



VADDIO™ WIDESHOT™ QUSB SYSTEM

WideSHOT HD POV Camera featuring the Quick-Connect™ USB Interface

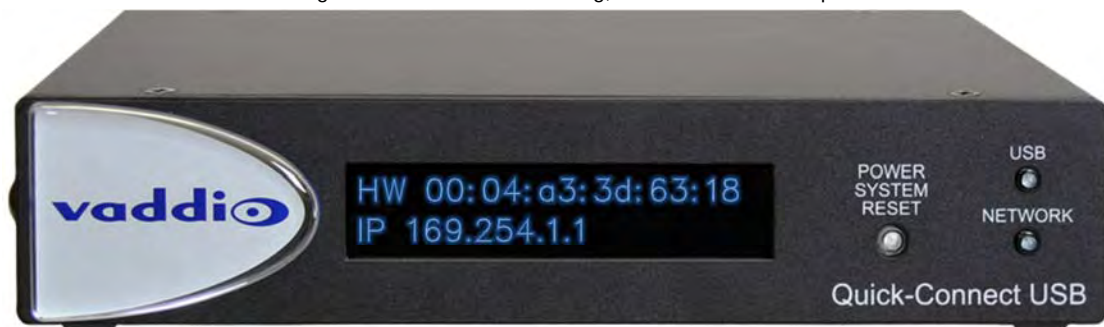
Model Number 999-6911-000 (North America)

Model Number 999-6911-001 (International)



Quick-Connect USB System Interface

Featuring USB 2.0 or H.264 Streaming, HDMI and YPbPr Outputs



Inside Front Cover - Blank

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OVERVIEW:

The Vaddio WideSHOT HD camera wide angle, manual lens camera produces astounding results for small and huddle room applications where the distance between the camera and the subject is limited. The WideSHOT camera was designed as a low cost, high value, manual pan/tilt/zoom camera with a super wide-angle lens that can be set to provide the best image possible in a small environment. To that end, the WideSHOT camera sports a lens with 82.2° wide horizontal field of view with a user adjustable iris, focus and varifocal zoom of approximately 3X (3.3mm to 10.5mm). With the 3X optical zoom capability, even the “big” small rooms can be covered too.

The WideSHOT HD was designed from the ground up and is equipped with the Vaddio EZCamera™ Cat-5 wiring standard for video, power and control. Using HSDS™ (high speed differential) video outputs over Cat-5 cable, the WideSHOT supplies a wide range of video resolutions that are selectable from the rear panel; from 480p/59.94-YPbPr up to and including 1080p/60. The HSDS processing allows delivery of the WideSHOT HD video signals up to 150' (45.72m).

This system features the exciting and robust Quick-Connect USB Interface, which was designed to have multi-format digital and analog video outputs, to be compatible with all existing and forthcoming Vaddio cameras and include USB 2.0 or IP streaming outputs with a built-in web server for IP control. The outputs include; HDMI, YPbPr, USB Video (UVC standards-MJPEG) and H.264 IP Video (RTSP & HLS). The embedded webserver provides for browser-based access to camera controls, camera presets and basic CCU functions (color and shading controls) as well as the video configuration web pages.

Choose between three (3) IR frequencies for the Vaddio IR SHOT Commander to allow multiple cameras to be locally IR controlled with a single remote control. And like all Vaddio camera packages, the thin profile wall mount is included and it's made in the USA.

Intended Use:

Before operating the device, please read the entire manual thoroughly. The system was designed, built, and tested for use indoors with the power supply provided. The use of a power supply other than the one provided, or outdoor operation hasn't been tested and may damage the device or create a potentially unsafe operating condition.

Important Safeguards:

Read and understand all instructions before using. Do not operate any device if it has been dropped or damaged. In this case, a Vaddio technician must examine the product before operating. To reduce the risk of electric shock, do not immerse in water or other liquids and avoid extremely humid conditions.



Use only the power supply provided with the system. Use of any unauthorized power supply will void any and all warranties.



Please do not use “pass-thru” type RJ-45 connectors. These pass-thru type connectors do not work well for professional installations and can be the cause of intermittent connections which can result in the RS-232 control line failing and locking up, and/or compromising the HSDS (high speed differential) signals. For best results please use standard RJ-45 connectors and test all cables for proper pin-outs prior to use and connection to Vaddio product.

Save These Instructions:

The information contained in this manual will help you install and operate your product. If these instructions are misplaced, these documents can be downloaded from www.vaddio.com free of charge.



Image: WideSHOT HD Camera



Image: Quick-Connect USB Interface



Image:
WideSHOT
Rear Panel

UNPACKING:

Carefully remove the product and all of the included parts from the packaging. Identify the following parts for each camera:

WideSHOT QUSB Camera System (North America):

Part Number: 999-6911-000

- One (1) WideSHOT HD Wide-Angle Camera (998-6910-000)
- One (1) Vaddio IR SHOT Commander Remote
- One (1) Quick-Connect USB Interface (998-1105-038)
- One (1) 6' (1.83m) USB 2.0 Type-A to Type-B Cable (Black)
- One (1) 24 VDC, 2.0 A Power Supply with Power Cord for North America
- One (1) Thin Profile Wall Mount with Mounting Hardware
- One (1) EZCamera™ Control Adapter (RJ-45-F to DB-9-F)
- Quick Start Guide

NOTE: Full manuals are downloaded from support.vaddio.com

**WideSHOT QUSB Camera System (International):**

Part Number: 999-6911-001

- One (1) WideSHOT HD Camera (998-6910-000)
- One (1) Vaddio IR SHOT Commander Remote
- One (1) Quick-Connect USB Interface (998-1105-038)
- One (1) 6' (1.83m) USB 2.0 Type-A to Type-B Cable (Black)
- One (1) 24 VDC, 2.0 A Power Supply
- One (1) Euro Power Cable
- One (1) UK Power Cable
- One (1) Thin Profile Wall Mount with Mounting Hardware
- One (1) EZCamera™ Control Adapter (RJ-45-F to DB-9-F)
- Quick Start Guide

NOTE: Full manuals are downloaded from support.vaddio.com

**Front View with Feature Call-outs**

Image: WideSHOT HD PTZ Camera



- 1) Lens:** 3.3mm to 10.5mm Varifocal HD Zoom Lens (16:9), 82.2° wide end, 27.4° tele end (approx. 3X zoom).
- 2) IR Sensor and Power/Tally LED:** The IR sensor for the IR SHOT Commander remote is located here. Below it is a light pipe where a blue LED power and a red LED tally reside. Both light up to produce purple.
- 3) Focus Knob Retention Screw:** Remove screw and knob to manually set zoom and iris (see next page).
- 4) The Yoke:** For manual pan and tilt. Tilt range is $\pm 30^\circ$ and Pan is limited to the service loop of the cabling.
- 5) Logo:** Really Cool Logo Badge (RCLB). The RCLB is affixed to the base in a recessed ovoid area.
- 6) The Aluminum Base and Steel Cylindrical Body:** Please don't drop it on your foot, it's fairly substantial.

Setting the WideSHOT Lens

Image: WideSHOT Focus Knob Removal

You may ask, “Why would anyone want to remove the focus knob?” The answer is directly correlated with the quality of this wide-angle HD lens. It is not a plastic “webcam”, but instead it is an exceptional quality glass lens, rated up to 3-megapixel with a 3.3mm to 10.5mm precision varifocal optical zoom lens with manual iris, focus and zoom controls.

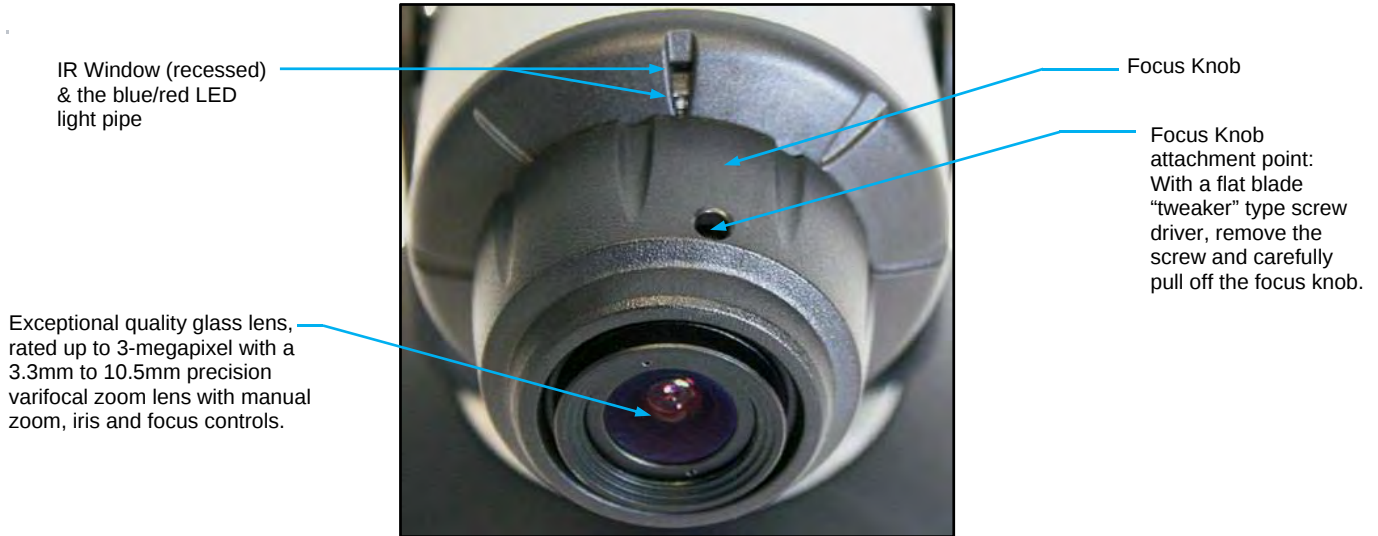


Image: Adjusting the HD Varifocal Optical Zoom Lens

After removing the focus knob screw and carefully sliding off the “snug” focus knob, the lens controls are exposed and available for adjustment. The controls are as follows:

- 1) **The Optical Zoom Control:** By carefully untightening the knurled screw a half turn on the innermost ring, adjust the ring to either the wide (W) or tele (T) direction. The focus ring, now without knurled adjustment screw (screw taken out to remove the focus knob) will need to be adjusted as the zoom is changed. Experiment with the zoom range to fit the application. A full 82.2° may be too wide in some cases and tailoring the zoom to 65° to 70° may fit the room better. After setting the control, tighten the knurled screw.
- 2) **The Manual Iris Control:** After setting the zoom range and focusing on the subject's at the distance that the camera will be used, the iris can be adjusted to limit the amount of light that the image sensor receives, which in turn gives an increased depth of field for focusing on the people in front of the camera. The “O” stands for open and the “C” stands for closed. Experiment with the iris to achieve the best results for the application. After setting the control, tighten the knurled screw.
- 3) **The Focus Control:** The outermost ring is the focus control and can be adjusted to the near (N) or far (F) side. Set the focus ring to the approximate position and reattach the focus knob with the knurled screw when finished. Fine tune the focus for the final shot.



Rear Panel Connections with Feature Call-outs

Image: WideSHOT HD Camera Rear View



1) RS-232 (Color Coded Blue): The RS-232 accepts modified VISCA protocol for camera control, as well as transmits IR signaling received by the front IR receiver, which can be transmitted to third party devices. The WideSHOT will not react to the remote if the IR is off. IR forwarding is not available with Quick-Connect USB Interface.

2) EZ-POWER VIDEO Port (Color Coded Orange): This RJ-45 connector is only used with the Quick-Connect SR, Quick-Connect DVI-D/HDMI SR Interface, Quick-Connect USB and USB Mini Interfaces to supply power and return HSDS (differential) video from the camera over Cat-5 cable up to distance of 150' (45.72m).

3) WideSHOT DIP Switch Settings: Settings for IR remote frequency, IR receiver on/off, image flip, test bars and defaults can be configured on these switches. See the Switch Settings page for additional information. The dip switch settings are as follows:

Table: WideSHOT Dip Switch Settings

DIP Switch	Function
1	Up = IR1, Down = IR2
2	Up = IR 1 or 2, Down = IR3
3	Up=IR ON, Down = IR OFF
4	Up = Normal Image, Down = Image Flip
5	Test Bars
6	Update Position - Leave UP unless updating firmware
All Down	Reset to Defaults - with power cycle



6 - Position
DIP Switch

4) HD Video Select: A rotary switch allows the user to choose the component HD output video resolution and format. After setting or changing the resolution, reboot the camera to ensure proper operation. If an unassigned rotary selection position is chosen (3, 9, A, B, C or D), the camera will output a medium grey video privacy mask. Simply set the rotary switch to an assigned position to output video. The HD Video Select Rotary Switch Settings are as follows:

Table: WideSHOT HD VIDEO Selections

Rotary	Resolutions	Rotary	Resolutions
0	720p/59.94	8	576p/50
1	1080i/59.94	9	--
2	1080p/59.94	A	--
3	--	B	--
4	720p/50	C	--
5	1080i/50	D	--
6	1080p/50	E	1080p/29.97
7	480p/59.94	F	1080p/25



Point the notch in the switch stem to assign the rotary position

Notes:

- 1) For IP or USB 2.0 Streaming, use position "0" (720p/59.94) **for best results**
- 2) Set the rotary switch to an assigned position. A medium grey privacy mask is displayed on unassigned positions.

QUICK-CONNECT USB INTERFACE**Image: Front Panel with Feature Call-outs****1) LCD Blue Backlit Display:**

20 x 2 Character, ODV (omnidirectional view), ABN (advanced black nematic) display with a high contrast and wide viewing angle combined with high visibility. The MAC address (labeled as "HW" for hardware) is on the top line, and the IP address (static or DHCP) is listed on the bottom line. This display with IP and MAC addresses allows for easy access to the embedded web server and Vaddio camera settings for the PC or BYOD (bring your own device - laptop or tablet) users of UC conference systems. Upon power up or power reset this display will indicate when the unit is in initialization mode.

2) Power/ System Reset Switch:

The System Reset switch on the front panel is a blue back-lit tactile switch that will illuminate when power is present at the rear power connector. Pressing in and holding this switch for 1.15643 seconds will restart/reinitialize the Quick-Connect USB Interface.

3) Network LED:

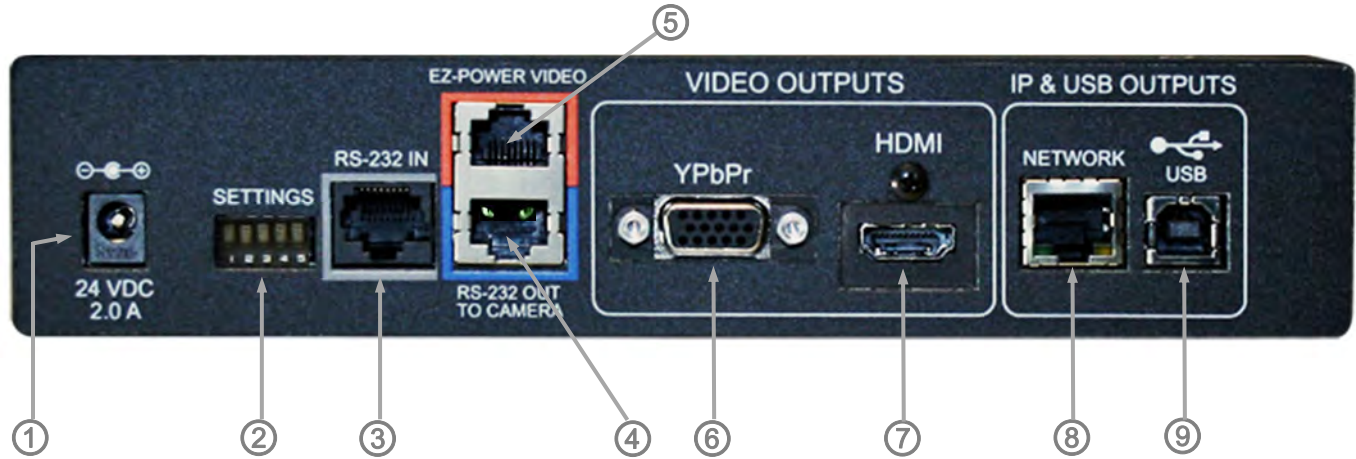
The blue panel mount LED indicator will indicate the presence of an Ethernet connection. This LED will blink to indicate network activity. If no network connection is made, the LED will remain off.

4) USB LED:

The blue panel mount LED indicates the presence of a USB connection to a PC (or mac). Blinking will indicate USB activity. If no USB connection is present the LED will remain off.

Quick-Connect USB Interface

Image: Rear Panel with Feature Call-outs



- 1) **Power Input:** 5.5mm OD x 2.5mm ID coaxial connector for the provided 24 VDC, 2.0 Amp switching power supply. The Quick-Connect USB Supplies Power to the attached camera.
- 2) **5-Position DIP Switch:** A 5-position dip switch allows the user to choose the HD video color space (YCbCr for HDMI and sRGB color space for DVI-D) on the HDMI output, configure for updates, and restore factory defaults when cycling power.

Table: Quick Connect USB Rear Panel Dip Switch Settings

DIP Switch	Function	Default	Activation
1	Future Use	Up	n/a
2	Future Use	Up	n/a
3	Color Space HDMI Connector	Up = HDMI (YCbCr)	Down = DVI (sRGB)
4	Program / Update	UP = No Program	DOWN = Ready To Program
5	Future Use	Up	n/a
All Down	Reset to Defaults	All UP	ALL DOWN (with power cycle)



5 - Position
DIP Switch

- 3) **RS-232 IN (Color Coded Grey):** Serial RS-232 input on a RJ-45 connector. This control port allows a Vaddio joystick controller or 3rd party controller (Crestron/AMX) to control the camera functions if the embedded webserver is not used for real time control.
- 4) **RS-232 OUT TO CAMERA (Color Coded Blue):** Serial RS-232 output on RJ-45 connects via Cat-5 to the camera RS-232 input on the camera. Control signals from the embedded webserver are sent to the camera over this control port.
- 5) **EZ-POWER VIDEO Port (Color Coded Orange):** RJ-45 jack used to supply 24 VDC power to the camera and return differential video from the camera on Cat-5 cable at a maximum distance of 150' (45.7m).
- 6) **YPbPr Output:** Analog component video output on a DE-15 (HD15) connector (resolution is set on the back of the camera). The YPbPr output resolution will be the same as the HDMI output resolution. SD video resolutions (Y/C and CVBS formats) are not supported by the Quick-Connect USB Interface; however some progressive frame analog component SD video is supported.
- 7) **HDMI Output:** The digital video output on the HDMI connector can either be YCbCr color space (normal HDMI mode) or can be changed to DVI-D color space (sRGB) for older monitors and devices. The HDMI and YPbPr outputs work simultaneously and are the same resolution (set at the camera).
- 8) **Ethernet 10/100 Network RJ-45 Jack:** The Ethernet jack will have yellow and green lights to indicate connectivity and activity of the network on that jack. The Ethernet jack will stream video up to 1080p/30 (H.264) and can be set from the internal web pages much like the HD-USB Camera. The resolutions will available in a three (3) stage quality format (High Quality, Good Quality and Standard Quality targets) and includes a range of CIF to 1080p/30.
- 9) **USB 2.0 Connector:** The USB 2.0 is on a Type-B female jack and connects to a PC running a soft-client video conferencing system or video capture software that uses UVC (USB Video Class) standard drivers. No other USB 2.0 drivers are required to plug the QC-USB into a computer and have it work. The UVC drivers will auto negotiate the top resolution that the PC and QC-USB can accomplish together and auto-implement that resolution.

BASIC APPLICATION DIAGRAMS

Diagram: Basic Wiring Configuration - Without Network or PC Integration

WideSHOT HD POV Manual Camera shown with the Quick-Connect USB Interface (video application)

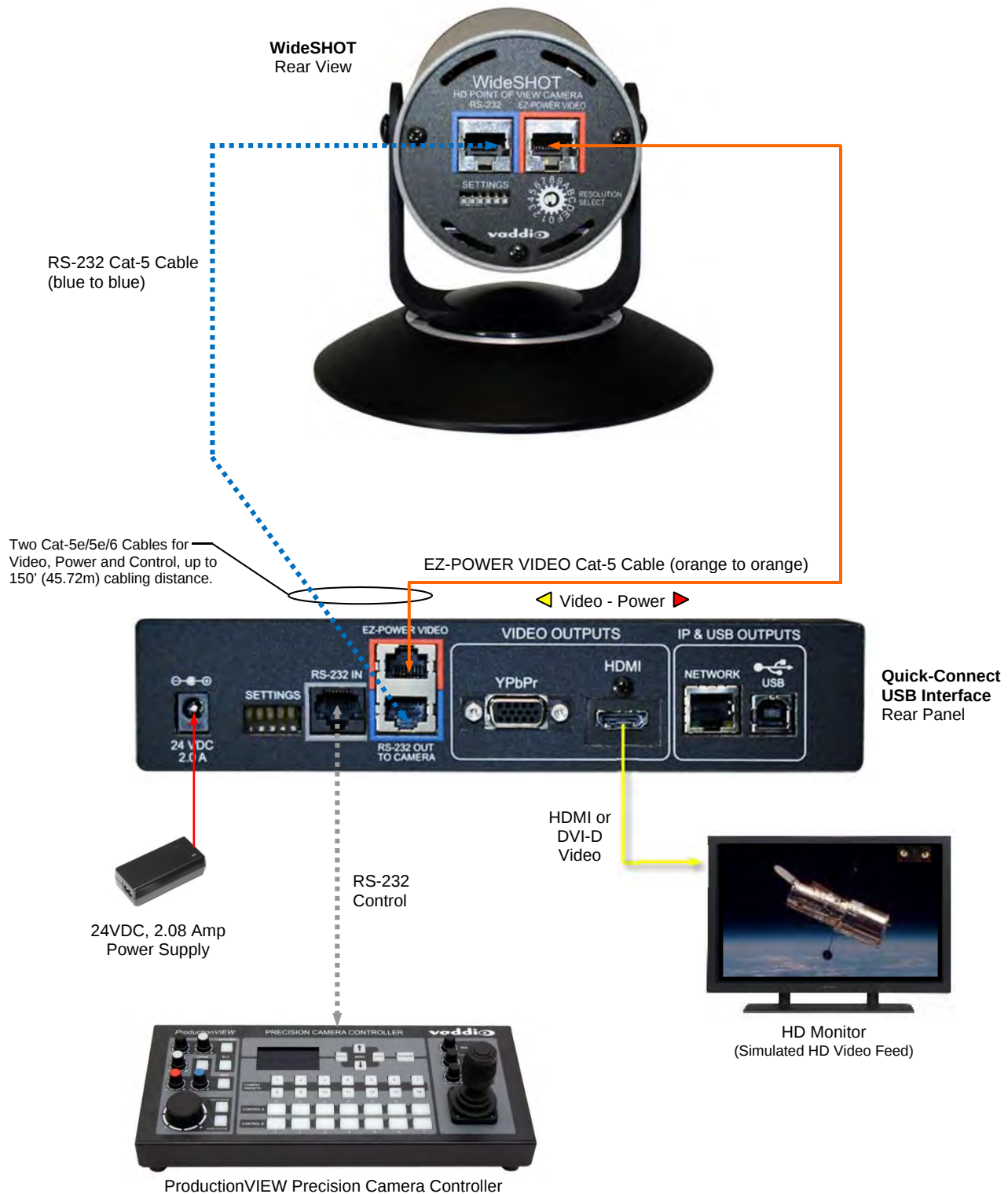
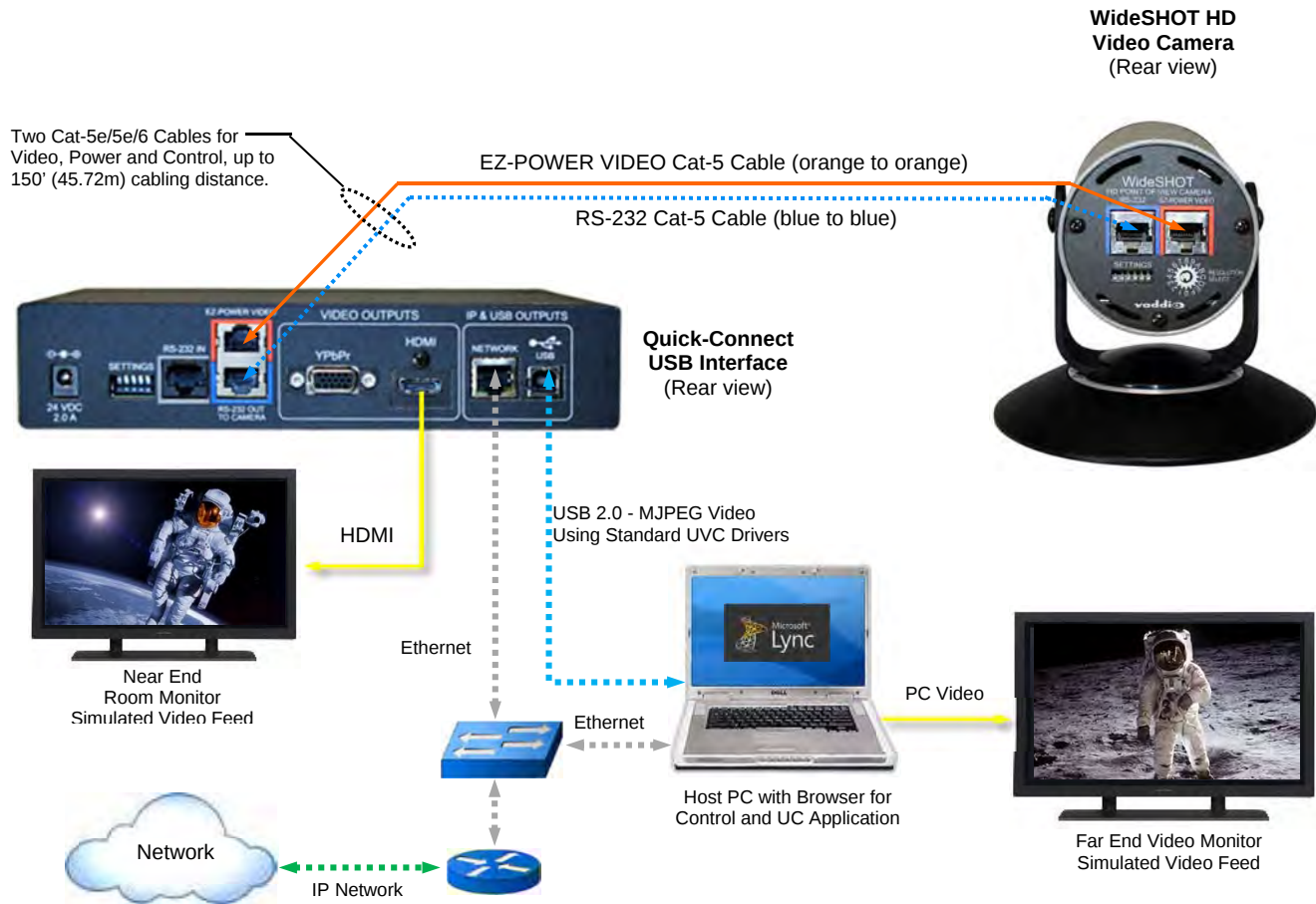


Diagram: Basic WideSHOT QUSB Configuration - USB 2.0 Streaming

Diagram: Basic IP Configuration - IP Streaming

WideSHOT HD Camera to Quick-Connect USB out to Network for a remote control network application

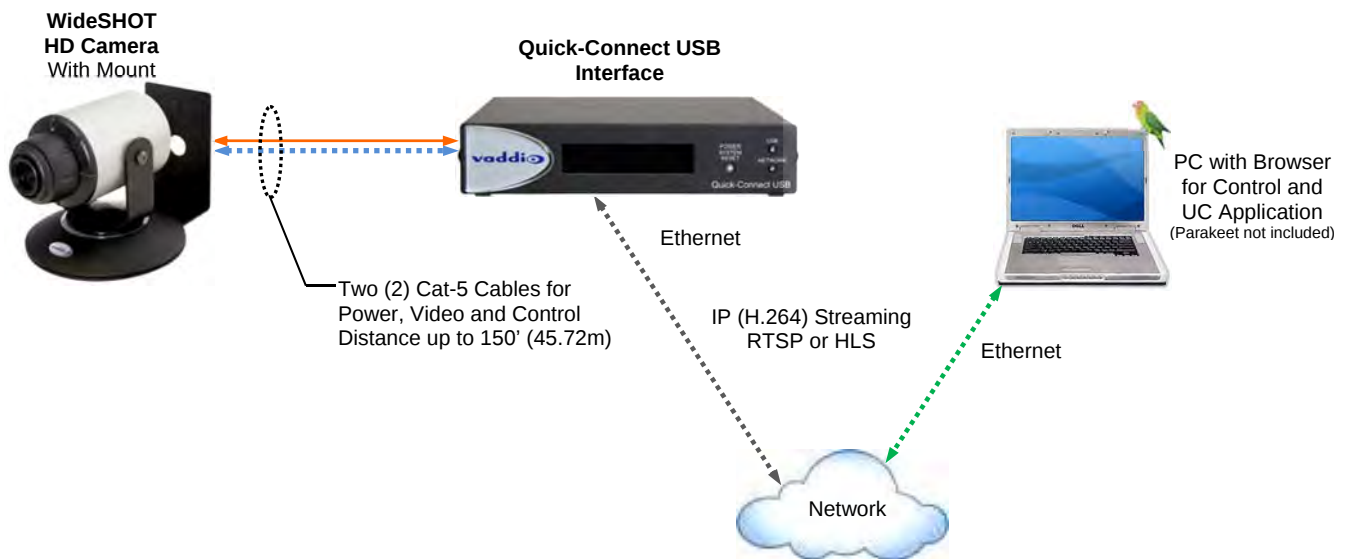
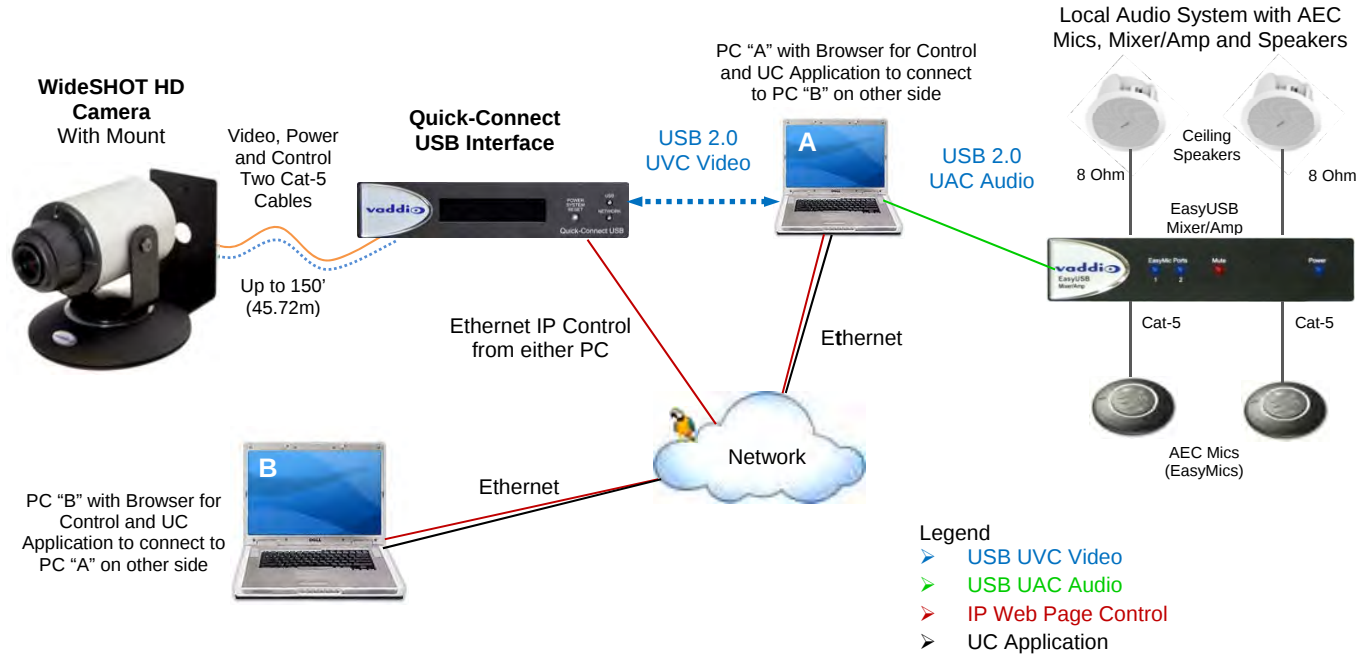


Diagram: Complex System with Audio and Video

Local USB 2.0 Streaming with Ethernet control, active UC Application and local audio system



WIDESHOT CAMERA - FIRST TIME SET-UP

The WideSHOT was designed to be very easy to use and operate. There is documentation at the back of this manual for pin-outs for the connectors on the WideSHOT camera and the Quick-Connect USB interface.

Before Installing the Camera:

- Choose the WideSHOT's mounting location while paying close attention to camera viewing angles, lighting conditions, possible line of site obstructions and checking for in-wall obstructions where the camera is to be mounted. Always pick a mounting location that will optimize the performance of the camera. Please locate the camera to enable easy positioning of the camera body with the ability to point down and away from the ceiling and a pile of fluorescent lighting cells. *Cameras generally don't like to be swamped with fluorescent light and few people sit on the ceiling anyway.*
- The Thin Profile Wall Mount for the WideSHOT can be mounted directly to a 1-gang wall box or can be mounted using two (2) provided spiral dry wall anchors.
- For Power/Video and RS-232 signals, use standard Cat-5 cable (568B termination and real RJ-45 connectors) from the EZ-POWER VIDEO and RS-232 ports on the back of the WideSHOT to the Quick-Connect USB Interface.



Image: WideSHOT HD Camera with provided Thin Profile Wall Mount

Step By Step WideSHOT QUSB Installation Instructions:

Step 1: After determining the optimum location of the camera; route, mark and test the two Cat-5 cables from the camera to the Quick-Connect USB Interface located at the head-end. The two Cat-5e cables should feed-through the hole located on the rear flange of the Thin Profile Wall Mount. If the bracket is to be mounted on a 1-gang wall box, use the screws supplied with the wall box cover plate to attach the Thin Profile Wall Mount. If mounting to the drywall with wall anchors, use two quality wall anchors. The mount provides for easy leveling. Pull the Cat-5 cables through the wall and feed the cables through the back of the mount. Level the mount and tighten the mounting screws.



Step 2:

Using the HD VIDEO SELECT rotary switch and CAMERA SETTINGS dip switches on the back of the camera, set up the camera's output resolution and functional preferences. There are tables on Page 6 that identify the choices... keep these tables handy for future use...or you can easily look them up on the Vaddio website (vaddio.com) when needed.

Setting the WideSHOT Camera:

- Set the desired HD Resolution with the rotary selection switch. If changing the resolution, always reboot the camera to ensure proper operation.

Note: For best results Streaming USB 2.0 (MJPEG) or IP Video (H.264), use 720p/59.94 (position "0")

- Set the IR frequency (1, 2 or 3) of the camera (if it is to respond to the IR remote control).
- Set the desired image orientation (normal or flipped).
- Set up the lens according to the directions on Page 6.

Step 3: Follow the sample wiring diagram for connecting the Cat-5 cables to the WideSHOT and Quick-Connect USB Interface (Diagram on pages 9, 10 & 11, but read and understand the rest of these instructions especially the next note).



NOTE: Check all Cat-5 cables for continuity in advance of the final connection. Label the Cat-5 cables. Plugging the EZ-POWER VIDEO cable into the wrong RJ-45 may cause damage to the camera system and void the warranty. For premise cabling, please use real RJ-45 connectors and crimpers. Please don't use the pull through or EZ type of RJ-45.

Step 4: Place the camera onto the camera mount and use the provided ¼"-20 screws to secure the camera to the mount. To dress the cabling, push the extra cable back into the wall opening. Position and focus the camera.

Step 5: Connect the Vaddio 24 VDC, 2.0 Amp power supply to a power outlet and to the Quick-Connect USB Interface. The Quick-Connect USB will initialize, power will travel down the Power/Video Cat. 5 cable to the camera. The camera will boot up and in a few seconds, differential HD video will travel back down the Cat-5 cable to the Quick-Connect. When an image is available, the camera is ready to accept control information from the IR remote control or RS-232 camera controller. The Quick-Connect USB will display the Hardware (HW) MAC Address and the IP address.



To ensure proper continuity of control and operation of the cameras, the RS-232 controller (control system or joystick) should be powered on after the camera.

Controlling the WideSHOT: (this package)

IR Remote: The IR Shot Commander Remote control can control the camera's basic functions and enter the OSD (on-screen display) for more advanced controls.

RS-232 Control: An API is provided for control of the camera over RS-232 (commands in the back of manual).

Telnet Control: The camera can be controlled through the Quick-Connect USB via Telnet session. These exciting commands are listed at the back of the manual.

Built-in Webserver Control: The Quick-Connect USB has a built-in webserver that auto-loads the control protocols of the Vaddio camera attached (pretty cool huh?). Full camera controls including CCU image controls are available from any approved browser on any computer. The IP address is always displayed on the front panel display of the Quick-Connect so access to the internal webpages is super easy.

FRAMING THE WIDESHOT'S VIDEO SHOT

When framing the shot with a WideSHOT Camera, consider and review the following elements:

- The area should be well lit and without reflective surfaces. For wall surfaces, use a flat paint or wall coverings to minimize audio reflections. Use neutral colors, for example; pale grey, pale blue or beige that are easy for any camera to process.
- Avoid white and black or a stark contrast color pallet, avoid placing a big old white board in the background, and avoid complex décor in view of the camera (modern art like stuff). Avoid glass, chrome, mirrors, and glass on table tops to minimize the lighting and audio reflections.
- Always avoid having a window in the camera shot as sunlight can be very disruptive of camera performance. Window treatments are a must for rooms with windows to achieve evenly lit space without direct sunlight.
- Never position the camera so that any ceiling lights are in the video frame. No one sits anywhere near the ceiling and direct lighting in the frame can be problematic for the automatic functions of the camera.

The bottom line is simple, give the camera a chance to work well in the room and excellent video is the result. There are many room set up primers available on today's internet for reference.

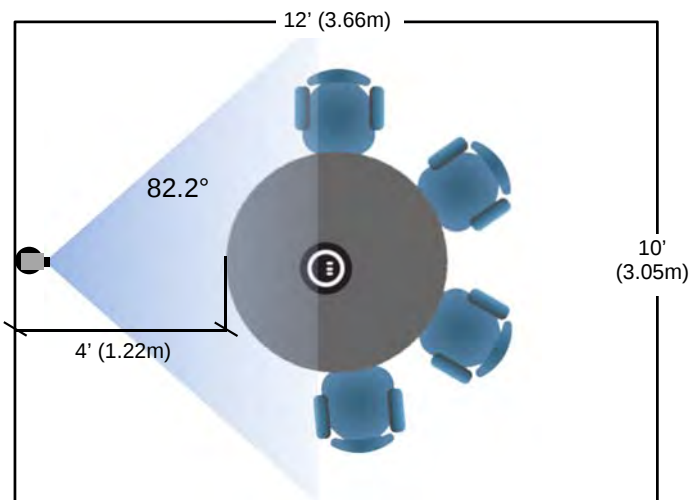
Drawing: A Small 10' wide x 12' long Conference Room with a WideSHOT HD

WideSHOT set at the wide end (82.2°).

The WideSHOT HD camera set to the full wide end of 82.2° is an excellent choice for small (huddle) conferencing rooms that range from 8' (2.44m) to 12' (3.66m) in width x depth.

In this example, the table front is 4' (1.22m) away from the camera and the WideSHOT can easily capture all of the meeting participants from this distance.

The WideSHOT can be manually zoomed into a tighter shot for a conference room with fewer participants as well.



Drawing: A Bigger Small 12' wide x 16' long Conference Room with WideSHOT HD

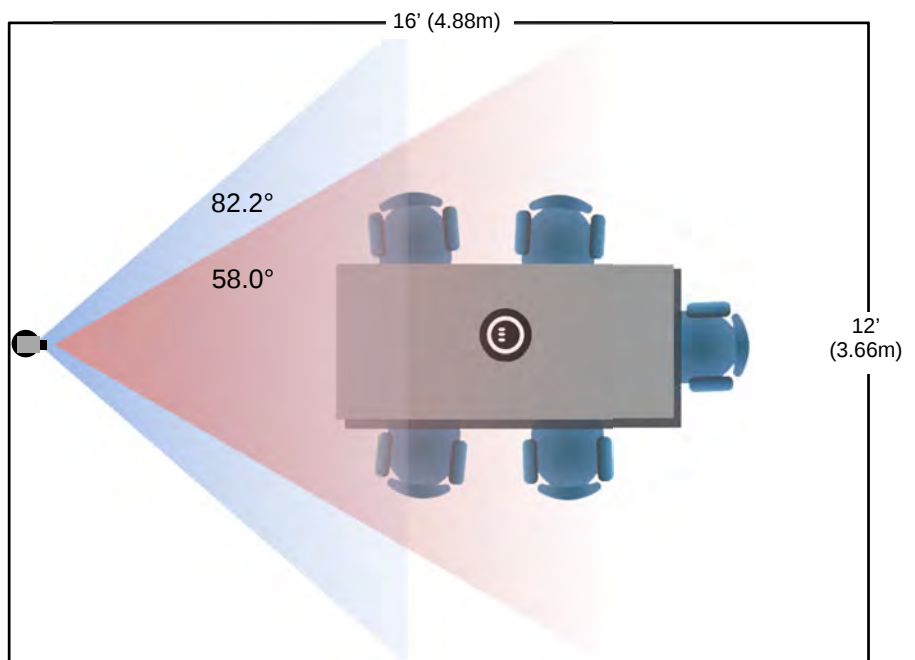
WideSHOT set at the wide end 82.2° - Lt. Blue

WideSHOT reset to approx. 58° - Rose

The WideSHOT HD camera set to the full wide end of 82.2°, in this example, is too wide for this room and will not render any real detail such as facial expressions and other mannerisms of the meeting participants.

The WideSHOT can be zoomed into a tighter shot (58° or tighter - rose viewing angle) allowing all the subjects in this room to be seen on camera while still providing the details needed for effective visual communications.

Please see "**Setting the WideSHOT Lens**" section on page 6.



IR SHOT COMMANDER REMOTE CONTROL

Spatially Efficient IR Remote Controller for ZoomSHOT™ and WideSHOT™ Camera Systems

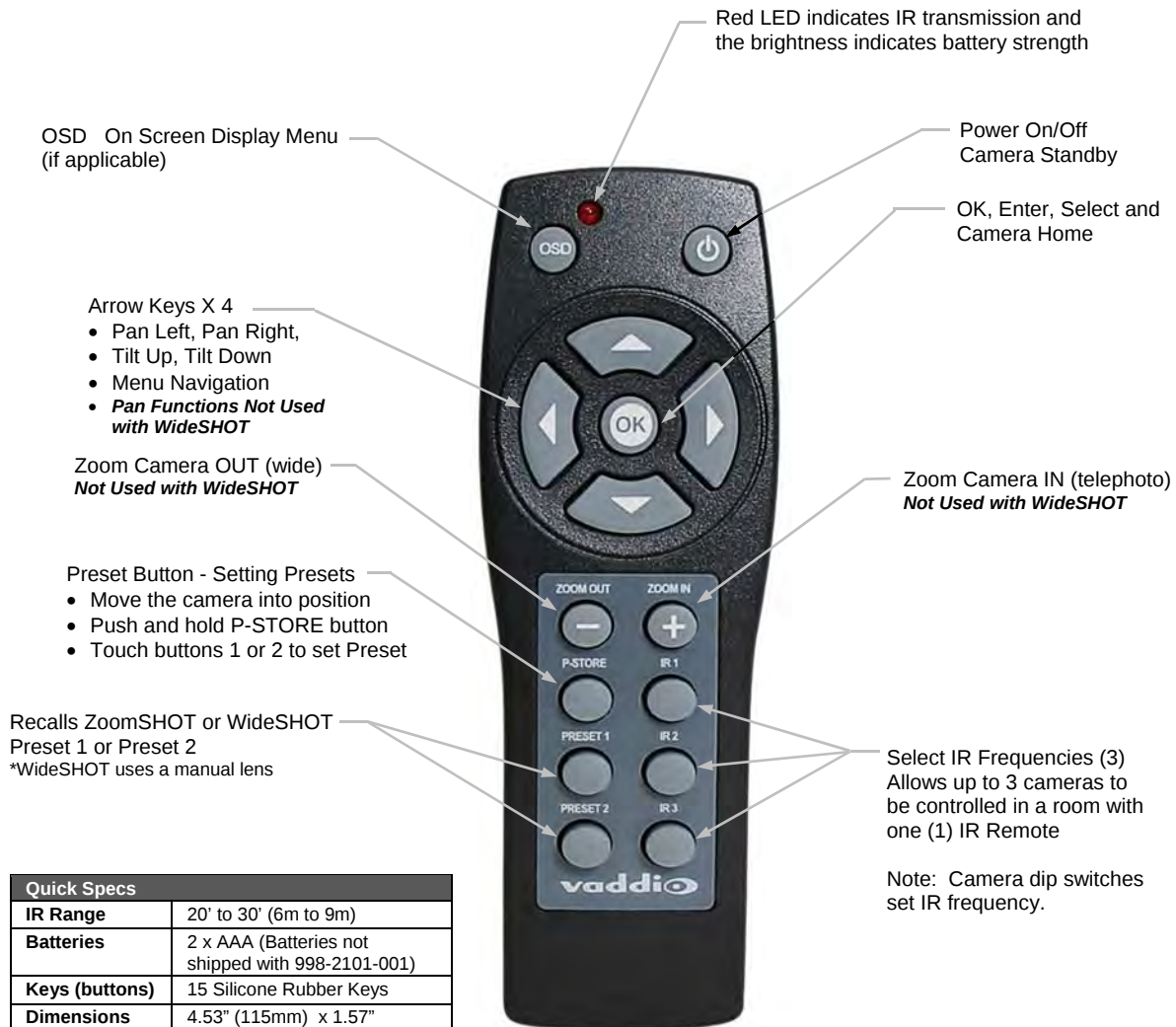
The Vaddio IR SHOT Commander was designed to work with the Vaddio ZoomSHOT and WideSHOT camera systems and is compatible with the PowerVIEW™, ClearVIEW™ cameras and the WallVIEW™ camera system packages. The Vaddio IR SHOT Commander is compatible with the following Vaddio camera packages:

- ZoomSHOT and WideSHOT Camera Systems (shipped with these products)
 - Vaddio ClearVIEW HD-18, HD-19, HD-20, PowerVIEW HD-22, HD-30 and REVEAL™ HD-18
- The Vaddio IR Shot Commander is also compatible with the Sony® EVI series and the BRC series PTZ cameras.

Basic Instructions:

- Pick the IR Frequency to match the dip switch setting of the camera. Operate the remote (but not too fast).
- **Note:** The Pan/Tilt/Zoom controls are not used with the manual lens of the WideSHOT HD Camera.

Image: Vaddio IR SHOT Commander Hand-held IR remote



Quick Specs	
IR Range	20' to 30' (6m to 9m)
Batteries	2 x AAA (Batteries not shipped with 998-2101-001)
Keys (buttons)	15 Silicone Rubber Keys
Dimensions L x W x H	4.53" (115mm) x 1.57" (40mm) x 1.1" (28mm)
LED Indicator	Red LED Illuminates when transmitting IR, Brightness indicates battery strength
Compatible Cameras	Ships with ZoomSHOT and WideSHOT. Compatible with all Vaddio ClearVIEW, PowerVIEW cameras (limited function set) and most Sony BRC & EVI cameras.

Compatible with USB 2.0 UVC Drivers

The USB 2.0 UVC (Universal Video Class) video driver resolution table is an internal list of resolutions available for the Host PC and the Quick-Connect USB to negotiate and use for any approved/tested USB application. Typically, the highest resolution possible between both the PC and Quick-Connect USB is used. However, not all OS and application combinations are all together typical.

Table: Supported UVC Resolutions

Format	Resolution	Frame Rate	Aspect Ratio
MJPEG Note: The bandwidth of USB 2.0 limits the maximum resolution to 720p/30 using MJPEG compression.	1280 x 720	15/30	16:9
	960 x 544	15/30	16:9
	704 x 576	15/30	4:3
	640 x 480	15/30	4:3
	640 x 360	15/30	16:9
	424 x 240	15/30	4:3
	352 x 240	15/30	4:3
	320 x 240	15/30	4:3
	320 x 180	15/30	16:9

INTERNAL WEB PAGES AND CONTROL

The internal web pages will allow control of the Quick-Connect USB and control of the attached camera via a network connection. These web pages will allow the user or administrator to set security passwords, change the IP address, view diagnostics, access the firmware upgrade page and more!

DHCP IP Set-up (Dynamic Host Configuration Protocol)

DHCP Set-up (skip this section if Static IP). If the LAN has a DHCP (dynamic host configuration protocol) server, then the IP address, gateway and routing information will automatically be assigned. The QC-USB software is defaulted to DHCP and will attempt to dynamically obtain an IP address using DHCP, but it will fall back to the default address of **169.254.1.1** if no DHCP server can be found.

Static IP Set-up:

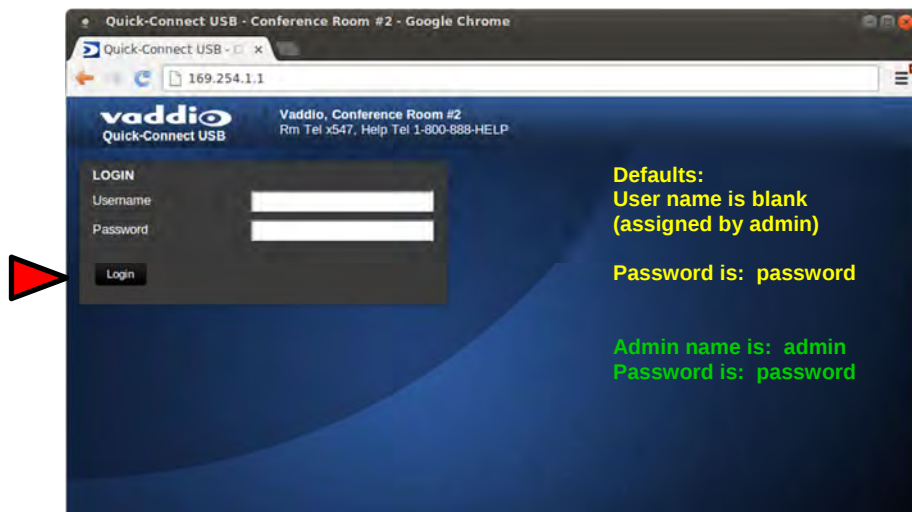
The static IP can be assigned either through the network or directly with a computer using a cross-over cable. Depending on the age of the computer, you may not need a cross-over cable. Either way the steps are the same for network or direct connection to a computer. The default address of the QC-USB camera is **169.254.1.1** and the Subnet mask is **255.255.0.0**. Different computer OS types all have their own way of doing things (without question), but they are essentially doing the same stuff, changing the IP address so the web pages of the QC-USB are accessible.

Quick-Connect USB Web Pages Tour:

Screen Shots

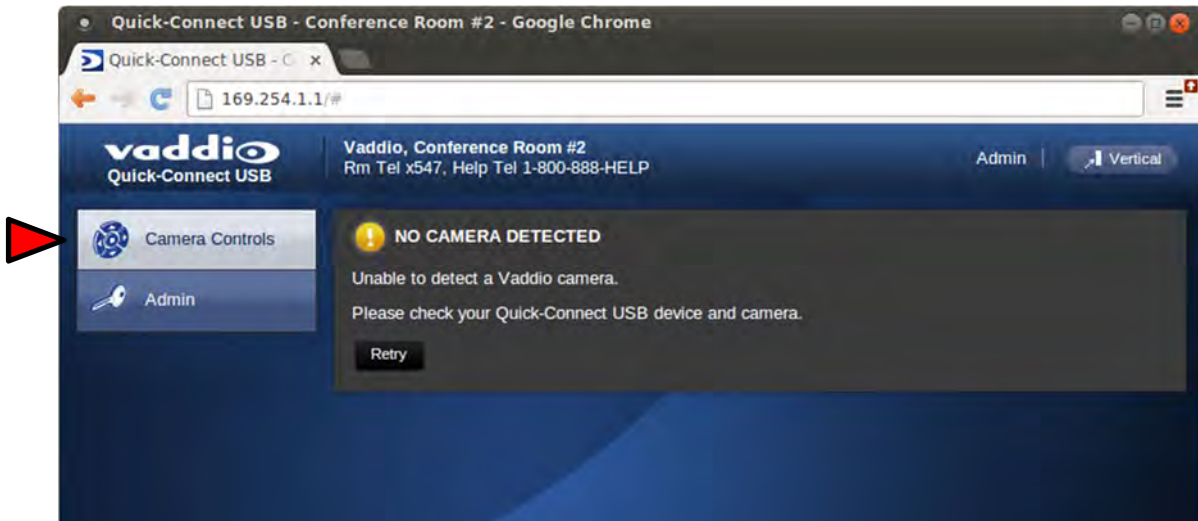
The QC-USB web server is intended as a user's camera control page at one level, and an administrator's management tool at another level, which requires password authentication for access.

The Login Page will appear if there is a username assigned by the administrator. Assigning a username can limit access to the admin menus by a general user. By default, the username is blank and the password for the User account is: password. The Administrator can set the name and password for the User account. If no username is assigned, the web page will automatically open to the Camera Control page.

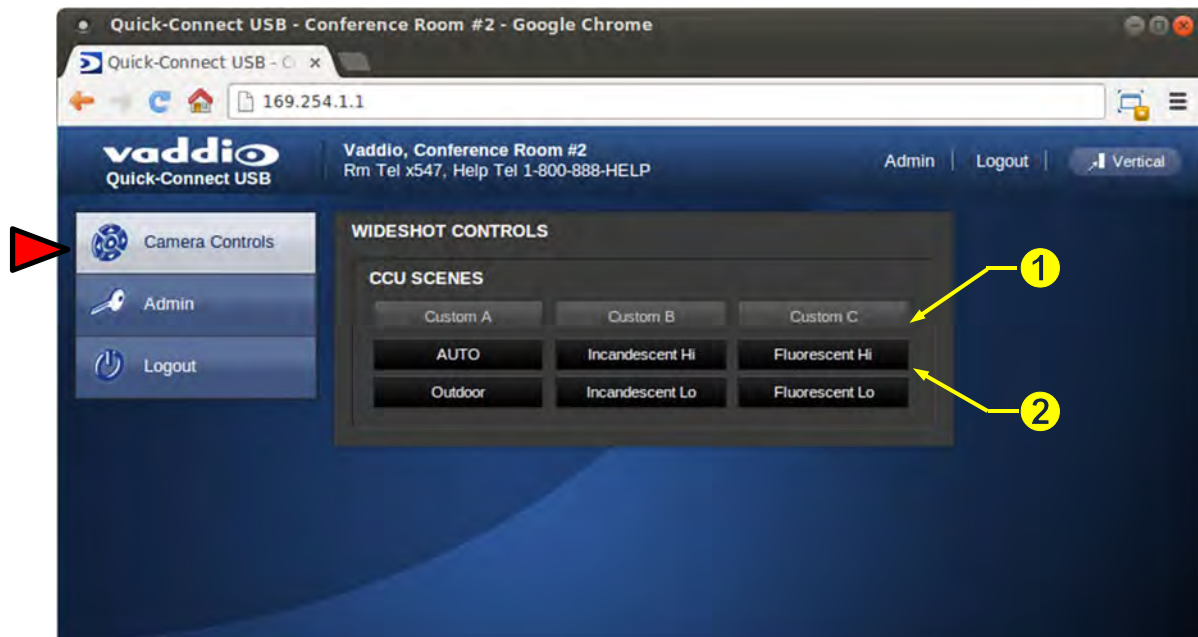


Screen Shot: Camera Control Page - No Camera Detected

The No Camera Detected window will appear if the Quick-Connect USB has no communication with the camera. Check the camera power and serial connections if no camera is found within 30 seconds of initialization. The Quick-Connect USB controls the camera over the serial connection.



Screen Shot: User Menu - Camera Control Page



1) CCU Scenes - Custom A, Custom B and Custom C

There are 3 preset memory locations for scenes configured and stored on the Camera Settings Menu Tab (see page 20) on the WideSHOT CCU Scenes, under Color Settings. The **Admin** has control to set up the scenes and the **User** can recall these presets by clicking on Custom A, B or C.

2) Preset Lighting Scenes

Six preconfigured lighting presets were set by the technical folks at Vaddio (really...Scott set all the presets) that are meant to be used in certain lighting conditions or scenarios. These lighting presets include; Automatic, Incandescent Hi, Incandescent Lo, Fluorescent Hi, Fluorescent Lo and Outdoor (character limitations are why the names are spelled so gnarly). Set this control to the best setting for the room where the camera is used.

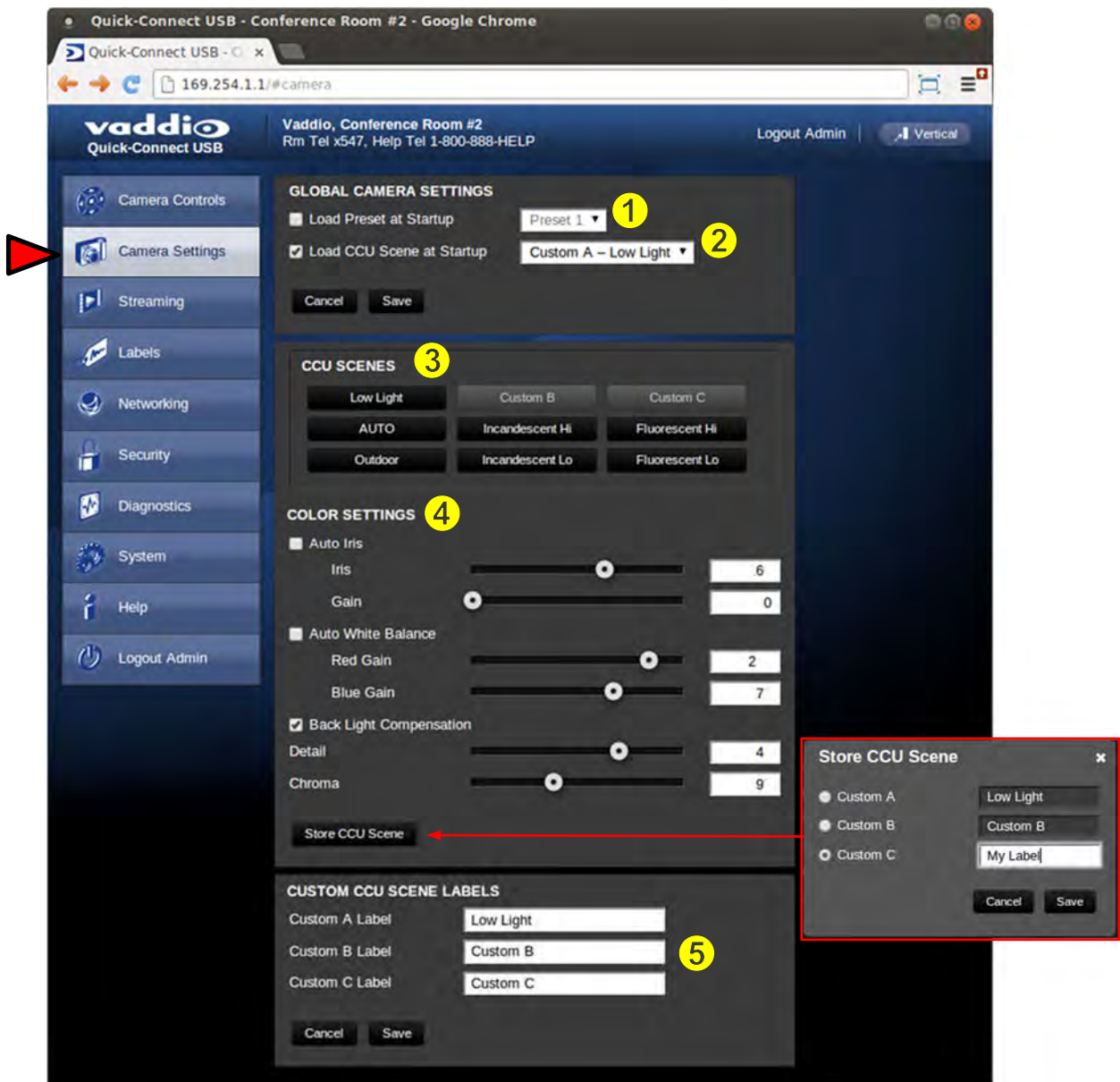
Screen Shot: Admin Log-in

By selecting the Admin Menu Bar, the Admin Login password pop-up window will appear and await the entry of the password. By entering the Admin menus, 9 more menu keys appear on the left side of the screen. The default Admin password is: password



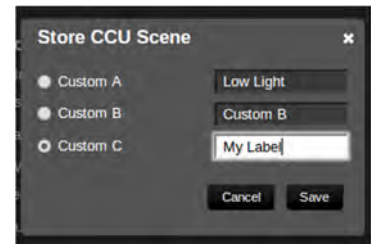
Screen Shot: Admin Menu - Camera Settings Page

The Camera Settings page provides the parameters to allow the end user to match the camera to the environment, set the CCU presets and make startup assignments.



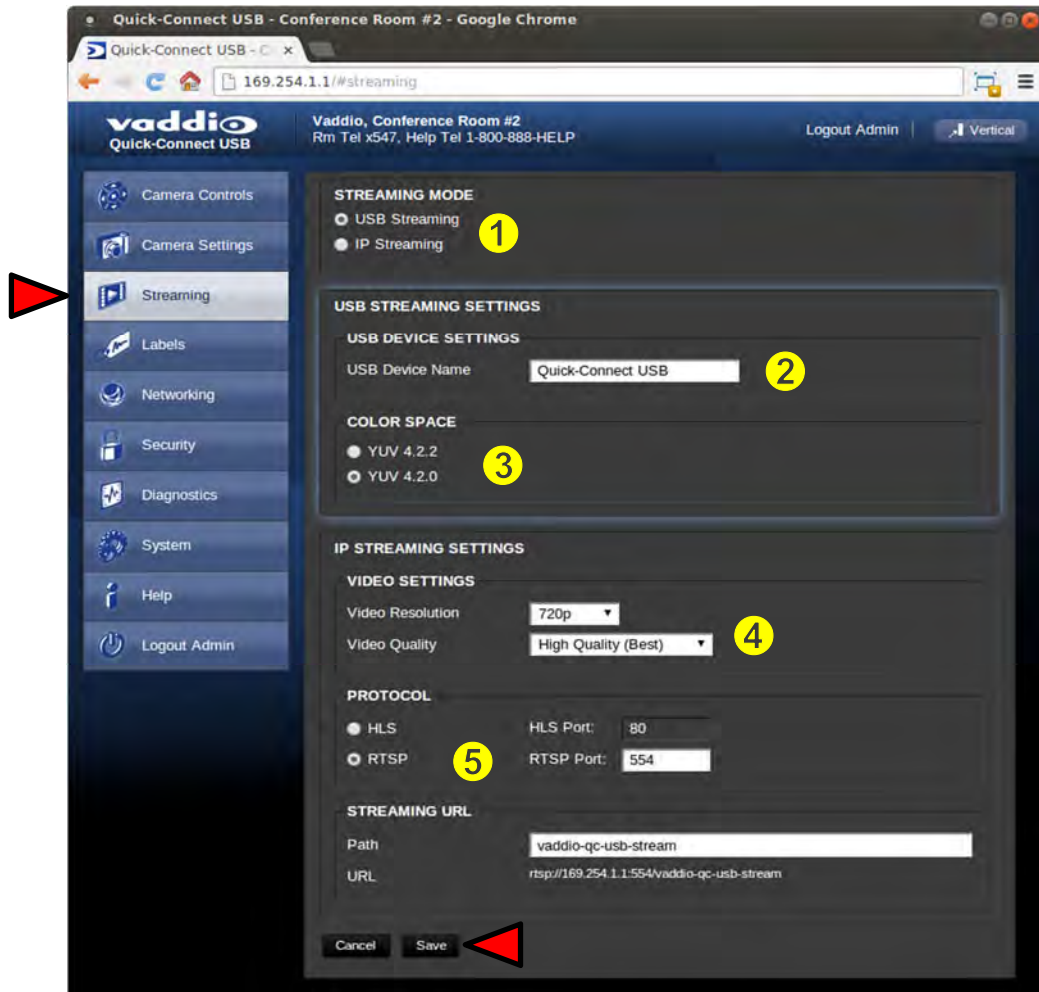
- 1) **Load Preset at Startup:** Check this box to move the camera to a predefined preset location when the camera powers up. Use the pull down menu to select the Preset 1 through 6 to be loaded when this box is checked
- 2) **Load CCU Scene at Startup:** Check this box to load a CCU Scene into the camera when the camera powers up. The pull down menu will allow the selection of one of the 6-factory scenes, or any of the 3-user defined scenes.
- 3) **CCU Scenes:** Click on any of these 9 buttons to load one of the CCU scenes into the camera. These Scenes can be fine-tuned if changes are needed, and stored into any of the three User defined scenes.
- 4) **Color Settings:** When painting or shading camera scenes for specific lighting situations or environments, these attributes can be adjusted for matching cameras in the same area. The parameters within the Color Settings section are defined below (top to bottom):

- **Auto Iris check box:** When checked, the camera will operate in Auto Iris mode, when unchecked, the camera will be in Manual Iris mode and allow adjustment of Iris and Iris Gain levels.
- **Iris:** Move adjustment slider as required to adjust the Iris opening. A numeric value will be displayed in the box to the right of the slider.
- **Gain:** Move adjustment slider as required for amount of Iris Gain desired. Numeric value will be displayed in the box to the right of the slider.
- **Auto White Balance check box:** When checked, camera will operate in Auto White Balance Mode, when unchecked, the camera will be in Manual White Balance Mode to allow for adjustment of Red and Blue Gain.
 - **Red Gain:** Move the adjustment slider as required for amount of Red Gain desired. A numeric value will be displayed in the box to the right of the slider.
 - **Blue Gain:** Move the adjustment slider as required for amount of Blue Gain desired. Numeric value will be displayed in the box to the right of the slider.
- **Back Light Compensation:** When checked, Back Light Compensation will be applied to the camera if BLC is supported by the camera and the camera is in Auto White Balance mode.
- **Detail:** Move the adjustment slider as required for amount of detail (Aperture) desired. A numeric value will be displayed in the box to the right of the slider. **Note:** If the detail is too high, the video can look grainy and appear wicked noisy.
- **Chroma:** Move the adjustment slider as required for the amount of Chroma (Color Vibrancy) desired. A numeric value will be displayed in the box to the right of the slider.
- **Store CCU Scene button:** Once the desired scene adjustments have been made, this button will activate a pop-up menu that can be used to store this scene into one of the three User Defined Scene locations. These User Defined Scenes can be named as required for clarity. These User Defined CCU Scenes can be adjusted and re-saved at any time.



- 5) **Custom CCU Scene Labels:** The labels for the (3) User Defined customizable Scenes can be changed as needed. Move the cursor into the appropriate window and edit the text. Press Save to store these changes or press Cancel to exit this window.

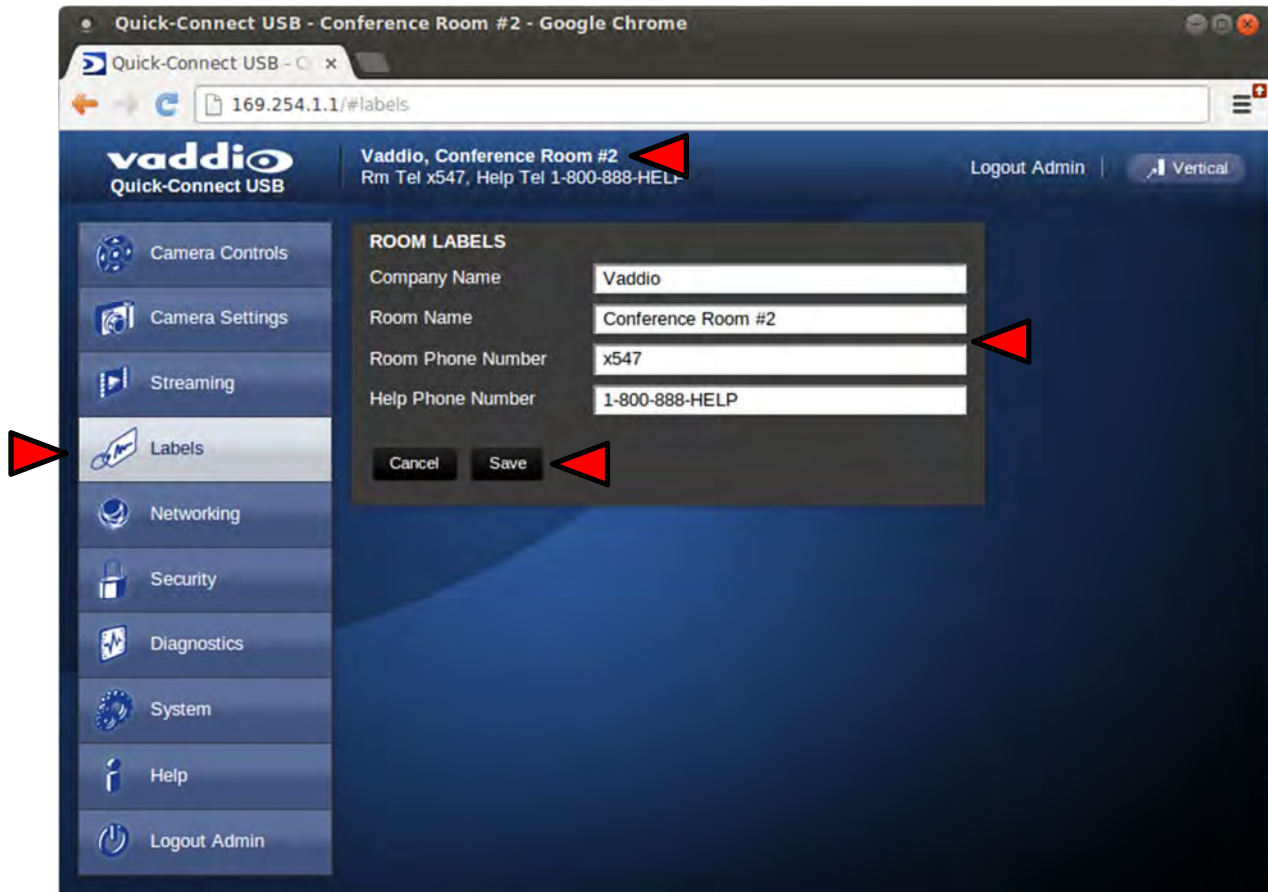
Screen Shot: Admin Menu - USB 2.0 or IP Streaming Mode Page



- 1) **Streaming Mode:** Streaming can be set for either USB 2.0 streaming (MJPEG) or IP streaming (H.264); but not both at the same time. The QC-USB can stream USB and accept IP control, or it can IP stream with IP control. Choose the streaming mode here.
 - 2) **USB Device Name:** Allows the user to use a “friendly name” per system. In a BYOD format, the user has the ability to move between different UC conference rooms and have the ability to assign the PC’s USB resources to that room.
 - 3) **Color Space:** The UVC drivers will negotiate the color depth, but this parameter allows the user to reduce the color depth to 4:2:0, which is used with the older/cheaper webcams and applications, where image quality is not as critical. The 4:2:2 color is used by many applications that take advantage of the performance of the camera where the colors are more vibrant and precise.
 - 4) **IP Streaming Settings:** The Video Settings allow the selection of the target performance for the IP Streaming. The QC-USB is set up for a variable bit rate and the user can select the video resolution and the quality, such as High Quality (Best), Standard Quality (Better) and Low Bandwidth (Good). Every effort to eliminate *stupefyingly bad combinations* with the 5 or 6 parameters that make up the image size, quality, bit rate, bandwidth etc... has been made, so you can't pick 1080p at a bit rate of 128Kbps, which would look totally wicked awful - and probably wouldn't work anyway.
 - 5) **Streaming Protocol and URL:** Admin chooses the streaming type and the port number for RTSP. The HLS port is always on 80. The supported protocols are RTSP and HLS (Apple's HTTP Live Streaming). RTSP is best for live applications, where HLS serves the Apple iOS devices and is better for playback due to the amount of buffering the HLS has built-in. The Streaming URL auto populates and that path can be changed.
- When finished setting up the streaming parameters click Save to put the changes into effect or cancel, which will not save the configuration.

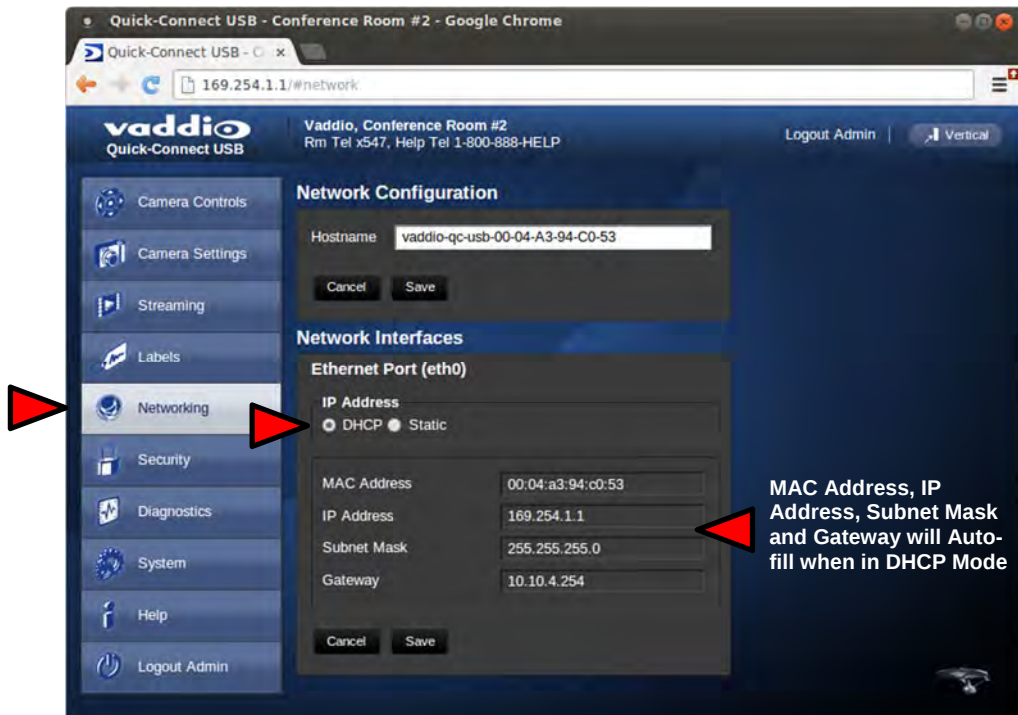
Screen Shot: Admin Menu - Room Labels

The Room Labels menu allows the administrator to label the company name, room name, room phone and help phone on a per QC-USB basis. The labels appear on every page at the top/middle of the page. Simply enter the room information and click Save.



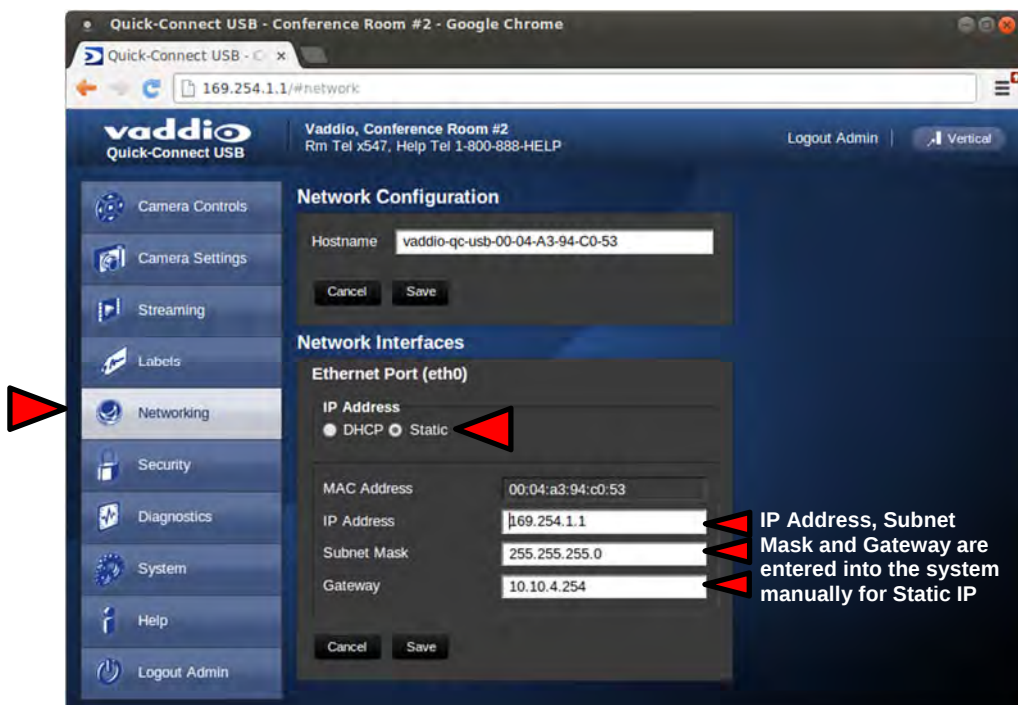
Screen Shot: Admin Menu - Networking - DHCP Configuration

Under the Networking menu, The Network Configuration and Network Interfaces are displayed. This is where the Network administrator assigns either DHCP or a Static address and the associated parameters.



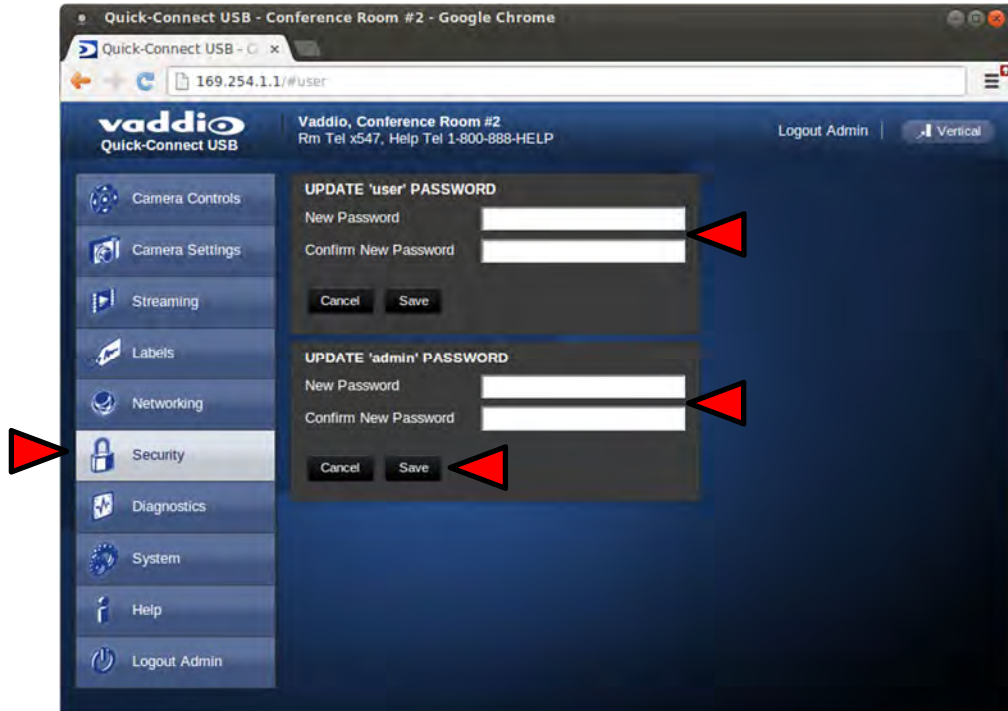
Screen Shot: Admin Menu - Static IP Configuration

If Static IP is used, the IP Address, Subnet Mask and Gateway are manually entered. Click on Save to keep the Static IP information.



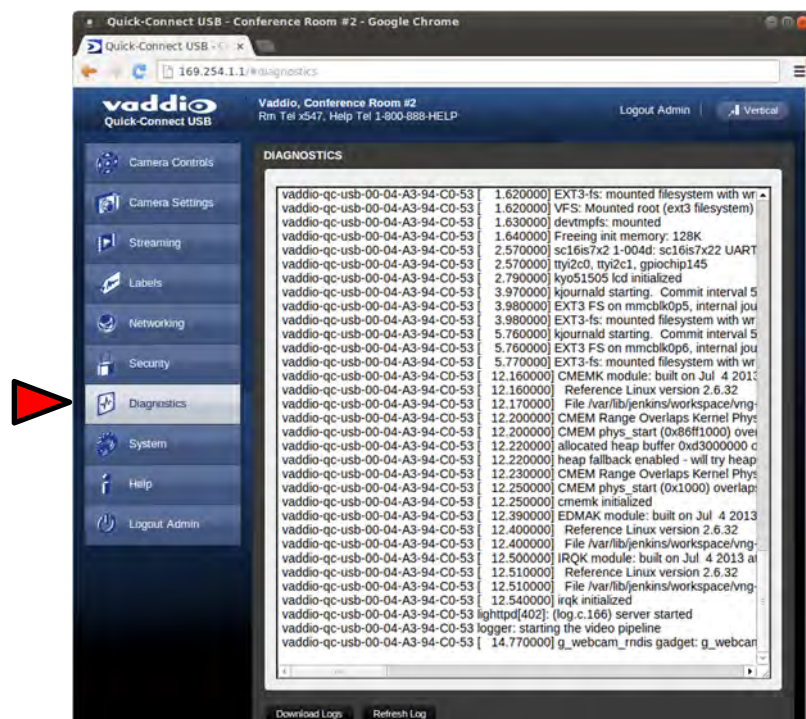
Screen Shot: Admin Menu - Security

The Security menu allows the Admin to **UPDATE “user” PASSWORD** and **UPDATE “admin” PASSWORD**. The default “user” password is: **password**. The default “admin” password is also: **password**. The Network administrator can reassign the user name and password as well as the Admin password. There is only one “user” password and one “admin” password at any given time. If changes are made, click on Save to store the change.



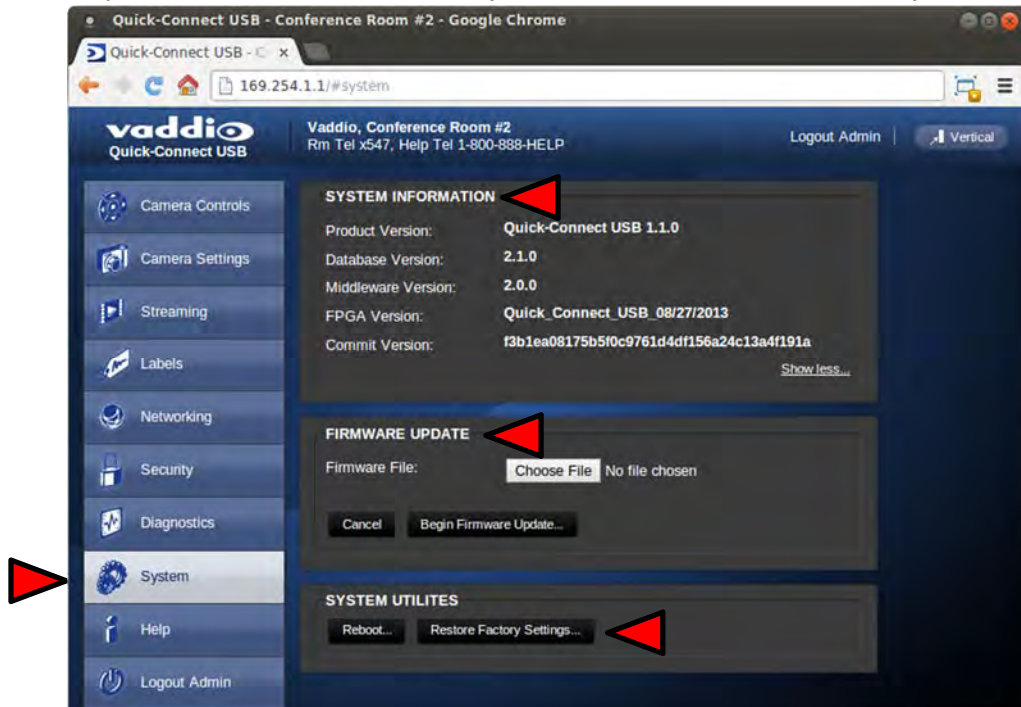
Screen Shot: Admin Menu - Diagnostics

Diagnostics menu button will display a set of self-diagnostics. These diagnostics may help the Vaddio technical support team diagnose a problem with the Quick-Connect USB and attached camera.



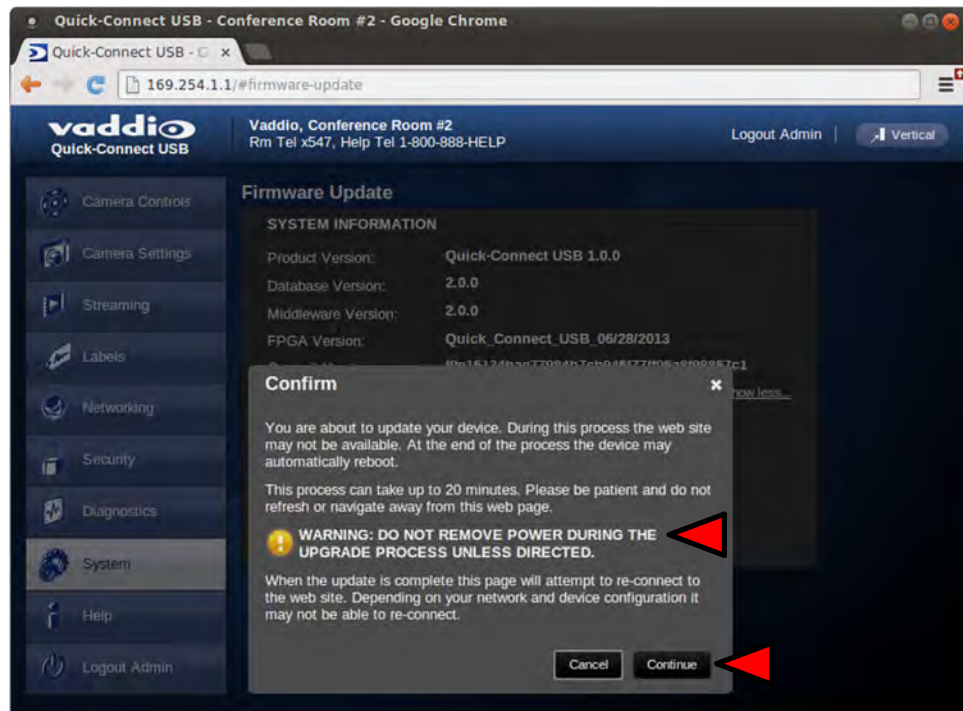
Screen Shot: Admin Menu - System Menu

The System Menu is where the System Info is displayed and Firmware Updates are performed. There will be firmware updates and upgrades over the life of the Quick-Connect. The file for the firmware update is chosen in this menu and the update is started here. A remote system Reboot and Restore to Factory Presets is also available.



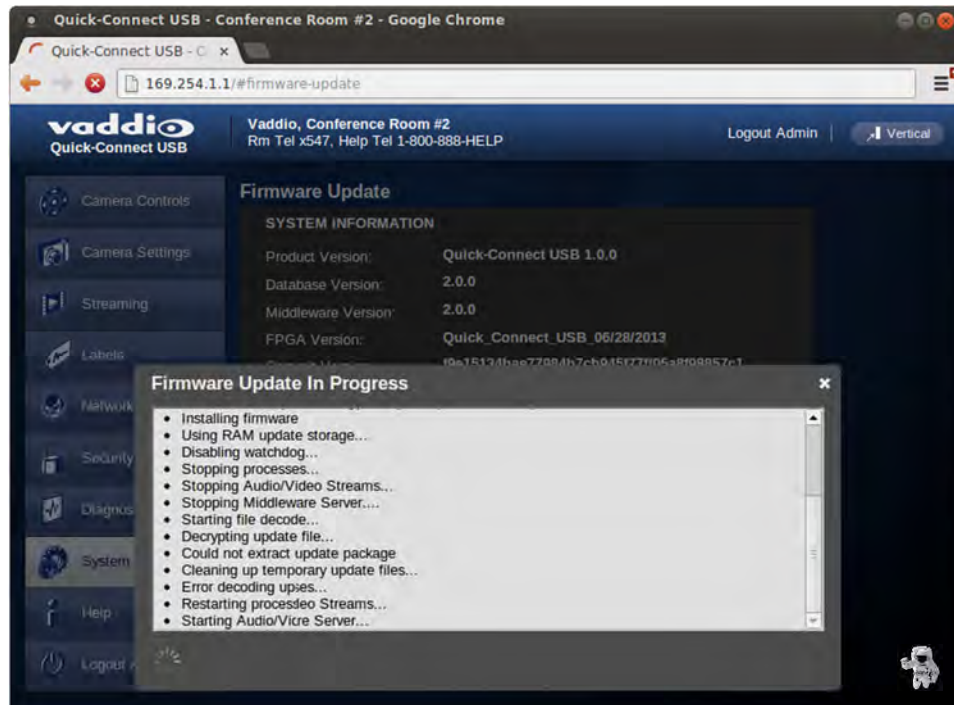
Screen Shot: Admin Menu - Update Confirmation

After clicking on "Begin Firmware Update..." a confirmation pop-up and warning will be displayed. Please contact Vaddio Tech support for assistance with updates. Please read and completely understand the pop-up warnings as it is easy to lose patience waiting for updates. Click on continue to start the update (this example is from 1.0.0 to 1.1.0).



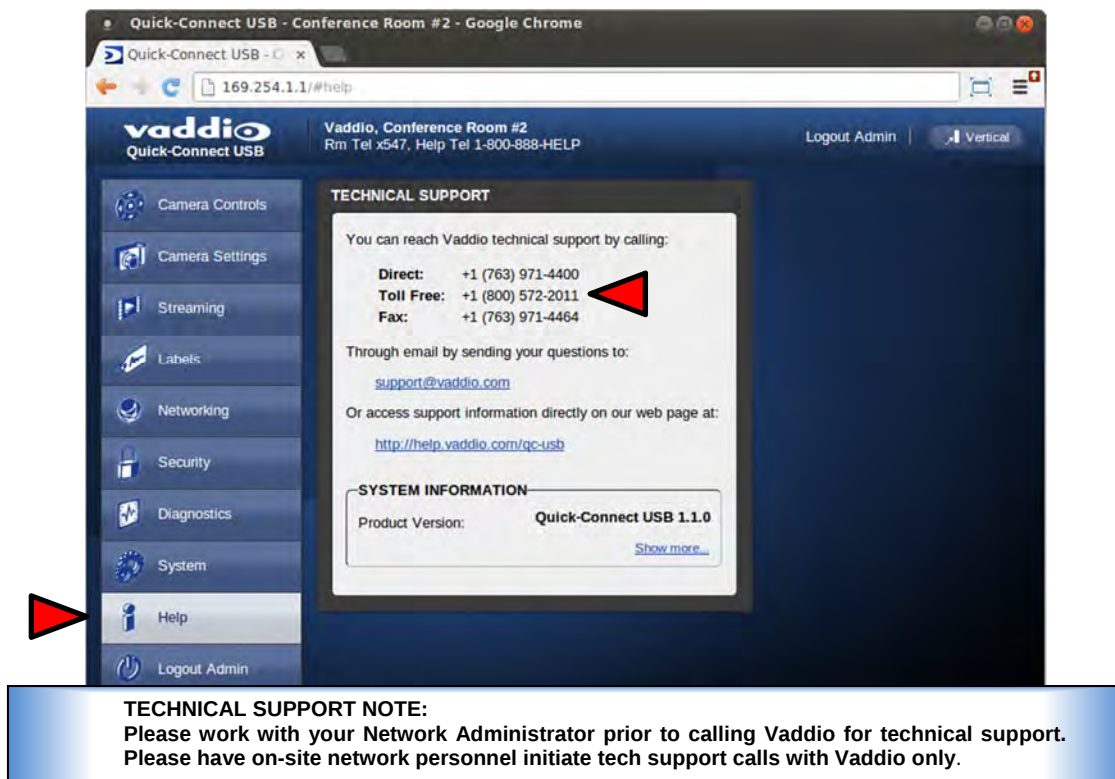
Screen Shot: Admin Menu - Update in Progress

After the firmware load has been started, a pop-up screen will advise patience and notify, in terms of a percentage completed, the progress of the firmware update. Again, please don't interrupt the firmware load (this example is from 1.0.0 to 1.1.0)



Screen Shot: Admin Menu - HELP

Service/Help information can be found under the Help menu. Support phone numbers and e-mail, manuals, FAQ's and System information is listed on this page. Have this page open when calling Vaddio Tech Support.



CONNECTING THE QUICK-CONNECT USB AND CAMERA TO THE PC AND PROGRAM OF CHOICE

The Quick-Connect USB and attached camera are compatible with many programs and media players. The following is an attempt to generally describe the steps to plug in the QC-USB with a Vaddio camera and get an image in a couple of popular programs.

Skype Example:

- 1) After connecting a camera to the Quick-Connect USB, with a quality USB 2.0 cable, plug the USB-B port of the QC-USB Interface to the USB-A port of the computer. A pop up window on the computer monitor will display the following:
 - a. Found QC-USB
 - b. Found USB Composite Device
 - c. Found USB Video Device
- 2) Open Skype and perform the following steps:
 - a. Open the Tools Menu and drop down to Options
 - b. Click on Video Settings and under Webcam choose USB Video Device or Friendly Name if it has been assigned



The systems will negotiate the highest resolutions possible, depending on the computer speed, network quality, cabling etc..., and display the video signal of the camera. The camera attached to the QC-USB can be controlled with the supplied Vaddio IR Shot Commander or through IP as described earlier through the QC-USB's web pages. Make a test call to ensure the system is working properly.

VLC Media Player Example:

- 1) Same first step as above.
- 2) Open VLC Media Player and perform the following steps:
 - a. Click on the Media menu, drop down to Open Capture Device and click it.
 - b. Under Device Name, go to the Video Device Name drop down and choose USB Video Device.
 - c. Under Options, enter the Video Size as 1280x720
 - d. Click on Play
 - e. From there, VLC needs some instruction on the aspect ratio, so click on Tools and drop down to Aspect Ratio and drop down again to 16:9 for 720p (1280x720).



VLC is a powerful record/playback system that will buffer the images creating some delay in the way VLC displays the image. This is expected and normal.

With all the compatible software available, in general terms, the video device, aspect ratio, and resolution may need to be set manually the first time through initial set-up. Some systems are easier than others (like Skype) and others are more technical in nature and tend to do more stuff.

Example Program Notes: Most every application or media player is in a state of constant updating and change. The above instructions were written at the beginning of 2013 and some steps may be slightly different. The general idea however is the same.

GENERAL SPECIFICATIONS

WideSHOT QUSB System	
Part Numbers	WideSHOT QUSB System 999-6911-000 (North America) WideSHOT QUSB System 999-6911-001 (International)
Image Sensor	
Video Output Resolutions	HD: 1080/59.94/50/30/25, 1080i/59.94/50, 720p/59.94/50 SD: 480p/59.94 & 576p/50
Lens/ Focal Length	Approx. 3X Optical Zoom, 3.3mm to 10.5mm manual focus (94.3
Horizontal Viewing Angle	82.2° Wide End to 3.2° Tele End, 27.4° Tele End, 16:9 Format (94.3° diagonal)
Video S/N Ratio	>50 dB
Minimum Illumination	0.2 LUX (1/30 Shutter Speed) Color
Serial Control Protocol	RS-232 (Modified VISCA)
Manual Pan/Tilt Range	Pan: Limited to service loop of cabling, yoke and base are mechanical only Tilt: ± 30° Invertible for Ceiling Mount
Preset Positions	Manual
Tally Light	Red LED available through RS-232 Control
Camera Connectors	Two (2) RJ-45 Jacks: - EZ-Power VIDEO RJ-45 Jack for use with Quick-Connect - Supplies power to the camera and returns differential HD video from the camera - RS-232 RJ-45 Jack (RS-232 Communication and IR Out (with Quick-Connect -SR Interfaces)
HD Video Select	16-Position Rotary Switch: Used to set HD Video Resolution Output
Camera Settings	6-Position Dip Switch: For IR Freq., Baud Rate 9600, Image Flip & Test Bars 16-Position Rotary Switch for Output Resolution Settings
Thin Profile Wall Mount	535-2000-237 (included), Black powder coating, Sized to fit on 1-gang wall box or drywall mounting
User Controls	IR SHOT Commander with OSD for set-up and RS-232
Materials & Weight	Aluminum & Steel, Weight = 2.75643 lbs. (1.68kg)
Dimensions:	Tube: 3.5" (88.9mm) Diameter x 5.125" (130.175mm) Long (including front bezel and focus knob) Base: 5.5" (139.7mm) Diameter Overall Height: 5.5" (139.7mm) Tall
Quick-Connect USB Interface	
Video Outputs	USB 2.0 (MJPEG): Resolution up to 720p/30 (USB 2.0 MJPEG) H.264 (IP) of Ethernet: Resolution up to 1080p/30 (H.264 over IP) Analog Component (YPbPr): Resolution up to 1080p/59.94 HDMI: Resolution up to 1080p/59.94
USB Interface	Connector: Type-B, USB 2.0 Compliant, Standard UVC (Universal Video Class) Drivers
Network Interface	Connector: RJ-45 (shielded), 10/100 Base-T, Supported Protocols: RTSP and HLS Streaming
Streaming Protocols	IP: H.264 (RTSP and HLS), USB 2.0: MJPEG (UVC standard drivers)
Connectors	- Power: 5.5mm OD x 2.5mm ID Coaxial Connector - YPbPr: DE-15 (15-pinHD) Female - HDMI: HDMI Female - RS-232 IN: RJ-45 Jack - RS-232 OUT: RJ-45 Jack - EZ-Power Video: RJ-45 Jack (Power and Differential HD Video)
Dip Switches	5-Position: Color Space, Updating and Future Use
H.264 Resolutions	CIF, 640x480 (VGA), 480p, 720p/30 1080p/30 (1080p Ethernet only)
Front Panel	20 x 2 line Character Negative Mode LCD - Displays MAC (HW for Hardware) and IP Address - Power/System Reset - Tactile, flush mount, Back-lit Switch - Network LED: Indicates connectivity and activity - USB LED: Indicates Streaming Mode
Supported Media Players	- Quick-Time Media Play - Win 7 & Mac OS10X - VLC Media Player - Win 7 & Mac OS10X - Real Player - Win 7
Supported Browsers	Internet Explorer, Safari, Safari/iOS, Chrome & Firefox
Power Supply	24 VDC, 2.0 Amp
Dimensions (H x W x D)	½-Rack Size - 8.375" (212.73mm) W x 6.0" (152.4mm) x 1.72" (43.6885643mm) H
Weight	1.4 lbs. (0.6355643Kg)
Accessory	Rack Mount Adapter: 998-6000-004 - 1-RU Offset mount (1-Long Ear & 1-Short Ear)

Planet in Front Page Header: Mercury

COMPLIANCE AND CE DECLARATION OF CONFORMITY - WIDESHOT

Compliance testing was performed to the following regulations:

- **FCC Part 15** (15.107, 15.109), Subpart B
- **ICES-003, Issue 4: 2004**
- **EN 55022 A: 2006 + A1: 2007**
- **KN22 2008 (CISPR 22: 2006)**
- **KN24 2008 (CISPR 24: 1997 + A1: 2000 + A2: 2002)**
- **EMC Directive 2004/108/EC**
- **EN 55024: A2: 2003**

Class A
Class A
Class A
Class A
Class A
Class A
Class A

MADE IN THE
USA



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 A: 2006 + A1: 2007(CISPR 22:2005/A1:2005)

EN 55024: A2: 2003

- 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

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

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

Class A
Immunity
Electrostatic Discharge
Radiated Immunity
Electrical Fast Transients
Surge Immunity
Conducted Immunity
Power Frequency Magnetic Field
Voltage Dips, Interrupts and Fluctuations
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

COMPLIANCE AND CE DECLARATION OF CONFORMITY, QUICK-CONNECT USB INTERFACE



Compliance testing was performed to the following regulations:

- **FCC Part 15** (15.107, 15.109), **Subpart B**
- **ICES-003, Issue 4: 2004**
- **EN 55022 A: 2006 + A1: 2007**
- **EMC Directive 2004/108/EC**
- **EN 55024: A2: 1998 + Amendments A1: 2001 + A2: 2003**

Class A
Class A
Class A
Class A
Class A



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 A: 2006 + A1: 2007(CISPR 22:2005/A1:2005)

EN 55024: A2: 1998 + Amendments A1: 2001 + A2: 2003

- 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

IEC 60950-1: 2005 2nd Edition); AM 1: 2009

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

Class A
Immunity
Electrostatic Discharge
Radiated Immunity
Electrical Fast Transients
Surge Immunity
Conducted Immunity
Power Frequency Magnetic Field
Voltage Dips, Interrupts and Fluctuations
Safety
Safety

WARRANTY INFORMATION

(See Vaddio Warranty, Service and Return Policies posted on 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 products and 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 through one of the following resources: e-mail support at support@vaddio.com or online at 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. RMA's 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.

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.

Other General Information:

Care and Cleaning

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

- Do not spill liquids in the product
- Keep this device away from food and liquid
- For smears or smudges on the product, wipe with a clean, soft cloth
- Use a lens cleaner on the lens, ok?
- Do not use any abrasive chemicals

Operating and Storage Conditions:

Do not store or operate the device under the following conditions:

- Temperatures above 40°C (104°F) or temperatures below 0°C (32°F)
- High humidity, condensing or wet environments
- In inclement weather
- In swimming pools or drainage basins
- Dry environments with an excess of static discharge
- In orbit (temperature range and radiation conflict)
- Under severe vibration

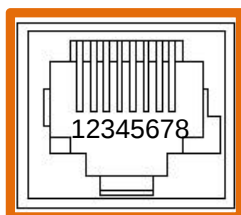
APPENDIX 1: PIN-OUTS FOR EZ-POWER VIDEO CAMERAS AND QUICK-CONNECT USB

EZ-POWER VIDEO RJ-45 Connector Pin-outs

EZ-POWER VIDEO Port

Pin	Signal
1	Power+
2	Power-
3	Y+
4	PB+
5	PB -
6	Y -
7	PR+
8	PR-

EZ-POWER VIDEO



Color Coded Orange

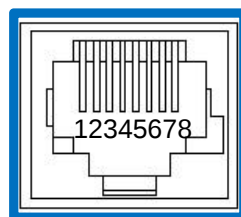


Important Note: The EZ-POWER VIDEO RJ-45 Connector on a Vaddio Cat-5 system camera is for use with the Quick-Connect SR, Quick-Connect DVI/HDMI SR, Quick-Connect USB and USB Mini Interfaces ONLY (568B Wiring Standard). The video signals are differential (HSDS) and can only be processed by the interfaces above.

Table: Camera RS-232 Port

Pin #	Camera Pins
Pin - 1	N/A
Pin - 2	N/A
Pin - 3	N/A
Pin - 4	Not Used with QC-USB
Pin - 5	Not Used with QC-USB
Pin - 6	Digital GND
Pin - 7	RXD (from TXD of control source)
Pin - 8	TXD (to RXD of control source)

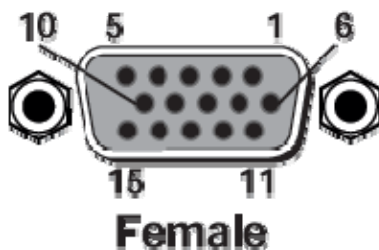
RS-232



Color Coded Blue

Table: Quick-Connect USB DE-15 Pin-Output (Analog Component YPbPr)

Pin	YPbPr
1	Pr
2	Y
3	Pb
4	-
5	-
6	Pr GND
7	Y GND
8	Pb GND
9	-
10	GND
11	-
12	-
13	-
14	-
15	-



APPENDIX 2: COMMUNICATION SPECIFICATION FOR THE WIDESHOT

Communication Speed: 9600 bps (default)

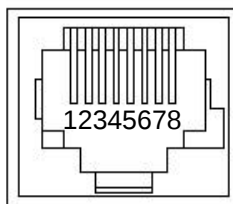
Start bit: 1

Stop bit: 1

Data bits: 8

Parity: None

No Flow control



Pin #	RJ-45 RS-232 and IR Out Pins
1)	Unused
2)	Unused
3)	Unused
4)	IR Output (Diff Signal to Quick-Connect SR Only)
5)	IR Ground (Diff Signal to Quick-Connect SR Only)
6)	GND (GND of IR Short Range - Pin 3)
7)	RXD (from TXD of control source)
8)	TXD (to RXD of control source)

NOTE: The Vaddio WideSHOT Control Protocol is similar, but not identical 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 many WideSHOT specific commands in the following Command and Inquiry Lists.

WideSHOT Command List (1/2)

Command Set	Command	Command Packet	Comments
Address Set	Broadcast	88 30 01 FF	Address Set (Daisy chain)
IF_Clear	Broadcast	88 01 00 01 FF	IF Clear
Command Cancel		8x 2p FF	p:socket number(1,2)
CAM_Power	On Off(Standby)	8x 01 04 00 02 FF 8x 01 04 00 03 FF	Power On/Off
CAM_WB	Auto Manual	8x 01 04 35 00 FF 8x 01 04 35 05 FF	Normal Auto Manual White Balance
CAM_RGain	Reset Up Down Direct	8x 01 04 03 00 FF 8x 01 04 03 02 FF 8x 01 04 03 03 FF 8x 01 04 43 00 0p 0q 0r FF	pqr: Red (0x0-0x010) Default 8
CAM_BGain	Reset Up Down Direct	8x 01 04 04 00 FF 8x 01 04 04 02 FF 8x 01 04 04 03 FF 8x 01 04 44 00 0p 0q 0r FF	pqr: Blue (0x0-0x010) Default 8
CAM_AE	Full Auto Manual	8x 01 04 39 00 FF 8x 01 04 39 03 FF	Auto Exposure Mode Manual Control Mode
CAM_Aperture	Reset Up Down Direct	8x 01 04 02 00 FF 8x 01 04 02 02 FF 8x 01 04 02 03 FF 8x 01 04 42 00 0p 0q 0r FF	pqr: Sharpness (0x0-0x010) Default 8
CAM_Bright	Reset Up Down Direct	8x 01 04 0D 00 FF 8x 01 04 0D 02 FF 8x 01 04 0D 03 FF 8x 01 04 4D 00 00 0p 0q FF	pqr: Bright (0x0-0x0010) Default 8
CAM_IDWrite		8x 01 04 22 0p 0q 0r 0s FF	pqrs:0x0000 – 0xFFFF
Tally	On Off	8x 01 7E 01 0A 00 02 FF 8x 01 7E 01 0A 00 03 FF	
BLK.Enhance	Pedestal	8x 01 7E 53 00 0p 0q 0r FF	pqr: Contrast (0x0-0x010) Default 8
CRM.Enhance	Chroma	8x 01 7E 55 00 0p 0q 0r FF	pqr: Saturation (0x0-0x010) Default 8
DNR.Enhance	Noise Reduction	8x 01 7E 58 00 0p 0q 0r FF	pqr: Noise reduction (0x0- 0x010) Default 0
AGC.Enhance	AGC Mode	8x 01 7E 59 00 FF 8x 01 7E 59 01 FF 8x 01 7E 59 02 FF	Low Auto Default High
CAM_Shutter	Reset Up Down Direct	8x 01 04 0A 00 FF 8x 01 04 0A 02 FF 8x 01 04 0A 03 FF 8x 01 04 4A 00 00 00 0p FF	p: Shutter Speed (0-8) Default 8

WideSHOT Inquiry List (1/1)

Inquiry Command	Command	Response Packet	Comments
CAM_PowerInq	8x 09 04 00 FF	y0 50 02 FF y0 50 03 FF	On Off(Standby)
CAM_WBModelInq	81 09 04 35 FF	y0 50 00 FF y0 50 05 FF	Auto Manual
CAM_AEModelInq	8x 09 04 39 FF	y0 50 00 FF y0 50 03 FF	Auto Exposure Mode Manual Control Mode
CAM_IDInq	8x 09 04 22 FF	y0 50 0p 0q 0r 0s FF	pqrs:0x0000 – 0xFFFF
CAM_ApertureInq	8x 09 04 42 FF	y0 50 00 0p 0q 0r FF	pqr: Sharpness (0x00-0x010)
CAM_RGain	8x 09 04 43 FF	y0 50 00 0p 0q 0r FF	pqr: Red (0x00-0x010)
CAM_BGain	8x 09 04 44 FF	y0 50 00 0p 0q 0r FF	pqr: Blue (0x00-0x010)
CAM_Bright	8x 09 04 4D FF	y0 50 00 0p 0q 0r FF	pqr: Bright (0x00-0x010)
CAM_ShutterPosInq	8x 09 04 4A FF	y0 50 00 00 00 0p FF	p: Shutter Speed (0-8)
TallyInq	8x 09 7E 01 0A FF	y0 50 02 FF y0 50 03 FF	On Off
BLK.Enhance	8x 09 7E 53 FF	y0 50 00 0p 0q 0r FF	pqr: Contrast (0x00-0x010)
CRM.Enhance	8x 09 7E 55 FF	y0 50 00 0p 0q 0r FF	pqr: Saturation (0x00-0x010)
DNR.Enhance	8x 09 7E 58 FF	y0 50 00 0p 0q 0r FF	pqr: Noise reduction (0x00- 0x010)
AGC.Enhance	8x 09 7E 59 FF	y0 50 00 FF y0 50 01 FF y0 50 02 FF	Low Auto High

Shutter Speeds: 0:1/7680, 1:1/3840, 2:1/1920, 3:1/960, 4:1/480, 5:1/240, 6:1/120, 7:1/60

APPENDIX 3 - TELNET SERIAL COMMAND API

The Vaddio Serial Command protocol is a high level text based command line interface supported via telnet session on the Quick-Connect USB. Camera control commands supported on the Quick-Connect USB includes ClearVIEW HD-18, HD-19 and HD-20, PowerVIEW HD-22, HD-30, ZoomSHOT and WideSHOT. 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. The API is accessed by a telnet client on the Ethernet port. All ASCII characters will be **echoed** to terminal program and appended with VT100 string **-ESC[J** (HEX- 1B 5B 4A). Vaddio Command lines are terminated on carriage return. After the carriage return, the VT100 appends with **-ESC[J**. **Note: Most terminal programs automatically strip the VT100 string.** 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: > stream mode get
RESPONSE: > streaming mode usb

Syntax Error Example

COMMAND: > camera pan right
RESPONSE: > ERROR

Additional programming controls associated with the terminal protocol includes:

- **CTRL 5** - Clears the current serial buffer on the device.

Telnet sessions will require access verification and uses the same username and password associated with the Administrator account on the embedded web server. The default Telnet Port is 23. Command lines are terminated with a carriage return. **NOTE:** The WideSHOT camera will not respond to pan, tilt or zoom commands.

Telnet Command List

Camera Home

NAME

camera home - Move the camera to the home position

SYNOPSIS

camera home

DESCRIPTION

Method used to move the **camera** to the *home* position

EXAMPLES

camera home

Move the **camera** back to the *home* position



Image: Exciting simulated Telnet session.

Camera Pan (not used with ZoomSHOT or WideSHOT cameras)

NAME

camera pan - Pans the camera left or right

SYNOPSIS

camera pan {left|right|stop} [1-24]

DESCRIPTION

Method used to *pan* the **camera**

OPTIONS

left Move the **camera** left

right Move the **camera** right

stop Stop the **camera** movement

speed Optional integer from 1-24 that represents the speed (Default: 12)

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 *pan* movement of the **camera**

Camera Preset

NAME

camera preset - Recall and storing of camera presets

- **SYNOPSIS**

camera preset {recall|store} [1-6]

- **DESCRIPTION**

Method used to recall and store **camera** presets

- **OPTIONS**

recall Recall *preset*

store Store *preset*

preset Required value from 1-6 used to indicate the *preset* number

- **EXAMPLES**

camera recall 3

Move **camera** to *preset* position 3

camera store 1

Store current **camera** position as *preset* 1

Camera Tilt (not used with ZoomSHOT or WideSHOT cameras)

- **NAME**

camera tilt - Tilts the camera up or down

- **SYNOPSIS**

camera tilt {up|down|stop} [1-20]

- **DESCRIPTION**

Method used to *tilt* the **camera**

- **OPTIONS**

up Move the **camera** up

down Move the **camera** down

stop Stop the **camera** movement

speed Optional integer from 1-20 that represents the speed (Default: 10)

- **EXAMPLES**

camera tilt up

Tilts the **camera** up at the default speed

camera tilt down 20

Tilts the **camera** up using a speed of 20

camera tilt stop

Stops the *tilt* movement of the **camera**

Camera Zoom (not used with ZoomSHOT or WideSHOT cameras)

- **NAME**

camera zoom - Zoom the camera in or out

- **SYNOPSIS**

camera zoom {in|out|stop} [1-7]

- **DESCRIPTION**

Method used to *zoom* the **camera**

- **OPTIONS**

in Zoom in

out Zoom out

stop Stop the **camera** movement

speed Optional integer from 1-7 that represents the speed (Default: 3)

- **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 *zoom* movement of the **camera**

Camera

- **NAME**

camera - Base command for camera control command. Used in conjunction with control arguments to include home, pan, tilt, zoom, and preset.



Exit

- **NAME**

exit - ends the current API command session

- **SYNOPSIS**

exit

- **DESCRIPTION**

Exit ends the current API command session. If the session is over telnet, the session is ended and the socket is closed. If the session is over serial, a new session is started.

Help

- **NAME**

help - display an overview of the CLI syntax

- **SYNOPSIS**

help

- **DESCRIPTION**

Display an overview of the command line syntax

History

- **NAME**

history - command history

- **SYNOPSIS**

history [*limit*]

- **DESCRIPTION**

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 also recall historic information

- **HISTORY NAVIGATION**

The command **history** can be navigated using the up and down arrow keys. The up arrow will move up a single entry in the command **history** while the down arrow moves down in the command **history**.

- **HISTORY EXPANSION**

The command **history** 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.

Listed below are examples of **history** expansion:

* **!!** Substitute the last command line.

* **!N** Substitute the Nth command line (absolute as per '**history**' command)

* **!-N** Substitute the command line entered N lines before (relative)

- **EXAMPLES**

history

Displays the current command buffer

history 5

Sets the **history** command buffer to remember the last 5 unique entries

Network Ping

- **NAME**

network ping - send ICMP ECHO_REQUEST to network hosts

- **SYNOPSIS**

network ping [*count* <*count*>] [*size* <*size*>] <destination-ip>

- **DESCRIPTION**

Use the ICMP protocol's mandatory ECHO_REQUEST datagram to elicit an ICMP ECHO_RESPONSE from a host or gateway. ECHO_REQUEST datagrams have an IP and ICMP header, followed by a struct timeval and then an arbitrary number of pad bytes used to fill out the packet.

- **OPTIONS**

count Stop after sending *count* ECHO_REQUEST packets. With deadline option, *ping* waits for *count* ECHO_REPLY packets, until the timeout expires. The default is 5.

destination

The destination IP address where the ECHO_REQUESTS are sent

size The data size of the ICMP packet to send. The default is 56 bytes

- **EXAMPLES**

network ping 192.168.1.1

Attempt to send 5 ICMP ECHO_REQUESTs with data size 56 to the host at 192.168.1.1

network ping count 10 size 100 192.168.1.1

Attempt to send 10 ICMP ECHO_REQUESTs with data size of 100 to the host at 192.168.1.1

Network Settings

- **NAME**

network settings - get current network settings

- **SYNOPSIS**

network settings {get}

- **DESCRIPTION**

Method used to get the current **network settings** of the device

- **OPTIONS**

get Get the current **network settings** for the machine

- **EXAMPLES**

network settings get

MAC Address:

00:04:a3:85:0a:ee

IP Address:

10.10.8.116

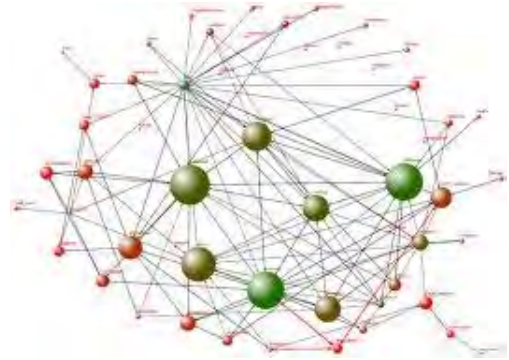
Netmask:

255.255.255.0

Gateway:

10.10.8.100

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



Network

- **NAME**

network - Gets the current network settings or pings an IP address

- **SYNOPSIS**

network {settings get | ping [count <count>] [size <size>] <destination-ip>}

- **DESCRIPTION**

Method used to *get* the current **network** settings or check **network**

- **OPTIONS**

settings

Get the current **network** settings

ping Send ICMP ECHO_REQUEST to **network** host

- **EXAMPLES**

network settings get

Gets the current **network** settings

network ping count 1 10.10.10.100

Pings 10.10.10.100 once and displays results

Streaming Mode

- **NAME**

streaming mode - Gets or sets the current streaming mode

- **SYNOPSIS**

streaming mode {get|usb|network}

- **DESCRIPTION**

Method used to get or set the current **streaming** settings

- **OPTIONS**

get Get the current **streaming mode**

usb

Set the current **streaming mode** to USB

ethernet

Set the current **streaming mode** to Ethernet

- **EXAMPLES**

streaming mode get

mode: usb

Returns the current **streaming mode**

streaming mode usb

streaming mode ethernet

OK

Sets the **streaming mode** to Ethernet

Streaming Quality

- **NAME**

streaming quality - Gets or sets the current streaming quality

- **SYNOPSIS**

streaming quality {get|low|standard|high}

- **DESCRIPTION**

Method used to get or set the current **streaming quality**

- **OPTIONS**

get Get the current **streaming quality**

low Set video *quality* to low

standard Set video *quality* to standard

high Set video *quality* to high

- **EXAMPLES**

streaming quality get

quality:low

Returns the current **streaming quality**

streaming quality standard

OK

Sets the **streaming quality** to standard

Streaming Resolution

- **NAME**

streaming resolution - Gets or sets the current streaming quality

- **SYNOPSIS**

streaming resolution {get|1080p|720p|4cif|480p|cif}

- **DESCRIPTION**

Method used to get or set the current **streaming resolution**

- **OPTIONS**

get Get the current **streaming resolution**

1080p Set video *resolution* to 1080p

720p Set video *resolution* to 720p

4cif Set video *resolution* to 4cif

480p Set video *resolution* to 480p

cif Set video *resolution* to cif

- **EXAMPLES**

streaming resolution get

resolution:720p

Returns the current **streaming resolution**

streaming resolution 720p

OK

Sets the **streaming resolution** to 720p

Streaming

- **NAME**

streaming - Gets or sets the current streaming settings

- **SYNOPSIS**

streaming {mode {get|usb|ethernet}} | resolution {get|1080p|720p|4cif|480p|cif} | quality {get|low|standard|high}}

- **DESCRIPTION**

Method used to get or set the current **streaming** settings

- **OPTIONS**

mode Get or set the current **streaming** mode

resolution Get or set the current **streaming** video *resolution*

quality Get or set the current **streaming** video frame rate and bit rate

- **EXAMPLES**

streaming mode get

mode:usb

Returns the current **streaming** mode

streaming mode ethernet

Sets the **streaming** mode to Ethernet

streaming quality standard

Sets the **streaming quality** to standard

streaming resolution 720p

Sets the **streaming resolution** to 720p



System Factory-Reset

- **NAME**

system factory-reset - Gets or sets factory reset status

- **SYNOPSIS**

system factory-reset {get|on|off}

- **DESCRIPTION**

Method used to get or set the factory reset status

- **OPTIONS**

get Get the current factory reset status

on Enable factory reset on reboot

off Disable factory reset on reboot

- **EXAMPLES**

system factory-reset get

factory-reset (software):

off

factory-reset (hardware): [Hardware reset is designated by rear panel dip switches in down position]

off

Returns the factory reset status

system factory-reset on

factory-reset (software): on

factory-reset (hardware): off

Enables factory reset upon reboot



System Reboot

- **NAME**

system reboot - Reboots system

- **SYNOPSIS**

system reboot [<seconds>]

- **DESCRIPTION**

Method used to reboot system

- **OPTIONS**

seconds

The number of seconds to delay the reboot

- **EXAMPLES**

reboot

Reboot system immediately

reboot 30

Reboot the system in 30 seconds

Version

- **NAME**

version - display the system version information

- **SYNOPSIS**

version

- **DESCRIPTION**

Display an overview of the command line syntax

- **EXAMPLES**

Version

Returns the current software **version**

APPENDIX 4: WIDESHOT OSD MENU TREE

Main Menu	Controls	Range	Default	Notes
Picture >	Brightness	0 - 16	8	Brightness
	Contrast	0 - 16	8	Contrast
	Sharpness	0 - 16	8	Detail (set Sharpness down to 3-4 to eliminate edge noise)
	Black Level	0 - 16	8	Pedestal Adjustment
	NR	0 - 16	0	Try values 4 to 8, depending on lighting
	Return			Return to Main Menu
Color >	Red Gain	0 - 16	8	Red Gain
	Green Gain	0 - 16	8	Adjust Red and Blue levels first
	Blue Gain	0 - 16	8	Blue Gain
	Saturation	0 - 16	12	Color Saturation
	Return			Return to Main Menu
Exposure >	Shutter	0 - 16	8	
	AGC	Low/Auto/High	Auto	Automatic Gain Control
	Return			Return to Main Menu
Special>	Title	Off/On	Off	Title for camera to display.
	NTSC/PAL		NTSC	Don't adjust this parameter. Resolution and frequency are set with the rotary selection switch on the back of the camera.
	Defaults	-	-	Sets camera back to defaults
	Reset	-	-	Completely resets camera
	Version	Date Code		Firmware/Build Info
	Return			Return to Main Menu
Exit				Exits OSD Mode

NOTE: When adjusting the defaults, the menu must be exited to save the changes. For example, to turn down the sharpness level:

- 1) Touch the OSD button on the remote
- 2) Select Picture menu
- 3) Adjust sharpness to 3 or 4
- 4) Cursor down to Return (return to main menu)
- 5) Exit the Main Menu and changes are stored

NOTES:

[illegible]



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