Complete Manual for the

ConferenceSHOT FX

USB 3.0 Fixed Camera

Document 411-0015-30 Rev C
November 2020

Contents

Overview

This guide covers the ConferenceSHOT FX USB 3.0 fixed camera, worldwide part numbers 999-20000-000 (black) and 999-20000-000W (white).

What's in this Guide

This guide covers

- Unpacking
- Physical features
- Switch settings
- Installation
- Initial set-up and system administration
- Performance/behavior configuration
- System maintenance
- Operation
- Telnet and RS-232 API references
- Specifications
- Troubleshooting
- Compliance/conformity information

For your convenience, the information you need to install this product is also available in the smaller, stand-alone **Installation Guide for the ConferenceSHOT FX USB 3.0 Fixed Camera**.

Features

- Fixed USB 3.0 camera for small to medium conference rooms
- 2 Megapixel, native 1080p/60 full HD image sensor
- 3x optical zoom, horizontal field of view of 88°
- Simultaneous uncompressed USB 3.0 and IP (H.264) streaming outputs at resolutions up to 1080p/60
- Selectable IP stream resolution; USB stream resolution auto-negotiated with conferencing client
- Universal Video Class (UVC) drivers supported in Windows®, macOS®, and Linux operating systems, compatible with most UC conferencing applications
- Integration-ready Telnet and serial RS-232 control
- Full administrative control via web interface; manage the camera remotely while monitoring the stream separately
- Presenter-friendly IR remote control

Unpacking the Camera

Make sure you received all the items you expected.

Caution:

Use the power supply shipped with or recommended for the camera. Using a different power supply may create an unsafe operating condition or damage the camera, and will void the 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.

The box should contain one of each item listed here:

- Camera (black or white)
- Thin Profile Wall Mount with mounting hardware (black or white)
- 12 VDC, 3 A switching power supply with AC cord sets
- USB 3.0 Type A to Type B cable, 6 ft. (1.8 m)
- Remote control
- Quick Start Guide

Older cameras were shipped with a different power supply.

A Quick Look at the Camera

This section covers the physical features of the camera.

Front of the Camera

Camera and zoom lens – The ConferenceSHOT FX camera features a 3X optical zoom lens.

IR sensor – Receives signals from the IR remote. Make sure there's nothing directly in front of the camera base, and point the remote at the camera.

Status light – The multi-colored LED indicates the camera's current state. This 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

- **12 VDC, 1.5 A** – EIAJ-04 jack. Connect only the power supply shipped with the camera or approved replacement 12 VDC, 3A power supply.
- **USB 3.0** – USB Type B connector. Connect to a computer for use with soft conferencing applications. Provides uncompressed USB 3.0 stream.
- **Ethernet** – RJ-45 connector. Connect to the network for IP streaming and camera control via web interface or Telnet.
- **Camera Settings** – DIP switches to set camera behaviors such as IR frequency, image flip (camera is invertible), normal or Super-Wide mode, and baud rate. See Camera Behavior Settings.
- **RS-232** – RJ-45 connector. Connect to a controller to manage the camera using a modified VISCA protocol.

Installation

This section covers:

- Selecting the location for the camera
- Verifying that the camera is ready to install
- Installing the mount
- RS-232 cable pin-out and communication settings
- Connection diagrams
- Mounting the camera

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
Use the power supply included with the camera or recommended for use with it. Always check the output voltage listed on the power supply label, as power supplies of different voltages may look nearly identical. Using the wrong power supply will void the warranty, possibly causing unsafe operating conditions and damage to the product.

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 Install the 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 can be pointed appropriately from the desired location. 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.

Prepare for a successful installation:

- Be sure you can identify all cables correctly.
- Check Cat-5 cables for continuity.
- Ensure that the Settings switches are set appropriately.
- 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

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

Intact – will make reliable contact with 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.

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.

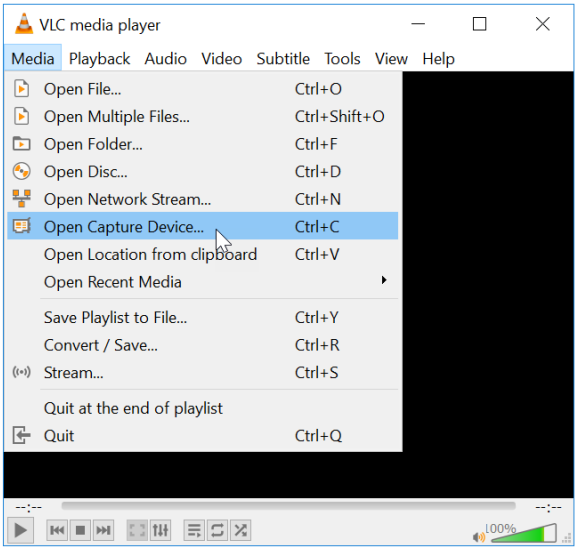
Pre-Installation Functional Check

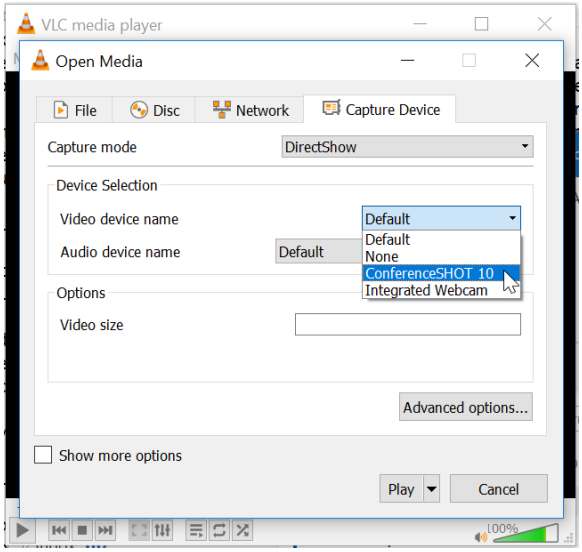
If you're installing the camera where it's hard to reach, you may want to verify functionality before you install it.

1. Connect the camera in its minimum functional configuration.

2. Connect power. The camera's indicator light turns blue.
3. Open a media player such as VLC Media Player and verify that the camera is available as a video capture device. (If you use VLC Media Player, this is the "Open Capture Device" option under Media.). The; the device name is ConferenceSHOT FX. Select the camera to view the USB stream.

   The screen shots below show how you would access the USB stream using VLC Media Player. In this example, the capture device is a ConferenceSHOT 10 camera. The steps are the same for the ConferenceSHOT FX camera; only the video device name differs.





If the camera turns on and sends video, continue with the installation.

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 blue – USB cable is disconnected (UC color scheme)

Caution

Do not remove power or reset the camera while the indicator is yellow, 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.

Camera Behavior Settings

The camera uses DIP switches to determine certain camera functions.

Note

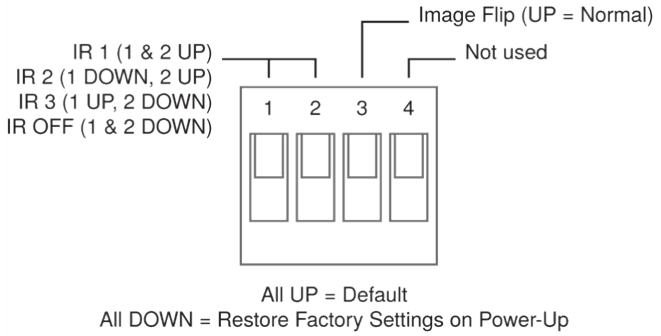
When the camera is not inverted, DIP switches are in their default positions when they are up.

IR Frequency Selection (switches 1 and 2): 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.

- SW1 and SW2 up: IR frequency 1
- SW1 down, SW2 up: IR frequency 2
- SW1 up, SW2 down: IR frequency 3

Image Flip (switch 3): If mounting the camera upside-down, set Image Flip ON. This orients the video image correctly.

Switch 4 is not currently used.



A label on the bottom of the camera provides a quick reference for setting the DIP switches.

About Ceiling-Mounted Cameras

If you use an inverted mount, set the camera's Image Flip DIP switch ON for inverted operation. This orients the video image correctly.

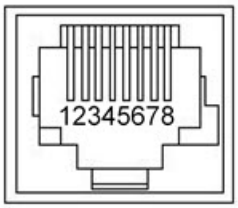
See Camera Behavior Settings for more information.

RS-232 Serial Communication Settings

The RS-232 serial port (RJ-45, color-coded blue) on the camera's back panel enables third-party control.

Parameter	Value
Communication Speed	9600 bps or 38400 bps, switch-selectable
Number of start bits	1
Number of stop bits	1
Number of data bits	8
Parity	None
Flow control	None

RS-232 Connector Pin-Out



Connector pin-out:

- Pin 1: Not used
- Pin 2: Not used
- Pin 3: Not used
- Pin 4: Not used
- Pin 5: Not used
- Pin 6: GND
- Pin 7: RXD (from TXD of control source)
- Pin 8: TXD (to RXD of control source)

Caution

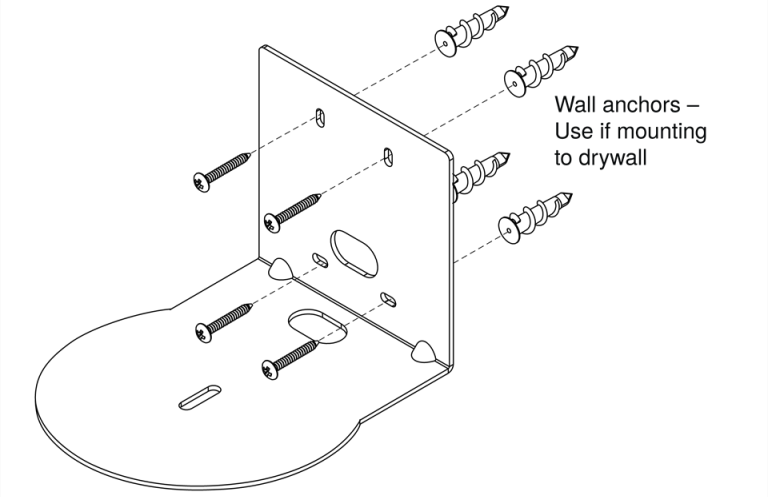
Check your cables. Connecting a cable to the wrong port or using the wrong pin-out can result in equipment damage and will void the warranty.

Installing the Wall Mount

The 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.

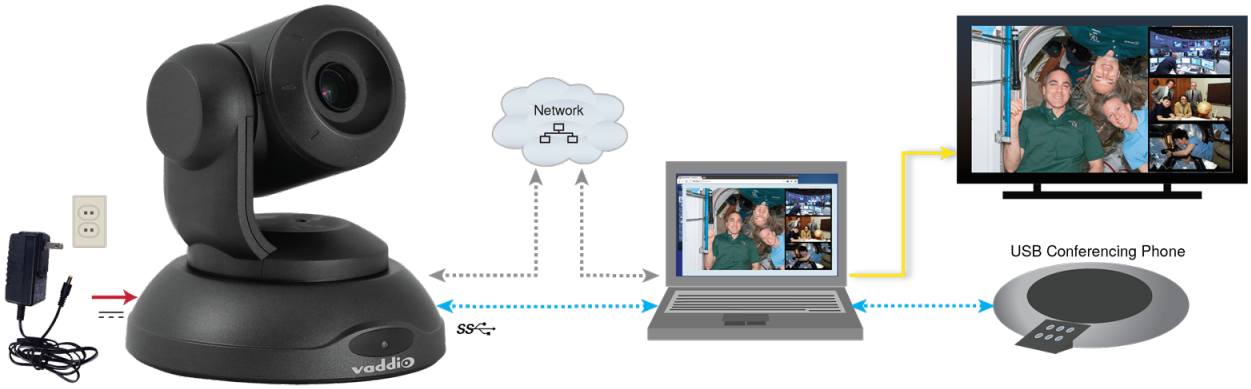
You can install the camera wall mount to a 2-gang wall box or directly to the drywall.

- 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.



Basic Connections

Here is an example of how the camera might be set up in a conference room. In this setup, a computer uses a unified communications conferencing application with the camera and a conference phone.



Installing the Camera

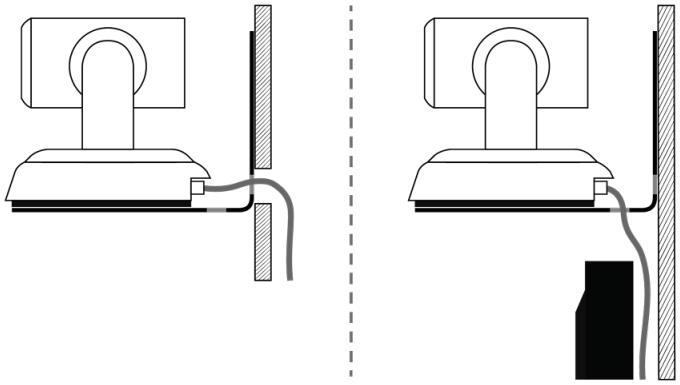
Caution
Before you start, be sure you can identify all cables correctly. Connecting a cable to the wrong port can result in equipment damage.

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

1. Verify that you have set the switches on the back of the camera to the desired settings.
2. Route the cables through the opening in the mounting shelf and connect them to the camera.

   Caution:
   Use the power supply shipped with the camera. Using a different power supply will damage the camera and void the warranty, and may create an unsafe operating condition.

3. Place the camera on the mount.



4. Attach the camera to the mount using the mounting screw supplied with the camera.

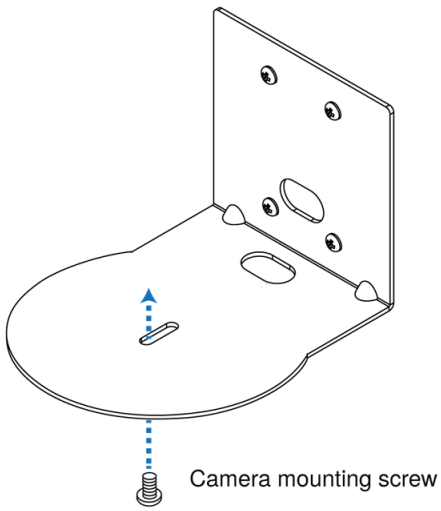


Image for illustration only; not to scale. Camera and mount details may differ.

Note
This is a fixed camera. After it is powered up and sending video, it will need to be positioned by hand.

Powering Up the Camera

Connect camera power. The status light illuminates purple as the camera initializes. When the camera is ready and a video stream is available, the light changes to blue.

Turn and tilt the camera as needed to position it for the desired view.

Initial Device Set-Up and System Administration Tasks

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

When any Vaddio 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.

After initial device set-up is complete, you will need to complete system administration tasks to define how the device behaves as an element of your 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 Device Set-up Process Overview

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

Ways to access the camera for initial device set-up:

- **Access the web interface from a Vaddio Device Controller** – The touch-panel automatically scans the subnet to locate Vaddio devices. Select the desired device and exit to the device's web interface to complete the initial device set-up.
- **Locate and set up the camera 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.
- **Access the web interface directly** – The classic method. Discover the camera's IP address and browse to its web interface.

Initial Device Set-Up Using the Vaddio Device Controller

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

Ways the Vaddio Device Controller makes your tasks easier:

- Easily scan your network for Vaddio devices – no more complicated procedures for discovering devices' IP addresses.
- Following the scan, select a device and exit straight to its web interface.
- No annoying messages about HTTPS connections - you automatically connect via HTTPS.

Unlike the Vaddio Deployment Tool, it does not need to be updated to support new products. For detailed instructions on installation and use, refer to the Vaddio Device Controller's manual.

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

1. Be sure the touch-panel is installed on the same subnet as the products you need to work with – for example, connect both to the same PoE+ switch.
2. Go to the touch-panel's Configuration page and select Scan. You will need to enter the Vaddio Device Controller's PIN to access the Configuration page.
3. Locate the device you need to work with, and select Use.
4. Select Exit to leave the Configuration page and open the device's web interface.

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

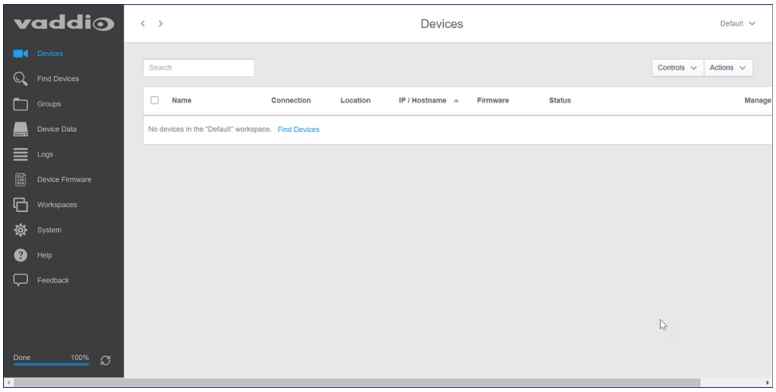
5. Complete the initial device set-up.

If the Vaddio Device Controller does not find the camera:

- Verify that the camera is connected to the network, on the same subnet as the Vaddio Device Controller.
- Check the camera's IP address manually.

Initial Device Set-Up Using the Vaddio Deployment Tool

The Vaddio Deployment Tool simplifies provisioning and system administration for most products, and provides a shortcut to each device's web interface.



Ways the Vaddio Deployment Toolmakes your tasks easier:

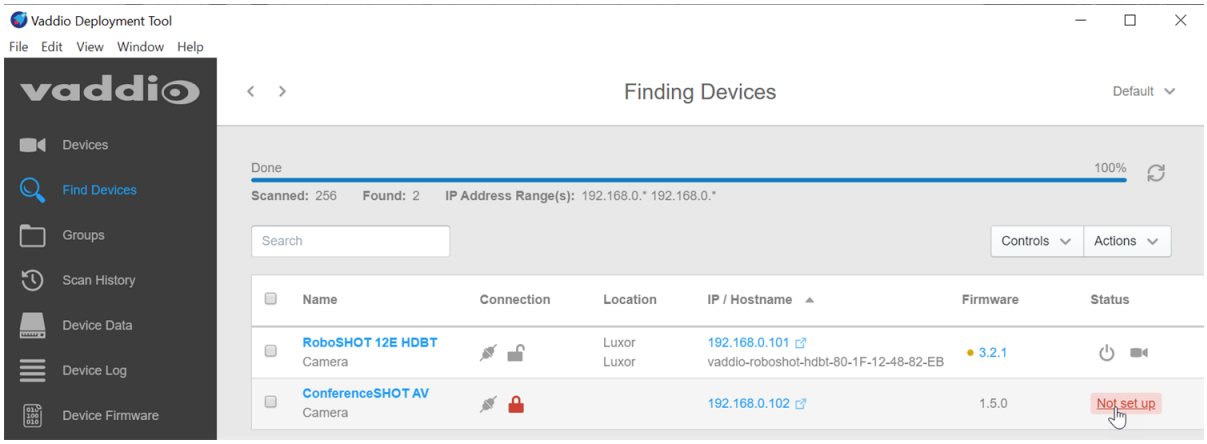
- Easily scan your network for devices – no more complicated procedures for discovering devices' IP addresses.
- View scan results as a dashboard; easily identify unprovisioned and unauthenticated devices.
- Provision new devices or update device firmware from the dashboard.
- Import or export device 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 devices into groups – for example, by product type or physical location.

Note

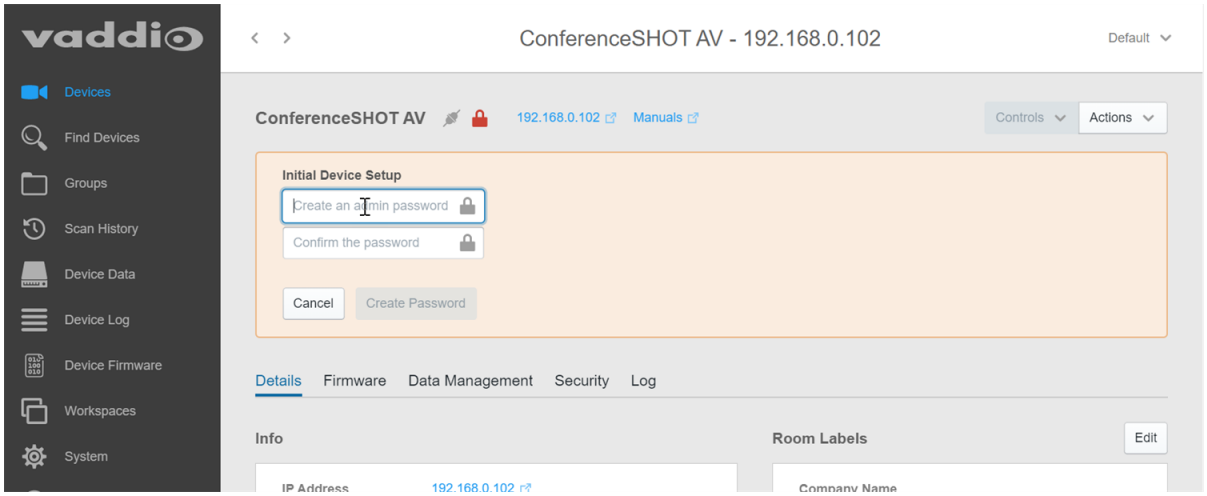
Be sure you have the current version of the Vaddio Deployment Tool. If it notifies you that an update is available, install the update. This ensures that you have access to the full capabilities of the tool.

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

1. Download and install the Vaddio Deployment Tool if you have not done so already, then open it.
2. Power up the camera and other devices if you have not done so already.
3. On the Find Devices page, click Scan. If the scan does not locate the devices you are setting up, your computer may be on a different subnet. Return to the Find Devices page and click Advanced and specify the appropriate portion of the network to scan.
4. In the list of equipment that the scan discovers, locate the devices marked Not Set Up.



5. For each device that you need to work with, click the Not Set Up button and set the admin password on the device detail page that opens.



The device shows up as unlocked after you set the admin password. You can now access the administrative web interface to complete system administration and other configuration tasks.

That's it. No complicated procedures for finding all the newly installed devices on your network. You can find and manage your whole Vaddio deployment from the Vaddio Deployment Tool.

Manual Access and Initial Device Set-Up

To complete the initial device set-up from the web interface, you will need to do these things:

- Discover the device's IP address.
- Browse to the device's IP address using HTTPS. This will generate warnings from your browser.
- Complete the initial device set-up.

Getting the Camera's IP Address for Access via Browser

If you are not using the Vaddio Deployment Tool or the Vaddio Device Controller to locate and work with the camera, you will need to know its IP address so you can browse to it.

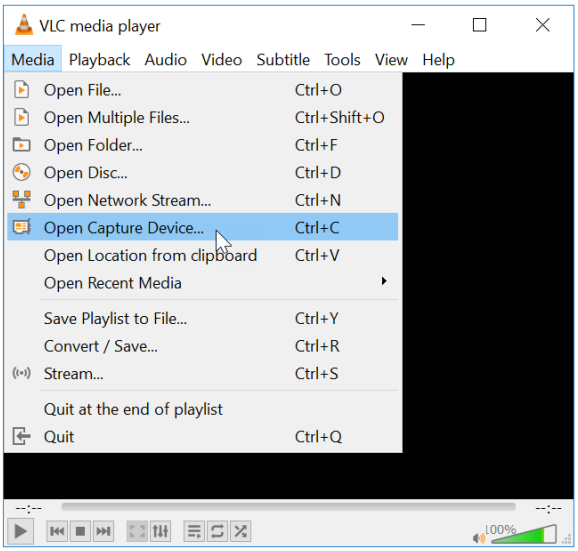
If you know that your network does not automatically assign IP addresses, skip this section: The camera's address is 169.254.1.1. You will need to connect your computer's network port to the camera's network port to do the initial device configuration and network configuration.

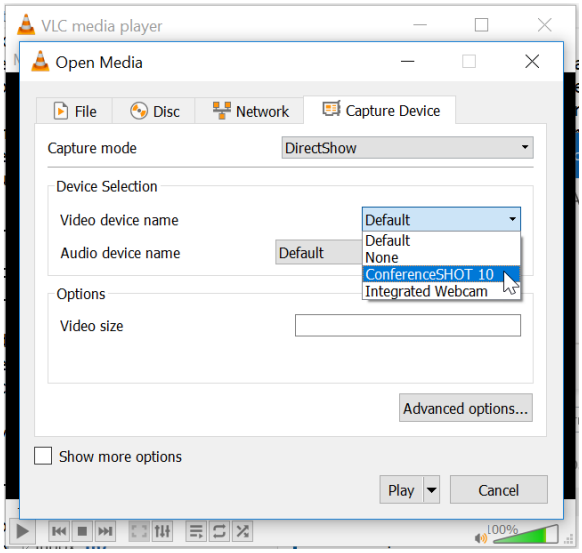
If you are not sure, or you know that your network automatically assigns IP addresses, you will need to be able to view the camera's USB stream to get the IP address.

To get the camera's IP address:

1. Connect the camera to the network, and connect the camera's USB cable to your computer. Then power up the camera. If necessary, your computer loads the appropriate USB driver.
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 ConferenceSHOT FX.

   The screen shots below show how you would access the USB stream using VLC Media Player. In this example, the capture device is a ConferenceSHOT 10 camera. The steps are the same for the ConferenceSHOT FX camera; only the video device name differs.





3. Point the remote at the camera and press the OSD button. The camera overlays its IP address and MAC address on the video output.
4. Point the remote at the camera and press the Data Screen button. The camera overlays its IP address and MAC address on the video output.
5. Press the button again to dismiss the information display.

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.

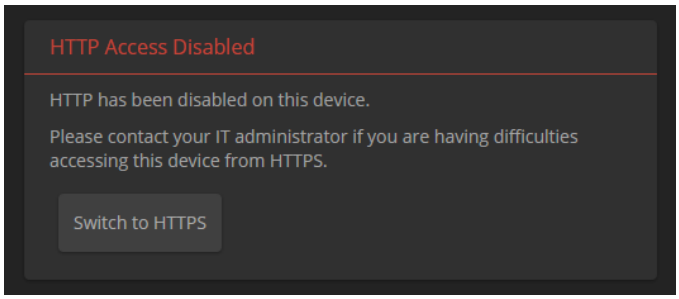
To communicate directly with the camera, connect a cable from your computer's network port to the camera's network port.

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:

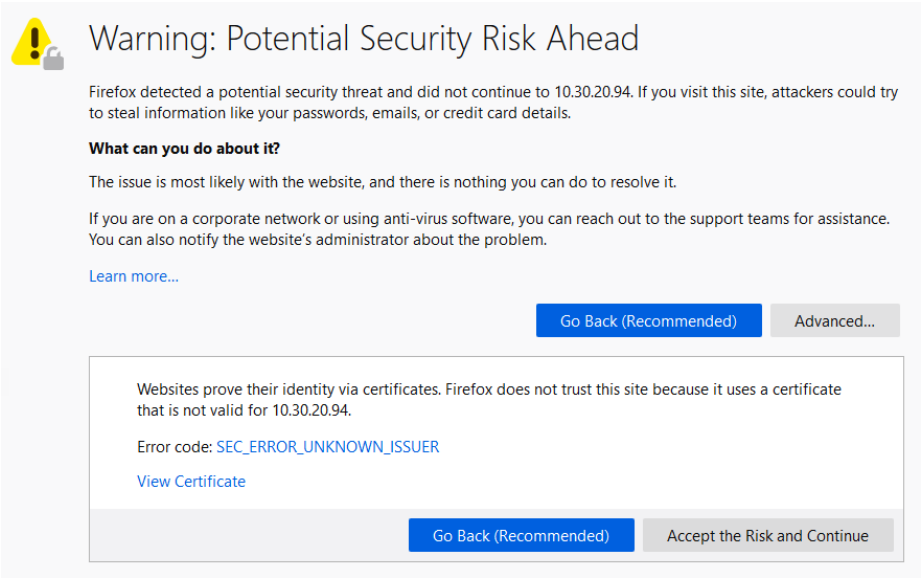
- The connection is not private
- The site is not secure
- The site is not trusted
- The site poses a security threat

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.*

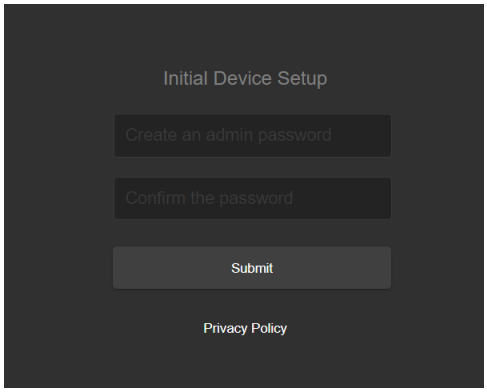
Here is a sample HTTPS warning page from Firefox, showing the "Advanced" information:



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

If the device has never been in service, or if factory defaults have been restored, the web interface opens to the initial device set-up page.



Set the admin password. If there are other tasks on the page (such as reading and accepting policies and agreements), complete them also.

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 may include 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.

The full administrative interface opens when you finish.

Web Interface Quick Reference

Where to find the controls you need right now for camera operation, administration, and configuration. If guest access is enabled, the web interface opens to the Controls page. You must log in as admin to gain access to the administrative pages.

Note
Vaddio cameras have very similar web interfaces. Some of the screen shots in this manual may be from other models of camera.

User or Guest Access – Camera Page

The operator's Camera page is available after you do at least one of these things:
- Set a password for the `user` account, or
- Enable guest access.

On the operator's Camera page, you can:
- Stop sending video (video mute)
- Zoom the camera manually
- Go to a zoom preset
- Return to the "home" zoom level
- Enter or exit standby mode

Administrative Pages

System administration

What do you need?	Go to this page
Passwords and access management	Security
IP address, hostname, and other network settings	Networking
Settings related to date and time	Networking
Information about the camera's location; helpful phone numbers	Room Labels

Camera behaviors and operation

What do you need?	Go to this page
Camera operation ■ Zoom levels ■ Color and lighting settings ■ Focus	Camera
Camera behavior ■ Normal or super-wide mode ■ Image flip ■ IR frequency – respond to the IR remote as camera 1, 2, or 3 ■ UVC-Compliant or Client Custom USB streaming ■ LED behavior ■ RS-232 baud rate	System (has multiple tabs)
USB and IP streaming settings	Streaming

Maintenance and Troubleshooting

What do you need?	Go to this page
■ Update camera firmware or view the current firmware version ■ Save (export) and restore (import) the camera's configuration ■ Reboot or reset to factory defaults	System: Firmware
Locate Vaddio Technical Support contact information	Help
View diagnostic logs	Diagnostics

System Administration

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

System administration

What do you need?	Go to this page
Passwords and access management	Security
IP address, hostname, and other network settings	Networking
Settings related to date and time	Networking
Information about the camera ■ Room location and phone number ■ Help desk phone number	Room Labels

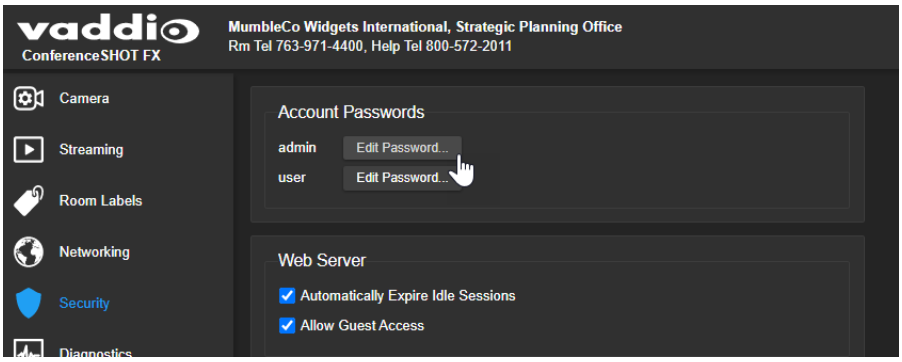
See Configuring Camera Behavior for information on image adjustments, streaming configuration, and other items related to camera behavior.

Setting Passwords and Access

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. There is no default admin password.
- **User password** – Required for access to the operator's page of the web interface unless guest access is enabled. There is no default user password.
- **Allow Guest Access** – Allows people to browse to the operator's page of the web interface without logging in. If guest access is not enabled, no controls are available until you log in. Guest access is disabled by default.
- **Automatically Expire Idle Sessions** – By default, sessions expire after 30 minutes with no interactions.



Configuring Other Security Settings

SECURITY PAGE

Security settings include:

- Enabling or disabling access via Telnet (by default, access via Telnet is disabled)
- Enabling or disabling HTTP for web access (by default, access via HTTP is disabled) and installing the SSL certificate
- Allowing or denying device discovery (allowed by default)

Note

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

Enabling Telnet Access

SECURITY PAGE

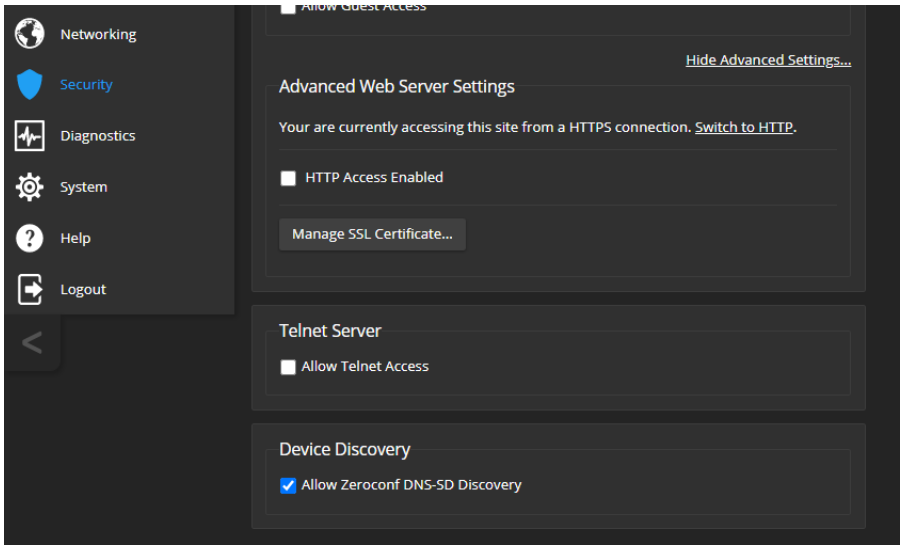
If your installation requires camera access via Telnet, you may choose to enable the camera's internal Telnet server.

Enabling HTTP Access

SECURITY PAGE

By default, the web interface uses the HTTPS protocol, and HTTP is disabled. You can configure the camera's web interface to allow a less secure HTTP connection instead.

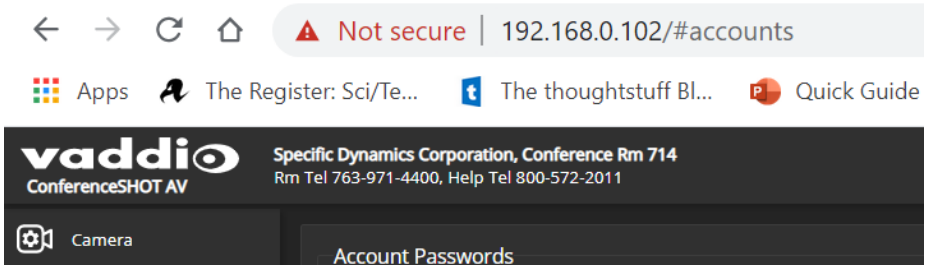
1. Select Show Advanced Settings. The advanced options open.
2. To allow HTTP connections, select HTTP Access enabled. The camera's web interface will be available via HTTP or HTTPS connection.
3. To switch to an HTTP connection, select Switch to HTTP.



Installing an SSL Certificate

SECURITY PAGE

When the camera does not have an SSL certificate, your browser's address bar may display a security indication.



Work with your network security professional to install the camera's SSL certificate.

Caution

Consult your network security professional to manage the camera's SSL certificate. Do not make any changes in the Certificate or Private Key text boxes without guidance from your organization's network security professional.

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. However, many organizations have policies concerning hostnames, static address assignments for certain equipment, and other aspects of network configuration. Work with your network specialist to ensure that the camera is configured to comply with the organization's network policies.

Configuring the Device with a Static IP Address

NETWORKING PAGE

If no DHCP server is available to automatically assign an IP address, the camera will use the default IP address of 169.254.1.1. If this is the case, you may need to follow this procedure. If you also need to install another camera or other device on this network, you *will* need to do this to prevent IP address conflicts.

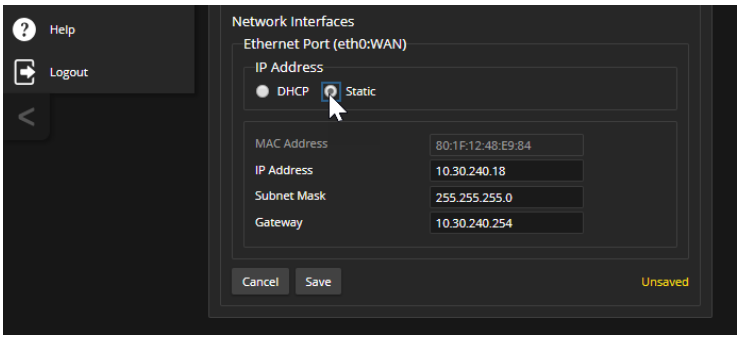
Caution

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

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.



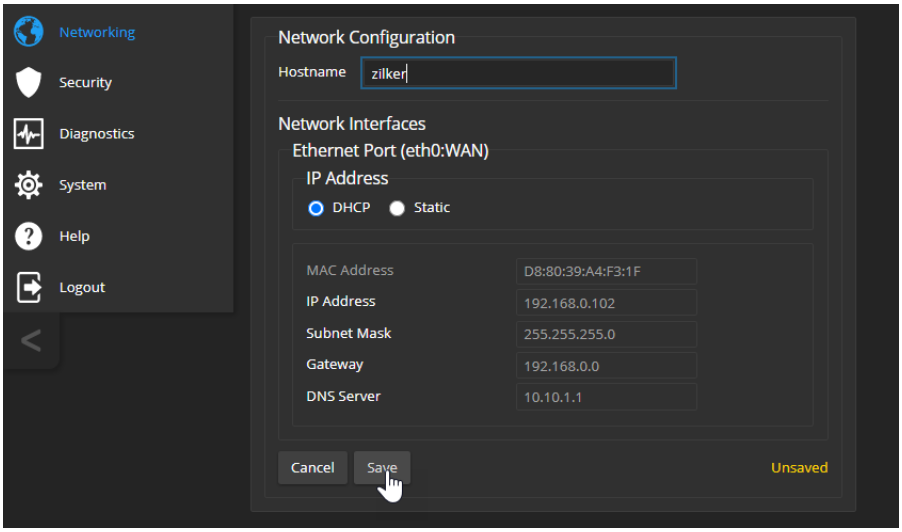
If the camera is currently at 169.254.1.1:

1. Work with your IT department to determine the correct IP address, subnet mask, and gateway to assign.
2. If necessary, connect your computer's network port to the camera's network port.
3. Set IP Address to Static.
4. Enter the IP address, subnet mask, and gateway as directed by the IT staffer; then save your work. The camera is now ready to be connected to the network.

Changing the Camera's Hostname

NETWORKING PAGE

If your network supports hostname resolution, you may find it convenient to change the camera'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.



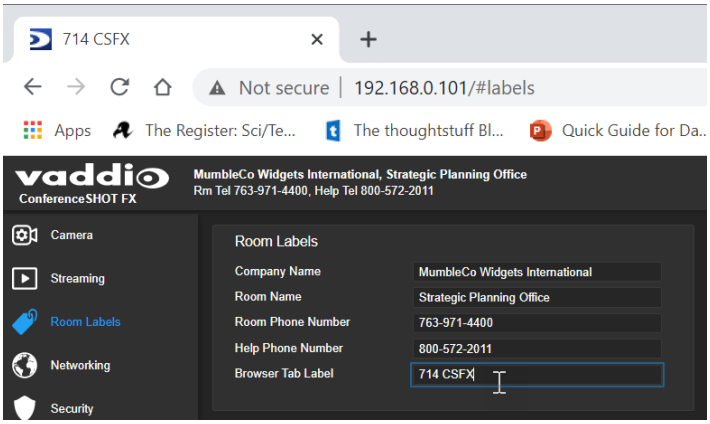
Note

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

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.

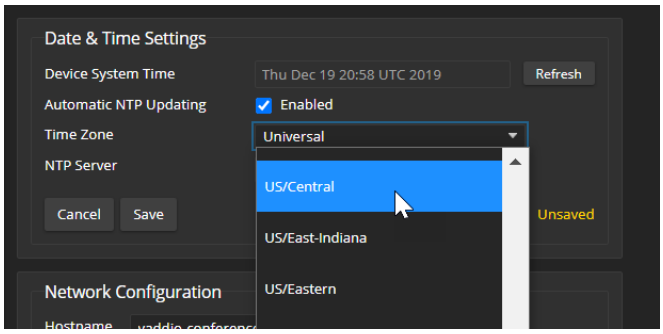


Specifying Time Zone and NTP Server

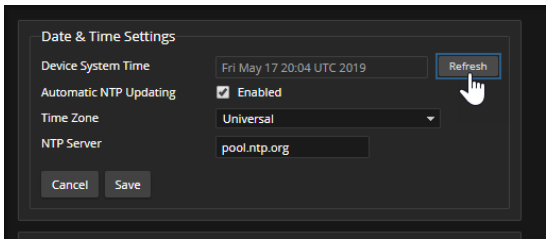
NETWORKING PAGE

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 desired, specify the NTP server to use. If you are not sure about this, use the default.
3. Select the desired time zone from the list.



You may need to refresh the system time display.



Configuring Camera Behavior

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

What do you need?	Go to this page
Camera operation ■ Color and lighting settings ■ Focus ■ Zoom levels	Camera
USB and IP streaming settings	Streaming
Other camera behaviors ■ IR frequency – respond to the IR remote as camera 1, 2, or 3 ■ Normal or super-wide mode ■ Image flip ■ UVC-Compliant or Client Custom USB streaming ■ LED and standby behavior ■ RS-232 baud rate	System (has multiple tabs)

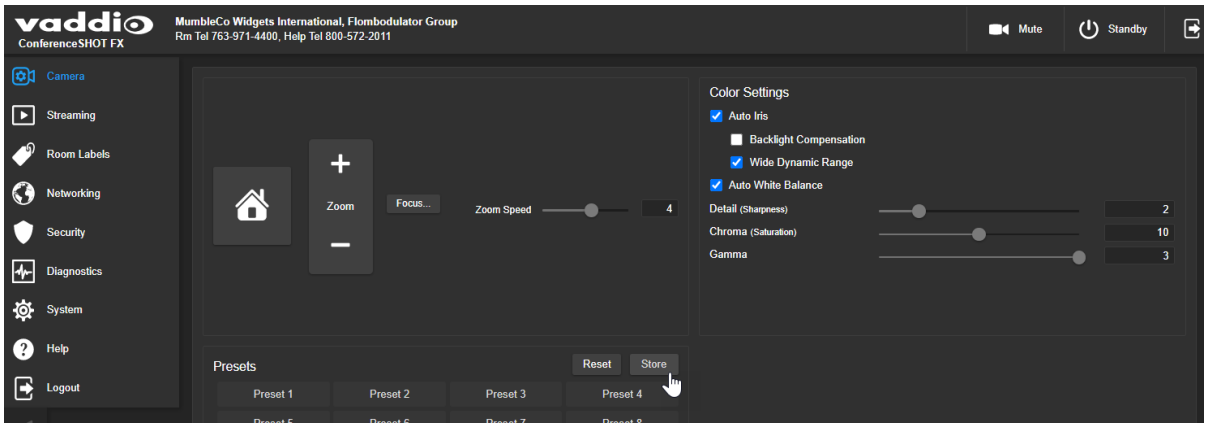
Storing Zoom Presets with Color Settings

CAMERA PAGE

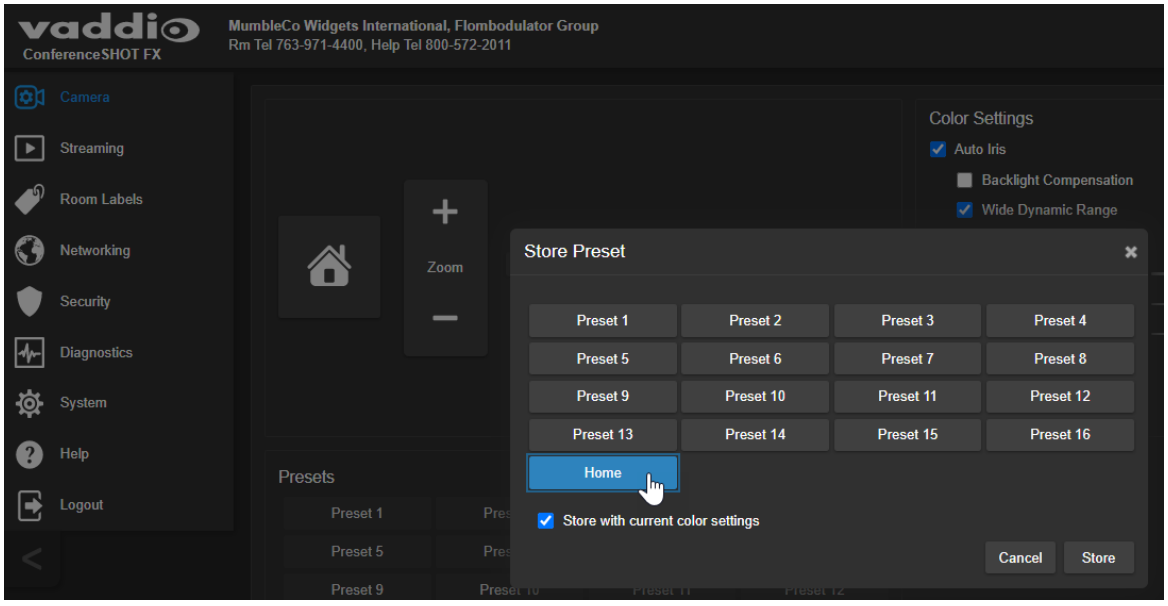
If a camera shot will be used repeatedly, you can save the zoom level and color settings together as a preset. Home, Preset 1, and Preset 2 are available from the remote; all stored presets are available from the web interface.

The camera returns to the Home preset when it comes out of standby mode, or when you reboot it.

1. Adjust the zoom to the desired level.
2. Adjust the color settings as needed.
3. Select Store to open the Store Preset box. Presets that have already been defined are highlighted.



4. Select the preset to store. The checkbox for storing the current color settings appears, as if by magic. Select it if you expect to always use the current color settings with this preset.



5. Save the preset.

Adjusting Color, Lighting, and Image Quality Settings

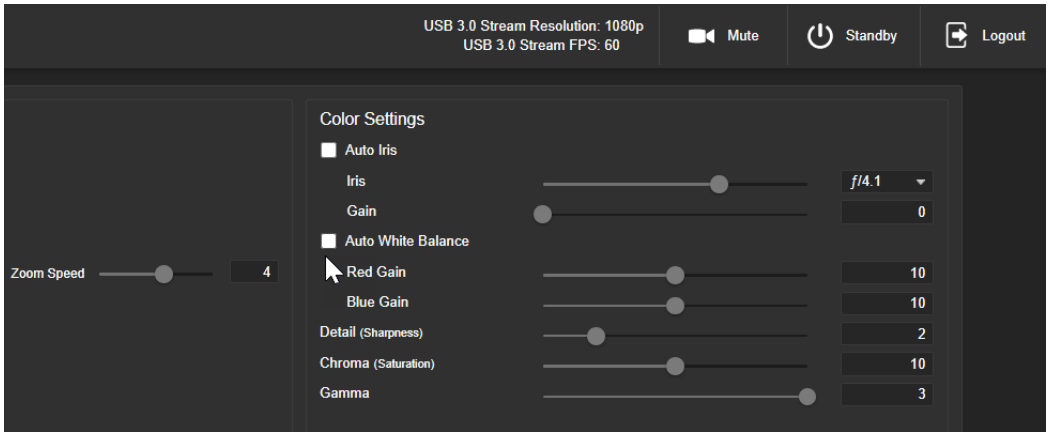
CAMERA PAGE

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 (grey 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 White Balance.



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
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.

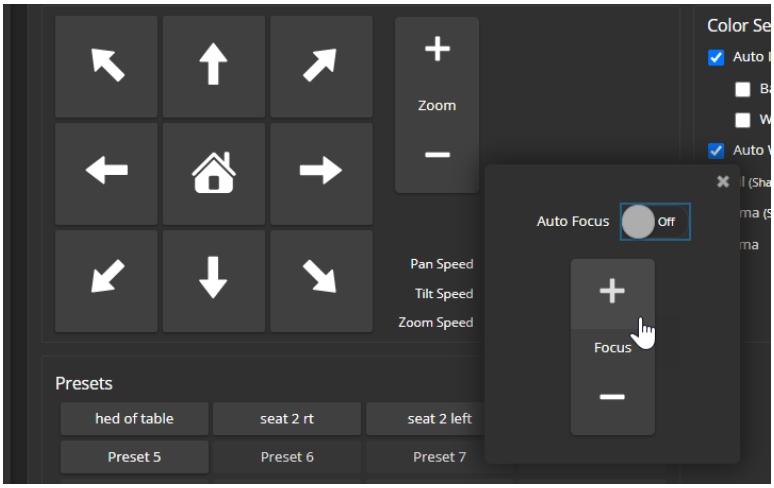
What do you need to correct?	Make this adjustment:
Colors look less vivid than they should	Increase Chroma
Colors look too vivid	Decrease Chroma
Colors look wrong; white objects do not appear white	Enable Auto White Balance
	One Push White Balance
	Disable Auto White Balance and... ■ adjust Red Gain (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

Adjusting the Focus

CAMERA PAGE

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



Focus control is available to non-administrative users via the IR Remote Commander.

Configuring Streaming Behavior

Conferencing applications use *USB streaming*. The camera's USB stream is always enabled, and is available when the camera is connected to a computer. The USB stream can be viewed using the computer, either in a conference or using a media player.

Two *IP streaming* protocols are available: RTSP and RTMP. IP streaming is off by default.

- *RTSP streaming* delivers an IP stream that people can access from your network using a media player. This is the camera's default protocol for IP streaming.
- *RTMP streaming* sends a stream to a content service provider such as YouTube. No local preview is available. To use RTMP streaming, you must have an account with a streaming service.

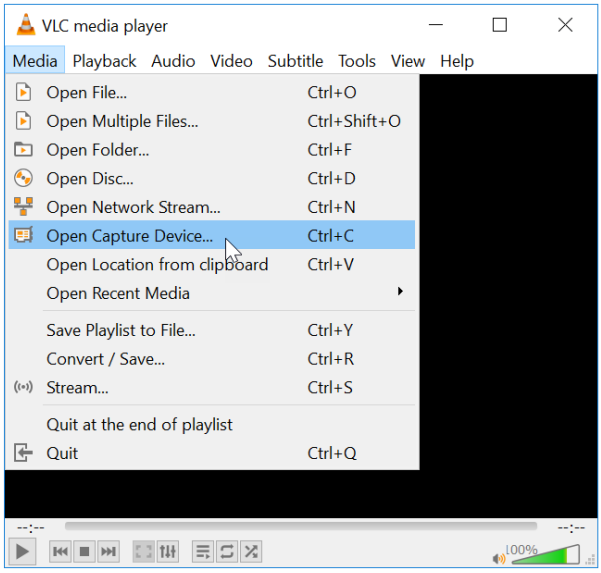
Note

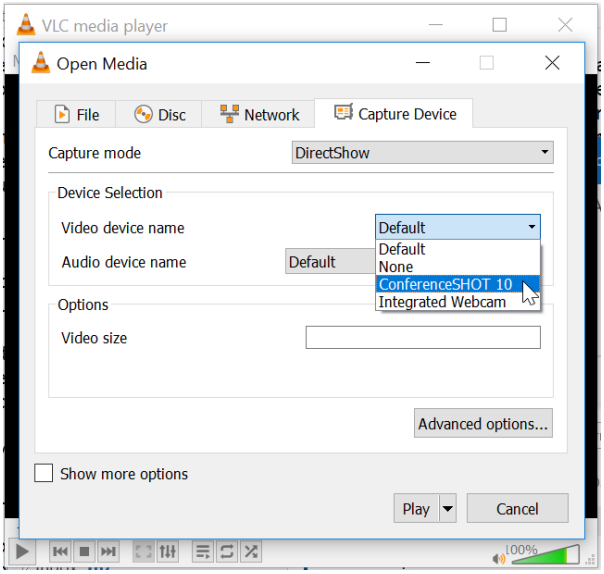
Your camera's web interface may differ slightly from the images in these procedures.

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 you would select a ConferenceSHOT 10 camera as the capture device for 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.

To change the way the camera 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

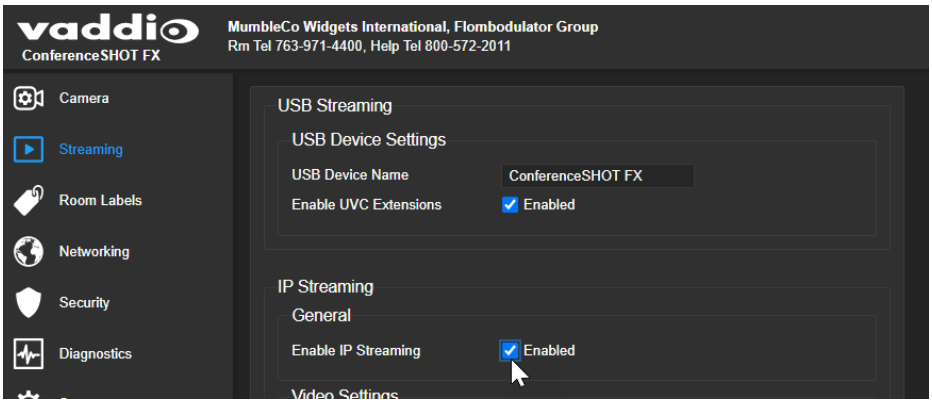
USB streaming resolution and frame rate are automatically negotiated between the camera and the conferencing application.

Depending on the conferencing application that you use, you may also need to change the USB stream format setting. See Additional Camera Settings.

Enabling or Disabling IP Streaming

STREAMING PAGE

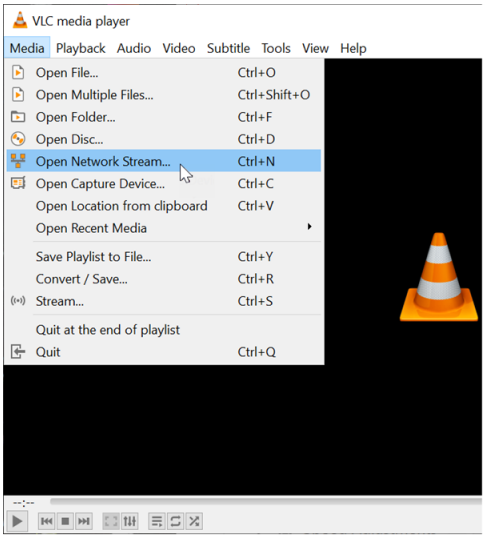
IP streaming is disabled by default. Enabling it makes the RTSP stream available for viewing on your network, or sends the RTMP stream to the configured destination, depending on which protocol you select.

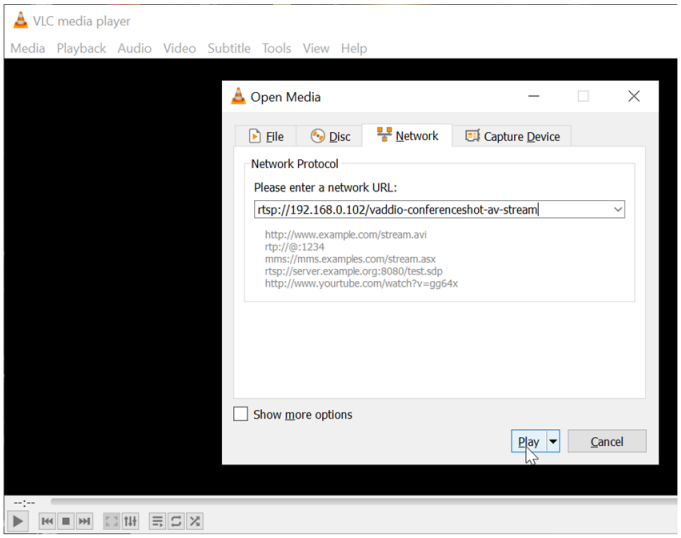


Viewing the IP Stream (RTSP)

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 ConferenceSHOT AV camera's IP stream using VLC Media Player.





RTSP Streaming Protocol and URL

STREAMING PAGE

RTSP is the default streaming protocol. When IP streaming is enabled, the RTSP stream is automatically available at the streaming URL shown.

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

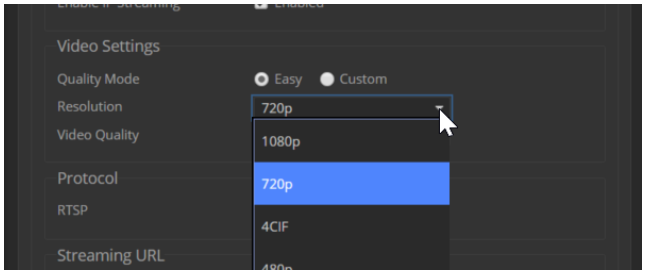
STREAMING PAGE

Note

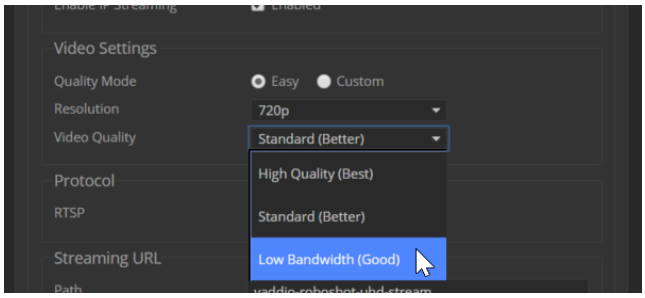
Consult your network specialist when setting up IP streaming, to be sure that you select settings that are appropriate for the network.

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.



4. Save your changes.

Setting up IP Streaming in Custom Mode

STREAMING PAGE

Note

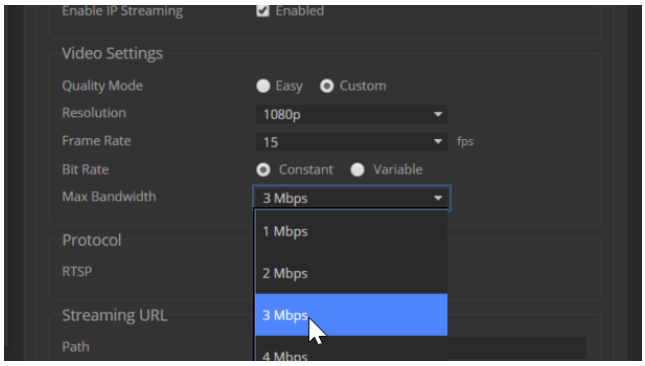
Consult your network specialist when setting up IP streaming, to be sure that you select settings that are appropriate for the network.

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

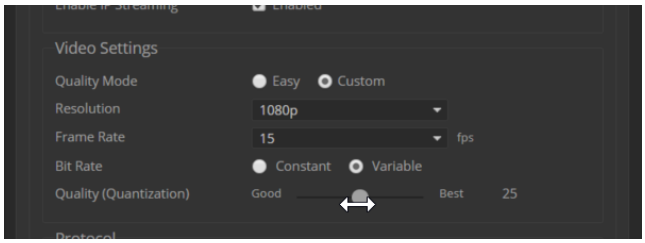
   Note

   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.



7. Save your changes.

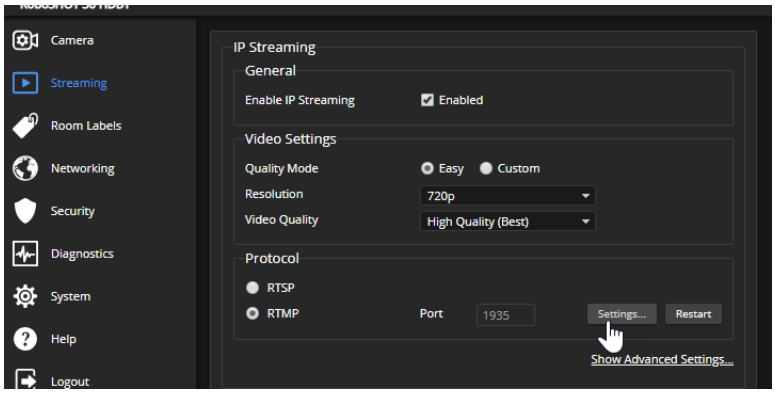
Configuring RTMP Streaming

STREAMING PAGE

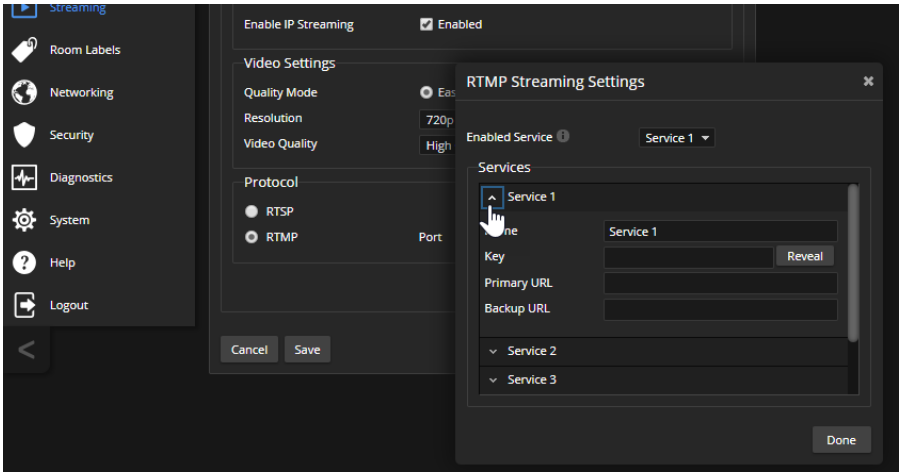
To use RTMP streaming, you must have an account with a streaming service.

To configure an RTMP streaming service:

1. Select RTMP streaming, and select Settings.



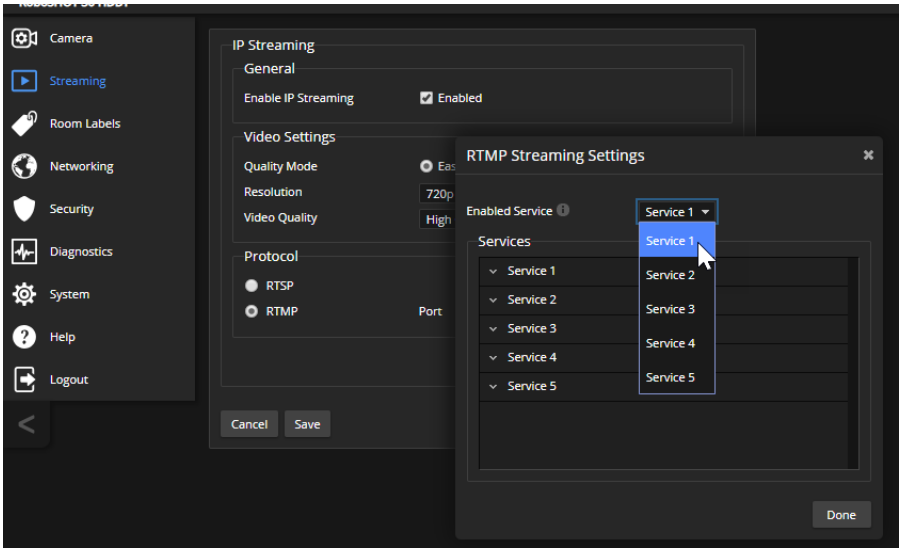
2. Expand the information box for the service.



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.



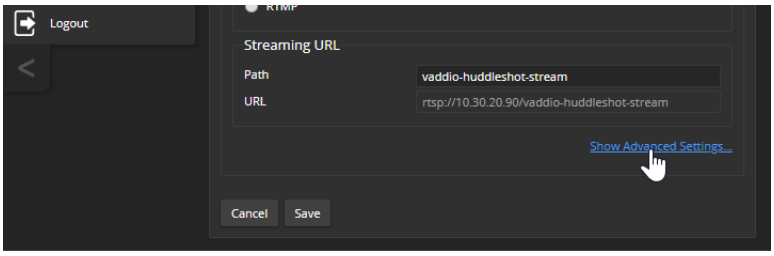
Note

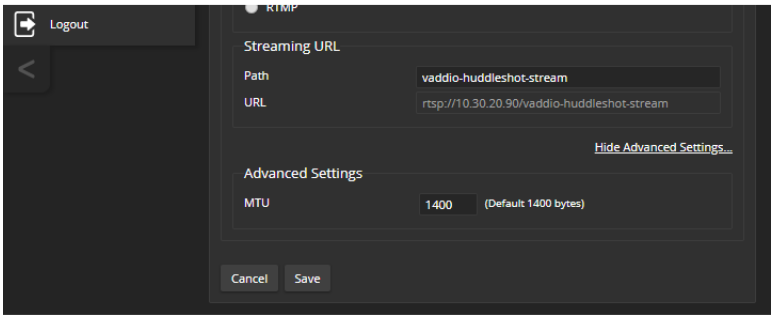
When RTMP streaming is selected and a service is configured, the camera streams to that service until you stop the stream.

Changing MTU

STREAMING PAGE

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





Reading the Camera's Back Panel Switches

CAMERA PAGE, CAMERA SETTINGS BUTTON

SYSTEM PAGE, DIP SWITCHES TAB

To see the camera's current switch settings, do one of these things:

- Select the Camera Settings button on the Camera page.
- Select the DIP Switches tab of the System page.

Either action shows the current positions of the physical switches on the back of the camera, along with other basic behavior settings.

The lower row of DIP switches in the web interface corresponds to the physical switches on the camera.

Refer to Camera Behavior Settings for information about these switch settings.

Additional settings are available on the General tab.

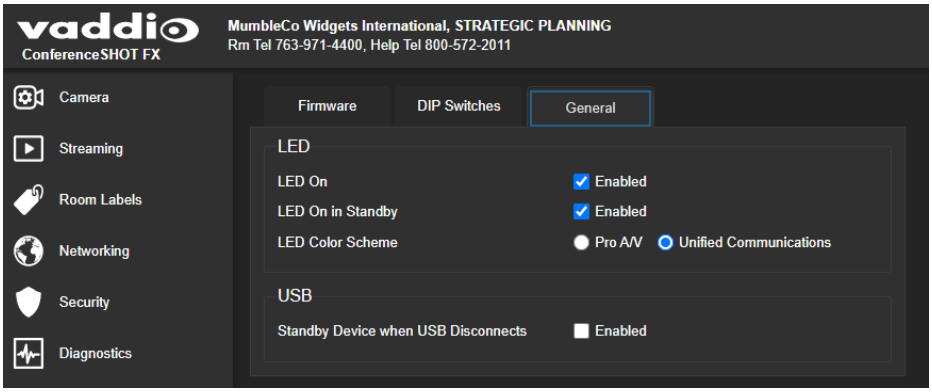
Additional Camera Settings

Camera page, Camera Settings button

System page, DIP Switches tab and General tab

The DIP Switches tab of the System page provides access to several features via soft DIP switches. The Camera Settings button on the Camera page also opens a view of the DIP Switches tab.

Additional settings are available on the General tab, which is only available by navigating to the System page. Some settings have moved from the DIP Switches tab to the General tab. Check both tabs if you don't immediately find the setting you're looking for.



Setting Name	Function	Location
Baud Rate	RS-232 serial communication rate; 9600 bps is default. Must match the baud rate of the device connected to the RS-232 port.	Soft DIP switch
UVC Compliant/ Client Custom	USB stream format. 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.	Soft DIP switch
LED Color Scheme	Status light color codes for Pro AV (broadcast) or UC (unified conferencing). Default is UC.	General tab
LED On/Off	In most cases, Vaddio recommends leaving the status light on, to let people in the room know whether the camera is currently sending video.	General tab
Enable/Disable LED in Standby Mode	Select Disabled to turn off the LED when the camera is in standby mode.	General tab
Manual Standby/ USB Standby	Select USB standby to set the camera in standby mode when no USB stream is present (not in a conference).	General tab

System Maintenance

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

Maintenance and Troubleshooting

What do you need?	Go to this page
■ Update camera firmware or view the current firmware version ■ Save (export) and restore (import) the camera's configuration ■ Reboot or reset to factory defaults	System: Firmware
Locate Vaddio Technical Support contact information	Help
View diagnostic logs	Diagnostics

Saving (Exporting) or Restoring (Importing) a Configuration

SYSTEM PAGE, FIRMWARE TAB

You can import a configuration to several cameras if you need to configure them the same way. Cameras must be of the same model, and must have a compatible firmware version installed.

Note

If the camera is using an older firmware version, it may be unable import a configuration that was exported from a camera using a different version of firmware.

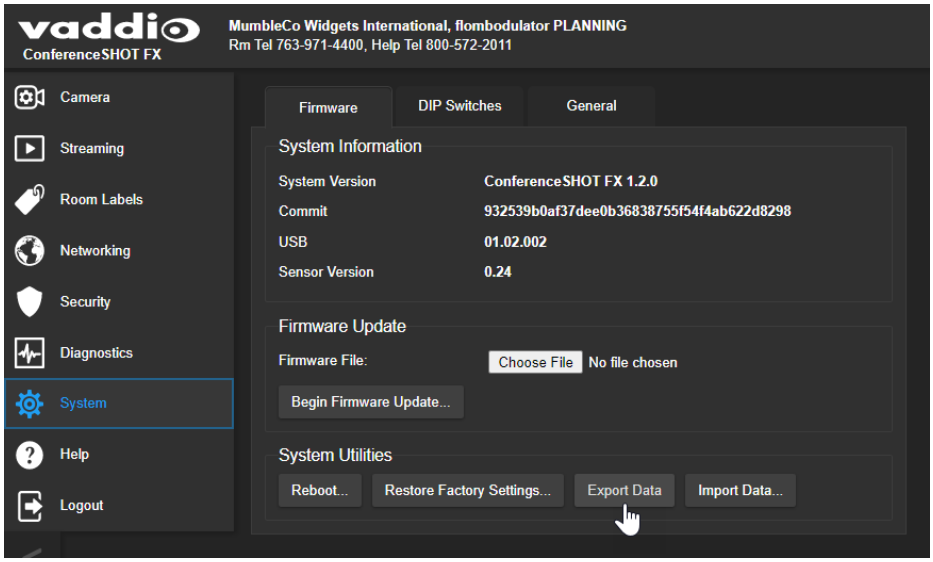
In the event that you need to restore a camera's factory default settings, you may want to export the configuration beforehand so that you can restore customized information.

Included	Not Included
Home and other presets	Color settings
NTP and time zone information	Hostname
Room Labels	Passwords and other security settings

Configuration data does not include security information or unique information such as hostname.

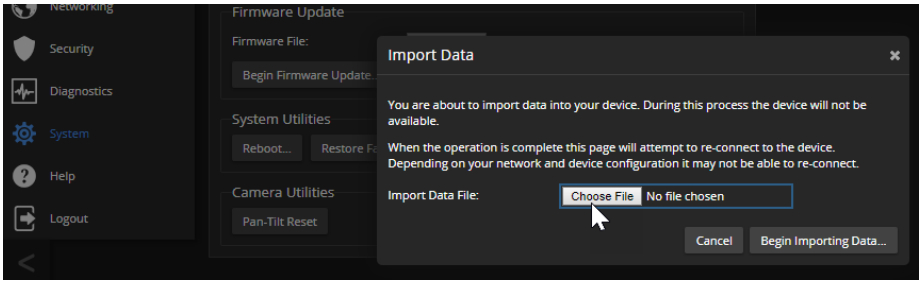
To export a configuration:

1. Configure the camera – set the time zone, create the room label, and 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 camera'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 camera, do this step from the web interface of the camera being configured.



Installing a Firmware Update

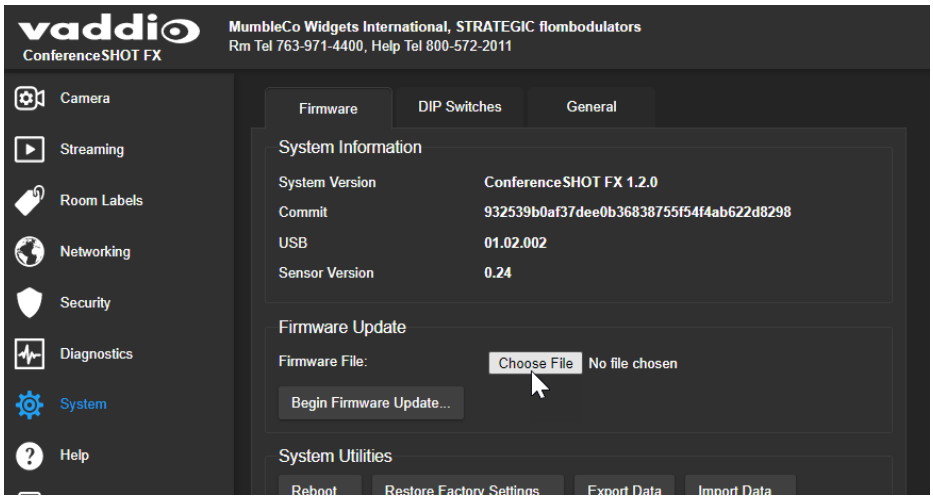
SYSTEM PAGE, FIRMWARE TAB

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.

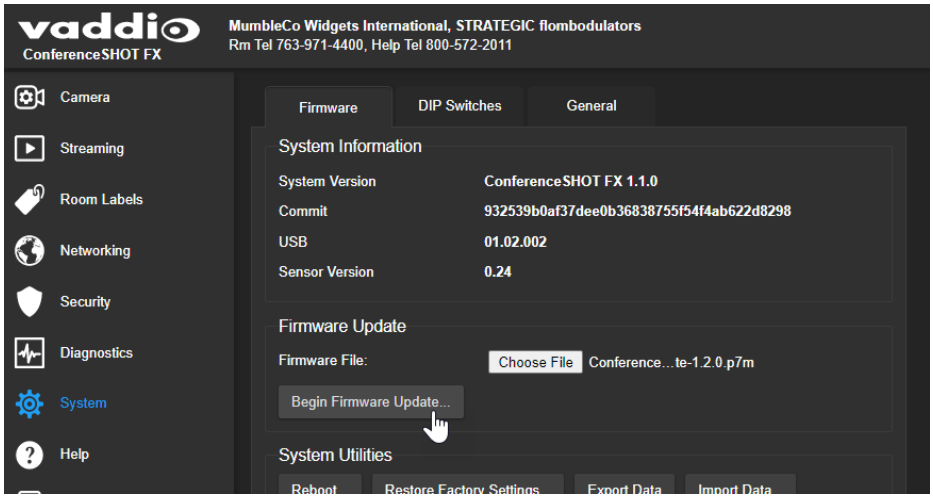
Caution

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

1. 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.



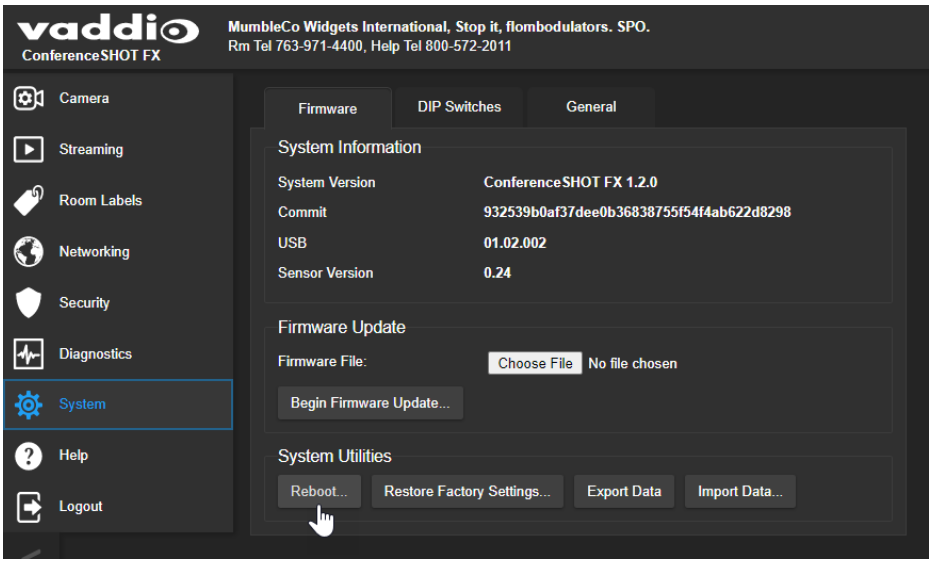
4. Read and understand the information in the Confirm dialog box.
5. Select Continue. A progress message box opens and the indicator light on the front of the camera turns yellow. If the update process presents warnings or error messages, read them carefully.

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

Rebooting the Camera

SYSTEM PAGE, FIRMWARE TAB

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



Contacting Vaddio Technical Support

HELP 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.

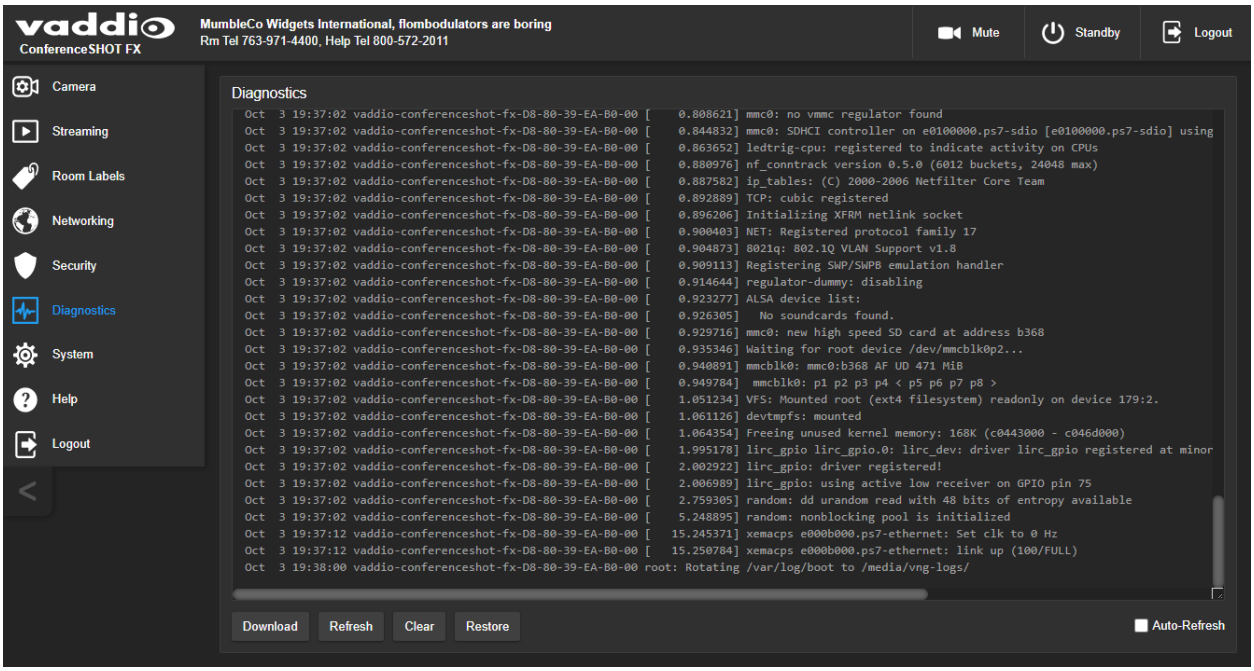
Viewing Diagnostic Logs

DIAGNOSTICS PAGE

If you encounter a problem that you can't solve, your Vaddio technical support representative may ask you to download and email the 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.



Using the Remote Control

The remote provides basic camera control. Some additional functionality is available from the non-administrative web interface.

Quick Reference

What do you need to do?	Button(s)
Power on or standby	**Power** (button at top right)
Select the camera to control (if this remote controls more than one)	**IR 1**, **IR 2**, and **IR 3** buttons
Discover the camera's IP address	**OSD** button (top left) – press and hold for 3 seconds
Return the camera to its home zoom position	**OK** button
Move the camera to a preset zoom	**Preset 1** and **Preset 2** buttons (lower left)
Change zoom	**Zoom Out** and **Zoom In** buttons

IR Remote Details

The remote provides the following functions:

OSD (On-Screen Display) – Press and hold for 3 seconds to display the camera's IP address and MAC address on the near-end display. Press momentarily to dismiss the information.

Power indicator – Shows power on, IR transmission, and battery level.

Power – Switch the selected camera on or off.

Arrow buttons – Non-functional, so they're perfect for fidgeting.

OK – Return to the camera's home zoom level.

Zoom Out and **Zoom In** – Change the zoom.

P-Store – Preset store. Hold while pressing Preset 1 or Preset 2 to store a preset.

Preset 1 and **Preset 2** – Zoom the camera to a preset zoom level. Presets may include color settings if defined through the web interface, which provides access to 16 presets.

IR 1, **IR 2**, and **IR 3** – In multi-camera installations, selects the camera to be controlled.

Storing a Preset Using the Remote

Zoom to the desired level. Then hold down the **P-Store** button while pressing **Preset 1** or **Preset 2**.

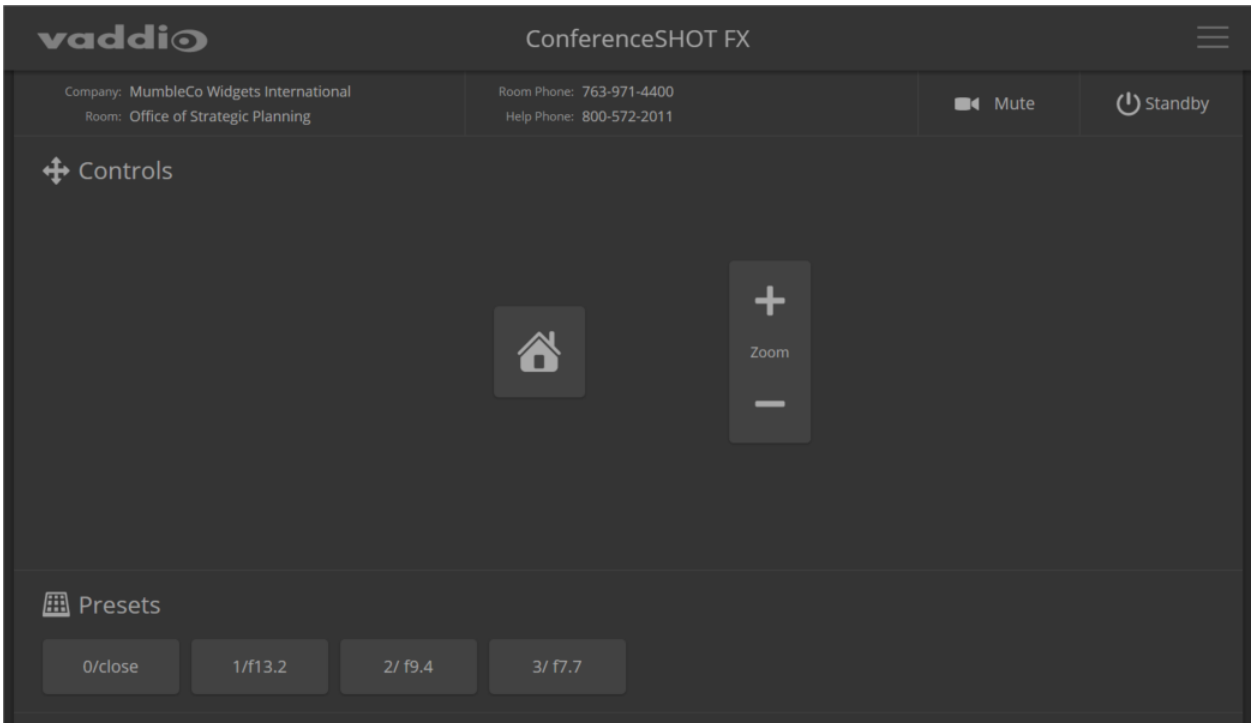
Operating the Camera from the Web Interface

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.

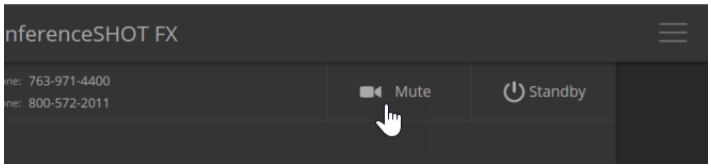
Only the operator's page is available with user or guest access.

- Stop or resume transmitting live camera video (video mute)
- Put the camera in standby or bring it back to the ready state
- Zoom to camera presets, if any have been stored



Stopping or Resuming Video

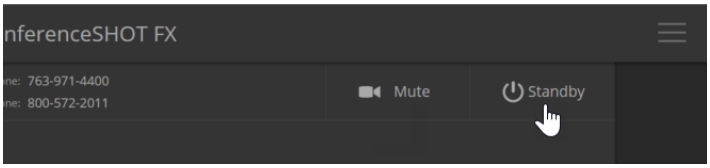
Use the mute button to temporarily stop video from the camera without placing it in standby. Remember that the video mute button does not mute the room's microphones, conference phone, or your computer's microphone. In video mute mode, the camera transmits blue or black video, with a message that the video is muted.



Managing the Camera Ready State

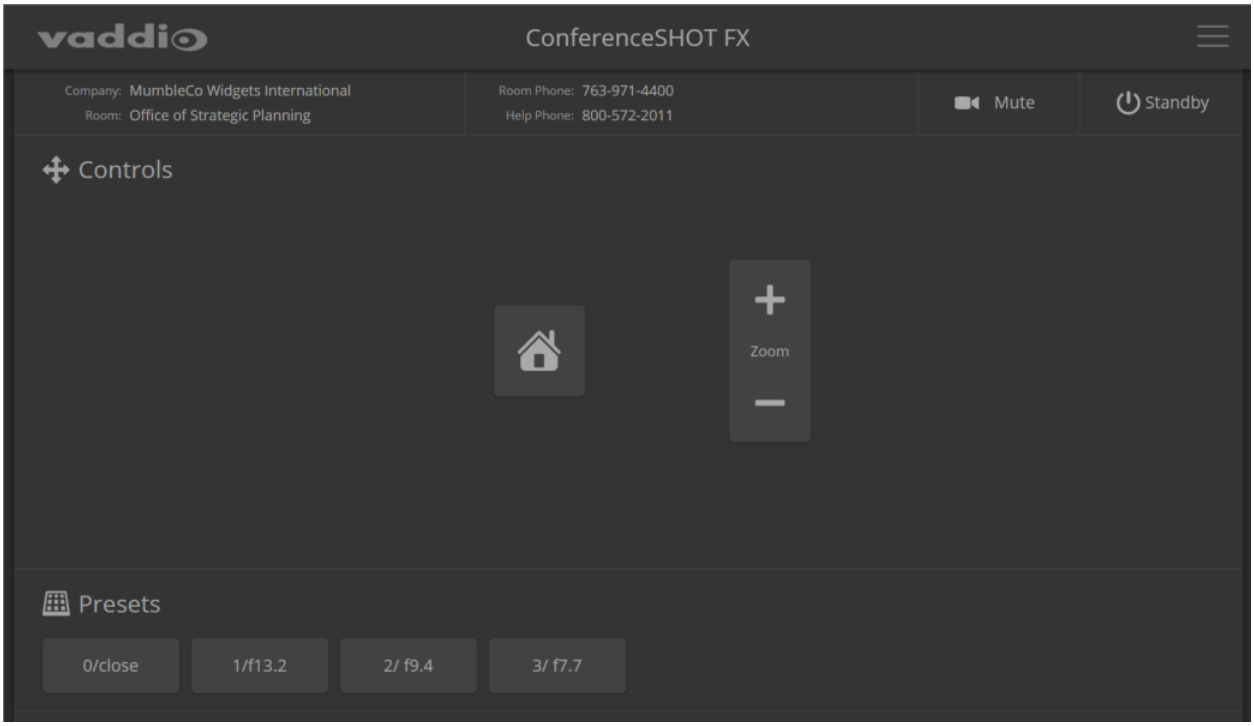
Use the Standby button to switch between low-power (standby) and ready states.

In standby mode, the screen presents the message “Device is in standby.”



Zooming to a Preset Level

All defined zoom presets are available from the Controls page. The administrator may assign them descriptive names.



Preset 1 and Preset 2 are also available using the buttons on the remote. If you select a preset that has not yet been programmed, nothing happens.

Telnet Serial Command API

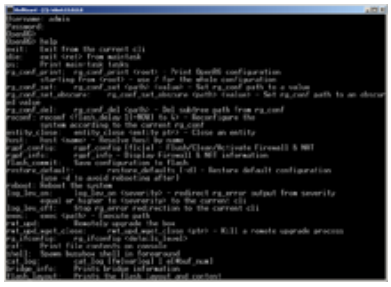
The Vaddio Telnet command API allows an external device such as an AMX or Crestron presentation system to control the camera. It is also used for writing macros. Network connectivity and a Telnet client are required; Telnet port 23 is used.

In addition to the camera control commands, Telnet session management commands are available – help, history, and exit.

Notes

By default, Telnet access is disabled in all firmware releases issued after mid-December 2019. Enable it on the Security page of the web interface.

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



Usage notes:

- The > character is the command prompt.
- CTRL-5 clears the current serial buffer on the device.
- *Using a question mark as a command or command parameter* will bring up a list of available commands, subcommands, or command parameters. For example, **`?`** returns all top-level commands; **`system ?`** returns the valid subcommands for the system command; and **`system reboot ?`** returns the parameter available for the system reboot command.

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

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.

Camera and Video Management Commands

The following camera and video management commands are available:

- camera home
- camera pan
- camera tilt
- camera zoom
- camera ptz-position
- camera focus
- camera preset
- camera ccu get
- camera ccu set
- camera led
- camera icr
- video mute

camera home

Returns the camera to the zoom level set as "home." The home preset can be configured in the web interface.

Synopsis	camera home
Example	>**camera home** OK >

camera zoom

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

Synopsis	camera zoom { in | out | stop }	
Options	`in`	Zooms the camera in.
	`out`	Zooms the camera out.
	`stop`	Stops the camera's zoom movement.
Examples	>**camera zoom in** OK > Zooms the camera in >**camera zoom stop** OK > Stops the camera's zoom motion.	

camera focus

Changes the camera focus.

Synopsis	camera focus { near [<speed>] | far [<speed> | stop | mode {get | auto | manual} }	
Options	`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 <1 - 8>	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`**
	`OK`
	`>`
	Brings the focus near at the default speed.
	`camera focus far 7`
	`OK`
	`>`
	Moves the focus farther from the camera at a speed of 7.
	`camera focus mode get`
	`auto_focus:  on`
	`OK`
	`>`
	Returns the current focus mode.	

camera preset

Moves the camera to the specified preset zoom level, or stores the current zoom level.

Synopsis	camera preset { recall | store} [1 - 16]	
Options	`recall` [1 - 16]	Zooms the camera to the specified preset.
	`store` [1 - 16]	Stores the current zoom level as the specified preset.

Examples	`>`**`camera preset recall 3`**
	`OK`
	`>`
	Zooms the camera to preset 3.
	`>`**`camera preset store 1`**
	`OK`
	`>`
	Saves the camera's current zoom level as preset 1.	

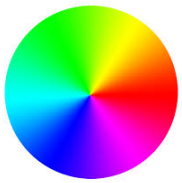
camera ccu get

Returns CCU (lighting and color) information. Entering the command without specifying a parameter returns all current CCU settings.

Synopsis	camera ccu get <param>	
Options 	auto_white_balance	Returns the current state of the auto white balance setting (on or off).
	red_gain	Returns the red gain value as an integer (0 to 20).
	blue_gain	Returns the blue gain value as an integer (0 to 20).
	backlight_compensation	Returns the current state of the backlight compensation setting (on or off).
	iris	Returns the iris value as an integer (0 to 9).
	auto_iris	Returns the current auto-iris state (on or off).
	gain	Returns the gain value as an integer (1 to 10).
	detail	Returns the detail value as an integer (0 to 10).
	chroma	Returns the chroma value as an integer (0 to 20).
	gamma	Returns gamma as an integer (0 to 3)
	wide_dynamic_range	Returns the current setting for Wide Dynamic Range (on or off).
	all	Returns all current CCU settings.
Examples	>**camera ccu get iris** iris 6 OK > Returns the current iris value. >**camera ccu get all** auto_iris on auto_white_balance on backlight_compensation off blue_gain 10 chroma 7 detail 3 gain 2 iris 9 red_gain 10 wide_dynamic_range on OK > 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.
	`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.
	`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.
	`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.
	`iris` <0 - 9>	Sets the iris value as an integer (0 to 9). Can only be used when auto-iris is off.
	`auto_iris` {on | off}	Sets the auto-iris state (on or off). Auto-iris disables manual iris and gain when it is on.
	`gain` <1 - 10>	Sets gain value as an integer (1 to 10). Can only be used when auto-iris is off.
	`detail` <0 - 10>	Sets the detail value as an integer (0 to 10).
	`chroma` <0 - 20>	Sets the chroma value as an integer (0 to 20).
	`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`
	`OK`
	`>`
	
	Turns off auto-iris mode, returning the camera to manual iris control.
	
	`>camera ccu set red_gain 10`
	`OK`
	`>`
	
	Sets the red gain value to 10.	

camera led

Get or change the state of the camera's indicator light.

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.

Synopsis	camera led { get | off | on }	
Options	`get`	Returns the current state of the indicator light.
	`off`	Switches off the indicator light.
	`on`	Switches on the indicator light.

Examples	`>`**`camera led off`**
	`OK`
	`>`
	
	Switches off the camera's indicator light.
	
	`>`**`camera led get`**
	`led:  on`
	`OK`
	`>`
	
	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`**
	`OK`
	`>`
	
	Brings the camera out of standby mode.
	
	`>`**`camera standby get`**
	`standby:  on`
	`OK`
	`>`
	
	Returns the current standby state.	

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

Network and Communication Commands

The following communication-related commands are available:

- streaming ip enable
- streaming settings get
- network settings get

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`**
	`> OK`
	
	Enables IP streaming.
	
	`>`**`streaming ip enable get`**
	`enabled: true`
	`> OK`
	
	Returns the current state of IP streaming.	

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 Port                554
IP Preset_Quality      Standard (Better)
IP Preset_Resolution   720p
IP Protocol            RTSP
IP URL                 vaddio-conferenceshot-fx-stream
IP Video_Mode          preset
USB Active             true
USB Device             ConferenceSHOT FX
USB Frame_Rate         30
USB Resolution         360p
USB Version            3
UVC Extensions_Enabled true
OK
>
```

network settings get

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

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 >

Maintenance and Troubleshooting Commands

The following commands are available for maintenance and troubleshooting:

- camera recalibrate
- network ping
- system reboot
- system factory-reset
- version

network ping

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

<table>
<tr><td>Synopsis</td><td colspan="2">network ping [count <count>] [size <size>] <string></td></tr>
<tr><td rowspan="3">Options</td><td><count></td><td>The number of ECHO_REQUEST packets to send. Default is five packets.</td></tr>
<tr><td><size></td><td>The size of each ECHO_REQUEST packet. Default is 56 bytes.</td></tr>
<tr><td><string></td><td>The hostname or IP address where the ECHO_REQUEST packets will be sent.</td></tr>
<tr><td>Examples</td><td colspan="2">>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.</td></tr>
<tr><td colspan="2">>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.</td></tr>
</table>

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** OK > The system is going down for reboot NOW!conferenceshot-fx-D8-80-39-62-A7-C5 Reboots the camera immediately. >**system reboot 30** Reboots the camera 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** 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.*	

Telnet Information and Session Management Commands

The following commands are available 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)	

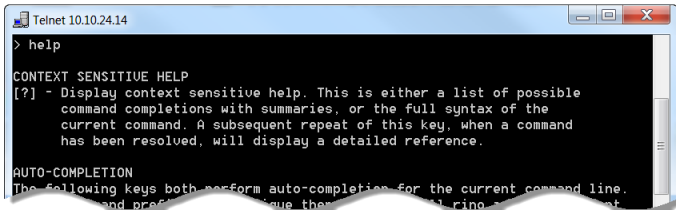
version

Returns the current firmware version.

Synopsis	version
Example	>**version** Commit 5a031cc87f4f27a28c486cf7f0e0c26bccf4e4ad PSoC Version 0.0 Sensor Version 0.19 System Version ConferenceSHOT FX 1.0.0 OK >

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**

RS-232 Serial Command API

The Vaddio Control Protocol is similar to the Sony® VISCA command set in order to be compatible with several popular control devices. Not all VISCA commands are supported and there are Vaddio-specific commands in the following command and inquiry lists.

For RS-232 communication settings and connector pin-out, see RS-232 Serial Communication.

Camera Zoom and Focus Commands

Command Set	Command	Command Packet	Comments
CAM_Zoom	Stop	8x 01 04 07 00 FF	Variable speed: p = 0 (low) to 7 (high) Direct: pqrs = zoom position (0h-****h)
	Tele (std)	8x 01 04 07 02 FF	
	Wide (std)	8x 01 04 07 03 FF	
	Tele (variable)	8x 01 04 07 2p FF	
	Wide (variable)	8x 01 04 07 3p FF	
	Direct	8x 01 04 47 0p 0q 0r 0s FF	
	Corresponds to `camera zoom` in Telnet API		
CAM_Focus	Stop	8x 01 04 08 00 FF	Variable speed: p = 0 (low) to 7 (high) Direct and Near Limit: pqrs = focus position (1000h – F000h)
	Far (std)	8x 01 04 08 02 FF	
	Near (std)	8x 01 04 08 03 FF	
	Far (variable)	8x 01 04 08 2p FF	
	Near (variable)	8x 01 04 08 3p FF	
	Direct	8x 01 04 48 0p 0q 0r 0s FF	
	Auto Focus	8x 01 04 38 02 FF	
	Manual Focus	8x 01 04 38 03 FF	
	Auto/Manual	8x 01 04 08 10 FF	
	One Push Trigger	8x 01 04 18 01 FF	
	Near Limit	8x 01 04 28 0p 0q 0r 0s FF	
	Corresponds to `camera focus` in Telnet API		
CAM_Memory	Reset	8x 01 04 3F 00 0p FF	p= preset number(0h-0Fh)
	Set	8x 01 04 3F 01 0p FF	
	Set with 'scene'	8x 01 04 3F 21 0p FF	
	Recall	8x 01 04 3F 02 0p FF	
	Corresponds to `camera preset` in Telnet API.		

Zoom and Focus Inquiry Commands

Inquiry Command	Command	Response Packet	Comments
CAM_ZoomPosInq	8x 09 04 47 FF	y0 50 0p 0q 0r 0s FF	pqrs: Zoom position
CAM_FocusPosInq	8x 09 04 48 FF	y0 50 0p 0q 0r 0s FF	pqrs: Focus position
CAM_FocusModeInq	8x 09 04 38 FF	y0 50 02 FF	Auto focus
		y0 50 03 FF	Manual focus
	Corresponds to `camera focus mode get` in Telnet API.		
CAM_MemoryInq	8x 09 04 3F FF	y0 50 pp FF	pp: Preset number recalled last (00h - 0Fh)
CAM_MemoryStatusInq	8x 09 04 3F 0p FF	y0 50 0p 0q 0r 0s FF	p: Preset number (00h - 0Fh) q: mode (00-std, 10-std /w ccu) rs: speed (0x1-0x18) 1 - 24
CAM_MemSaveInq	8x 09 04 23 0X FF	y0 50 0p 0q 0r 0s FF	X: 00h to 0Fh (preset number) pqrs: 0000h to FFFFh (Data)

Color and Light Management Commands

Command Set	Command	Command Packet	Comments
CAM_WB	Auto	8x 01 04 35 00 FF	Normal auto
	Manual	8x 01 04 35 05 FF	Manual control mode
	Corresponds to `camera ccu set auto_white_balance` in Telnet API.		
CAM_RGain	Reset	8x 01 04 03 00 FF	Manual control of red gain pq = red gain (00h – FFh)
	Up	8x 01 04 03 02 FF	
	Down	8x 01 04 03 03 FF	
	Direct	8x 01 04 43 00 00 0p 0q FF	
	Corresponds to `camera ccu set red_gain` in Telnet API.		
CAM_BGain	Reset	8x 01 04 04 00 FF	Manual control of blue gain pq = blue gain (00h – FFh)
	Up	8x 01 04 04 02 FF	
	Down	8x 01 04 04 03 FF	
	Direct	8x 01 04 44 00 00 0p 0q FF	
	Corresponds to `camera ccu set blue_gain` in Telnet API.		
CAM_AE	Auto	8x 01 04 39 00 FF	Auto exposure mode
	Manual	8x 01 04 39 03 FF	Manual control mode
	Corresponds to `camera ccu set auto_iris` in Telnet API.		
CAM_Shutter	Reset	8x 01 04 0A 00 FF	Shutter setting pq = shutter position (00h – 15h) See Shutter Speed Values – CAM_Shutter Command
	Up	8x 01 04 0A 02 FF	
	Down	8x 01 04 0A 03FF	
	Direct	8x 01 04 4A 00 00 0p 0q FF	
CAM_Iris	Reset	8x 01 04 0B 00 FF	Iris setting pq = iris position (0h, 05h-11h) See Iris Values – CAM_Iris Command
	Up	8x 01 04 0B 02 FF	
	Down	8x 01 04 0B 03 FF	
	Direct	8x 01 04 4B 00 00 0p 0q FF	
	Corresponds to `camera ccu set iris` in Telnet API.		
CAM_Gain	Reset	8x 01 04 0C 00 FF	Iris gain setting pq = gain position (01h – 0Fh) p = gain limit (04h-0Fh) See Iris Gain and Gain Limit Values – CAM_Gain Command
	Up	8x 01 04 0C 02 FF	
	Down	8x 01 04 0C 03 FF	
	Direct	8x 01 04 4C 00 00 0p 0q FF	
	+Gain Limit	8x 01 04 2C 0p FF	
	Corresponds to `camera ccu set gain` in Telnet API.		

Command Set	Command	Command Packet	Comments
CAM_BackLight	On	8x 01 04 33 02 FF	Backlight compensation On/Off
	Off	8x 01 04 33 03 FF	
	Corresponds to `camera ccu set backlight_compensation` in Telnet API.		
CAM_WD	On	8x 01 04 3D 02 FF	Wide Dynamic Range On
	Off	8x 01 04 3D 03 FF	Wide Dynamic Range Off
	Corresponds to `camera ccu set wide_dynamic_range` in Telnet API.		
CAM_Aperture	Reset	8x 01 04 02 00 FF	Aperture setting pq = aperture position (0h-0fh)
	Up	8x 01 04 02 01 FF	
	Down	8x 01 04 02 02 FF	
	Direct	8x 01 04 42 00 00 0p 0q FF	
	Corresponds to `camera ccu set detail` in Telnet API.		
CAM_Chroma	Direct	8x 01 7E 55 00 00 0p 0q FF	pq: 00h – 14h
	Corresponds to `camera ccu set chroma` in Telnet API.		
CAM_ GammaOffset	Direct	8x 01 04 1E 00 00 00 0s 0t 0u FF	s: polarity offset (0 is plus, 1 is minus) tu: offset s=0 (00h to 40h) offset s=1 (00h to 10h)
	Corresponds to `camera ccu set gamma` in Telnet API.		

Command Setting Values – Exposure Control

Iris Values

Value	Iris
0x11	F1.8
0x10	F2
0x0F	F2.4
0x0E	F2.8
0x0D	F3.3
0x0C	F4
0x0B	F4.8
0x0A	F5.6
0x09	F6.8
0x08	F8
0x07	F9.6
0x06	N/A
0x05	N/A
0x00	CLOSE

Iris Gain Values

Value	Steps
0x0A	18
0x09	16
0x08	14
0x07	12
0x06	10
0x05	8
0x04	6
0x03	4
0x02	2
0x01	0

Color and Light Management Inquiry Commands

Inquiry Command	Command	Response Packet	Comments
CAM_WBModeInq	8x 09 04 35 FF	y0 50 00 FF	Auto
		y0 50 05 FF	Manual
CAM_RGainInq	8x 09 04 43 FF	y0 50 00 00 0p 0q FF	pq: Red gain
CAM_BGainInq	8x 09 04 44 FF	y0 50 00 00 0p 0q FF	pq: Blue gain
CAM_AEModeInq	8x 09 04 39 FF	y0 50 00 FF	Auto
		y0 50 03 FF	Manual
CAM_ShutterPosInq	8x 09 04 4A FF	y0 50 00 00 0p 0q FF	pq: Shutter position
CAM_IrisPosInq	8x 09 04 4B FF	y0 50 00 00 0p 0q FF	pq: Iris position
CAM_GainPosInq	8x 09 04 4C FF	y0 50 00 00 0p 0q FF	pq: Gain position
CAM_WDModeInq	8x 09 04 3D FF	y0 50 02 FF	On
		y0 50 03 FF	Off
CAM_BackLightModeInq	8x 09 04 33 FF	y0 50 02 FF	On
		y0 50 03 FF	Off
CAM_ApertureInq	8x 09 04 42 FF	y0 50 00 00 0p 0q FF	pq: Aperture gain
CAM_ChromaInq	8x 09 7E 55 FF	y0 50 05 00 00 00 0p FF	p: 0 – Eh
CAM_GammaOffsetInq	8x 09 04 1E FF	y0 50 00 00 00 0s 0t 0u FF	s: Polarity offset (0 is plus, 1 is minus) tu: Offset s=0 (00h to 40h) Offset s=1 (00h to 10h)

Other Commands

Command Set	Command	Command Packet	Comments
CommandCancel		8x 2p FF	p= socket (1 or 2)
CAM_Power	On	8x 01 04 00 02 FF	Power on
	Off	8x 01 04 00 03 FF	Power off
	Corresponds to `camera standby` in Telnet API.		
CAM_Tally	On	8x 01 7E 01 0A 00 02 FF	
	Off	8x 01 7E 01 0A 00 03 FF	
CAM_NR	--	8x 01 04 53 0p FF	p = noise reduction level (0: off,1 – 5)
CAM_Mute	On	8x 01 04 75 02 FF	Video mute on/off
	Off	8x 01 04 75 03 FF	
	Toggle	8x 01 04 75 10 FF	
	Corresponds to `video mute` in Telnet API.		

Other Inquiry Commands

Inquiry Command	Command	Response Packet	Comments
CAM_PowerInq	8x 09 04 00 FF	y0 50 02 FF	On
		y0 50 03 FF	Off (standby)
	Corresponds to `camera standby get` in Telnet API		
CAM_TallyInq	8x 09 7E 01 0A FF	y0 50 02 FF	On
		y0 50 03 FF	Off
CAM_NRInq	8x 09 04 53 FF	y0 50 0p FF	Noise reduction p: 00h to 05h
CAM_MuteModeInq	8x 09 04 75 FF	y0 50 02 FF	On
		y0 50 03 FF	Off
	Corresponds to `video mute get` in Telnet API		
IPAddressInq	8x 09 08 4E 00 00 FF	90 50 49 50 00 00 00 0p 0p 0p 0q 0q 0q 0q 0r 0r 0r 0s 0s 0s FF	pppqqqrrrsss = IP address Example: 90 50 49 50 00 00 00 00 01 00 00 03 00 02 04 00 01 09 00 FF = 10.30.240.190
Vaddio_ModelInq	8x 09 08 0e FF		ConferenceSHOT FX

Specifications

Camera and Image

Image device		**Pixels**	
IP (H.264) RTSP Video Resolutions	1080p/30/15 720p/60-15 360p/60-15	**USB 3.0 (UVC) Video Resolutions**	1080p/60 down to 180p/15; autonegotiated
Lens and horizontal FOV	3x optical zoom, 88.4° wide to 40.7° tele		
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 or manual
Focusing system	Auto or manual	**Wide Dynamic Range**	On or off
Sync system	Internal	**S/N ratio**	Over 50 dB
Remote management	Web interface, Telnet, RS-232	**Power**	12 VDC, 1.5 A

Physical and Environmental

Height	6.3” (163 mm)	**Operating temperature**	0°C to +40°C (32°F to 104°F)
Width	6.1” (155 mm)	**Operating humidity (relative)**	20% to 80% non-condensing
Depth	5.5” (145 mm)	**Storage temperature**	-5°C to +60°C (-23°F to 140°F)
Weight	2.5 lbs.(1.13 kg)	**Storage humidity (relative)**	20% to 80% non-condensing

Specifications are subject to change without notice.

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. The light on the front is off and no video is available.	At least one of the cables is bad.	Check using known good cables.
	The wall outlet is not active. (Check by finding out if it powers something else, such as a laptop or phone charger.)	Use a different outlet.
	The camera or its power supply 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 General tab of the System page, or using the Telnet command **`camera led on`**.
The camera is not responding to the remote and the light is yellow.	A firmware update is in progress.	Wait a few minutes, and try again when the light turns blue.
The camera does not respond to the remote, but the web interface is available.	The remote is not using the same IR channel as the camera.	Change the IR channel with the Camera Select buttons on the remote.
	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's web UI is available but the camera does not respond to commands via RS-232 connection.	The RS-232 cable is not connected, or is bad.	Connect a known good cable.
	The camera's RS-232 settings don't match the settings on the controlling device.	Check the settings at both ends to be sure they match. The camera's baud rate can be viewed but not changed on the System page in the web UI.

Other Issues

What is it doing?	Possible causes	Check and correct
Video is available but the camera does not move.	ConferenceSHOT FX cameras must be manually positioned.	Check the System screen to verify the camera model. This is normal behavior for fixed cameras.
The camera loses all its settings when power is cycled.	All the DIP switches are in the ON (down) position. (Verify on the DIP Switches tab of the System page.)	Set the DIP switches to their proper positions. Default is all OFF (up). See Camera Behavior Settings for more information.

Need help? Call Vaddio Technical Support at (+1) 763-971-4400 or 800-572-2011.

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 blue – USB cable is disconnected (UC color scheme)

Caution

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

Note

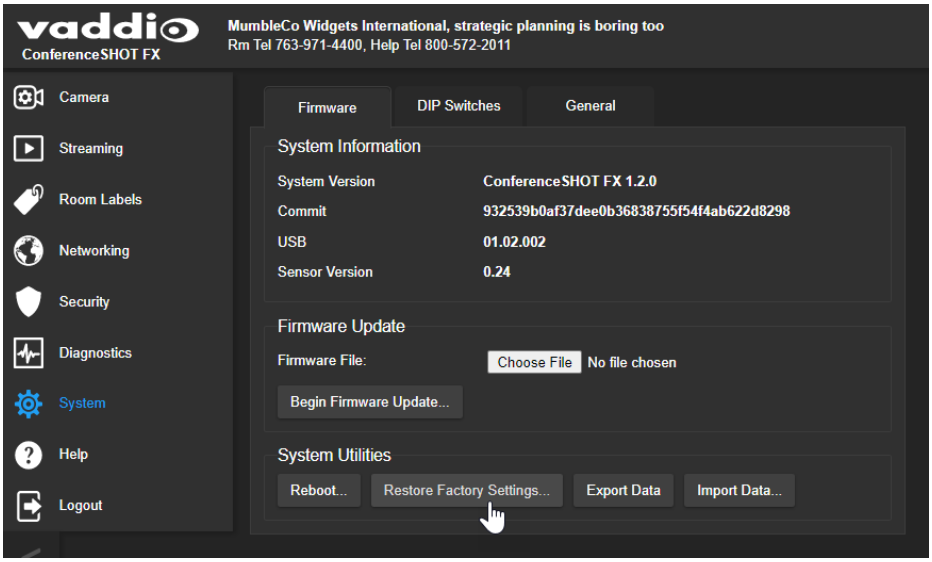
By default, the camera's status indicator light is active during normal operation; however, it can be configured to remain off when the camera is powered up. The camera may be sending video even if the light is off.

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 switches on the back of the camera: Set all DIP switches DOWN and cycle the power to reload the default camera settings. Then return all DIP switches to the desired settings.

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
- On the hull of an orbital launch vehicle
- Dry environments with an excess of static discharge

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

Glossary

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

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.

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 engineers are never going to stop calling them that, so our web interface will keep on saying it.

DIY
Do It Yourself. As in, "You can copy information from this document to create a DIY room guide customized for your conference room." Yes! You can do that! In fact, the "Info for DIY Room Guides" document is specifically designed for you to adapt and customize.

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.

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.

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

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 (for PTZ cameras) 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.

LED
Light-Emitting Diode. An indicator light.

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.

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

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.

preset
A stored 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.

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.

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

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

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

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

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

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

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:

CE

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

Photo Credits

This guide may include some or all of these photos.

European Space Agency (ESA) astronaut Samantha Cristoforetti, a Flight Engineer with Expedition 42, photographs the Earth through a window in the Cupola on the International Space Station
By NASA - https://blogs.nasa.gov/ISS_Science_Blog/2015/03/06/women-in-space-part-two-whats-gender-got-to-do-with-it/, Public Domain, https://commons.wikimedia.org/w/index.php?curid=38834990

Carl Sagan, Bruce Murray, Louis Friedman (founders) and Harry Ashmore (advisor), on the occasion of signing the papers formally incorporating The Planetary Society
By credit NASA JPL - JPL, Public Domain, https://commons.wikimedia.org/w/index.php?curid=1180927

Main Control Room / Mission Control Room of ESA at the European Space Operations Centre (ESOC) in Darmstadt, Germany
By European Space Agency - ESOC flickr, Credit: ESA - Jürgen Mai, CC BY-SA 3.0-igo, https://commons.wikimedia.org/w/index.php?curid=36743173

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.
By NASA - https://www.flickr.com/photos/nasa2explore/16166230844/, Public Domain, https://commons.wikimedia.org/w/index.php?curid=38931301

European Space Agency astronaut Luca Parmitano, Expedition 36 flight engineer, outside the International Space Station
By NASA - http://spaceflight.nasa.gov/gallery/images/station/crew-36/html/iss036e016704.html, Public Domain, https://commons.wikimedia.org/w/index.php?curid=27263573

Chris Cassidy, Luca Parmitano, and Karen Nyberg, ISS, 2013. Photo Credit: NASA

Nicolas Altobelli, Rosetta Scientist at ESA's European Space Astronomy Centre, Villanueva de la Cañada, Madrid, Spain
By European Space Agency - Nicolas Altobelli talks to the media, CC BY-SA 3.0-igo, https://commons.wikimedia.org/w/index.php?curid=36743144

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.
By European Space Agency - Live update from the Main Control Room, CC BY-SA 3.0-igo, https://commons.wikimedia.org/w/index.php?curid=36743150

Sleeping goose
By ladypine - Own work, CC BY-SA 3.0, https://commons.wikimedia.org/w/index.php?curid=1695227

By Rick Dikeman - Image:Wayne Gretzky 1997.jpg, CC BY-SA 3.0, https://commons.wikimedia.org/w/index.php?curid=945698

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

Index

Vaddio is a brand of Legrand AV Inc. · www.legrandav.com · Phone 800.572.2011 / +1.763.971.4400 · Fax +1.763.971.4464 · Email av.vaddio.support@legrand.com

Visit us at www.legrandav.com for firmware updates, specifications, drawings, manuals, technical support information, and more.

A brand of legrand®

Commercial AV Brands Chief | Da-Lite | Middle Atlantic | Projecta | Vaddio

vaddio®