Complete Manual for the

# HuddleSHOT and HuddleSHOT FC

All-in-One Conferencing Cameras

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# Overview

This guide covers:

HuddleSHOT all-in-one conferencing camera:

- North America – 999-50707-000 (black); 999-50707-000G (gray)
- Europe and UK – 999-50707-001 (black); 999-50707-001G (gray)
- Australia and New Zealand – 999-50707-009 (black); 999-50707-009G (gray)

HuddleSHOT FC all-in-one conferencing camera:

- 998-50808-000 (black)
- 998-50808-000G (gray)

## What's in this Guide

This guide covers

- Physical features
- Installation
- Initial set-up and system administration
- Performance/behavior configuration
- System maintenance
- Operation
- Troubleshooting

## Features

- Intuitive operation with simple remote control
- Simultaneous uncompressed USB 3.0 and IP (H.264) video at resolutions up to 1080p/60 with full-duplex audio streaming
- 110° HFOV at 1x with full dewarping; 125° HFOV with no dewarping
- Selectable 1x, 1.5x, or 2x zoom with dewarping option
- Easy configuration, system administration, and remote management via web interface
- Integrated stereo speakers and phased microphone array
- Advanced network security features
- Audio input for Vaddio TableMIC or other microphone with EasyMic connectivity
- Universal Video Class (UVC) and Universal Audio Class (UAC) drivers supported in Windows®, Mac® OS, and Linux operating systems, compatible with most UC conferencing applications

# A Quick Look at the Camera

This section covers the physical features of the cameras. They are in the same locations in both cameras.

## Front of the Camera


**Camera and zoom lens –** HuddleSHOT and HuddleSHOT FC cameras offers 1x, 1.5x, and 2x zoom levels.

**Left and right speakers –** Far-end audio, or content audio when using EasyMic Adapter Mode.

**Integrated microphones –** No external microphone needed in typical installations. Echo-canceling microphones pick up the voices of participants up to 10 ft. (3 m) away.

**Status light –** The illuminated ring around the lens bezel indicates the camera's current state. The status light can be turned off in the administrative web interface.

***Note***

*By default, the camera's status indicator light is active during normal operation; however, it can be configured to remain off when the camera is powered up. The camera may be sending video even if the light is off.*

## Back of the Camera


**Network/PoE+** – RJ-45 connector. Connect to the network and to power via the Power and Data Out port of the mid-span PoE+ power injector. Provides power and network access for IP streaming and camera control via web interface or Telnet.

**USB 3.0** – USB type C connector. Connect to a computer for use with soft conferencing applications. Provides uncompressed USB 3.0 stream.

**EasyMic** – RJ-45 connector. Optional connection for a TableMIC or other microphone with Vaddio EasyMic connectivity.

**Multifunction button** – Momentary pushbutton; used to return from standby, display IP address, pair with a remote, and restore factory defaults.

# Connections

This section covers:

- Selecting the location for the camera
- Cabling notes
- Connection diagrams

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***

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

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

## Before You Install the Camera

Keep these things in mind when deciding where to place the camera.

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

Prepare for a successful installation:

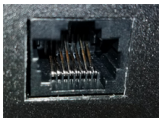
- Be sure you can identify all cables correctly.
- If you make cables for this installation, check them for continuity.
- Talk to the network administrator. If installing the camera in a non-DHCP network (one that does not automatically assign IP addresses), you will need to configure the camera with a static IP address as directed by the network administrator.

## Cabling Notes

***Caution***

*Do not use pass-through RJ-45 connectors when making cables for this product. Poorly crimped connectors of this type can cause intermittent connections and degraded signal quality. They can also 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

When making cables for this product, use Cat-5e or better cable. We recommend using high-quality connectors and a high-quality crimping tool.

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***

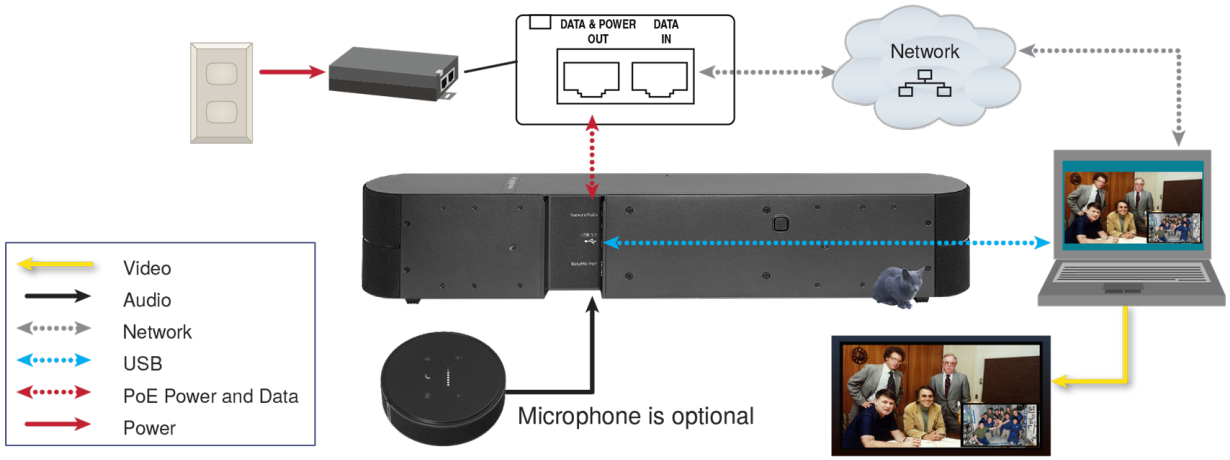
*Label all cables at both ends.*

## Basic Connections for Conferencing

This diagram shows a basic conferencing configuration. A laptop provides USB connectivity and the HDMI output to the display. Adding an optional TableMIC microphone allows more flexibility in the room layout.

This system provides acoustic echo cancellation, with or without the TableMIC microphone.

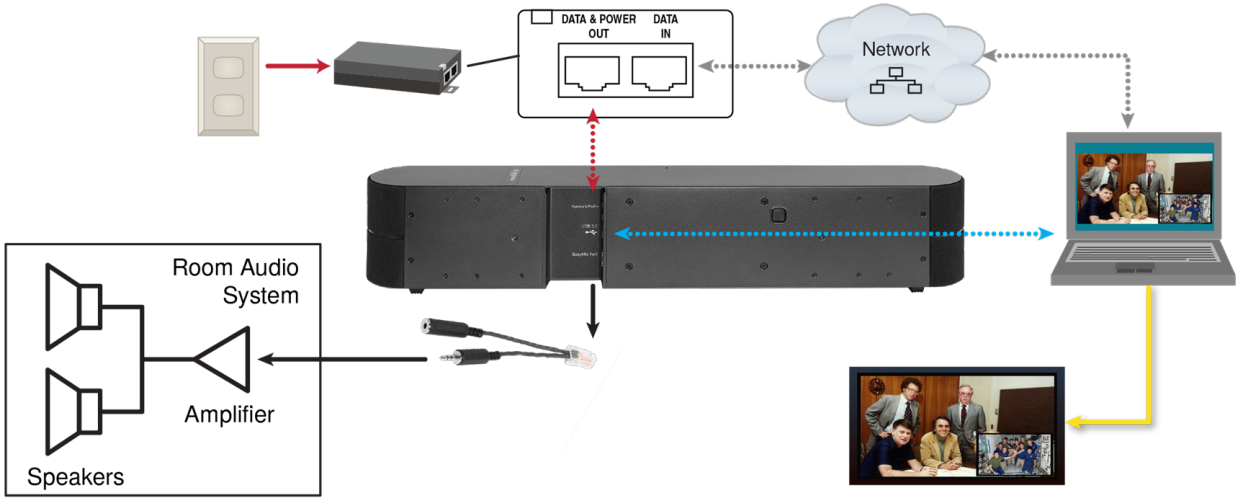
HuddleSHOT camera shown. The HuddleSHOT FC camera connects the same way.



## Connections – Using the Camera with a Room Audio System

This diagram shows a setup for a room with an audio system. The camera's built-in microphones are used and far-end audio is routed to the room's speakers, using the EasyMic adapter.

HuddleSHOT camera shown. The HuddleSHOT FC camera connects the same way.



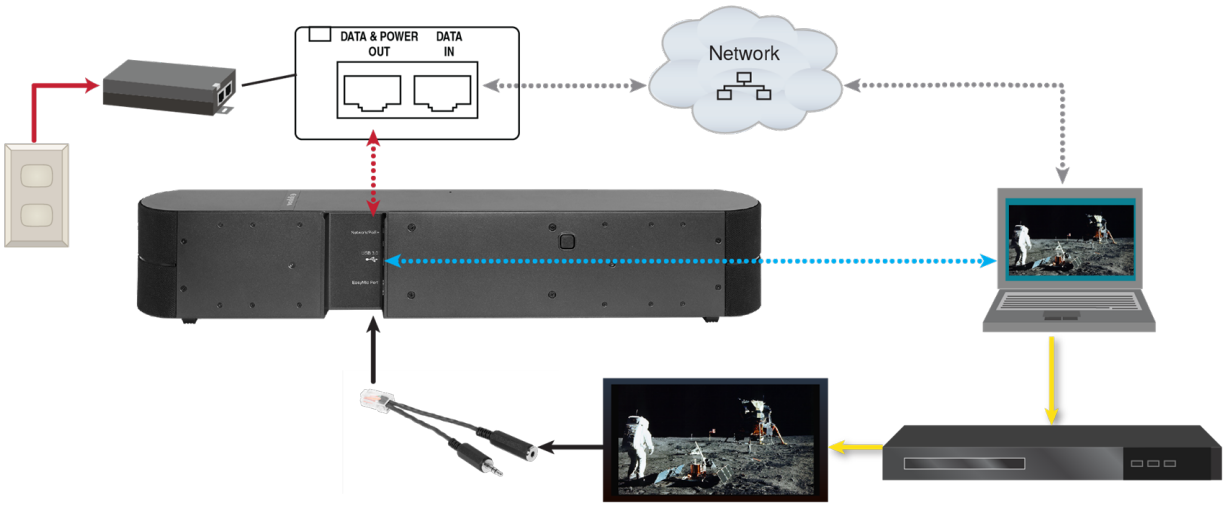

## Connections – Using the Camera as a Sound Bar

This diagram shows the camera used as a sound bar for the display. Audio from the DVD or other external device is routed from the display to the camera's speakers using the EasyMic adapter. The display's built-in speakers are not used. Select EasyMic Adapter Mode on the Audio page of the web interface.

HuddleSHOT camera shown. The HuddleSHOT FC camera connects the same way.

***Note***

*The computer in this connection diagram is not required in EasyMic adapter mode.*



# Mounting the HuddleSHOT Camera

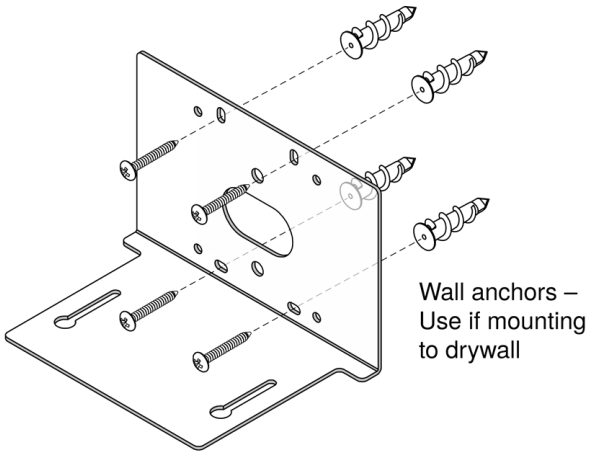
*For information about mounting the HuddleSHOT FC camera, refer to the documentation for the product in which it is housed.*

This section covers:
- Installing the wall mount for the HuddleSHOT camera
- Mounting the HuddleSHOT camera
- Other mounting options

## Installing the HuddleSHOT Wall Mount

The HuddleSHOT camera is shipped with a wall mount. Other mounting options are available as well. Contact us if you don't have the camera mount you need.

You can install the camera wall mount to a 2-gang wall box or directly to the drywall.
- If you mount it to drywall, use the wall anchors provided with the wall mount.
- If you mount it to a wall box, use the cover plate screws supplied with the wall box.




## Installing the HuddleSHOT Camera on the Wall Mount

***Caution***
*If installing a TableMIC microphone with the camera, be sure you can identify the cables correctly. Connecting a cable to the wrong port can result in equipment damage and void the warranty.*

1. Route the cables through the opening in the mounting shelf and connect them to the camera.
2. Place the camera on the mount.
3. Attach the camera to the mount using the mounting screws supplied with the camera, but do not fully tighten the screws.

Do not tighten the screws securing the camera to the wall mount until you are able to access the camera's web interface. You will need access to the button on the back of the camera to pair the remote and camera or to display the camera's IP address in the USB stream.

# Optional Adjustable HuddleSHOT Mount

For additional flexibility in installation, a tilting wall mount (part number 535-2100-207) is available for the HuddleSHOT camera. It can be mounted above or below a display, or placed on the conference room table.

## Tabletop Use

Use the adjustable mount on as a tabletop mount for a simple, quick installation.

1. Place the adhesive feet on the outer face of the mount base.
2. Use the two screws provided with the camera to secure it to the adjustable shelf .

## Wall Mounting

The adjustable mount can be installed on drywall or secured to a wall box. Do not use the adhesive feet for this type of installation.

## Installing on a Compatible Above/Below Mount

The adjustable mount can replace the original camera shelf on a Chief or Middle Atlantic above/below mount. Contact your sales representative for information on compatible products.

Do not use the adhesive feet for this type of installation.

1. Remove the original camera shelf from the shelf mounting bar.
2. Secure the base of the adjustable mount to the shelf mounting bar.
3. Ensure that the screws are properly tightened before placing the camera on the adjustable mount.

# Powering Up the Camera

Connect camera power. The camera will initialize. This takes a minute or two. When an image is available, the camera is ready to accept control information.

## Status Indicator Light

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

- Purple – Initializing
- White – Camera is active
- Red – Audio is muted
- Blinking red – Video is muted
- Yellow/green – Firmware update is in progress
- Blinking cyan – Remote pairing mode
- Blinking blue – Pairing error
- Different color on each blink – Disco mode! Everybody dance!
  (We have never actually observed this mode. If your camera does this, please contact us and describe how you induced this behavior.)

***Caution***

*Do not remove power or reset the camera while the indicator is yellow/green, showing a firmware update in progress. Interrupting a firmware update can make the camera unusable.*

***Note***

*By default, the camera's status indicator light is active during normal operation; however, it can be configured to remain off when the camera is powered up. The camera may be sending video even if the light is off.*

## Multifunction Button

Use the button on the back of the camera to do these things:

- **Display the camera's IP address in the video output:** Press momentarily. Press again to dismiss the IP address.
- **Pair the remote with the camera:** Press and hold until the light blinks cyan. Then press the pairing button on the remote.
- **Restore factory default settings:** Press and hold for about 10 seconds during power-up.
- **Return from standby mode:** When the camera is in standby (purple indicator light, or no light), press momentarily to return to the ready state.

# Initial Device Set-Up

Vaddio cameras have a web interface for initial device set-up, administrative control, and operation.

When any Vaddio product is shipped from the factory, the admin password is not set and the administrative controls are not available. You will need to access the web interface and set the admin password. You will then have access to the system administration tasks to define how the device behaves as an element of your network.

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

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

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

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

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

5. Set the admin password.

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

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

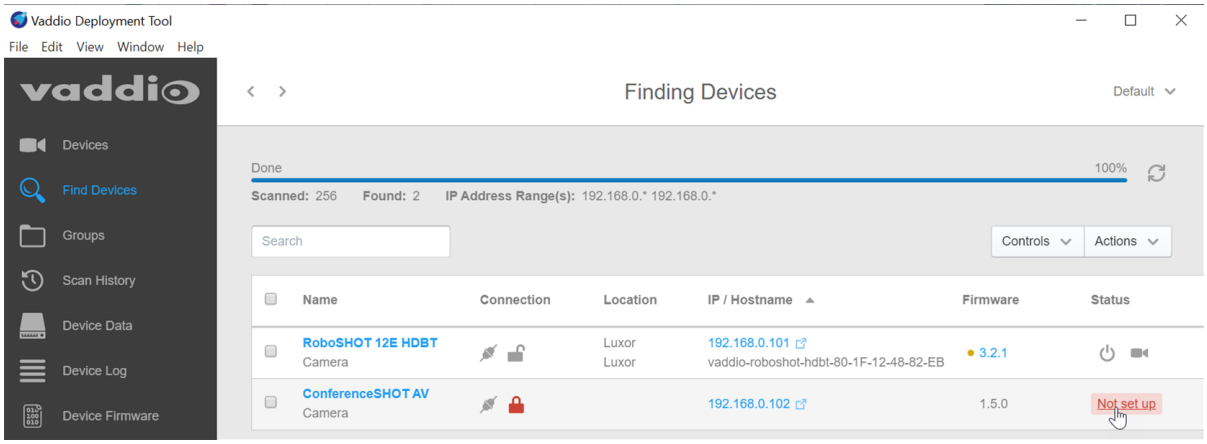
The Vaddio Deployment Tool provides an option to do the initial device set-up for all connected devices, and provides a shortcut to each device's web interface for system administration. This tool is available as a free download at https://info.legrandav.com/VaddioDeploymentTool.

***Note***

*Be sure you have the current version of the Vaddio Deployment Tool. If it notifies you that an update is available, install the update. This ensures that you have access to the full capabilities of the tool.*

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

1. Power up the camera and other devices if you have not done so already.
2. On the Find Devices page, select Scan. If the scan does not locate the devices you need to set up, your computer may be on a different subnet. Return to the Find Devices page and set up an advanced scan to search the appropriate portion of the network.
3. In the list of equipment that the scan discovers, locate the devices marked Not Set Up.




4. For each device that you need to work with, click the Not Set Up button and set the admin password.

You can now access the administrative web interface for system administration and other configuration tasks.

# Manual Access and Initial Device Set-Up

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

## About the Web Interface

The camera's web interface provides:

- **Administrative access** for system administration, maintenance, and performance/behavior configuration.
- **User access** for operation, including camera controls similar to those available from the IR remote. Set the user password or enable guest access for this portion of the web interface.

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.

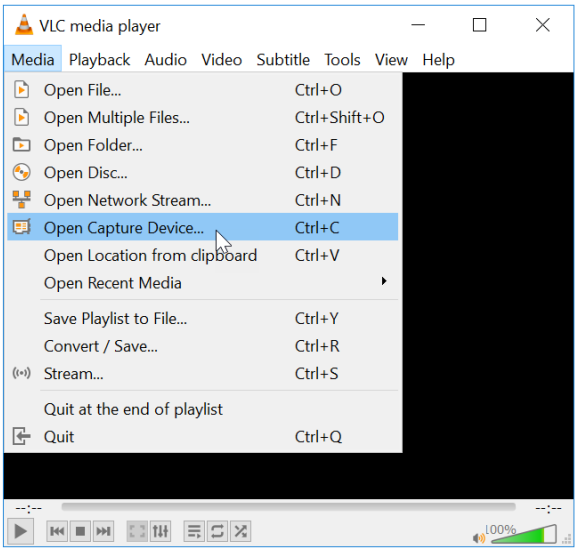
## Getting the Camera's IP Address for Manual Access

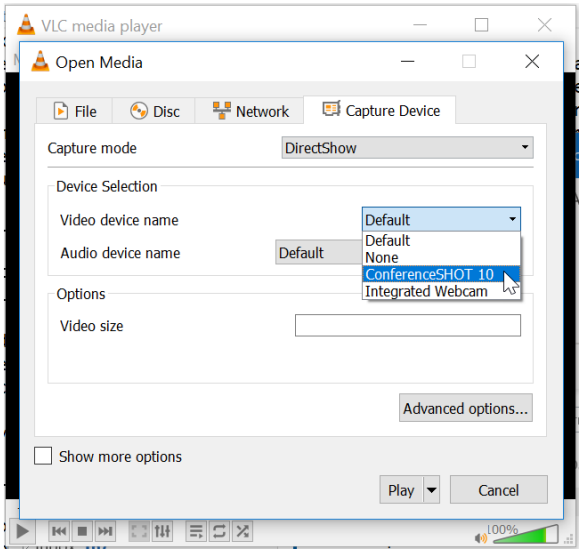
**If you know that your network does not automatically assign IP addresses,** skip this section: The camera's address is 169.254.1.1. You will need to connect your computer's network port to the camera's network port to do the initial device configuration and network configuration.

If you are not sure, or you know that your network automatically assigns IP addresses, you will need to be able to view the camera's USB stream to get the IP address.

**To get the camera's IP address:**

1. Connect the camera's USB port to your laptop.
2. Open a stream viewer 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.)




3. Prepare the remote for use, if you have not done so already.
4. Press the Network button on the remote. The USB stream displays the IP address.

## If the Camera Is At 169.254.1.1

This is the camera's default IP address. This means one of these things:

- The camera is not connected to the network.
- The network does not automatically assign IP addresses, and you need to configure the camera for the network.

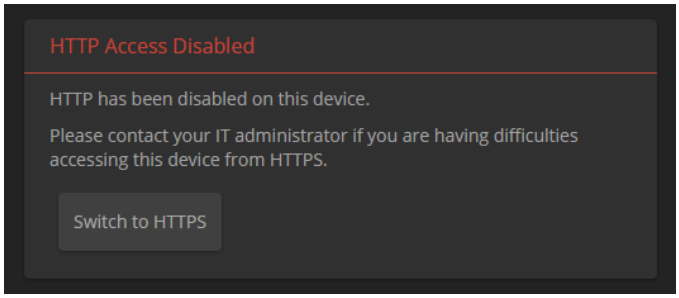
To communicate directly with the camera, connect a cable from your computer's network port to the camera's network port.

After you have done the initial device set-up, you will need to configure the camera for the network.

## Initial Access to the Web Interface

Enter the camera's IP address in your browser's address bar. You may need to enter **`https://`** as a prefix to keep the browser from treating it as a search query. (Example: **`https://10.30.200.125`**)

HTTP access is disabled initially. **This is also true after restoring factory defaults.** When you access the web interface without using the **`https://`** prefix, 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.*

**You will need to make the selections that your browser's security message discourages.** Depending on the browser, the warning presents an option to learn more, view details, or go to the "Advanced" page. When you select this, your browser provides an explanation and a button or link to continue to the IP address you entered, with a reminder that it may be unsafe. Select the option to continue. *Your HTTPS connection is safe.*

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

## Completing the Initial Device Set-up

Set the admin password and complete any other required tasks, such as accepting agreements.

The full administrative interface opens when you finish.

***Note***

*Be sure you have a way to remember the admin password. We cannot reset it for you. If the password is lost, you will need to restore factory defaults.*

***Note***

*This page includes a link to the company's standard privacy policy. This product does not record or save audio or video files, and it does not store any identifying information other than what you may choose to enter on the Room Labels page of the web interface. However, the device's IP address is considered "personally identifiable information" for the purposes of the privacy policy.*

# System Administration

This chapter covers settings for managing the camera as an element of your network.

- Security – Passwords, guest access, other IT security-related settings
- Network configuration
- Time settings

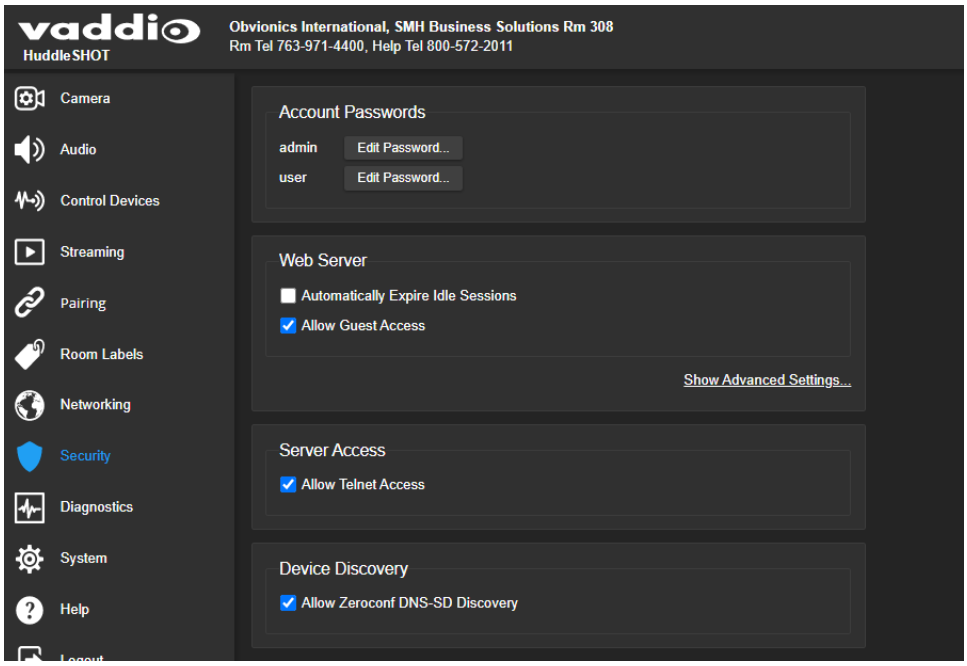
See Configuring Camera Behavior for information on image adjustments, streaming configuration, and other items related to camera behavior.

## Configuring Access and Other Security Settings

### SECURITY PAGE

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

- **Admin password** – Required. The web interface is unavailable if no admin password is set.
- **User password** – Password-protected access to the operator's page of the web interface.
- **Allow Guest Access** – Allow access the operator's page without a password. Disabled by default.
- **Automatically Expire Idle Sessions** – Automatically logs you out after 30 minutes of inactivity.




Other security settings include:

- **Allow Telnet Access** – disabled by default.
- **Allow Zeroconf DNS-SD discovery** – allowed by default.
- Advanced Settings – **Enable HTTP access** (disabled by default) and **Manage SSL Certificate**.

***Note***

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

# Configuring the Camera for Your Network

By default, the camera is set to DHCP, and will receive an IP address automatically if your network assigns IP addresses. Work with your network specialist to ensure that the camera is configured to comply with the organization's network policies.

***Caution***

*Consult your IT department before changing network settings. Errors in network configuration can make the camera inaccessible from the network.*

## Configuring the Device with a Static IP Address

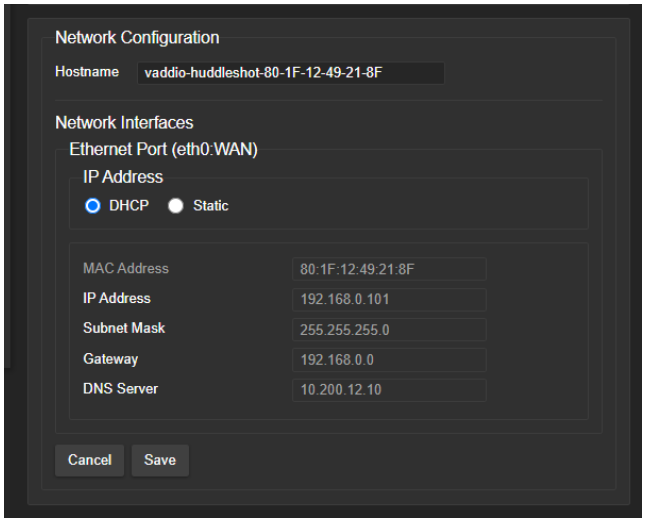
NETWORKING PAGE

If no DHCP server is available to automatically assign an IP address, the camera uses its default IP address (169.254.1.1).

If you install more than one camera or other device on this network, you must follow this procedure to prevent IP address conflicts.

**If the camera is currently at 169.254.1.1:**

1. Work with your IT department's network specialist to determine the correct network settings.
2. Connect your computer's network port to the camera's network port.
3. Set IP Address to Static. Then enter the IP address, subnet mask, and gateway. DNS Server is optional; ask the network specialist.




**If the camera is currently at an IP address other than 169.254.1.1:**

Work with your IT department to determine whether the device's current IP address is suitable.

If it is, set IP Address to Static. If not, follow the steps for a device at 169.254.1.1.

## Changing the Camera's Hostname

NETWORKING PAGE

If your network supports hostname resolution, you can change the camera's hostname. Work with your IT department to ensure that the new hostname conforms to the organization's naming conventions.

***Note***

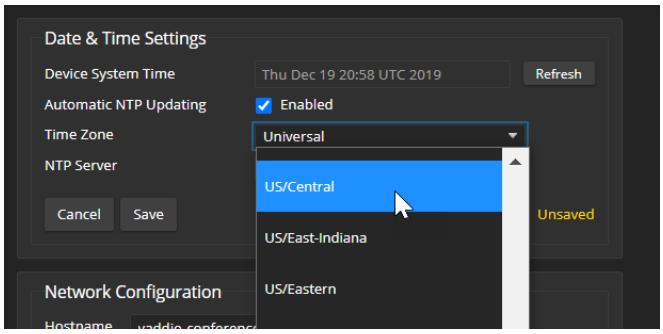
*You may need to log in to the web interface again after changing the hostname.*

## Specifying Time Zone and NTP Server

### NETWORKING PAGE

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

1. To make the time zone and NTP server editable, enable Automatic NTP Updating.
2. If you are not sure what to use for NTP Server, use the default.
3. Select the desired time zone from the list.

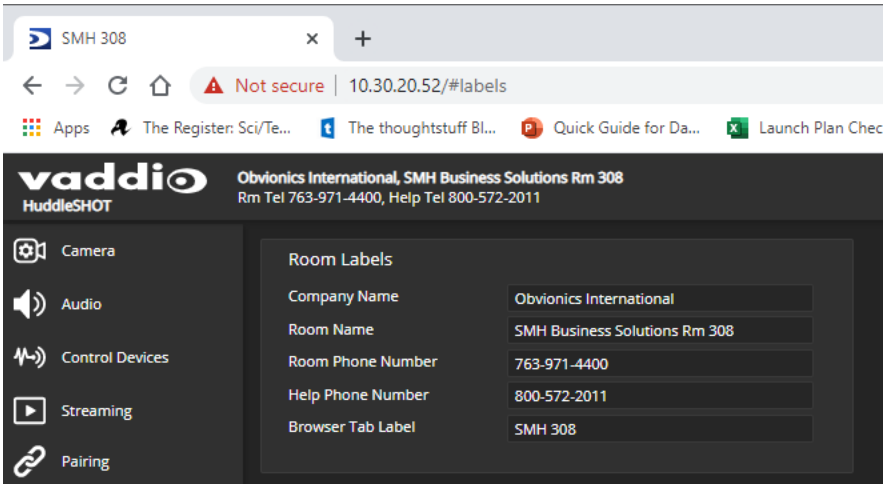



You may need to refresh the system time display.

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

### ROOM LABELS PAGE

The information you enter on this page is displayed on every page of the web interface. In a multi-camera environment, you may also wish to specify what appears on the browser tab.



# Configuring Camera Behavior

This chapter covers settings for defining how the camera performs in your environment:

- Streaming settings
- Speaker and microphone settings
- Camera adjustments – zoom, color, and dewarp settings
- Programmable behaviors
- Other camera behaviors

## Configuring Streaming Behavior

Conferencing applications use *USB streaming*. After initial device set-up is complete, the camera's USB stream is always enabled.

*IP streaming* is disabled by default.

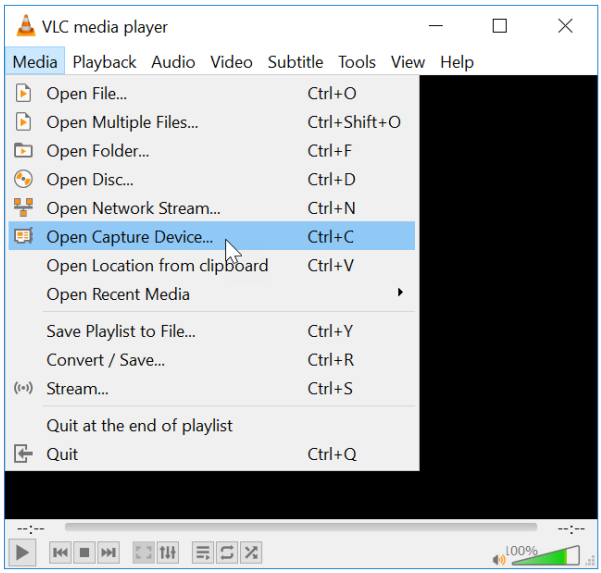
***Note***

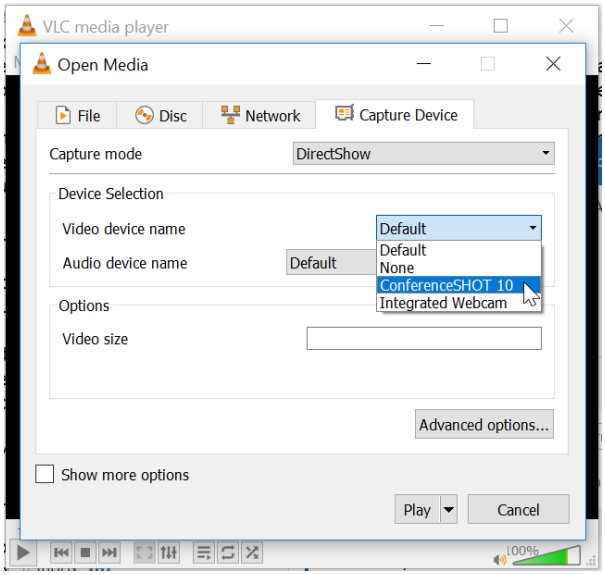
*The screen shots in this section are representative, but may differ from what you see.*

### Viewing the USB Stream

Do one of these things:

- Start or join a conference.
- Open a stream viewer and select the camera as the video capture device.
  The image below shows how to view a camera's USB stream using VLC Media Player. The media player will correctly identify your camera by model.




## Configuring USB Streaming

### STREAMING PAGE

These settings affect how the camera works with soft conferencing applications.

**USB Device Name** – Specify how the camera shows up in your soft client's camera selection list.

**HID Audio Controls** – Enable to allow conferencing applications to control the audio.

**Enable UVC Extensions** – Allow conferencing applications to control the camera.

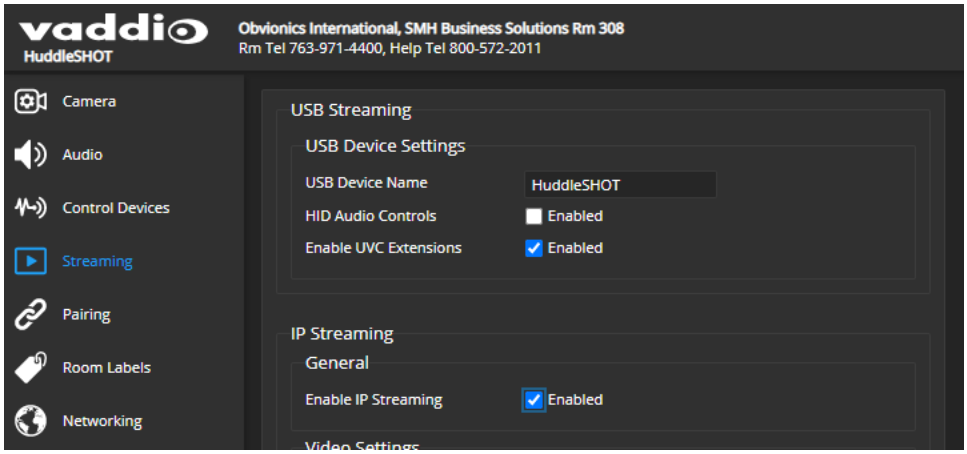
## Enabling or Disabling IP Streaming

### STREAMING PAGE

Two IP streaming protocols are available:

- *RTSP streaming* delivers an IP stream that people can access from your network using a media player.
- *RTMP streaming* sends a stream to a content service provider such as YouTube. To use RTMP streaming, you must have an account with a streaming service.

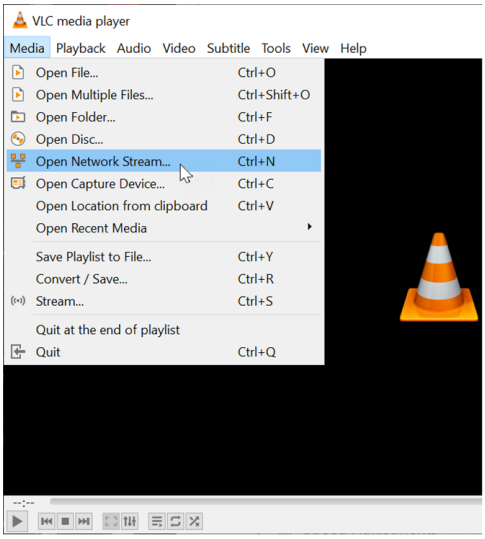
IP streaming is disabled by default.

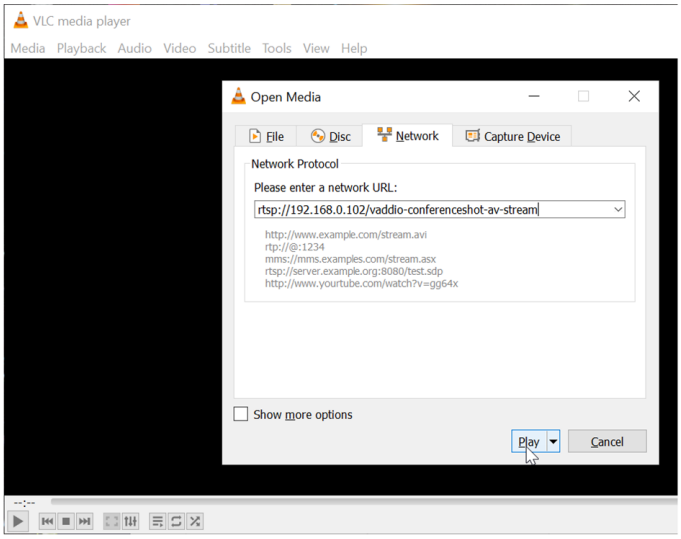



## Viewing the IP Stream (RTSP)

1. Open a stream viewer such as VLC Media Player.
2. Select "Network stream" or your viewer's equivalent option.
3. Copy the streaming URL from the camera's Streaming page and paste it into the viewer as the URL for the network stream.

The image below shows how you would view a camera's IP stream using VLC Media Player. The media player will correctly identify your camera by model.



## RTSP Streaming Protocol and URL

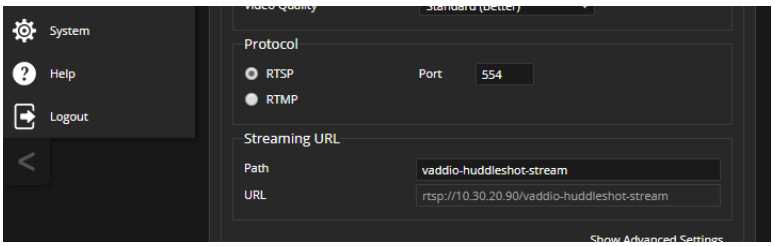
### STREAMING PAGE

When IP streaming is enabled and RTSP is selected, the RTSP stream is automatically available. Consult your IT department before changing these settings.

**RTSP port:** Vaddio strongly recommends using the default RTSP port number.

**Path:** The portion of the streaming URL that appears after the IP address. You may wish to change this to help identify the stream source – for example, **`demo-studio-3`**.

**URL:** The location where the stream can be viewed. This will change if you edit the path.




## Setting up IP Streaming in Easy Mode

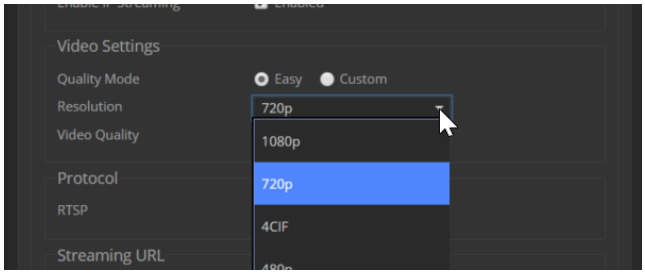
### STREAMING PAGE

***Note***

*Consult your network specialist when setting up IP streaming, to be sure that you select settings that are appropriate for the network.*

If you are not sure about these settings, start with the defaults.

1. Select Easy Quality Mode.
2. Select the desired IP streaming resolution. This determines the size of the window in which the stream is displayed.




3. Select Video Quality. Then save your changes.

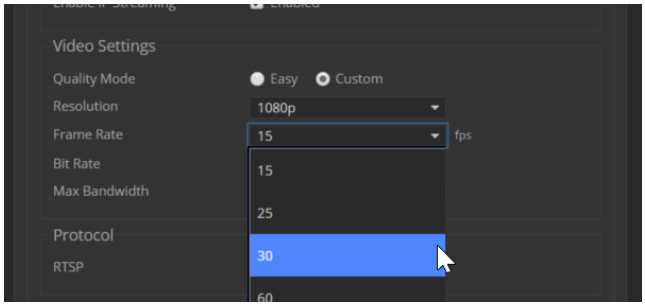
## Setting up IP Streaming in Custom Mode

### STREAMING PAGE

***Note***

*Consult your network specialist when setting up IP streaming, to be sure that you select settings that are appropriate for the network.*

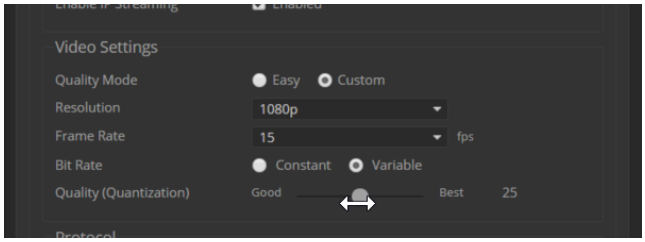
1. Select Custom quality mode.
2. Select the desired resolution.
3. Select the desired frame rate.




***Note***

*Some combinations of resolution and frame rate are not valid, and will generate notifications.*

4. Select Constant or Variable Bit Rate.
5. Constant Bit Rate only: Set Max Bandwidth.
6. Variable bit rate only: Set the Quality (Quantization) slider. Then save your changes.



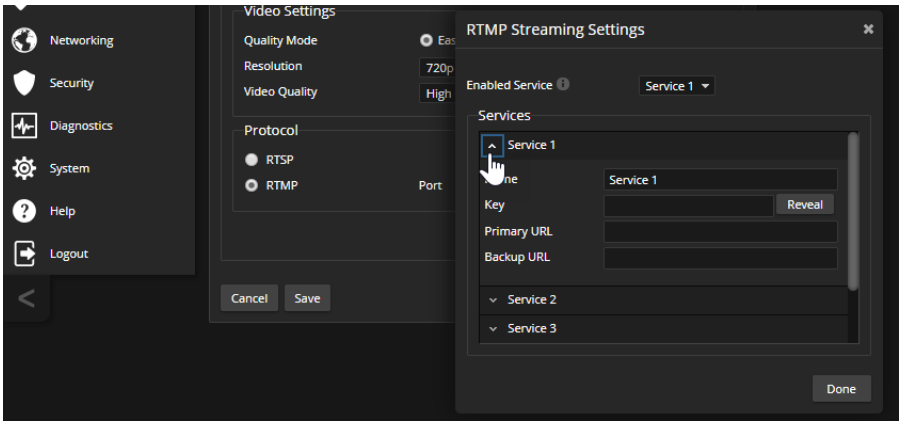
## Configuring RTMP Streaming

### STREAMING PAGE

To use RTMP streaming, you must have an account with a streaming service.

**To configure an RTMP streaming service:**

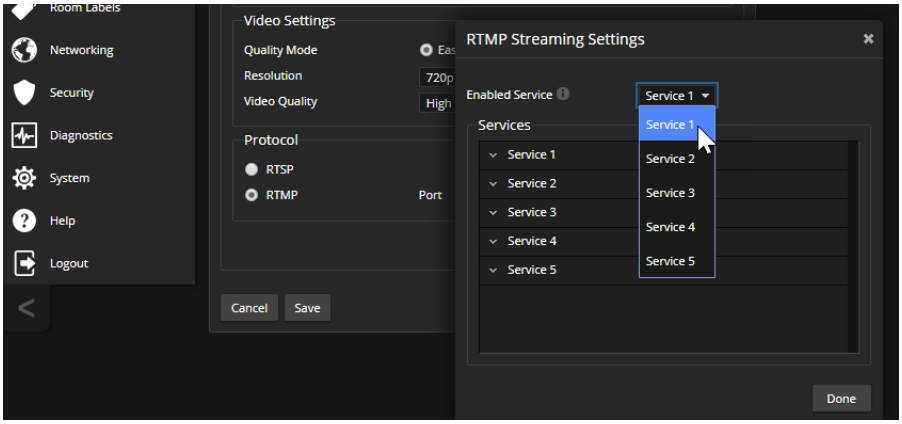
1. Select RTMP streaming, then select Settings.
2. Expand the information box for the service.




3. Enter the name of the service.
4. Paste in the key and URL(s) provided by the service.

**To select the enabled RTMP streaming service:**

Expand the list of available streaming services, and select the one to use.




***Note***

*When RTMP streaming is selected and a service is configured, the camera streams to that service until you stop the stream.*

## Changing MTU

### STREAMING PAGE, ADVANCED SETTINGS

The default packet size for streaming is 1400. Do not change this except in consultation with your network administrator.

# Adjusting Video

## CAMERA PAGE

Adjust the video according to the requirements of the room.

Image area and distortion correction:

- **Zoom** – 1x captures the largest image area. 2x has a smaller field of view, so it displays less of the fish-eye effect.
- **Dewarp** – Select None for the widest field of view. Full dewarping corrects for the fish-eye effect.

Lighting:

- **Color Compensation** – Adjusts for the room lighting.
- **Backlight Compensation** – Reduces contrast to adjust for bright light behind the main subject of the shot. Use this if the subject is in front of a window, projector screen, or other bright area and appears as a silhouette. This setting can't be used with Wide Dynamic Range.
- **Wide Dynamic Range** – Automatically darkens bright areas and brightens dark areas to provide a properly exposed image in challenging lighting conditions. This setting can't be used with Backlight Compensation.
- **Gamma** – Adjusts the range (gray density) between bright areas and shadows.

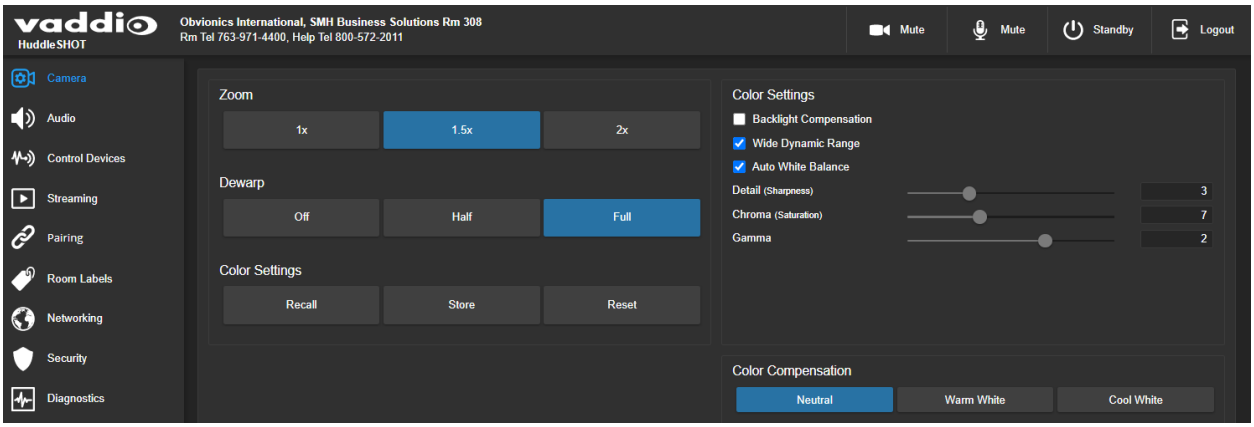
Color:

- **Auto White Balance** – Adjusts color automatically. Clear this box to adjust red gain and blue gain manually.
- **Red Gain** and **Blue Gain** – Provide manual color adjustment when Auto White Balance is not selected.
- **Chroma** – Adjusts the color intensity (saturation).

Image sharpness:

- **Detail** – If the video looks grainy or “noisy,” try a lower Detail setting.

If your room requires custom color settings, you can store them and recall them later. Stored color settings do not include Color Compensation.

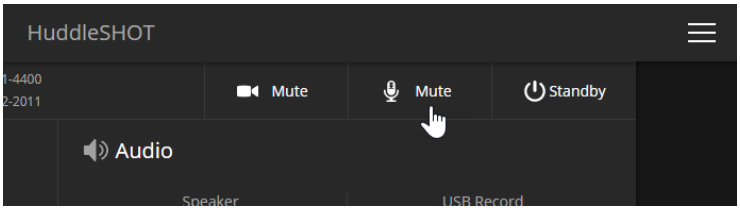


# Managing Audio

The web interface provides separate controls for each audio input and output.

## Muting All Audio Inputs Together

To stop sending audio, use the audio mute button at the top of any page of the web interface.




## Controlling Volume and Muting Per Input or Output

### AUDIO PAGE

Inputs (audio from your site) and outputs (audio from the far end of the conference) are on separate tabs.

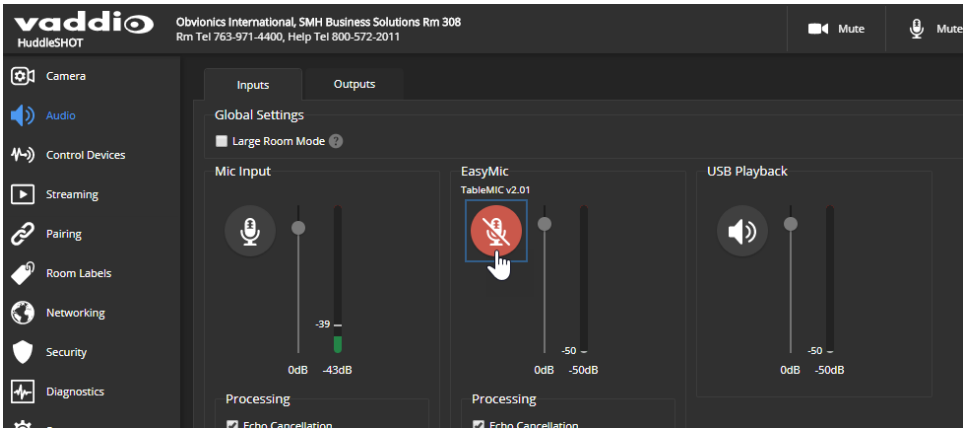
**To manage individual audio inputs or outputs:**

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

Use the slider for the appropriate audio input or output to set the volume.

***Note***

*For best performance with most computers, we recommend setting the USB Record volume high. This allows people at the far end of the call to adjust the audio to their environment.*

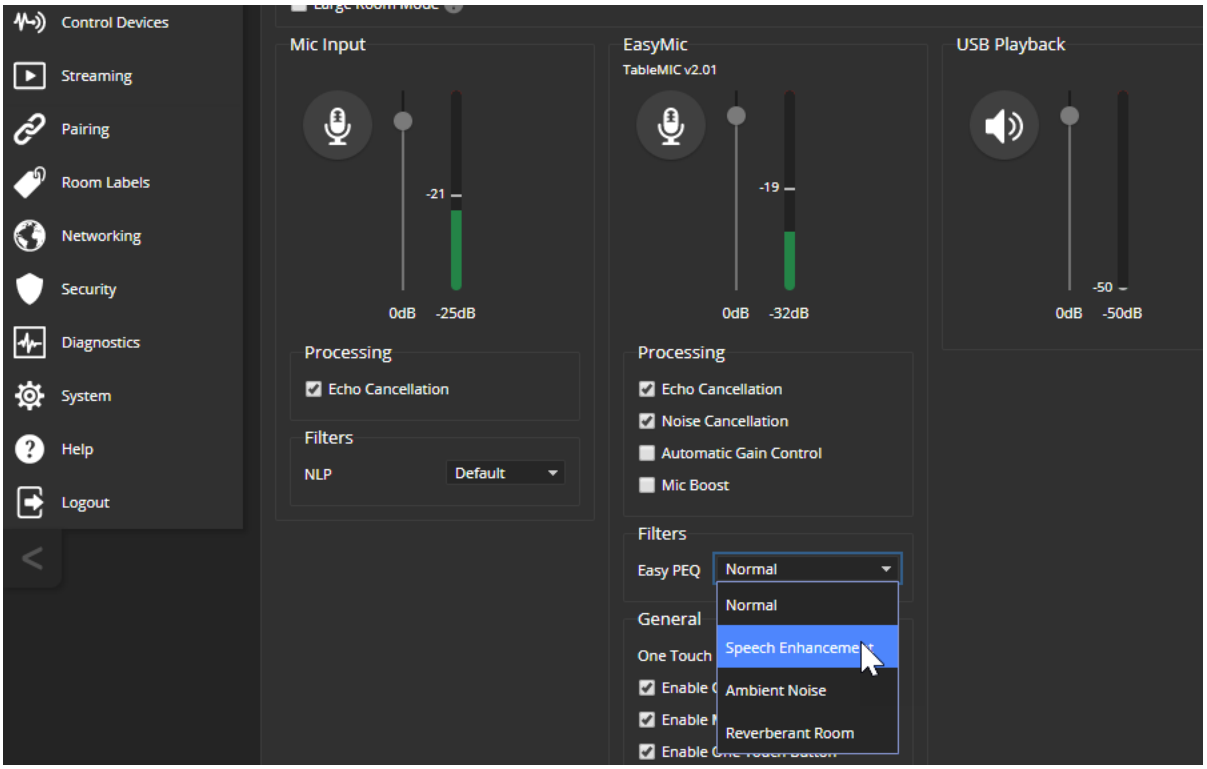


## Fine-Tuning Microphone Performance

### AUDIO PAGE, INPUTS TAB

You may need to adjust the microphones to suit the room or the specific conference.

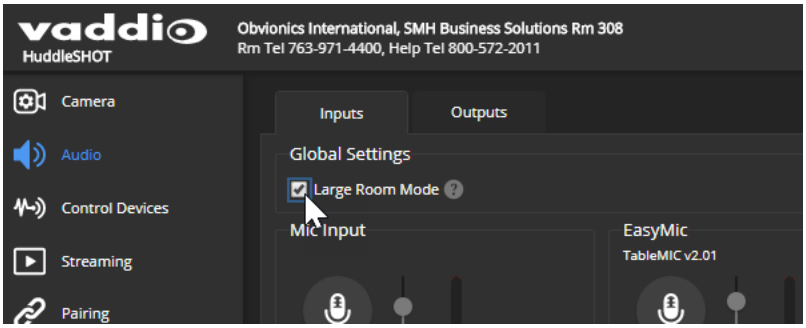
| To correct this… | Do this |
|---|---|
| Reverberant room (no external microphone) | Set the NLP (Non-Linear Processing) filter to Reverberant to reduce the echoing quality of the sound. |
| Reverberant room<br>(TableMIC microphone connected) | From the TableMIC Easy PEQ menu, select Reverberant Room. |
| Noisy environment<br>(TableMIC microphone connected) | From the TableMIC 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<br>(TableMIC microphone connected ) | Select the Mic Boost processing option to increase microphone gain overall.<br>From the TableMIC Easy PEQ menu, select Speech Enhancement to increase gain in the frequency range for speech. |
| Participants with widely differing vocal volumes<br>(TableMIC microphone connected) | Select the Automatic Gain Control processing option to adjust microphone gain based on the relative volumes of people's voices. |



## Adjusting Performance for Larger Rooms

### AUDIO PAGE

If the camera is installed in a room large enough to require an external microphone, you may need to adjust the audio. Select Large Room Mode to boost the speakers and use the external microphone exclusively. This setting is available on both the Inputs and the Outputs tabs.

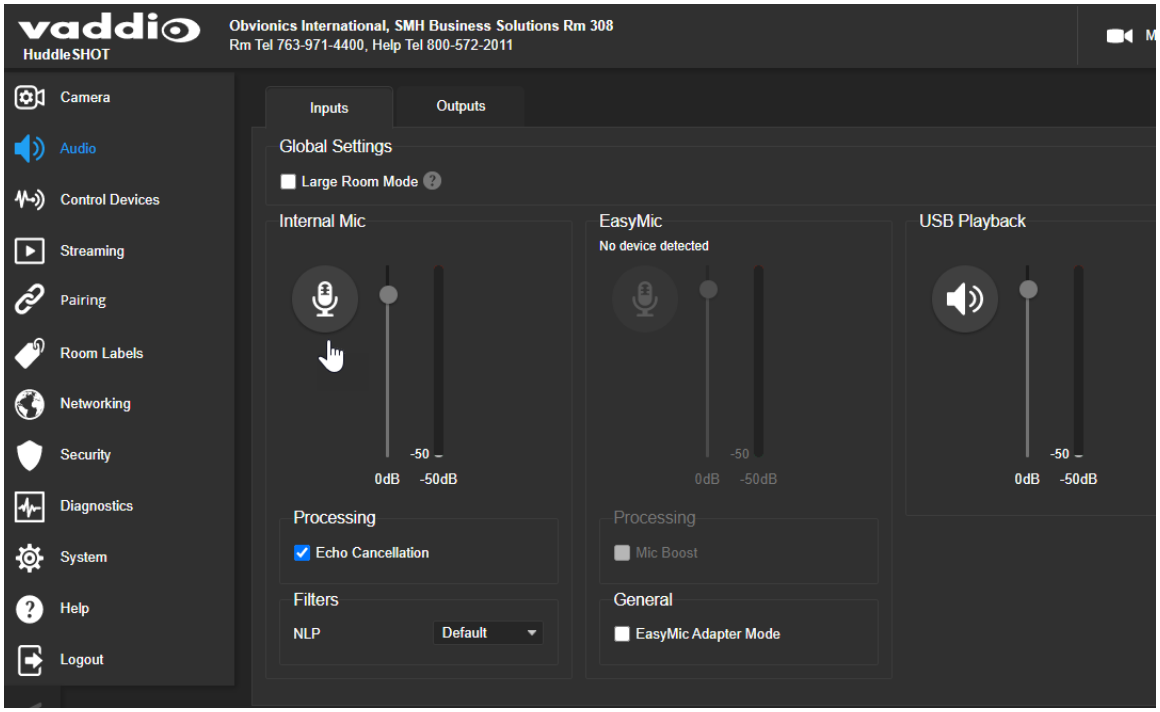



## Using the Camera as a Sound Bar

### AUDIO PAGE, BOTH TABS

The camera must be connected as a sound bar.

1. Select the EasyMic Adapter Mode on the Inputs tab.




2. If the content is primarily music, set the speaker EQ Mode to Music on the Outputs tab.

# Setting up Custom Functions and Third-Party Control

The Control Devices page provides a way to define programmed behaviors and use third-party control devices to manage the camera.

*Macros* are sequences of commands. A macro can only run successfully if all its commands are valid and able to run successfully. Refer to the Telnet Serial Command API section for a full list of commands.

*Triggers* can be associated with macros, to make them run.

Hardware triggers (labeled One Touch in the web interface) allow you to define responses to connected trigger devices.The One Touch (Home) button on a Vaddio TableMIC is a hardware trigger.

Software triggers allow you to program custom functions for third-party control devices, such as defining the buttons on a conference room touch-screen.

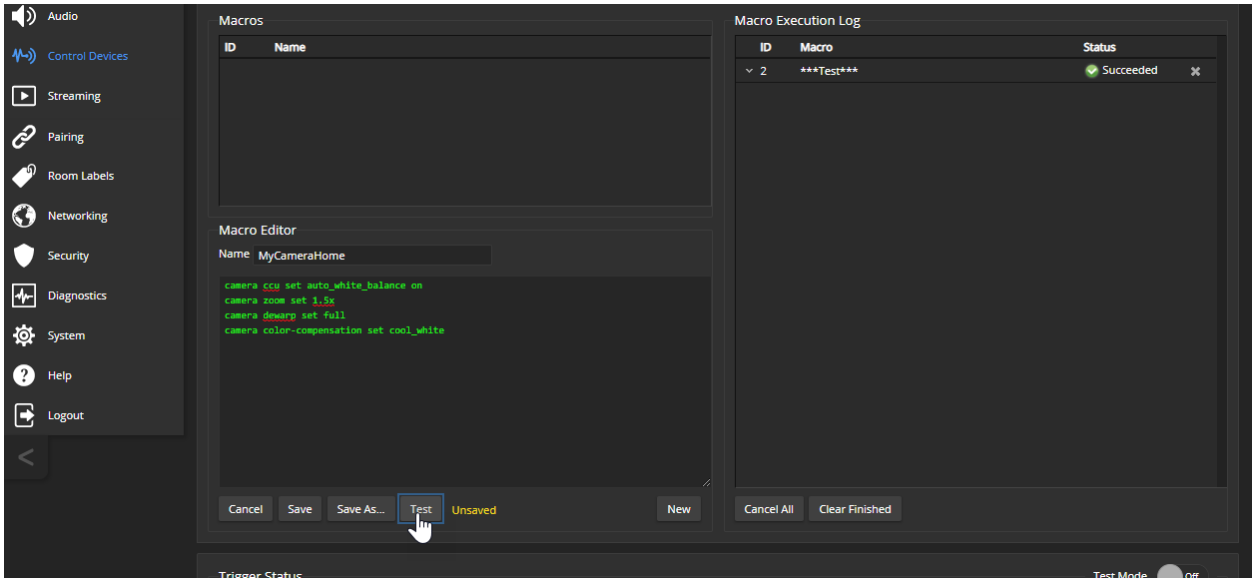
## Writing, Editing, and Testing Macros

### Control Devices page, Macros tab

Your camera has two example macros, Preset 1 and Preset 2. You can safely rename, edit, or delete these macros.

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



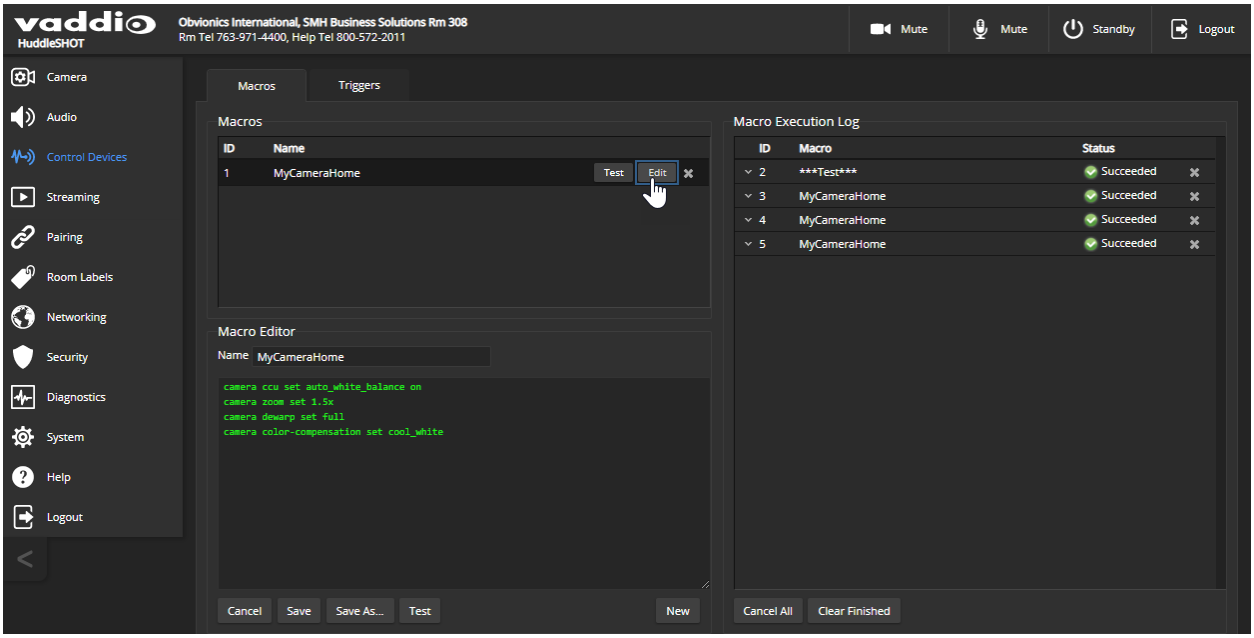

4. Save your work when you are finished, or select New to start over.

***Note***

*If the macro has external requirements, it will only run successfully if those requirements are met.*

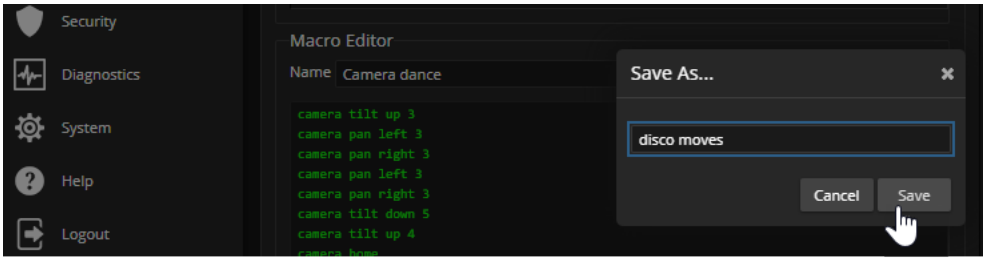
**To open an existing macro for editing:**

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:**

Open a macro for editing, and use the Save As button to give it a new name. Then open it for editing again, and make the desired changes.




**To test (debug) the macro:**

Use the Test button to run a macro while you are editing it. You can also test macros after saving them. The Macro Execution Log shows the result of each test.

## Assigning Macros to Triggers

### CONTROL DEVICES PAGE, TRIGGERS TAB

A macro can run 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.

To assign two macros to a microphone's One Touch trigger (the Home button), set the One Touch trigger to Latching mode. If you assign only one macro to the One Touch trigger, ensure that it is set to Momentary mode, so the macro runs every time you tap the button. See Setting the Microphone's One Touch Button Behavior.

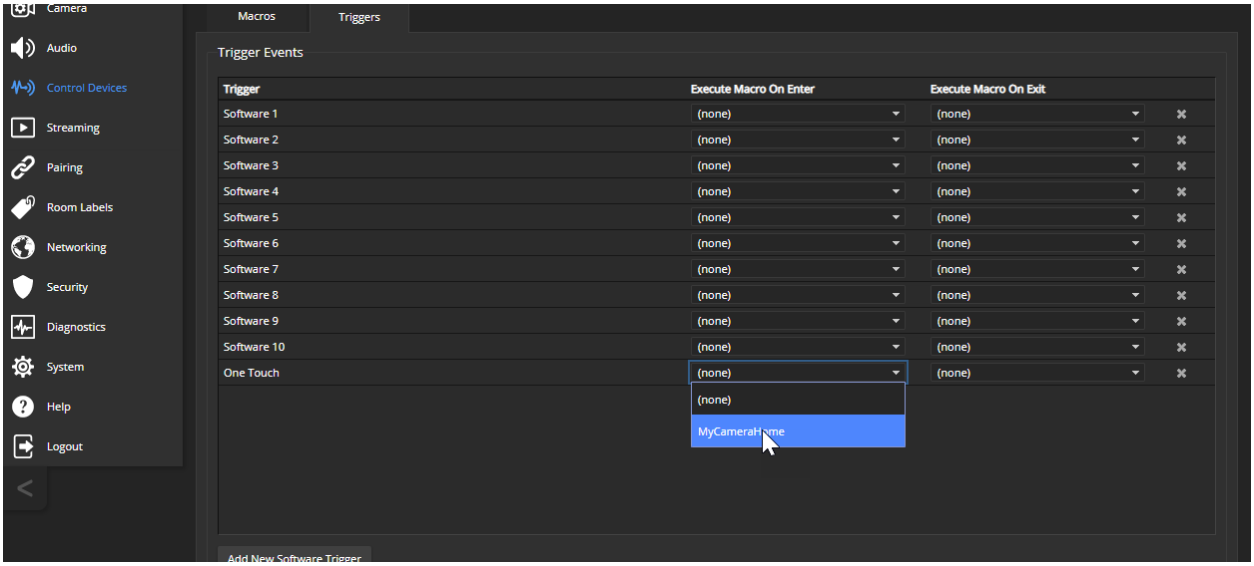
**To assign macros to triggers:**

For a macro that runs when the trigger turns on, select a macro in the Execute Macro on Enter field. For one that runs when the trigger turns off, select a macro in the Execute Macro on Exit field.

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

**Example: Assigning a 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. Go to the Audio page and set the One Touch Button mode to Momentary, so the macro will run every time you tap the microphone's Home 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)`.

## Setting the Tabletop Microphone's One Touch Button Behavior

### AUDIO PAGE, INPUTS TAB

The Home button on any EasyMic microphone can be associated with macros. Set the One Touch Button behavior according to how you want the button to behave:

- **Latching** works like a light switch and allows you to associate the button with two macros – one that runs when you turn it on, another that runs when you turn it off.
- **Momentary** works like a doorbell and allows you to associate the button with one macro that runs every time you tap the button.

## Testing Triggers

### 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.

**To test a trigger:**

1. Turn on Test Mode. 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.*

## Setting Other System Behaviors

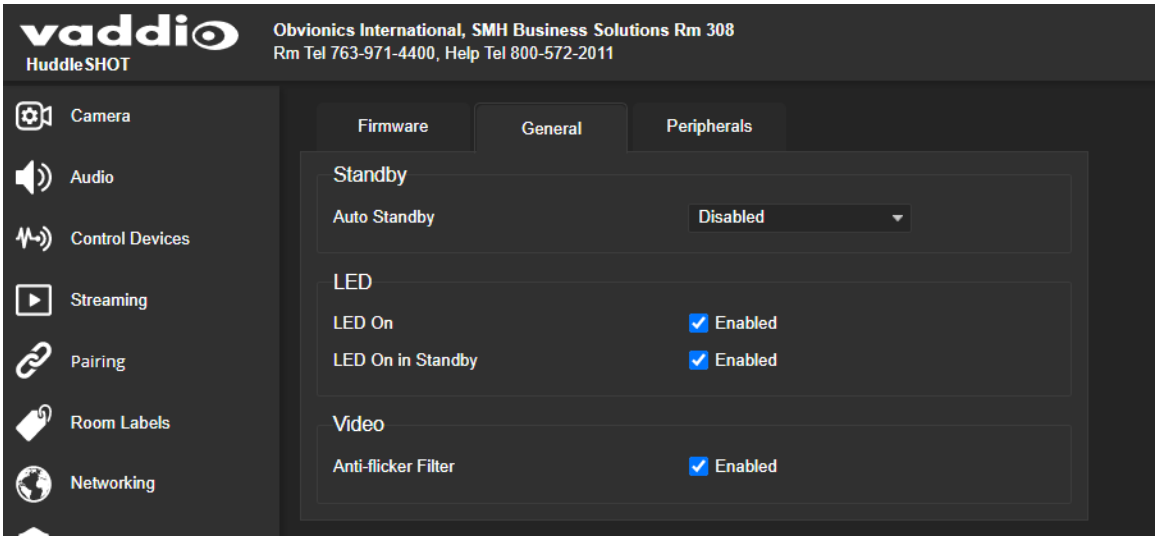
### SYSTEM PAGE, GENERAL TAB

The following settings are available on the System page:

- **Auto Standby** – Enable to automatically set the camera in standby (low-power) mode when not connected to a computer.
- **LED On** – Normally on. If desired, the indicator light can be turned off.
- **LED On in Standby** – Normally on. Disable to turn off the indicator light when the camera is in standby mode.
- **Anti-flicker Filter** – You may need to use this setting if AC mains power is 50 Hz.

***Note***

*By default, the camera's status indicator light is active during normal operation; however, it can be configured to remain off when the camera is powered up. The camera may be sending video even if the light is off.*



# System Maintenance

This chapter covers tasks for keeping your system up-to-date and operating properly:

- Rebooting
- Backing up and restoring the camera configuration
- Installing firmware updates
- Getting help

## Rebooting the Camera

### SYSTEM PAGE, FIRMWARE TAB

This can help if the camera stops responding as you expect. In the System Utilities section, select Reboot.

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

### SYSTEM PAGE, FIRMWARE TAB

If you need to restore a camera's factory default settings, you can export the configuration beforehand to restore customized information instead of re-entering it manually.

The data export includes room labels, NTP server, and time zone information.

It does not include any information that is unique to the device, such as passwords, hostname, camera settings, or remote pairing.

**To export a configuration:**

Select Export Data. The export downloads to your computer as a .dat file. The filename is the camera's hostname.


**To import a configuration file:**

Select Import Data. The web interface prompts you to select the file to import.

# Installing a Firmware Update

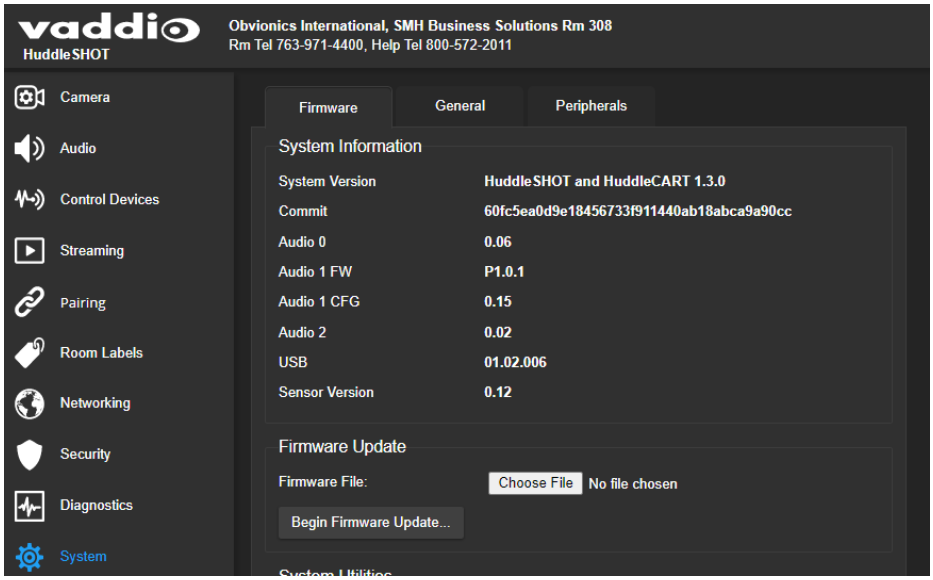
### SYSTEM PAGE, FIRMWARE TAB

The latest firmware and release notes are available on the product's web page at www.legrandav.com. The release notes provided with each update can help you to decide whether to install the update.

***Caution***

*Be sure the camera stays connected to power and to the network during the update. Interrupting the update could make it unusable.*

1. Read the release notes and download the firmware update file.
2. Select the firmware update file that you downloaded. The filename ends with `.p7m`.
3. Select Begin Firmware Update.




4. Read and understand the information in the Confirm dialog box, then select Continue. A progress message box opens and the indicator light on the front of the camera turns yellow/green. If the update process presents warnings or error messages, read them carefully.

The camera reboots to complete the update, and the web interface prompts you to log in again.

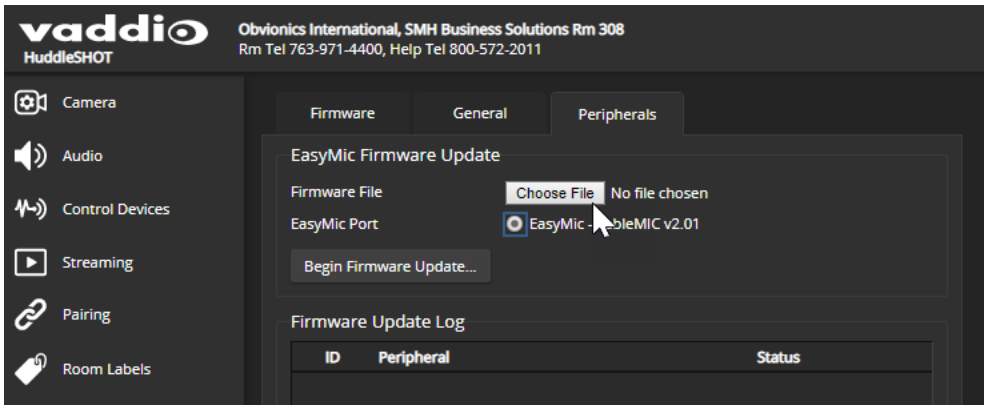
## Installing a Firmware Update for the Connected Microphone

### SYSTEM PAGE, PERIPHERALS TAB

Vaddio conference room microphones are updated via the equipment to which they are connected.

When you update the microphone firmware, you may also need to update the firmware of the other equipment in the room.

1. Read the release notes and download the update file identified as the web firmware update. The filename ends in `.p7m`.
2. On the System page, select the Peripherals tab.




3. Select the firmware update file that you downloaded.
4. Select the port connection for the microphone to be updated. There's only one, but you have to select it anyway.
5. Select Begin Firmware Update.
6. Read the information in the Confirm dialog box, then select Continue. The Firmware Update Log box displays progress messages during the update, and displays a success message when the microphone is updated and ready to use.

# Contacting Vaddio Technical Support and Viewing Diagnostic Logs

HELP PAGE, DIAGNOSTICS PAGE

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

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

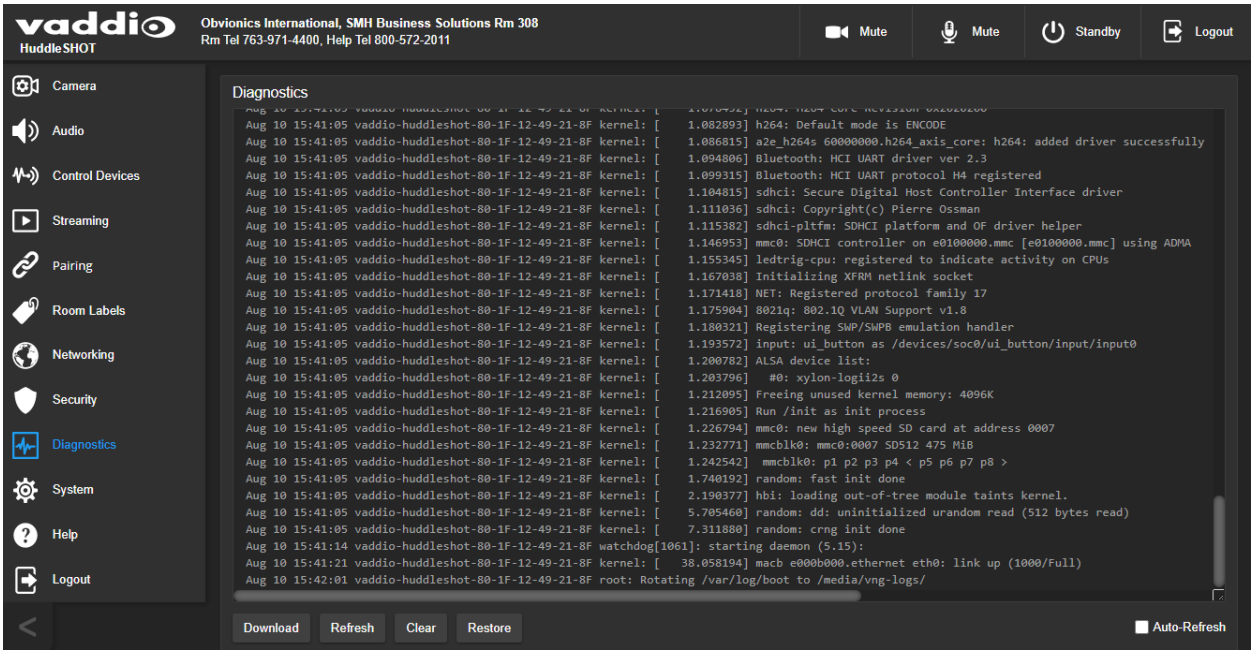
***Note***

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

Your Vaddio technical support representative may ask you to download and email the log file from the Diagnostics page.

***Note***

*The log may include large numbers of internal events even when no errors have occurred. Rebooting generates over 100 log entries.*



# Using the RF Remote

The RF remote provides basic in-conference functionality – zoom, volume control, and muting. You can also use it to get the camera's IP address. When you have the IP address, you can open the camera's web interface.

Before you can use the remote, you will need to:

- Install the batteries
- Pair the remote with the camera

HuddleSHOT and HuddleSHOT FC cameras are not compatible with IR remotes.

## Installing the Batteries

The remote uses two AAA batteries.

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

## Pairing the Remote to the Camera

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

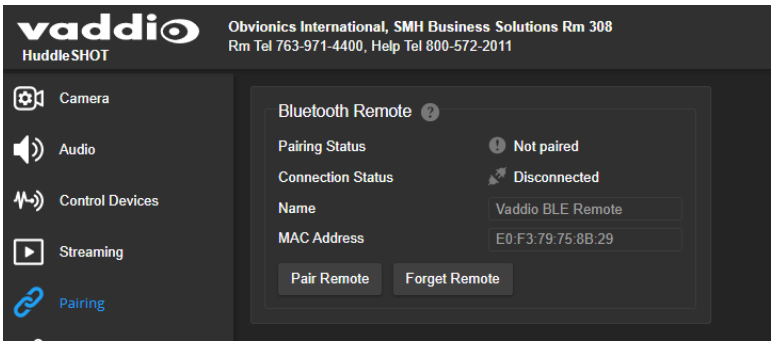
**If you do not have access to the administrative web interface:**

1. Press and hold the multifunction button on the back of the camera until the indicator light blinks cyan.
2. While the indicator light blinks cyan, press the pairing button on the remote. The camera's indicator light changes to steady white when the pairing is complete. You may need to press the remote's pairing button more than once.
3. If the indicator light changes from blinking cyan to blinking blue, this indicates a pairing error: The pairing was not successful and pairing mode has timed out. Go back to step 1. If the problem persists, contact Vaddio Technical Support.

***Note***

*Any time a pairing error occurs (indicator blinking blue), Vaddio recommends rebooting the camera as soon as feasible. If pairing was successful, the remote remains paired through the reboot process.*

**If you have access to the administrative web interface:**




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

## Other Things to Know About the Remote

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

**Environments with HuddleSHOT cameras in adjacent rooms** – If the remote is currently paired to a camera and within range of that camera, it will not pair with another camera.

**The remote goes to standby mode after a brief period of inactivity** – To return the remote to its normal operating state, press a button.

**The remote is no longer paired after restoring the camera's factory defaults** – If you restore factory defaults on the camera, you will need to pair it with the remote again.

## Unpairing the Remote

### PAIRING PAGE

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

## Quick Reference

| | |
|---|---|
|  | **Power button** – Set the HuddleSHOT camera to standby mode, or return to full-power mode. |
|  | **Mute button** – Mute the microphone(s). |
|  | **Home button** – Returns the camera to its stored color settings. |
| | **Arrow buttons** – These buttons have no function on the HuddleSHOT camera, so they're great for fidgeting. |
|  | **Zoom + button** – Increase the zoom. The HuddleSHOT camera provides three zoom levels: 1x, 1.5x, and 2x. |
|  | **Zoom – button** – Decrease the zoom. |
|  | **Volume + button** – Increase the volume from the speakers. |
|  | **Volume – button** – Decrease the volume from the speakers. |
|  | **Pairing button** – Use when pairing the remote with the camera.<br>*Note: On some remotes, this button is marked differently.* |
|  | **Network button** – Display the camera's IP address on the video output. |

# Operating the Camera from the Web Interface

## CAMERA PAGE (USER OR GUEST ACCESS)

By default, the operator's page of the web interface is not available. The administrator must set a password for the `user` account, or enable guest access.

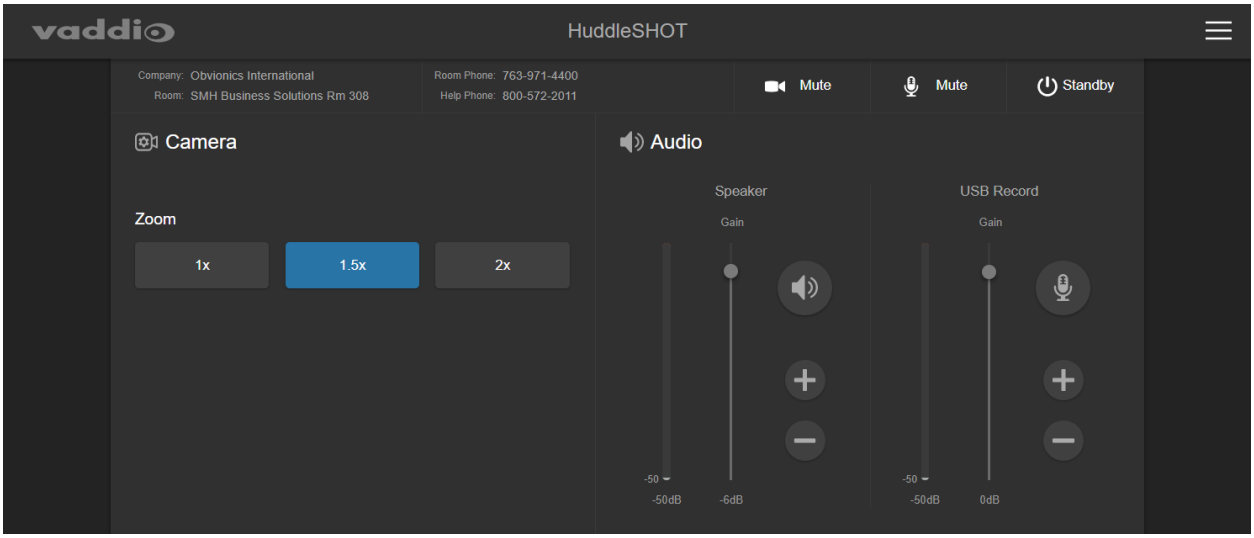
Only the operator's page is available with user or guest access.

The web interface is available on the Vaddio Device Controller touch panel (if your installation uses one) or from a computer's web browser.

The operator's Camera page provides the same controls as the remote, plus volume control for the USB audio from your site.

***Note***

*For best performance with most computers, we recommend setting the USB Record volume high. This allows people at the far end of the call to adjust the audio to their environment.*



# 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.

## Requirements

- Telnet must be enabled on the Security page of the device's web interface.
- Your computer must have a Telnet client. Telnet port 23 is used.
- Your computer must be able to connect to the device over the network.
- When you connect via Telnet, you must log in using the admin account.

## Usage notes

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

## Getting More Information

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

Firmware updates sometimes implement new commands or command parameters. We do not update the manuals for every firmware update, and occasionally the author makes a mistake. Querying returns the command parameters that are currently available, along with guidance on command syntax.

## Typographical Conventions

- { x | y | z } – Choose x, y, or z.
- <variable> – Substitute the desired value here.
- < x - y > – Valid range of values is x through y.
- [parameter] – Parameter is not required.

## camera home

Returns the camera to its stored color settings.

| | |
|---|---|
| Synopsis | camera home |
| Example | >**camera home**<br>OK<br>> |

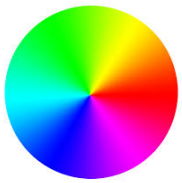
## camera ccu get

Returns CCU (lighting and color) information.

| | | |
|---|---|---|
| Synopsis | camera ccu get <param> | |
| Options | auto_white_balance | Returns the current state of the auto white balance setting (on or off). |
| | backlight_compensation | Returns the current state of the backlight compensation setting (on or off). |
| | blue_gain | Returns the blue gain value as an integer (0 to 20). |
| | red_gain | Returns the red gain value as an integer (0 to 20). |
| | chroma | Returns the chroma value as an integer (0 to 20). |
| | gamma | Returns gamma as an integer (0 to 3). |
| | detail | Returns the detail value as an integer (0 to 10). |
| | wide_dynamic_range | Returns the current setting for Wide Dynamic Range (on or off). |
| | all | Returns all current CCU settings. |
| Examples | >**camera ccu get red_gain**<br>red_gain 11<br>OK<br>><br><br>Returns the current red gain value.<br><br>>**camera ccu get all**<br><br>auto_white_balance on<br>backlight_compensation off<br>blue_gain 10<br>chroma 2<br>detail 8<br>gamma 3<br>red_gain 11<br>wide_dynamic_range off<br>OK<br>><br><br>Returns all current CCU settings. | |

## camera ccu set

Sets the specified CCU (lighting) information.

| Synopsis | camera ccu set <param> <value> | |
|---|---|---|
| Options  | `auto_white_balance` {on \| off} | Sets the current state of the auto white balance setting (on or off). Auto white balance overrides red gain and blue gain manual settings. |
| | `backlight_compensation` {on \| off} | Sets the current state of the backlight compensation setting (on or off). Can only be used when wide dynamic range mode is off. |
| | `blue_gain` <0 - 20> | Sets the blue gain value as an integer (0 to 20). Can only be used when auto white balance is off. |
| | `red_gain` <0 - 20> | Sets the red gain value as an integer (0 to 20). Can only be used when auto white balance is off. |
| | `chroma` <0 - 20> | Sets the chroma value as an integer (0 to 20). |
| | `gamma` <0- 3> | Sets gamma value as an integer (1 to 3). |
| | `detail` <0 - 10> | Sets the detail value as an integer (0 to 10). |
| | `wide_dynamic_range` {on \| off} | Sets Wide Dynamic Range mode on or off. Can only be used when backlight compensation is off. |
| Examples | `>camera ccu set auto_iris off`<br>`OK`<br>`>`<br><br>Turns off auto-iris mode, returning the camera to manual iris control.<br><br>`>camera ccu set red_gain 10`<br>`OK`<br>`>`<br><br>Sets the red gain value to 10. | |

## camera zoom

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

| | | |
|---|---|---|
| Synopsis | camera zoom { get \| set { 1x \| 1.5x \| 2x }} | |
| Options | `get` | Returns the camera's zoom level. |
| | `set` { 1x \| 1.5x \| 2x } | Sets the camera's zoom level. 1x, 1.5x, and 2x are the only permissible values. |
| Examples | **`camera zoom set 1.5x`**<br>`OK`<br>`>`<br>Sets the camera to 1.5x zoom.<br>**`> camera zoom get`**<br>`zoom: 1.5x`<br>`OK`<br>`>`<br>Returns the camera's current zoom level. | |

## camera dewarp

Dewarping removes the "fish-eye" effect. When the camera is set to full dewarp, the field of view is reduced by about 10°.

| | | |
|---|---|---|
| Synopsis | camera dewarp { get \| set { off \| half \| full } | |
| Options | `get` | Returns the camera's current dewarp level. |
| | `set` { off \| half \| full } | Sets the camera's dewarp level. |
| Examples | **`camera dewarp set full`**<br>`OK`<br>`>`<br>Sets the camera to full dewarp.<br>**`> camera dewarp get`**<br>`dewarp: full`<br>`OK`<br>`>`<br>Returns the camera's current dewarp level. | |

## camera color-compensation

The color compensation settings allow quick color adjustments for room lighting that is overly warm or cool.

| | | |
|---|---|---|
| Synopsis | camera color-compensation { get \| set { neutral \| warm_white \| cool_white }} | |
| Options | `get` | Returns the camera's current color compensation setting. |
| | `set` | Sets the camera's color compensation. |
| | `neutral` | No color compensation. |
| | `warm_white` | Compensates for "cool white" lighting. |
| | `cool_white` | Compensates for "warm white" lighting. |
| Examples | **`camera color-compensation set warm_white`**<br>`OK`<br>`>`<br>Sets the camera to color-compensation.<br>**`> camera color-compensation get`**<br>`color-compensation: warm_white`<br>`OK`<br>`>`<br>Returns the camera's current color compensation setting. | |

## camera led

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

## camera standby

Set or change camera standby status.

| | | |
|---|---|---|
| Synopsis | camera standby { get \| off \| on \| toggle } | |
| Options | `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`**<br>`OK`<br>`>`<br><br>Brings the camera out of standby mode.<br><br>`>`**`camera standby get`**<br>`standby: on`<br>`OK`<br>`>`<br><br>Returns the current standby state. | |

## audio volume

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. |
| | `mic_input` | Applies the command to the built-in microphones. |
| | `easy_mic_1` | Applies the command to the external microphone connected to the EasyMic port. |
| | `usb_playback` | Applies the command to the audio portion of the incoming (far-end) USB stream |
| | `speaker` | Applies the command to the audio from the speakers. |
| | `usb_record` | Applies the command to the outbound (near-end) audio portion of the USB stream |
| | `ip_out_left`<br>`ip_out_right` | Applies the command to the outbound (near-end) audio portion of the IP stream, left and right channels. |
| 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`<br>`OK`<br>`>`<br><br>Sets -5 dB as the volume for the device connected to the Line In 1 port.<br><br>`audio line_out_1 volume get`<br>`volume -10.0 dB`<br>`OK`<br>`>`<br><br>Returns the current volume for the speaker connected to the line out port. | |

## audio mute

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. |
| | `mic_input` | Applies the command to the built-in microphones. |
| | `easy_mic_1` | Applies the command to the external microphone connected to the EasyMic port. |
| | `usb_playback` | Applies the command to the audio portion of the incoming (far-end) USB stream |
| | `speaker` | Applies the command to the audio from the speakers. |
| | `usb_record` | Applies the command to the outbound (near-end) audio portion of the USB stream |
| | `ip_out_left`<br>`ip_out_right` | Applies the command to the outbound (near-end) audio portion of the IP stream, left and right channels. |
| 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`<br>`mute:  off`<br>`OK`<br>`>`<br><br>Returns the current mute state of the device connected to audio line out 1. Mute is off, so the audio is on.<br><br>`>audio master mute on`<br>`OK`<br>`>`<br><br>Mutes all audio. | |

## video mute

Gets or sets the camera's video mute status. When video is muted, the camera sends blue or black video with an on-screen message stating that video mute is on. This can be desirable when preparing the room, or when privacy is needed.

***Note***
*In systems with audio, this command does not affect the audio.*

| | | |
|---|---|---|
| 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 or black screen with message) |
| | `toggle` | Changes the camera's video mute status. |
| Examples | `>video mute get`<br>`mute:  off`<br>`OK`<br>`>`<br><br>Returns video mute status.<br><br>`>video mute on`<br>`OK`<br>`>`<br><br>Transmits blue or black video. | |

## trigger

Turn an existing trigger on or off. This command has no effect if the specified trigger has not been defined or if the associated macro is unable to run.

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

| | | |
|---|---|---|
| Synopsis | trigger <1..10> { off \| on } | |
| Parameters | <1..10> | The trigger index (identifier) – triggers 1 through 10 are available. |
| | {off \| on} | Set the state of the trigger. |
| | `block` | Prevents subsequent commands from running until the macro finishes. |
| Example | **`> trigger 3 on`**<br><br>`OK`<br><br>Turns trigger 3 on. | |

## streaming settings get

Returns current IP and USB streaming settings.

| Synopsis | streaming settings get | |
|---|---|---|
| Parameters | `IP Custom_Frame_Rate` | Frame rate (Custom mode). |
| | `IP Custom_Resolution` | Resolution (Custom mode). |
| | `IP Enabled` | `True` if IP streaming is enabled, `False` if it is not. |
| | `IP MTU` | The current MTU setting (1400 is default) |
| | `IP Port` | Port number used for IP streaming. RTSP default is 554; RTMP default is 1935. |
| | `IP Preset_Quality` | Video quality (Easy mode). |
| | `IP Preset_Resolution` | Resolution (Easy mode). |
| | `IP Protocol` | IP streaming protocol in use (RTSP or RTMP). |
| | `IP URL` | URL where the RTSP stream is available. |
| | `IP Video_Mode` | Video quality mode (preset or custom). |
| | `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. 0 if no USB stream is present. |
| | `UVC Extensions_Enabled` | Allow or disable far-end control of the camera. |
| Example | | |

```
>streaming settings get
IP Custom_Frame_Rate   15
IP Custom_Resolution   1080p
IP Enabled             true
IP MTU                 1400
IP Port                554
IP Preset_Quality      Standard (Better)
IP Preset_Resolution   720p
IP Protocol            RTSP
IP URL                 vaddio-huddleshot-stream
IP Video_Mode          preset
USB Active             false
USB Device             HuddleSHOT
USB Frame_Rate         0
USB Resolution         0x0
USB Version            3
UVC Extensions_Enabled true
OK
>
```

## streaming ip enable

Set or change the state of IP streaming.

| Synopsis | streaming ip enable { get \| on \| off \| toggle} | |
|---|---|---|
| Parameters | `get` | Returns the current state of IP streaming |
| | `on` | Enables IP streaming. |
| | `off` | Disables IP streaming. |
| | `toggle` | Changes the state of IP streaming (on if it was off, or off if it was on). **`streaming ip enable toggle`** has the same effect as selecting the Enable IP Streaming checkbox in the web interface. |
| Example | `>`**`streaming ip enable on`**<br>`> OK`<br><br>Enables IP streaming.<br><br>`>`**`streaming ip enable get`**<br>`enabled: true`<br>`> OK`<br><br>Returns the current state of IP streaming. | |

## network ping

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

| Synopsis | network ping [count <count>] [size <size>] <string> | |
|---|---|---|
| Options | <count> | The number of ECHO_REQUEST packets to send. Default is five packets. |
| | <size> | The size of each ECHO_REQUEST packet. Default is 56 bytes. |
| | <string> | The hostname or IP address where the ECHO_REQUEST packets will be sent. |
| Examples | `>`**`network ping 192.168.1.66`**<br>`PING 192.168.1.66 (192.168.1.66): 56 data bytes`<br>`64 bytes from 192.168.1.66: seq=0 ttl=64 time=0.476 ms`<br>`64 bytes from 192.168.1.66: seq=1 ttl=64 time=0.416 ms`<br>`64 bytes from 192.168.1.66: seq=2 ttl=64 time=0.410 ms`<br>`64 bytes from 192.168.1.66: seq=3 ttl=64 time=0.410 ms`<br>`64 bytes from 192.168.1.66: seq=4 ttl=64 time=3.112 ms`<br>`--- 192.168.1.66 ping statistics ---`<br>`5 packets transmitted, 5 packets received, 0% packet loss`<br>`round-trip min/avg/max = 0.410/0.964/3.112 ms`<br>`>`<br><br>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`**<br><br>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. | |

## network settings get

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

| | |
|---|---|
| Synopsis | network settings get |
| Example | network settings get<br>Name eth0:WAN<br>MAC Address 00:1E:C0:F6:CA:7B<br>IP Address 192.168.1.67<br>Netmask 255.255.255.0<br>VLAN Disabled<br>Gateway 192.168.1.254<br>OK<br>> |

## system reboot

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

| | | |
|---|---|---|
| Synopsis | system reboot [<seconds>] | |
| Options | <seconds> | The number of seconds to delay the reboot. |
| Examples | >**system reboot**<br>OK<br>><br>The system is going down for reboot NOW!huddleshot-D8-80-39-62-A7-C5<br>Reboots the system immediately.<br>>**system reboot 30**<br>Reboots the system in 30 seconds. The response is in the same form; the system message appears at the end of the delay. | |

## system factory-reset

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

| Synopsis | system factory-reset { get \| on \| off} | |
|---|---|---|
| Options | `get` | Returns the camera's current factory reset status. |
| | `on` | Enables factory reset on reboot and returns he camera's current factory reset status. |
| | `off` | Disables factory reset on reboot and returns he camera's current factory reset status. |
| Examples  | `>system factory-reset get`<br>`factory-reset (software):  off`<br>`factory-reset (hardware):  off`<br>`OK`<br>`>`<br><br>Returns the factory reset status.<br><br>`>system factory-reset on`<br>`factory-reset (software):  on`<br>`factory-reset (hardware):  off`<br>`OK`<br>`>`<br><br>Enables factory reset upon reboot.<br><br>***Note***<br>*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`<br>`Audio 0  0.06`<br>`Audio 1 CFG  0.15`<br>`Audio 1 FW  P1.0.1`<br>`Audio 2  0.02`<br>`Commit  966a78e827a2e6f871011eb820706dcaa64ec0e2`<br>`Sensor Version 0.12`<br>`System Version HuddleSHOT 1.0.0`<br>`USB  01.01.003`<br>`OK`<br>`>` |

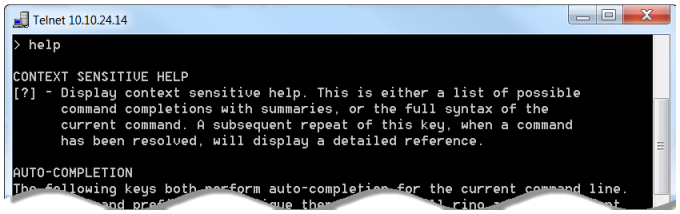
## history

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**<br>Displays the current command buffer.<br>**history 5**<br>Sets the history command buffer to remember the last 5 unique entries. | |
| Additional information<br>  | You can navigate the command history using the up and down arrow keys.<br>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.<br>Examples of history expansion:<br>* **!!** Substitute the last command line.<br>* **!4** Substitute the 4th command line (absolute as per 'history' command)<br>* **!-3** Substitute the command line entered 3 lines before (relative) | |

## help

Displays an overview of the CLI syntax.

| | |
|---|---|
| Synopsis | help |
| Example<br>  | **help**<br>  |

## exit

Ends the command session and closes the socket.

| | |
|---|---|
| Synopsis | exit |
| Example | **exit** |

# Troubleshooting and Care

When the camera doesn't behave as you expect, check the indicator light on the front before you do anything else.

Use this table to determine whether it's time to call Vaddio Technical Support.

## Power and Control

| What is it doing? | Possible causes | Check and correct |
|---|---|---|
| Nothing.<br>The light on the front is off and no video is available. | The network cable to the camera is bad. | Check using a known good cable from the PoE power injector to the camera |
| | The wall outlet is not active. (Check by finding out if it powers something else, such as a laptop or phone charger.) | Use a different outlet. |
| | The camera or its PoE power injector is bad. | Contact your reseller or Vaddio Technical Support. |
| The light on the front of the camera is off but the web interface and video are available. | The status light is turned off. | You can turn it on again using the LED On setting on the System page (General tab), or using the Telnet command **`camera led on`**. |
| The camera is not responding to the remote and the light is yellow/green. | A firmware update is in progress. | Wait a few minutes, and try again when the light turns blue. |
| The camera responds to the remote but the web interface is not available. | The camera is not using the IP address you browsed to. | Press the Network button on the remote to see camera information. |
| The camera does not respond to the remote and the light is white. | The remote is not paired to the camera. | Pair the remote to the camera. |
| | The batteries are not installed correctly in the remote. | Install the batteries as shown in the diagram inside the remote. |
| The camera operates normally and its web interface is available, but the light is blinking blue. | The camera did not pair successfully with the remote, or the camera entered pairing mode and did not detect a remote. | Reboot the camera or disable the indicator light. |

## Video and Streaming

| What is it doing? | Possible causes | Check and correct |
|---|---|---|
| No H.264 video stream. | IP streaming is not enabled. | Enable IP streaming: Streaming page in the web interface. |
| Conference is using the laptop camera and audio, not the HuddleSHOT camera. | The USB cable is not connected from the camera to the computer. | Connect the USB cable. |

## Audio

| What is it doing? | Possible causes | Check and correct |
|---|---|---|
| No audio from the speakers (No 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 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) | Your microphone is muted. | Unmute your microphone. |

## Remote

| What is it doing? | Possible causes | Check and correct |
|---|---|---|
| The camera does not respond to the remote, but the web interface is available and video is available. | The remote is not paired to the camera. | Pair the camera and remote. See Pairing the Remote to the Camera. |
| | 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 remote is in standby mode. | Press the button again.<br>This is normal, if it has been more than 3 minutes since anyone used the remote. |
| Pairing doesn't work. The camera's light changes from blinking cyan to blinking blue. | The remote is already paired with another camera nearby. | Remove and reinstall the batteries in the remote, then try pairing again. |
| | The camera does not detect the remote. | Replace the batteries in the remote. |
| The camera does not respond to the remote and the indicator light on the remote is on. | The remote is in the process of pairing or correcting an internal error. | Wait until the remote's indicator light turns off. |

## Restoring Default Camera Settings

This returns the camera to its original state. If you export the camera'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.

**Using the multifunction button on the back of the camera:** Disconnect the network cable. Then press and hold the multifunction button while reconnecting the cable. Continue to hold the button for about 10 seconds.

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

## 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
- In a hydraulic press
- 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.

**bandwidth**
Data transfer rate (bits per second) for the stream. In some cases, using a high bandwidth can slow down other network traffic. On networks with very low bandwidth, video issues may result. Streaming at a lower resolution or frame rate can reduce bandwidth usage.

**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.

**dewarping**
Image processing to remove the "fish-eye" effect from wide-angle views. Dewarping also disables interstellar travel.

**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.

**dynamic range**
The amount of difference between extremes - for example, the darkest and lightest areas in a shot, or the softest and loudest sounds that a microphone picks up.

**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.

**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.

**HDMI**
A video output format; may also carry audio information.

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

**home button (microphone)**
A One Touch trigger control on a tabletop microphone. The button can be associated with one macro in momentary mode, or two macros in latching mode.

**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.

**LED**
Light-Emitting Diode. An indicator light.

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

**mic**
Microphone. Pronounced "mike" because the etymology matters more than English pronunciation rules, which are inconsistent anyway.

**MTU**
Maximum Transmission Unit. The largest number of bytes allowed in a packet. If you don't know what that means, don't change MTU size.

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

**NLP**
Non-Linear Processing. Removes certain particularly challenging types of undesirable audio, such as the echo in a room without acoustic treatment, or background chatter in an office.

**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. The HuddleSHOT camera and its remote must be paired for the remote to control the camera.

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

**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.

**RTMP**
Real-Time Messaging Protocol. Used for livestreaming video (and audio, if available) to a service such as YouTube Live.

**RTSP**
Real-Time Streaming Protocol. Used for streaming video and audio over your network.

**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.

**streaming protocol**
A set of rules that define how video and audio data are sent over the network. See RTMP and RTSP.

**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. Vaddio cameras use USB 3.

**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.

# Photo Credits

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