vaddio

Complete Manual for

EasyIP Systems
Featuring the EasyIP Decoder and EasyIP 10 Camera

Contents

Overview

This guide discusses the following products:

- EasyIP Decoder AV-over-IP switching USB endpoint, 999-60210-000 (worldwide)
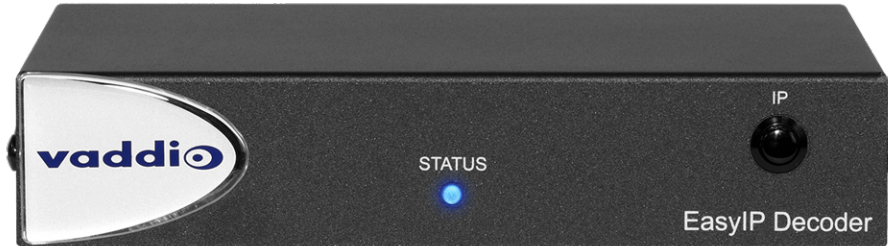
- EasyIP 10 AV-over-IP PTZ camera, 999-30200-000 (black, worldwide)
- EasyIP 10 AV-over-IP PTZ camera, 999-30200-000 (black, worldwide)

At a minimum, an EasyIP system includes one decoder and one camera. See Basic Connections.

What's in this Guide

This guide covers
- Unpacking
- Physical features
- Installation
- System administration and performance/behavior configuration
- Telnet API reference
- Specifications
- Troubleshooting
- Warranty and compliance/conformity information

For your convenience, the information you need to install this product with other EasyIP products is available in the smaller, stand-alone **Installation Guide for EasyIP AV-over-IP Systems**.

The EasyIP Ecosystem

Vaddio® EasyIP products are designed to be used together. A basic EasyIP system includes an EasyIP Decoder managing up to four EasyIP cameras. Typically the EasyIP system is powered by a PoE+ switch.

- EasyIP cameras deliver video in Vaddio's proprietary EasyIP format.
- The decoder is required to convert the cameras' output signal to an IP and/or USB stream.
- The decoder automatically detects EasyIP cameras on its own subnet.
- The decoder does not recognize other types of cameras.
- The decoder can manage cameras in its directory. The administrator adds cameras to the directory.
- Cameras are not required to be on the same subnet as the decoder that manages them.
- EasyIP products require PoE+ power.

EasyIP Decoder

The decoder is the central component of any EasyIP installation. Its functions include

- Video – pair with up to four cameras at a time, control the active camera via web interface, and decode the camera's AV-over-IP signal.
- Audio – provide connections for two Vaddio microphones and a speaker.
- USB streaming – UVC-compliant or client-custom USB streaming for conferencing applications.

EasyIP Cameras

EasyIP cameras may be installed anywhere on the network. They require only a PoE+ power connection. An EasyIP Decoder is needed to decode the AV-over-IP signal.

PoE+ Switch

A PoE+ switch simplifies installation, eliminating the need for PoE+ power injectors and placing all the connected products on the same subnet.

Caution
Do not connect the PoE+ switch to the network without guidance from an on-site network specialist.

Decoder Features

- Uncompressed USB 3.0 streaming
- Streaming video resolutions up to 1080p/60
- Full-duplex audio streaming
- Audio inputs for two Vaddio microphones
- HDMI video output for local display
- Universal Video Class (UVC) and Universal Audio Class (UAC) drivers supported in Windows®, macOS®, and Linux operating systems, compatible with most UC conferencing applications
- Integration-ready Telnet control
- Pairs with up to four EasyIP 10 cameras on your network to provide control and manage streaming
- Enterprise-class IT administrative capabilities with full web controls for remote management

Camera Features

- 2.14 Megapixel effective, native 1080p/60 full HD image sensor
- 10x optical zoom, horizontal field of view of 67°
- Resolutions up to 1080p/60
- Precise pan and tilt movements at up to 90° per second
- Integration-ready Telnet control
- Pairs with an EasyIP Decoder, which provides video and audio connectivity and manages streaming
- Just one cable – the EasyIP connection to a PoE switch
- Enterprise-class IT administrative capabilities with full web controls for remote management

Unpacking the EasyIP System Components

Make sure you received all the items you expected.

EasyIP Decoder AV-over-IP switching USB endpoint

Worldwide: 999-60210-000

The box should contain one of each item listed here:
- EasyIP Decoder
- USB 3 cable, 6 ft. (1.8 m)
- Cat-5e cable, 3 ft. (0.9 m)
- 4-position Phoenix-type connector
- Half-rack mounting kit
- Quick-Start Guide

EasyIP 10 AV-over-IP PTZ Camera

Worldwide: 999-30200-000 (black), 999-30200-000W (white)

Caution

Always support the camera's body when lifting or moving it. Lifting the camera by its head or mounting arm will damage it.

The box should contain one of each item listed here:
- Camera (black or white)
- VaddioIR Remote Commander
- Thin Profile Wall Mount with mounting hardware
- Cat-5e cable, 10 ft. (3 m)
- Quick-Start Guide

A Quick Look at the System Components

EasyIP Decoder – Decodes the AV-over-IP signal from the camera(s) and originates a USB stream.

EasyIP 10 camera – Great video, simple installation, minimal set-up.

Front of the Decoder
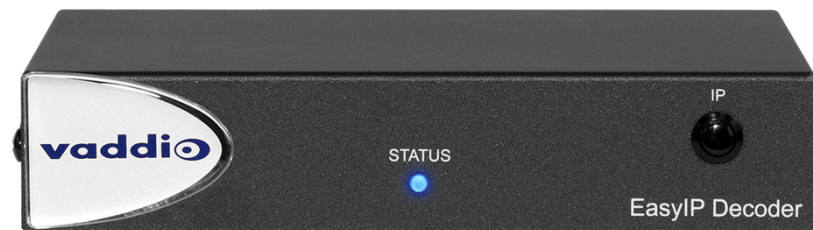
Status light – Provides basic information about the device.
- Illuminated: Normal operation
- Off: No power to the device
- Blinking: Error

IP Address button – Press to display the decoder's IP address in its USB stream.

Dimensionally enhanced logo badge – We have spared no expense to provide a puffy logo badge to elevate your experience. It's quite shiny, and offers superior tactile appeal.

Front of the Camera

Camera and zoom lens – 10X optical zoom lens.

IR sensor – Receives signals from the IR remote.

Status light – Multi-colored LED that indicates the camera's current state.
- Blue – Camera is active
- Purple – Standby mode or booting
- Yellow – Firmware update is in progress
- Blinking red – Video mute is on (UC color scheme)
- Blinking yellow – Motor out of calibration

Back of the Decoder
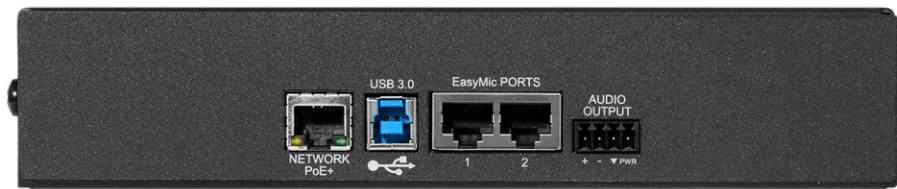
- **Network/PoE+** – RJ-45 connector. Connect to a powered port on the PoE+ switch.
- **USB 3.0** – USB Type B connector. Connect to a computer for use with soft conferencing applications. Provides uncompressed USB 3.0 stream.
- **EasyMic** – RJ-45 connectors. Connect to a TableMIC or other microphone with EasyMic connectivity.
- **Audio output** – Line level differential audio and 12 VDC power output to the optional amplified speaker or other audio infrastructure.

Back of the Camera

Network/PoE+ – RJ-45 connector. Connect to a powered port on the PoE+ switch.

It doesn't get much easier than that, does it?

Installation

Please refer to the **Installation Guide for EasyIP AV-over-IP Systems** for a more system-oriented view of EasyIP product installation. It includes information not available in this manual.

This section covers:
■ Selecting the location for the camera
■ Installing the mount
■ Cabling notes
■ Connection diagrams
■ Connecting and mounting the camera

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
Always support the camera's body when lifting or moving it. Lifting the camera by its head or mounting arm will damage it.

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

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

Before You Start

Work with the network administrator to plan your EasyIP deployment. A typical EasyIP system includes network equipment.

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 that the EasyIP system includes a switch that 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 camera, ask what hostname (if any) you should assign to it.

Before Installing a Camera

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 body can move freely and will normally 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.
- If the remote will be used, ensure that nothing blocks the IR lens in the camera's base.

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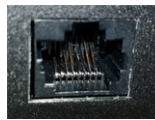
Damaged – Bent contact fingers will NOT make reliable contact with cable connector

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.

Basic Connections

Here is an example of a simple EasyIP deployment. In this setup, an EasyIP Decoder manages up to four EasyIP 10 cameras and provides hard-wired audio connections. A PoE+ switch provides power and network connectivity to the EasyIP products. The EasyIP Decoder connects directly to a computer as a USB conferencing device.

If no PoE+ switch is used, a mid-span PoE+ power injector (sold separately) is required for each EasyIP device.
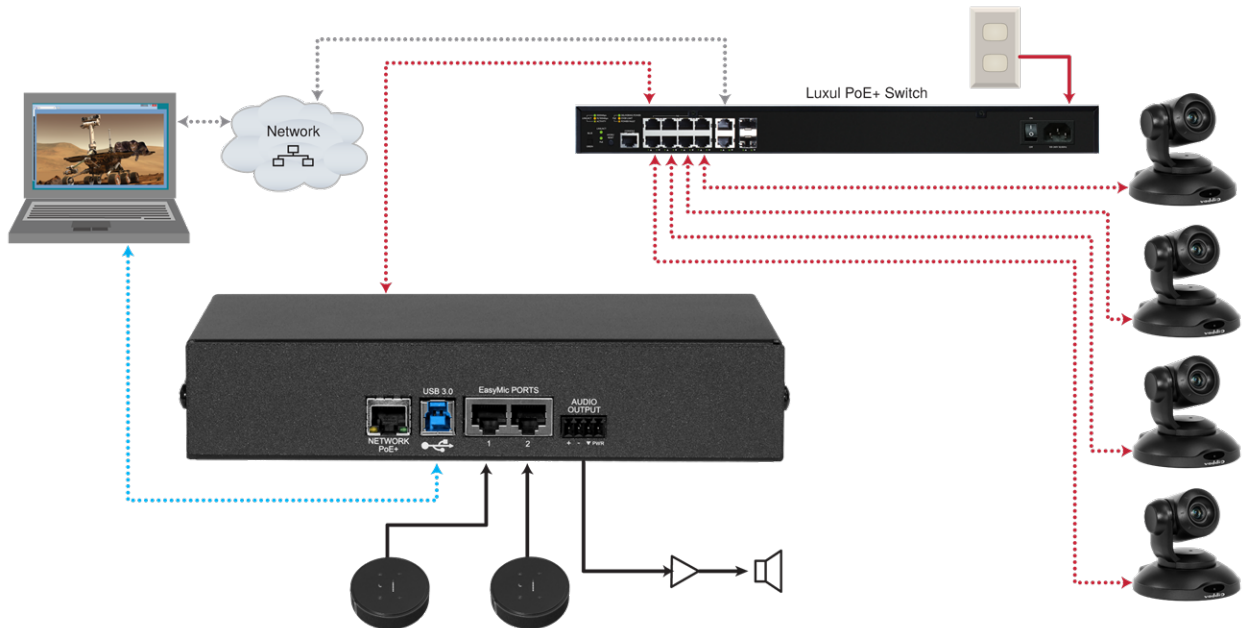
Note
EasyIP 10 cameras require an EasyIP Decoder to decode the AV-over-IP signal and originate a USB stream. The EasyIP Decoder is compatible with EasyIP cameras only. It does not detect or pair with other types of cameras.

Vaddio recommends making all connections while the PoE+ switch is turned off.

Caution
Do not connect the PoE+ switch to the network without guidance from an on-site network specialist.

Powering Up the EasyIP System

Vaddio recommends making all connections while the PoE+ switch is turned off. To power the system, turn on the PoE+ switch.

- The EasyIP Decoder's status light turns blue when the device is ready. The connected computer recognizes it as a USB peripheral.
- The EasyIP 10 cameras initialize and move if they are powered from the same PoE+ switch. This will take a few seconds. When each camera's status light turns blue, the camera is ready to accept control information.

Initial Device Set-Up and System Administration Tasks

When any EasyIP product is shipped from the factory, there is no admin password and the administrative controls are not available. This is also true if you restore factory defaults, which returns the device to a "like new" state.

Initial device set-up includes setting the admin password, and may include additional tasks.

There are three ways to access EasyIP devices for initial device set-up:

- **Access the Initial Device Set-up page of the web interface directly** – You must know the IP address of the device so you can browse to its web interface.
- **Locate and set up the product using the Vaddio Deployment Tool** – This tool is available as a free download at https://info.legrandav.com/VaddioDeploymentTool. The tool scans the network for Vaddio devices, lists them by model and IP address, identifies all devices that are not set up, provides the controls to complete the initial device set-up, and provides links to each device's web interface.
- **Cameras only: Locate and browse to the device from the EasyIP Decoder** – after the decoder's initial device set-up is complete, go to the Directory page and select Edit Device. In the device editing box, select Discover Devices; then select the camera's IP address from the list.

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

- **Network settings** – Depending on the requirements of your network, the device's default network settings may need to be changed. Work with the site's network specialist to determine the right settings.
- **Security settings** – Depending on the organization's security requirements, some of these settings may need to change.
- **Time zone** – Set the device to the appropriate time zone to ensure that timestamps in the event log are accurate.
- **Room labels** – Add helpful information such as the room location and phone number to the web interface of each device.

The sequence of tasks differs somewhat, depending on which way you do the initial device set-up.

Web Interface

Like other Vaddio products, EasyIP products allow initial device set-up, administrative control, and operation via a network connection, using a browser. After initial device set-up, each device's web interface provides password-protected pages for administrative access to tasks such as configuring network and security settings, customizing device behaviors, and installing firmware updates.

To access the device's web interface, you must have a way to browse to its IP address or hostname on the network.

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.

Initial Access to the Web Interface

Before the product is configured, HTTP access is disabled. **This is also true after restoring factory defaults.** When you access the web interface, you may encounter this message:
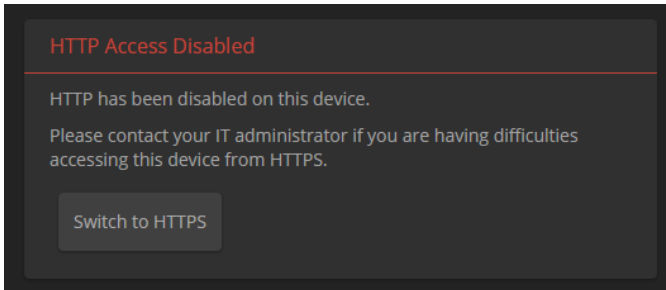
Switch to HTTPS if you see this message.

Expect a security warning from your browser the first time you access the device's web interface.

Different browsers will respond with different messages and options. Your browser will probably present a message indicating one of these things:

- The connection is not private
- The site is not secure
- The site is not trusted
- The site poses a security threat

This is because the certificate (the product's website security credential) is self-signed rather than being issued by an external certificate authority. *The HTTPS connection is secure and traffic is encrypted, however.*

To proceed to the product's web interface, **you will need to make the selections that your browser's security message discourages.** The security warning page may present an option to learn more, view details, or go to the "Advanced" page. When you select the applicable option, your browser provides a button or link to continue to the IP address you entered, with a reminder that it may be unsafe. Select this option. *Your HTTPS connection is safe.*

After you have accessed the product's web interface once, your browser remembers its IP address and will not present the security message again.

Vaddio Deployment Tool

The Vaddio Deployment Tool simplifies provisioning and system administration for most Vaddio products, and provides a shortcut to each device's web interface. This tool is available as a free download at https://info.legrandav.com/VaddioDeploymentTool.

Ways the Vaddio Deployment Tool makes your tasks easier:

- Easily scan your network for Vaddio devices – no more complicated procedures for discovering devices' IP addresses.
- View scan results as a dashboard; easily identify unprovisioned and unauthenticated devices.
- Provision new devices or update device firmware from the dashboard.
- Import or export device configurations, reboot, or restore a device to factory defaults from its detail page.
- Access devices' web interfaces directly.
- Change a device's admin password from its detail page.
- Standby and mute controls available on the dashboard for authenticated devices.
- Organize Vaddio devices into groups – for example, by product type or physical location.

Comparison: Initial Device Set-up, Web Interface vs. Vaddio Deployment Tool

The sequence of tasks for initial device set-up and system administration differs somewhat, depending on which way you do the initial device set-up.

Using the Web Interface	Using the Vaddio Deployment Tool
Before you start: Be sure you have a media player to view the USB stream.	Before you start: Be sure you have the current version of the Vaddio Deployment Tool. This tool is available as a free download at https://info.legrandav.com/VaddioDeploymentTool.
1. Discover the IP address of the EasyIP Decoder. 2. Open the EasyIP Decoder's web interface. 3. Complete the initial device set-up. 4. Complete the initial system administration tasks. 5. Use the tools on the EasyIP Decoder's Directory page to discover the EasyIP 10 cameras on the same subnet and open their web interfaces. 6. Complete the initial device set-up and system administration tasks for each camera.	1. Scan the appropriate portion of the network for devices. 2. Set initial admin passwords on all devices marked Not Set Up and enter passwords for any devices requesting a login. 3. Open the web interface of each device and complete initial system administration tasks for all devices.

Initial Device Set-Up Using the Web Interface

You will need a media player such as VLC Media Player to view the USB stream.

Discover and Access the EasyIP Decoder

You will be able to discover and access the cameras from the EasyIP Decoder's web interface after completing its initial device set-up.

To discover the EasyIP Decoder's IP address:

1. Connect the EasyIP Decoder's USB cable to your computer. Then power up the EasyIP system, if it is not already on.
2. Open a media player such as VLC Media Player and view the USB stream (If you use VLC Media Player, this is the "Open Capture Device" option under Media.). The camera is available as a video capture device; the device name is EasyIP Decoder.

   The video output is blue or black when no video input is selected.
3. Press the IP Address button to overlay the EasyIP Decoder's IP address and MAC address on the video output.
4. Press the button again to dismiss the information display.

To access the EasyIP Decoder's web interface:

Enter the IP address in your browser's address bar. See Initial Access to the Web Interface for information about the warning messages that you will encounter the first time you access the device's web interface.

To complete the initial device set-up:

The first time you access any EasyIP device's web interface, it presents a landing page to set the admin password. There may be additional initial device set-up tasks. After you complete the initial device set-up, you will be able to work with the product.
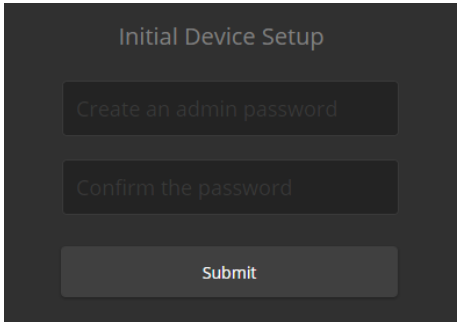
Note
Because restoring factory defaults returns the product to a "like new" condition, you will need to do the initial device set-up after you restore factory defaults.

Discover and Access EasyIP 10 Cameras

EASYIP DECODER – DIRECTORY PAGE

After you complete the initial device set-up for the EasyIP Decoder, you will be able to use it to discover the IP addresses of the cameras in your EasyIP system.

To discover a camera from the EasyIP Decoder:

1. On the Directory page, select the Edit icon for one of the inputs.
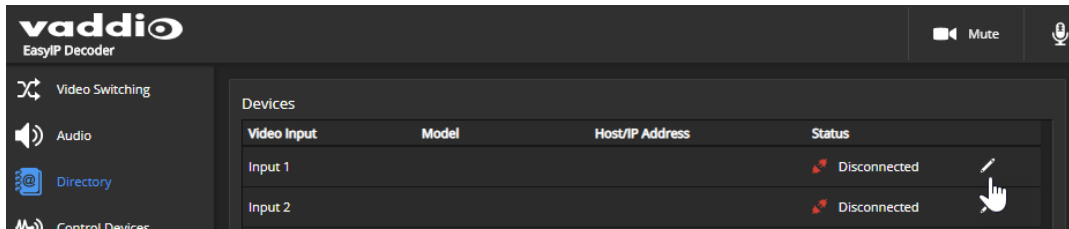
2. In the Input Pairing box that opens, select Discover Devices.
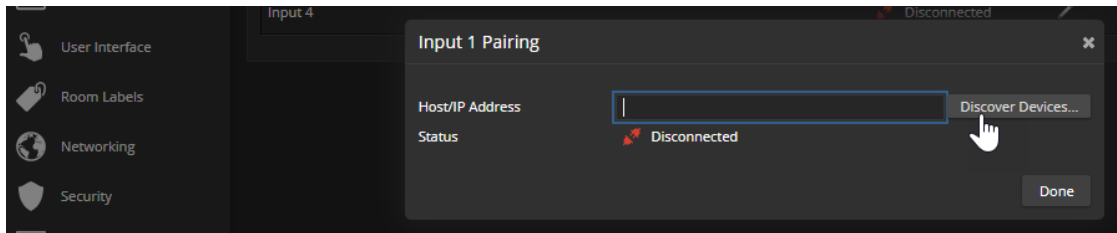
3. The Discovered Devices list shows the EasyIP 10 cameras on the subnet with the EasyIP Decoder.
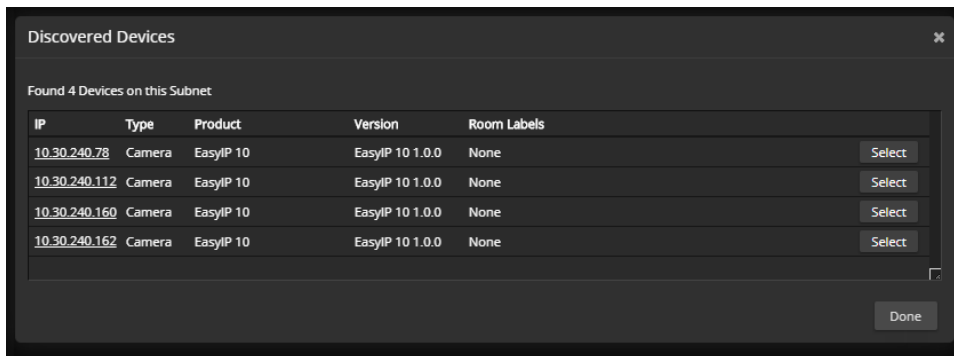
To access a camera's web interface:

Select the camera's IP address from the Discovered Devices list,

OR

Select and save the camera, then select its IP address from the directory.

Initial Device Set-Up Using the Vaddio Deployment Tool

Be sure you have the current version of the Vaddio Deployment Tool. This tool is available as a free download at https://info.legrandav.com/VaddioDeploymentTool. If you have a copy of the tool already, compare its version information to the version shown on the release notes. You can find this document at https://www.legrandav.com/en/products/vaddio/accessories/vaddio_deployment_tool under the Resources tab.

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

1. Download and install the Vaddio Deployment Tool if you have not done so already, then open it.

2. Power up the EasyIPsystem if you have not done so already.

3. On the Find Devices page, click Scan. If the scan does not locate the EasyIP devices, click Advanced and specify the appropriate portion of the network to scan – your computer may be on a different subnet from the EasyIPEasyIP equipment.

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

4. In the list of equipment that the scan discovers, locate the EasyIP devices marked Not Set Up.
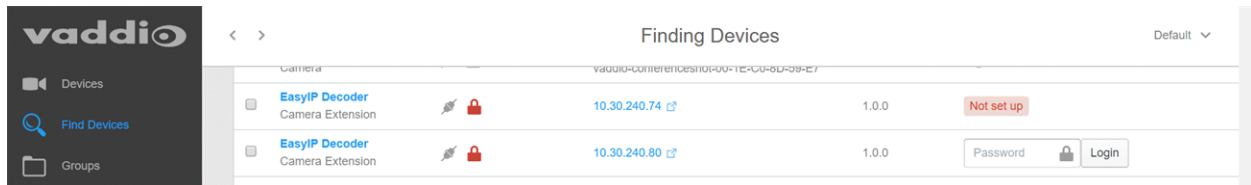
5. For each device, click the Not Set Up button and set the admin password on the device detail page that opens.
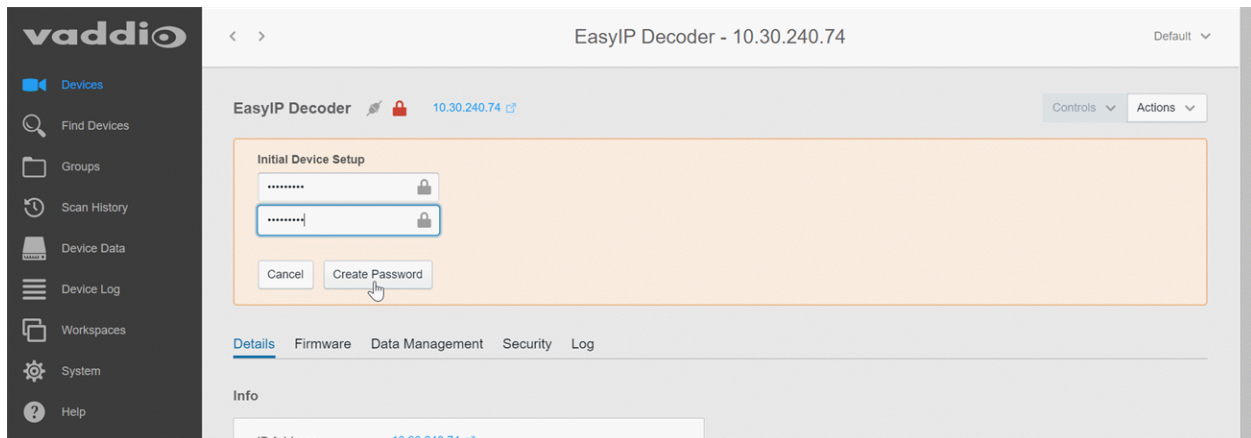
The device now shows up as unlocked.

After the EasyIP devices have all been provisioned with admin passwords, you will be able to log in to the administrative web interface for each one to complete system administration and other configuration tasks.

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

Select the device's IP address from any page where it appears. See Initial Access to the Web Interface for information about the warning messages that you will encounter the first time you access the device's web interface.

Next Steps for New Deployments

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

Security settings – In each device's administrative web interface, you can configure product security features to conform to the IT policies for your environment. See Setting Passwords and Access.

Network settings – Depending on the requirements of your network, you may need to change the hostname. See Changing the Hostname. If additional network changes are required, work with the site's network specialist to configure the Luxul switch.
Do not change network settings without guidance from an on-site network specialist.

Time zone – Set the device to the appropriate time zone to ensure that timestamps in the event log are accurate. See Specifying Time Zone and NTP Server.

Room labels – Add helpful information such as the room location and phone number to the web interface of each device. See Adding Room Information to the Device's Web Interface.

The system administration pages for these tasks are virtually identical for all EasyIP products.

Note
Some of the screen shots of these web interface pages are from the EasyIP Decoder and some are from the EasyIP 10 camera.

Setting Passwords and Access

EACH DEVICE – 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.

Caution
Be sure you have a way to remember passwords after changing them. If you are not using the Vaddio Deployment Tool to manage the EasyIP devices, there is no way to reset a forgotten password on the EasyIP 10 camera. In this situation, you may need to return the camera to the factory.
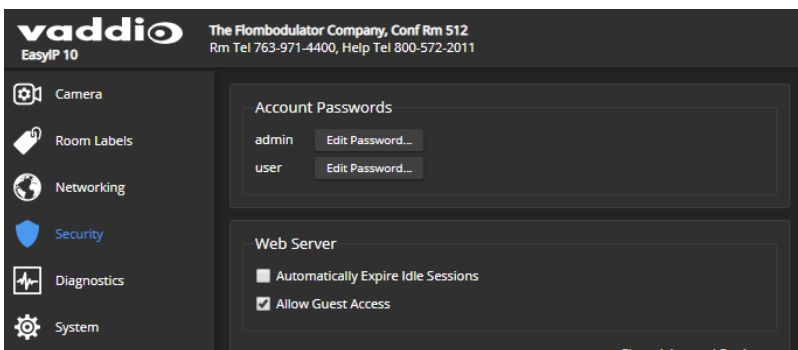
Configuring Other Security Settings

EACH DEVICE – SECURITY PAGE

Depending on your environment, you may want to make these changes:

- **Enable HTTP access** – When selected, administrators and operators can access the product's web interface using the less-secure HTTP protocol.
- **Enable Telnet access** – When selected, the device accepts Telnet connections.

Default security-related settings:

- HTTP access is disabled
- Telnet access is disabled
- Device discovery is enabled

Note
Consult your network security specialist before changing any of these settings.

1. Select Show Advanced Settings. The advanced options open.
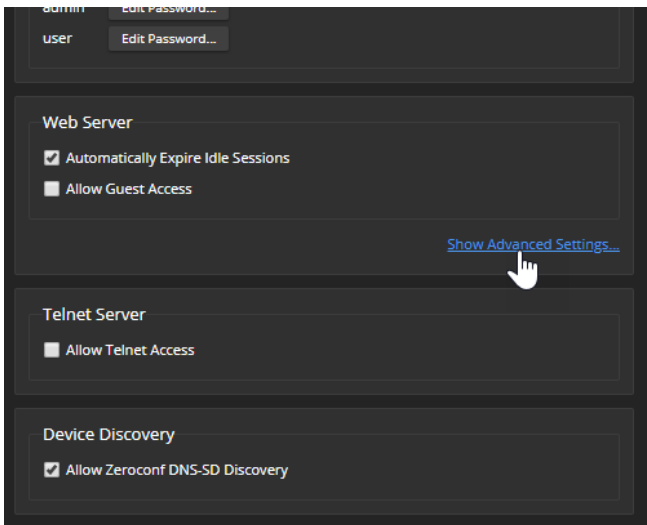
2. In consultation with your network security specialist, make the desired changes.
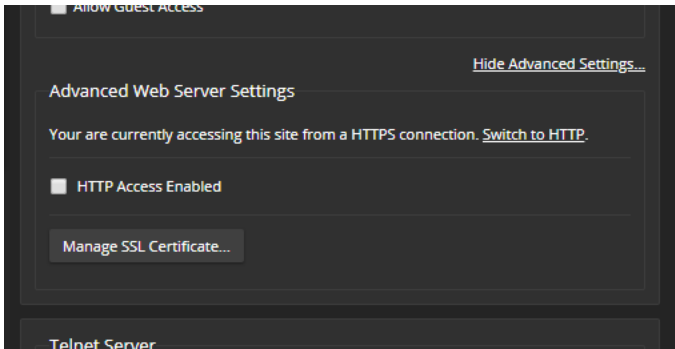
Changing the Hostname

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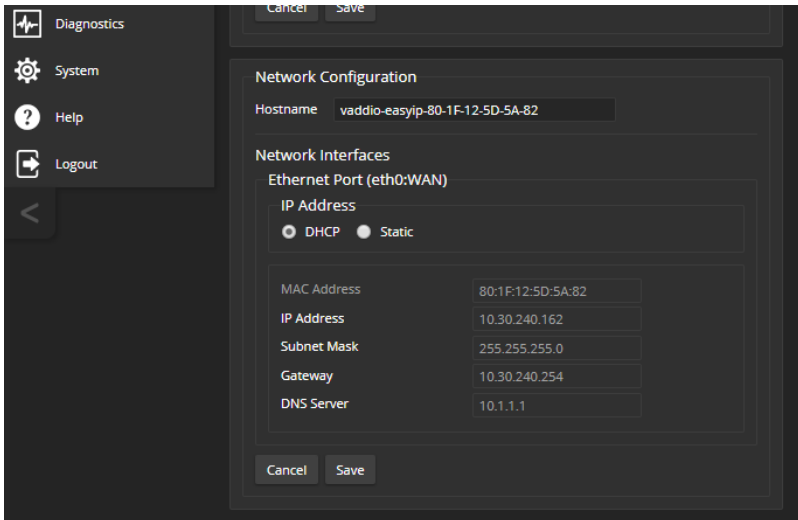
If additional network changes are required, work with the site's network specialist to configure the PoE+ switch. Refer to Luxul's manual for the switch.

Specifying Time Zone and NTP Server

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

Using automatic NTP updating ensures that the timestamps in the 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.
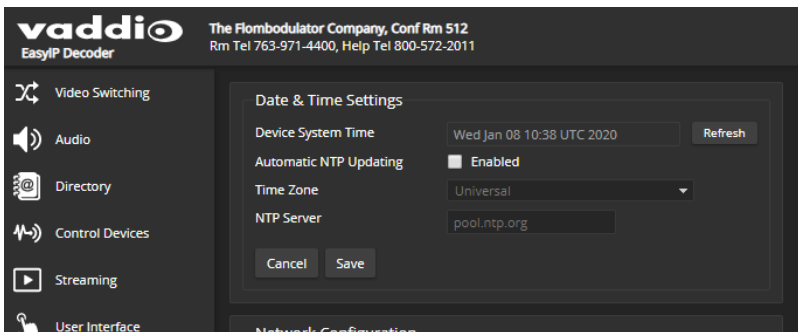
Adding Room Information to the Device's Web Interface

EACH DEVICE – 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.
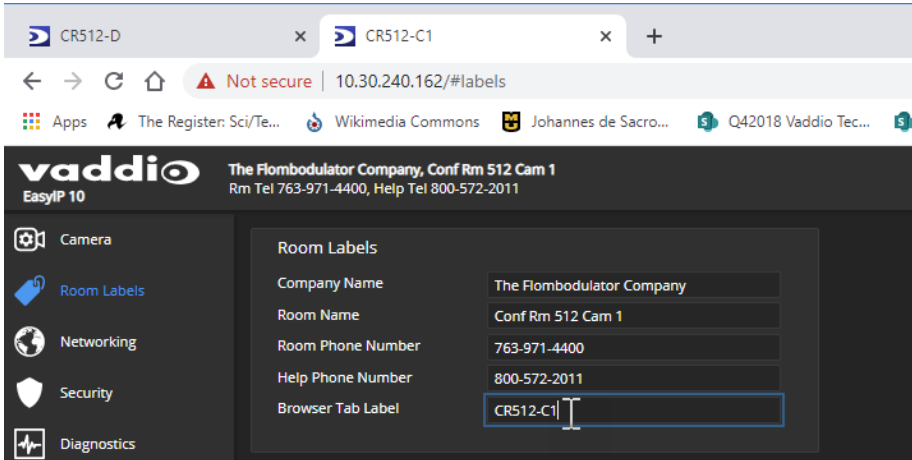
Configuring System Behavior

This chapter covers settings for defining how the system performs in your environment – for example, streaming settings.

What do you need to do?	Work with this device	Go to this page of the web interface
Create a list of available video sources (Camera pairing)	Decoder	Directory
Streaming settings		Streaming
Speaker and microphone settings		Audio
Select the active video input		Video Switching
Camera operation ■ Preset positions ■ Color and lighting settings ■ Focus ■ Speed adjustments	Camera	Camera
Other camera behaviors ■ IR frequency – respond to the IR remote as camera 1, 2, or 3 ■ Image flip (for ceiling-mounted cameras) ■ Indicator light behavior		System (has multiple tabs)
Set cameras to go to standby mode when the decoder goes to standby mode	Decoder	User Interface
Programmable behaviors (macros)		Control Devices

Setting up the Directory

EASYIP DECODER – DIRECTORY PAGE

Cameras are paired to the EasyIP Decoder if they are in its directory.

Status indications tell you whether each camera is currently available.

- **Disconnected** – The camera paired to this input is currently unavailable, or the input is not paired to a camera.
- **Unauthenticated** – A camera is paired to this input, and is waiting for an administrator to log in as admin from the EasyIP Decoder.
- **Connected** – A camera is paired to this input and ready to send video and accept commands from the EasyIP Decoder.

Video Input	Model	Host/IP Address	Status		
Input 1	EasyIP 10	10.30.240.162	Connected	✎	✕
Input 2		10.30.240.112	Disconnected	✎	✕
Input 3		10.30.240.160	Unauthenticated	✎	✕
Input 4		10.30.240.78	Unauthenticated	✎	✕

To add a camera to the directory:

1. Select the Edit icon (pencil) for the input to pair. The Input Pairing dialog box opens.
2. To find the IP addresses of EasyIP cameras on the same subnet as the EasyIP Decoder, select Discover Devices.
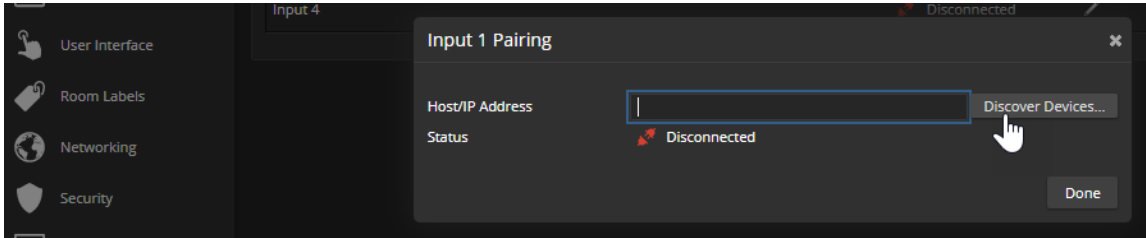
You can add a camera from another subnet by entering its hostname or IP address in the Host/IP Address box. The Vaddio Deployment Tool can help you to discover EasyIP cameras elsewhere on the network. This tool is available as a free download at https://info.legrandav.com/VaddioDeploymentTool.

3. Select one of the cameras from the list, and select Done.

   Note
   If a camera is in the directories of two or more EasyIP Decoders, it is possible for more than one person to control the camera at any given time. This can result in unexpected camera behavior.

4. Authenticate to the selected camera. After you submit the correct admin password for the camera, the Input Pairing box shows its status as Connected.
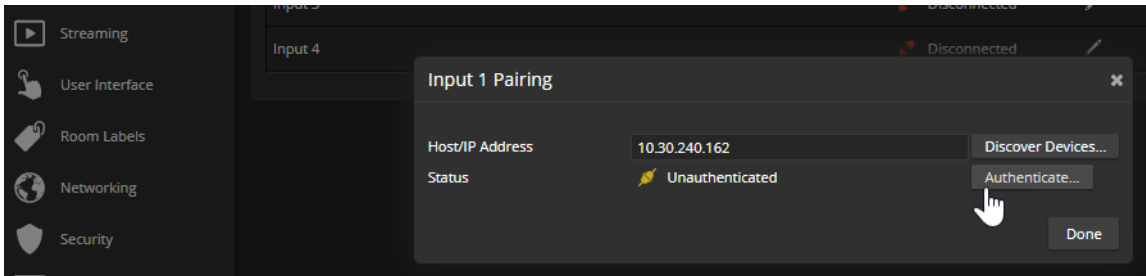
   Note
   If you are unable to authenticate successfully, this may mean you need to do the initial device set-up for the camera. See step 6.

5. Select Done to save the pairing and return to the main Directory view. If you authenticated successfully, you have finished this procedure. The camera is paired and available.
6. If you were not able to authenticate to the camera, do one of these things:
   - Select the camera's IP address from the Directory to open its web interface in a separate browser tab, and complete the initial device set-up.
   - Locate the camera using the Vaddio Deployment Tool, and select the Not Set Up button to open the camera's detail page and complete the initial set-up.
7. In the Directory list, select the Edit icon to open the camera's pairing dialog box again. Then select Authenticate and authenticate to the camera.

To change a directory entry:

Select the pencil (edit) icon for the desired address book entry to edit its IP address or name.

Select the X icon to delete the address book entry.

To access a camera's web interface:

Select the hostname/IP address of the desired camera. Its web interface opens in a separate browser tab.

Configuring Streaming Behavior

EASYIP DECODER – STREAMING PAGE AND SYSTEM PAGE

The EasyIP Decoder converts the video from the selected input to a USB stream, which can be viewed using the computer connected to the camera.

Viewing a Stream

To view the USB stream:

Connect your computer to the USB port on the EasyIP Decoder, and do one of these things:
- Start or join a conference.
- Open a stream viewer and select the camera as the video capture device.

The EasyIP Decoder streams video from the currently selected video input.

Configuring USB Streaming

EASYIP DECODER – STREAMING PAGE

These settings affect how the EasyIP Decoder works with soft conferencing applications.

To change the way the decoder shows up in your soft client's camera selection list:

Edit the USB Device Name.

To allow conferencing applications to control the audio:

Check the Enabled box for HID Audio Controls.

To allow conferencing applications to control the camera:

Check the box marked Enable UVC Extensions.
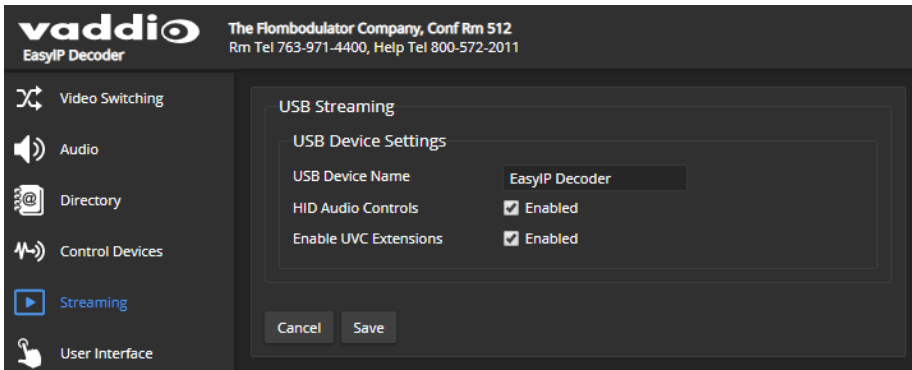
Note
USB streaming resolution and frame rate are automatically negotiated between the camera and the conferencing application.

Configuring the USB Stream Format for Specific Applications

EASYIP DECODER – SYSTEM PAGE

Depending on the conferencing application that you use, you may need to change the USB stream format. The Client Custom enables far-end camera control when used with the Zoom soft client. Use the default UVC Compliant setting with most other conferencing applications.
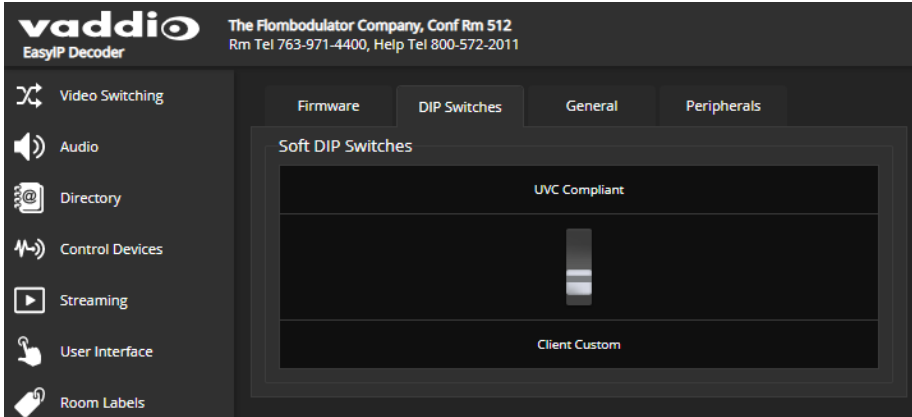
Managing Audio

When you are logged in as admin, the EasyIP Decoder provides separate controls for each of the audio inputs (microphones 1 and 2, USB playback) and outputs (line out, IP stream, and USB record). The operator's interface provides a single audio mute control and a single volume control.

Muting All Audio Inputs Together

EASYIP DECODER – ALL PAGES

Use the audio mute button at the top of any page of the EasyIP Decoder's web interface. This control is present in the admin interface and the operator's interface.

Controlling Volume and Muting Per Input or Output

EASYIP DECODER – AUDIO PAGE

To manage individual audio inputs or outputs:

Use the slider for the appropriate audio input or output to set the volume. The audio level meter and numeric value can be helpful.

Note
For best performance with most computers, we recommend setting the USB Record volume high.

To mute individual inputs or outputs:

Use the button to mute the desired audio input or output.

Fine-Tuning Microphone Performance

EASYIP DECODER – AUDIO PAGE, INPUTS TAB

To adjust microphones for best far-end audio performance:

Check or clear the checkboxes for the desired adjustments:

- **Echo Cancellation** – Keeps microphones from feeding the speaker output back into the system. Under most circumstances, echo cancellation is desirable.
- **Noise Cancellation** – Suppresses ambient noise such as the conference room's heating/air conditioning.
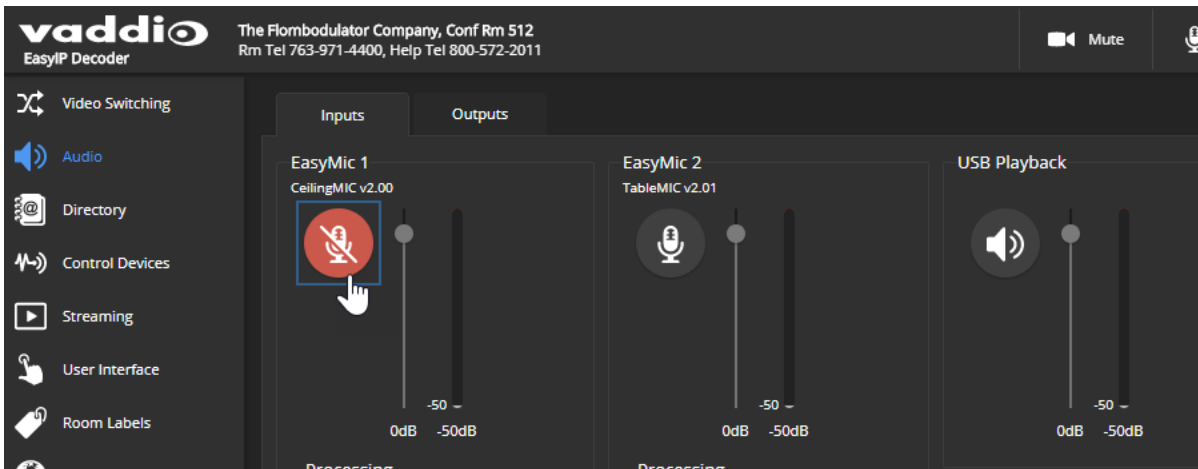- **Automatic Gain Control** – Adjusts gain to compensate for differences in the volume of people's voices.
- **Mic Boost** – Provides a 3 dB boost.

EasyPEQ filtering offers additional options.
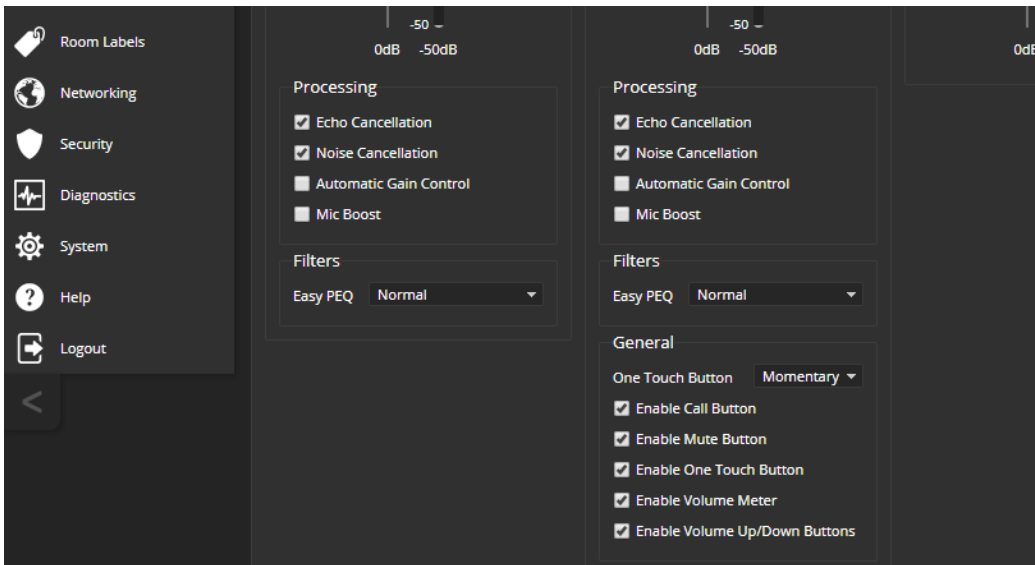
You may need to adjust the microphones to suit the room or the specific conference.

To correct this…	Do this
Reverberant room	From the Easy PEQ menu, select Reverberant Room.
Noisy environment	From the Easy PEQ menu, select Ambient Noise to reduce gain in the frequencies above and below the normal speech range.
Participants who have quiet voices or are seated beyond the microphones' optimum pick-up range	Select the Mic Boost processing option to increase microphone gain overall. From the Easy PEQ menu, select Speech Enhancement to increase gain in the frequency range for speech.
Participants with widely differing vocal volumes	Select the Automatic Gain Control processing option to adjust microphone gain based on the relative volumes of people's voices.

If two microphones are connected, they do not necessarily need to be set the same way – for example, one microphone might be set to use Mic Boost while the other is not.

Fine-Tuning Speaker Performance

EASYIP DECODER – AUDIO PAGE, OUTPUTS TAB

To reduce the dynamic range from the connected speaker:

If some people on the far end are inaudible while others are too loud, check the Compressor box.

To adjust for more natural sound:

Use the equalizer to adjust specific frequency ranges.

Working with Video Inputs

EASYIP DECODER – VIDEO SWITCHING PAGE

The EasyIP Decoder originates a USB stream with video from the input that is currently selected. When the Directory includes more than one camera or other video input, the Video Switching page lets you select which video input is active.

This page also presents the camera controls that would be available from the input camera's web interface.
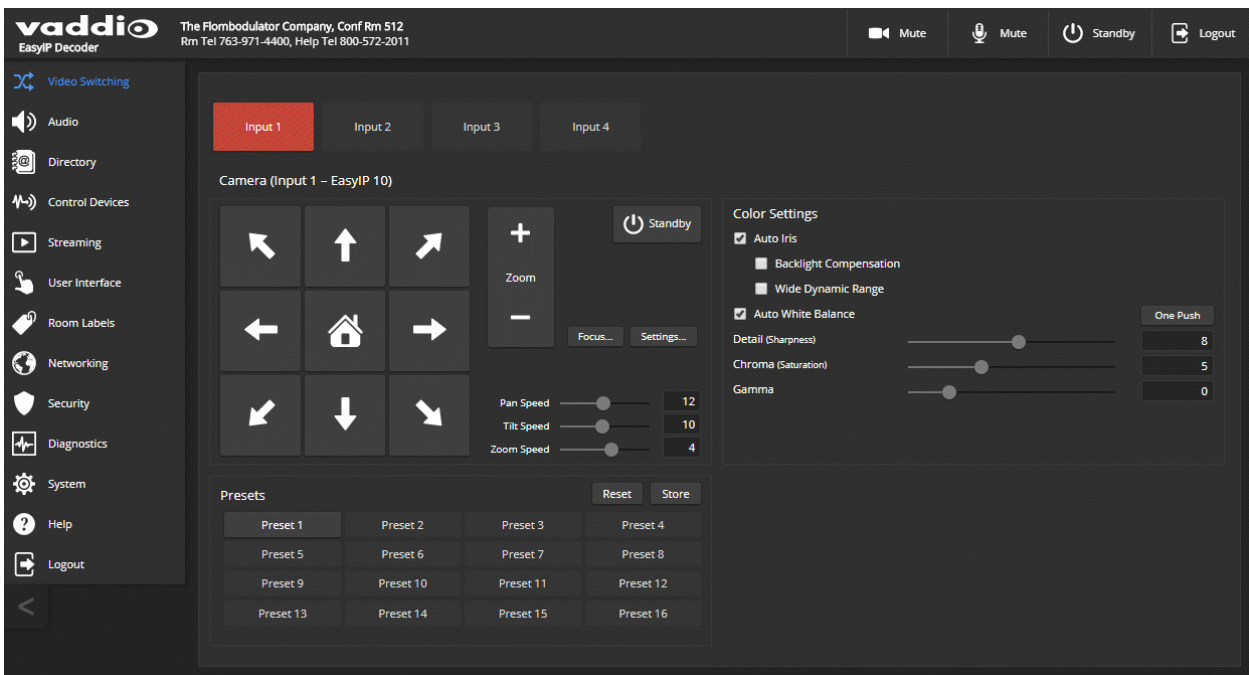
Changes that you make using the camera controls on this page (such as storing and naming presets) are stored on the camera.

Configuring and Adjusting Cameras

Cameras are configured and adjusted individually. Most of the settings and adjustments are on the Camera page of the camera's administrative web interface.

- **Home position and other preset positions** – When the camera comes out of standby mode, it moves to its Home position. You can define additional preset positions; these include pan, tilt, and zoom information and may optionally include color adjustments. Presets 1 - 6 are available using the Vaddio IR Remote Commander; all defined presets are available from the operator's (non-administrative) web interface.
- **Color and lighting adjustments** – Each room may need different color and lighting settings. Cameras in different areas of the same room may also need different settings.
- **Speed adjustments** – Cameras have separate speed settings for manual movements and movements to presets.
- **Focus adjustment** – Focus controls are also available on the IR Remote Commander, but not in the operator's web interface.
- **Indicator light behavior** – By default, the camera's indicator light is on if the camera has power. You can change this.
- **Other camera settings** – Image orientation can be changed. This is helpful for ceiling-mounted cameras, unless you prefer upside-down video.

Setting the Home Position and Other Preset Shots

EACH EASYIP 10 CAMERA – CAMERA PAGE

Presets are saved shots. Each preset includes pan, tilt, zoom, and (optionally) color settings. 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 IR Remote Commander; the others are only available from the web interface.

To store a preset:

1. Set up the shot.
2. In the Presets area, select Store to open the Store Preset dialog.
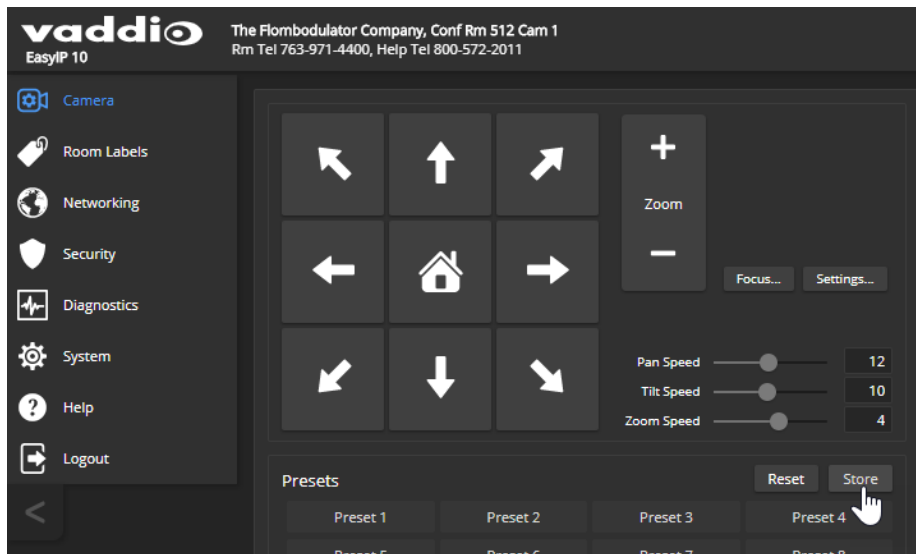
3. Select the preset to store. The preset button changes color.

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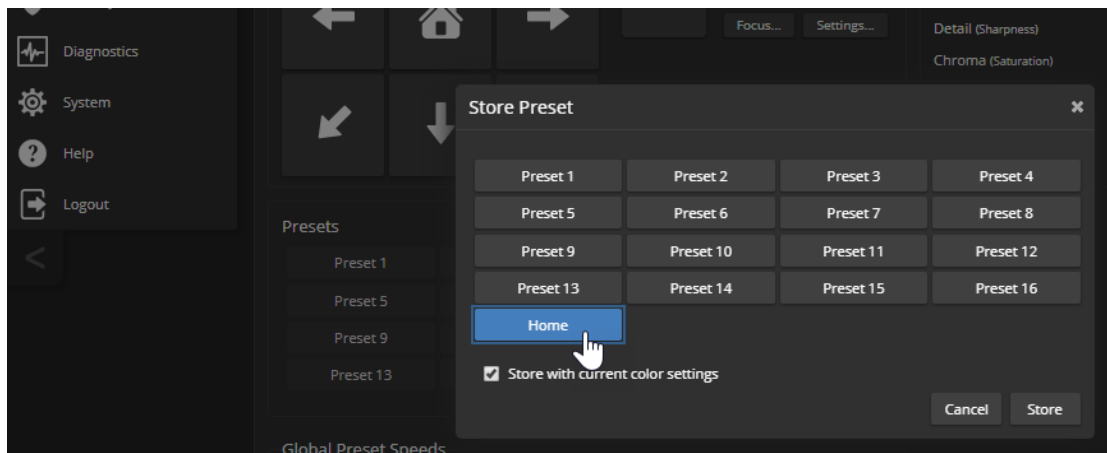
4. To save the current color settings along with the camera position, check Store with Current Color Settings.
5. Store the preset.

Renaming Presets

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

Right-click the button for the preset, and edit the label.
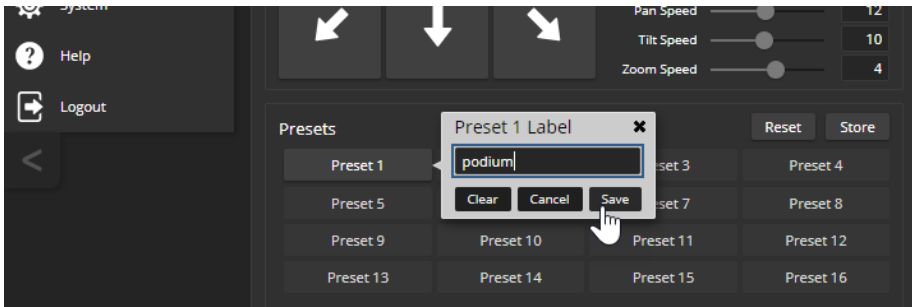
Adjusting the Color and Image Quality Settings

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).
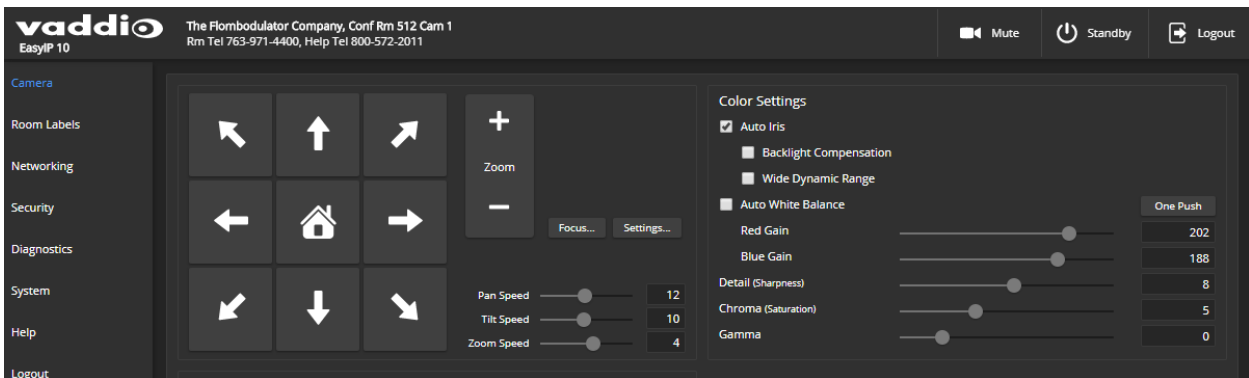
Lighting and Image Quality Quick Reference

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

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... ■ adjust Red Gain (decrease for less red, increase for less green) ■ adjust Blue Gain (decrease for less blue, increase for less yellow)

Too much red	Not enough red	Too much blue	Not enough blue	Balanced

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

EACH EASYIP 10 CAMERA – 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.
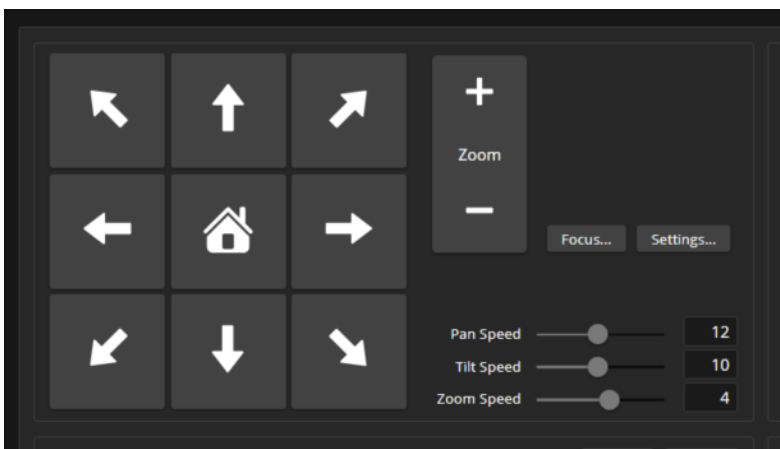
Setting the Speeds of Camera Movements to Presets

EACH EASYIP 10 CAMERA – CAMERA PAGE

The Pan Speed, Tilt Speed, and Zoom Speed sliders in the Global Preset Speeds control how fast the camera moves to presets.

To set speeds for movements to presets:

In the Global Preset Speeds section, set the speeds for movements to presets.
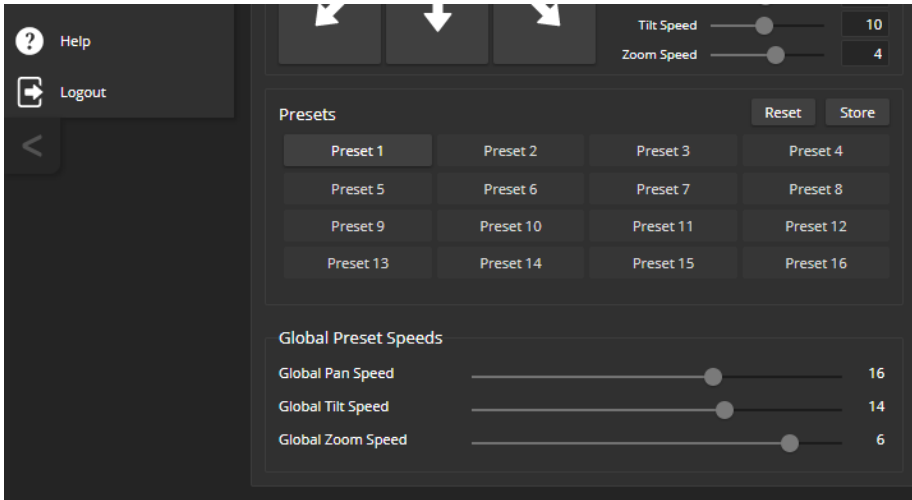
Setting the Direction for Camera Movements

EASYIP 10 CAMERA PAGE, EACH CAMERA

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.
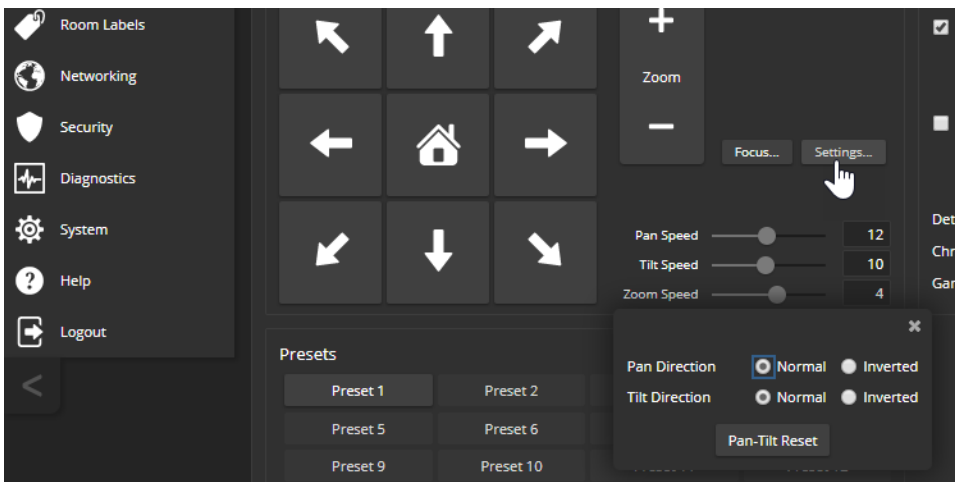
Adjusting the Focus

EASYIP 10 CAMERA PAGE, EACH CAMERA

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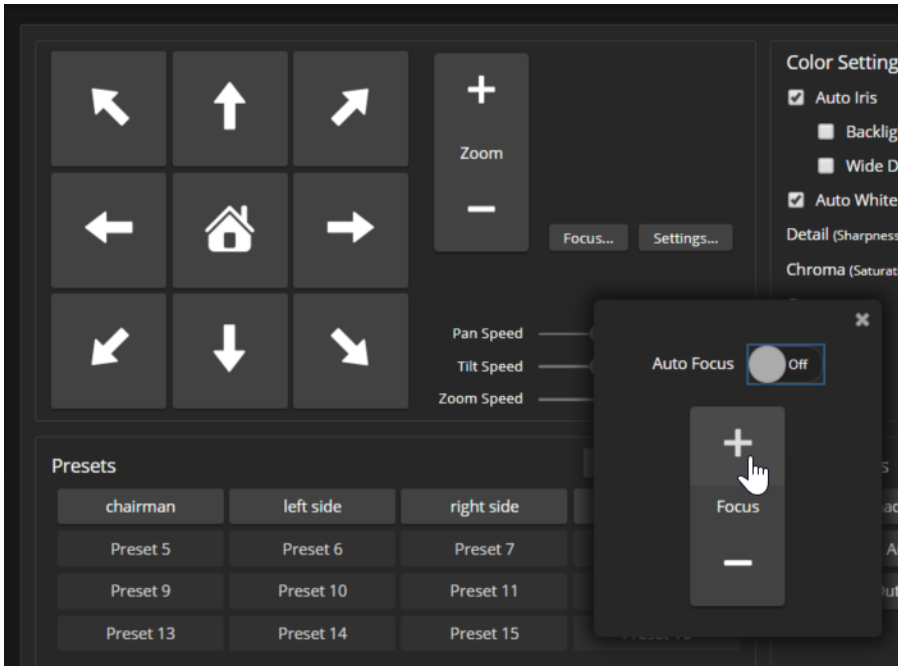
For users who are not logged in as admin, focus control is available via the IR Remote Commander.

Camera Indicator Light Settings

EACH EASYIP 10 CAMERA – SYSTEM PAGE

The General tab of the System page provides settings to control the way the indicator light behaves.

LED On – In most cases, Vaddio recommends leaving the status light on, to let people in the room know whether the camera is currently sending video.

LED On in Standby – Select Disabled to turn off the LED when the camera is in standby mode.

LED color scheme – Status light color codes for Pro AV (broadcast) or UC (unified conferencing); default is Unified Communications.
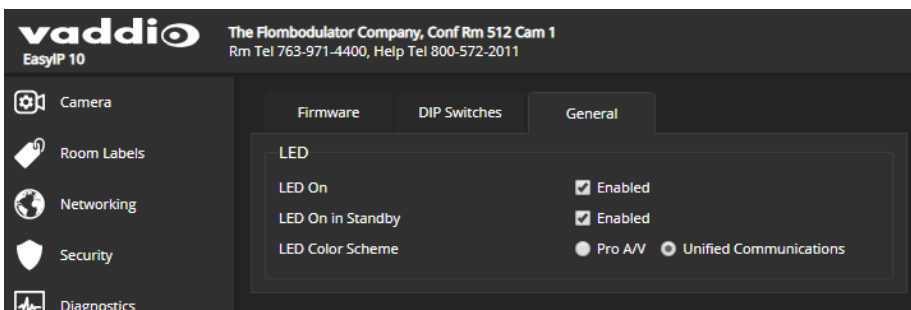
Other Camera Behavior Settings

EACH EASYIP 10 CAMERA – CAMERA PAGE OR SYSTEM PAGE

To see the camera's basic settings, do one of these things:
- Select the Camera Settings button on the Camera page.
- Select the DIP Switches tab of the System page.

IR Settings (Camera ID) – The IR Remote Commander can control up to three cameras in the same room with different IR frequencies. Use **IR Settings** switches 1 and 2 to select the frequency to identify the camera as camera 1, 2, or 3; then use the Camera Select buttons at the top of the remote to select the camera you want to control.

Image Flip – If mounting the camera upside-down, set IMAGE FLIP ON. This orients the video image correctly and sets the tilt motors to respond appropriately to tilt commands from the remote, web interface, and connected control devices.
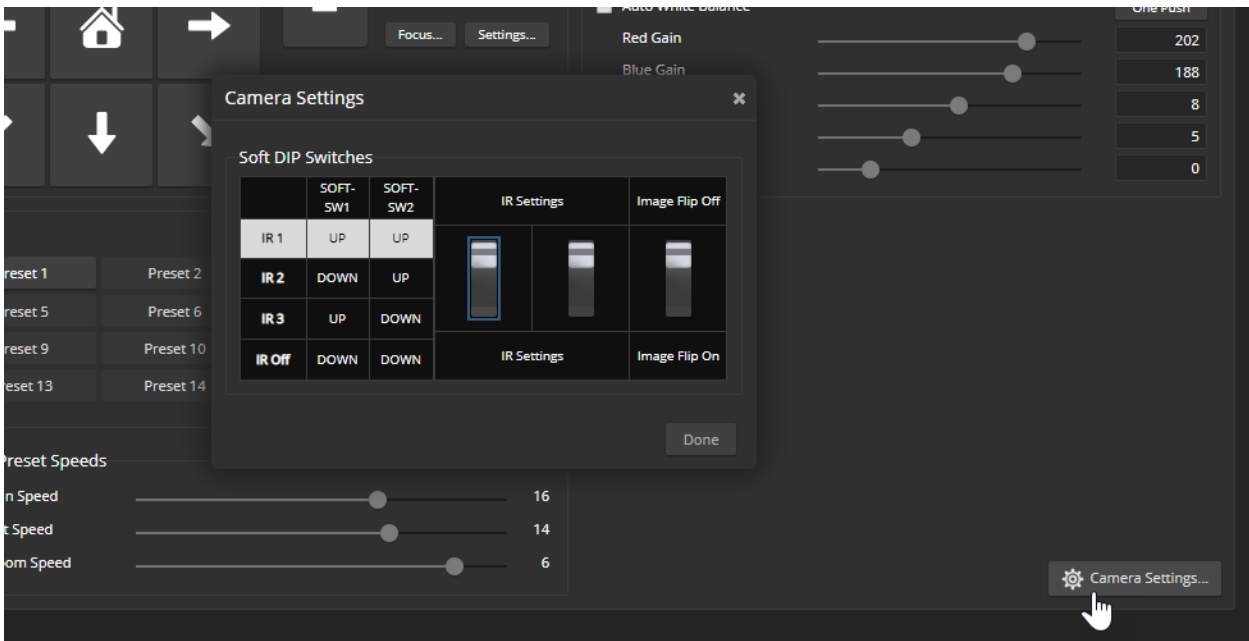
Setting up Macros and Triggers

Macros are sequences of commands. Triggers register events or state changes that can be associated with macros, to make them run. For example, the One Touch (Home) button on a TableMIC is a trigger.

When you associate a macro with a trigger, you must specify whether it runs when the trigger turns on, or when it turns off – so you can associate two macros with each trigger, one to run when the trigger is activated, and one to run when the trigger is turned off.

A trigger may be either hardware, such as the Home button on a tabletop microphone, or software. Software triggers allow you to program custom functions for third-party control devices, such as defining the buttons on a conference room touch-screen. Hardware triggers (labeled One Touch in the web interface) allow you to define responses to connected Vaddio trigger devices such as TableMIC microphones or StepVIEW mats.

The macro can only run successfully if all the commands in the macro are able to run successfully. For example, if the macro sends the camera to a preset position, that preset must be defined. Refer to the Telnet Serial Command API section for a full list of commands.

Writing and Editing Macros

EASYIP DECODER CONTROL DEVICES PAGE, MACROS TAB

To define a macro:

1. Enter a name in the Macro Editor's Name field.

2. Enter one or more Telnet commands in the editing area. Note that camera commands must specify which camera they apply to – for example, `camera 1 tilt set 10` applies to the camera paired to input 1.

3. Optional but strongly recommended: Use the Test button to check your work while you are writing the macro.

4. Save your work when you are finished, or select New to start over.

Note
If the macro has external requirements, it will only run properly if those requirements are met. For example, if the macro includes a command to move to a preset, the applicable preset must be stored before the macro can run successfully. I know I'm repeating myself, but this is important.
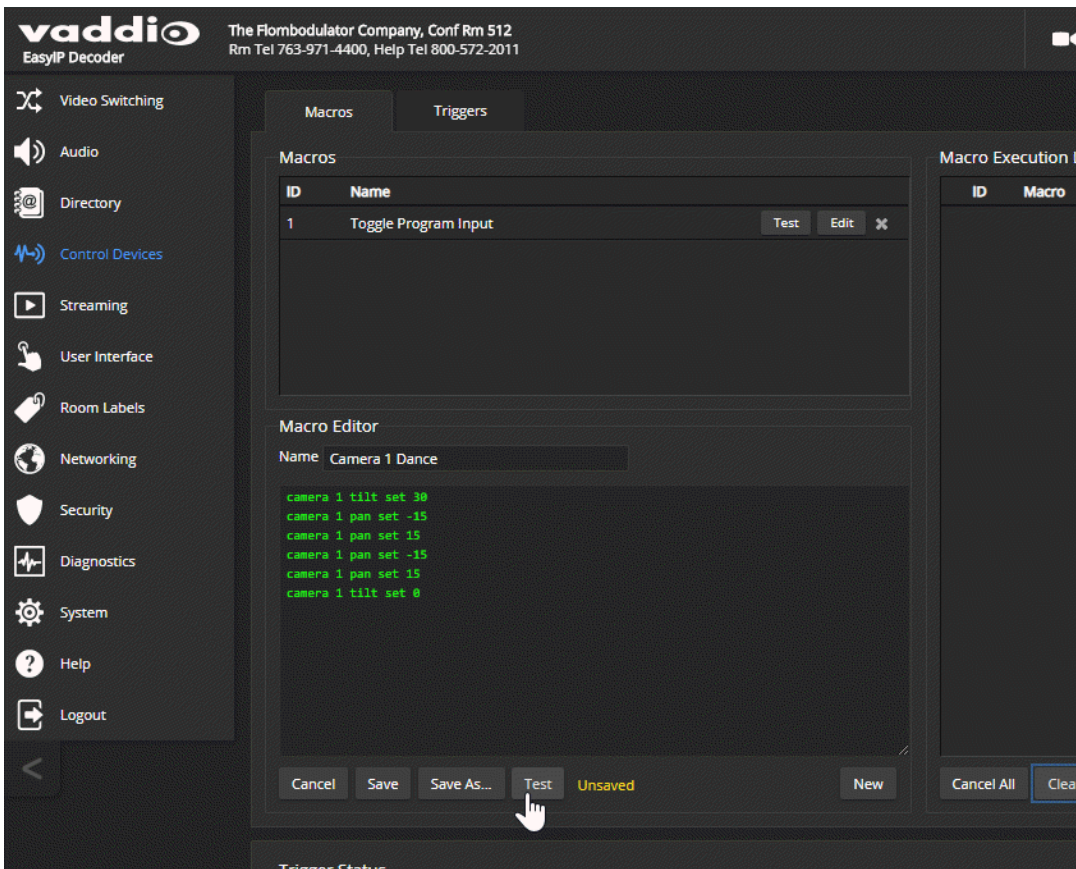
Testing Macros

EASYIP DECODER CONTROL DEVICES PAGE, MACROS TAB

The Macro Editor has a Test button. You can test the macro while you are editing it, or after saving it. The Macro Execution Log shows the result of each command as the test runs.
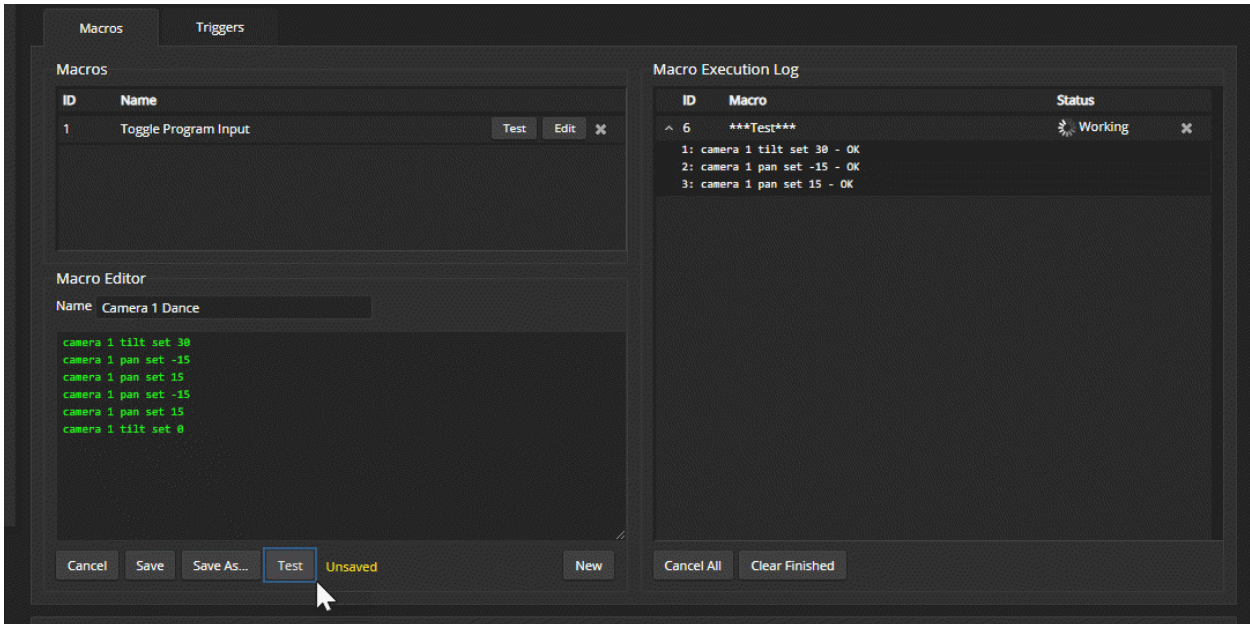
When the test finishes, the execution log shows a pass message or a fail message and hides the line-by-line results. If you need to debug the macro, you can expand the log again by selecting the down-arrow.
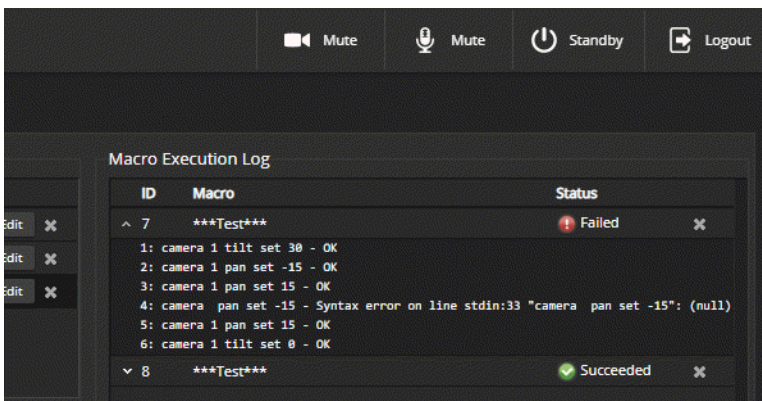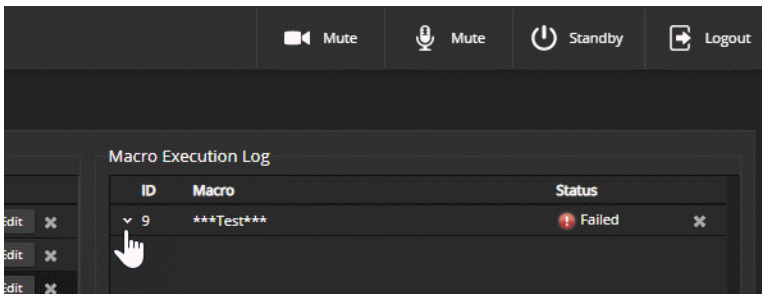
To edit an existing macro:

Select the Edit button associated with the macro, make your changes in the Macro Editor, and save your work.

To create a new macro based on an existing one:

Select the Edit button for the existing macro to open it, and use the Save As button to give it a new name. Then select its Edit button again, and make the desired changes.
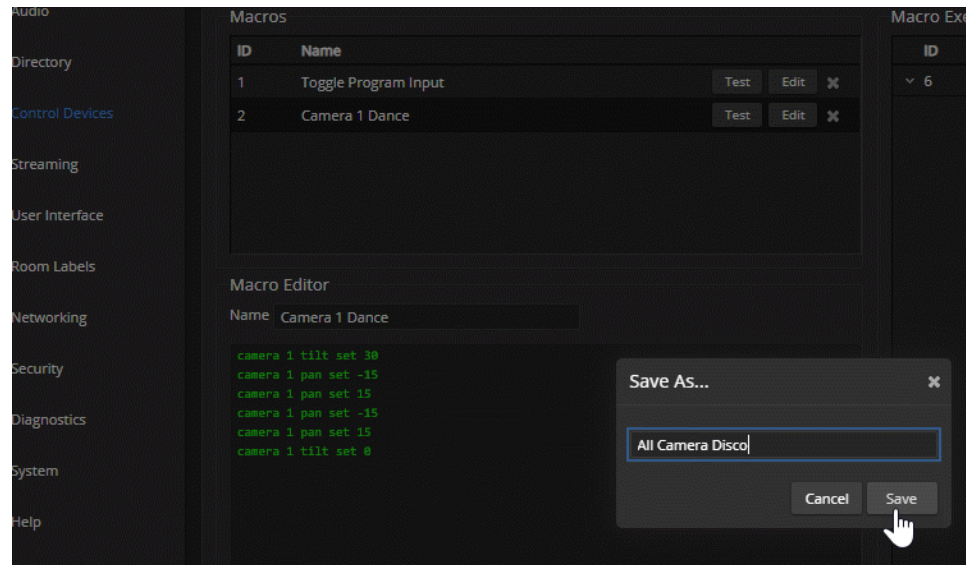
Assigning Macros to Triggers

EASYIP DECODER CONTROL DEVICES PAGE, TRIGGERS TAB

A trigger may be associated with a macro that runs when the trigger is on, one that runs when the trigger is off, or one of each.

To assign a macro to a trigger:

Do at least one of these things:
- Select a macro in the Execute Macro on Enter field. This macro will start when the trigger turns on.
- Select a macro in the Execute Macro on Exit field. This macro will start when the trigger turns off.

Right-click a trigger label or test button to rename the trigger.

Example: Assigning a single macro to the Home button of the connected TableMIC microphone:

1. On the Macros tab of the Control Devices page, name and create the macro. Then test, debug, and save it.

2. If you want this macro to run every time you tap the TableMIC microphone's One Touch button, got the Audio page and set the One Touch Button mode to Momentary. Otherwise it will run *every other time* you tap the button.

3. On the Triggers tab of the Control Devices page, locate One Touch in the list of trigger events, and select the macro from the list of available actions for Execute Macro On Enter.

To remove macro assignments from a trigger:

Select the X on that trigger's row. This is equivalent to setting both macros to `(none)`.

Testing Triggers

EASYIP DECODER CONTROL DEVICES PAGE

Just as it can be helpful to test macros when you write them, it can also be helpful to test triggers when you assign macros to them. The Trigger Testing section is available from both tabs of the Control Devices page.

To test a trigger:

1. Set Test Mode on. The web interface displays a notification.
2. Select the trigger to run the macro associated with turning the trigger on.
3. Select the trigger again to run the macro associated with turning the trigger off, if there is one.
4. Turn off Test Mode when you finish testing.
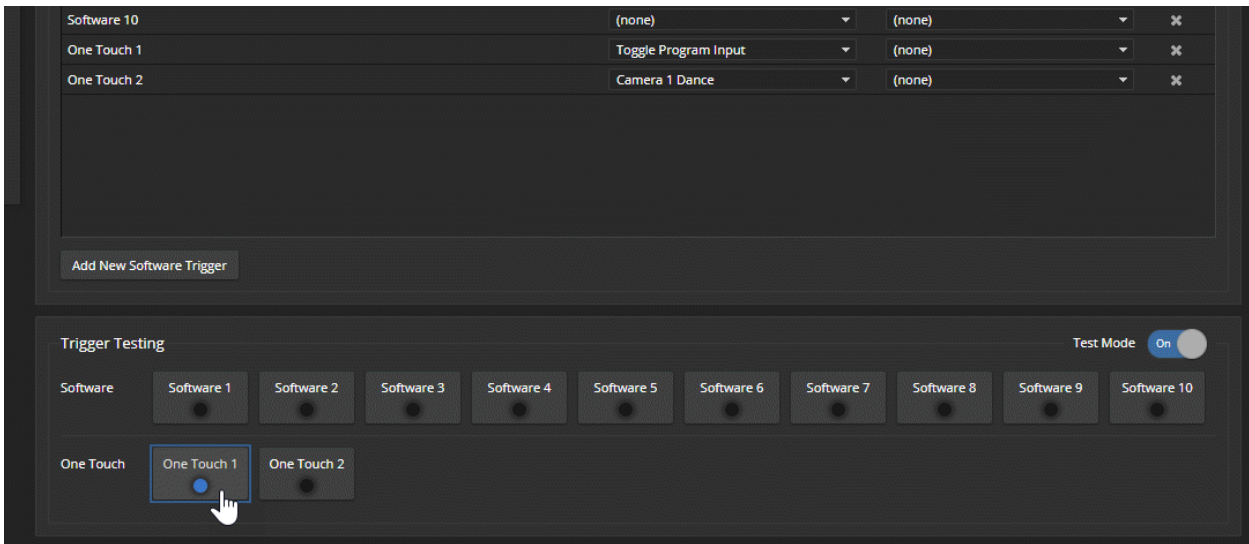
Note
Triggers are not available to the control device when Test Mode is selected.

Example: Assigning a Function to the Connected Microphone's Home Button

EASYIP DECODER CAMERA PAGE, CONTROL DEVICES PAGE

In this example, two TableMIC microphones are connected to the EasyIP Decoder. The team that uses the conference room most frequently has requested that the Home button on the cameras' remote and the Home buttons on the two microphones should all do the same thing. The remote is normally set to control the camera that is paired to Input 1 of the EasyIP Decoder.

Tasks to accomplish this:

1. **Video Switching page:** Select Input 1, set up the shot and color adjustments on the camera, and store the Home preset.
2. **Control Devices page, Macros tab:** Create, name, test, and save a new macro that runs the `camera 1 home` command. For this example, we'll assume you name it Cam1 Home.
3. **Control Devices page, Triggers tab:** For the OneTouch 1 trigger, click the box in the Execute on Enter column and select the Cam1 Home macro from the list. Do the same thing for the OneTouch 2 trigger.

Configuring System Standby Behaviors

EASYIP DECODER SYSTEM PAGE, GENERAL TAB

To set the EasyIP Decoder's standby behavior:

To place the EasyIP Decoder in standby mode when its USB cable is not connected, select "Standby Device when USB Disconnects."

When this check box is not selected, the decoder only goes to standby mode in response to a command from the web interface or Telnet connection.
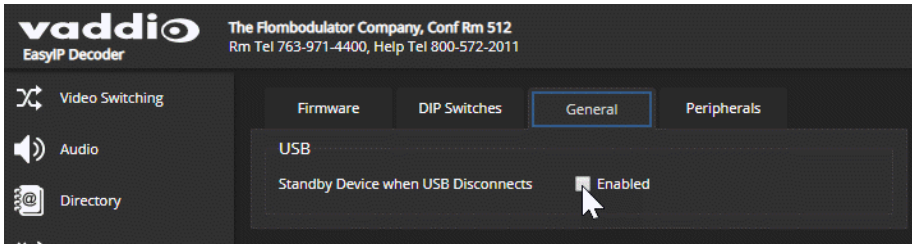
EASYIP DECODER USER INTERFACE PAGE

To set standby behavior for cameras in the directory:

To place the cameras in standby mode along with the EasyIP Decoder, select "Standby Connected Cameras when EasyIP Decoder Enters Standby."

When this check box is not selected, the camera only goes to standby mode in response to a command from the remote, web interface, or Telnet connection.
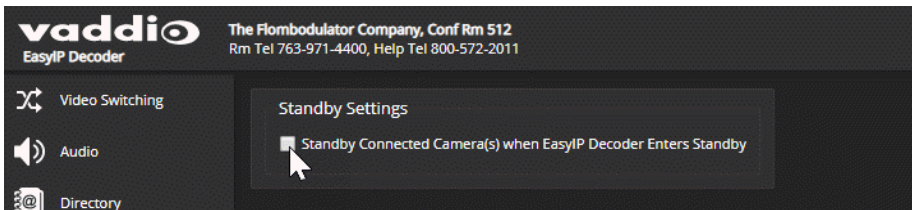
System Maintenance

This chapter covers maintenance and troubleshooting tasks for the EasyIP system.

What do you need to do?	Work with this device	Go to this page of the web interface
Save (export) and restore (import) the configuration data	Affected device	System: Firmware
Update firmware or view the current firmware version	Affected device	System: Firmware
Update microphone firmware or view the microphones' current firmware version	EasyIP Decoder	System: Firmware
Reboot or restore factory defaults	Affected device	System: Firmware
Camera adjustment: Recalibrate pan and tilt motors	Affected camera	System: Firmware
Locate Vaddio Technical Support contact information	Any EasyIP device	Help
View diagnostic logs		Diagnostics

Note
Some of the screen shots of these web interface pages are from the EasyIP Decoder and some are from the EasyIP 10 camera.

The System pages for the different products are similar to each other, but include product-specific features as well. For example, the EasyIP 10 camera's System page provides a control to recalibrate the camera's motors, and the EasyIP Decoder's System page includes a tab for updating the firmware on connected microphones.

Saving (Exporting) or Restoring (Importing) a Configuration

SYSTEM PAGE, FIRMWARE TAB

You can import a configuration to several devices of the same type if you need to configure them the same way. The devices must be of the same model and must have compatible firmware versions installed.

If you need to restore a device's factory default settings, you may want to export the configuration beforehand so that you can restore customized information.

Device	Included	Not Included
Camera	Home Presets	Color settings Speed settings
All devices	NTP and time zone information Room Labels	Hostname Passwords and other security settings

To export a configuration:

1. Configure the device with the time zone and room label. If you are working with a camera, store the presets you need.

2. Export the configuration (Export Data button). The export downloads to your computer as a .dat file. The filename is the device's hostname.
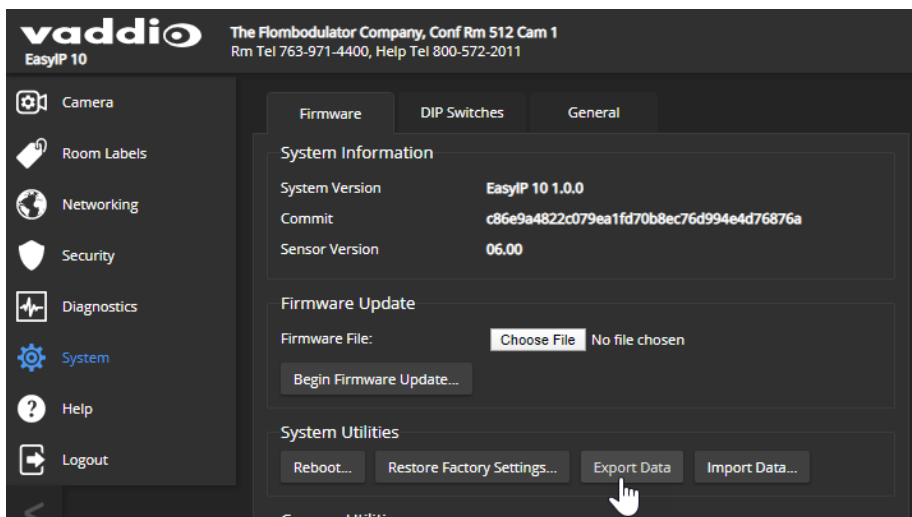
3. When you are ready to restore the configuration, select Import Data. The web interface prompts you to browse to the .dat file that will be imported.

   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, EACH EASYIP DEVICE

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.

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

1. Download the firmware and its release notes.
2. Select Choose File, then browse to the downloaded firmware and select it. The filename ends with `.p7m`.
3. Select Begin Firmware Update.
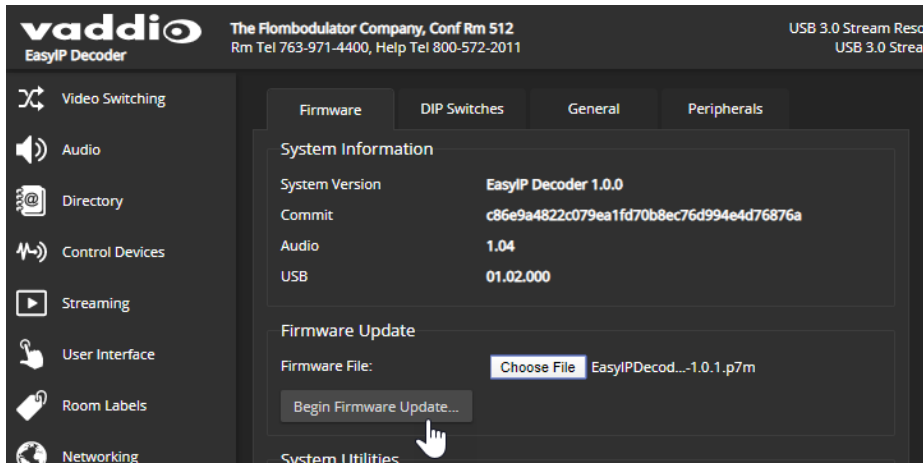
4. Read and understand the information in the Confirm dialog box.
5. Select Continue. A progress message box opens. If you are updating a camera, the indicator light on the front of the camera turns yellow. If the update process presents warnings or error messages, read them carefully.

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.

Installing a Firmware Update for a Connected Microphone

EASYIP DECODER SYSTEM PAGE, PERIPHERALS TAB

The process to update microphone firmware is similar to the process for updating other devices, but is done from the EasyIP Decoder.

1. Download the firmware and release notes. Microphone firmware is available on the microphone product page.
2. Select Choose File and navigate to the firmware file you downloaded.
3. Select the appropriate EasyMic port (1 or 2). You can only update one microphone at a time; this selection specifies which EasyMic connector the data will flow through.
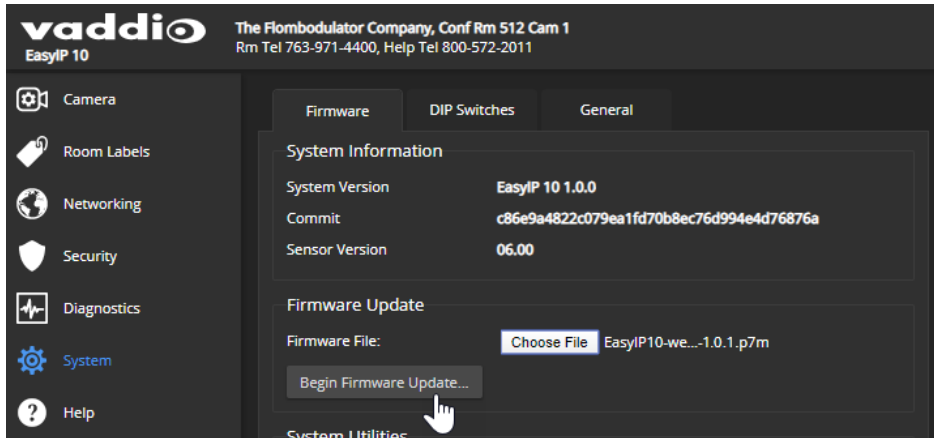
4. Select Begin Firmware Update.

Rebooting the Device

SYSTEM PAGE, EACH EASYIP DEVICE

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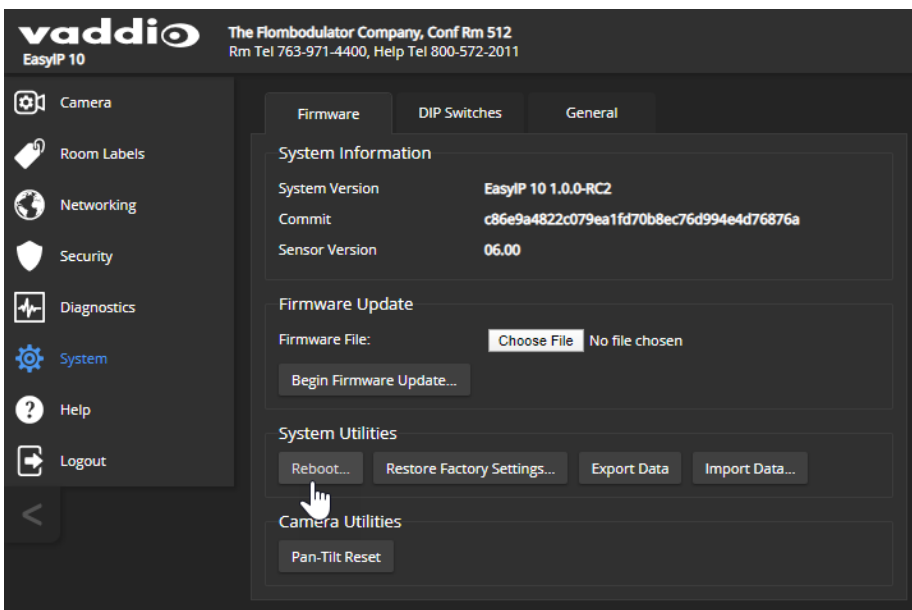
Contacting Vaddio Technical Support

HELP PAGE, ANY VADDIO DEVICE

If you can't resolve an issue using your troubleshooting skills (or the Troubleshooting table in this manual), we are here to help.

You'll find information for contacting Vaddio Technical Support on the Help screen.

Viewing Diagnostic Logs

DIAGNOSTICS PAGE, EACH EASYIP DEVICE

If you encounter a problem that you can't solve, your Vaddio technical support representative may ask you to download and email the event log file available from the Diagnostics screen.

Note
The log may include large numbers of internal events even when no errors have occurred. Rebooting generates over 100 log entries.
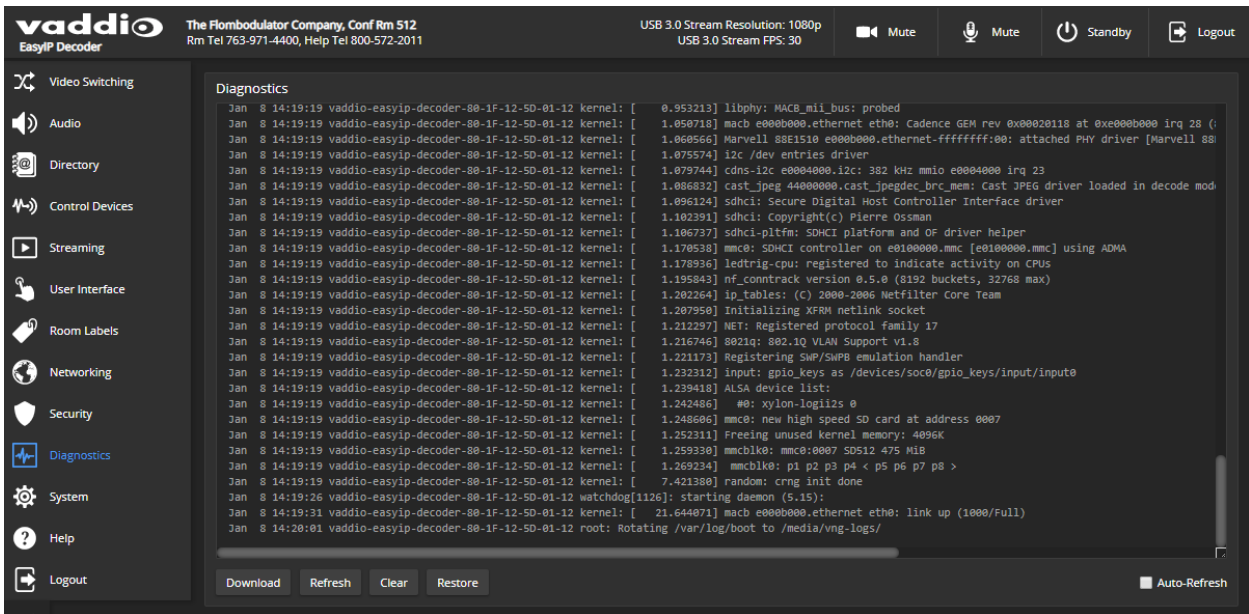
Operating the System Using the Web Interface

Although the EasyIP 10 cameras have their own web interfaces, the system can be operated from the EasyIP Decoder, which provides audio controls as well as video input selection and controls for the selected video input. Instructions and screen shots in this chapter are for the EasyIP Decoder unless otherwise noted.

You will need to know the device's IP address to use its web interface. You will also need to know the user password if guest access is not enabled.

To discover the EasyIP Decoder's IP address:

While viewing the USB stream, press the IP Address button on the front of the EasyIP Decoder. The decoder overlays its IP address and MAC address on the video output. Press the button again to dismiss the information display.

To access the EasyIP Decoder's web interface:

Enter the IP address or hostname in your browser's address bar. If you use the hostname, you may need to enter `https://` as a prefix to keep the browser from treating it as a search query.

By default, the web interface opens to a login page, but each EasyIP device can be configured to allow non-administrative access without logging in. Check with the system administrator if you need the credentials to log in.

The operator's page varies in appearance, depending on the controls that the system administrator sets up on the active input device.
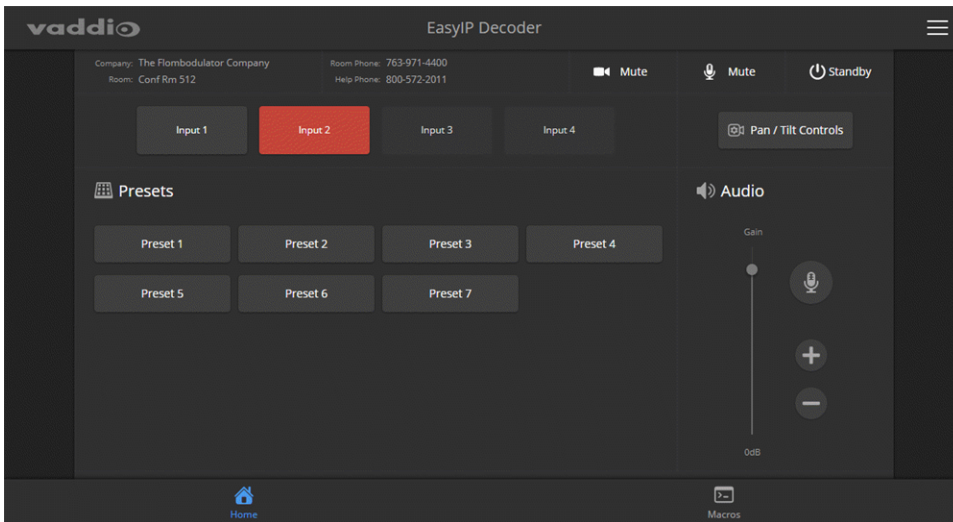
Muting Audio or Video

EASYIP DECODER

Audio and video mute controls are available at the top of each page of the EasyIP Decoder's web interface.

- Audio mute disables the microphone inputs and the audio portion of the stream.
- Video mute disables camera inputs to the EasyIP Decoder, and the USB stream sends blue or black video.
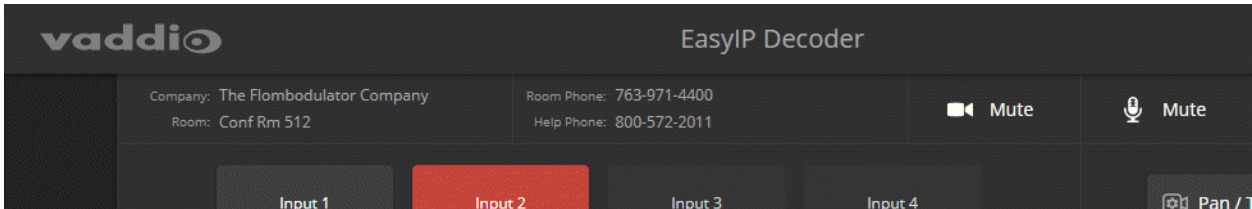
Note
Remember that video mute provides visual privacy but does not mute the room's microphones. Mute video and audio if you need complete privacy.

Adjusting Speaker Volume

EASYIP DECODER

Use the Speaker slider or the + and - buttons to set the speaker volume.

Moving the Camera to a Preset Position

EASYIP DECODER OR INDIVIDUAL CAMERA

Use the Preset buttons (if available) to move the camera to any of its programmed positions. Presets are only available if they have been set in the camera's administrative interface.
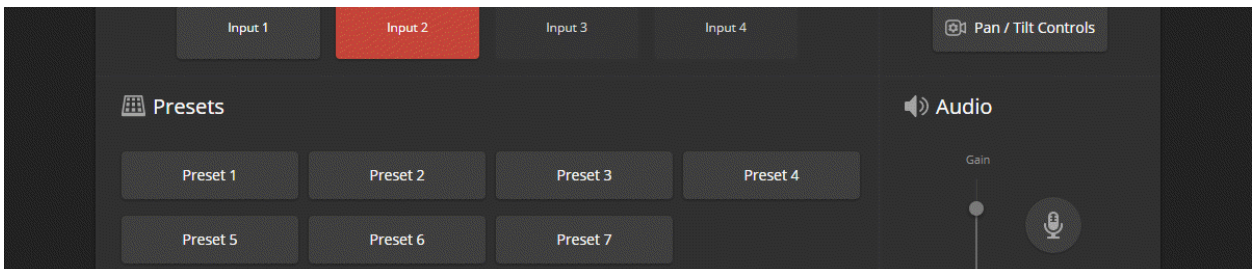
Accessing Camera Controls

EASYIP DECODER

Select Pan/Tilt Controls to open these controls for the selected camera:

- Directional controls
- Home button
- Zoom
- Focus
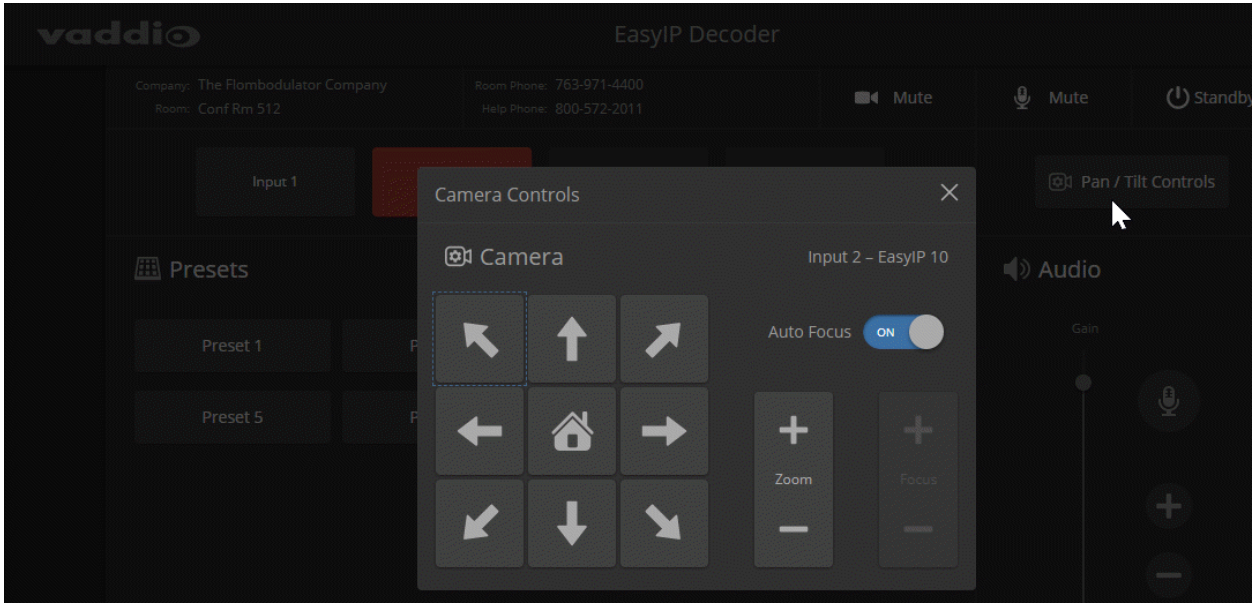
Moving the Camera Manually

EASYIP DECODER OR INDIVIDUAL CAMERA

Use the arrow buttons for camera pan and tilt. The center button moves the camera to the home position.

Zooming In or Out

EASYIP DECODER OR INDIVIDUAL CAMERA

Use the Zoom + button to zoom in and the Zoom – button to zoom out.
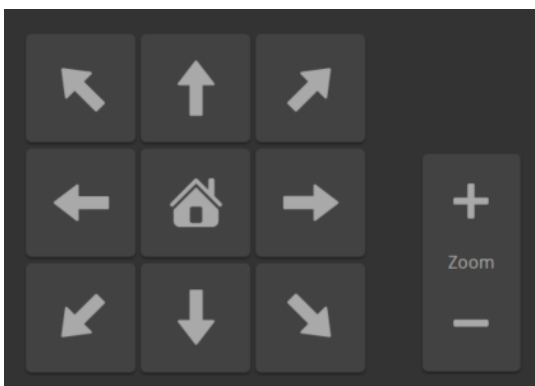
Telnet Serial Command API

The Vaddio Telnet command API allows an external device such as an AMX or Crestron presentation system to control the camera. It is also used for writing macros.

By default, Telnet access is disabled on new Vaddio devices. Telnet access must be enabled on the device. Network connectivity and a Telnet client are also required. Telnet port 23 is used.

In addition to the device-related commands, Telnet session management commands are available – help, history, and exit.

Note
When you connect via Telnet, you must log in using the admin account.

Things to know about Telnet:
- The > character is the command prompt.
- Using a question mark as a command parameter will bring up a list of available subcommands or parameters. Example:

```
camera led ?
get      Get the current LED toggle
on       Turn the LED on
off      Turn the LED off
```

- CTRL-5 clears the current serial buffer on the device.

Typographical conventions:
- n { x | y | z } – Choose x, y, or z.
- n <variable> – Substitute the desired value here.
- n < x - y > – Valid range of values is from x through y.
- n [optional] – Parameter is not required.
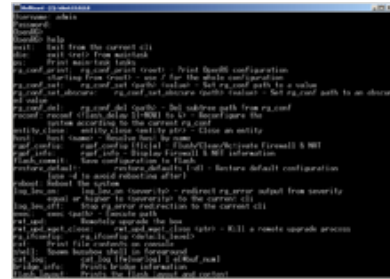
Telnet Commands Common to the Camera and Decoder: Camera Control

The following commands are valid for the EasyIP Decoder and EasyIP 10 cameras:

- camera home
- camera pan
- camera tilt
- camera zoom
- camera focus
- camera preset
- camera ccu get/set
- camera standby

When sending any of these commands to the EasyIP Decoder, you must specify the camera input.

camera home

EASYIP 10

EASYIP DECODER

Moves the camera to its home position.
When sending the command to the EasyIP Decoder, you must specify the camera input.

Synopsis	camera *<input>** home	
	* *<input>* used only when sending commands to the EasyIP Decoder	
Options	*<input>*	Integer 1 to 4; specifies the camera to control.

Example	`camera 1 home`
	`OK`
	`>`
	
	(Sent from the EasyIP Decoder) Moves the camera paired to input 1 to its home position.	

camera pan

EASYIP 10

EASYIP DECODER

Moves the camera horizontally.
When sending the command to the EasyIP Decoder, you must specify the camera input.

Synopsis	camera *<input>** pan { left [<speed>] | right [<speed>] | stop | get | set <position> [<speed>] }	
	* *<input>* used only when sending commands to the EasyIP Decoder	
Options	*<input>*	Integer 1 to 4; specifies the camera to control.
	`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.
	`set` <position>	Sets the camera's absolute pan position in degrees, as a floating point value between approximately -155.00 and 155.00.
		This is the minimum range. 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.
	`get`	Returns the camera's absolute pan position in degrees, as a floating point value between approximately -155.00 (left) and 155.00 (right).

Examples	`>`**`camera pan left`**
	`OK`
	`>`	

	(Sent to the camera) Pans the camera left at the default speed.	

	`>`**`camera 1 pan right 20`**
	`OK`
	`>`	

	(Sent to the EasyIP Decoder) Pans the Input 1 camera right using a speed of 20.	

	`>`**`camera pan set -15`**
	`OK`
	`>`	

	(Sent to the camera) Pans the camera to 15° left of its centerline at the default speed.	

camera tilt

EASYIP 10

EASYIP DECODER

Moves the camera vertically.
When sending the command to the EasyIP Decoder, you must specify the camera input.

Synopsis	camera *<input>** tilt { up [<speed>] | down [<speed>] | stop | get | set <position> [<speed>] }	
	* *<input>* used only when sending commands to the EasyIP Decoder	
Options	*<input>*	Integer 1 to 4; specifies the camera to control.
	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.
	set <position>	Sets the camera's absolute tilt position in degrees, as a floating point value between -30.00 and 93.00.
		The camera tilt set command blocks execution of subsequent commands until the camera reaches the specified position.
	get	Returns the camera's absolute tilt position in degrees, as a floating point value between approximately -30.00 (down) and 93.00 (up). Note that the range is 30.00 to -93.00 if Image Flip is selected.
Examples	>**camera tilt up** OK >	
	(Sent to the camera) Tilts the camera up at the default speed.	
	>**camera 1 tilt down 20** OK >	
	(Sent to the EasyIP Decoder) Tilts the specified camera down at a speed of 20.	
	>**camera tilt set –5** OK >	
	(Sent to the camera) Tilts the camera 5° down from level at the default speed.	

camera zoom

Moves the camera in toward the subject or out away from the subject.
When sending the command to the EasyIP Decoder, you must specify the camera input.

Synopsis	camera *<input>** zoom { in [<speed>] | out [<speed>] | stop | get | set <position> } ** <input>* used only when sending commands to the EasyIP Decoder	
Options	*<input>*	Integer 1 to 4; specifies the camera to control.
	`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.
	`set`	Sets the camera's zoom level as a floating point value between 1.00 and 10.00.
	`get`	Returns the camera's zoom setting as a floating point value between 1.00 and 10.00.
	<zoom>	Integer 1 to 10; specifies the zoom level.
Examples	`>`**`camera zoom in`** `OK` `>` (Sent to the camera) Zooms the camera in at the default speed. `>`**`camera 2 zoom set 7`** `OK` `>` (Sent to the EasyIP Decoder) Zooms camera 2 to zoom level 7.	

camera focus

EASYIP 10

EASYIP DECODER

Changes the camera focus.
When sending the command to the EasyIP Decoder, you must specify the camera input.

Synopsis	camera *<input>** focus { near [<speed>]	far [<speed>	stop	mode {get	auto	manual} }	
	* *<input>* used only when sending commands to the EasyIP Decoder	
Options	*<input>*	Integer 1 to 4; specifies the camera to control.
	`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.
	<speed>	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.
Examples	**camera focus near 2** OK > (Sent to the camera) Brings the focus near at a speed of 2. **camera 2 focus mode get** auto_focus: on OK > (Sent to the EasyIP Decoder) Returns the current focus mode of the Input 2 camera.	

camera preset

EASYIP 10

EASYIP DECODER

Moves the camera to the specified preset, or stores the current camera position.
When sending the command to the EasyIP Decoder, you must specify the camera input.

Synopsis	camera *<input>** preset { recall	store} [1 - 16] [save-ccu]	
	* *<input>* used only when sending commands to the EasyIP Decoder	
Options	*<input>*	Integer 1 to 4; specifies the camera to control.
	`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.

Examples	`>`**`camera preset recall 3`**
	`OK`
	`>`
	
	(Sent from the camera) Moves the camera to preset 3.
	
	`>`**`camera 3 preset store 1`**
	`OK`
	`>`
	
	(Sent from the EasyIP Decoder) Saves the Input 3 camera's current position as preset 1.	

camera ccu get

EASYIP 10

EASYIP DECODER

Returns CCU (lighting and color) information.
When sending the command to the EasyIP Decoder, you must specify the camera input.

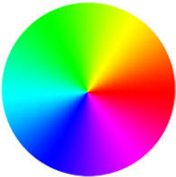| Synopsis	camera *<input>** ccu get <param>	
	* *<input>* used only when sending commands to the EasyIP Decoder	
Options	*<input>*	Integer 1 to 4; specifies the camera to control.
	`auto_iris`	Returns the current auto-iris state (on or off).
	`auto_white_balance`	Returns the current auto white balance state (on or off).
	`backlight_compensation`	Returns the current backlight compensation state (on or off).
	`blue_gain`	Returns the blue gain value (integer 0 to 255).
	`chroma`	Returns the chroma value (integer 0 to 14).
	`detail`	Returns the detail value (integer 0 to 15).
	`gain`	Returns the gain value (integer 0 to 11).
	`iris`	Returns the iris value (integer 0 to 11).
	`red_gain`	Returns the red gain value (integer 0 to 255).
	`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.
Examples	``` >camera ccu get iris iris 6 OK > ``` (Sent to the camera) Returns the current red gain value. ``` >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 > ``` (Sent to the EasyIP Decoder) Returns current CCU settings for the Input 1 camera.	

camera ccu set

EᴀsʏIP 10

EᴀsʏIP Dᴇᴄᴏᴅᴇʀ

Sets the specified CCU (lighting) information.
When sending the command to the EasyIP Decoder, you must specify the camera input.

Synopsis	camera *<input>** ccu set <param> <value> * *<input>* used only when sending commands to the EasyIP Decoder	
Options	*<input>*	Integer 1 to 4; specifies the camera to control.
	`auto_iris {on | off}`	Sets the auto-iris state (on or off). Auto-iris disables manual iris and gain when it is on.
	`auto_white_balance {on | off}`	Sets the auto white balance state (on or off). Auto white balance overrides red gain and blue gain manual settings.
	`backlight_compensation {on | off}`	Sets the backlight compensation state (on or off). Can only be used when wide dynamic range is off.
	`blue_gain <0..255>`	Sets the blue gain (integer 0 to 255). Can only be used when auto white balance is off.
	`chroma <0..14>`	Sets the chroma (integer 0 to 14).
	`detail <0..15>`	Sets the 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 the gamma (integer -16 to 64)
	`iris <0..11>`	Sets the iris (integer 0 to 11). Can only be used when auto-iris is off.
	`red_gain <0..255>`	Sets the 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.

Examples	`>`**`camera ccu set auto_iris off`**
	`OK`
	`>`
	
	(Sent to the camera) Turns off auto-iris, returning the camera to manual iris control.
	
	`>`**`camera 1 ccu set red_gain 10`**
	`OK`
	`>`
	
	(Sent to the EasyIP Decoder) Sets red gain to 10 for the Input 1 camera.	

camera standby

EASYIP 10

EASYIP DECODER

Set or change camera standby status.
When sending the command to the EasyIP Decoder, you must specify the camera input.

Synopsis	camera *<input>** standby { get | off | on | toggle } * *<input>* used only when sending commands to the EasyIP Decoder	
Options	*<input>*	Integer 1 to 4; specifies the camera to control.
	`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."

Examples	`>camera standby off`
	`OK`
	`>`
	
	(Sent to the camera) Brings the camera out of standby mode.
	
	`>camera 3 standby get`
	`standby:        on`
	`OK`
	`>`
	
	(Sent to the EasyIP Decoder) Returns the current standby state of the specified camera.	

Telnet Commands Specific to the EasyIP Decoder: System Controls and Management

The following commands are valid for the EasyIP Decoder. They are not available on the EasyIP 10 camera.

- audio mute
- audio volume
- camera authenticate
- camera comm host
- video source
- video type
- trigger
- streaming settings get

audio mute

EASYIP DECODER ONLY

Gets or sets the mute status of the specified audio channel.

Synopsis	audio < channel > mute { get | on | off | toggle }	
Channels	`master`	Applies the command to all audio channels.
	`easy_mic_1` `easy_mic_2`	Applies the command to the external microphone connected to the specified EasyMic port.
	`usb_playback`	Applies the command to the audio portion of the incoming (far-end) USB stream
	`line_out_1`	Applies the command to the audio from the connected speaker.
	`usb_record`	Applies the command to the outbound (near-end) audio portion of the USB stream
Options	`get`	Returns the current mute status of the specified channel.
	`on`	Mutes the audio for the specified channel.
	`off`	Unmutes the audio for the specified channel.
	`toggle`	Changes the mute state for the specified channel – unmutes if it was muted, mutes if it was not.

Examples	`> `**`audio line_out_1 mute get`**
	`mute:  off`
	`OK`
	`>`
	
	Returns the current mute state of the device connected to audio line out 1. Mute is off, so the audio is on.
	
	`>`**`audio master mute on`**
	`OK`
	`>`
	
	Mutes all audio.	

audio volume

EASYIP DECODER ONLY

Gets or sets the volume of the specified audio channel.

Synopsis	audio < channel > volume { get | up | down | set }	
Channels	`master`	Applies the command to all audio channels.
	`easy_mic_1` `easy_mic_2`	Applies the command to the external microphone connected to the specified EasyMic port.
	`usb_playback`	Applies the command to the audio portion of the incoming (far-end) USB stream
	`line_out_1`	Applies the command to the audio from the connected speaker.
	`usb_record`	Applies the command to the outbound (near-end) audio portion of the USB stream
Options	`get`	Returns the current volume of the specified channel.
	`up`	Increases the volume of the specified channel.
	`down`	Reduces the volume of the specified channel.
	`set`	Sets the volume of the specified channel.

Examples	`audio line_in_1 volume set -5`
	`OK`
	`>`
	
	Sets -5 dB as the volume for the device connected to the Line In 1 port.
	
	`audio line_out_1 volume get`
	`volume -10.0 dB`
	`OK`
	`>`
	
	Returns the current volume for the speaker connected to the line out port.	

camera authenticate

EASYIP DECODER ONLY

Authenticate to a camera in the directory.

Synopsis	camera <input> authenticate <password>	
Options	<input>	Integer 1 to 4; specifies which camera input to authenticate.
	<password>	The camera's admin password.

Examples	`>camera 1 authenticate ********`
	`OK`
	`>`	

camera comm host

EASYIP DECODER ONLY

Directory operations – get the IP address of the device at the specified input, add or delete a device.

Synopsis	camera <input> comm host { get	set <host>	unset }	
Options	<input>	Integer 1 to 4; specifies which input to manage.
	get	Returns the IP address of the device at this input.
	set <host>	Set this input to the IP address of an input device. Equivalent to adding a device to the directory using the web interface.
	unset	Delete the IP address information for the specified input. Equivalent to deleting a device from the directory using the web interface.
Examples	>**camera 1 comm host get** host: 10.30.240.160 (connected) OK >	

video source

EASYIP DECODER ONLY

Gets or sets the decoder's video source.

Synopsis	video source { get	set <input> }	
Options	get	Returns the video input that is currently selected.
	set	Sets the video input that is currently selected.
	<input1..input4>	Specifies the video input.
Examples	>video source get source: input2 OK > Returns the video input that is currently selected, Input 2. >video source set input1 OK > Sets Input 1 as the selected video source.	

video type

Gets or sets the type of video associated with the specified input device.

Synopsis	video <input> type { get	set { camera	video }}	
Options	<input1..input4>	Specifies the input device.
	get	Returns the input device's video type.
	set	Sets the input device's video type.
	camera	Specifies the input device as a camera.
	video	Specifies the input device as a video input other than a camera.

Examples	`>video input1 get`
	`input type:   camera`
	`OK`
	`>`
	
	Returns the type of device at input 1.	

trigger

Turn an existing trigger on or off. This command has no effect if the specified trigger has not been defined.

Note
If the web interface's macro/trigger test mode is in use, this command may return parse errors.

Synopsis	trigger <index> { off	on }	
Parameters	<index>	The trigger index (identifier) – integer 1 to 50.
	{off	on}	Set the state of the trigger.

Example	`> trigger 3 on`
	
	`OK`
	
	Turns trigger 3 on.	

streaming settings get

EASYIP DECODER ONLY

Retrieves USB streaming settings. Except for the UVC Extensions_Enabled setting, these are automatically negotiated with the conferencing client.

Synopsis	streaming settings get	
Parameters	`USB Active`	`True` if a USB stream is present; `false` if not.
	`USB Device`	The USB Device Name currently assigned.
	`USB Frame Rate`	Frame rate for the USB stream (negotiated with conferencing client). 0 when no USB stream is present.
	`USB Resolution`	Resolution of the USB stream (negotiated with conferencing client). 0x0 when no USB stream is present.
	`USB Version`	2 or 3, as negotiated with the conferencing client.
	`UVC Extensions_Enabled`	Allow or disable far-end control of the camera.

Example	`>`**`streaming settings get`**
	`USB Active          false`
	`USB Device          EasyIP Decoder`
	`USB Frame_Rate      0`
	`USB Resolution      0x0`
	`USB Version         3`
	`UVC Extensions_Enabled true`
	`OK`
	`>`
	
	Returns the current streaming settings.

Telnet Commands Specific to the EasyIP 10 Camera

The following commands are valid for the EasyIP 10 camera. They are not available on the EasyIP Decoder.

- camera led
- camera icr
- camera recalibrate
- video mute

camera led

EASYIP 10 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	>**camera led off** OK > Disables the indicator light. When the LED is off, you cannot tell by looking at the camera whether it is sending video. >**camera led get** led: on OK > Returns the current state of the indicator light.	

camera icr

EASYIP 10 ONLY

Gets or sets the state of the camera's IR cut filter.

Synopsis	camera icr { get	on	off }	
Options	`get`	Returns the IR cut filter mode.
	`on`	Sets the IR cut filter on.
	`off`	Sets the IR cut filter off.
Examples	**camera icr get** IR(Cut) filter off(In) > Returns the current IR cut filter state (off, in this case). **camera icr on** OK > Sets the IR cut filter on.	

camera recalibrate

EASYIP 10 ONLY

Recalibrates the pan and tilt motors. This is typically done in response to a motor fault indication or error message.

Synopsis	camera recalibrate

Example	`>camera recalibrate`
	`OK`
	`>`

video mute

EASYIP 10 ONLY

Gets or sets the camera's video mute status. When video is muted, the USB stream displays as a blue screen. This can be desirable when preparing the room, or when privacy is needed.

Synopsis	video mute { get | off | on | toggle}	
Options	`get`	Returns the current video mute status.
	`off`	Unmutes the video. (Normal video resumes.)
	`on`	Mutes the video. (Blue screen)
	`toggle`	Changes the camera's video mute status.

Examples	`>video mute get`
	`mute:  off`
	`OK`
	`>`
	
	Returns video mute status.
	
	`>video mute on`
	`OK`
	`>`
	
	Transmits blue or black video.	

Telnet Commands Common to All Vaddio Devices: Network and System

The following commands are valid for all Vaddio devices:

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

network settings get

ANY DEVICE

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

Synopsis	network settings get
Example	``` 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 > ```

network ping

ANY DEVICE

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	``` >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 > ``` Sends five ECHO_REQUEST packets of 56 bytes each to the host at 192.168.1.66.	
	``` >network ping count 10 size 100 192.168.1.1 ``` Sends 10 ECHO_REQUEST packets of 100 bytes each to the host at 192.168.1.1. The command returns data in the same form as above.	

system reboot

ANY DEVICE

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

Synopsis	system reboot [<seconds>]	
Options	<seconds>	The number of seconds to delay the reboot.
Examples	``` >system reboot OK > The system is going down for reboot NOW!p-decoder-D8-80-39-62-A7-C5 ``` Reboots the device immediately. ``` >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.	

system factory-reset

ANY DEVICE

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

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

version

Returns the current firmware version.

Synopsis	version
Example	``` >version Audio 1.04 Commit c867266822c63caa1fd2a6cec76f641068af509 System Version EasyIP Decoder 1.0.0 USB 01.02.00 OK > ```

Telnet 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.
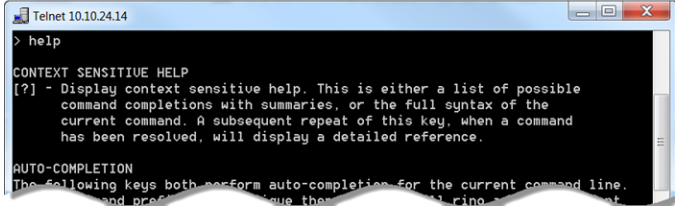
Synopsis	history <limit>	
Options	<limit>	Integer value specifying the maximum number of commands to return.
Examples	**history** Displays the current command buffer. **history 5** Sets the history command buffer to remember the last 5 unique entries.	
Additional information	You can navigate the command 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. Examples of history expansion: * **!!** Substitute the last command line. * **!4** Substitute the 4th command line (absolute as per 'history' command) * **!-3** Substitute the command line entered 3 lines before (relative)	

help

Displays an overview of the CLI syntax.

Synopsis	help
Example	**help**

exit

Ends the command session and closes the socket.

Synopsis	exit
Example	**exit**

Specifications

Specifications are subject to change without notice.

EasyIP Decoder

USB Streaming, Audio, and Control

USB Stream	Video and Audio Up to 1080p/60 Resolution (Full HD)	Input Power	PoE+
USB Audio (record, playback)	2 Channel (UAC) 16-bit resolution 48 KHz sample rate	**EasyMic Inputs (2 channels available)**	RJ-45 12V, bidirectional balanced
Audio Line Out	4-pin Phoenix type terminal block Impedance: 50 ohms Frequency response 20Hz - 20KHz THD + noise < 0.02% Maximum output level +12 dBu differential audio		
Control	Web interface, Telnet		

Physical and Environmental

Height	1.72 in. (4.4 cm)	**Operating temperature**	0°C to +40°C (32°F to 104°F)
Width	8.38 in. (21.3 cm)	**Operating humidity (relative)**	20% to 80% non-condensing
Depth	6.0 in. (15.2 cm)	**Storage temperature**	-5°C to +60° C (23°F to 140°F)
Weight	2.65 lb.(1.26 kg)	**Storage humidity (relative)**	20% to 80% non-condensing

EasyIP 10 Camera

Camera and Image

Image device	1/2.8-type Exmor CMOS sensor	**Pixels**	2.14 million (effective)
Pan angle and speed	± 155°, up to 90°/sec	**Tilt angle and speed**	+90° -30°, up to 90°/sec
Lens and horizontal FOV	10x optical zoom, 67.0° wide to 7.6° tele, f=3.8mm to 38mm, F1.8 to F3.4		
Min. working distance	10mm (wide), 1.0m (tele)	**Min. illumination**	100+ lux recommended
Aperture/detail	16 steps	**Gain**	Auto or manual
Backlight compensation	On or off	**White balance**	Auto, manual, One-Push
Focusing system	Auto or manual	**Noise reduction**	On or off
Sync system	Internal	**S/N ratio**	Over 50 dB
Remote management	Web interface, Telnet	**Power**	PoE+

Physical and Environmental

Height	6.3 in. (16.3 cm)	**Operating temperature**	0°C to +40°C (32°F to 104°F)
Width	6.1 in. (15.5 cm)	**Operating humidity (relative)**	20% to 80% non-condensing
Depth	5.5 in. (14.5 cm)	**Storage temperature**	-5°C to +60° C (23°F to 140°F)
Weight	3.0 lb.(1.36 kg)	**Storage humidity (relative)**	20% to 80% non-condensing

Troubleshooting and Care

When the system doesn't behave as you expect, use this table to determine whether it's time to call Vaddio Technical Support.

System and Power issues

What is it doing?	Possible causes	Check and correct
All the devices in the EasyIP system are unresponsive.	The PoE+ switch is turned off, or is 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.
One camera is unresponsive. The light on the front is off and no video is available.	The camera cable is bad.	Check using a known good cable.
	The camera is connected to a non-functional port on the PoE+ switch.	Try another PoE+ port.
	The camera is bad.	Contact your reseller or Vaddio Technical Support.
Cameras have power but the decoder is unresponsive.	The decoder is connected to a non-functional port on the PoE+ switch.	Try another PoE+ port.

Camera

What is it doing?	Possible causes	Check and correct
The light on the front of the camera is off but it responds to controls.	The status light is turned off. This is normal.	You can turn the light on again using the LED On setting on the General tab of the System page, or using the Telnet command `camera led on`.
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 blue.
The camera does not respond to the remote, but it can be controlled using the web interface.	The remote is not using the same IR channel as the camera.	Push the Camera Select 1 button on the remote. Try Camera Select 2
	The batteries in the remote are dead.	Put new batteries in the remote.
	The batteries were installed incorrectly in the remote.	Install the batteries as shown in the diagram inside the remote.
The camera does not appear in the decoder's list of inputs.	The camera is not paired to the decoder.	Add the camera to the decoder's directory. See Setting Up the Directory.
The camera is not listed among the available cameras.	The camera and decoder are on different subnets.	Add the camera to the directory by entering its IP address manually.

Audio

What is it doing?	Possible causes	Check and correct
No audio from the speaker (far-end audio)	Far-end microphone is muted (the conferencing window may show a mute icon for that site's microphone)	Ask the participants at that site to unmute their microphone.
	Speaker is not connected.	Check all connections carefully.
	Speaker volume is turned all the way down.	You checked that first, right?
Far end reports that they can't hear you. (No near-end audio)	Microphone is not connected.	Check all connections carefully.
	Your microphone is muted.	Unmute your microphone.

Status Indicator Light

The light in the camera's base indicates its current state.
- Blue – Camera is active
- Purple – Standby mode or booting
- Yellow – Firmware update is in progress
- Blinking red – Video mute is on (UC color scheme)
- Blinking yellow – Motor out of calibration

Caution
Do not disconnect either end of 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.

Correct a Motor Calibration Error

If the web interface presents an error message about the motors, or if the camera's status light is blinking yellow, you will need to reset the pan and tilt motors.

To reset the pan and tilt motors using the IR Remote Commander:

Point the remote at the camera and press the Pan-Tilt Reset button.

Note:
Because the infrared pulse from the remote is not a tight beam, this may cause other cameras in the room to do a pan-tilt reset at the same time.

To reset the pan and tilt motors from the web interface:

AFFECTED EASYIP 10 CAMERA – CAMERA PAGE

AFFECTED EASYIP 10 CAMERA – SYSTEM PAGE

1. On the Camera Controls page, select Settings to open the pan and tilt settings box;
   OR
   On the System page, go to the Firmware tab if you are on a different tab.
2. Select Pan-Tilt Reset. The motors recalibrate. This takes a few seconds.
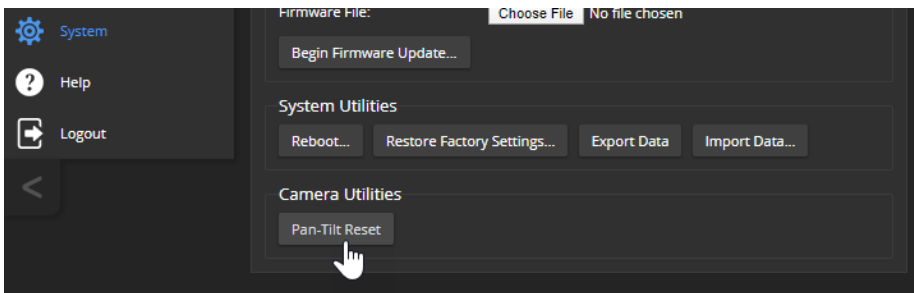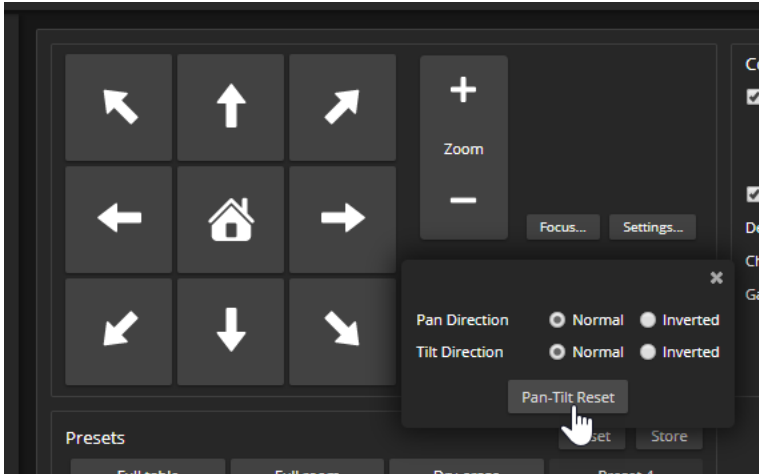
Restoring Factory Default Settings

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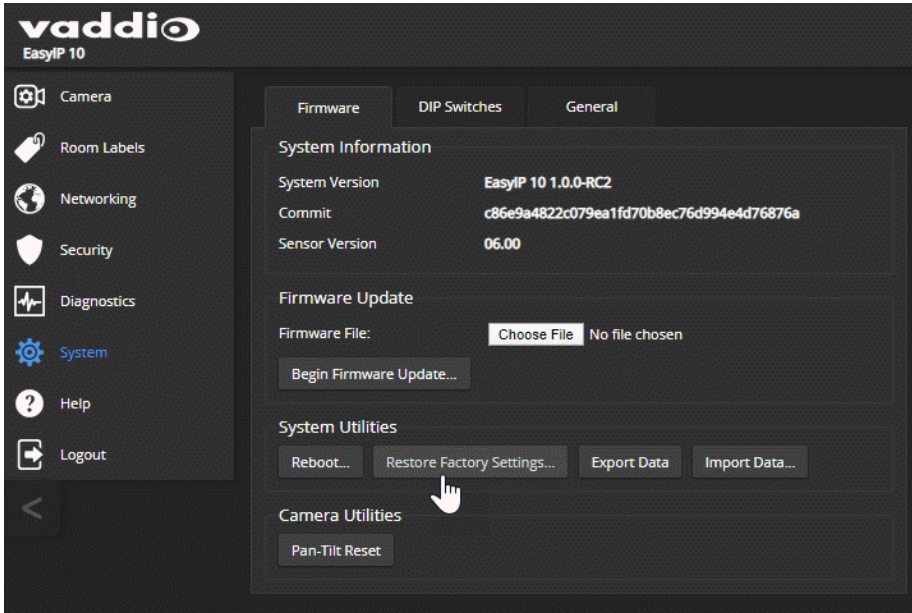
From the Vaddio Deployment Tool: Locate the device, select it in the Name column to open its detail page, and select Restore Factory Defaults from the Controls list.

This tool is available as a free download at https://info.legrandav.com/VaddioDeploymentTool.
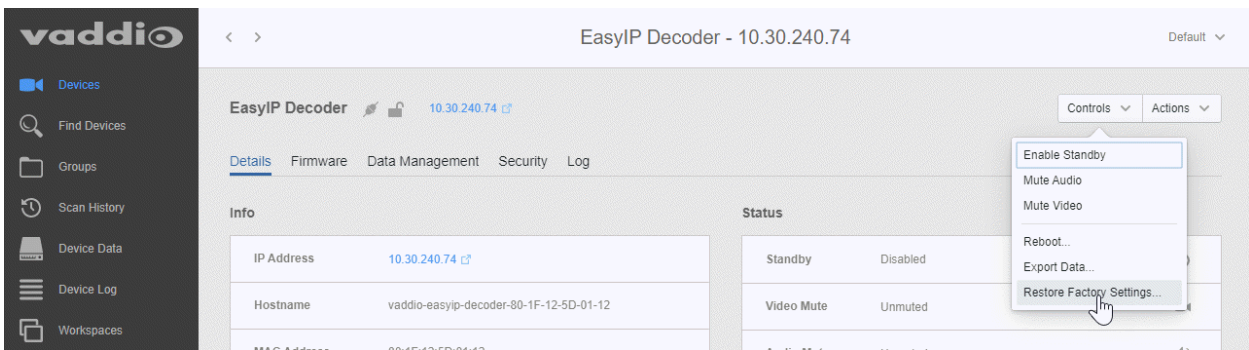
From the device (EasyIP Decoder only): Press and hold the IP address button while disconnecting and then reconnecting the network/PoE+ cable.

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 40° C (104° F) or below 0° C (32° F)
- High humidity, condensing or wet environments
- Inclement weather
- Severe vibration
- Under the sea, in an octopus's garden
- Dry environments with an excess of static discharge

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

Glossary

AEC

Acoustic echo cancellation. Audio processing that subtracts the far-end (speaker) audio from the sound that your microphone picks up.

auto white balance

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

backlight compensation

A setting that reduces contrast to adjust for bright light behind the main subject of the shot.

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.

DIP switches

An array of switches designed for installation on a circuit board. (DIP = Dual Inline Package; refers to the physical form.) Our web interface has virtual ones because we miss the real ones.

EasyMic

Vaddio's proprietary connectivity standard for conferencing microphones.

echo cancellation

Audio processing that subtracts the far-end (speaker) audio from the sound that your microphone picks up.

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.

gateway

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

HID audio controls

(Human Interface Device) Controls to enable conference participants to use the conferencing client to control the audio.

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 not using static IP addresses.

LED

Light-Emitting Diode. An indicator light.

macro

A defined sequence of commands that a device performs in response to a trigger event.

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 EasyIP Decoder on its Directory page.

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.

subnet mask

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

trigger

An event, such as pressing the Home button on a connected TableMIC, that can be associated with a macro (defined command sequence). Devices that originate trigger events are sometimes called triggers or trigger devices.

UAC drivers

(Universal Audio Class) Standard USB audio drivers used by Vaddio conferencing products with audio capabilities.

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.

USB playback

Audio from other sites (far-end audio) in a conference call.

USB record

Audio from your site (near-end audio) in a conference call.

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.

Compliance and Conformity Statements

Compliance testing was performed to the following regulations:

FCC Part 15 (15.107, 15.109), Subpart B	Class A
ICES-003, Issue 54: 2012	Class A
EMC Directive 2014/30/EU	Class A
EN 55032: 2015	Class A
EN 55024: November 2010	Class A
IEC 60950-1:2005 (2nd Edition); Am 1: 2009 + Am 2: 2013	Safety
EN 60950-1: 2006 + A11: 2009 + A1: 2010 + A12: 2011 + A2: 2013	Safety
IEC 62368-1:2014 (2nd Edition)	Safety

FCC Part 15 Compliance

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15, Subpart B, of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his/her own expense.

Operation is subject to the following two conditions: (1) This device may not cause interference, and (2) This device must accept any interference including interference that may cause undesired operation of the device.

Changes or modifications not expressly approved by Vaddio can affect emission compliance and could void the user's authority to operate this equipment.

ICES-003 Compliance

This digital apparatus does not exceed the Class A limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

Le présent appareil numérique n'emet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la classe A préscrites dans le Règlement sur le brouillage radioélectrique édicté par le ministère des Communications du Canada.

European Compliance

This product has been evaluated for Electromagnetic Compatibility under the EMC Directive for Emissions and Immunity and meets the requirements for a Class A digital device. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

Standard(s) To Which Conformity Is Declared:

EMC Directive 2014/30/EU

EN 55032: 2015 – Conducted and Radiated Emissions

EN 55024: November 2010 – Immunity

IEC 60950-1: 2005 (2nd Edition); Am 1: 2009 + Am 2: 2013 – Safety

EN 60950-1: 2006 + A11: 2009 + A1: 2010 + A12: 2011 + A2: 2013 – Safety

IEC 62368-1: 2014 (2nd Edition) – Safety

Warranty and Return Policy

Hardware warranty: Two (2) year limited warranty on all parts and labor for Vaddio manufactured products. Vaddio warrants its manufactured products against defects in materials and workmanship for a period of two years from the day of purchase, to the original purchaser, if Vaddio receives notice of such defects during the warranty. Vaddio, at its option, will repair or replace products that prove to be defective. Vaddio manufactures its hardware products from parts and components that are new or equivalent to new in accordance with industry standard practices.

Exclusions: The above warranty shall not apply to defects resulting from improper or inadequate maintenance by the customer, customers applied software or interfacing, unauthorized modifications or misuse, mishandling, operation outside the normal environmental specifications for the product, use of the incorrect power supply, modified power supply or improper site operation and maintenance. OEM and special order products manufactured by other companies are excluded and are covered by the manufacturer's warranty.

Vaddio Customer Service: Vaddio will test, repair, or replace the product or products without charge if the unit is under warranty. If the product is out of warranty, Vaddio will test then repair the product or products. The cost of parts and labor charge will be estimated by a technician and confirmed by the customer prior to repair. All components must be returned for testing as a complete unit. Vaddio will not accept responsibility for shipment after it has left the premises.

Vaddio Technical Support: Vaddio technicians will determine and discuss with the customer the criteria for repair costs and/or replacement. Vaddio Technical Support can be contacted by email at support@vaddio.com or by phone at one of the phone numbers listed on support.vaddio.com.

Return Material Authorization (RMA) number: Before returning a product for repair or replacement request an RMA from Vaddio's technical support. Provide the technician with a return phone number, e-mail address, shipping address, product serial numbers and original purchase order number. Describe the reason for repairs or returns as well as the date of purchase. See the General RMA Terms and Procedures section for more information. RMAs are valid for 30 days and will be issued to Vaddio dealers only. End users must return products through Vaddio dealers. Include the assigned RMA number in all correspondence with Vaddio. Write the assigned RMA number clearly on the shipping label of the box when returning the product. All products returned for credit are subject to a restocking charge without exception. Special order products are not returnable.

Voided warranty: The warranty does not apply if the original serial number has been removed or if the product has been disassembled or damaged through misuse, accident, modifications, use of incorrect power supply, use of a modified power supply or unauthorized repair.

Shipping and handling: Vaddio will not pay for inbound shipping transportation or insurance charges or accept any responsibility for laws and ordinances from inbound transit. Vaddio will pay for outbound shipping, transportation, and insurance charges for all items under warranty but will not assume responsibility for loss and/or damage by the outbound freight carrier. If the return shipment appears damaged, retain the original boxes and packing material for inspection by the carrier. Contact your carrier immediately.

Products not under warranty: Payment arrangements are required before outbound shipment for all out of warranty products.

General RMA Terms and Procedures: RMA's are valid for 30 days and will be issued to Vaddio dealers only.

- End users must return products through Vaddio dealers.
- Before a defective product can be authorized to send in for repair, it must first go through the troubleshooting process with a member of the Vaddio Technical Support team.
- Products authorized for repair must have a valid RMA (Return Material Authorization) number.
  - Vaddio RMA Team will issue the RMA number.
  - An RMA number is to be included in all correspondence with Vaddio.
  - The RMA number must appear clearly on the shipping label (not the box) when the product is returned.
  - A packing slip must be included on the inside of the box with the RMA number listed and reason for RMA return.
- Products received at Vaddio that do not have a valid RMA number clearly marked on the outside of the shipping container may be refused and returned to sender.
- Boxes showing external damage will be refused and sent back to the sender regardless of the clearly marked RMA number and will remain the responsibility of the sender.

RMA Charges (Restocking): All qualified returns must be made in unopened, original packaging with all original materials.

- Initial shipments of equipment that are refused upon attempted delivery, for any reason, are subject to restocking charges.
- The Dealer has up to 60 days from the date of purchase to return Vaddio product for credit for future purchases of Vaddio product only.
- The Dealer has 61 to 90 days from the date of purchase to return Vaddio product with a 15% restocking fee or $50.00 fee, whichever amount is greater
- The Dealer has up to 30 days from the date of purchase to return OEM and other manufacturer's products with a 15% restocking fee or $50.00 fee, whichever amount is greater.
- NOTE: Special Order products from other manufacturers (identified in the Vaddio Price Guide as noncancelable, nonreturnable and not refundable) are not eligible for advance replacement from Vaddio.

Advance Replacement Policies: For Vaddio manufactured products, advance replacement will be provided for up to one (1) year after the initial shipment of products.

- NOTE: OEM and other manufacturer's products are excluded from the Vaddio advance replacement policy. Advance replacement will be provided for up to 30 days after initial shipment of OEM products. Thereafter, a return to Vaddio and factory repair is offered during the other manufacturer's warranty period. Vaddio will determine if the returned product is qualified for the OEM warranty.
- NOTE: Special Order products from other manufacturers (identified in the Vaddio Price Guide as noncancelable, nonreturnable and not refundable) are not eligible for advance replacement from Vaddio.

Advance Replacement Procedures: The Vaddio Dealer must submit a non-revocable purchase order for advance replacement equipment at normal dealer pricing. Credit shall be issued upon complete product return (including all accessories) for dealers with Net 30 terms. For credit card accounts, charges will be assessed to the credit card for the replacement and credited back upon complete product return.

- Returns must be made in the original Vaddio packaging with all original materials if at all possible. Vaddio products with missing original materials will be billed to the dealer at dealer price.
- NOTE: OEM products must be returned in the original packaging with all materials and the RMA number written on the shipping label only and not on the OEM box. If the return is incomplete and/or the OEM box is defaced, the product shall be returned to the dealer and the RMA will not be credited.
- Equipment returned with "No Trouble Found" after advanced replacement will be assessed a full 15% or $50.00 restocking fee (whichever is greater) for each item and may also be assessed for additional charges to compensate for wear, damages and reconditioning.
- All returns must be accompanied by RMA # as stated above.
- All Advanced Replacement products are sent via 2-day service in the continental USA. If the product is requested to be sent via priority or overnight shipping, the Dealer shall pay shipping costs. The dealer can elect to supply their preferred shipping account number.
- International customers are responsible for all freight charges for equipment returned to Vaddio, including international shipping, taxes, and duties, insurance and all other associated logistic charges.

Warranty Repair Terms and Procedures: Vaddio will repair any product free of charge, including parts and labor, within the terms outlined in the warranty agreement for that product.

- Customers must provide proof of the product's purchase date.
- Product that is within the warranty period will be repaired under the non-warranty terms if:
  - The equipment has been damaged by negligence, accident, act of God, mishandling, used with the incorrect, modified or extended power supply or has not been operated in accordance with the procedures described in the operating and technical instructions.
  - The equipment has been altered or repaired by other than the Manufacturer or an authorized service representative.
  - Adaptations or accessories other than those manufactured or provided by the Manufacturer have been made or attached to the equipment, which in the determination of the Manufacturer, shall have affected the performance, safety of reliability of the equipment; or the equipment's original serial number has been modified or removed.
- Customer is responsible for shipping charges to send defective product under warranty to Vaddio. Vaddio will pay ground service return shipping charges during the 2nd year of the warranty period.
- Standard return shipping method for products under warranty, but out of the advance replacement warranty period, is ground shipment. Extra charges associated with priority shipping, when requested, will be the responsibility of the customer.

Non-Warranty Repair Terms: Vaddio will repair any non-obsolete product that does not meet the terms of the warranty. Non-warranty repair terms are as follows:

- The customer is responsible for, and agrees to pay, all parts and labor costs associated with the repair. Standard non-warranty repair charges are outlined below.
- Customers must provide payment method and one of the following, prior to receiving an RMA:
  - Hard copy of a PO, for dealers with Net 30 terms and in good standing with Vaddio.
  - Valid credit card number - Credit card will be charged upon shipping repaired product back to customer.
- Request for COD: Customers will be notified of COD charges prior to shipping repaired unit.
- Customer is responsible for all shipping charges both to and from Vaddio, and may use their own carrier.
- Customers will receive a courtesy call notifying them of total repair charges prior to return shipping.

Non-Warranty Repair Charges: Total repair charges (per unit) for a non-warranty repair consist of the following:

- Cost of any replacement parts needed to repair the defect.
- Labor costs billed per hour after minimum charges/time.
- Labor charges include troubleshooting and repair time only.
- Burn-in time and final test time is not included in the labor charges.
- Labor time is rounded to the nearest quarter hour.
- Labor charges are billed at the prevailing rate for the category of equipment repaired, after minimum charges/time. For prevailing labor rates, please contact the Vaddio technical support.
- All shipping and handling costs are the responsibility of the customer for non-warranty repairs.

Minimum Labor Charges: All non-warranty repairs are subject to a minimum evaluation/repair labor charge even if there is no problem found. Please contact Vaddio technical support for the current applicable rate.

Repair Charge Estimates: Estimates on repair charges for a specific problem will not be given before an RMA is issued and the actual product has been evaluated by a Vaddio technician. Repair estimates will be given after the repair department receives and evaluates the unit.

- Customers requesting an estimate on repair charges must do so up front when they call in for an RMA. The RMA team will call or email with the estimate after evaluating the unit and before proceeding with the repair.
- Any product evaluated for a repair estimate is still subject to the minimum labor charges even if the customer decides not to proceed with the repair.
- Vaddio does not guarantee estimates given on repair charges. Actual repair costs may exceed the estimate.
- Customer is responsible for actual repair charges, regardless of estimate.

Repair Policy Notes:

- **Duration of Repair:** Products are repaired on a first come first serve basis. The turn-a-round time of a particular repair is dependent upon circumstances such as product type, the nature of the problem and current repair volumes. Requests for expedited repair service will be considered on a case-by-case basis.
- **Repair Warranty:** Vaddio guarantees all of its repair work, performed on non-warranty items, for 90 days from the day the repaired product is shipped back to the customer. If the original problem described was not resolved or reoccurs within the 90-day period, Vaddio will repair the unit free of labor charges. However additional material charges may apply unless the parts used to affect the repair are again deemed defective.

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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
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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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Main Control Room / Mission Control Room of ESA at the European Space Operations Centre (ESOC) in Darmstadt, Germany
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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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European Space Agency astronaut Luca Parmitano, Expedition 36 flight engineer, outside the International Space Station
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Chris Cassidy, Luca Parmitano, and Karen Nyberg, ISS, 2013. Photo Credit: NASA

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Andrea Accomazzo, ESA Rosetta Spacecraft Operations Manager, providing a live update from the Main Control Room at ESA's European Space Operations Centre, Darmstadt, Germany during the Rosetta wake-up day.
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Sleeping goose
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Photo AS11-40-5948, Aldrin assembles seismic experiment, by National Aeronautics and Space Administration, courtesy of the NASA History Office and the NASA JSC Media Services Center

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

Index