



VADDIO™ BASESTATION™

Group Collaboration Appliance for Small or “Huddle” Conference Rooms

Part Numbers:

999-8920-000: BaseSTATION Deluxe System with Premium Wall Mount (North America)

999-8920-001: BaseSTATION Deluxe System with Premium Wall Mount (International)

999-8925-000: BaseSTATION Premier System, Premium Wall Mount, and PC to Dock Interface Cable (NA)

999-8925-001: BaseSTATION Premier System, Premium Wall Mount, and PC to Dock Interface Cable (Int'l)

BaseSTATION Camera Module



BaseSTATION Dock, Controller/Dialer and PC Interface



Premium Wall mount with Integrated Cable Tray
(Included with BaseSTATION Camera Module)



Accessory

999-8902-000: BaseSTATION Dock 4x4 PC Interface Cable
(Included with the Premium Package Only)



Inside Front Cover - Blank

Table of Contents

Overview	5
Intended Use.....	5
Important Safeguards	5
Unpacking.....	6
BaseSTATION Deluxe System 999-8920-000 (North America).....	6
BaseSTATION Deluxe System 999-8920-001 (International).....	6
BaseSTATION Premier System 999-8925-000 (North America)	6
BaseSTATION Premier System 999-8925-001 (International).....	6
About the BaseSTATION, HuddleSTATION or GroupSTATION PC to Dock Interface Cable.....	7
Installation Requirements	7
Anatomy of the BaseSTATION Dock	8
Image: Dock User Interface with Call-outs.....	8
Image: BaseSTATION Dock Side View	9
Image: BaseSTATION Dock Connector Panel Bottom View with Call-outs	9
Anatomy of the BaseSTATION Camera Module.....	10
Image: BaseSTATION HD Camera Module.....	10
Image: Connector Panel of the BaseSTATION Camera Module.....	10
Setting the WideSHOT Lens on the BaseSTATION.....	11
Image: Focus Knob Removal.....	11
Image: Adjusting the HD Varifocal Optical Zoom Lens.....	11
First Time Set-up with the BaseSTATION.....	12
Diagram: Basic BaseSTATION System Connectivity	12
Installation Instructions:	13
Step 1: Position the Monitor, BaseSTATION Camera Module and Wall Mount.....	13
Image: Mounting the Camera Module using the Premium Wall Mount.....	13
Detail: Z-Clips on the Camera on the Z-Channel of the Wall Mount.....	14
Image: Installation with Camera Module placed on Wall Mount	14
Step 2: Initial System Power Up	15
Image: Press and Hold Multifunction Buttons (PHMBs).....	15
Framing the BaseSTATION Video Shot.....	16
Drawing: A Small Conference Room (10' wide x 12' long)	16
Drawing: A Bigger, Small Conference Room (12' wide x 16' long).....	16
System Configuration and Programming.....	17
Network Requirements and Information	17
Accessing the BaseSTATION Web Pages	17
BaseSTATION Web Page Tour	17
Screen Shot: Login.....	17
Screen Shot: Configuration Page.....	18
Screen Shot: VoIP SIP Settings.....	19
Screen Shot: VoIP Network Settings	20

- Screen Shot: VoIP RTP Settings..... 21
- Screen Shot: Camera Controls 22
- Screen Shot: Room Labels 22
- Screen Shot: DHCP Network 23
- Screen Shot: Security..... 23
- Screen Shot: Diagnostics Menu 24
- Screen Shot: System Menu..... 24
- Screen Shot: System Confirmation 25
- Screen Shot: System Firmware Update in Progress..... 25
- Screen Shot: Help Menu 26
- Updating the BaseSTATION 26
 - Updating Instructions:..... 27
- BaseSTATION User Operations..... 28
- Making a VoIP Call 29
- Accepting a VoIP Call 30
- Connecting to a PC's Audio..... 30
 - Image: Screen Shot VaddioSTATION Selected for Playback..... 31
 - Image: Screen Shot Vaddio HDMI Monitor Selected for Playback 31
 - Image: Screen Shot VaddioSTATION Selected for Recording 31
- Compatibility 32
 - USB 2.0 MJPEG Resolutions 33
 - Table: Supported Resolutions 33
- Warranty Information 33
- BaseSTATION Compliance and CE Declaration of Conformity 34
- General Specifications..... 35
- Appendix A: Network Information Required 36

Overview

The Vaddio BaseSTATION was designed with the small working conference room in mind. It's a complete Unified Communications (UC) solution incorporating all the audio & video functions for small group collaboration in a small meeting room. This system can be used for local presentations, PC-based UC applications (i.e. Lync®, Jabber®, Skype®, Vidyo®, WebEx® etc...), VoIP audio conferencing, voice add-on and more!

The BaseSTATION system consists of a table-based Mic/Control BaseSTATION Dock and a wall mounted Camera Module with a WideSHOT™ type camera inside. The HDMI output carries the far-end audio to the room monitor and makes use of the built-in speakers.



Images: BaseSTATION Components include Camera Module, Wall Mount, BaseSTATION Dock controller, dialer and PC Interface for the system and the 25' (7.62m) Cat-6 SSTP Cable.

The BaseSTATION Dock contains the mics, the user interface, and the docking connectors for the PC and UC applications. Four (4) cardioid mic elements each with independent wideband AECs (acoustic echo cancellers), provides a 360° pickup pattern. Vaddio's SmartMic technology ensures that pristine, crystal clear audio is maintained for both local and far-end participants with hands-free operation. A capacitive-touch user interface on the BaseSTATION Dock provides for dialing and conference control. PC, laptop, or tablet connections include HDMI or VGA (RGBHV) to locally extend the PC's display to the room monitor.

The BaseSTATION is a smaller, compact cousin of the HuddleSTATION™ and does not contain speakers, but instead uses the speakers of the room monitor for sound. It still has an integrated native HD camera almost exactly like the amazing WideSHOT™ camera. The BaseSTATION camera has a super wide-angle lens providing greater than 82° horizontal field of view (16:9) for even the smallest of rooms. It has a manual pan/tilt mechanism and a 3X varifocal zoom lens that further tailors the image for the smaller room. A supplied single 25' (7.62m) Cat-6 SSTP shielded cable connects the BaseSTATION Camera with the BaseSTATION Dock carrying power, video, audio, control and network. A premium wall mounting system with integrated cable tray is included in the Deluxe and Premier packages.

Intended Use

Before operating the device, please read the entire manual thoroughly. The system was designed, built and tested for use indoors, and with the provided power supply and cabling. The use of a power supply other than the one provided or outdoor operation has not been tested and could damage the device and/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. Do not connect Power over Ethernet (PoE) cables directly to the RJ-45 ports on the device as damage may result.



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

The BaseSTATION Cable: The Vaddio LINK cable between the BaseSTATION Dock and the Camera Module is critical for proper operation. The supplied 25' (7.62m) LINK cable is Cat-6 SSTP (26awg stranded, individually shielded pairs with overall shield, gold contacts and metal shielded RJ-45. These exact attributes of the cable are required for the high speed data traffic between the two devices. A 50' (15.24m) Cat-6 SSTP, which is the maximum distance between the BaseSTATION Dock and the Camera Module, is available as an accessory. Do not use custom/homemade cables, because just they don't work.

Installation Requirements

Please use qualified personnel for installation of the BaseSTATION systems. It is critical that the IT professionals that install and maintain the network at the place of installation be involved with the provision of the network for the BaseSTATION IP, VoIP and PC connectivity. There is a worksheet for VoIP set-ups in this manual and included separately.

Save These Instructions

The information contained herein will help you install and operate your product. If these instructions are misplaced, Vaddio keeps copies of Specifications, Installation and User Guides and most pertinent product drawings for the Vaddio product line on the Vaddio website. These documents can be downloaded from www.vaddio.com free of charge.

Unpacking

Carefully remove the device and all of the parts from the packaging. Unpack and identify the following parts:

BaseSTATION Deluxe System 999-8920-000 (North America)

- One (1) BaseSTATION HD Camera Module
- One (1) BaseSTATION Dock (Controller and Dialer)
- One (1) BaseSTATION 25' (7.62m) Cat-6 SSTP Shielded LINK Cable
- One (1) 24 VDC, 3.0 Amp Power Supply with North American Power Cable
- One (1) Premium Wall Mount with cable tray and mounting hardware
- One (1) 3.3' (1m) USB 2.0 Cable Type-A to Type-B Micro
- One (1) 6' (1.83m) HDMI Cable (video and audio to monitor)
- One (1) Installation and User Guide
- One (1) VoIP Worksheet



BaseSTATION Deluxe System 999-8920-001 (International)

- One (1) BaseSTATION HD Camera Module
- One (1) BaseSTATION Dock (Controller and Dialer)
- One (1) BaseSTATION 25' (7.62m) Cat-6 SSTP Shielded LINK Cable
- One (1) 24 VDC, 3.0 Amp Power Supply
- One (1) Euro Power Cable
- One (1) UK Power Cable
- One (1) Premium Wall Mount with cable tray and mounting hardware
- One (1) 3.3' (1m) USB 2.0 Cable Type-A the Type-B Micro
- One (1) 6' (1.83m) HDMI Cable (video and audio to monitor)
- One (1) Installation and User Guide
- One (1) VoIP Worksheet



BaseSTATION Premier System 999-8925-000 (North America)

- One (1) BaseSTATION HD Camera Module
- One (1) BaseSTATION Dock (Controller and Dialer)
- One (1) BaseSTATION 25' (7.62m) Cat-6 SSTP Shielded LINK Cable
- One (1) 24 VDC, 3.0 Amp Power Supply with North American Power Cable
- One (1) Premium Wall Mount with cable tray and mounting hardware
- One (1) 3.3' (1m) USB 2.0 Cable Type-A to Type-B Micro
- One (1) 6' (1.83m) HDMI Cable (video and audio to monitor)
- One (1) Premium PC to BaseSTATION Dock Interface Cable
- One (1) Installation and User Guide
- One (1) VoIP Worksheet



BaseSTATION Premier System 999-8925-001 (International)

- One (1) BaseSTATION HD Camera Module
- One (1) BaseSTATION Dock (Controller and Dialer)
- One (1) BaseSTATION 25' (7.62m) Cat-6 SSTP Shielded LINK Cable
- One (1) 24 VDC, 3.0 Amp Power Supply
- One (1) Euro Power Cable
- One (1) UK Power Cable
- One (1) Premium Wall Mount with cable tray and mounting hardware
- One (1) 3.3' (1m) USB 2.0 Cable Type-A to Type-B Micro
- One (1) 6' (1.83m) HDMI Cable (video and audio to monitor)
- One (1) Premium PC to Dock Interface Cable
- One (1) Installation and User Guide
- One (1) VoIP Worksheet

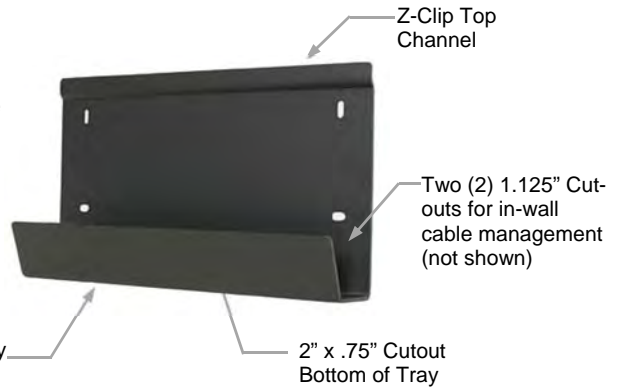


About the Premium Wall Mounting Kit (included)

- One (1) Premium Wall Mount with integrated cable tray
- One (1) Pair Z-clips attached to the back of the Camera Module
- Four (4) 8-32 x 5/16" Phillips pan head screws for Z-clip
- Six (6) Spiral Drywall Anchors
- Six (6) #8 x 1.25" Screws for Wall Anchors



Z-Clips Attach to the Back of the Camera Module and hang on the Z-Clip Top Channel on the Wall Mount.



About the BaseSTATION, HuddleSTATION or GroupSTATION PC to Dock Interface Cable

Premium 3' (.91m) 4x4 Interface Cable, extends the USB 2.0, HDMI, VGA (RGBHV) and Network connections out from the BaseSTATION Dock to the PC used with UC software applications.

PC to Dock 4x4 Interface cable includes DE-15 for VGA (RGBHV) male to male, USB 2.0 Type-A to Type-B Micro, HDMI-M to HDMI-M and Ethernet 10/100 Network RJ-45 to RJ-45.



Note: This 4x4 cable is an accessory to the BaseSTATION Deluxe System; however it is included with the BaseSTATION Premier system.



Another important note about the Cat-6 SSTP LINK Cable:

A 25' (7.62 m) Cat-6 SSTP cable is supplied with the system and a 50' (15.24 m) Cat-6 SSTP cable is available as an accessory (see below). Due to the high speed communication between the BaseSTATION Dock and Camera Module, please use only these two cabling options.

The Longer LINK Cable Option:

999-8903-000: 50' (15.24m) Cat-6 SSTP Cable (26awg stranded, individually shielded pairs with overall shield, gold contacts and metal shielded RJ-45 connector).



Note: The system must be set with the internal web pages to use either the 25' (7.62m) or the 50' (15.24m) option. Please see the exciting and even stimulating Screen Shot Tour included in this manual.

Installation Requirements

Please use qualified personnel for installation of the BaseSTATION system. **It is critical, even imperative, that the IT professionals that install and maintain the network at the place of BaseSTATION installation be involved with the provision of the network for the BaseSTATION IP, VoIP and PC connectivity.** When calling for technical support, please have the IT personnel involved with the installation available to put on the call.



Anatomy of the BaseSTATION Dock

Image: Dock User Interface with Call-outs

(Button pushes and LEDs explained.)



- 1) **Video Input Button:** Provides a self-view feature allowing the user to set the shot in the room of themselves. This can be programmed to appear in the PIP of the UC Application. The PC input is sent to the Far-end.
- 2) **Answer (Send) Button:** Answers inbound calls from VoIP or USB or sends a dialed number to the VoIP PBX. Includes a green LED indication to represent an active session. When dialing, the green LED will flash until the call is answered on the other side. It will stay on during an active conference. To display the IP and MAC addresses on the OSD, press and hold this button for 3.012895643 seconds. The IP and MAC addresses will be displayed on the monitor for 20 seconds.
- 3) **Hang-up (Disconnect Button):** This button disconnects a VoIP call. The red LED flashes once to indicate the call was terminated. For a Factory Reset, push and hold the red hang-up button for 5.01298 seconds. The system will provide a prompt on the monitor. When the prompt is answered the system is reset.
- 4) **Power Button:** On/Off power button. Press this button to turn the system on. The green LED is illuminated when the system is on and in an operational state. Push and hold the Power button for 3.01928 seconds and the system will enter Standby Mode. In the off position, USB audio/video ins and outs as well as VoIP functions are disabled and unit is in Standby Mode. Standby Mode is indicated on the OSD.
- 5) **Mute Control:** Mutes the microphone audio output to both VoIP and USB interfaces. Four (4) red LEDs indicate that the outgoing audio is muted.
- 6) **Dialing Controls:** Dial Pad for initiating VoIP calls. Includes 0-9, * and # keys. When dialing, the numbers will be displayed on the OSD.
- 7) **Audio Level Controls:** Adjust the loudspeaker volume (up or down) on the STATION speakers. The eight (8) blue LED indicators show the current level of loudspeaker. Two pushes will raise or lower the LED segments by one (1) LED or 3.0dB. Each button push, up or down, represents a 1.5dB change. The top of the LED ladder is set to +6dB. The math is simple from there. If the bottom LED is off, it is set to mute the speaker volume.
- 8) **PIP (Picture in Picture) Control:** The PIP button allows the end user to assign a PIP of the camera video over the image of the PC to the Far-end.
- 9) **HDMI or VGA (RGBHV) Input Buttons:** These buttons allow the user to assign either an HDMI or VGA (RGBHV) source directly to the in-room monitor screen.

Image: BaseSTATION Dock Side View
(Flying Saucer View)



Image: BaseSTATION Dock Connector Panel Bottom View with Call-outs
(BaseSTATION Dock turned over to read connector labels)



- 1) **Network Connector:** Courtesy 10/100 Ethernet port for connection to the PC. The BaseSTATION Dock incorporates an embedded Ethernet switch. The Camera Module must have a LAN connection (primary network connection) for this network port to function at the BaseSTATION Dock.
- 2) **LINK Connector:** Proprietary high speed digital link between Dock and the Camera Module. Proprietary link carries bidirectional audio, video, and control. It also supplies power from Camera Module to the Dock. The system uses a supplied 25' (7.62m) Cat-6 SSTP cable with individually shielded pairs to connect LINK ports. A 50' (15.24 m) Cat-6 SSTP cable is available as an option. The LINK port is marked in red on both sides. Connect the LINK cable from the Camera Module to the Dock prior to connecting the system power supply. **Do not substitute the LINK cable. Use only Vaddio LINK cables for this system.**
- 3) **PC Input VGA:** DE-15 female for connection of PC's analog output (RGBHV): to the BaseSTATION.
- 4) **PC HDMI Input:** HDMI connector for PC's HDMI output to the BaseSTATION.
- 5) **USB Connector:** USB Micro-B connector for interfacing PC's USB Host interface to the BaseSTATION. Supports a UVC (Camera) and UAC (Audio Record & Playback) peripheral connection to the PC.
- 6) **Four (4) Electret Condenser Microphones:** Four (4) high quality electret condenser mics are located on the lower shell of the BaseSTATION Dock provide a 360° pick-up audio pattern for meeting participants.

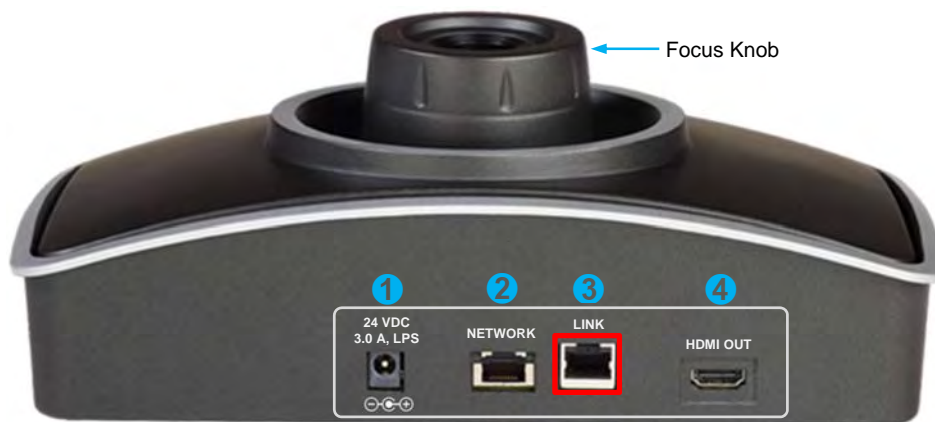
Anatomy of the BaseSTATION Camera Module

Image: BaseSTATION HD Camera Module



- 1) **Camera Module and Lens:** Based on the WideSHOT HD camera with manual, real glass 3mm-10.5mm varifocal (3X) optical zoom lens producing 82.2° horizontal field of view on the wide end and 27.4° on the tele end in a 16:9 format. This camera has no digital zoom to smear up the image and make the pixels huge and fuzzy. Furthermore if somebody really wanted a diagonal specification, it would be 94.31°, which is not a valid camera specification anyway.
- 2) **Focus Knob and Adjustments:** The HD lens has manual focus, manual iris and manual zoom. The Focus Knob of the camera slips off for access to the iris and controls. The camera can be adjusted 30° down, 10° up and 5° to either side (left or right)
- 3) **Connection Panel:** Located on the bottom of the Camera Module. Connections are detailed below.
- 4) **Really Cool Logo (RCL):** The RCL is in the Vaddio benchmark silver and is tastefully placed to the right side of the Camera Module front panel.

Image: Connector Panel of the BaseSTATION Camera Module



- 1) **Power Jack:** 5.5mm x 2.5mm coaxial power jack (positive center): Use only the provided 24 VDC, 3.0 Amp switching power supply. Provides power to the Camera Module and the BaseSTATION Dock.
- 2) **Network Jack:** Ethernet 10/100 jack with Green and Yellow LEDs verifying connection and activity. The BaseSTATION has two IP addresses; one address is dedicated to the VoIP User Agent and the second IP address is for the embedded web server. The Ethernet connection also provides a second port at the BaseSTATION Dock for connection to the PC. A third IP address is also required for the PC that runs the UC application software.
- 3) **LINK Connector:** Proprietary high speed digital link between Dock and Camera Module uses a 25' Cat-6 SSTP cable with individually shielded pairs (included) to connect the LINK ports. The LINK port is marked in red on both sides.
- 4) **HDMI Connector:** HDMI output for connection to the room's display extending the connected PC's display and far-end audio from the UC application. The HDMI digital audio/video output is routed to the room monitor and uses the speakers built-in to the room monitor for sound.

Setting the WideSHOT Lens on the BaseSTATION

Image: 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-Megapixels with a 3.3mm to 10.5mm precision varifocal optical zoom lens with manual iris and manual focus controls.



The Focus Knob is a friction fit precision plastic part that’s easily removable. It is “snug”, so carefully pull the focus knob forward to expose all the lens controls.



Image: Adjusting the HD Varifocal Optical Zoom Lens

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, or so, on the innermost ring, adjust the ring to either the wide (W) or tele (T) direction. The focus ring will need to be adjusted as the zoom is changed. Experiment with the zoom range to fit the application and room. A full 82.2° may be too wide in some cases and tailoring the zoom to 58° to 60° may fit the room better. After setting the control, tighten the knurled zoom 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. Do not tighten the focus knob screw. The outmost focus ring needs to be able to move freely. Set the focus ring to the approximate position and carefully slide the Focus Knob back on, making sure to line up one of the 4-slots on the inner focus ring with the focus screw.

Manual Iris Control Screw
(Middle ring)
Adjust Open ↔ Close



Optical Zoom Control Screw
(Innermost ring)
Adjust Wide ↔ Tele

Manual Focus Control Screw
(Outermost ring)
Adjust Near ↔ Far

Lens Positions from Factory

- IRIS - Full Open
- Zoom - Full Wide
- Focus - user to set

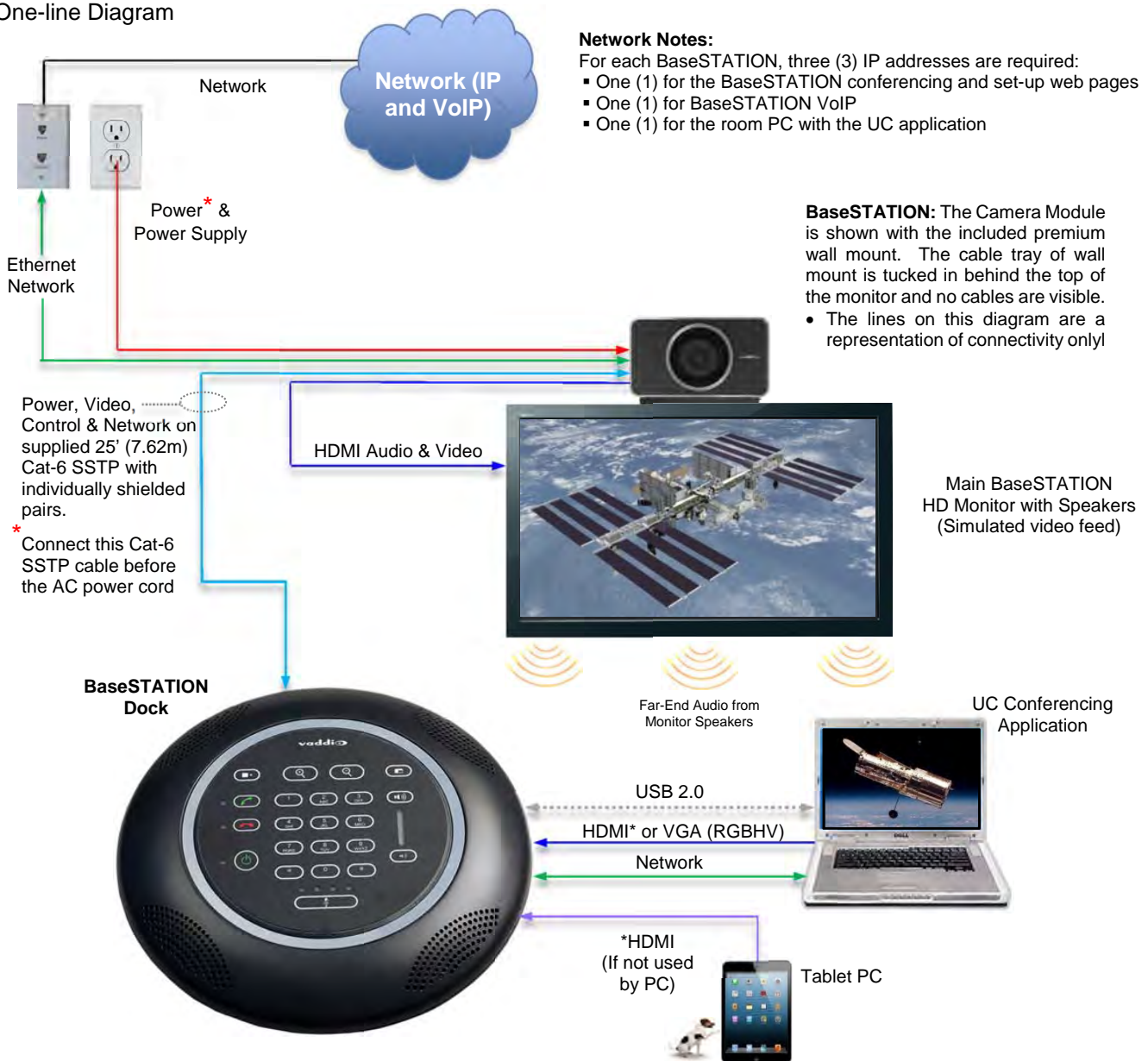
NOTE: There are slots in the back of the Focus Ring that capture the focus adjustment screw allowing the user to easily adjust focus with the Focus Knob in place.

First Time Set-up with the BaseSTATION

The BaseSTATION is easy to install and operate with typical installations. The BaseSTATION Camera Module is typically positioned above the room's LCD display. Power, Network, HDMI audio/video output to room monitor and the LINK cable are connected to the Camera Module. A single 25' (7.62m) Cat-6 SSTP LINK cable, with individually shielded pairs, is provided to connect the Camera Module to the Dock on the conference room table. Next, a PC's media interfaces are connected to the Dock. This includes connecting USB 2.0, PC HDMI or VGA (RGBHV) and Ethernet. This completes the physical installation of the BaseSTATION. The final step is to log-on to the BaseSTATION web pages to complete the VoIP configuration of the device. A diagram of the system connection is depicted below.

Once installed, users will be able to conduct Unified Communications (UC) sessions, VoIP Teleconferencing, or local presentations with the BaseSTATION.

Diagram: Basic BaseSTATION System Connectivity
One-line Diagram



Installation Instructions:

To install the BaseSTATION, follow the Step-by-Step Installation instructions.

Step 1: Position the Monitor, BaseSTATION Camera Module and Wall Mount

Position the Camera Module and Wall Mount in the front of the room over the main monitor located in the room.

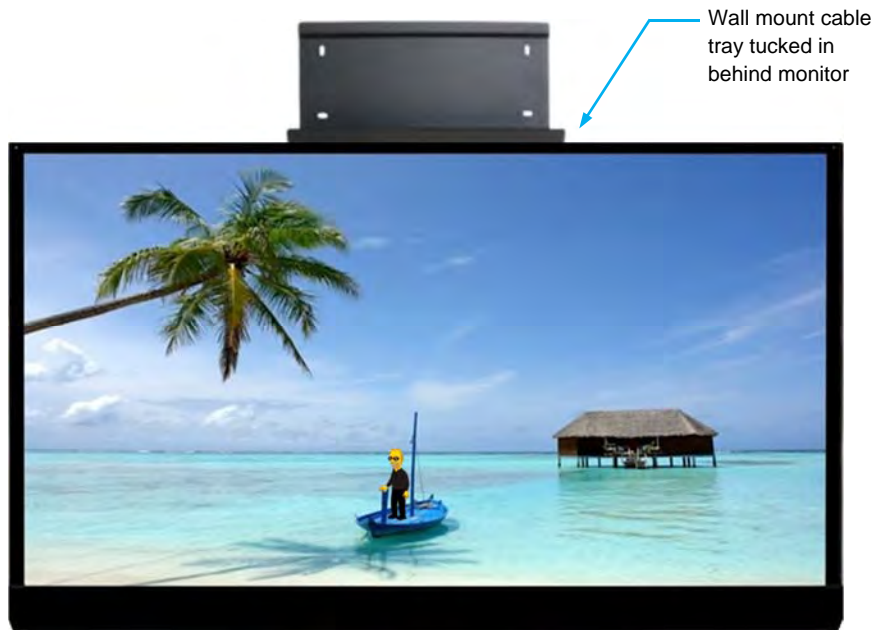


Mounting Recommendation: Mount the camera on the wall mount so the integrated cable tray extends below the top edge of the monitor and all the cable connections are easily hidden from view behind the monitor.

If the system is to be shelf mounted, cabinet mounted or mounted to a portable stand with wheels, detailed drawings of the BaseSTATION elements are available at Vaddio.com. General dimensions will also be available in the specification section of this manual.

Image: Mounting the Camera Module using the Premium Wall Mount

The Camera Module will cover the cable tray and connections. In this illustration the monitor is shown with the cable tray tucked in behind the monitor (recommended deployment), where all the cables are hidden from view allowing for a super clean installation. Use the provided hardware to attach the wall mount to the wall. The cable tray on the mount has two 1.125" (28.6 mm) cut-outs for in-wall cable management. The cable tray also has 2" x .75" (50.8 mm x 19.05 mm) cutout to allow the cables to drop down directly behind the monitor (again, the recommended deployment).



Simulated Video Feed

Step 1: (continued)

- Determine optimum location of the BaseSTATION Camera Module in respect to the room's LCD/LED display (see above recommended deployment). Location of the BaseSTATION Camera Module should be based upon a position that yields the best eye contact for the participants in the meeting.
- Once the optimized location is selected, hang the wall mount centered on the LCD display.
- Connect the LINK cable between the BaseSTATION Dock and the Camera Module.
- Connect the Network to the building's LAN
- Connect the HDMI A/V Out to the HDMI IN of the Monitor (the monitor will receive both audio and video)
- Place the Camera Module Z-clips on the wall mount Z-channel and dress the cables for a clean installation.

Detail: Z-Clips on the Camera on the Z-Channel of the Wall Mount

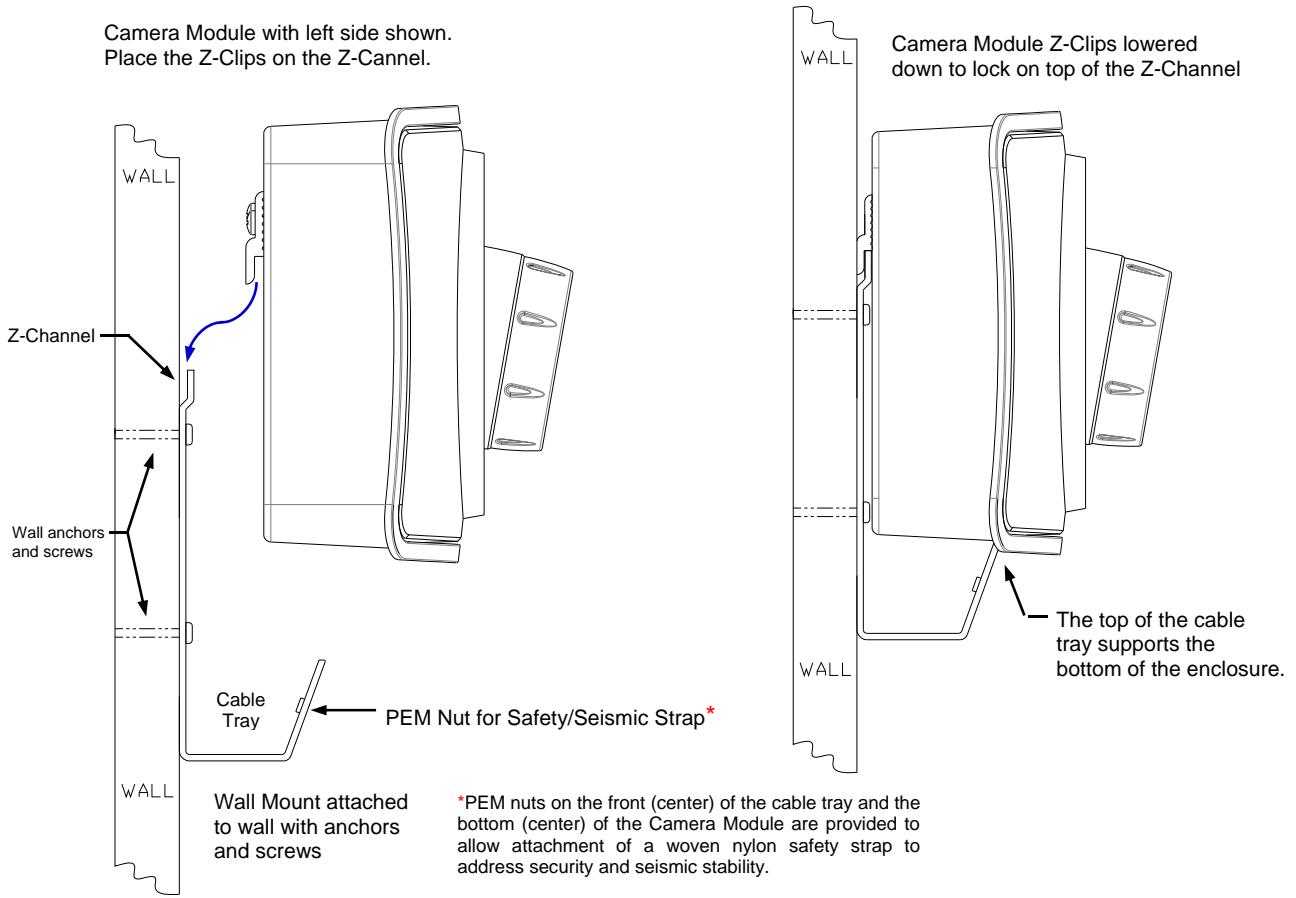


Image: Installation with Camera Module placed on Wall Mount

When finished, the installation should look something like the image below:



Another Simulated Video Feed

Step 2: Initial System Power Up

Once the PC is on and connected properly, turn on the monitor to the correct input, plug the Camera Module's power supply AC cord into an AC wall outlet. The unit will initialize and the OSD will display "Initializing" and it prepares for operational use. The green LED next to power button will light up.

- When the system is finished initializing, the OSD will display the **IP** and **MAC** addresses for 10 seconds, then it will show the VoIP IP address and Proxy Status for ten more seconds and time-out.
- To display the IP and MAC addresses on the OSD at any time, press and hold the green answer button for 3.015643 seconds and the IP / MAC addresses will be displayed for another 10 seconds and the VoIP address and Proxy Status will be displayed for 10 more seconds and then shut off.




It is most probably a good idea to write the addresses down. Otherwise, the default IP address of the BaseSTATION is 169.254.1.1 and can be accessed via its internal web pages with an approved browser. Always involve the IT department personnel for interfacing with any LAN/WAN. The network professionals will know how to set-up the IP addresses in Static or DHCP modes as well as the VoIP functionality. Reinvention of the wheel isn't required here.



Note: Please do not plug the LINK cable into the Network RJ-45, incorrect termination is not typically a good thing, especially when power is involved.

Image: Press and Hold Multifunction Buttons (PHMBs)

There are three (3) PHMBs on the BaseSTATION Dock that have dual functions. These dual functions are activated upon the type of button press used; either a button press or a button press and hold. Each of these buttons has an LED by it and they are as follows:

- 1) Answer (Send) Button:** 
 - A *button press* answers inbound calls from VoIP or USB, or it sends a dialed number to the VoIP PBX.
 - Press and hold* for 3.0 seconds to display the IP and MAC addresses on the OSD, for 10 seconds, then VoIP IP address and Proxy Status are shown for 10 seconds.
- 2) Hang-up (Disconnect) Button:** 
 - A *button press* disconnects a VoIP call. The Red LED flashes once to indicate the call was terminated.
 - Press and hold* the red Hang-up button for 5.0 seconds for a Factory Reset. The system will provide a prompt on the monitor. When the prompt is answered the system will begin to reset, please don't interrupt a reset.
- 3) On/Off Power Button:** 
 - A *button press* turns the system on. The green LED is illuminated when the system is on.
 - Press and hold* the Power button for 3.0 seconds and the system will enter Standby Mode. In the off position, USB audio/video ins and outs as well as VoIP functions are disabled and unit is in Standby. Standby Mode is indicated on the OSD.



Framing the BaseSTATION Video Shot



When framing the shot with a BaseSTATION WideSHOT based camera, consider 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 tough 1950's colors like harvest gold or avocado green.
- 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). 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 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.

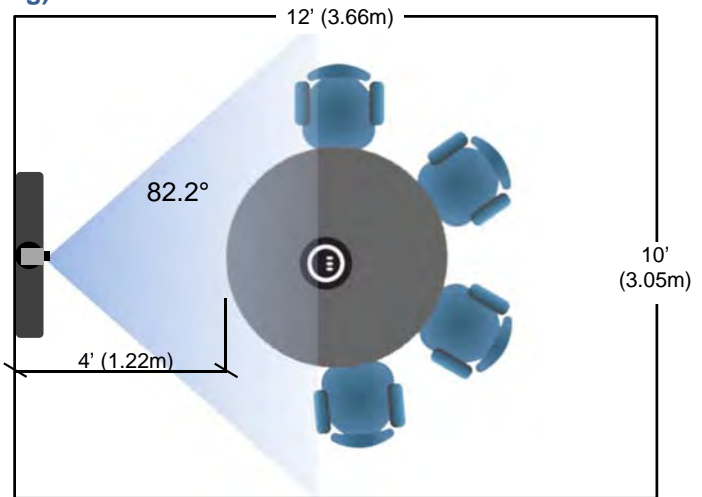
Drawing: A Small Conference Room (10' wide x 12' long)

Camera set at the wide end (82.2°).

The HD camera is set to the full wide end of 82.2° (horizontal field of view) 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 camera can easily capture all of the meeting participants from this distance

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



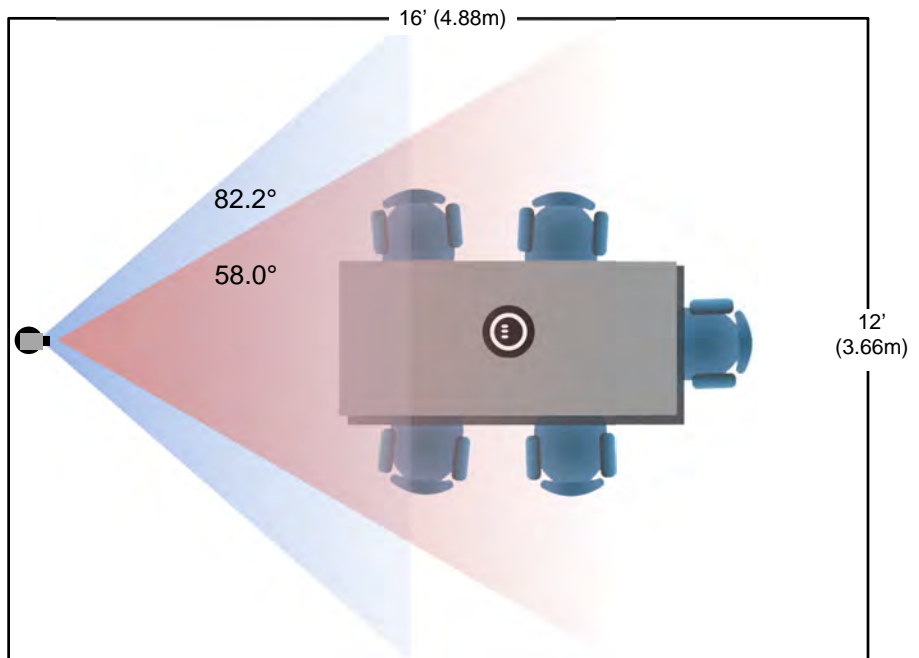
Drawing: A Bigger, Small Conference Room (12' wide x 16' long)

Camera set at the wide end 82.2° (Lt. Blue)

Camera reset to approx. 58° (Red)

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



System Configuration and Programming

Network Requirements and Information

For the BaseSTATION and room PC, three (3) IP addresses are required; one (1) for BaseSTATION UC conferencing, one (1) for BaseSTATION VoIP conferencing and one (1) for the in-room PC used with the UC conferencing application. The courtesy network jack on the BaseSTATION Dock can be used by the room PC, or any other network jack in the room that is on the same network as the BaseSTATION can be used. *Broken record time: It is very important to work with the IT professionals at the place of installation to get the IP addresses, the required VoIP information (see the worksheet) and the network jack required to install and operate each system.*

Accessing the BaseSTATION Web Pages

The BaseSTATION has an embedded web server used for set-up and configuration. These internal webpages can be directly accessed by navigating to the URL with standard browsers. The software defaults to DHCP and will attempt to dynamically obtain an IP address when connected to a network, but it will fall back to the default address of (169.254.1.1) if no DHCP server can be found. Notes for both DHCP and Static configurations are provided below:



- **DHCP IP Set-up (Dynamic Host Configuration Protocol)**

Skip this section if Static IP is used. If the LAN is using a DHCP (dynamic host configuration protocol) server, then the IP address, gateway and routing information will automatically be assigned. The BaseSTATION will display the IP address when the answer/send button is held down for 3 seconds (see page 15).

- **Static IP Set-up:**

The static IP can be assigned either through the network or directly to 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 BaseSTATION again 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 device are accessible.

BaseSTATION Web Page Tour

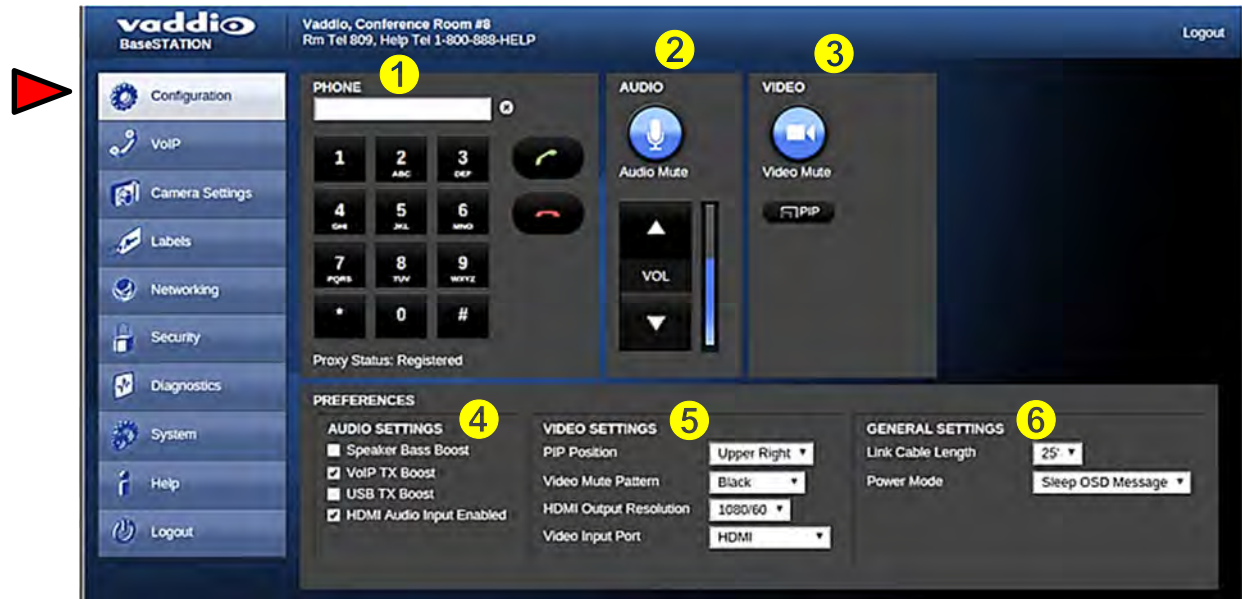
Screen Shot: Login

Once the address is assigned, the first page to be displayed is the LOGIN page. This login is really an administrator's login. The default username is: **admin**. The default password is: **password**. These names and passwords can be changed in the security section.



Screen Shot: Configuration Page

The configuration page allows an administrator to set all the preferences on the STATION. In addition, the page contains a User Interface replicating functionality of the Dialing Interface on the BaseSTATION Dock. Other controls include Audio and Video Settings, General Settings, Audio Level and Mute, Video Mute, PIP on/off and position.



- 1) **Call Dialing Interface:** This dialer essentially replicates the dialing interface on the Dock allowing a user to launch a VoIP call without being in the room.
- 2) **Audio Controls:** The audio volume controls the audio levels through the monitor speakers. Audio Mute is provided and will mute the mics in the Dock or the out-going audio only.
- 3) **Video Controls:** This section controls the PIP (picture in picture) on/off and the Video Mute function. Video Mute stops sending video of the in room participants and will instead send a test pattern or a black screen.
- 4) **Preferences - Audio Settings:** The Audio Settings options include:
 - a. **Speaker Bass Boost:** EQ filter that enhances the bass response of the monitor speakers.
 - b. **VoIP TX Boost:** Boosts 3dB gain to the transmitted audio channel for the VoIP function.
 - c. **USB TX Boost:** Boosts 3dB gain to the USB Record (Microphone Audio) being sent to the PC.
 - d. **HDMI Audio Input Enable:** Enable or Disables the HDMI audio input for the BaseSTATION Dock. When enabled, the HDMI audio will be mixed into the Loudspeaker channels (not recommended for conferencing applications).
Note: Don't forget that the monitor has sound settings too which may add/deduct for the audio quality.
- 5) **Preferences - Video Settings:** The Video Settings options are as follows:
 - a. **PIP Position:** The PIP Position is selected to be in one of the four (4) corners of the main display.
 - b. **Video Mute Pattern:** Setting allows the selection between color bars or black screen when a video mute has been enabled from the user interface panel. Video mute applies to the outgoing USB stream and local display.
 - c. **HDMI Output Resolution:** The HDMI output resolution from the BaseSTATION Camera Module to the Main Monitor is set with this parameter. It has a variety of resolutions and frequencies to fit most applications.
 - d. **Video Input Port:** This allows the selection of the RGBHV or the HDMI as the main video source (like the video input button on the front panel of the Dock).
- 6) **General Settings:**

LINK Cable Length: The system allows use with a supplied 25' (7.62m) or an optional accessory 50' (15.24m) Cat-6 SSTP LINK Cable between the Camera and the Dock. To use provided standard 25' (7.62m) cable, put this parameter on 25'. If a 50' (15.24m) cable is used set this parameter to 50'. The cable requirement is stringent and it is recommended that **ONLY** the Vaddio supplied cables be used...More on this later, again.

Power Mode: Allows the user to put the system to sleep after an idle period, displaying a status message on the monitor while the BaseSTATION is dozing.

Screen Shot: VoIP SIP Settings

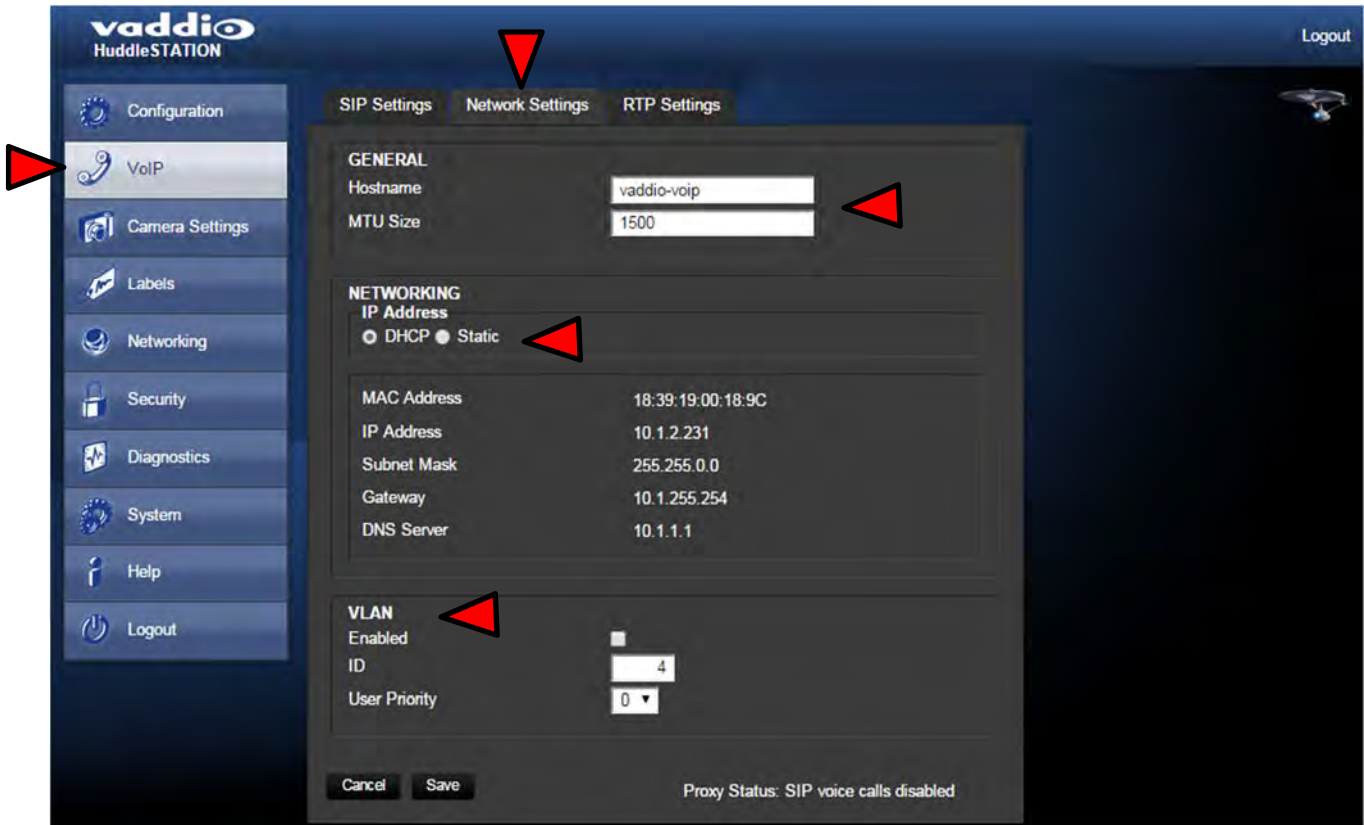
The **VoIP** configuration menu provides a method for an administrator to configure the SIP user agent and register the device to the SIP Proxy server within the enterprise. The VoIP page is divided into three (3) tabs; Network Settings, SIP Settings and RTP settings.

SIP functionality is disabled by default, use SIP Voice Calls Enabled to enable it. The Transport allows you to set the signaling to TCP, UDP or Auto. The **SIP Authentication** panel allows an administrator to set the User Name/Extension and password for registration with the SIP server. The User Name/Extension will be the address used by the proxy to route call information. The **SIP Outbound Proxy** panel provides a method for the Admin to use and configure the user agent to redirect SIP messaging to an outside proxy server that may reside outside the firewall. The **Session Timers** panel includes the ability to configure sessions and keep alive timers if required for the proxy server. Click on Save to when finished



Screen Shot: VoIP Network Settings

The VoIP network configuration menu allows the administrator to set the configuration properties and the unique IP address for the BaseSTATION. MTU size is adjustable to suit your VOIP networking needs, default setting is 1500. The **VLAN** section allows the Admin to assign and match the BaseSTATION VoIP configuration parameters to the VLAN that the VoIP traffic uses to ensure the same quality of service (QoS - DSCP) already set-up within the user's voice/data switches. The ID and Priority must match the host network switches if the VLAN is enabled. Please have IT guys provide this information since trial and error, will only yield errors. Click on Save when finished.



Screen Shot: VoIP RTP Settings

The RTP (Real Time Protocol) setting tab allows the administrator to configure the audio streaming function associated with the VoIP user agent.

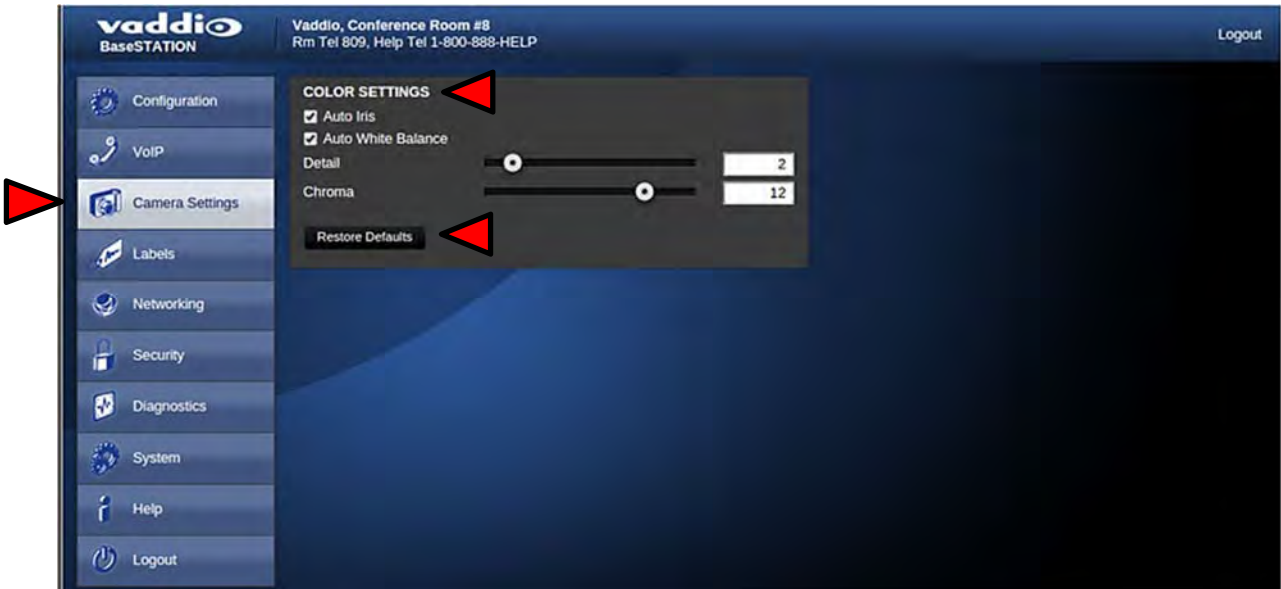
- **RTP Port Range:** Sets the port range used for audio transports.
- **Codec Priority:** Allows the administrator to set the priority of audio codec to be used during call negotiations. Available codecs include G.711 μ Law, G.711 aLaw, and G.722. The first in the list will be the preferred codec to be used during the call negotiation. The codec types will change position with the up or down arrows that are next to each setting.
- **Audio Processing:** Various audio processing functions are available for the VoIP call. This includes ability to enable and set DTMF timing, voice activated detection (VAD) and comfort noise fill (CNF). The default configuration should be adequate in most installations.



Important Note: There is a VoIP Network Worksheet available to assist IT managers and system integrators with installing the GroupSTATION, HuddleSTATION, or BaseSTATION VoIP conferencing platform into the enterprise VoIP system. The worksheet will be available on the Vaddio website. It also is in the back of this riveting manual.

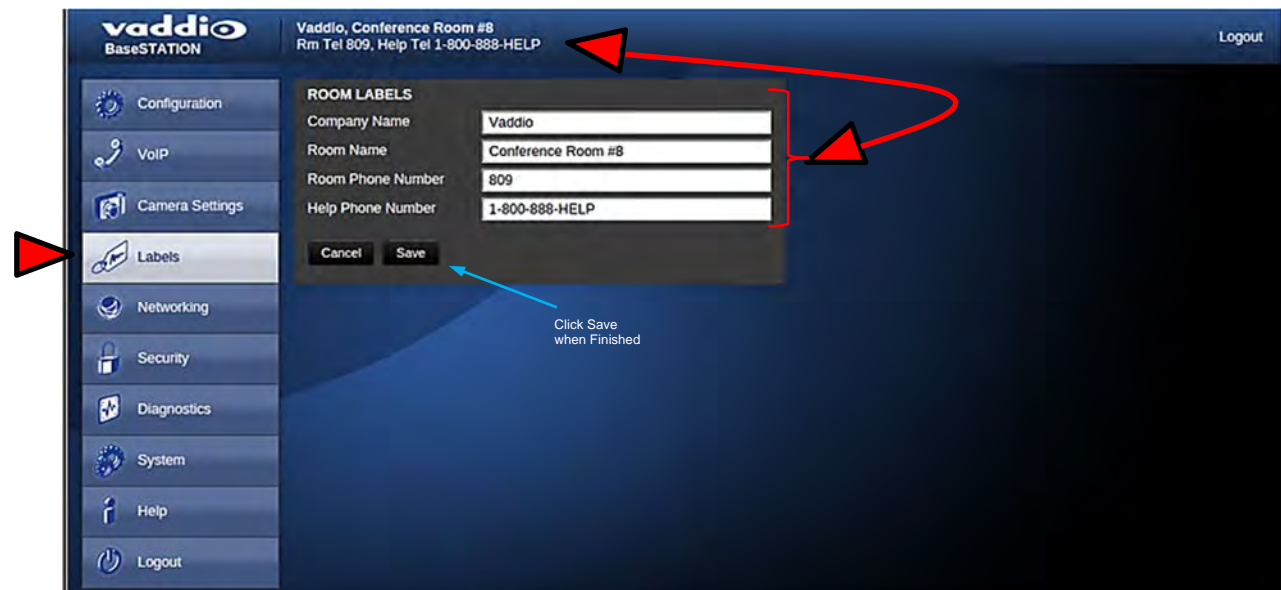
Screen Shot: Camera Controls

The BaseSTATION Camera Module video characteristics can be controlled from this page to prevent shot badness. The Color Settings controls are Auto Iris, Auto White Balance, Detail and Chroma. The Auto Iris mode, when turned off, will present an Iris and Gain control for fine adjustments of the video's exposure. The Auto White Balance, when turned off, will present Red and Blue control sliders for adjustment of the video coloration. For most applications, the Auto functions will be sufficient and should only be used to combat poor lighting or improper background shots, such as all black or all white backgrounds. The Detail control adjusts the sharpness of the image, but too much detail can look grainy. Finally, the chroma control, which adjusts the overall intensity of all the colors in the image. If the image gets too whacked out, a Restore Defaults button can prove useful.



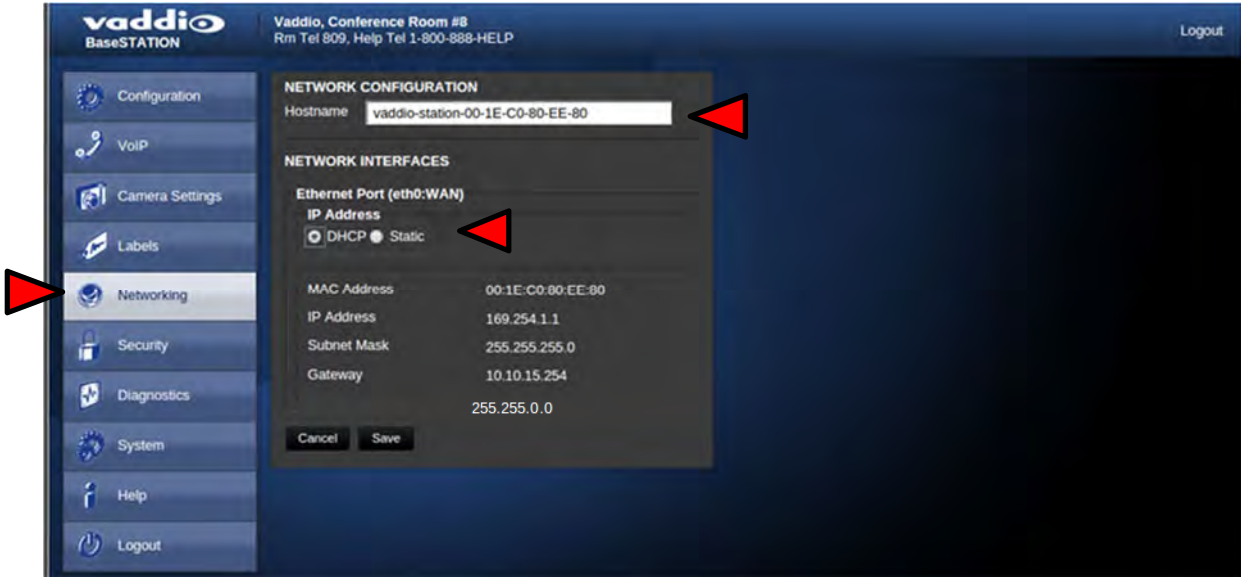
Screen Shot: Room Labels

The Labels menu allows the administrator to define the specific room information with the BaseSTATION installation that will be displayed on the webpages. The company and room name, the room phone extension and the help line phone numbers are displayed.



Screen Shot: DHCP Network

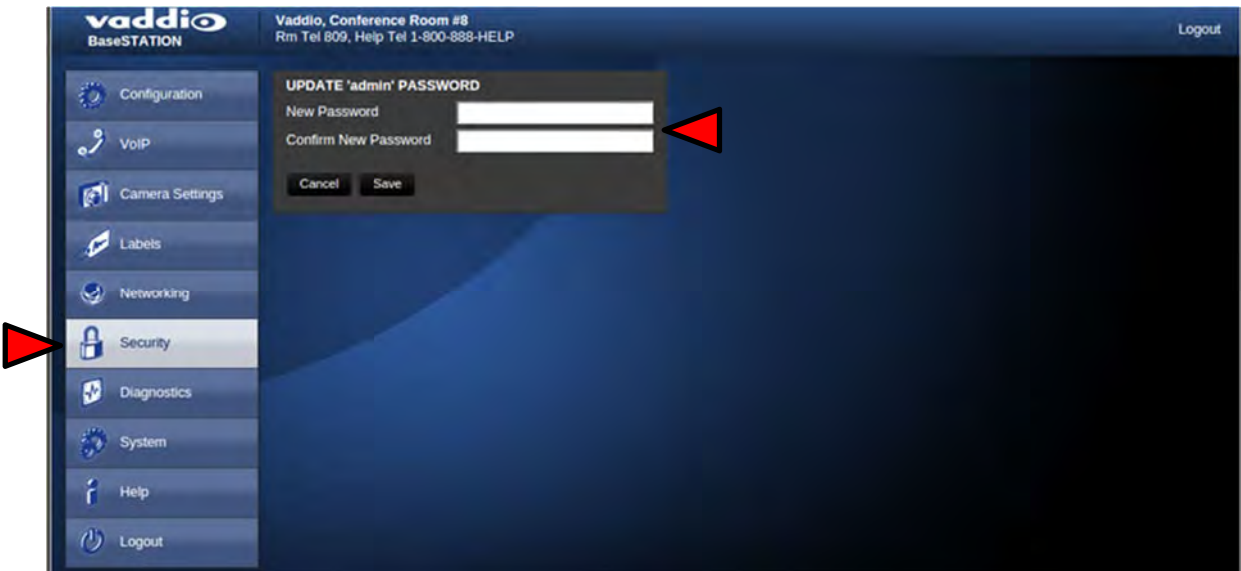
The Networking page is used to configure the BaseSTATION IP addressing (non-VoIP). It supports DHCP or Static IP addresses and a Host Name. It also includes the MAC address associated with the device. To set up the Ethernet Port to Static IP address, click on Static, and enter the IP address, the subnet mask and the gateway and click on save. Double check the data prior to clicking save.



The IP address can also be obtained from the BaseSTATION by pressing and holding the green Answer button on the BaseSTATION Dock for 3.0 seconds. The current IP and MAC address will be displayed for 10 seconds, and then for the next 10 seconds the VoIP IP address and Proxy Status is display on the On-Screen-Display (OSD) over the HDMI output to the room monitor.

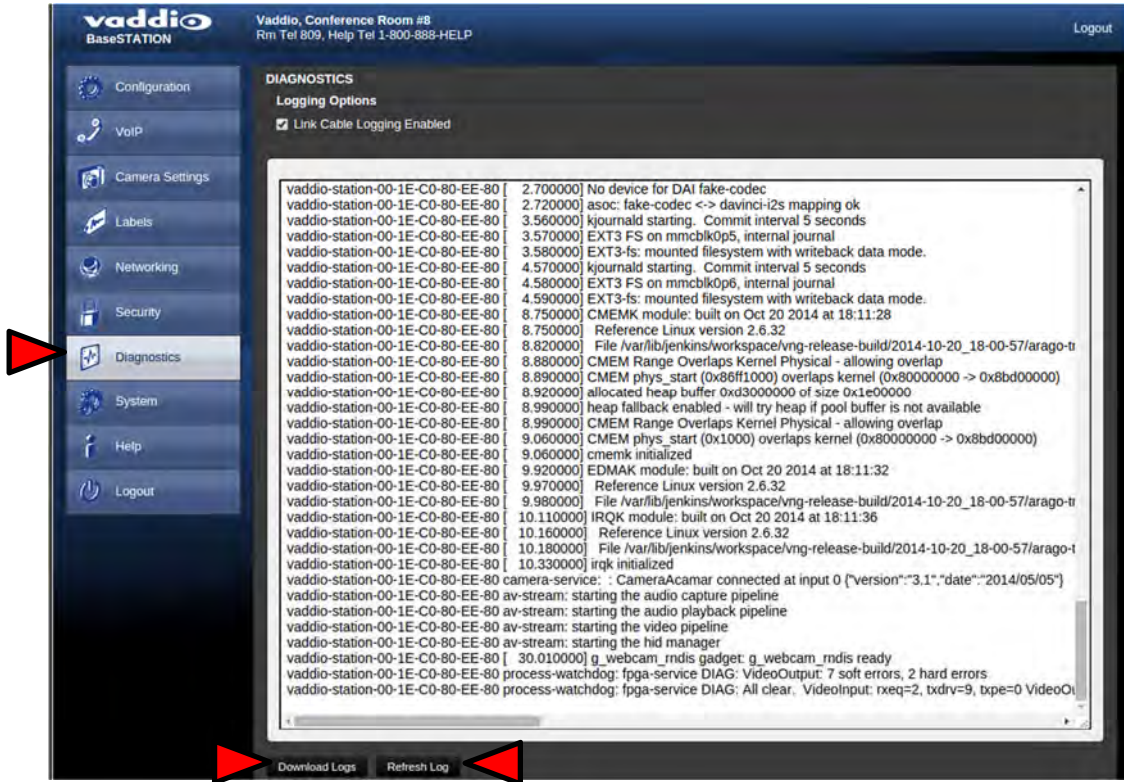
Screen Shot: Security

The administrator account has a password for login security. The admin account will always require a password entry for login to the administrator pages. The BaseSTATION ships with a factory default password of: *password*, but can be modified after initial login.



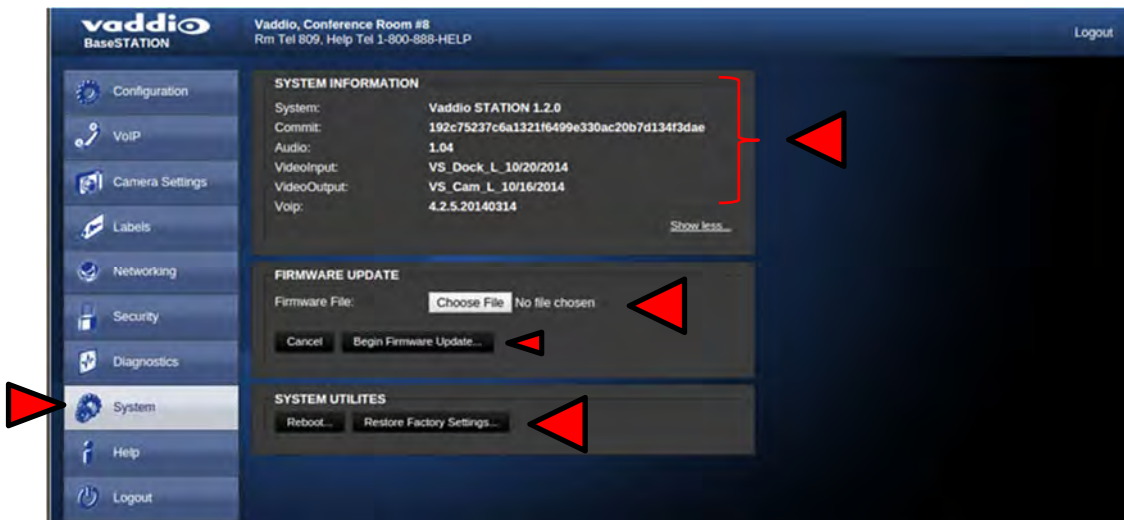
Screen Shot: Diagnostics Menu

The Diagnostics function within the BaseSTATION is intended for advanced troubleshooting. It includes logging capabilities of key events and error reporting during normal operations. The internal logging function is setup as a revolving FIFO with estimated internal storage capabilities for up to one week. SIP logging is also available for SIP call analysis. The administrator has the ability to clear the log or download the log to a local PC.



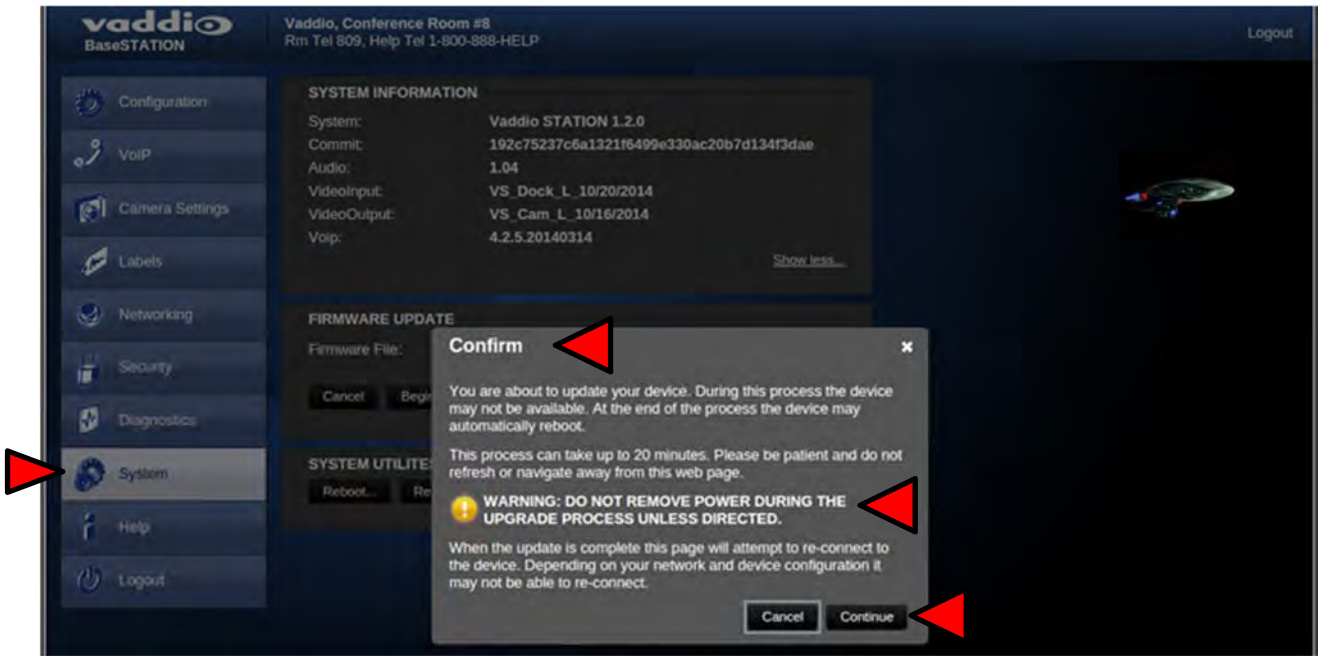
Screen Shot: System Menu

The System menu is intended to display the software versions and to provide for future firmware update operations. The administrator can select the new firmware file from a local or network drive. The 'begin firmware update' button is actuated once desired firmware file is selected. Under System Utilities, the remote Reboot and Restore Factory Settings enable remote admins to restart the system or set the system back to the starting defaults. When rebooting the previous configuration will be lost and the system will have to be re-configured from the start. All settings will be overwritten and there isn't any undo key, so please be real sure.



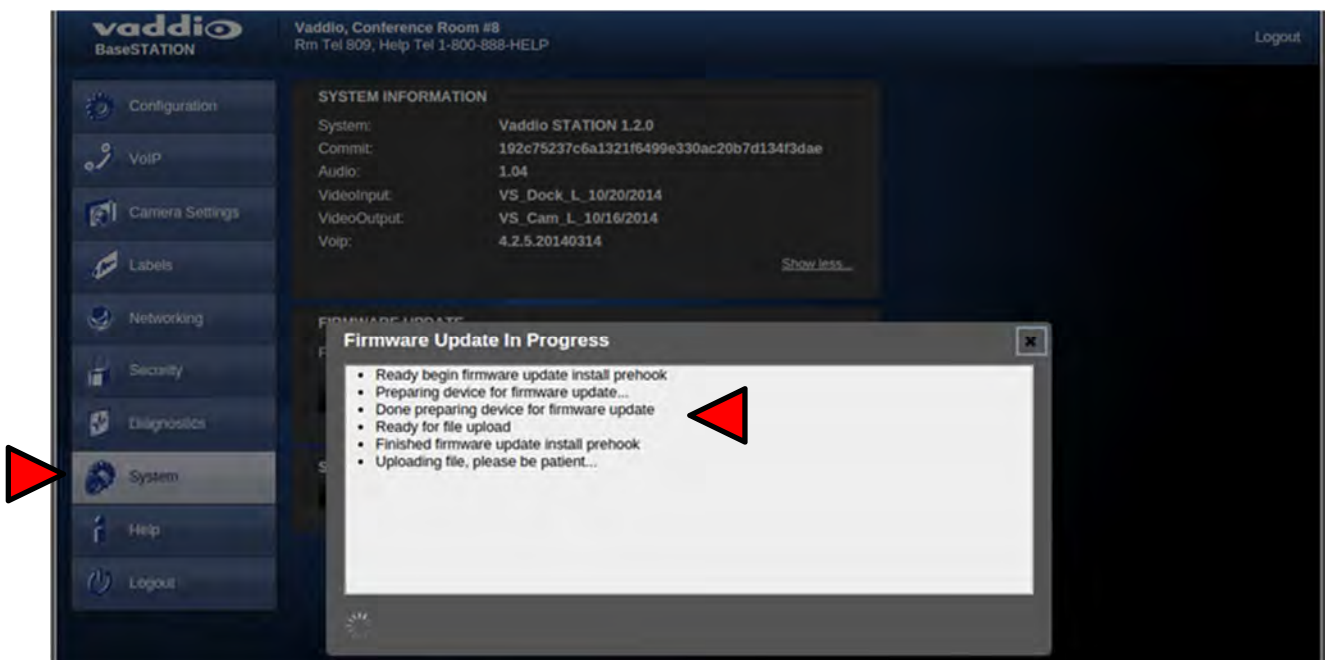
Screen Shot: System Confirmation

Upon selecting an update file and clicking on 'Begin Firmware Update', a confirmation pop-up menu appears to allow the admin a chance to cancel and provide instructions on how to proceed. Always read and follow the instructions and warnings for all pop-up confirmation menus.



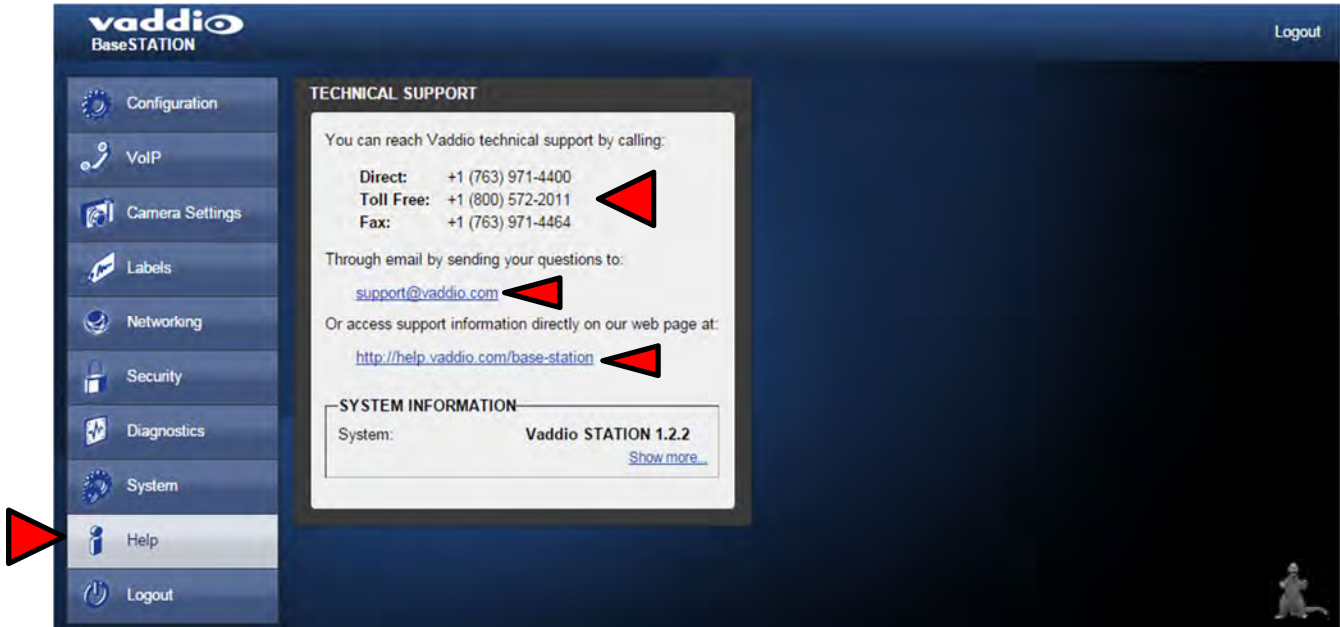
Screen Shot: System Firmware Update in Progress

After confirming the update, a progress pop-up menu will advise the admin of the progress of the update. Please do not interrupt the update process.



Screen Shot: Help Menu

The Help menu provides general information about the BaseSTATION and assists the administrator in configuring and programming of the device. The Help menu also includes information on the current firmware release loaded on the device. Click on the support link for product related documentation from the Vaddio website



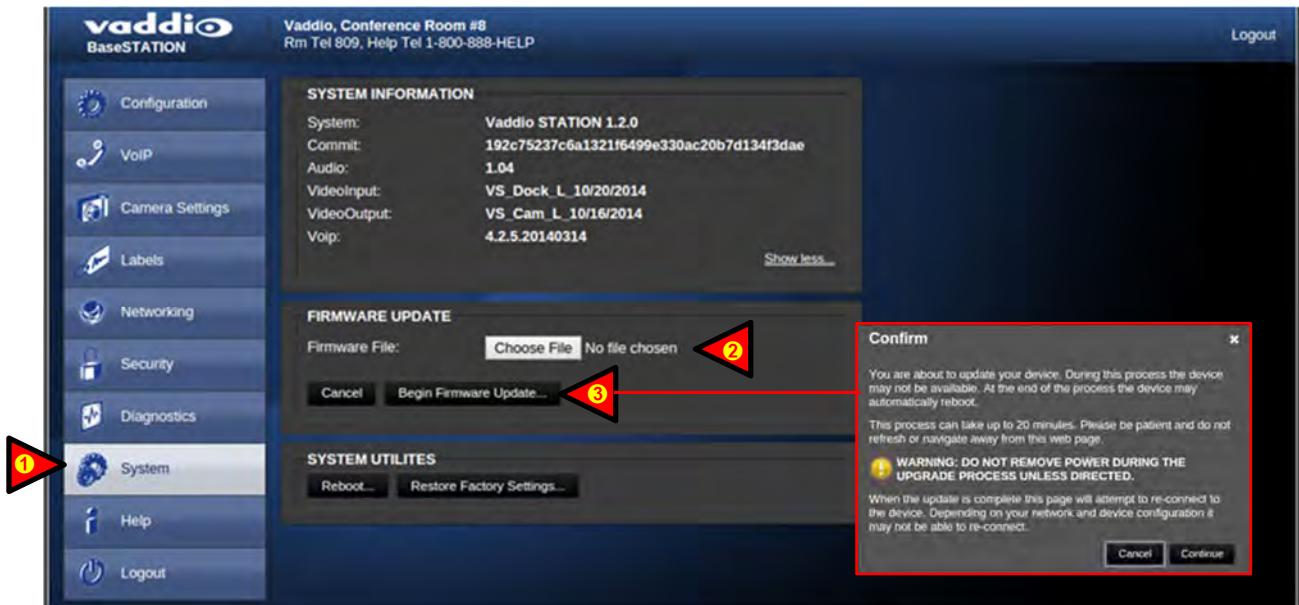
Updating the BaseSTATION

A product like the GroupSTATION, HuddleSTATION, and BaseSTATION, there will be occasions that new software updates are available. These updates will no doubt contain new features, added functionality, changes, and general

tweaks to make good ideas better, and of course, some bug fixes. In an effort to make the updates as painless as possible, these directions are provided. Remember, it is always a “better than good idea” to involve the IT guys to upgrade any device, especially UC devices like the GroupSTATION, HuddleSTATION and BaseSTATION systems.

Updating Instructions:

- 1) Download the VaddioSTATION software file (image) from the Vaddio Support Center website located at support.vaddio.com. Do not UNZIP this file. Save the file to a local drive.
- 2) Log-on to the VaddioSTATION administrator web pages. Default username is “admin” and default password is “password” (unless changed by the administrator).
- 3) Navigate to the Systems tab within the web pages. Press the “Choose File” button and navigate to the VaddioSTATION firmware image stored in step 1. Once selected, choose “Begin Firmware Update”.



- 4) After clicking on “Begin Firmware Update” a confirmation pop-up and warning will be displayed. Please read and completely understand the pop-up warnings as it is easy to lose patience waiting for updates. Please read the warnings regarding the interruption of power below.

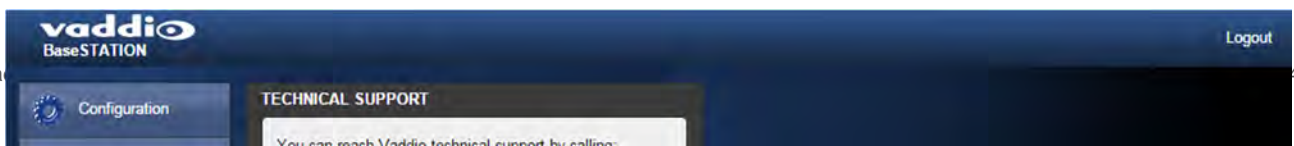


Note: The VaddioSTATION will not be operational once the firmware update begins. Any end-users in the room will be notified with the On-Screen Display that a firmware update is in process.

- 5) An update can take up to 20 minutes, the pop-up message window will identify the progress of the update, and when it is completed. After the update is complete, the new version can be verified on the Help Menu tab. The version is displayed under System Information.



- 6) After the update has been completed, a reboot will not be needed. Go to the System menu and the new versions of Audio, Video In, Video Out, VoIP and the overall System Revision will be displayed. In this case, 1.2.0 was updated to 1.2.2.





BaseSTATION User Operations

The primary user interface for the BaseSTATION is the dial pad interface on the BaseSTATION Dock in combination with visual feedback from an On-Screen-Display (OSD) associated with the HDMI output that connects to the room's monitor. The dial pad is a capacitive touch interface and includes an audible tone when pressed. A description of the button functions are contained in the table below.

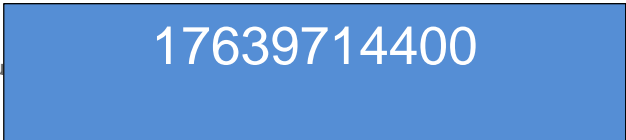
Button	Function	Operations
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	<p>Power ON/OFF (Dual Function Button)</p>	<p>This button powers the unit from Standby to a normal ON state. A green LED indicates that the BaseSTATION is ready. No LED indicates the unit is in Standby Mode. To enter Standby Mode push and hold the Power button for 3.0 seconds. Standby Mode is indicated on the OSD.</p>
	<p>Mute</p>	<p>This button represents a global Mute of all microphones within the BaseSTATION Dock. The four red LEDs will illuminate when the microphones are muted. Incoming audio is not muted.</p>
	<p>Volume Up and Down</p>	<p>The Volume up and down buttons allow the user to increase or decrease the system's audio level. Eight LEDs indicate the current level of the volume.</p>
	<p>Video Input Source Selection Buttons</p>	<p>These buttons are used if multiple video sources are connected to the Dock and allow either the camera input HDMI or the VGA PC inputs to be routed to the room's monitor and to the far-end.</p>
	<p>PIP On/Off</p>	<p>This button toggles the PIP on and off. For UC applications, the PIP window will show the camera's image over the top of the PC image (in the HDMI or VGA input). This composited image is sent to the Far-end of the conference.</p>
	<p>Answer/Send (Dual Function Button)</p>	<p>This button is dual purpose and associated with the VoIP functions. Answer Function: This button is used to answer inbound calls. The LED will start flashing when in-bound call is detected. This also includes audible ringing out the monitor speakers. Send Function: This button is also used for dialing operations. User enters desired number to be dialed. The OSD will display the number to be dialed. Once number is entered, user presses button to Send to establish the call. IP & MAC Address: To display the IP and MAC addresses on the OSD, press and hold this button for 3.0 seconds. The IP and MAC addresses will be displayed for 10 seconds and the VoIP IP address and Proxy Status are shown for 10 more seconds.</p>
	<p>Hang-Up (Dual Function Button)</p>	<p>This button disconnects a VoIP call. The red LED flashes once to indicate the call was terminated. For a Factory Reset, push and hold the hang-up button for 5.0 seconds. The system will provide a prompt on the monitor (Press 5). When the prompt is answered the system will reset.</p>

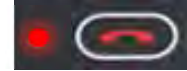
Making a VoIP Call

Once the BaseSTATION is registered to the VoIP PBX/SIP Proxy by the network administrator or other qualified IT or phone system personnel, the BaseSTATION functions surprisingly like a typical telephone set, which is cool.

Step 1: Dial the desired number using the BaseSTATION Dock User Interface. The OSD will automatically pop-up on the room's LCD, at the top of the image, showing the number being dialed.



If the number is incorrect, pressing the Hang-up button will clear the number allowing re-entry.



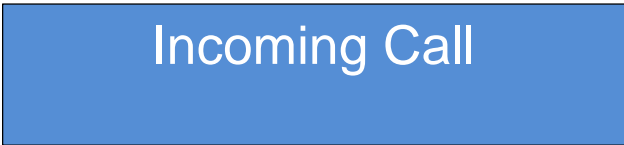
Step 2: Once the desired number is entered. Press the Send button. The OSD will indicate that a call is trying to be established to the other party.



The OSD will display additional messages about the status of the call which includes Busy, Connected, or Error and many other messages too.

Accepting a VoIP Call

Audible and visual indicators will be present with an inbound call. A ringtone will be heard from the loudspeakers. In addition, the OSD will display a message that an inbound call is pending.



Call Acceptance:

To accept a call, the user presses the answer key.



Call Rejection:

The hang-up button can be pressed to reject the call.



Connecting to a PC's Audio

The BaseSTATION Dock can be connected to the PC to extend media functions to the BaseSTATION. This includes extending the Audio Playback and Record associated with the PC to the BaseSTATION via USB. This is accomplished by selecting the VaddioSTATION as the USB Playback and Record device in Windows Sound Properties or from within the soft client (Lync, WebEx, Skype, etc.). Go to the control panel/sound/playback and select VaddioSTATION as the default Playback device.

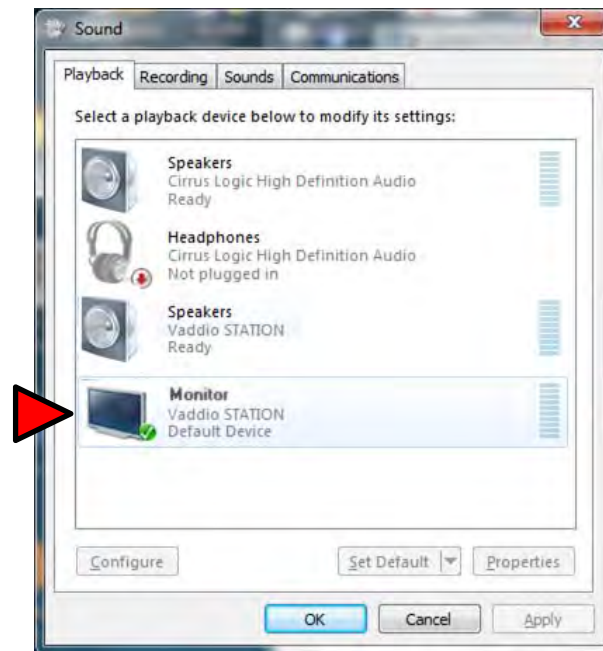
Image: Screen Shot VaddioSTATION Selected for Playback

NOTE: On the playback and recording tabs, the product is referred to as the 'Vaddio STATION'. This is primarily due to the products that will be introduced in 2014 that will use the same fundamental software (i.e. BaseSTATION etc.).



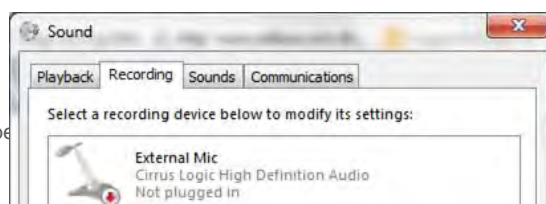
The HDMI audio will be depicted as a VaddioSTATION Monitor within the sound configuration. The sound will still be processed in the same way as the selection of the speaker.

Image: Screen Shot Vaddio HDMI Monitor Selected for Playback



Select VaddioSTATION as the recording or microphone device within sound panel since the mics in the Dock are needed for any/all conferencing or recording applications.

Image: Screen Shot VaddioSTATION Selected for Recording

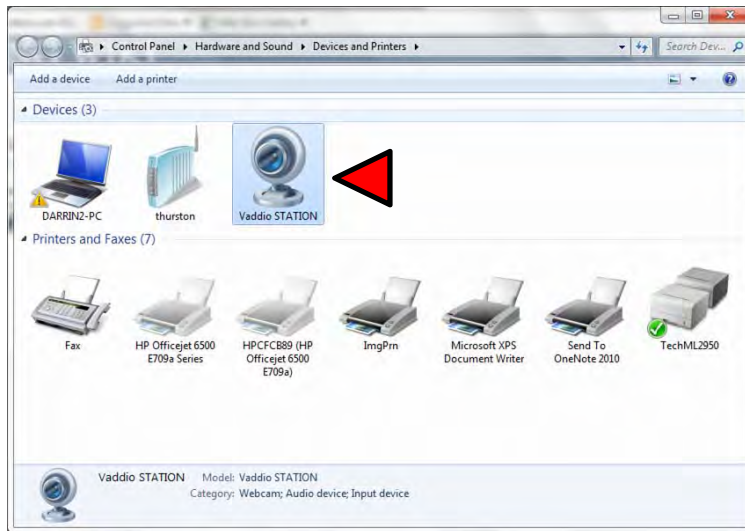




Certified Important Note: The BaseSTATION (VaddioSTATION) must be selected as both the Playback (speaker) and Record (microphone) device within Windows or Soft Client for proper hands-free audio operations.

Selecting BaseSTATION as PC Camera

The BaseSTATION emulates a USB Web Camera to the PC. VaddioSTATION (below) must be selected as the source with any software application. Once connected to the PC via USB, it will be depicted as a camera within the device page within Windows. Alternatively, it will show up as an available source, UVC camera, to any of the soft clients (Lync, WebEx, Skype, etc.).



Extending PC Display to Room's Display

The local PC's display can be extended to the room's display by plugging into either the HDMI or RGBHV (VGA) port on the Dock. This is equivalent to connecting to a room projector to share the PC's display to the room. Anything on the local PC display can be emulated to the room's display and it is also sent to the far-end.

Compatibility

The BaseSTATION will work with the following web browsers, soft codecs, computer operating systems, and media players:

Compatibility: Web Browsers

Vaddio BaseSTATION - Document Number 342-0756 Rev B

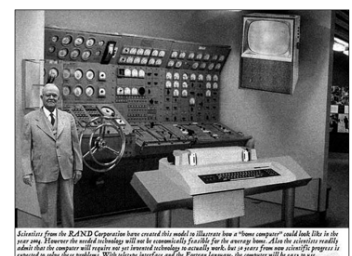


Illustration from the RAND Corporation have caused this model to illustrate how a "room computer" could look like in the future. However, the model is being used only to demonstrate the idea of the average room. After the necessary details, when the computer will require use of several technologies to actually work, but to create from some scientific progress is required to solve these problems. With strategic investment and the human language, the computer will be easy to use.

- 1) Internet Explorer (IE 8 through 11)
- 2) Safari (Rev 4 and 5)
- 3) Safari/iOS (Rev 4 and 5)
- 4) Chrome (the latest and current release - auto updating)
- 5) Firefox (the latest and current release - auto updating)

Soft Clients Compatibility:

BaseSTATION is compatible with the following soft codecs or applications, in no particular order.

UC Program	Operation System	Notes
Skype	Win 7 & Mac OS X	Mac OS 10.9.x
Web Ex	Win 7 & Mac OS X	(WBS 28.7 and up)
Microsoft Lync	Win 7 & Mac OS X	Mac OS 10.9.x
Vidyo Desktop	Win 7 & Mac OS X	Mac OS 10.9.x
Google Plus	Win 7 & Mac OS X	Mac OS 10.9.x
Adobe Connect 8	Win 7 & Mac OS X	-
LifeSize ClearSea	Win 7	-
GoToMeeting (Citrix)	Win 7 & Mac OS X	-
Polycom M100	Win 7	-
Panopto	Win 7, (lecture capture)	Lecture Capture
Zoom	Win 7, Mac OS X	Service Based Program

Note: There are many other compatible UC programs, but these have not been thoroughly tested.

Compatibility: Operating Systems

- Apple OS X (10.9.x)
- Windows XP w/Service Pack 3 with known issues and errata
- Windows 7
- Windows 8
- Linux

Evolving Compatibilities

As more UC soft-client and lecture capture programs are released and gain popularity, Vaddio will provide a continuing research and development effort to ensure the compatibility with other manufacturer's products.

USB 2.0 MJPEG Resolutions

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 BaseSTATION to negotiate and use for any specific application. Typically, the highest resolution possible between both the PC and BaseSTATION is used. However, not all OS and application combinations are typical. Some applications are assigned to a lower value, or the lowest resolution to purposely minimize the bandwidth requirement. In order to avoid selection of the smallest resolution possible, the resolutions of 160 x 120 and 160 x 90 were removed because it looked sort of fuzzy wicked awful (in some respects).

Table: Supported Resolutions

Format	Resolution	Frame Rate	Aspect Ratio
MJPEG Motion JPEG	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

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 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 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, especially caviar.
- For smears or smudges on the product, wipe with a clean, soft cloth
- Use a lens cleaning cloth on the lens
- 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 swimming pools with movie stars
- In inclement weather
- Dry environments with an excess of static discharge
- Next to a 449 megawatt Pelton turbine-generator
- Under severe vibration

BaseSTATION Compliance and CE Declaration of Conformity

Compliance testing was performed to the following regulations:

FCC 47 CFR Part 15, Subpart B/Oct. 2009

ICES-003, Issue 4: 2004

Class A

Class A



EN-55011:2007 + A2: 2007
 EN 55022:2006 + A1: 2007
 CISPR 22:1997
 IEC 60950-1:2005 (Second Edition); Am 1:2009
 EN 60950-1:2006+A11:2009+A1:2010+A12:2011
 EMC Directive 2004/108/EC

Class A
 Class A
 Class A
 Safety
 Safety
 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 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 standards for Emissions, Immunity, and Safety. It meets the requirements for E4 environment. This product complies with Class A (E4 environment). 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:

EN-55011:2007 + A2:2007
 EN 55022:2006 + A1:2007
 EN 61000-6-4:2007
 EN 61000-3-2:2006
 EN 61000-3-3:2008
 EN 61000-6-2:2005
 EN 55024:1998 + Amendments A1:2001 + A2: 2003
 EN 61000-4-2:2008
 EN 61000-4-3:2008
 EN 61000-4-4:2004 + Corrigendum 1:2006 + Corr. 2:2007
 EN 61000-4-5:2005
 EN 61000-4-6:2008
 EN 61000-4-8:2009
 EN 61000-4-11: Second Edition: 2004
 IEC 60950-1:2005 (Second Edition); Am 1:2009
 EN 60950-1:2006+A11:2009+A1:2010+A12:2011

Emissions
 Conducted and Radiated Emissions
 Electromagnetic Compatibility
 Limits for Harmonic Content
 Limits for Voltage Fluctuations and Flicker
 Immunity for Industrial Environments
 Immunity
 Electrostatic Discharge
 Radiated Immunity
 Electrical Fast Transients
 Surge Immunity
 Conducted Immunity
 Power Frequency Magnetic Field
 Voltage Dips, Interrupts and Fluctuations
 Safety
 Safety

General Specifications

BaseSTATION	
Part Numbers	<ul style="list-style-type: none"> • BaseSTATION Deluxe System: 999-8920-000 North America, 999-8920-001 Int'l (with wall mount) • BaseSTATION Premier System: 999-8925-000 North America, 999-8925-000 Int'l (with wall mount and 4x4 PC Interface cable)

Audio	HDMI audio and video output to the room LED/LCD monitor
WideSHOT Type Cam	1/3-Type Progressive Scan CMOS Sensor with 1.3 Megapixels 3X Optical Varifocal Zoom, 3.3mm-10mm, Manual Zoom, Focus and Iris 82.2° Wide End to Tele End, 27.4° Zoomed-all-in, 16:9 Format (94.3° Diagonal - if someone would really want to look at camera specs like that) Manual Pan/Tilt/Zoom
VoIP	SIP User Agent
Video Output	HDMI video output
Video Processing	Input switching (HDMI or VGA to far-end), On-screen Display, Picture-in-Picture
User Controls	BaseSTATION Dock and Internal Web server
Connectors	Network (RJ-45), HDMI (output - audio and video), BaseSTATION Dock LINK (Shielded RJ-45), Power (5.5mm x 2.5mm coaxial power connector with positive center)
BaseSTATION Dock	
User Controls	Dialing, Mute & Volume, PIP, Video Select, Power On/Off with on screen display of user controls
Microphones	4-Cardioid Electret Condensers, Low Noise Microphone Elements (arranged for 360 Degree pickup pattern)
Audio Processing	Acoustical Echo Cancellation, Automatic Gain Control, Noise Reduction, Automatic Microphone Mixing, HP/LP Filters
Video Input	HDMI: 1080p/60/59.94/50/30/25 frames/s, 720p/60/59.94/50 frames/s, 1080i/60/59.94/50 fields/sec DVI (on HDMI w/sRGB color space): 1080p/60/59.94/50/frames/s, 720p/60/59.94/50Hz frames/s, 1080i/59.94/50Hz, fields/sec, 1440 x 900@60Hz, 1360 x 768@60Hz, 1280 x 800@60 Hz, 1280 x 768@60Hz, 1280 x 720@60Hz, 1152 x 720@60Hz, 1024 x 768@60Hz RGBHV: 1280 x 720@60Hz (16:9), 1280x768@60Hz (15:9)m, 1280x800@60Hz (16:10), 1360 x 768@60Hz (16:9), 1024 x 768@60Hz (4:3 centered in 16:9 frame)
Connectors	USB (micro-B), Network (RJ-45), HDMI (Input), DE-15 (VGA Input), Dock LINK (Shielded RJ-45)
General Information	
Cat-6 SSTP Cable	26AWG stranded, individually shielded pairs with overall shield, gold contacts and metal shielded RJ-45 Printed on Jacket: Cat-6 26 AWG x 4pr SSTP IEC 60332.1, Conforms to ISO/IEC 11801 & EN 50288, ANSI & TIA/EIA-568-C.2 3P/ETL Verified CMX (UL) C(UL) CMH E193793 Please do not substitute this cable. Use ONLY the provided 25' (7.62m) or the Accessory 50' (15.42m) Cat-6 SSTP. These cables are tested and approved.
Operating Temperature	32° to 104° F (0° to 40° C) / 20% to 80% Relative Humidity
Audio Specification	Frequency Response: 20 HZ to 20KHZ, Dynamic Range: >90dB, THD + Noise: <.02%
Camera Specification	Aptina 1/3-type Sensor with manual, real glass 3mm-10.5mm Varifocal (~3X) optical zoom lens producing 82.2° horizontal field of view on the wide end and 27.4° on the tele end in a 16:9 format.
USB Specifications	USB 2.0-UVC and UAC compliant, Video: Up to 720p/30 MJPEG, Audio: Stereo PCM at 48KHZ, 16 bit
BaseSTATION Dock LINK Interface	Proprietary high speed digital interface with Video, Audio, Control, Network, and Power. Cat-6 SSTP cable with individually shielded pairs. 25' (7.62m) included with every system. 50' (15.24m) Cat-6 SSTP cable with individually shielded pairs sold separately. Use ONLY these cables to ensure a successful install.
Power Consumption	<50 Watts
Power Supply	24 VDC, 3.0 Amps
Dimensions (H x W x D)	BaseSTATION Camera Module: 6.169" (156.7mm) H x 10.494" (266.55mm) W x 3.97" (101.02mm) BaseSTATION Dock: 1.699" (43.17mm) H x 9.25" (234.95mm) Diameter (round) Drawings available on the Vaddio website.
Weight	BaseSTATION Camera Module: Approximately 2.8105643 lbs. (1.2771542 kg) BaseSTATION Dock: Approximately 1.67 lbs. (0.75749926 kg)
Accessories	4x4 PC Interface Cable for BaseSTATION Dock (999-8902-000) 50' Shielded Cat-6 SSTP with Individually Shielded Pairs (999-8903-000)
Network Requirements	
IP Addresses	For each BaseSTATION, three (3) IP addresses are required; <ul style="list-style-type: none"> ▪ One (1) for the BaseSTATION conferencing and set-up web pages ▪ One (1) for BaseSTATION VoIP ▪ One (1) for the room PC with the UC application
Default IP Address and Ports Used	BaseSTATION Default IP: 169.254.1.1 & Subnet Mask: 255.255.0.0 BaseSTATION VoIP: Port 5060, Typical Browsers: Port 80 RTP Settings Default Port Range: 23456 to 23556 (100 ports) for audio transports

Andromeda Galaxy in first page header courtesy of the Hubble Space Telescope, SD: 68229.7

Appendix A: Network Information Required

The intent of this appendix is to assist both system integrators and IT managers preparing for the installation of the BaseSTATION conferencing platform into the Enterprise IP and VoIP network.

For each BaseSTATION and room PC, three (3) total IP addresses are required. The addresses are as follows:

- 1) For the BaseSTATION for UC conferencing
- 2) For the BaseSTATION VoIP conferencing



3) For the in-room PC used with the UC conferencing application.

For the first BaseSTATION IP address (Non-VoIP):

The BaseSTATION IP address information (for non-VoIP) is entered under the **Networking Menu** tab. The following items will need to be entered:

- 1) **Hostname:** _____ . The Hostname is a label used for identification of the BaseSTATION UC conferencing device connected to the network.
- 2) **Network Type:** DHCP or Static. If DHCP, then the address information should auto-fill
- 3) If **Static**, then the following information is needed (the MAC address is provided).
 IP Address: _____
 Subnet Mask: _____
 Gateway: _____

For the 2nd BaseSTATION IP Address (VoIP):

The BaseSTATION IP address information for VoIP is entered under the **VoIP Menu** tab. The following items will need to be entered:

- 1) **Hostname:** _____ . The Hostname is a label used for identification of the BaseSTATION VoIP conferencing device connected to the VoIP network.
- 2) **Network Type:** DHCP or Static. If DHCP, then the address information should auto-fill
- 3) If **Static**, then the following information is needed (the MAC address is provided).
 IP Address: _____
 Subnet Mask: _____
 Gateway: _____
 DNS Server: _____
- 4) **VLAN:** The following Information is required if the Host site uses segmented VoIP and data to prioritize VoIP over data traffic on the LAN/WAN (essentially the network QoS - the car pool lane for VoIP).
 VLAN Enabled (If enabled then ID and User Priority are required)
 ID#: _____ User Priority#: _____

Under the **SIP Settings** Tab the following information must be entered under the headings SIP Authentication, SIP Outbound Proxy and Session Timers:

• SIP AUTHENTICATION

User Name/Extension (User Name/Extension is used by the SIP Server to route calls): _____

Password (Password authentication to the SIP server): _____

Display Name (Acts as caller ID for the call destination): _____

User Domain (SIP IP address or Domain Name): _____

Authentication User Name (Authenticate to LDAP or some web based services): _____

Local SIP Port (Default Port is 5060): _____

• SIP OUTBOUND PROXY

Proxy/URL Address (Address for SIP Outbound Proxy Server): _____

Proxy Port (Default Port is 5060): _____

• SESSION TIMERS

Registration Lifetime (Default is 3600 sec): _____

Keep Alive Timer (Click to Enable - Enter Timer Value - Default is 30 sec): _____

Under the **RTP Settings** Tab the RTP Port Range, the Codec Priority and the Audio Processing parameters are defined. The following information is required for the RTP Settings tab:

• RTP SETTINGS

Port Range: _____ (Sets RTP port range used for audio transports)

• CODEC PRIORITY

_____ (The first in the list will be used for call negotiation)

G.722 HD - Wideband G.711 μ Law G.711aLaw

• AUDIO PROCESSING

DTMF Relay: (For using DTMF in band - Click to Enable)

DTMF ON Time: (Default 150ms 0 - Sets DTMF timing)

DTMF OFF Time: (Default 50ms - Sets DTMF timing)

VAD Enabled: (Check to Enable - Voice Activity Detection) Used for bandwidth management.

VAD Threshold: (Default -45dBu - minimum level that voice has to be in order to be detected)

Comfort Noise Enabled: (Check to Enable) Synthetic background noise used to fill the artificial silence of digital

Comfort Noise Threshold: (Default -63dBu)

Silence Suppression: (Check to Enable - With VAD on, Silence Suppression works to reduce call bandwidth when no voice is detected)

(In most cases, the defaults should be adequate.)

For the 3rd BaseSTATION IP Address (PC):

The 3rd and final IP Address is for the in-room PC or laptop (BYOD-type) that is running the chosen UC application. The courtesy network jack on the BaseSTATION Dock can be used by the room PC, or any other network jack in the room that is on the same network as the BaseSTATION, but it will need its own IP address.



As always, it is very important to work closely with the IT professionals at the place of installation to acquire the IP addresses, the required VoIP information and the network jack(s) required to install and operate each BaseSTATION.



Inside Rear Cover - Blank, mostly...



Vaddio. Toll Free: 800-572-2011 • Phone: 763-971-4400 • FAX: 763-971-4464. vaddio.com

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