



Installation Guide for

RoboSHOT USB Enterprise-Class PTZ Conferencing Cameras

Including RoboSHOT 12 USB, RoboSHOT 12E USB,
and RoboSHOT 30E USB

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Overview

This guide covers the RoboSHOT® USB enterprise-class PTZ conferencing cameras:

- RoboSHOT 12 USB, North America – 999-9920-000 (silver and black)
- RoboSHOT 12 USB, Europe and UK – 999-9920-001 (silver and black)
- RoboSHOT 12 USB, Australia and New Zealand – 999-9920-009 (silver and black)
- RoboSHOT 12E USB, North America – 999-99200-000 (black), 999-99200-000W (white)
- RoboSHOT 12E USB, Europe and UK – 999-99200-001 (black), 999-99200-001W (white)
- RoboSHOT 12E USB, Australia and New Zealand – 999-99200-009 (black), 999-99200-009W (white)
- RoboSHOT 30E USB, North America – 999-99230-000 (black), 999-99230-000W (white)
- RoboSHOT 30E USB, Europe and UK – 999-99230-001 (black), 999-99230-001W (white)
- RoboSHOT 30E USB, Australia and New Zealand – 999-99230-009 (black), 999-99230-009W (white)



Some models may be unavailable at this time.

What's in this Guide

This guide covers:

- Unpacking the camera
- Tips for a successful installation
- Instructions for installing the camera mount
- Information on connecting and mounting the camera
- Camera power-on

Complete product information is available in the **Complete Manual for RoboSHOT USB Enterprise-Class PTZ Conferencing Cameras**.

Features

- RoboSHOT 12 USB and RoboSHOT 12E USB: 12x optical zoom – perfect for huddle rooms and small to medium conference rooms
RoboSHOT 30E USB: 30x optical zoom – best for medium to large venues such as houses of worship and lecture theaters
- RoboSHOT 12 USB: Exmor® 1/2.8 type image sensor
RoboSHOT 12E USB and RoboSHOT 30E USB: Exmor R™ back-lit 1/2.5 type, high-speed, low-noise image sensor
- Simultaneous uncompressed USB 3.0 and H.264 IP streaming (RTSP or RTMP)
- Selectable IP stream resolution; USB stream resolution auto-negotiated with conferencing client
- HDMI video output for local display
- Smooth, silent direct-drive motors for precise pan and tilt movements at up to 120° per second
- Tri-Synchronous Motion™ simultaneous-arrival pan/tilt/zoom movement between presets
- Universal Video Class (UVC) drivers supported in Windows®, Mac® OS, and Linux operating systems, compatible with most UC conferencing applications
- Presenter-friendly IR remote control
- Integration-ready Telnet and serial RS-232 control
- Full administrative control via web interface; manage the camera remotely while monitoring the stream separately

Unpacking the Camera

Make sure you have received all the items you expected.

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

Caution

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



Note

Some models may be unavailable at this time.

RoboSHOT 12 USB, North America – 999-9920-000 (silver and black)

RoboSHOT 12 USB, Europe/UK – 999-9920-001 (silver and black)

RoboSHOT 12 USB, Australia/New Zealand – 999-9920-009 (silver and black)

- RoboSHOT 12 USB Camera
- Vaddio IR Remote Commander
- 12 VDC, 3.0 Amp switching power supply with AC cord set(s)
- Thin Profile Wall Mount with mounting hardware, black
- EZCamera RS-232 control adapter, part number 998-1001-232
- USB 3.0 Type A to Type B cable, 6 ft. (1.8m)
- Quick Start Guide



-000



-001



-009

RoboSHOT 12E USB, North America – 999-99200-000 (black); 999-99200-000W (white)
RoboSHOT 12E USB, Europe/UK – 999-99200-001 (black); 999-99200-001W (white)
RoboSHOT 12E USB, Australia/New Zealand – 999-99200-009 (black); 999-99200-009W (white)

- RoboSHOT 12E USB camera, black or white
- Thin Profile Wall Mount with mounting hardware, black or white, depending on camera color
- VaddioIR Remote Commander
- PoE+ mid-span power injector with AC cord set(s)
- EZCamera RS-232 control adapter, part number 998-1001-232
- USB 3.0 Type A to Type B cable, 6 ft. (1.8m)
- Quick Start Guide



RoboSHOT 30E USB, North America – 999-99230-000 (black); 999-99230-000W (white)
RoboSHOT 30E USB, Europe/UK – 999-99230-001 (black); 999-99230-001W (white)
RoboSHOT 30E USB, Australia/New Zealand – 999-99230-009 (black); 999-99230-009W (white)

- RoboSHOT 30E USB camera, black or white
- Thin Profile Wall Mount with mounting hardware, black or white, depending on camera color
- Vaddio IR Remote Commander
- PoE+ mid-span power injector with AC cord set(s)
- EZCamera RS-232 control adapter, part number 998-1001-232
- USB 3.0 Type A to Type B cable, 6 ft. (1.8m)
- Quick Start Guide



A Quick Look at the Camera

This section covers the physical features of the camera.

Front of the Camera

This photograph shows a RoboSHOT 12 USB camera. The RoboSHOT 12E USB and RoboSHOT 30E USB are similar in appearance, and are available in either black or white.



Camera and Zoom Lens:

- RoboSHOT 12 USB: 12x optical zoom (12x in Super-Wide mode, 10x in normal mode). Recommended for small to medium sized conference rooms.
- RoboSHOT 12E USB: 12x optical zoom; recommended for small to medium sized conference rooms.
- RoboSHOT 30E USB: 30x optical zoom; recommended for larger rooms.

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.

Back of the Camera – RoboSHOT 12 USB



- **12 VDC 3.0 A** – EIAJ-04 jack. Connect only the power supply shipped with the camera or approved replacement 12 VDC, 3A power supply. This connection is not needed if you connect to the network using a mid-span PoE+ power injector.
- **Network PoE+** – RJ-45 connector. Connect to the network for network access for IP streaming and camera control via web interface or Telnet. Optionally connect to the network using a mid-span PoE+ power injector for power, streaming, and control.
- **USB 3.0** – USB type B connector. Connect to a computer for use with soft conferencing applications. Provides uncompressed USB 3.0 stream.
- **HDMI video select switch** – Select the appropriate HDMI video output resolution for the near-end video display. USB streaming resolution is auto-negotiated; IP streaming resolution is set in the administrative web interface.
- **Camera Settings** – DIP switches to set camera behaviors such as IR frequency, image flip (camera is invertible), normal or Super-Wide mode, and baud rate. See [Camera Behavior Settings](#).
- **HDMI** – HDMI video output connector. Connect to the near-end video display.
- **RS-232** – RJ-45 connector. Optionally connect to a controller to manage the camera using a modified VISCA protocol.

Note

A label on the bottom of the camera lists the rotary and DIP switch settings.

Back of the Camera – RoboSHOT 12E USB and RoboSHOT 30E USB



- **Network PoE+** – RJ-45 connector. Connect to the network via mid-span PoE+ power injector. Provides power and network access for IP streaming and camera control via web interface or Telnet.
- **USB 3.0** – USB type B connector. Connect to a computer for use with soft conferencing applications. Provides uncompressed USB 3.0 stream.
- **HDMI video select switch** – Select the appropriate HDMI video output resolution for the near-end video display. USB streaming resolution is auto-negotiated; IP streaming resolution is set in the administrative web interface.
- **HDMI output** – HDMI video output connector. Connect to the near-end video display.
- **RS-232 port** – RJ-45 connector. Optionally connect to a controller to manage the camera using a modified VISCA protocol.

Note

A label on the bottom of the camera lists the rotary switch settings.

Installation

This section covers:

- Selecting the location for the camera
- Installing the mount
- RS-232 cable pin-out and communication settings
- Settings for the physical switches on the camera
- Connection diagrams
- Connecting and mounting the camera

And a required safety note here:

Note

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

Don't Void Your Warranty!



Caution

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

Caution

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

For RoboSHOT 12 USB: Use the power supply included with the camera or recommended for use with it. Always check the output voltage listed on the power supply label, as power supplies for different products may look nearly identical. Using the wrong power supply will void the warranty, possibly causing unsafe operating conditions and damage to 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.

Before You Install the Camera

Things to keep in mind when deciding where to install the camera:

- Consider camera viewing angles, lighting conditions, line-of-sight obstructions, and in-wall obstructions where the camera is to be mounted.
- Ensure that the camera body can move freely and will normally point away from the ceiling and lights. The camera will not perform well if it is pointed toward a light source such as a light fixture or window.
- If the IR Remote Commander will be used, ensure that nothing blocks the IR lens in the camera's base.

Prepare for a successful installation:

- Be sure you can identify all cables correctly.
- Check Cat-5 cables for continuity.
- Ensure that the video resolution rotary switch and the DIP switches (if any) are set appropriately.
- Talk to the network administrator. If installing the camera in a non-DHCP network (one that does not automatically assign IP addresses), you will need to configure the camera with a static IP address as directed by the network administrator.

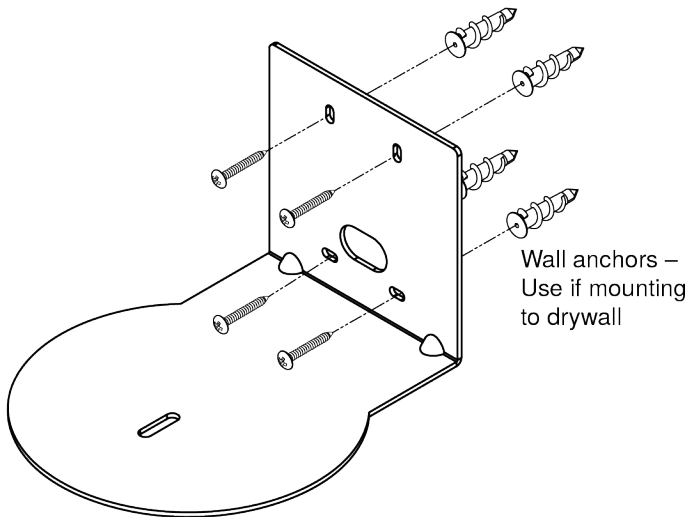
Installing the Wall Mount

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

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

- If you mount it to drywall, use the wall anchors provided with the wall mount.
- If you mount it to a wall box, use the cover plate screws supplied with the wall box.

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



About Ceiling-Mounted Cameras

If you use an inverted mount, set the camera's Image Flip DIP switch ON for inverted operation. This orients the video image correctly and sets the tilt motors to respond appropriately to tilt up and down commands from the remote, web interface, and connected control devices. For RoboSHOT Elite series cameras, this switch is available to the administrator on the System page of the web interface.

Note

If mounting this camera using the Half-Recessed Ceiling Mount, you will need to power the mount's IR receiver separately to use the IR remote with the camera. Use Power Extension Module 999-1005-021. This camera does not supply power to the mount's IR receiver.

Video Resolution Setting

A rotary switch sets the HDMI video resolution. USB streaming resolution is negotiated with the host PC and the application, and the IP streaming resolution is set via the web interface.

Set the desired video output resolution with the rotary switch before installing the camera. The video resolutions are mapped differently on the rotary switch for the newer Elite-series cameras.

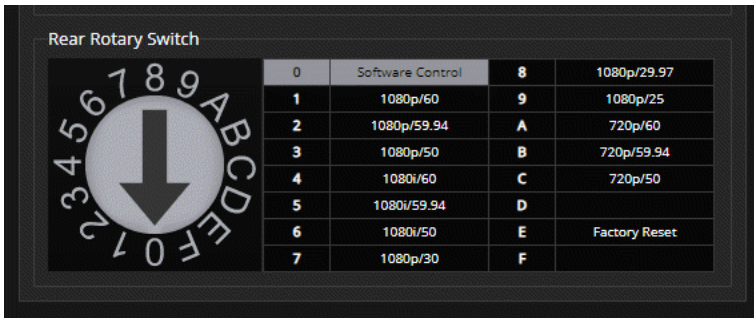
RoboSHOT 12 USB camera



The image shows the rear rotary switch for the RoboSHOT 12 USB camera. The switch has 10 positions labeled 0 through 9 and A through F. A large downward-pointing arrow is in the center of the dial. To the right of the dial is a table mapping these positions to video resolutions.

Position	Resolution
0	720p/59.94
1	1080i/59.94
2	1080p/59.94
3	720p/60
4	1080i/60
5	1080p/60
6	720p/50
7	1080i/50
8	1080p/50
9	720p/30
A	1080p/30
B	720p/25
C	1080p/25
D	
E	
F	

RoboSHOT 12E USB or RoboSHOT 30E USB camera



The image shows the rear rotary switch for the RoboSHOT 12E USB or RoboSHOT 30E USB camera. The switch has 10 positions labeled 0 through 9 and A through F. A large downward-pointing arrow is in the center of the dial. To the right of the dial is a table mapping these positions to video resolutions.

Position	Resolution
0	Software Control
1	1080p/60
2	1080p/59.94
3	1080p/50
4	1080i/60
5	1080i/59.94
6	1080i/50
7	1080p/30
8	1080p/29.97
9	1080p/25
A	720p/60
B	720p/59.94
C	720p/50
D	
E	Factory Reset
F	

For the newer Elite-series cameras: If the camera has been updated to version 3.1.0 firmware or later, Position 0 selects software control. Set video output resolution in the web interface.

The default resolution is 1080p/59.94. This capability is not available in earlier firmware versions or on the older RoboSHOT 12 USB camera.

A label on the bottom of the camera provides a quick reference for setting the rotary switch.

Camera Behavior Settings – RoboSHOT 12 USB

The RoboSHOT 12 USB camera uses DIP switches to set camera behaviors; the RoboSHOT 12E USB and RoboSHOT 30E USB cameras set all camera behaviors in the web interface.

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

Set the switches appropriately before mounting the camera.

After the camera is installed, you can read the switches from the camera's web interface.

Note

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

IR Frequency Selection: If there are multiple cameras in the room, use **switches 1 and 2** to configure each with a different IR frequency to allow the IR Remote Commander to control them independently. Then use the Camera Select buttons at the top of the remote to select the camera you want to control.

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

IR: Leave **switch 3** in the default UP position if the IR remote will be used.

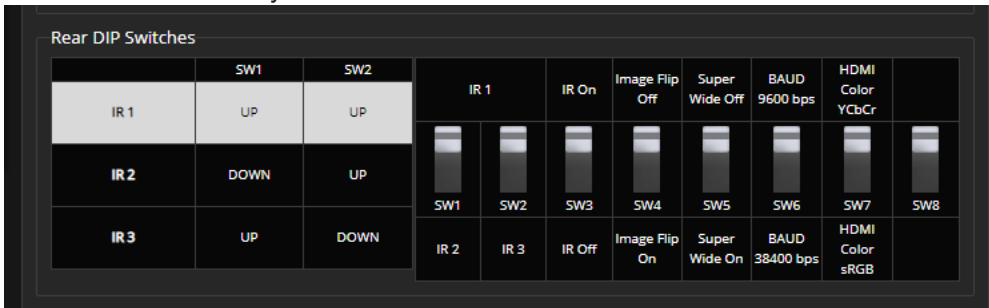
Image Flip: If mounting the camera upside-down, set **switch 4** to the DOWN position: IMAGE FLIP ON. This orients the video image correctly and sets the tilt motors to respond appropriately to tilt up and down commands from the remote, web interface, and connected control devices.

Super Wide: In normal mode, the camera has a 67.2° horizontal field of view (HFOV). For Super Wide mode, set **switch 5** to the DOWN position for a 12X, 73° horizontal angle of view.

Baud: Set **switch 6** to the baud rate of the device connected to the RS-232 port. The default is 9600 bps. The 38400 baud setting is optional if the connected control device supports it.

HDMI Color: Set the color space for the HDMI output to YCbCr (default; switch 7 UP) or sRGB.

Switch 8 is not currently used.

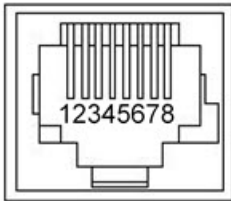


RS-232 Serial Communication Settings

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

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

RS-232 Connector Pin-Out



Connector pin-out:

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

Caution

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

Cabling Notes

Caution

Do not use pass-through RJ-45 connectors. If they are crimped incorrectly, they can damage the connectors on the product, cause intermittent connections, and degrade signal quality. Physical damage to the connectors may void your warranty.



Intact – will make reliable contact with cable connector



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

Use Cat-5e or better cable. We recommend using high-quality connectors and a high-quality crimping tool. We recommend shielded cabling if the cables will be coiled, run tightly with other cables, or placed close sources of electromagnetic interference such as power lines.

Caution

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

Pro Tip

Label all cables at both ends.

Connecting the Camera

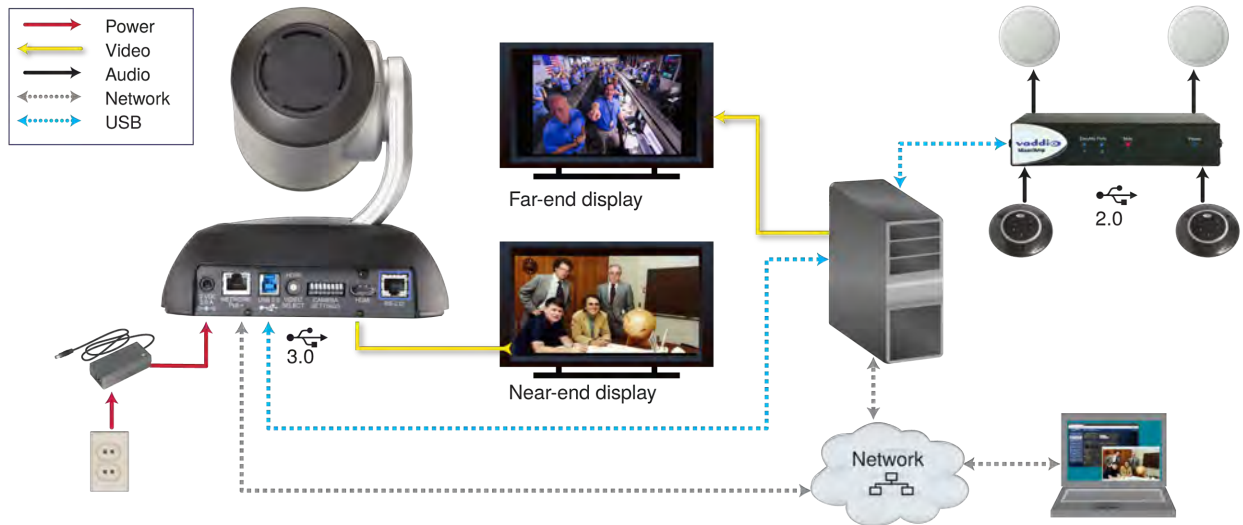
Note

Talk to the network administrator before you connect the equipment.

If you install this equipment on a non-DHCP network (one that uses only static IP addresses), you may need to configure the camera with a static IP address before you connect it to the network. Work with the network administrator to determine how to configure the equipment.

Basic Connections – RoboSHOT 12 USB

Here is an example of how the RoboSHOT 12 USB 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.

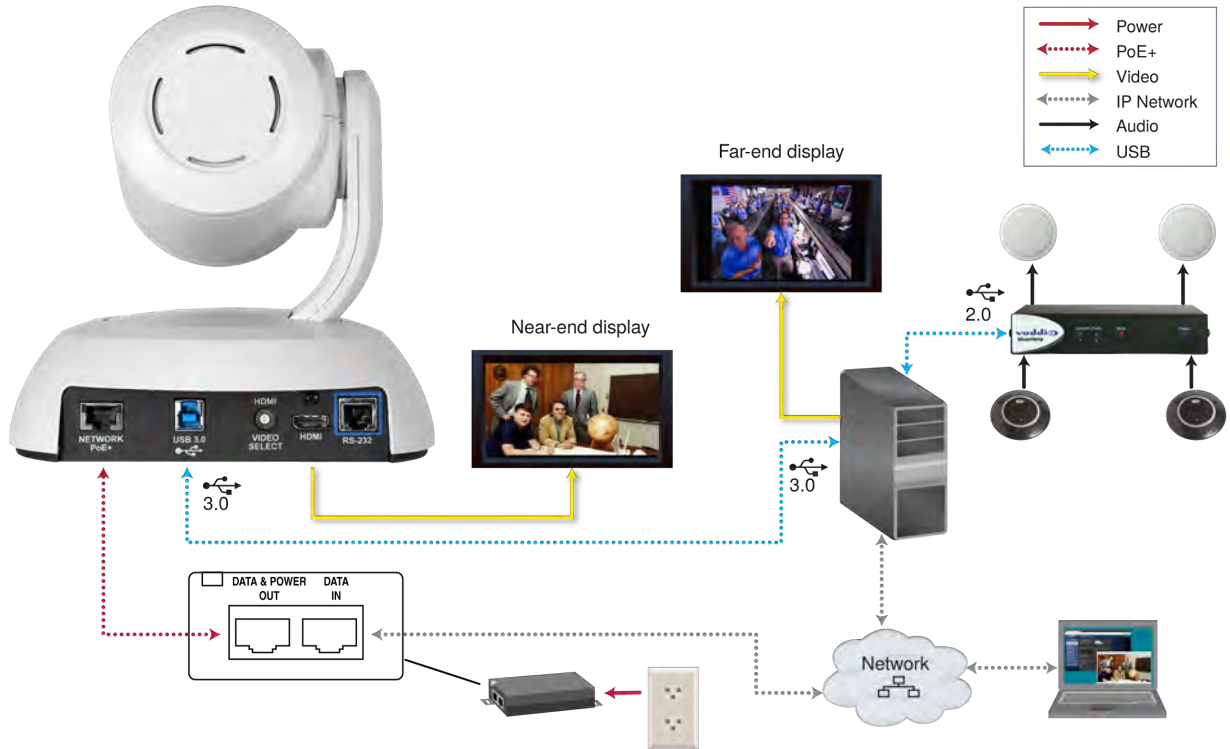


Note

RoboSHOT 12 USB output is USB 3.0; EasyUSB Mixer/Amp is USB 2.0.

Basic Connections – RoboSHOT 12E USB or RoboSHOT 30E USB

Here is the same installation using an Elite-series camera. Again, please note that the camera's output is USB 3.0; the EasyUSB Mixer/Amp is USB 2.0.



Installing the Camera

Caution

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

Caution

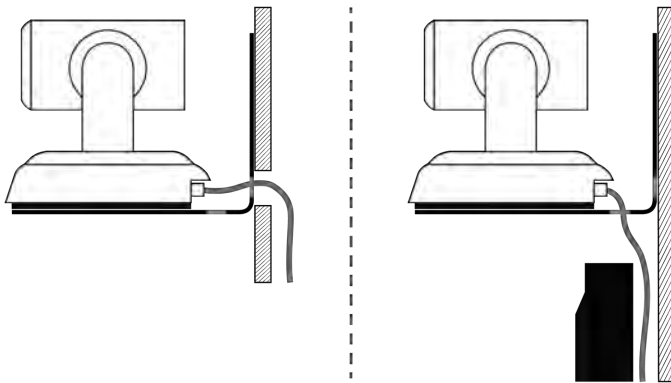
Check your cables. Connecting a cable to the wrong port or using the wrong pin-out can result in equipment damage and will void the warranty.

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

Caution:

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

3. Place the camera on the mount.



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

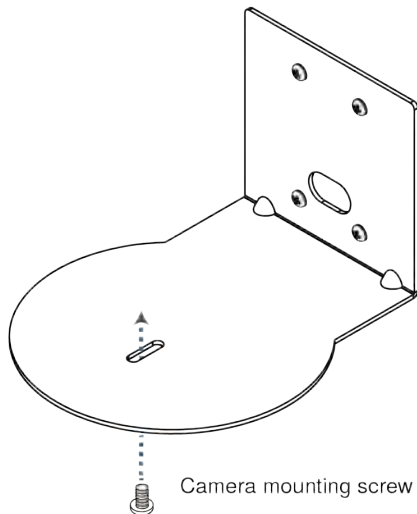


Image for illustration only; not to scale. Camera and mount details may differ.

Powering Up the Camera

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 – USB cable is disconnected (UC color scheme)
- Blinking red – Video mute is on (UC color scheme)

Caution

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

Note

By default, the camera's status 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.

Next Steps

The camera is now ready to configure and use. This information is available in the **Complete Manual for RoboSHOT USB Enterprise-Class PTZ Conferencing Cameras**.

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 and Conformity Statements – RoboSHOT 12E USB and RoboSHOT 30E USB

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'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la classe A prescrites dans le Règlement sur le brouillage radioélectrique édicté par le ministère des Communications du Canada.



European Compliance

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

Standard(s) To Which Conformity Is Declared:



EMC Directive 2004/108/EC

EN 55022: December 2010

EN 55024: November 2010

EN 61000-4-2: 1995 + Amendments A1: 1998 + A2: 2001

EN 61000-4-3: 2006 + A1: 2008

EN 61000-4-4: 2004 + Corrigendum 2006

EN 61000-4-5: 2006

EN 61000-4-6: 2009

EN 61000-4-8: 2010

EN 61000-4-11: 2004

Conducted and Radiated Emissions

Immunity

Electrostatic Discharge

Radiated Immunity

Electrical Fast Transients

Surge Immunity

Conducted Immunity

Power Frequency Magnetic Field

Voltage Dips, Interrupts and
Fluctuations

KN22 2008 (CISPR 22: 2006)

KN24 2008 (CISPR 24: 1997 + A1: 2000 + A2: 2002)

EN 61000-4-2

EN 61000-4-3

EN 61000-4-4

EN 61000-4-5

EN 61000-4-6

EN 61000-4-8

EN 61000-4-11

Conducted and Radiated Emissions

IT Immunity Characteristics

Electrostatic Discharge

Radiated Immunity

Electrical Fast Transients

Surge Immunity

Conducted Immunity

Power Frequency Magnetic Field

Voltage Dips, Interrupts and
Fluctuations

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

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

Safety

Safety

Compliance and Conformity Statements – RoboSHOT 12 USB

Compliance testing was performed to the following regulations:

FCC Part 15 (15.107, 15.109), Subpart B	Class B
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 B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.



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'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la classe A prescrites dans le Règlement sur le brouillage radioélectrique édicté par le ministère des Communications du Canada.



European Compliance

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

Standard(s) To Which Conformity Is Declared:



EMC Directive 2004/108/EC

EN 55022: December 2010

EN 55024: November 2010

EN 61000-4-2: 1995 + Amendments A1: 1998 + A2: 2001

EN 61000-4-3: 2006 + A1: 2008

EN 61000-4-4: 2004 + Corrigendum 2006

EN 61000-4-5: 2006

EN 61000-4-6: 2009

EN 61000-4-8: 2010

EN 61000-4-11: 2004

KN22 2008 (CISPR 22: 2006)

KN24 2008 (CISPR 24: 1997 + A1: 2000 + A2: 2002)

EN 61000-4-2

EN 61000-4-3

EN 61000-4-4

EN 61000-4-5

EN 61000-4-6

EN 61000-4-8

EN 61000-4-11

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

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

Conducted and Radiated Emissions

Immunity

Electrostatic Discharge

Radiated Immunity

Electrical Fast Transients

Surge Immunity

Conducted Immunity

Power Frequency Magnetic Field

Voltage Dips, Interrupts and
Fluctuations

Conducted and Radiated Emissions

IT Immunity Characteristics

Electrostatic Discharge

Radiated Immunity

Electrical Fast Transients

Surge Immunity

Conducted Immunity

Power Frequency Magnetic Field

Voltage Dips, Interrupts and
Fluctuations

Safety

Safety

Warranty and Return Policy

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Repair Policy Notes:

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

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European Space Agency (ESA) astronaut Samantha Cristoforetti, a Flight Engineer with Expedition 42, photographs the Earth through a window in the Cupola on the International Space Station

By NASA - https://blogs.nasa.gov/ISS_Science_Blog/2015/03/06/women-in-space-part-two-whats-gender-got-to-do-with-it/, Public Domain, <https://commons.wikimedia.org/w/index.php?curid=38834990>

Carl Sagan, Bruce Murray, Louis Friedman (founders) and Harry Ashmore (advisor), on the occasion of signing the papers formally incorporating The Planetary Society

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Main Control Room / Mission Control Room of ESA at the European Space Operations Centre (ESOC) in Darmstadt, Germany

By European Space Agency - ESOC flickr, Credit: ESA - Jürgen Mai, CC BY-SA 3.0-igo, <https://commons.wikimedia.org/w/index.php?curid=36743173>

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

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European Space Agency astronaut Luca Parmitano, Expedition 36 flight engineer, outside the International Space Station

By NASA - <http://spaceflight.nasa.gov/gallery/images/station/crew-36/html/iss036e016704.html>, Public Domain, <https://commons.wikimedia.org/w/index.php?curid=27263573>

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

Nicolas Altobelli, Rosetta Scientist at ESA's European Space Astronomy Centre, Villanueva de la Cañada, Madrid, Spain

By European Space Agency - Nicolas Altobelli talks to the media, CC BY-SA 3.0-igo, <https://commons.wikimedia.org/w/index.php?curid=36743144>

Andrea Accomazzo, ESA Rosetta Spacecraft Operations Manager, providing a live update from the Main Control Room at ESA's European Space Operations Centre, Darmstadt, Germany during the Rosetta wake-up day.

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Sleeping goose

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

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