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THE ART OF EASY

Integrator's Complete Guide to
ClearSHOT 10 USB
Enterprise-Class PTZ Conferencing Cameras

Document 342-1118 Rev A, November 2015

Contents

About this Guide

This guide covers

- Unpacking and installing ClearSHOT™ 10 USB cameras
- The camera's physical features and switch settings
- Controlling the camera using the IR remote or web interface
- Controlling the camera using Telnet or RS-232 commands
- Specifications
- Troubleshooting and maintenance
- Warranty and compliance/conformity information

For your convenience, this information is also available in smaller, limited-purpose manuals:

- **Installation Guide for ClearSHOT 10 USB Enterprise-Class PTZ Conferencing Cameras** (unpacking, physical features, switch settings, installation, initial power-up)
- **Configuration and Administration Guide for ClearSHOT 10 USB Enterprise-Class PTZ Conferencing Cameras** (physical features, controlling the camera, troubleshooting, and specifications)

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

Overview

This guide covers the ClearSHOT 10 USB enterprise-class PTZ conferencing cameras:

- ClearSHOT 10 USB camera (silver), North America – part number 999-9990-000
- ClearSHOT 10 USB camera (silver), international – part number 999-9990-001
- ClearSHOT 10 USB camera (white), North America – part number 999-9990-000W
- ClearSHOT 10 USB camera (white), international – part number 999-9990-001W

Features

- Ideal for huddle rooms and small to medium conference rooms in corporate, healthcare, government, and education environments
- Simultaneous uncompressed USB 3.0 and IP (H.264) streaming outputs
- 10X optical zoom, horizontal field of view of 74° in super-wide mode
- 2.14 Megapixel (effective), full HD (native 1080p/60) image sensor
- Precise pan and tilt movements at up to 90° per second
- Presenter-friendly IR remote control
- Universal Video Class (UVC) drivers supported in Windows®, Mac® OS, and Linux operating systems – compatible with most UC conferencing applications
- Full administrative control from your browser via web interface
- Integration-ready Telnet or serial RS-232 control

Unpacking the Camera

Make sure you received all the items you expected. Here are the packing lists for the ClearSHOT 10 USB cameras.

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 picking it up. Lifting the camera by its head or mounting arm will damage it.

For use in North America:

ClearSHOT 10 USB camera, silver/black, part number 999-9990-000

ClearSHOT 10 USB camera, white, part number 999-9990-000W

The box should contain one of each item listed here:

- Camera, part number 998-9990-000 (silver/black) or 998-9990-000W (white)
- Vaddio IR Remote Commander, part number 998-2100-000
- 12 VDC, 3.0 Amp switching power supply
- AC cord set, North America
- Thin Profile Wall Mount with mounting hardware, black or white depending on camera color
- EZCamera RS-232 control adapter, part number 998-1001-232
- USB 3.0 Type A to Type B cable, 6 ft. (1.8m), part number 440-0004-306
- Quick Start Guide, part number 342-1117

For use outside North America:

ClearSHOT 10 USB camera, silver/black, part number 999-9990-001

ClearSHOT 10 USB camera, white, part number 999-9990-001W

The box should contain one of each item listed here:

- Camera, part number 998-9990-000 (silver/black) or 998-9990-000W (white)
- Vaddio IR Remote Commander, part number 998-2100-000
- 12 VDC, 3.0 Amp switching power supply
- AC cord set, Europe
- AC cord set, UK
- Thin Profile Wall Mount with mounting hardware, black or white depending on camera color
- EZCamera RS-232 control adapter, part number 998-1001-232
- USB 3.0 Type A to Type B cable, 6 ft. (1.8m), part number 440-0004-306
- Quick Start Guide, part number 342-1117

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

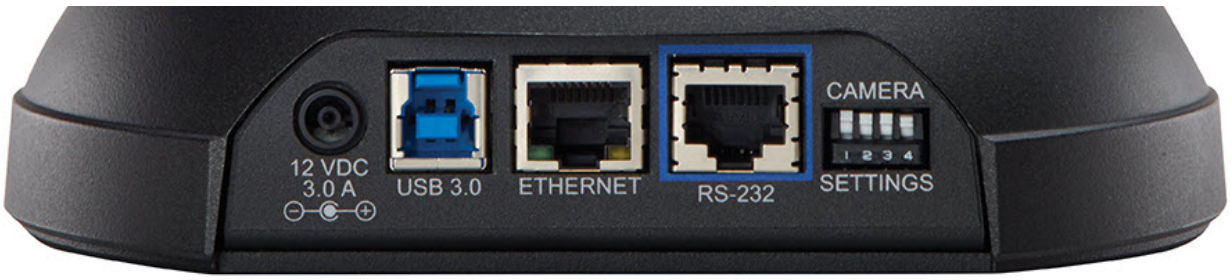
A Quick Look at the Camera

- **Camera and Zoom Lens:** The ClearSHOT 10 USB camera features a 10X optical zoom lens (11X in Super-Wide mode) built around an Exmor 1/2.8-Type, high-speed, low noise image sensor with 2.14 Megapixels (effective) for exceptional video image quality in a small to medium sized conference room.
- **IR Sensors:** Sensors in the front of the camera base receive signals from the IR Remote Commander.
- **Status indicator:** The multi-colored LED indicates the camera's current state.
  - Purple – Booting or in standby mode.
  - Blue – Power on, ready (normal operation).
  - Blinking blue – The camera has received an IR signal from the remote or other IR source.
  - Red – Tally function; shows that the camera is on-air.
  - Blinking red – Fault condition.
  - Yellow – Firmware update is in progress.

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.

Back of the Camera



From left to right:

- **12 VDC, 3.0 Amp power connector** – Connect only the power supply shipped with the camera
- **USB 3.0 video device connector** for streaming uncompressed UVC standard video
- **Ethernet RJ-45** for IP streaming, access to web interface and Telnet for camera control
- **RS-232 port** on shielded RJ-45 connector for legacy controllers
- **DIP switches** to set IR frequency, IR on/off, and image flip (camera is invertible)

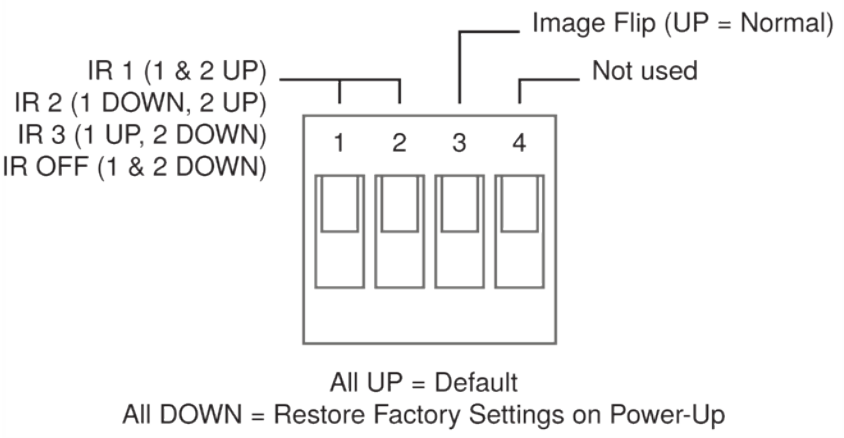
Switch Settings

Use the DIP switches to set camera behaviors.

IR Frequency Selection: The IR Remote Commander can control up to three cameras in the same room with different IR frequencies. Use **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.

Inverted operation: If mounting the camera upside-down, set **switch 3** to the DOWN position: IMAGE FLIP ON.

Switch 4 is not currently used.



Note

The web interface provides baud rate and super-wide mode settings. See Web Tasks for Administrators: Soft Switch Settings, Reboots, Resets, and Updates.

Installation

This section covers siting the camera, installing the mount, and installing the camera.

Before You Install the Camera

All ClearSHOT cameras include a wall mount.

- Choose a camera 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 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.

Note
Dome enclosures are not recommended for ClearSHOT 10 USB cameras.

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.

Learn more at www.vaddio.com/products.

Cabling Notes

For RS-232 cabling, use Cat-5 or Cat-5e/6 cable and standard RJ-45 connectors (568B termination) from the camera’s RS-232 port to the controller's RS-232 port. If the camera is connected to a third-party control system (such as AMX or Crestron), a DE-9F (sometimes called DB-9F) adapter is supplied.

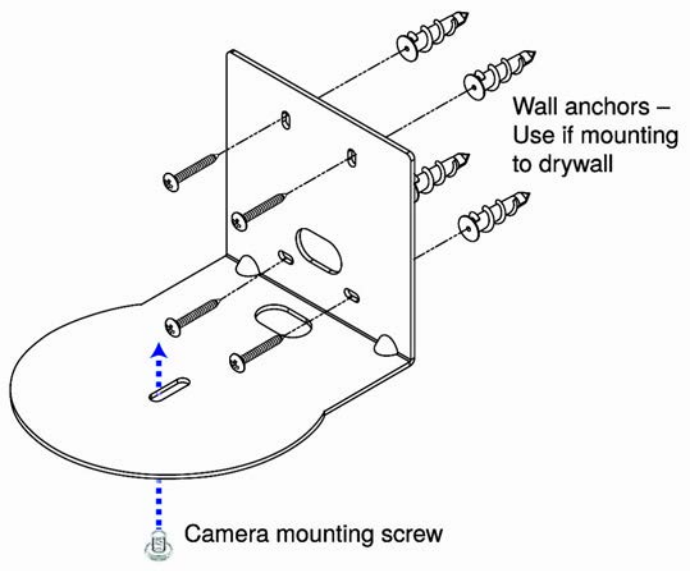
We recommend using high-quality connectors and a high-quality crimping tool.

Note
Do not use pass-through RJ-45 connectors. These can cause intermittent connections and degraded signal quality, resulting in problems that may be hard to diagnose. Use standard RJ-45 connectors and test all cables for proper pin-outs and continuity before you connect them to Vaddio products.

Installing the Wall Mount

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.



About Ceiling-Mounted Cameras

If you use an inverted mount, set the camera's Image Flip DIP switch ON for inverted operation. See Switch Settings for more information.

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.

1. Route the cables through the mount, and install the mount on the wall or attach it to the wall box. Leave the screws loose enough to adjust the position of the mount.
2. Level the mount and tighten the mounting screws.
3. Check the level again.
4. Connect the cables to the camera.

   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.

5. Place the camera on the mount.
6. Attach the camera to the mount using the ¼”-20 x .375 mounting screw supplied with the camera.

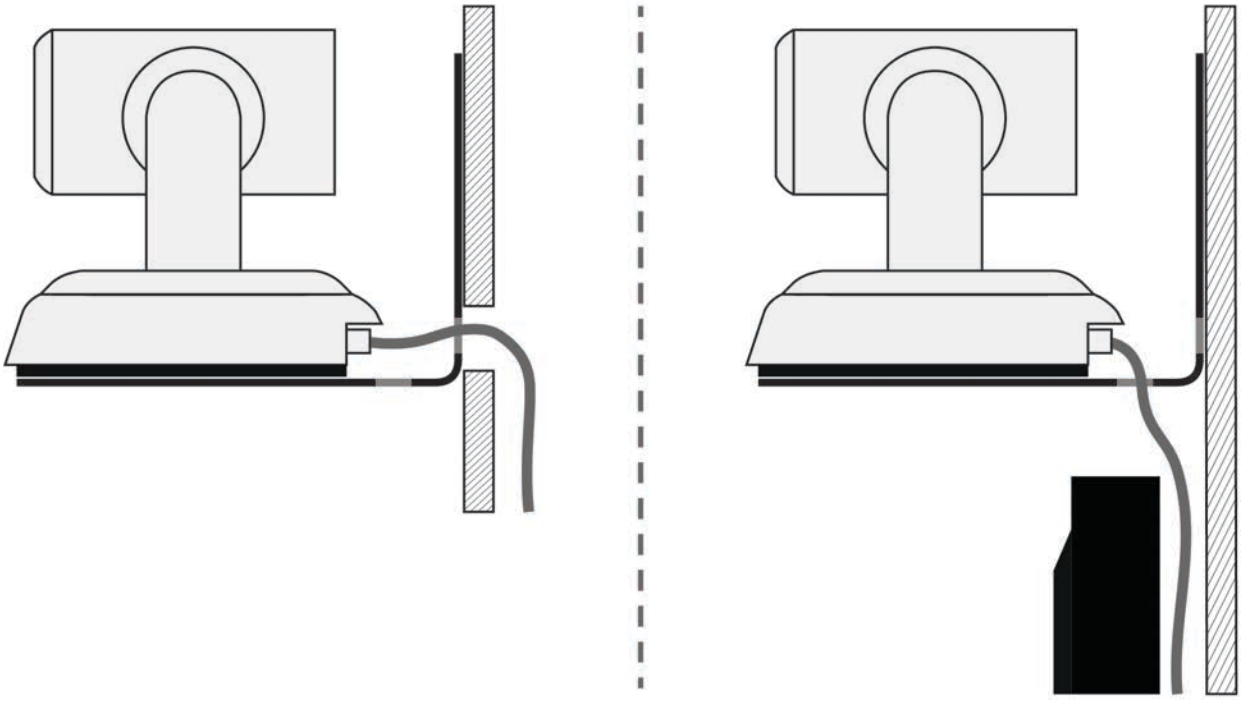


Image for illustration only; not to scale. Camera and mount details may differ.

Connecting the Camera

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 an EasyUSB Mixer/Amp with attached microphones and speakers.

Note

ClearSHOT 10 USB camera output is USB 3.0; EasyUSB Mixer/Amp is USB 2.0.

Powering Up the Camera

Connect camera power.

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

Configuring and Controlling the Camera

You can control the camera using the IR remote, web interface, Telnet session, or RS-232 command line – but not at the same time. Choose the method that best meets the requirements.

Vaddio IR Remote Commander

The remote provides basic camera control for end users.

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)
Control zoom speed	**Zoom Speed** buttons - Slow **T** and **W**, Fast **T** and **W** for telephoto and wide-angle modes (light gray)
Adjust for excess light behind the camera's subject	**Back Light** button (top center)

Details

The Vaddio remote provides the following functions:

Power – Switch the selected camera on or off.

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

Back Light – Use or turn off back light compensation.

Data Screen – Press and hold for 3 seconds to display the camera's IP address and MAC address.

Camera Select – In multi-camera installations, selects the camera to be controlled. See on page 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.

Rev. Pan and Std. Pan– Control how the camera responds to the arrow buttons. Helpful for ceiling-mounted cameras.

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.

Zoom Speed – Select Slow or Fast movements for telephoto and wide-angle shots.

- **T** (slow and fast) – Telephoto
- **W** (slow and fast) – Wide-angle

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.

The web interface offers greater control over camera movements to presets (such as setting the speed for Tri-Synchronous Motion), and provides additional presets.

Storing a Preset Using the IR Remote Commander

Position the camera. Then hold down the **Preset** button and press one of the numbered preset buttons.

Clearing a Preset Using the IR Remote Commander

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

Web Interface

The camera provides a web interface to allow control via an Ethernet network connection, using a browser. The web interface gives the user more control over the camera than the IR remote offers.

The web interface allows user-level camera control and password-protected administrative access to tasks such as setting passwords, changing the IP address, viewing diagnostics, and installing firmware updates.

- Administrative access – The default password is `password`. The admin has access to all pages of the web interface.
- User access – The default password is `password`. Only the camera control page is available with user-level access.

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. In the absence of a DHCP server, the camera's default IP address is 169.254.1.1 and its subnet mask is 255.255.0.0.

You can configure the camera's static IP address either through the network or from a computer connected directly to its Ethernet port. You may need a crossover cable.

To display the camera's IP address:

Press and hold the Data Screen button on the remote. After 3 seconds, the room display presents the information.

Compatible Web Browsers

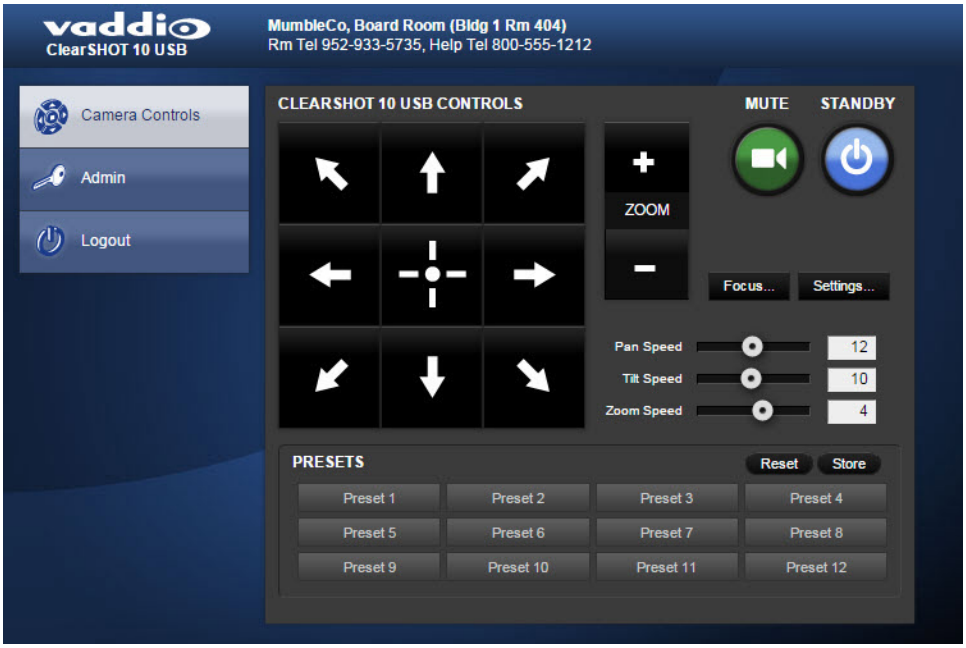
Supported web browsers:

- Chrome® (latest version),
- Firefox® (latest version),
- Microsoft® Internet Explorer® (versions 8 through 11)
- Safari® (versions 6 and 7)
- Microsoft® Edge

Other browsers may also work.

User Access

If the admin sets up automatic guest access, no login is needed – the system starts at the Camera Control page, rather than the login page. The administrative login dialog is accessible from the Camera Control page, to allow access to administrative tasks.



Administrative Access

If you are on the Camera Control screen and no other screens are available, you're logged in at the user level, or guest access is enabled and you're not logged on at all. Use the Admin button to open the login screen.

When you log in as Admin, all the admin menu buttons appear on the left side of the screen. In addition to Camera Controls, you also have access to:

- Camera Settings – Additional control over camera behavior related to camera movement and color management.
- 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 switch settings, 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 Camera Controls page at guest access level.

Web Interface Cheat Sheet

Where to find the controls you need right now.

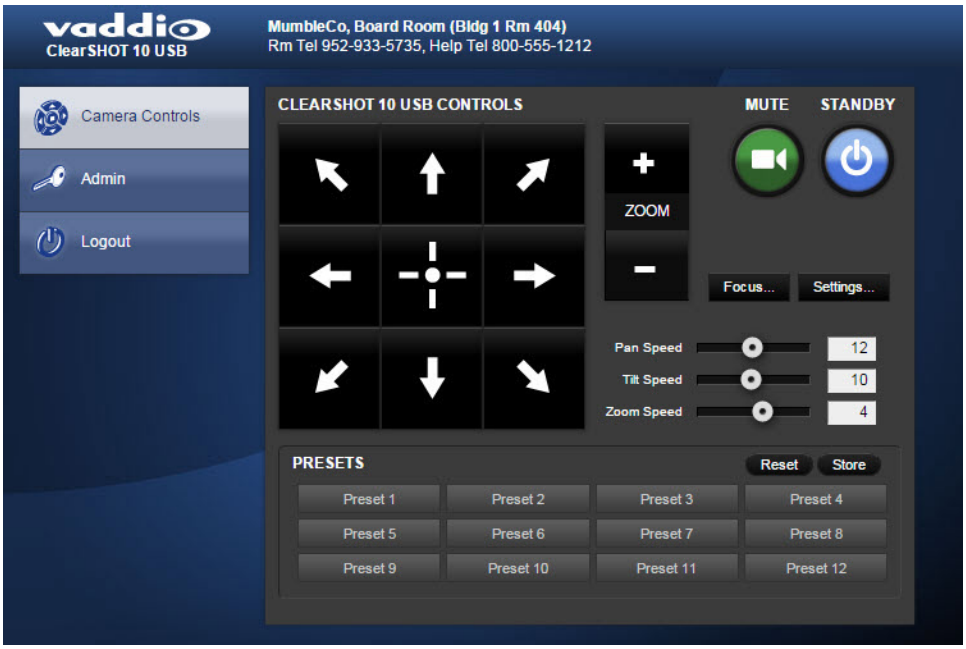
What do you need?	Go to this screen
Camera operation ■ Move or zoom the camera ■ Set the speed for pan, tilt, or zoom motions ■ Focus the camera (Focus button reveals the focus control) ■ Move to a camera preset ■ Put the camera into or bring it out of standby mode	Camera Controls
Camera behavior ■ Set motors for inverted operation (Settings button reveals the control) ■ Set or clear camera presets ■ Select the appropriate lighting adjustments (CCU Scenes section)	Camera Controls
Camera behavior ■ Normal or super-wide mode	System
Camera behavior ■ Specify whether to use automated adjustments (auto-iris, auto white balance, backlight compensation)	Camera Settings
Camera adjustments ■ Color settings (Iris, iris gain, red gain, blue gain, detail, chroma, gamma) ■ Specify global speed settings for camera movements	Camera Settings
USB and IP streaming settings	Streaming
Other IP settings ■ Hostname ■ DHCP or static addressing ■ Static: IP address, subnet mask, gateway	Networking
RS-232 serial communication ■ Baud rate	System
Access management ■ Guest access ■ Account passwords	Security
Diagnostic logs	Diagnostics
Information about the camera location	Room Labels
Helpdesk phone number for end users	Room Labels
Vaddio Technical Support contact information	Help

Web Tasks for All Users: Controlling the Camera

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

- Stop or resume transmitting video
- Put the camera in standby or bring it back to the ready state
- Pan, tilt, zoom, or return to "home" position
- Set speeds for camera movements
- Focus manually or set auto-focus
- Set or move to camera presets
- Set the way the camera responds to the arrow buttons on the remote

Since the web interface is specific to the camera you are working with, it does not offer camera selection.



Manage 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. Ceiling-mounted cameras also point downward in standby mode; this keeps dust from collecting on the lens.

Stop or Resume Transmitting Video

Use the Mute button to temporarily stop video from the camera without placing it in standby - for example, when you need to confer privately with another person in the room. Remember that the mute button does not mute the room's microphones. In video mute mode, the camera transmits black video, with a message that the video is muted.

Move the Camera

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

Zoom In or Out

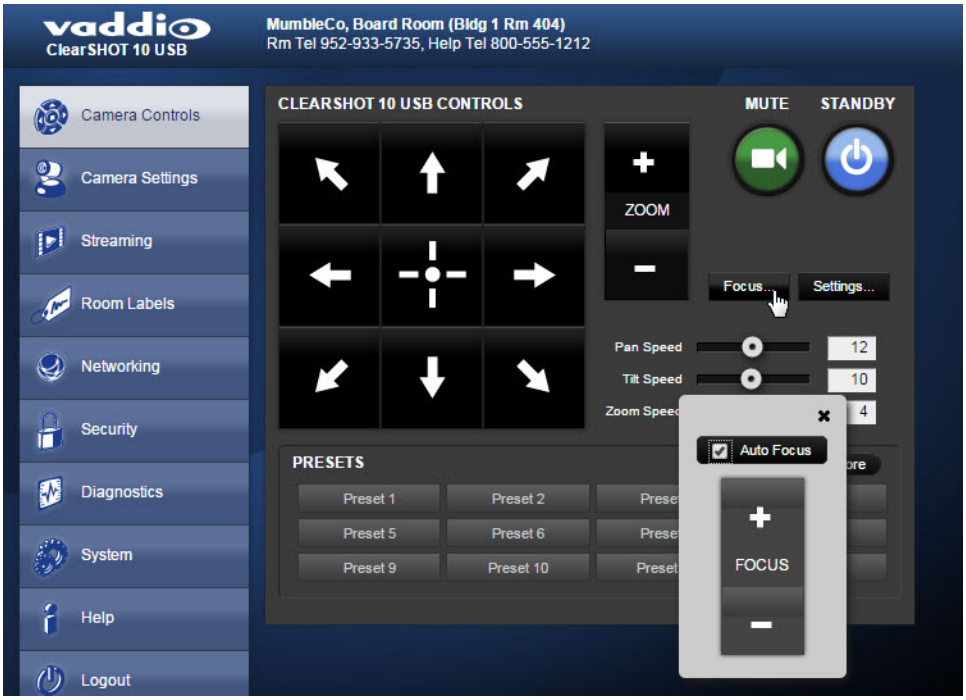
Use the Zoom + button to zoom in and the Zoom - button to zoom out.

Change the Speed of Camera Movements

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.

Change the Focus

Open the Focus control to select Auto-focus, or set manual focus with the + (near) and – (far) buttons. I know you get this, but I'm going to say it anyway: The + and – buttons don't work when the Auto Focus box is checked.



Move the Camera to a Preset Position

Use the numbered Preset buttons to move the camera to any of its programmed positions. If you select a preset that has not yet been programmed, nothing happens.

Store a Camera Preset

1. Set up the camera shot, then use the Store button to open the Store Preset box.
2. Click one of the numbered preset buttons.
3. To save the current color settings along with the camera position, check Save with current color settings.
4. Save the preset.

Set 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.

Web Tasks for Administrators: Configuring Network Settings

Things you can do on this screen:

- Specify time zone and NTP server
- Assign the camera's hostname
- Specify DHCP or static IP address
- Set up other networking information

Network Configuration

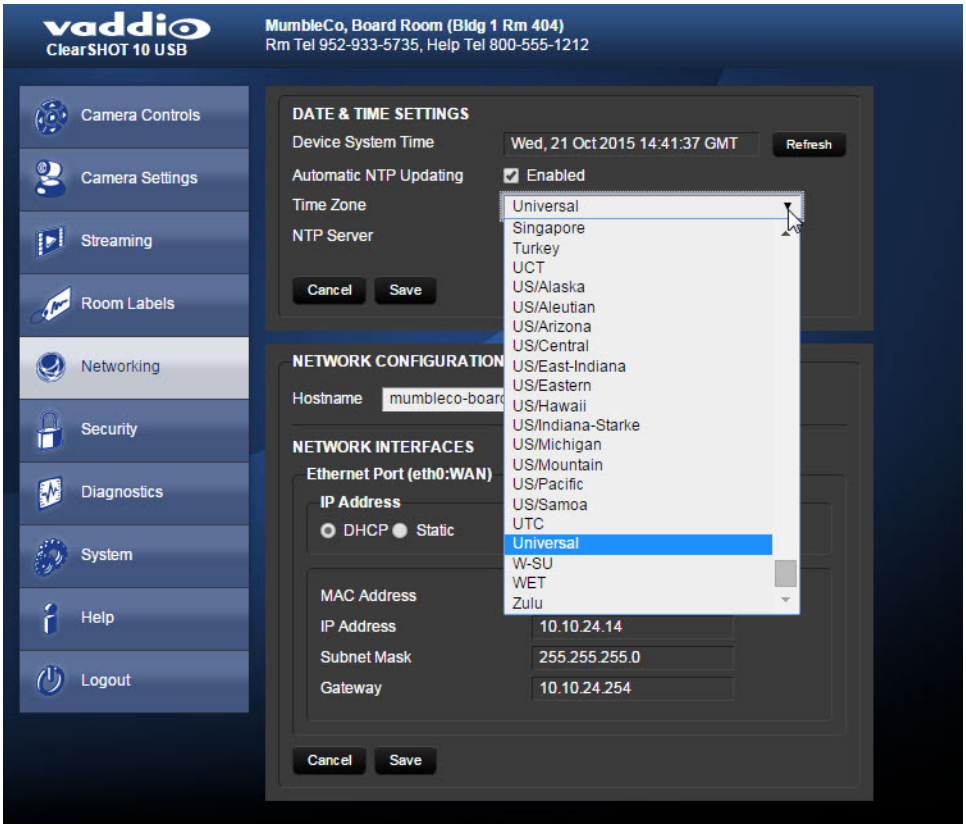
You will only be able to enter the IP address, subnet mask, and gateway if you set IP Address to Static.

Note

DHCP is the default setting, but the camera will use the default address of 169.254.1.1 if no DHCP server is available.

Specifying Time Zone and NTP Server

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.



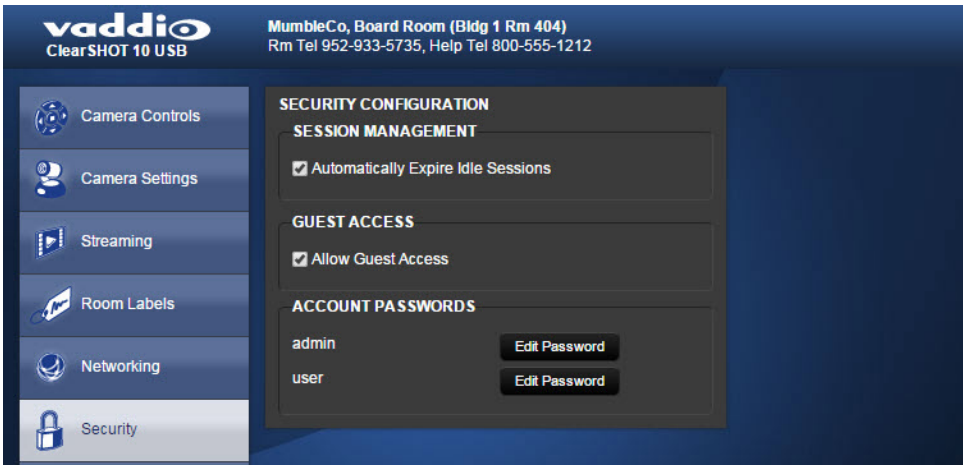
Web Tasks for Administrators: Adding Room Information to the Screen

To display your company name, conference room name and phone number, and the number for meeting hosts to call for in-house A/V support, enter this information on the Room Labels screen.

Web Tasks for Administrators: Managing Access and Passwords

Things you can do on this screen:

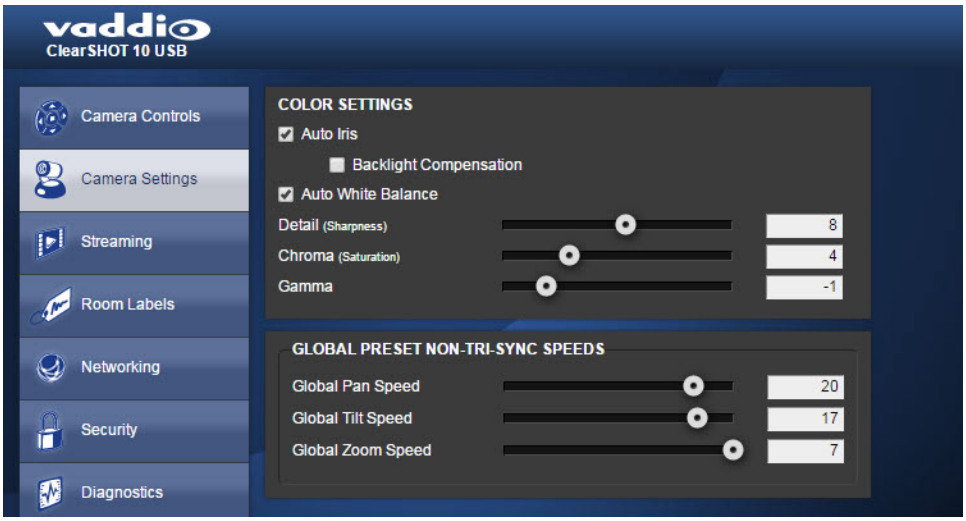
- Allow people to access the Camera Control screen without logging on (Allow Guest Access)
- Set whether inactive sessions log off automatically or not
- Change the password for the admin account (default is `password`)
- Change the password for the user account (default is `password`)



Web Tasks for Administrators: Setting Camera Behaviors and Adjustments

Things you can do on this screen:

- Set up the color settings the camera uses.
- Set the pan, tilt, and zoom speeds that will be used.



Set up Color Settings

1. To allow the camera to compensate automatically for the light level, check the Auto Iris box. Leave it unchecked to adjust iris and gain manually.
2. If there will be bright lighting behind the main subject of the shot, check the Back Light Compensation box. This is only available when Auto Iris is selected.
3. To allow the camera to adjust the white balance automatically, check the Auto White Balance box. Leave it unchecked to adjust red gain and blue gain manually.
4. Detail – adjust the slider as required for the right image sharpness.

   Note:
   If the video looks grainy or "noisy," try a lower Detail setting. As in conversation, too much detail is bad.

5. Chroma – adjust the slider as needed for the right level of color intensity.
6. Gamma – adjust the slider as needed for the desired range between bright areas and shadows.

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

Set Pan, Tilt, and Zoom Speeds

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

Web Tasks for Administrators: Configuring Streaming Settings

Things you can do on this screen:

- Enable or disable IP streaming
- Enable or disable USB streaming
- Set the resolution, video quality, and frame rate for IP streaming
- Specify the IP streaming port and path/URL

Note
USB streaming settings are automatically negotiated between the camera and the conferencing application.

The camera uses the RTSP protocol for H.264 streaming. Available resolutions and frame rates are:

Resolution	Frame Rate
1080p	30/25/15
720p	60/30/25/15
4CIF	60/30/25/15
640 x 480p	60/30/25/15
360p	60/30/25/15
CIF	60/30/25/15

Set IP streaming quality, resolution, and frame rate

Select the video Quality Mode: Easy or Custom. Easy automatically sets the recommended frame rate; Custom provides additional control.

You will only be able to specify the frame rate if you select Custom Quality Mode.

Web Tasks for Administrators: Soft Switch Settings, Reboots, Resets, and Updates

Things you can do on this screen:

- Run a firmware update
- Reboot the camera
- Set the camera back to its original factory settings
- Read (but not change) the current settings of the switches on the back of the camera
- Read or change the "soft DIP switches" for baud rate and normal/super-wide operation.

Change Baud Rate

Use the on-screen Baud rate "DIP switch" to set either 38400 or 9600 baud.

Change Normal/Super-Wide Setting

Use the on-screen Super Wide "DIP switch" to set either normal or super-wide mode.

Reboot the Camera

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

Restore Factory Settings

Sometimes it's easiest to just start over. To restore the original factory settings…click Restore Factory Settings. This will overwrite anything you have customized, such as custom camera presets.

Start a Firmware Update

1. Be sure you have downloaded the appropriate update file to your computer.
2. Click Choose File and select the camera update file.
3. Click Begin Firmware Update.
4. READ the information in the Confirm dialog box and be sure you understand it. This stuff may seem boring, but it could save you a lot of time and aggravation.
5. When you are ready to start the update, click 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.
6. If the update process presents warnings or error messages, read them carefully.
7. Contact Vaddio technical support if you encounter any problems with the update.

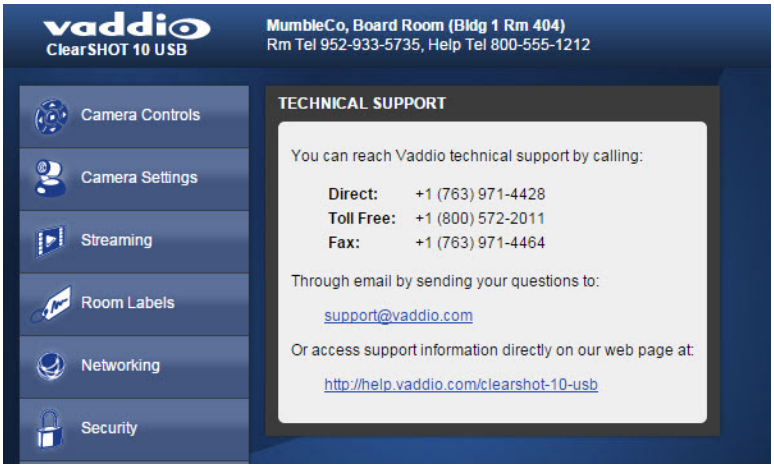
Caution

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.

Web Tasks for Administrators: Contacting Vaddio Technical Support

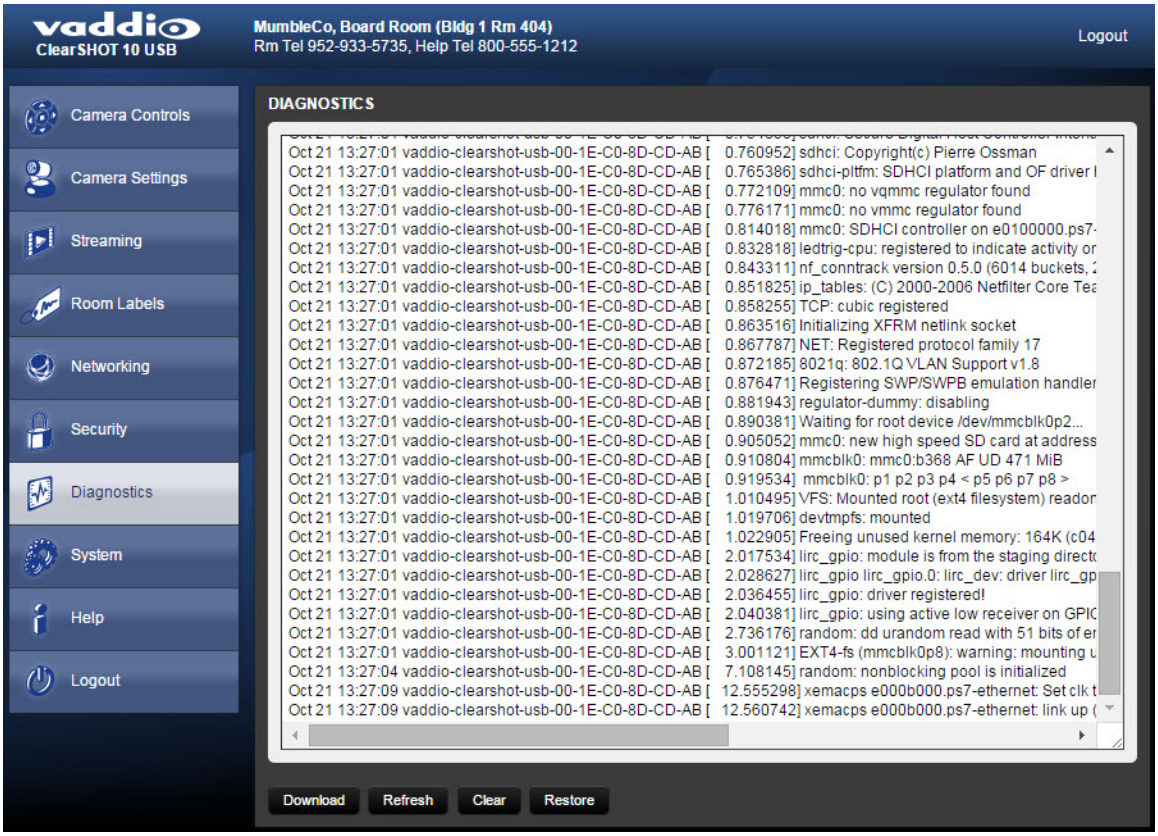
If you can't resolve an issue using your troubleshooting skills (or the Troubleshooting table in this manual), we are here to help.

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



Web Tasks for Administrators: Viewing Diagnostic Logs

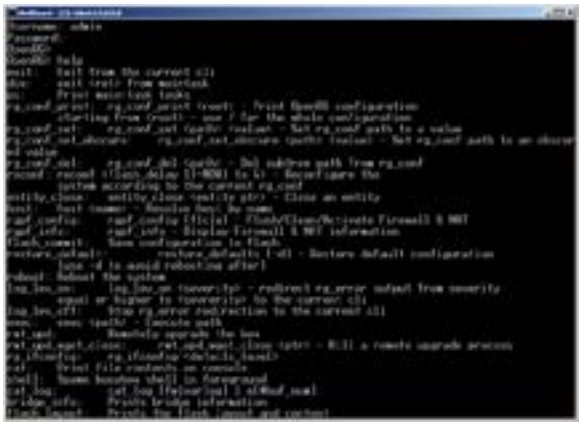
If you encounter a problem that you can't solve, your Vaddio technical support representative may ask you to download and email the log file available from the Diagnostics screen.



Telnet Serial Command API

The Vaddio serial command protocol is a high-level, text-based command line interface supported via Telnet session on the camera. The API is accessed by a telnet client on the Ethernet port; the default Telnet port is 23. Telnet sessions require the administrator account login.

The command application protocol interface is intended to allow external device such as AMX or Crestron to control the camera. The protocol is based upon ASCII format following the VT100 terminal emulation standard and uses an intuitive text command nomenclature for ease of use.



General format usage follows a get/set structure. Usage examples for each type are:

Set Example

COMMAND: > **`camera pan right`**

RESPONSE: > `OK`

Get Example

COMMAND: > **`camera ccu get iris`**

RESPONSE: > `iris 11`

Syntax Error Example

COMMAND: > **`camera right pan`**

RESPONSE: > `ERROR`

Using a question mark as a command parameter will bring up a list of available commands for the menu you are in.

Things 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.

The ClearSHOT 10 USB camera supports the Telnet commands in the following sections.

camera home

Moves the camera to its home position.

Synopsis	camera home
Example	**`camera home`**

camera pan

Moves the camera horizontally

Synopsis	camera pan { left [<speed>] | right [<speed>] | stop }	
Options	`left`	Moves the camera left
	`right`	Moves the camera right
	`speed` [1 - 24]	Optional - integer 1 - 24 specifies the speed for the commanded movement Default speed is 12
	`stop`	Stops the camera's horizontal movement
Examples	**`camera pan left`** Pans the camera left at the default speed	
	`camera pan right 20` Pans the camera right using a speed of 20	
	`camera pan stop` Stops the camera's horizontal motion	

camera tilt

Moves the camera vertically.

Synopsis	camera tilt{ up [<speed>] | down [<speed>] | stop }	
Options	`up`	Moves the camera up
	`down`	Moves the camera down
	`speed` [1 - 20]	Optional - integer 1 - 20 specifies the speed for the commanded movement Default speed is 10
	`stop`	Stops the camera's vertical movement
Examples	**`camera tilt up`** Tilts the camera up at the default speed	
	`camera tilt down 20` Tilts the camera down using a speed of 20	
	`camera tilt stop` Stops the camera's vertical motion	

camera zoom

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

Synopsis	camera zoom { in [<speed>] | out [<speed>] | stop }	
Options	`in`	Moves the camera in
	`out`	Moves the camera out
	`speed`[1 - 7]	Optional - integer 1 - 7 specifies the speed for the commanded movement Default speed is 3
	`stop`	Stops the camera's zoom movement
Examples	**`camera zoom in`** Zooms the camera in at the default speed	
	`camera zoom out 7` Zooms the camera out using a speed of 7	
	`camera zoom stop` Stops the camera's zoom motion	

camera focus

Changes the camera focus.

Synopsis	camera focus {{ near [<speed>] | far [<speed>]} | {mode [auto | manual]} |stop }	
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 - 8 specifies the speed for the commanded movement
	`mode [auto | manual]`	Specifies automatic or manual focus
	`stop`	Stops the camera's focus movement
Examples 	**`camera focus near`** Brings the focus near at the default speed	
	`camera focus far 7` Moves the focus farther from the camera at a speed of 7	
	`camera focus mode auto` Sets the camera in auto-focus mode	
	`camera focus stop` Stops the camera's focus motion	

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. If CCU information was saved with the preset, the camera switches to the CCU setting associated with the preset.
	`store` [1 - 16]	Stores the current camera position as the specified preset.
	`save-ccu`	Optional - Saves the current CCU settings as part of the preset. If not specified, the last color settings are used when recalled.
Examples	**`camera preset recall 3`** Moves the camera to preset 3.	
	`camera preset store 1` Saves the camera's current position as preset 1.	
	`camera preset store 2 save-ccu` Stores the camera's current position as preset 2. The camera will apply the current CCU settings when it is recalled to this preset.	

camera ccu get

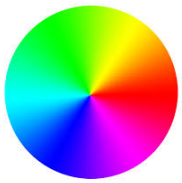
Returns or sets CCU (lighting) information.

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 between 0 and 255.
	`blue_gain`	Returns the blue gain value as an integer between 0 and 255.
	`backlight_compensation`	Returns the current state of the backlight compensation setting (on or off).
	`iris`	Returns the iris value as an integer between 0 and 11.
	`auto_iris`	Returns the current auto-iris state (on or off).
	`gain`	Returns the gain value as an integer between 0 and 11.
	`detail`	Returns the detail value as an integer between 0 and 15.
	`chroma`	Returns the chroma value as an integer between 0 and 14.
	`all`	Returns all current CCU settings.
Examples	**`camera ccu get iris`** `iris 11` Returns the current iris value.	
	`camera ccu get red_gain` `red_gain 201` Returns the current red gain value.	

	`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`
	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. Valid range: integers 0 to 255. Can only be used when auto white balance is off.
	`blue_gain` [0 - 255]	Sets the blue gain value. Valid range: integers 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).
	`iris` [0 - 11]	Sets the iris value. Valid range: integers between 0 and 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. Valid range: integers 0 to 11. Can only be used when auto-iris is off.
	`detail` [0 - 15]	Sets the detail value. Valid range: integers 0 to 15.
	`chroma` [0 - 14]	Sets the chroma value. Valid range: integers 0 to 14.
Examples	**`camera ccu set auto_iris off`** Turns off auto-iris mode, returning the camera to manual iris control.	
	`camera ccu set red_gain 10` Sets the red gain value to 10.	

camera standby

Set or change camera standby status.

Synopsis	camera standby { off | on | toggle}	
Options	`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`** Brings the camera out of standby mode.	
	`camera standby on` Puts the camera in standby mode.	

video mute

Gets or sets the camera's video mute status. When video is muted, the camera sends 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.

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. (Black screen with message)
	`toggle`	Changes the camera's video mute status.
Examples	**`video mute get`** Returns video mute status in a form something like this: `mute:  off`	
	`video mute on` Transmits black video	

streaming settings

Retrieves streaming settings.

Note

USB streaming settings are automatically negotiated between the camera and the conferencing application.

Synopsis	streaming settings get	
Settings returned	IP Enabled	Returns `true` if IP streaming is enabled; `false` if it is not.
	IP Port	Returns the port number that the IP stream uses. Port 554 is typical.
	IP Protocol	Returns the streaming protocol. Only RTSP is supported at this time.
	IP Quality	Returns the video quality currently set.
	IP Resolution	Returns the IP streaming video resolution.
	IP URL	Returns the URL where the stream is available.
	USB Enabled	Returns `true` if USB streaming is enabled; `false` if it is not.

Example	**`streaming settings get`**
	Returns the current streaming settings in a form something like this:
	`IP Enabled true`
	`IP Port 554`
	`IP Protocol RTSP`
	`IP Quality High Quality (Best)`
	`IP Resolution 1800p`
	`IP Url mumbleco-boardroom-clearshot1-stream`
	`USB Enabled true`	

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. If this is not specified, the default is five packets.
	`size`	The size of each ECHO_REQUEST packet. If this is not specified, the default is 56 bytes.
	<destination-ip>	The IP address where the ECHO_REQUEST packets will be sent.
Examples	**`network ping 192.168.1.1`** Sends five ECHO_REQUEST packets of 56 bytes each to the host at 192.168.1.1.	
	`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.	

network settings get

Returns the current network settings for mac addres, ip address, netmask, and gateway

Synopsis	network settings get

Example	**`network settings get`**
	`MAC Address: 00:04:a3:85:0a:ee`
	`IP Address: 10.10.8.116`
	`Netmask: 255.255.255.0`
	`Gateway: 10.10.8.100`

sleep

Pauses for the specified number of milliseconds.

Synopsis	sleep <milliseconds>	
Options	<milliseconds>	The number of milliseconds (1 - 10000) to pause
Example	**`sleep 7000`** 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`** Reboots the system immediately.	
	`system reboot 30` Reboots the system in 30 seconds.	

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.
	`off`	Disables factory reset on reboot.

Examples	**`system factory-reset get`**
	Returns the factory reset status in this form:
	`factory-reset (software):`
	`off`
	(This evaluates the most recent `system factory-reset` on or off command, if one has been received.)
	`factory-reset (hardware):`
	`off`
	(This reads the rear panel DIP switches and returns the status `on` if they are all in the down position.)	

	`system factory-reset on`
	Enables factory reset upon reboot. Returns current status in this form:
	`factory-reset (software):`
	`on`
	`factory-reset (hardware):`
	`off`	

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

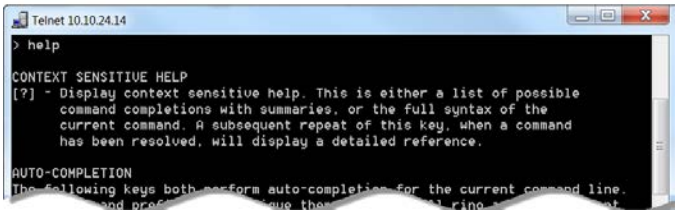
Returns the current firmware version.

Synopsis	version

Example	**version**
	Returns current firmware version information in a form something like this:
	`Commit: d033ddb2378357a871011eb820706dcaa64ec0e2`
	`Sensor Version: 02.00`
	`System Version: ClearSHOT USB 1.0.0`

help

Displays an overview of the CLI syntax.

Synopsis	help
Example 	**help** 

exit

Ends the command session and then does one of these two things:

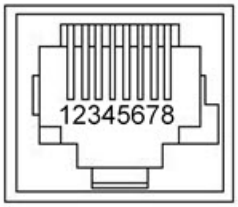
- Telnet: Closes the socket.
- RS-232 serial: Automatically starts a new session.

Synopsis	exit
Example	**exit**

RS-232 Serial Communication

The RS-232 serial port (color-coded blue) near the center of the camera's back panel provides another means of controlling the camera.

Specification	Value
Communication Speed	9600 bps (default)
Number of start bits	1
Number of stop bits	1
Number of data bits	8
Parity	None
Flow control	None



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 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.

The Vaddio ClearSHOT 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.

RS-232 Command List

Command Set	Command	Command Packet	Comments
AddressSet	Broadcast	88 30 01 FF	Sets address for all daisy-chained cameras
IF_Clear	Broadcast	88 01 00 01 FF	I/F Clear
CommandCancel		8x 2p FF	p= Socket No.(1-2)
CAM_Power	On	8x 01 04 00 02 FF	Power on
	Off	8x 01 04 00 03 FF	Power off
CAM_Zoom	Stop	8x 01 04 07 00 FF	
	Tele(std)	8x 01 04 07 02 FF	
	Wide(std)	8x 01 04 07 03 FF	
	Tele (variable)	8x 01 04 07 2p FF	p= speed 0:low to 7:high
	Wide (variable)	8x 01 04 07 3p FF	p= speed 0:low to 7:high
	Direct	8x 01 04 47 0p 0q 0r 0s FF	pqrs=Zoom Position (0h-4000h)
CAM_Focus	Stop	8x 01 04 08 00 FF	
	Far (std)	8x 01 04 08 02 FF	
	Near (std)	8x 01 04 08 03 FF	
	Far (variable)	8x 01 04 08 2p FF	p= speed 0:low to 7:high
	Near (variable)	8x 01 04 08 3p FF	p= speed 0:low to 7:high
	Direct	8x 01 04 48 0p 0q 0r 0s FF	pqrs=Focus Position (1000h – F000h)
	Auto Focus	8x 01 04 38 02 FF	
	Manual Focus	8x 01 04 38 03 FF	
	Auto/Manual	8x 01 04 08 10 FF	
CAM_ZoomFocus	Direct	8x 01 04 47 0p 0q 0r 0s 0t 0u 0v 0w FF	pqrs=Zoom Position (0h - 7AC0h) tuvw=Focus Position (1000h – F000h)
CAM_WB	Auto	8x 01 04 35 00 FF	Normal Auto
	Manual	8x 01 04 35 05 FF	Manual Control mode
CAM_RGain	Direct	8x 01 04 43 00 00 0p 0q FF	pq=Red gain (00h – FFh)
CAM_BGain	Direct	8x 01 04 44 00 00 0p 0q FF	pq=Blue gain (00h – FFh)

Command Set	Command	Command Packet	Comments
CAM_AE	Full Auto	8x 01 04 39 00 FF	Auto Exposure mode
	Manual	8x 01 04 39 03 FF	Manual Control mode
CAM_Iris	Direct	8x 01 04 4B 00 00 0p 0q FF	pq=Iris Position (0h, 07h-11h) See Iris Values
CAM_Gain	Direct	8x 01 04 4C 00 00 0p 0q FF	Iris Gain setting pq=Gain Position (01h – 0Fh) See Iris Gain Values
CAM_BackLight	On	8x 01 04 33 02 FF	Backlight Compensation On/Off
	Off	8x 01 04 33 03 FF	
CAM_Aperture	Direct	8x 01 04 42 00 00 0p 0q FF	pq=Aperture Position (0h-0fh)
CAM_Gamma	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)
CAM_Chroma	Direct	8x 01 7E 55 00 00 00 0p FF	p: 0-0eh
CAM_Memory	Reset	8x 01 04 3F 00 0p FF	p= preset number(0h-0fh)
	Set standard	8x 01 04 3F 01 0p FF	
	Set standard with ‘scene’	8x 01 04 3F 21 0p FF	
	Recall standard	8x 01 04 3F 02 0p FF	
Pan-TiltDrive	Up	8x 01 06 01 vv ww 03 01 FF	vv= Pan speed (01h-18h) ww=Tilt speed (01h-14h)
	Down	8x 01 06 01 vv ww 03 02 FF	
	Left	8x 01 06 01 vv ww 01 03 FF	
	Right	8x 01 06 01 vv ww 02 03 FF	
	UpLeft	8x 01 06 01 vv ww 01 01 FF	
	UpRight	8x 01 06 01 vv ww 02 01 FF	
	DownLeft	8x 01 06 01 vv ww 01 02 FF	
	DownRight	8x 01 06 01 vv ww 02 02 FF	
	Stop	8x 01 06 01 vv ww 03 03 FF	
	Absolute Position	8x 01 06 02 vv ww 0Y 0Y 0Y 0Y 0Z 0Z 0Z 0Z FF	0Y0Y0Y0Y = Pan position (A654h-5A80h) 0Z0Z0Z0Z = Tilt position (DEE3h-64E6h)
	Home	8x 01 06 04 FF	Returns the camera to its default position
Pan-Tilt-ZoomDrive	Up	8x 01 06 0A vv ww rr 03 01 03 FF	vv= Pan speed (01h-18h) ww=Tilt speed (01h-14h)

Command Set	Command	Command Packet	Comments
	Down	8x 01 06 0A vv ww rr 03 02 03 FF	rr=Zoom speed (00h-07h)
	Left	8x 01 06 0A vv ww rr 01 03 03 FF	
	Right	8x 01 06 0A vv ww rr 02 03 03 FF	
	In	8x 01 06 0A vv ww rr 03 03 01 FF	
	Out	8x 01 06 0A vv ww rr 03 03 02 FF	
	Stop	8x 01 06 0A vv ww rr 03 03 03 FF	
	Absolute Position	8x 01 06 0B vv ww 0Y 0Y 0Y 0Y 0Z 0Z 0Z 0Z 0R 0R 0R 0R FF	vv: Pan speed (01h-18h) ww: Tilt speed (01h-14h) 0Y0Y0Y0Y = Pan position (A654h-5A80h) 0Z0Z0Z0Z = Tilt position (DEE3h-64E6h) 0R0R0R0R = Zoom position (0000h-7AC0h)
	Home	8x 01 06 0C FF	Returns the camera to the default position and zoom
CAM_PTZ_ PresetSpeed		8x 01 7e 01 0b pp qq rr FF	pp:pan speed (01h-18h), qq:tilt speed (01h-14h), rr:zoom speed (0h-07h)

Command Setting Values – Exposure Control

Iris Values

Value	
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
0x0F	28
0x0E	26
0x0D	24
0x0C	22
0x0B	20
0x0A	18
0x09	16
0x08	14
0x07	12
0x06	10

Value	Steps
0x05	8
0x04	6
0x03	4
0x02	2
0x01	0

RS-232 Inquiry Command List

Inquiry Command	Command	Response Packet	Comments
CAM_PowerInq	8x 09 04 00 FF	y0 50 02 FF	On
		y0 50 03 FF	Off (Standby)
CAM_ZoomPosInq	8x 09 04 47 FF	y0 50 0p 0q 0r 0s FF	pqrs: Zoom Position
CAM_FocusModeInq	8x 09 04 38 FF	y0 50 02 FF	Auto Focus
		y0 50 03 FF	Manual Focus
CAM_FocusPosInq	8x 09 04 48 FF	y0 50 0p 0q 0r 0s FF	pqrs: Focus Position
CAM_WBModeInq	8x 09 04 35 FF	y0 50 00 FF	Auto
		y0 50 03 FF	One Push WB
		y0 50 04 FF	ATW
		y0 50 05 FF	Manual
CAM_RGainInq	8x 09 04 43 FF	y0 50 00 00 0p 0q FF	pq: R Gain
CAM_BGainInq	8x 09 04 44 FF	y0 50 00 00 0p 0q FF	pq: B Gain
CAM_AEModeInq	8x 09 04 39 FF	y0 50 00 FF	Full Auto
		y0 50 03 FF	Manual
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_ 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_Gamma	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)
CAM_ MemoryStatusInq	8x 09 04 3F 0p FF	y0 50 0p 0q 00 00 FF	p: Memory number q: mode (00-std, 10-std /w ccu)
Vaddio_ModelInq	8x 09 08 0e FF	y0 50 05 08 00 00 00 FF	ClearSHOT 10
CAM_Chroma	8x 09 7E 55 FF	y0 50 05 00 00 00 0p FF	p: 0-0eh
Pan-tiltPosInq	8x 09 06 12 FF	y0 50 0w 0w 0w 0w 0z 0z 0z 0z FF	wwww= Pan position zzzz=Tilt Position
CAM_PTZ_ PresetSpeed	8x 09 7E 01 0B FF	y0 50 pp qq rr FF	pp:pan speed (01h-18h), qq:tilt speed (01h-14h), rr:zoom speed (0h-07h)

Specifications

Video and Image

Outputs/protocols	IP H.264, RTSP USB 3.0, UVC, YUY2	**Aspect ratio**	Depends on video resolution
IP video resolutions/frame rates	1080p/30/25/15 720p/60/30/25/15 704x576p/60/30/25/15 720x480p/60/30/25/15 640x480p/60/30/25/15 360p/60/30/25/15 352x288p/60/30/25/15	**USB 3.0 video resolutions/frame rates**	1080p/30/15 720p/60/30/15
		USB 2.0 and 3.0 video resolutions/frame rates All USB resolutions uncompressed	960x540p/30/15 848x480p/30/15 360p/60/30/15 424x240p/30/15 320x240p/30/15 180p/30/15
Streaming	IP (H.264), RTSP + USB 3.0 (UVC) IP and USB streams are simultaneous and can be at differing resolutions.		

Camera

Image device	1/2.8-Type Exmor CMOS sensor		
Pan angle and speed	± 170°, 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		
Minimum working distance	10mm (wide), 1.0m (tele)	**Minimum illumination**	Recommended: >100 lux
Pixels	2.14 million (effective)	**Aperture/detail**	16 steps (via all remote management interfaces)
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
Power	12 VDC, 3.0 Amp switching power supply		
Remote management	Web interface (Chrome, Firefox, Safari, Internet Explorer 8 through 11), Telnet, RS-232 API (modified VISCA)		

Physical and Environmental

Height	6.3” (163mm)	**Operating temperature**	0°C to +40°C (32°F to 104°F)
Width	6.1” (155mm)	**Operating humidity**	20% to 80% RH
Depth	5.5” (145mm)	**Storage temperature**	-5°C to +60° C (23°F to 140°F)
Weight	3.0 lbs.(1.36 kg)	**Storage humidity**	20% to 80% RH

Specifications are subject to change without notice.

Troubleshooting and Care

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

- Purple – booting or in standby (low power) mode.
- Blue – normal operation.
- Blinking blue – the camera has received a valid IR command.
- Red – Tally function; the camera is on-air.
- Blinking red – fault condition.
- Yellow – firmware update in progress.
- Off – no power to the camera.

Stuff happens – we get it. 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.	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 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.
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.

What is it doing?	Possible causes	Check and correct
	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 or changed on the System page in the web UI.
The camera loses all its settings when power is cycled.	All the DIP switches are in the ON (down) position.	Set the DIP switches to their proper positions. Default is all OFF (up). See Switch Settings for more 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.
Indicator light continues to blink blue.	The USB cable is not connected.	Connect the USB cable.

Restoring default camera settings

Set all DIP switches DOWN and cycle the power to reload the default camera settings. Then return all DIP switches to the desired 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 55022: December 2010	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 numeriques de la classe A préscrites dans le Règlement sur le brouillage radioélectrique édicte 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 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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Vaddio

131 Cheshire Ln., Suite 500

Minnetonka, MN 55305