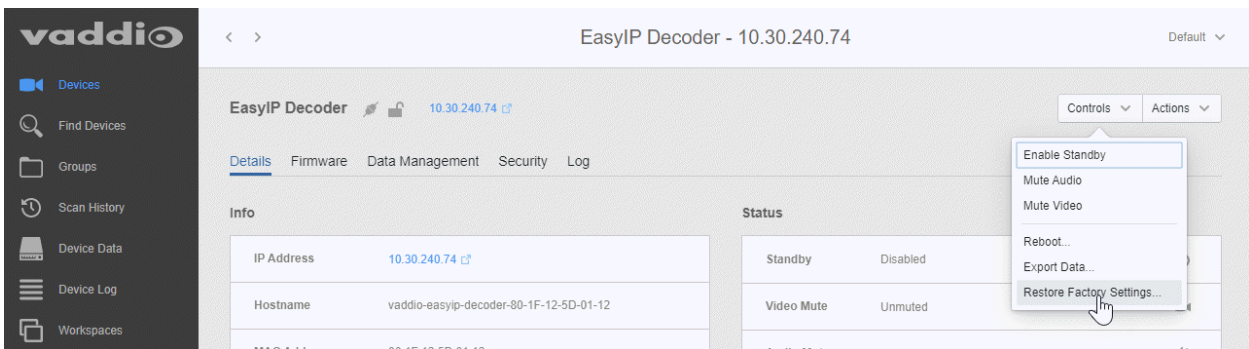
### Note

*Because restoring factory defaults returns the product to a "like new" condition, you will need to do the initial device set-up again if you restore factory defaults.*

**From the web interface:** Log on using the admin account, go to the System page's Firmware tab, and select Restore Factory Settings.



**From the Vaddio Deployment Tool:** Locate the device, select it in the Name column to open its detail page, and select Restore Factory Defaults from the Controls list.



This tool is available as a free download at <https://info.legrandav.com/VaddioDeploymentTool>.

**From the device (EasyIP Decoder and EasyIP Mixer):** Press and hold the IP address button while disconnecting and then reconnecting the network/PoE+ cable.



## Operation, Storage, and Care

For smears or smudges on the product, wipe with a clean, soft cloth. Use a lens cleaner on the lens. 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 104° F (40° C) or below 32° F (0° C)
- High humidity, condensing or wet environments
- Inclement weather
- Severe vibration
- Anywhere in the digestive tract of a large cetacean
- Dry environments with an excess of static discharge

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

## Glossary

**auto white balance**

A setting that allows the camera to manage color adjustments automatically.

**chroma**

A setting that adjusts color intensity.

**detail**

A setting that adjusts image sharpness. If detail is set too low, the image may appear unrealistically smooth.

**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.

**EasyMic**

Vaddio's proprietary connectivity standard for conferencing microphones.

**far end**

(conferencing) A location in the conference other than the one where you are. Far-end video is what you typically see in a conference – the people at the other end of the call.

**Field of View (FOV)**

How wide the video image is. Vaddio measures horizontal field of view. Some manufacturers use diagonal field of view, which yields a bigger number for the same actual image area. Tilt your head to one side and diagonal FOV will make sense.

**flombodulator**

A technically complex item the name of which you can't recall at the moment.

**frame rate**

The number of output video frames per second. Different outputs (such as the IP stream and the USB stream) may use different frame rates. For streaming, higher frame rates use more bandwidth.

**full-duplex**

Simultaneous two-way (or multi-way) audio; conference participants at the near end can talk and still hear the participants at the far end(s), as in a face-to-face meeting.

**gamma**

A setting that adjusts the range (gray density) between bright areas and shadows.

**home (camera)**

The settings to which the camera returns after a reboot or on exiting standby mode. Depending on the camera's capabilities, home may include zoom, color and lighting settings, and pan/tilt position.

**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.

**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 the reason 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. You don't need to worry about this if you're using DHCP.

**LED**

Light-Emitting Diode. A status light.

**near end**

(conferencing) Your location in a conference. When you mute the video, your camera stops sending near-end video.

**NTP**

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

**pairing**

The process of "teaching" two specific devices to recognize each other. Pair cameras to the host device from the host device. If the camera uses an RF remote, pair the remote from the camera.

**PoE, PoE+, PoE++**

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

**preset**

A stored camera position. Contains pan, tilt, and zoom position; may also include color settings.

**RCLB**

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

**resolution**

1. The image size. For Vaddio cameras, resolution is expressed in terms of digital TV standards, with 1080p being the default in most cases. Resolution and frame rate are set together on Vaddio cameras. 2. The thing that usually flies out the window by January 10th.

**Richard**

The reason there are cats (well, pictures of cats) in this manual.

**soft conferencing client**

A conferencing application (such as Zoom, Google Hangouts, or Skype for Business) that uses a computer rather than requiring a conferencing codec.

**SSL certificate**

A file used with HTTPS proving that a web page really originates from its purported source. If you enable or require HTTPS on a camera or other device without installing an SSL certificate, your browser will pop up security warnings when you try to browse to the device's web interface.

**UCC, UC conferencing**

Unified Communications Conferencing; refers to soft-client conferencing (such as Zoom or Skype for Business) using a computer with USB-connected peripherals.

**USB 2**

An older, lower-speed USB protocol; good for audio but offers lower maximum resolutions for video conferencing. USB 2 products can be connected to USB 2 or USB 3 ports on your computer.

**USB 3**

A high-speed USB protocol, capable of handling high-quality video and audio as in conferencing applications. USB 3 products should be connected to USB 3 ports; performance may be degraded otherwise.

**UVC drivers**

(Universal Video Class) Standard USB video drivers used by Vaddio cameras. They're the reason your computer doesn't have to stop and download a driver when you connect your new Vaddio USB camera to it.

**UVC extensions**

Controls in UVC drivers to allow participants at the far end of a conference to control your camera, if it processes UVC commands. The administrator may choose to disable these.

## Photo Credits

This guide may include some or all of these photos.

European Space Agency (ESA) astronaut Samantha Cristoforetti, a Flight Engineer with Expedition 42, photographs the Earth through a window in the Cupola on the International Space Station

By NASA - [https://blogs.nasa.gov/ISS\\_Science\\_Blog/2015/03/06/women-in-space-part-two-whats-gender-got-to-do-with-it/](https://blogs.nasa.gov/ISS_Science_Blog/2015/03/06/women-in-space-part-two-whats-gender-got-to-do-with-it/), Public Domain, <https://commons.wikimedia.org/w/index.php?curid=38834990>

Carl Sagan, Bruce Murray, Louis Friedman (founders) and Harry Ashmore (advisor), on the occasion of signing the papers formally incorporating The Planetary Society

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Expedition 42 on orbit crew portrait, International Space Station, Mar. 7, 2015 – Barry Wilmore (Commander) Top, Upside down, to the right cosmonaut Elena Serova, & ESA European Space Agency Samantha Cristoforetti. Bottom center US astronaut Terry Virts, top left cosmonauts Alexander Samokutyaev and Anton Shkaplerov.

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Sleeping goose

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Author's own cats, photos by author, you're welcome.

# Index

## A

- admin password 9-10, 12
- API 34-58
- auto focus 27, 40
- auto iris 23, 42-43
- auto white balance 23, 25, 42-43
- Autoframing 47-54
  - adjustments 49, 51, 54
  - behavior 48
  - electronic zoom 52
  - enabled state 47
  - noise threshold 53
  - persistence 51
  - responsiveness 50
  - sensitivity 50
  - shot margin 49
  - speed 52
  - Tri-Sync Motion 53
- Autoframing page (web) 17-19
- Autoframing presets 17
- Autoframing;pause state 48

## B

- backing up a configuration 29
- backlight compensation 23-24, 42-43
- behavior on power-up 8
- blue gain 23, 25, 42-43
- browser 9
- browser compatibility 9
- Buffer Zone (Autoframing setting) 18, 49

## C

- cable 4
  - connectors 4
- cable connectors 2
- camera mount 7
- Camera page (web) 22
- cameras 3
  - placement 3
- capabilities 1
- CCU scenes 22, 24, 44
  - custom 24, 44
  - recalling 44
- CCU settings 24-25, 41-43
- ceiling-mounted cameras 7

- cheat sheet 24-25
  - color adjustment 25
  - lighting and image quality 24
- chroma setting 23-25, 42-43
- cleaning 63
- color codes for status light 59
- color settings 22-25, 42-43
- commands 35-58
  - autoframer 47-54
  - camera 35-44, 46
  - exit 58
  - help 58
  - history 58
  - network 55
  - system 56
  - version 57
  - video 45
- compatibility, browsers 9
- configuration, saving or restoring 29
- connection diagram 5-6
- connectors 2
- custom CCU scenes 24
- custom home position 21

## D

- damage, preventing 3-4
- default settings, restoring 56, 61
- Default Wide (Autoframing setting) 18, 48
- detail setting 23-24, 42-43
- diagnosing issues 55, 59-60
- diagnostic logs 13, 62
  - timestamps 13
- Diagnostics page (web) 62
- diagram, connection 5-6

## E

- EasyIP basics 1
- Ethernet port 2

## F

- factory defaults, restoring 56, 61
- fault isolation 55, 59-60
- firmware update 30
- firmware version 57
- focus 27, 40
- Forced Wait Time (Autoframing setting) 18, 54



**G**

gain 23-25  
 blue 23, 25  
 iris 24  
 red 23, 25  
 gamma setting 23-24  
 getting help 62  
 guest access 12

**H**

Help page (web) 62  
 History (Autoframing setting) 18, 54  
 home position 21, 35  
 custom 21  
 hostname 13  
 HTTP 12  
 enabling 12

**I**

ignoring unwanted motion sources 19  
 Image Flip (setting) 7  
 importing a configuration 29  
 inactive sessions (web interface) 12  
 indicator light 2, 28, 44, 59  
 behavior 28, 44  
 color scheme 28  
 enabling/disabling 28  
 meaning of colors 2, 59  
 information, conference room 14  
 initial device set-up 9-10  
 using Vaddio Deployment Tool 10  
 Initial Persistence (Autoframing setting) 18, 51  
 installation 5-7  
 camera 7  
 camera mount 7  
 inverted 7  
 typical 5-6  
 inverted installation 7  
 IP address 10-11  
 camera, discovering 10  
 camera. discovering 11  
 EasyIP Decoder, discovering 10  
 iris settings 24, 42-43

**L**

labels, room 14  
 LED control 28, 44

light, status indicator 28, 44, 59  
 behavior 28, 44  
 color scheme 28  
 enabling/disabling 28  
 meaning of colors 59  
 lighting settings 22, 42-44  
 location of the camera 3, 14  
 locations of connectors 2  
 log files 62  
 low-power (standby) state 44, 46

**M**

manual focus 27, 40  
 masks 19  
 Max Electronic Zoom (Autoframing setting) 18, 52  
 Max ePTZ Speed (Autoframing setting) 17, 52  
 minimum requirements, EasyIP system 5-6  
 mount 7  
 mounting the camera 7  
 muting 45  
 video 45

**N**

network configuration 13, 55  
 current 55  
 network port 2  
 Networking page (web) 13  
 Noise Threshold (Autoframing setting) 17, 53  
 NTP server 13

**O**

One Push White Balance 25  
 operating environment 3, 63  
 Optical Zoom (Autoframing setting) 17

**P**

page 12-14, 17-19, 22, 62  
 Autoframing 17-19  
 Camera 22  
 Diagnostics 62  
 Help 62  
 Networking 13  
 Room Labels 14  
 Security 12  
 pan 26, 36, 39  
 direction 26

- speed 26, 36
- passwords 9, 12
- Persistence (Autoframing setting) 17, 51
- ping command 55
- point light compensation 23-24
- power on/power off 8, 46
- precautions 3
  - for operating the system 3
- presets 21, 41
  - moving to 41
  - renaming 21
  - setting 21, 41
- product capabilities 1

**Q**

- quick reference 24-25

**R**

- ready state 46
- rebooting 31, 56
- red gain 23, 25, 42-43
- remote control 32
  - installing batteries 32
  - pairing with the camera 32
  - standby mode 32
  - unpairing 33
- requirements 1, 3-6
  - EasyIP system 1
  - installation 3-6
  - network 3
- reset See also rebooting; restoring default settings
- Responsiveness (Autoframing setting) 18, 50
- restoring a configuration 29
- restoring default settings 56, 61
- RJ-45 connectors 4
- room information 14
- Room Labels page (web) 14

**S**

- saving a configuration 29
- scenes, CCU 22
  - storing 24
- Scott 22
- Security page (web) 12
- Sensitivity (Autoframing setting) 17, 50
- serial command API 34-58
- settings, default, restoring 56, 61

- shelf, camera mount 7
- Shot Margin (Autoframing setting) 17, 49
- site requirements 3
- software update 30
- solving problems 59-60
- speed 26, 36-38, 40, 52
  - focus 40
  - manual, setting 26
  - pan 26, 36
  - tilt 26, 37
  - zoom 26, 38
- SSL certificate 12
- standby (low-power) state 44, 46
- status light 2, 44, 59
  - behavior 2, 44
  - meanings of colors 59
- storage environment 63
- storing a configuration 29
- supported web browsers 9
- syntax help, Telnet commands 58
- system time 13

**T**

- tablet 9
- technical support 62
- Telnet 12, 34
  - enabling 12
- Telnet commands 34-58
  - autoframer 47-54
  - camera 35-44, 46
  - exit 58
  - help 58
  - history 58
  - network 55
  - syntax help 34
  - system 56
  - typographical conventions 34
  - version 57
  - video 45
- Telnet session 34, 58
  - ending 58
  - history 58
- temperature, operating and storage 63
- third-party control 34-58
- tilt 26, 37, 39
  - speed 26
- time zone 13
- tracking adjustments 17-18
- Tri-Sync Motion (Autoframing setting) 18, 53

troubleshooting 55, 59-60

## **U**

update 30  
USB port 2  
user password 12

## **V**

Vaddio Deployment Tool 10  
    accessing discovered devices 10  
    check for the latest version 10  
    initial device set-up 10  
Vaddio Device Controller 9  
version, firmware 57  
video mute 45  
visual parts identification 2

## **W**

wall mount 7  
warranty 3  
web browsers supported 9  
web interface 9-14, 17-19, 22, 62  
    accessing 9-10  
    Autoframing page 17-19  
    Camera page 22  
    Diagnostics page 62  
    Help page 62  
    manual access 11  
    Networking page 13  
    Room Labels page 14  
    Security page 12  
wide dynamic range setting 24

## **Z**

zone, buffer 49  
zoom 26, 38-39, 52  
    electronic (Autoframing setting) 52  
    speed 26, 38

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