vaddio

Complete Manual for

ConferenceSHOT AV
Enterprise-Class Conferencing System

Contents

Overview

This guide covers the ConferenceSHOT™ AV system – a camera and detachable speaker available in silver/black or white, together or separately, with or without microphones and a variety of other accessories.

What's in this Guide

This guide covers
- Unpacking and installation
- The system's physical features
- Configuration and system administration
- Controlling the camera using the IR remote or web interface
- Controlling the camera using Telnet commands
- Specifications
- Troubleshooting and maintenance
- Warranty and 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 ConferenceSHOT AV Enterprise-Class Conferencing System**.

Download manuals, dimensional drawings, and other information from www.vaddio.com/support.

Features

- Integrated HD camera and audio system ideal for huddle rooms and small to medium conference rooms
- Audio inputs for two Vaddio MicPOD table or ceiling microphones
- Audio output for optional matching speaker – or integrate into existing audio infrastructure
- 2.14 Megapixel effective, native 1080p/60 full HD image sensor
- 10x optical zoom, horizontal field of view of 74° in super-wide mode
- Simultaneous uncompressed USB 3.0 and IP (H.264) video + full-duplex audio streaming
- Selectable IP stream resolution; USB stream resolution auto-negotiated with conferencing client
- Precise pan and tilt movements at up to 90° per second
- Universal Video Class (UVC) and Universal Audio Class (UAC) drivers supported in Windows®, Mac® OS, and Linux operating systems, compatible with most UC conferencing applications
- Presenter-friendly IR remote control
- Integration-ready Telnet control
- Enterprise-class IT administrative capabilities with full web controls for remote management

Unpacking the Conferencing System

Make sure you received all the items you expected. Here are the packing lists for the ConferenceSHOT AV system.

Caution:
Use the power supply shipped with 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.

ConferenceSHOT AV camera kit

North America: 999-9995-000 (black/silver) or 999-9995-000W (white)

Europe and UK: 999-9995-001 (black/silver) or 999-9995-001W (white)

Australia and New Zealand: 999-9995-009 (black/silver) or 999-9995-009W (white)
- ConferenceSHOT AV system camera
- Vaddio IR Remote Commander
- PoE+ mid-span power injector with AC cord set(s)
- Cat-5e cable, 10 ft (3 m)
- USB 3.0 cable, 6 ft (1.8 m)
- HDMI cable, 6 ft (1.8 m)
- 4-contact Molex connector
- Thin profile wall mount with mounting hardware

ConferenceSHOT AV speaker kit

All locales: 998-9995-003 (black) or 998-9995-003W (white)
- System speaker
- Rail mount kit (mounts to the camera or its mount)
- Cable to system camera, 6 in. (15 cm)

HDMI audio embedder kit

All locales: 999-9995-004
- HDMI audio embedder
- Audio interface module
- ConferenceSHOT AV speaker cable
- HDMI cable
- Audio interface to HDMI audio embedder patch cable, 4 ft (1.2 m)
- Power cable, 4 ft.(1.2 m)

ConferenceSHOT AV system with single ceiling microphone

North America: 999-9995-100 (black/silver) or 999-9995-100W (white)

Europe and UK: 999-9995-101 (black/silver) or 999-9995-101W (white)

Australia and New Zealand: 999-9995-109 (black/silver) or 999-9995-109W (white)
- ConferenceSHOT AV system camera kit, including:
  - ConferenceSHOT AV system camera
  - Vaddio IR Remote Commander
  - PoE+ mid-span power injector with AC cord set(s)
  - USB 3.0 A to B cable, 6 ft (1.8 m)
  - Cat-5e cable, 10 ft (3 m)
  - HDMI cable, 6 ft (1.8 m)
  - 4-contact Molex connector
  - Thin profile wall mount with mounting hardware
- ConferenceSHOT AV system speaker kit, including:
  - ConferenceSHOT AV system speaker
  - ConferenceSHOT AV speaker cable
  - Rail mount kit (mounts to the camera or its mount)
- One EasyMIC MicPOD ceiling microphone, white

ConferenceSHOT AV system with two ceiling microphones

North America: 999-9995-200 (black/silver) or 999-9995-200W (white)

Europe and UK: 999-9995-201 (black/silver) or 999-9995-201W (white)

Australia and New Zealand: 999-9995-209 (black/silver) or 999-9995-209W (white)
- ConferenceSHOT AV system camera kit, including:
  - ConferenceSHOT AV system camera
  - Vaddio IR Remote Commander
  - PoE+ mid-span power injector with AC cord set(s)
  - USB 3.0 A to B cable, 6 ft (1.8 m)
  - Cat-5e cable, 10 ft (3 m)
  - HDMI cable, 6 ft (1.8 m)
  - 4-contact Molex connector
  - Thin profile wall mount with mounting hardware
- ConferenceSHOT AV system speaker kit, including:
  - ConferenceSHOT AV system speaker
  - ConferenceSHOT AV speaker cable
  - Rail mount kit (mounts to the camera or its mount)
- Two EasyMIC MicPOD ceiling microphones, white

ConferenceSHOT AV system with single tabletop microphone

North America: 999-9995-300 (black/silver) or 999-9995-300W (white)

Europe and UK: 999-9995-301 (black/silver) or 999-9995-301W (white)

Australia and New Zealand: 999-9995-309 (black/silver) or 999-9995-309W (white)

- ConferenceSHOT AV system camera kit, including:
  - ConferenceSHOT AV system camera
  - Vaddio IR Remote Commander
  - PoE+ mid-span power injector with AC cord set(s)
  - USB 3.0 A to B cable, 6 ft (1.8 m)
  - Cat-5e cable, 10 ft (3 m)
  - HDMI cable, 6 ft (1.8 m)
  - 4-contact Molex connector
  - Thin profile wall mount with mounting hardware
- ConferenceSHOT AV system speaker kit, including:
  - ConferenceSHOT AV system speaker
  - ConferenceSHOT AV speaker cable
  - Rail mount kit (mounts to the camera or its mount)
- One EasyMIC MicPOD tabletop microphone

ConferenceSHOT AV system with two tabletop mics

North America: 999-9995-400 (black/silver) or 999-9995-400W (white)

Europe and UK: 999-9995-401 (black/silver) or 999-9995-401W (white)

Australia and New Zealand: 999-9995-409 (black/silver) or 999-9995-409W (white)

- ConferenceSHOT AV system camera kit, including:
  - ConferenceSHOT AV system camera
  - Vaddio IR Remote Commander
  - PoE+ mid-span power injector with AC cord set(s)
  - USB 3.0 A to B cable, 6 ft (1.8 m)
  - Cat-5e cable, 10 ft (3 m)
  - HDMI cable, 6 ft (1.8 m)
  - 4-contact Molex connector
  - Thin profile wall mount
- ConferenceSHOT AV system speaker kit, including:
  - ConferenceSHOT AV system speaker
  - ConferenceSHOT AV speaker cable
  - Rail mount kit (mounts to the camera or its mount)
- Two EasyMIC MicPOD tabletop microphones

ConferenceSHOT AV system camera with HDMI audio embedder and one microphone

North America: 999-9995-500 (black/silver) or 999-9995-500W (white)

Europe and UK: 999-9995-501 (black/silver) or 999-9995-501W (white)

Australia and New Zealand: 999-9995-509 (black/silver) or 999-9995-509W (white)

- ConferenceSHOT AV system camera kit, including:
  - ConferenceSHOT AV system camera
  - Vaddio IR Remote Commander
  - PoE+ mid-span power injector with AC cord set(s)
  - USB 3.0 A to B cable, 6 ft (1.8 m)
  - Cat-5e cable, 10 ft (3 m)
  - HDMI cable, 6 ft (1.8 m)
  - 4-contact Molex connector
  - Thin profile wall mount with mounting hardware
- HDMI audio embedder kit, including:
  - HDMI audio embedder
  - Audio interface module
  - ConferenceSHOT AV speaker cable
  - Audio interface to HDMI audio embedder patch cable, 4 ft (1.2 m)
  - HDMI cable
  - Power cable, 4 ft.(1.2 m)
- One EasyMIC MicPOD tabletop microphone

ConferenceSHOT AV system camera with HDMI audio embedder and two microphones

North America: 999-9995-600 (black/silver) or 999-9995-600W (white)

Europe and UK: 999-9995-601 (black/silver) or 999-9995-601W (white)

Australia and New Zealand: 999-9995-609 (black/silver) or 999-9995-609W (white)

- ConferenceSHOT AV system camera kit, including:
  - ConferenceSHOT AV system camera
  - Vaddio IR Remote Commander
  - PoE+ mid-span power injector with AC cord set(s)
  - USB 3.0 A to B cable, 6 ft (1.8 m)
  - Cat-5e cable, 10 ft (3 m)
  - HDMI cable, 6 ft (1.8 m)
  - 4-contact Molex connector
  - Thin profile wall mount with mounting hardware
- HDMI audio embedder kit, including:
  - HDMI audio embedder
  - Audio interface module
  - ConferenceSHOT AV speaker cable
  - Audio interface to HDMI audio embedder patch cable, 4 ft (1.2 m)
  - HDMI cable
  - Power cable, 4 ft.(1.2 m)
- Two EasyMIC MicPOD tabletop microphones

ConferenceSHOT AV system camera with one ceiling microphone

North America: 999-9995-700 (black/silver) or 999-9995-700W (white)

Europe and UK: 999-9995-701 (black/silver) or 999-9995-701W (white)

Australia and New Zealand: 999-9995-709 (black/silver) or 999-9995-709W (white)

- ConferenceSHOT AV system camera kit, including:
  - ConferenceSHOT AV system camera
  - Vaddio IR Remote Commander
  - PoE+ mid-span power injector with AC cord set(s)
  - USB 3.0 A to B cable, 6 ft (1.8 m)
  - Cat-5e cable, 10 ft (3 m)
  - HDMI cable, 6 ft (1.8 m)
  - 4-contact Molex connector
  - Thin profile wall mount with mounting hardware
- One EasyMIC MicPOD ceiling microphone

ConferenceSHOT AV system camera with two ceiling microphones

North America: 999-9995-800 (black/silver) or 999-9995-800W (white)

Europe and UK: 999-9995-801 (black/silver) or 999-9995-801W (white)

Australia and New Zealand: 999-9995-809 (black/silver) or 999-9995-809W (white)

- ConferenceSHOT AV system camera kit, including:
  - ConferenceSHOT AV system camera
  - Vaddio IR Remote Commander
  - PoE+ mid-span power injector with AC cord set(s)
  - USB 3.0 A to B cable, 6 ft (1.8 m)
  - Cat-5e cable, 10 ft (3 m)
  - HDMI cable, 6 ft (1.8 m)
  - 4-contact Molex connector
  - Thin profile wall mount with mounting hardware
- One EasyMIC MicPOD ceiling microphone

Download manuals, dimensional drawings, and other information from www.vaddio.com/support.

A Quick Look at the System

This section covers the physical features of the ConferenceSHOT AV system.

Front of the Camera

Camera and zoom lens: The ConferenceSHOT 10 camera features a 10X optical zoom lens (11X in Super-Wide mode).

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.
- Blue – Camera is active
- Red – Tally
- Purple – Standby mode or booting
- Yellow – Firmware update is in progress
- Blinking blue – Video mute is on (Pro A/V color scheme) or USB cable is disconnected (UC color scheme)
- Blinking red – Tally; video mute is on
- Blinking yellow – Motor out of calibration
- Blinking purple – Error

Speaker: Far-end audio for small conference rooms.

Back of the Camera

- **Network PoE+** – 10/100/1000 Ethernet port; IP streaming and control via web interface
- **USB 3.0** – Type B media device connector; streams uncompressed UVC standard video and UAC standard audio
- **EasyMIC ports** – Connect up to two Vaddio EasyMIC microphones
- **Audio output** – Line level differential audio and 12 VDC power output to the optional amplified speaker or other audio infrastructure

Back of the Speaker

Use the provided speaker cable to connect the speaker to the camera.

Installation

This section covers:
- Selecting the location for the camera
- Installing the mount
- Connecting the camera (and speaker, if purchased)
- Mounting the camera (and speaker, if purchased)

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

Before You Install the Camera

- Choose a mounting location that will optimize camera performance. Consider camera viewing angles, lighting conditions, line-of-sight obstructions, and in-wall obstructions where the camera is to be mounted.
- Ensure that the camera body can move freely and will normally point away from the ceiling and lights. The camera will not perform well if it is pointed toward a light source such as a light fixture or window.
- Follow the installation instructions included with the camera mount.

Don't Void Your Warranty!

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

Use only the power supply included with this product. Using a different one will void the warranty, and could create unsafe operating conditions or damage the product.

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

Cabling Notes

For RJ-45 connections, use Cat-5e or better cable and high-quality standard RJ-45 connectors.

Note
Use standard RJ-45 connectors and a good crimping tool. Do not use pass-through RJ-45 connectors. Poorly crimped connectors can damage the connectors on the product, cause intermittent connections, and degrade signal quality. Test cable pin-outs and continuity before connecting them.

Intact – will make reliable contact with cable connector

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

Pro Tip
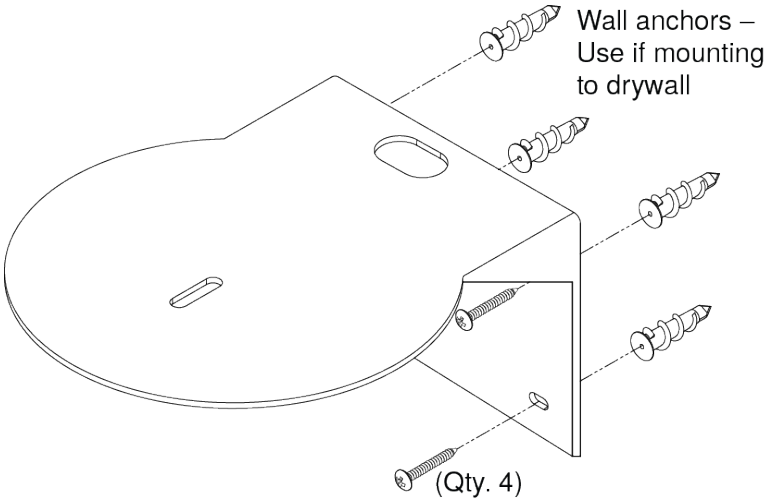*Label all cables at both ends.*

Installing the Thin Profile Wall Mount

All ConferenceSHOT cameras include a wall mount. Other mounting options are available as well. Contact us if you don't have the camera mount you need.

If you install the camera wall mount to drywall, use the wall anchors provided with the mount.

Wall anchors –
Use if mounting
to drywall

(Qty. 4)

Basic Connections

Here is an example of how the camera might be set up in a medium-size conference room. In this setup, a PC uses a unified communications conferencing application to manage the camera and connected microphones and speaker.
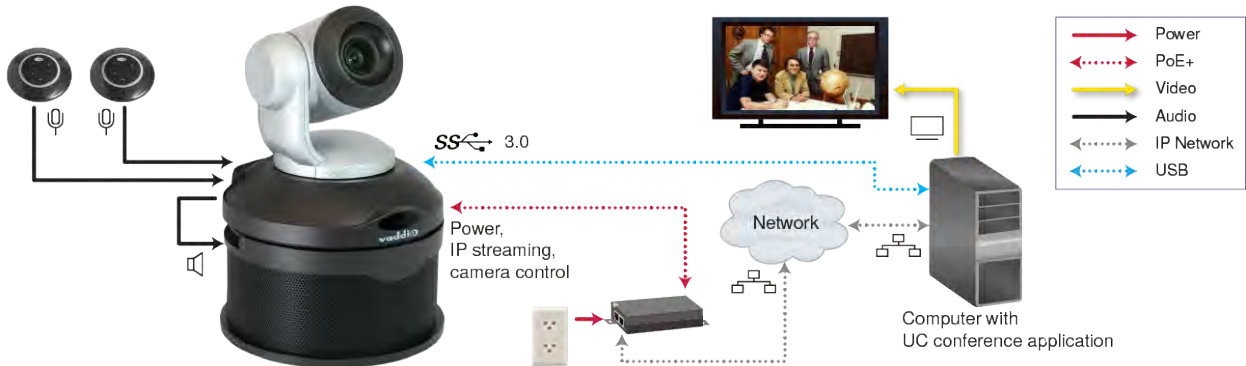
The camera can also be connected without the speaker, using an HDMI audio embedder to include the far-end audio in the HDMI output. This allows you to use a display with integrated speakers.

This product is intended for installation and use only in environments where all PoE/PoE+ connections originate within the building. It is not to be connected to lines that run outside the building where it is installed.

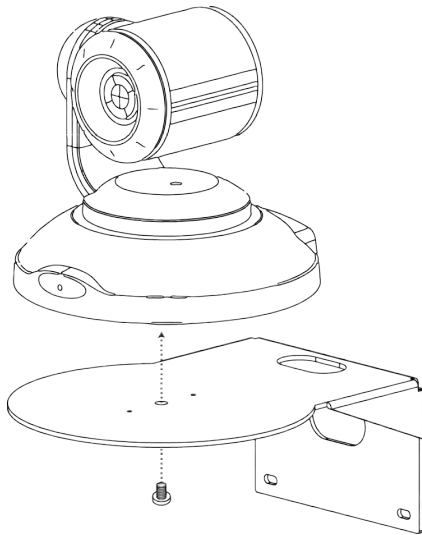## Installing the Camera (No Speaker)

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 Cat-5 cables for continuity before using them. Using the wrong pin-out may damage the camera system and void the warranty. Pro tip: Label your cables.

1. Route the cables through the opening in the mounting shelf.
2. Connect all required cables to the camera.
3. Secure the camera to the mounting shelf using the mounting screw (¼-20 x .375 in.) supplied with the camera.

Installing the Camera and Speaker

1. If you are adding a speaker to a previously-installed ConferenceSHOT AV camera, remove its mounting screw.
2. Place the camera on the mounting shelf if you have not already done so.
3. Secure the speaker rail, gasket, and camera to the mounting shelf with the 0.5 in. 1/4-20 flathead screw.
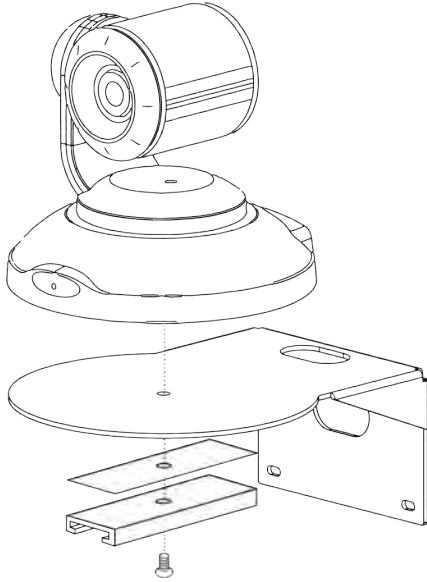
4. Connect the speaker cable (power and line level signal) to the speaker.
5. Slide the speaker into place.
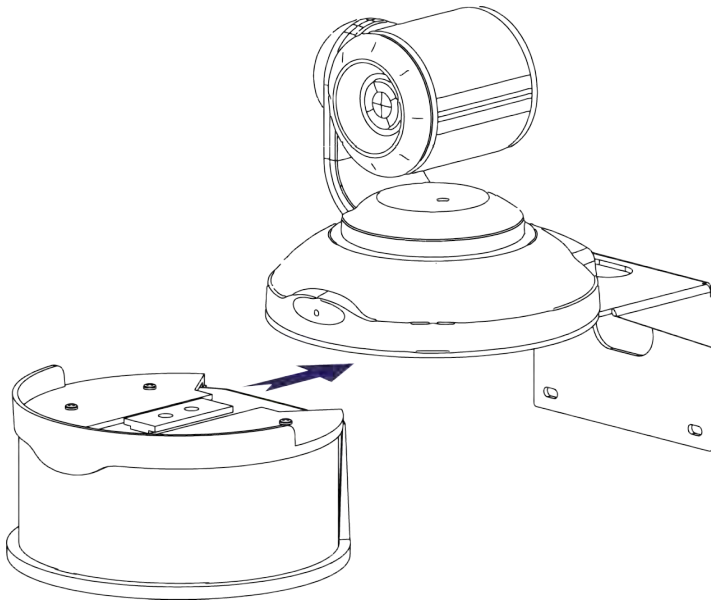
Note
If the camera is jostled or bumped, it may require a pan-tilt reset.

Powering Up the System

Connect camera power.

The camera will initialize and move. This will take a few seconds. When an image is available, the camera is ready to accept control information.

Status 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 – Video mute is on (Pro A/V color scheme) or USB cable is disconnected (UC color scheme)
- Blinking yellow – Motor out of calibration
- Blinking purple – Error

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 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 indicator light is off.

Using the Remote Control

The remote provides basic camera control.

Quick Reference

What do you need to do?	Button(s)
Power on or standby	**Power** (green button at top right)
Select the camera to control (if this remote controls more than one)	**Camera Select** buttons 1 through 3 (second row on the remote)
Discover the camera's IP address	**Data Screen** button (top left) – press and hold for 3 seconds
Move the camera	Arrow buttons and **Home** button (dark red)
Move the camera to a preset position	**Position Preset** buttons 1 through 6 (bottom two rows)
Focus the camera	**Auto Focus** button (near arrow buttons) **Manual Focus** buttons **Near** and **Far** (below Zoom Speed buttons)
Mute the microphone(s)	**Mic Mute** button (center)
Change the speaker volume	**Volume** buttons (center left)
Change zoom	**Zoom** buttons – **T** (telephoto) to zoom in and **W** (wide-angle) to zoom out.modes (center right)
Adjust for excess light behind the camera's subject	**Back Light** button (top center)
Correct a motor calibration fault condition (blinking yellow light)	**Pan-Tilt Reset** button (center right, beside arrow buttons)

Details

The remote provides the following functions:

Data Screen – 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.

Back Light – Use or turn off back light compensation.

Camera Select – In multi-camera installations, selects the camera to be controlled. See Camera Switch Settings for information on configuring the camera as camera 1, 2, or 3.

Pan/Tilt (arrow button) controls and Home button – Control the camera's position.

Std. Pan and Rev. Pan – Control how the camera responds to the arrow buttons. Helpful for ceiling-mounted cameras and installations where the camera will point at the person using the remote.

Pan/Tilt Reset – Recalibrate the pan and tilt motors. If the camera gets jostled, you may need to push this button to ensure that the camera moves accurately to its home and preset positions.

Auto Focus – Switch the camera to Auto-Focus mode.

Volume Increase and Decrease – Control the speaker volume.

Mic Mute – Stop sending audio.

Zoom – Select **T** (telephoto) to zoom in or **W** (wide-angle) to zoom out.

Manual Focus – Switch the camera to Manual Focus mode.

Near (-) adjustment – Moves the focus nearer when in manual focus mode.

Far (+) adjustment – Moves the focus farther when in manual focus mode.

Position Presets 1 through 6 – Move the camera to a predefined position.

Preset – Save the camera's current position as one of the numbered presets.

Reset – Clear the saved position presets.

Storing a Preset Using the Remote

Set up the shot using the pan, tilt, and zoom controls. Then hold down the **Preset** button and press one of the numbered preset buttons.

Clearing a Preset Using the Remote

Press and hold the **Reset** button while pressing the preset number you want to clear.

Web Interface

The camera's web interface allows control via a network connection, using a browser. Password-protected pages provide administrative access to tasks such as setting passwords, changing the IP address, viewing diagnostics, and installing firmware updates. The user login (or guest access, if it is enabled) provides access to camera controls similar to those available from the IR remote.

You will need to know the camera's IP address to use the web interface. If the LAN has a DHCP server, the camera will get its IP address, gateway and routing information automatically and you will be able to browse to it. If not, you will need to configure the camera to use a static IP address.

To display 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. The camera is available as a capture device.
3. Play the video capture from the camera.
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 has already been configured and video is available, all you need to do is use the remote.

If the address is 169.254.1.1, the camera is using its default IP address and you will need to configure it for your network. You can configure the camera's static IP address either through the network or from a computer connected directly to its Network/PoE+ port. You may need a crossover cable.

Note
Work with your IT department to determine the correct IP address, subnet mask, and gateway information.

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

Browser Support

We have tested this product with these web browsers:
- Chrome®
- Microsoft® Internet Explorer®
- Safari®
- Firefox®

We test using the browser version available from the vendor at that time. Older versions of these browsers are likely to work, and other browsers may also work.

User Access

By default, the web interface opens to the Controls page without requiring a login; but if the administrator has changed the guest access setting, you will need to log in. The default user password is `password`. Only the camera control page is available with user-level access.
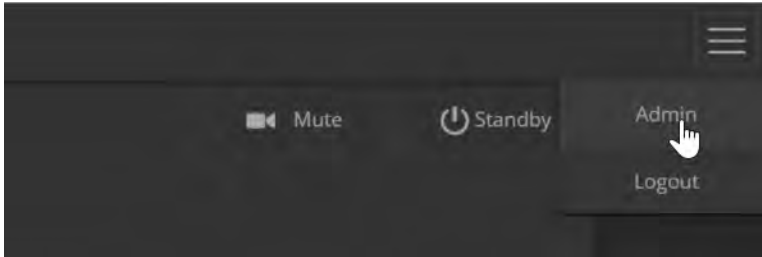

Your camera's Controls page may look somewhat different.

The Controls page for the ConferenceSHOT AV camera includes audio controls

Administrative Access

If you are on the Controls screen, you're logged in at the user level, or guest access is enabled and you're not logged in at all. Open the menu to log in as admin.

The default admin password is `password`.

Logging in as Admin gives you access to configuration and system administration tasks:
- Camera – Additional control over camera behavior related to camera zoom and color management.
- Audio – Control and adjust audio inputs and outputs individually
- Control Devices – Define actions and sequences to execute via third-party control devices.
- Streaming – USB device settings and IP (H.264) streaming.
- Room Labels – Information to display on the web interface screens, including the conference room name and phone number and the in-house number for AV assistance.
- Networking – Ethernet configuration.
- Security – Set passwords and manage guest access.
- Diagnostics – View or download logs when troubleshooting issues.
- System – View firmware version and hardware switch settings, access soft DIP switches, reboot, restore factory defaults, and run firmware updates.
- Help – Tech support contact information and a link to the product information library on the Vaddio website.
- Logout – Leave the web interface in a password-protected state. If guest access is on, this returns the web interface to the Controls page at guest access level.

Web Interface Quick Reference

Where to find the controls you need right now.

What do you need?	Go to this page
Camera operation ■ Stop sending video (video mute) ■ Enter or exit standby mode	(any page)
Camera operation ■ Move or zoom the camera ■ Set the speed for pan, tilt, or zoom motions ■ Focus the camera (Focus button reveals the focus control) ■ Move to a camera preset ■ Enter or exit standby mode	Controls (User or guest access page) Camera (when logged in as admin)
Audio operation ■ Mute the microphones ■ Silence the speaker ■ Set speaker volume ■ Set microphone volume	Controls (User or guest access page)
Camera behavior ■ Set motors for inverted operation (Settings button reveals the control) ■ Set or clear camera presets	Camera Controls (guest access page)
Camera behavior ■ Specify whether to use automated adjustments (auto-iris, auto white balance, backlight compensation)	Camera Settings
Camera behavior ■ Normal or super-wide mode ■ Status light color scheme (Pro A/V or UC) ■ UVC-Compliant or Client Custom USB streaming ■ Image flip ■ IR frequency – respond to the IR remote as camera 1, 2, or 3	System: DIP Switches
Camera adjustments ■ Color settings (Iris, iris gain, red gain, blue gain, detail, chroma, gamma) ■ Specify global speed settings for camera movements	Camera Settings
Camera adjustment: Recalibrate pan and tilt motors	System : Firmware
Access management ■ Guest access ■ Account passwords ■ Automatic logout for idle sessions	Security
USB and IP streaming settings	Streaming
Other IP settings ■ Hostname ■ DHCP or static addressing ■ Static: IP address, subnet mask, gateway	Networking

What do you need?	Go to this page
Date and time, time zone, and NTP server	Networking

Information about the camera
  ■ Room location and phone number
  ■ Help desk phone number
	Room Labels

Reboot or reset to factory defaults	System: Firmware

Firmware
  ■ Current version information
  ■ Save (export) and restore (import) configuration
  ■ Firmware update (system)
	System: Firmware

Firmware update (microphones)	System: Peripherals
Vaddio Technical Support contact information	Help
Diagnostic logs	Diagnostics

Compact Menu View

By default, the navigation buttons in the administrative interface display an icon and a text label.

The web interface provides a compact view of the menu buttons along with the standard view. The button at the bottom of the menu toggles between the two views.

System Administration

Administrative tasks are on these pages:

- Networking – Network configuration, date/time, and time zone settings
- Security – Passwords, guest access, other IT security-related settings
- Room Labels – Helpful information to display in the web interface
- System – Controls to reboot, reset to factory defaults, and run firmware updates
- Help – Contact information for Vaddio Technical Support and links to more information
- Diagnostics – Logs to help Vaddio Technical Support troubleshoot issues

Configuring Network Settings

NETWORKING PAGE

Caution

Consult your IT department before editing network settings. Errors in network configuration can make the camera and its IP stream 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.

Editable network settings include:
- The camera's hostname
- Choice of static IP addressing or DHCP addressing
- IP address, subnet mask, and gateway, if static IP addressing is used

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

DHCP is the default setting, but the camera will use the default address of 169.254.1.1 if no DHCP server is available. You will only be able to enter the IP address, subnet mask, and gateway if you set IP Address to Static.

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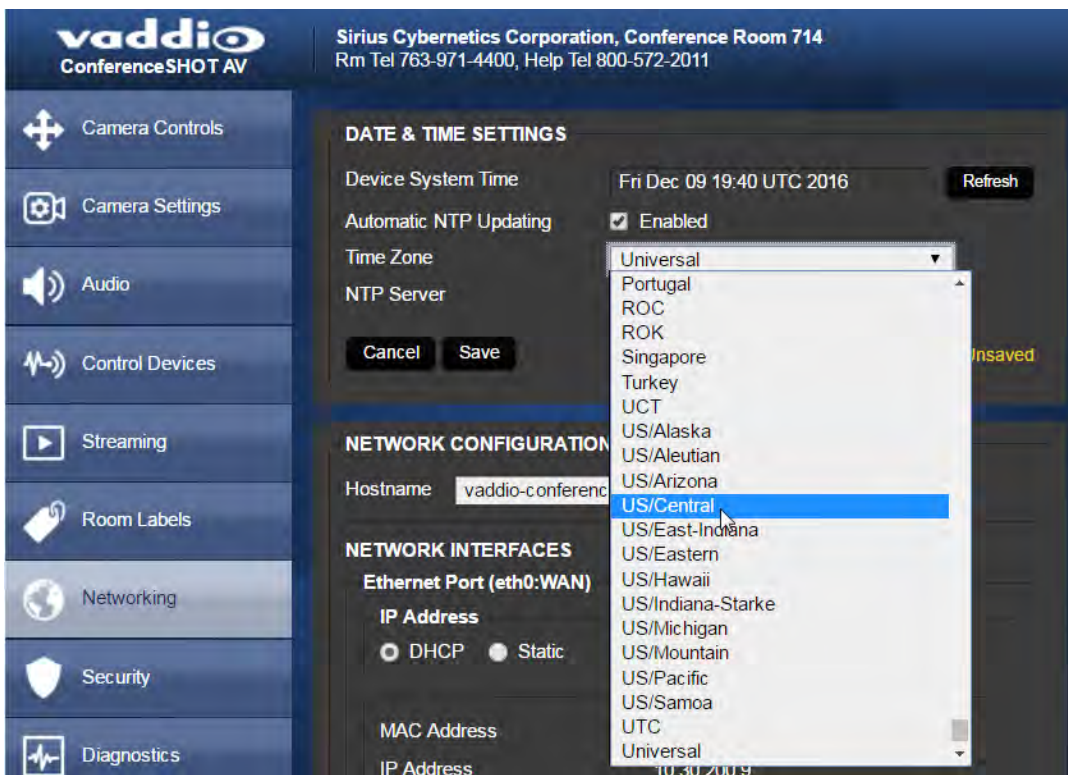
Managing Access and Passwords

Things you can do on this page:
- Allow people to access the Controls screen without logging on (Allow Guest Access) – this is enabled by default
- Set whether inactive sessions log off automatically or not (Automatically Expire Idle Sessions) – by default, inactive sessions expire after 30 minutes
- Change the password for the admin account (default is `password`)
- Change the password for the user account (default is `password`)
- Disable Telnet access

The Security page also provides advanced settings for web access, to configure the camera to comply with your organization's network security policies.

Note
For best security, Vaddio strongly recommends changing the user and admin passwords. *Using the default passwords leaves the product vulnerable to tampering. Be sure you have a way to remember the passwords after changing them.*

Advanced settings include:
- Use HTTPS connection/Use HTTP connection
- HTTP Access Enabled (selected by default)
- Manage SSL Certificate

Note
Consult your IT department before disabling Telnet access or making any changes to the Advanced settings.
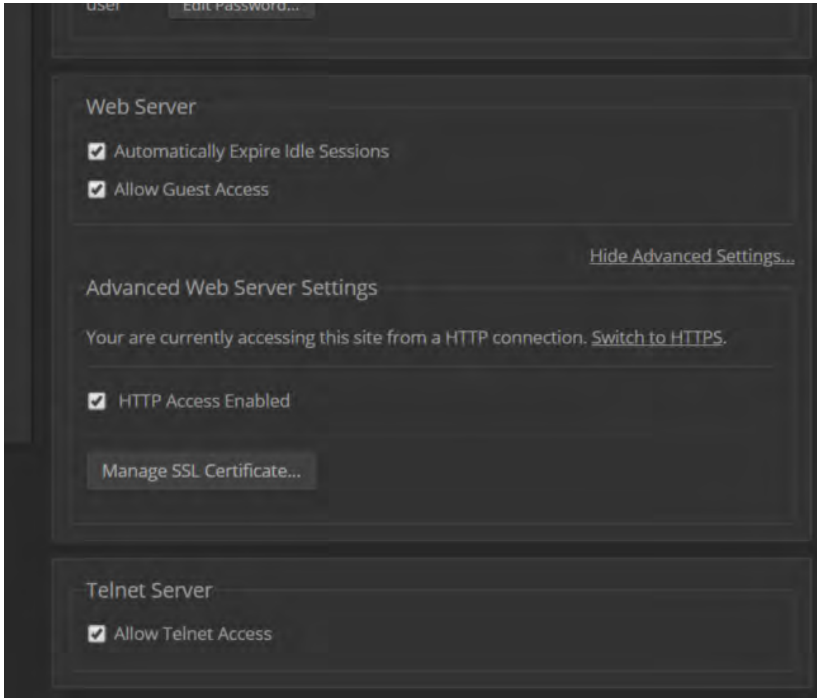
Adding Room Information to the Screen

ROOM LABELS PAGE

Enter your organization's name, the conference room name and phone number, and the number for people to call for in-house A/V support. This information is displayed on every page of the web interface.

Rebooting the Camera

SYSTEM PAGE, FIRMWARE TAB

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

Saving or Restoring a Configuration

SYSTEM PAGE, FIRMWARE TAB

If you need to configure several cameras the same way, you can configure the first one, export its configuration, and then import the configuration to the other cameras. The export downloads to your computer as a `.dat` file. The filename is the camera's hostname.

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

Starting a Firmware Update

SYSTEM PAGE, FIRMWARE TAB

The process to update microphone firmware is the same as for updating the camera.

1. Be sure you have downloaded the appropriate update file to your computer.
2. If you are updating microphone firmware, go to the Peripherals tab.
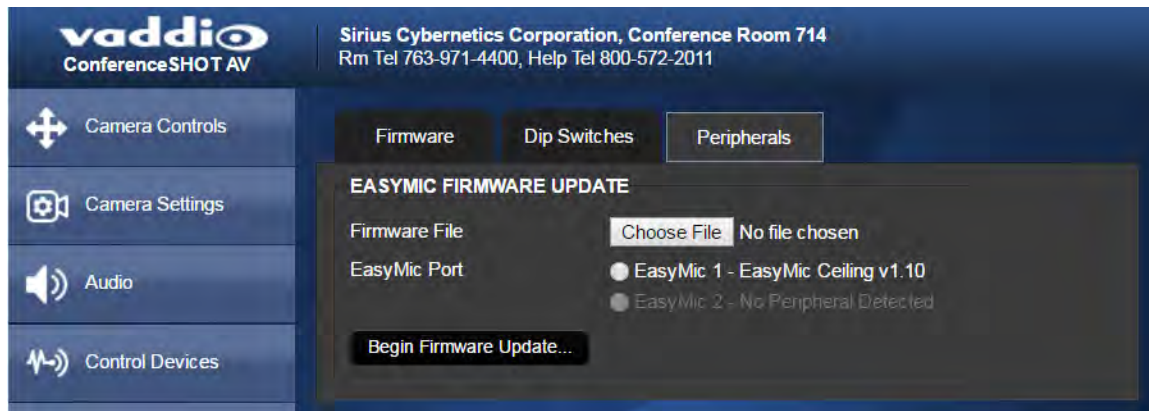
3. If you are updating microphone firmware, select the appropriate EasyMic port (1 or 2). You can only update one microphone at a time; this selection specifies which EasyMic connector the data will flow through.
4. Select Choose File. In the box that opens, select the update file.

5. Select Begin Firmware Update.
6. READ the information in the Confirm dialog box and be sure you understand it. It may seem boring, but it could save you some time and aggravation.
7. When you are ready to start the update, select Continue. A progress message box opens and the indicator light on the front of the camera turns yellow to show the firmware update is in progress. If the update process presents warnings or error messages, read them carefully.

   The camera reboots when the update is complete.
8. Contact Vaddio Technical Support if you encounter any problems with the update.

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.

Contacting Vaddio Technical Support

HELP PAGE

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

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

Viewing Diagnostic Logs

DIAGNOSTICS PAGE

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.

Configuring Camera Behavior

Basic camera configuration tasks are available on the Camera page:

- Set a custom Home position and other presets
- Adjust for the lighting in the room
- Set pan, tilt, and zoom speeds

Other camera configuration tasks are available on these pages:

- Streaming – USB device settings and IP (H.264) streaming
- System (DIP Switches tab) – How the camera responds to the remote, status light behavior, image flip, and other settings

Additional configuration tasks are on the Camera Settings, Audio, and Control Devices pages.

Enabling or Disabling Streaming

IP and USB streaming are enabled by default. Use the Enable USB Streaming and Enable IP Streaming checkboxes to change this.

Configuring USB Streaming

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 camera:

Check the box marked Enable UVC Extensions.

To allow conferencing applications to control the audio:

Check the Enabled box for HID Audio Controls.

## Configuring IP Streaming

STREAMING PAGE

Note
The web interface presents all the possible streaming resolutions values, but the IP stream cannot be higher than the value set with the video resolution switch on the back of the camera. (See Video Resolution for information on setting the switch.) If the selected value is out of range, the camera will automatically adjust the streaming resolution.

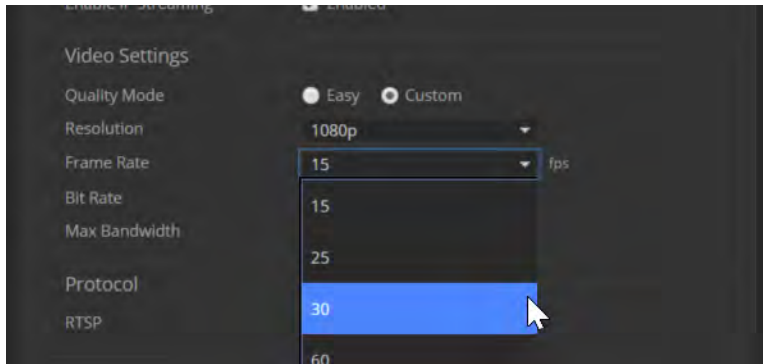If you are not sure about these settings, start with the defaults.

1. Select the video Quality Mode: Easy or Custom. Easy takes care of most settings automatically; Custom provides additional control.

2. Select the desired IP streaming resolution.
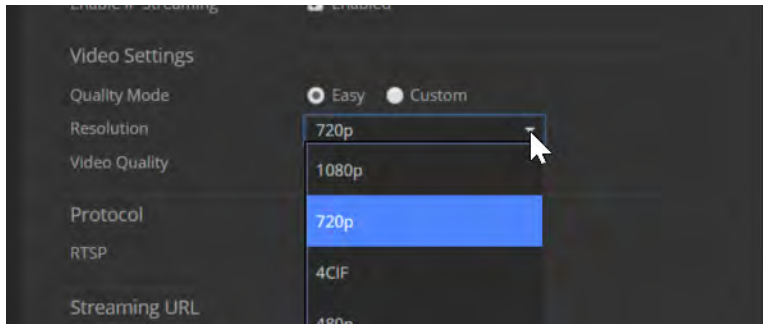
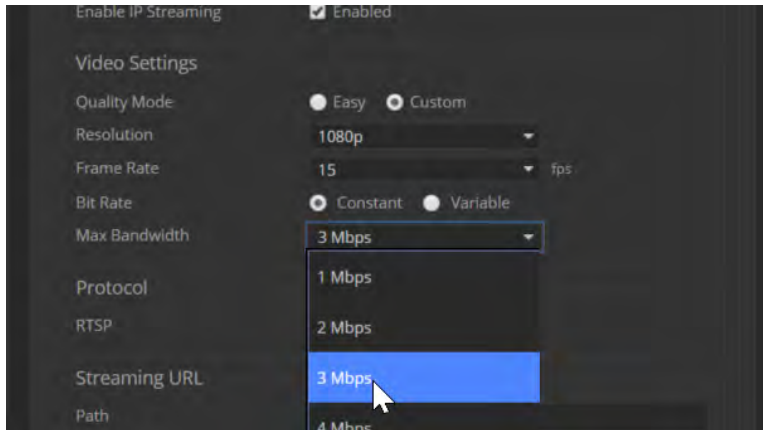3. Easy quality mode only: Select Video Quality.
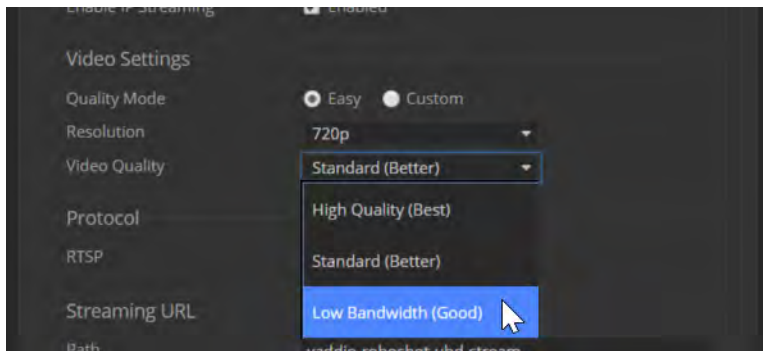
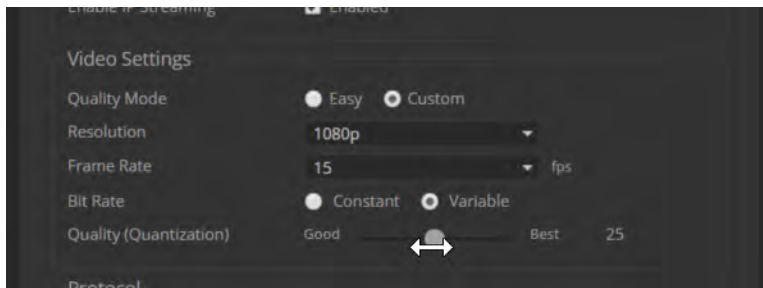4. Custom quality mode only: Select the desired IP streaming frame rate.

5. Custom quality mode only: Select Constant or Variable Bit Rate.

6. Custom quality mode, Constant Bit Rate only: Set Max Bandwidth.

7. Custom quality mode, Variable bit rate only: Set the Quality (Quantization) slider.

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

Advanced IP Streaming Settings

Consult your IT department before changing these.

RTSP port: Vaddio strongly recommends using the default RTSP port number unless you need to change it. Consult your IT department.

Streaming URL: Edit the path to change the portion of the streaming URL that appears after the IP address, if necessary.

Adjusting the Color Settings

Fine-tune the color and lighting as needed using the Color Settings controls.

- **Auto Iris** allows the camera to compensate automatically for the light level. Clear this box to adjust iris and gain manually.
- **Backlight Compensation** (available with Auto Iris) 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 with Auto Iris) 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 between bright areas and shadows.

If you make a change that you don't like, start over by selecting and then deselecting Auto White Balance.

Web Tasks for Administrators: Customizing the Audio

AUDIO PAGE

The web interface provides separate controls for each of the audio inputs (microphones 1 and 2, USB playback) and outputs (line out, IP stream, and USB record).
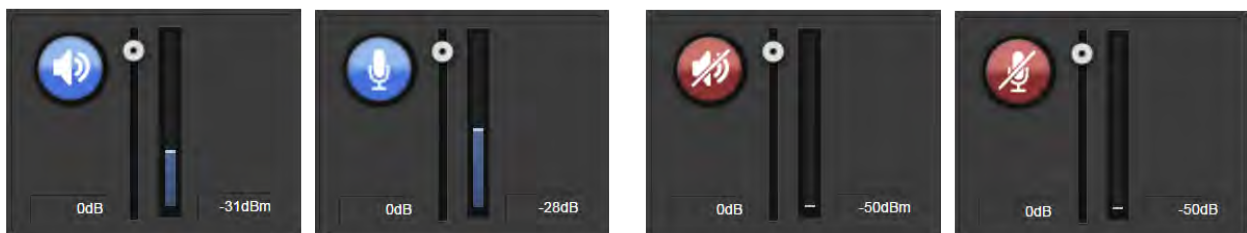
Controlling Volume

To manage individual audio inputs or outputs:

Use the slider for the appropriate audio input or output to set the volume. The audio read-out bar and numeric value can be helpful.

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

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

To control all audio inputs or outputs at once:

Use the Microphone and Speakers controls on the Camera Controls page.

Fine-Tuning

To adjust microphones for best far-end audio performance:

Check or clear the checkboxes for the desired adjustments:

- **Echo Cancellation** – Selected by default. Under most circumstances, echo cancellation is desirable.
- **Noise Cancellation** – Selected by default; suppresses ambient noise such as the conference room's heating/air conditioning.
- **Automatic Gain Control** – Selected by default; adjusts gain to compensate for differences in the volume of people's voices.
- **Mic Boost** – Provides a 3 dB boost.

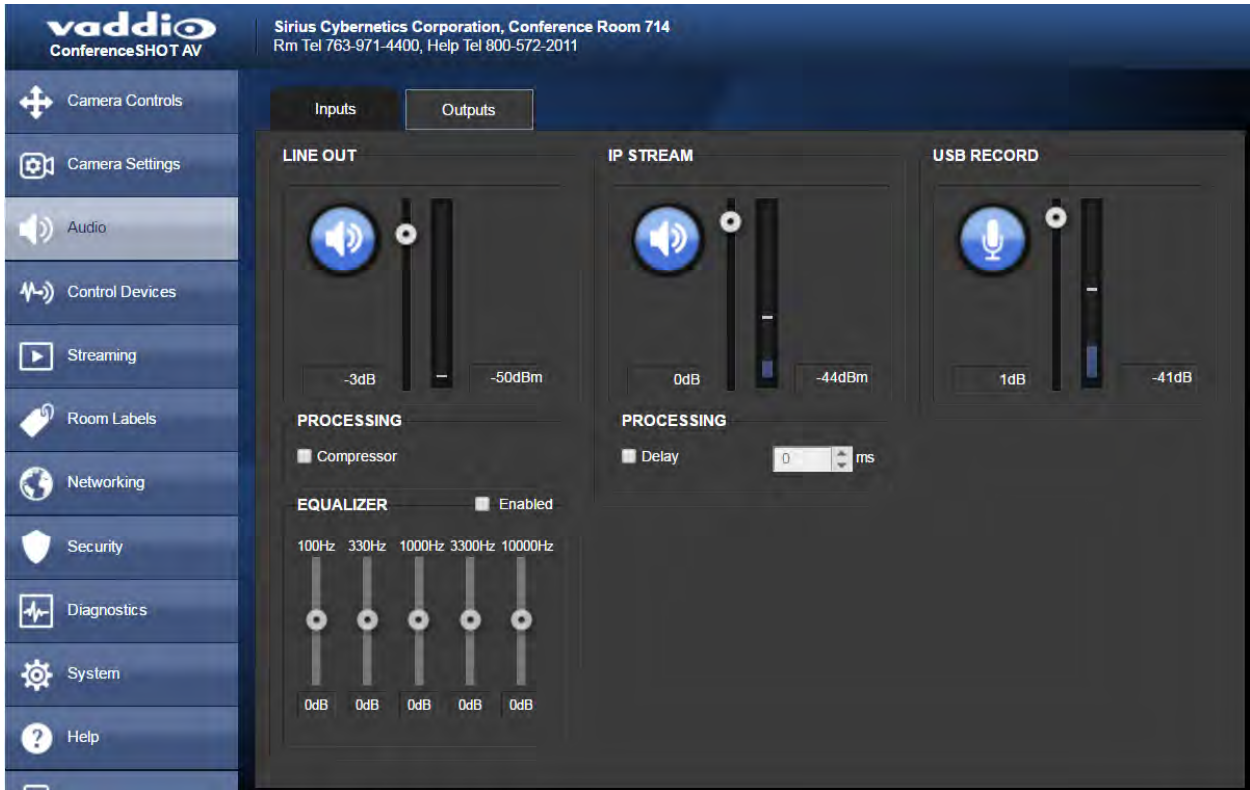**To reduce the dynamic range from the connected speaker:**

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

To adjust for more natural sound:

Use the equalizer to adjust specific frequency ranges.

To sync the sound with the video in the IP stream:

Check the Delay box and enter a delay value in msec.

Web Tasks for Administrators: Setting up Macros and Triggers

Macros define actions or sequences of actions. Triggers can specify a macro to execute when the trigger is activated, and a macro to execute when the trigger is turned off. The 10 software triggers are available via Telnet command, allowing you to program custom functions for third-party control devices. The two One Touch triggers allow you to define responses to Vaddio trigger devices such as StepVIEW mats.

Writing and Editing Macros

CONTROL DEVICES PAGE, MACROS TAB

To define a macro:

1. Enter a name in the Macro Editor's Name field.
2. Enter one or more Telnet commands in the editing area.
3. Optional: Use the Test button to check your work while you are writing the macro.
4. Save your work when you are finished, or select New to start over.

To edit or copy an existing macro:

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

To create a macro that is similar to an existing one, edit the existing macro and use the Save As button. The system prompts you to name the new macro.

Testing Macros

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

Defining and Deleting Triggers

CONTROL DEVICES PAGE, TRIGGERS TAB

To define a trigger:

For the trigger you are defining,
- Optional: Select a macro in the Execute Macro on Enter field. This macro will start when the trigger turns on.
- Optional: Select a macro in the Execute Macro on Exit field. This macro will start when the trigger turns off.

Because triggers are typically invoked programmatically, you cannot rename them.

To delete a trigger:

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

Testing Triggers

CONTROL DEVICES PAGE

The Trigger Testing section is available from both tabs of the Control Devices page. Trigger indicators illuminate to show that the trigger is on.

To test a trigger:

1. Set Test Mode on.
2. Select the trigger to turn on.
3. Select the trigger again to turn it off.

Note
Turn off Test Mode when you are finished testing; otherwise, the triggers are not available to the control device. Diagnostic: If you send a `trigger` *command via Telnet and the command returns an error message, check to see whether Test Mode is on.*
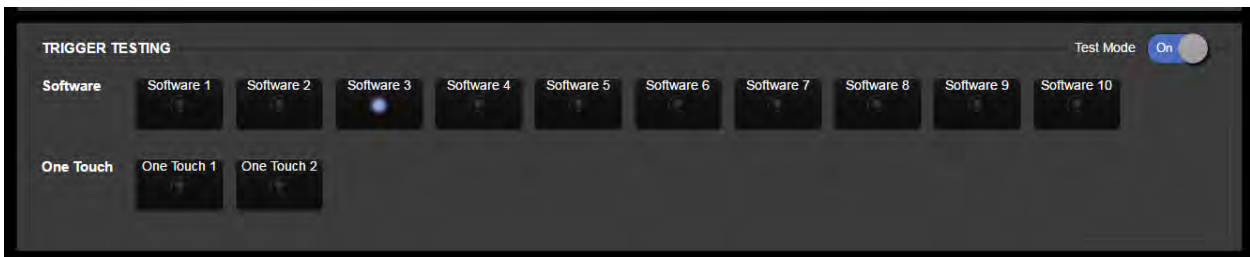
Setting Other Camera Behaviors

The DIP Switches tab of the System page provides access to these features via soft switches:

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

Image Flip – If mounting the camera upside-down, set IMAGE FLIP ON.

Super Wide mode – Provides a wider horizontal field of view and greater zoom. Some distortion may be present.

LED color scheme – Status light color codes for UC (unified conferencing) or Pro AV (broadcast); set to UC by default, to follow the standard for conferencing cameras. At this time, the two color schemes are functionally identical on this camera.

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.

USB stream format (UVC Compliant or Client Custom) – Client Custom enables far-end camera control when used with the Zoom soft client.
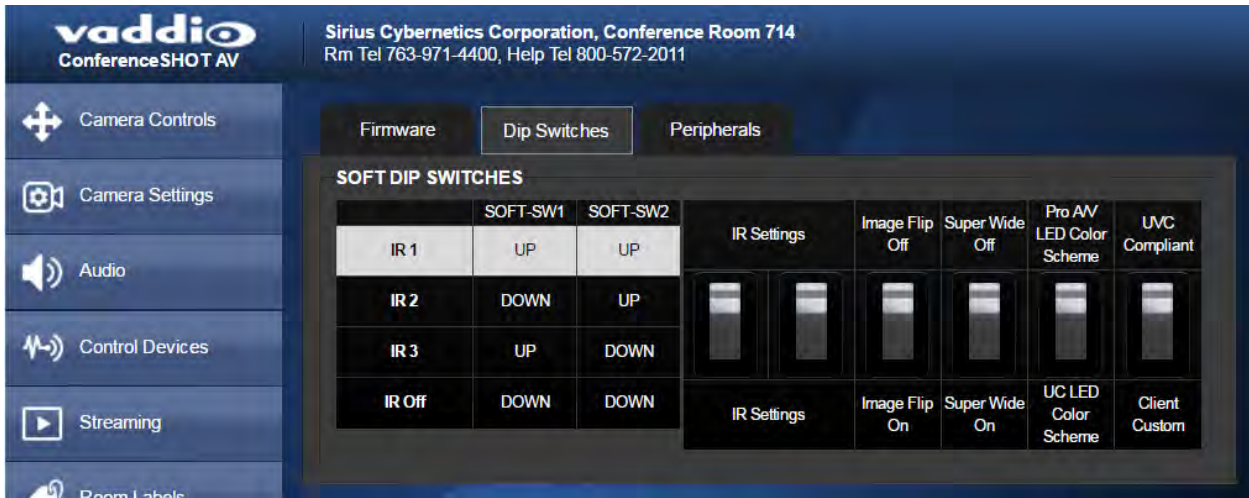
Note

By default, the camera's status 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 indicator light is off.

Operating the Camera

CONTROLS PAGE (USER OR GUEST ACCESS)

The Controls page provides most of the same controls as the IR Remote Commander, along with some that are not available from the remote:

- Pan, tilt, zoom, or return to home position
- Stop or resume transmitting live camera video (video mute)
- Mute or unmute the microphone(s)
- Change the speaker volume
- Put the camera in standby or bring it back to the ready state
- Move 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 mute button does not mute the room's microphones. In video mute mode, the camera transmits blue or black video, with a message that the video is muted.

Muting the Microphones

Use the Microphone button to temporarily stop sending audio.
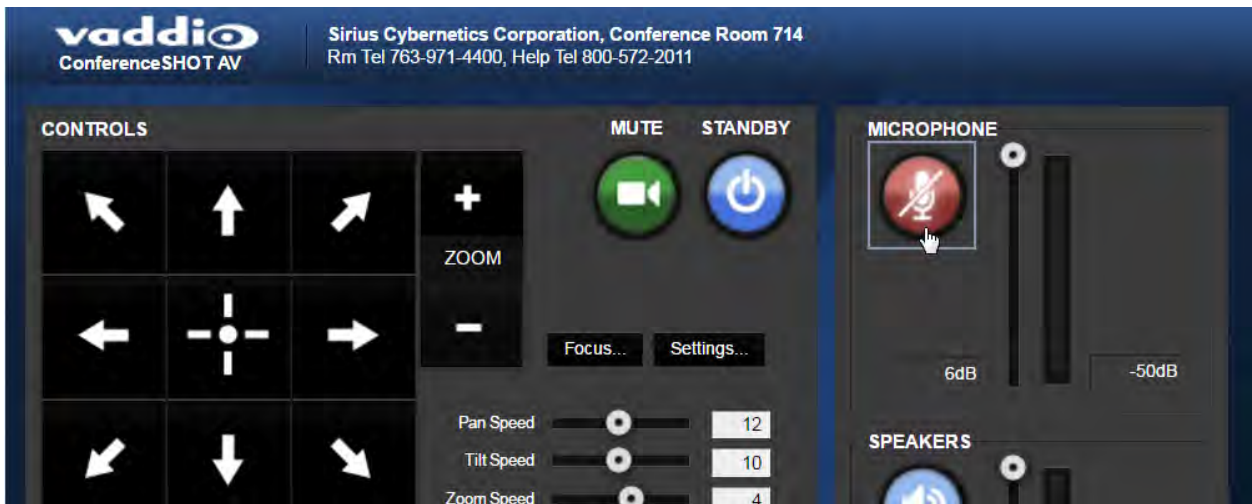
Muting the Speaker

Use the Speaker button to silence the audio from the far end.

Managing the Camera Ready State

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

In standby mode, the button is red and the screen presents the message "Device is in standby." On entering standby mode, the camera pans 90° from center and 30° downward.
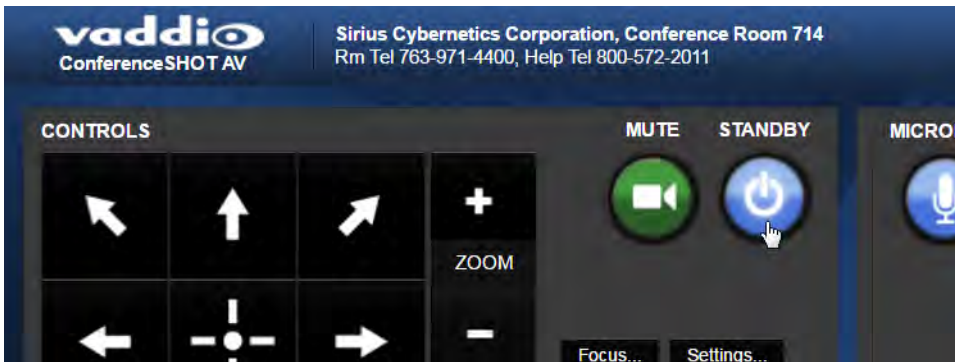
Moving the Camera

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

Zooming In or Out

Use the Zoom + button to zoom in and the Zoom – button to zoom out.
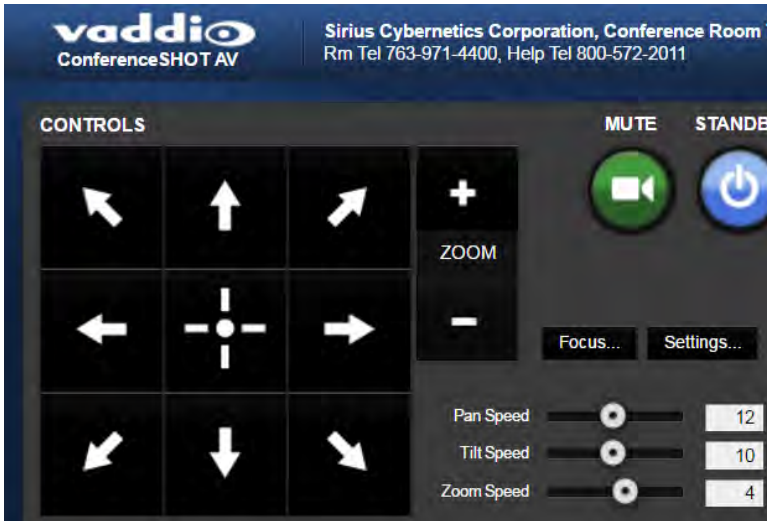
Moving the Camera to a Preset Position

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

Adjusting the Focus

Open the Focus control to select Auto-focus, or to set manual focus with the + (near) and – (far) buttons.
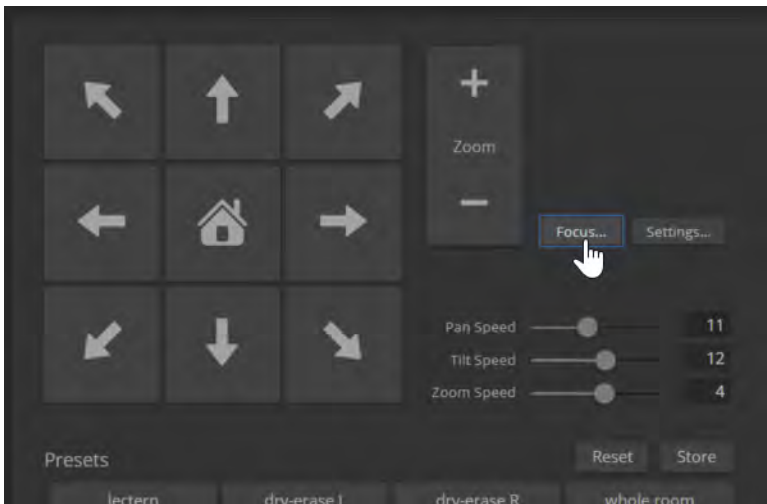
Setting the Speeds of Camera Movements

To set speeds for movements to presets:

In the Global Preset Speeds section, set the speeds for movements to presets.

To set speeds for movements using the arrow buttons:

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

Setting Pan Direction

By default, the arrow buttons move the camera in the direction that viewers at the far end would see. If you face the camera and use the left arrow button, the camera pans to your right.

To switch the camera pan direction to the near end point of view, use the Settings button to open the pan and tilt direction box. Then set Pan Direction to Inverted.
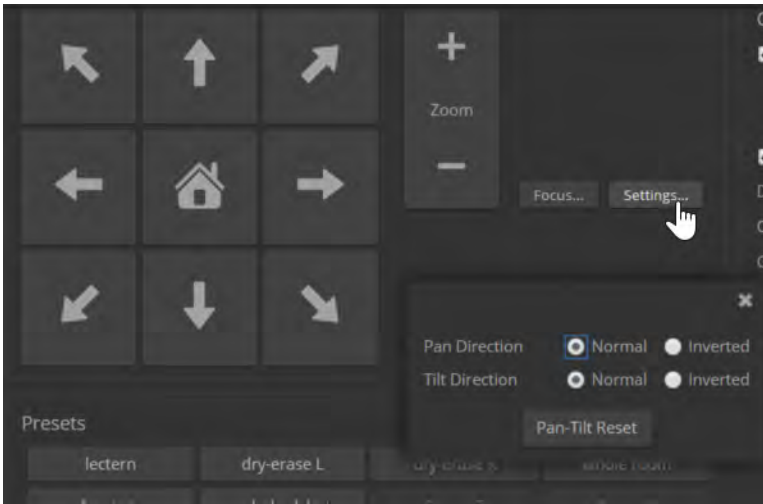
Note
To change tilt direction, please use the soft DIP switch on the System page.

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.

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

The command format follows a get/set structure. Here are some examples:

Command	`camera pan right`
Response	`OK` `>`
Command	`camera focus mode auto`
Response	`OK` `>`
Command	`camera ccu get iris`

Response	`iris    6`
	`OK`
	`>`

Use a question mark as a command parameter to bring up a list of commands, subcommands, or command parameters. For example:
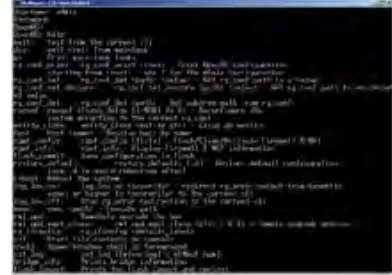
`> camera focus ?`

```
near    Focus the camera near
far     Focus the camera far
stop    Stop the camera focus
mode    Camera focus mode
```

Things you might need to know about control via Telnet session:

- Command lines are terminated with a carriage return.
- All ASCII characters (including carriage returns) are echoed to the terminal program and appended with the VT100 string ESC[J (hex 1B 5B 4A), which most terminal programs automatically strip.
- CTRL-5 Clears the current serial buffer on the device.

Typographical conventions:

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

camera home

Moves the camera to its home position.

Synopsis	camera home

Example	`>camera home`
	`OK`
	`>`

camera pan

Moves the camera horizontally

Synopsis	camera pan { left [<speed>] | right [<speed>] | stop | get | set <position> [<speed>] }	
Options	`left`	Moves the camera left.
	`right`	Moves the camera right.
	`speed` <1 - 24>	Optional: Specifies the pan speed as an integer (1 to 24). Default speed is 12.
	`stop`	Stops the camera's horizontal movement.
	`set` <position>	Sets the camera's absolute pan position in degrees, as a floating point value between approximately -160.00 and 160.00. This is the minimum range. Individual cameras may have slightly more travel before they reach their physical limits.
	`get`	Returns the camera's absolute pan position in degrees, as a floating point value between approximately -160.00 (left) and 160.00 (right).
Examples	>**camera pan left** OK > Pans the camera left at the default speed. >**camera pan right 20** OK > Pans the camera right using a speed of 20. >**camera pan stop** OK > Stops the camera's horizontal motion.	

camera tilt

Moves the camera vertically.

Synopsis	camera tilt{ up [<speed>] | down [<speed>] | stop | get | set <position> [<speed>] }	
Options	`up`	Moves the camera up.
	`down`	Moves the camera down.
	`speed` <1 - 20>	Optional: Specifies the tilt speed as an integer (1 to 20). Default speed is 10.
	`stop`	Stops the camera's vertical movement.
	`set` <position>	Sets the camera's absolute tilt position in degrees, as a floating point value between approximately -30.00 and 90.00. This is the minimum range; individual cameras may have an additional degree or two of travel before they reach their physical limits.
	`get`	Returns the camera's absolute tilt position in degrees, as a floating point value between approximately -30.00 (down) and 90.00 (up).

Examples	`>camera tilt up`
	`OK`
	`>`
	
	Tilts the camera up at the default speed.
	
	`>camera tilt down 20`
	`OK`
	`>`
	
	Tilts the camera down at a speed of 20.
	
	`>camera tilt 15.25 12`
	`OK`
	`>`
	
	Tilts the camera to position 15.25 at a speed of 12.	

camera zoom

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

Synopsis	camera zoom { in [<speed>] | out [<speed>] | stop | get | set <position> }	
Options	`in`	Zooms the camera in.
	`out`	Zooms the camera out.
	`stop`	Stops the camera's zoom movement.
	`set` <zoom>	Sets the camera's zoom level as a floating point value between 1 and 10.
	`get` <zoom>	Returns the camera's zoom setting as a floating point value between 1 and 10.

Examples	`>camera zoom in`
	OK
	`>`
	
	Zooms the camera in at the default speed.
	
	`>camera zoom out 7`
	OK
	`>`
	
	Zooms the camera out using a speed of 7.
	
	`>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, or stores the current camera position and optionally CCU information.

Synopsis	camera preset { recall	store} [1 - 16] [save-ccu]	
Options	`recall` [1 - 16]	Moves the camera to the specified preset.
	`store` [1 - 16]	Stores the current camera position as the specified preset.
	`save-ccu`	Optional: Saves the current CCU (color and lighting) settings as part of the preset. If not specified, the last color settings are used when recalled.
Examples	>**camera preset recall 3** OK > Moves the camera to preset 3. >**camera preset store 1** OK > Saves the camera's current position as preset 1.	

camera ccu get

Returns CCU (lighting and color) information.

Synopsis	camera ccu get <param>	
Options	`auto_white_balance`	Returns the current state of the auto white balance setting (on or off).
	`red_gain`	Returns the red gain value as an integer (0 to 255).
	`blue_gain`	Returns the blue gain value as an integer (0 to 255).
	`backlight_compensation`	Returns the current state of the backlight compensation setting (on or off).
	`iris`	Returns the iris value as an integer (0 to 11).
	`auto_iris`	Returns the current auto-iris state (on or off).
	`gain`	Returns the gain value as an integer (0 to 11).
	`detail`	Returns the detail value as an integer (0 to 15).
	`chroma`	Returns the chroma value as an integer (0 to 14).
	`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
>
```<br>Returns the current iris value.<br><br>```
>camera ccu get red_gain
red_gain      201
OK
>
```<br>Returns the current red gain value.<br><br>```
>camera ccu get all
auto_iris             on
auto_white_balance    on
backlight_compensation  off
blue_gain             193
chroma                2
detail                8
gain                  3
iris                  11
red_gain              201
wide_dynamic_range    off
OK
>
```<br>Returns all current CCU settings. | |

camera ccu set

Sets the specified CCU (lighting) information.

Synopsis	camera ccu set <param> <value>	
Options	`auto_white_balance {on | off}`	Sets the current state of the auto white balance setting (on or off). Auto white balance overrides red gain and blue gain manual settings.
	`red_gain <0 - 255>`	Sets the red gain value as an integer (0 to 255). Can only be used when auto white balance is off.
	`blue_gain <0 - 255>`	Sets the blue gain value as an integer (0 to 255). 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 - 11>`	Sets the iris value as an integer (0 to 11). 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 <0 - 11>`	Sets gain value as an integer (0 to 11). Can only be used when auto-iris is off.
	`detail <0 - 15>`	Sets the detail value as an integer (0 to 15).
	`chroma <0 - 14>`	Sets the chroma value as an integer (0 to 14).
	`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 recalibrate

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

Synopsis	camera recalibrate

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

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.	

audio volume

Gets or sets the volume of the specified audio channel.

Synopsis	audio [channel] volume {get | on | off | toggle}	
Channels	`master`	Applies the command to all audio channels.
	`line_in_1` `line_in_2`	Line/Mic In ports (typically microphone inputs).
	`usb3_playback_left` `usb3_playback_right`	Audio portion of the incoming (far-end) USB stream, left and right channels.
	`hdbt_in_left` `hdbt_in_right`	Audio portion of the incoming (far-end) HDMI signal, left and right channels.
	`line_out_1` `line_out_2`	Line Out ports (typically speaker outputs).
	`usb3_record_left` `usb3_record_right`	Outbound (near-end) audio portion of the USB stream, left and right channels.
	`hdmi_out_left` `hdmi_out_right`	Audio portion of the HDMI output (far-end audio to the display's speakers), left and right channels.
	`sdi_out_left` `sdi_out_right`	Audio portion of the SDI output (far-end audio to the display's speakers), left and right channels.
	`hdbt_out_left` `hdbt_out_right`	Outbound (far-end) audio portion of the IP stream, left and right channels.
Options	`get`	Returns the current volume of the specified channel.
	`up`	Increases the volume of the specified channel.
	`down`	Reduces the volume of the specified channel.
	`set`	Sets the volume of the specified channel.

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

audio mute

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

Synopsis	audio [channel] mute {get | on | off | toggle}	
Channels	`master`	Applies the command to all audio channels.
	`line_in_1` `line_in_2`	Line/Mic In ports (typically microphone inputs).
	`usb3_playback_left` `usb3_playback_right`	Audio portion of the incoming (far-end) USB stream, left and right channels.
	`hdbt_in_left` `hdbt_in_right`	Audio portion of the incoming (far-end) HDMI signal, left and right channels.
	`line_out_1` `line_out_2`	Line Out ports (typically speaker outputs).
	`usb3_record_left` `usb3_record_right`	Outbound (near-end) audio portion of the USB stream, left and right channels.
	`hdmi_out_left` `hdmi_out_right`	Audio portion of the HDMI output (far-end audio to the display's speakers), left and right channels.
	`sdi_out_left` `sdi_out_right`	Audio portion of the SDI output (far-end audio to the display's speakers), left and right channels.
	`hdbt_out_left` `hdbt_out_right`	Outbound (far-end) audio portion of the IP stream, left and right channels.
Options	`get`	Returns the current mute status of the specified channel.
	`on`	Mutes the audio for the specified channel.
	`off`	Unmutes the audio for the specified channel.
	`toggle`	Changes the mute state for the specified channel – unmutes if it was muted, mutes if it was not.

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

trigger

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

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

Synopsis	trigger <1..10> {off | on}	
Parameters	<1..10>	The trigger index (identifier) – triggers 1 through 10 are available.
	{off | on}	Set the state of the trigger.
Example	`> trigger 3 on` OK Turns trigger 3 on.	

streaming settings get

Returns current IP and USB streaming settings.

Synopsis	streaming settings get	
Parameters	`IP Custom_Frame_Rate`	Frame rate selected in Custom quality mode.
	`IP Custom_Resolution`	Resolution selected in Custom quality mode.
	`IP Enabled`	Specifies whether IP streaming is enabled.
	`IP Port`	The RTSP port number used for IP streaming. Default is 554.
	`IP Preset_Quality`	Video quality selected in Easy video quality mode.
	`IP Preset_Resolution`	Resolution selected in Easy video quality mode.
	`IP Protocol`	The IP streaming protocol in use.
	`IP URL`	The URL where the stream is available. To view the stream, enter the URL as `rtsp://` followed by the IP address, the `/` character, and the string returned as the IP URL.
	`IP Video_Mode`	Video quality mode selected (preset or custom).
	`USB Active`	True when a USB stream is present; false otherwise.
	`USB Device`	The USB Device Name currently assigned.

	USB Frame_Rate	Frame rate in use for USB streaming (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 soft client USB control of the camera.

Example	`>`**`streaming settings get`**
	`IP Custom_Frame_Rate   30`
	`IP Custom_Resolution   1080p`
	`IP Enabled             true`
	`IP Port                554`
	`IP Preset_Quality      Standard (Better)`
	`IP Preset_Resolution   1080p`
	`IP Protocol            RTSP`
	`IP URL                 vaddio-conferenceshot-av-stream`
	`IP Video_Mode          preset`
	`USB Active             false`
	`USB Device             ConferenceSHOT AV`
	`USB Frame_Rate         0`
	`USB Resolution         0x0`
	`USB Version            3`
	`UVC Extensions_Enabled false`
	`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`
	`>`

network ping

Sends an ICMP ECHO_REQUEST to the specified IP address.

Synopsis	network ping [count <count>] [size <size>] <destination-ip>	
Options	<count>	The number of ECHO_REQUEST packets to send. Default is five packets.
	<size>	The size of each ECHO_REQUEST packet. Default is 56 bytes.
	<destination-ip>	The IP address where the ECHO_REQUEST packets will be sent.

Examples	`>`**`network ping 192.168.1.66`**
	`PING 192.168.1.66 (192.168.1.66): 56 data bytes`
	`64 bytes from 192.168.1.66: seq=0 ttl=64 time=0.476 ms`
	`64 bytes from 192.168.1.66: seq=1 ttl=64 time=0.416 ms`
	`64 bytes from 192.168.1.66: seq=2 ttl=64 time=0.410 ms`
	`64 bytes from 192.168.1.66: seq=3 ttl=64 time=0.410 ms`
	`64 bytes from 192.168.1.66: seq=4 ttl=64 time=3.112 ms`
	`--- 192.168.1.66 ping statistics ---`
	`5 packets transmitted, 5 packets received, 0% packet loss`
	`round-trip min/avg/max = 0.410/0.964/3.112 ms`
	`>`
	
	Sends five ECHO_REQUEST packets of 56 bytes each to the host at 192.168.1.66.	

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

sleep

Pauses command execution for the specified number of milliseconds.

Synopsis	sleep <milliseconds>	
Options	<milliseconds>	The number of milliseconds (1 to 10000) to pause.

Example	`>`**`sleep 7000`**
	`OK`
	`>`
	
	Pause for 7 seconds (7000 milliseconds) before returning.	

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-av-D8-80-39-62-A7-C5`
	
	Reboots the system immediately.
	
	`>system reboot 30`
	
	Reboots the system in 30 seconds. The response is in the same form; the system message appears at the end of the delay.	

system factory-reset

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.	

version

Returns the current firmware version.

Synopsis	version
Example	``` >**version** Audio 1.03 Commit 598672663c7763ca45a02a6c8755f641068af509 PScC Version 1.4 Sensor Version 04.00 System Version ConferenceSHOT AV 1.0.0 OK > ```

history

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

Synopsis	history <limit>	
Options	<limit>	Integer value specifying the maximum number of commands to return.
Examples	**history** Displays the current command buffer. **history 5** Sets the history command buffer to remember the last 5 unique entries.	
Additional information	You can navigate the command history using the up and down arrow keys.	
	This command supports the expansion functionality from which previous commands can be recalled from within a single session. History expansion is performed immediately after a complete line is read.	
	Examples of history expansion:	
	* **!!** Substitute the last command line.	
	* **!4** Substitute the 4th command line (absolute as per 'history' command)	
	* **!-3** Substitute the command line entered 3 lines before (relative)	

help

Displays an overview of the CLI syntax.

Synopsis	help
Example	**help**

exit

Ends the command session and closes the socket.

Synopsis	exit
Example	`exit`

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Specifications

Camera and Image

Image device	1/2.8-type Exmor CMOS sensor	**Pixels**	2.14 million (effective)
IP (H.264) RTSP Video Resolutions	1080p down to 180p 1080p at 30/25/15; others 60/30/25/15	**USB 3.0 (UVC) Video Resolutions**	1080p down to 180p at 60/30/15
Pan angle and speed	± 165°, up to 90°/sec	**Tilt angle and speed**	+90° -30°, up to 90°/sec
Lens and horizontal FOV	10X optical zoom, 67.0° wide to 7.6° tele, f=3.8mm to 38mm, F1.8 to F3.4 Super-wide: 11X optical zoom, 74° wide to 7.6° tele, f=3.8mm to 41.8mm, F1.8 to F3.4		
Min. working distance	10mm (wide), 1.0m (tele)	**Min. illumination**	100+ lux recommended
Aperture/detail	16 steps	**Gain**	Auto or manual
Backlight compensation	On or off	**White balance**	Auto, manual, One-Push
Focusing system	Auto or manual	**Noise reduction**	On or off
Sync system	Internal	**S/N ratio**	Over 50 dB
Remote management	Web interface, Telnet	**Power**	PoE+ (25 watts)

Audio

EasyMIC Inputs (2 channels available)	RJ-45 12V, bidirectional, balanced	**Line Out**	4-pin Phoenix type terminal block Impedance: 50 ohms Frequency response 20Hz - 20KHz THD + noise < 0.02% Maximum output level +12 dBu differential audio Power to speaker: 12V, 0.84A max (10 watt speaker)
IP Streaming	1 Channel (PCM), 16-bit resolution, 48 KHz sample rate		
USB streaming (record, playback)	2 Channel (UAC), 16-bit resolution, 48 KHz sample rate		

Physical and Environmental

Height	Camera: 7.0 in. (17.78 cm) Speaker: 3.63 in. (9.22 cm)	**Operating temperature**	0°C to +40°C (32°F to 104°F)
Width	Camera: 7.06 in. (17.93 cm) Speaker: 7.06 in. (17.93 cm)	**Operating humidity (relative)**	20% to 80% non-condensing
Depth	Camera: 6.5 in. (16.51 cm) Speaker: 6.8 in. (17.27 cm)	**Storage temperature**	-5°C to +60° C (23°F to 140°F)
Weight	Camera: 3.6 lbs.(1.63 kg) Speaker: 1.6 lbs. (0.72 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.

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 soft DIP switch on 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.	Push the Camera Select 1 button on the remote.
	The batteries in the remote are dead.	Put new batteries in the remote.
The camera responds to the remote but the web interface is not available.	The camera is not using the IP address you browsed to.	Press the Data Screen button on the remote to see camera information.
No H.264 video stream.	IP streaming is not enabled.	Enable IP streaming: Streaming page in the web interface.
No USB video stream.	USB streaming is not enabled.	Enable USB streaming: Streaming page in the web interface.
Status light continues to blink blue.	The USB cable is not connected.	Connect the USB cable.
Status light blinks yellow	Pan or tilt motor is out of calibration	Reset the pan and tilt motors. See Correct a Motor Calibration Error.

Correct a Motor Calibration Error

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

1. On the Camera Controls page, select Settings to open the pan and tilt settings box;

   OR

   On the System page, go to the Firmware tab if you are on a different tab.
2. Select Pan-Tilt Reset. The motors recalibrate. This takes a few seconds.

Status 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 – Video mute is on (Pro A/V color scheme) or USB cable is disconnected (UC color scheme)
- Blinking yellow – Motor out of calibration
- Blinking purple – Error

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 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 indicator light is off.

Restoring Default Camera Settings

Factory reset clears most settings and returns soft DIP switches (on the DIP Switches tab of the System page) to their default positions.

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
- Between converging tectonic plates
- Dry environments with an excess of static discharge

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

Compliance Statements and Declarations of Conformity

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 2004/108/EC	Class A
EN 55032: 2015	Class A
EN 55024: November 2010	Class A
KN22 2008 (CISPR 22: 2006)	Class A
KN24 2008 (CISPR 24: 1997 + A1: 2000 + A2: 2002)	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: $C\epsilon$

EMC Directive 2004/108/EC	
EN 55022: December 2010	Conducted and Radiated Emissions
EN 55024: November 2010	Immunity
EN 61000-4-2: 1995 + Amendments A1: 1998 + A2: 2001	Electrostatic Discharge
EN 61000-4-3: 2006 + A1: 2008	Radiated Immunity
EN 61000-4-4: 2004 + Corrigendum 2006	Electrical Fast Transients
EN 61000-4-5: 2006	Surge Immunity
EN 61000-4-6: 2009	Conducted Immunity
EN 61000-4-8: 2010	Power Frequency Magnetic Field
EN 61000-4-11: 2004	Voltage Dips, Interrupts and Fluctuations
KN22 2008 (CISPR 22: 2006)	Conducted and Radiated Emissions
KN24 2008 (CISPR 24: 1997 + A1: 2000 + A2: 2002)	IT Immunity Characteristics
EN 61000-4-2	Electrostatic Discharge
EN 61000-4-3	Radiated Immunity
EN 61000-4-4	Electrical Fast Transients
EN 61000-4-5	Surge Immunity
EN 61000-4-6	Conducted Immunity
EN 61000-4-8	Power Frequency Magnetic Field
EN 61000-4-11	Voltage Dips, Interrupts and Fluctuations
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

Warranty Information

See Vaddio Warranty, Service and Return Policies posted on support.vaddio.com for complete details.

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

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

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

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

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

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

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

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

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