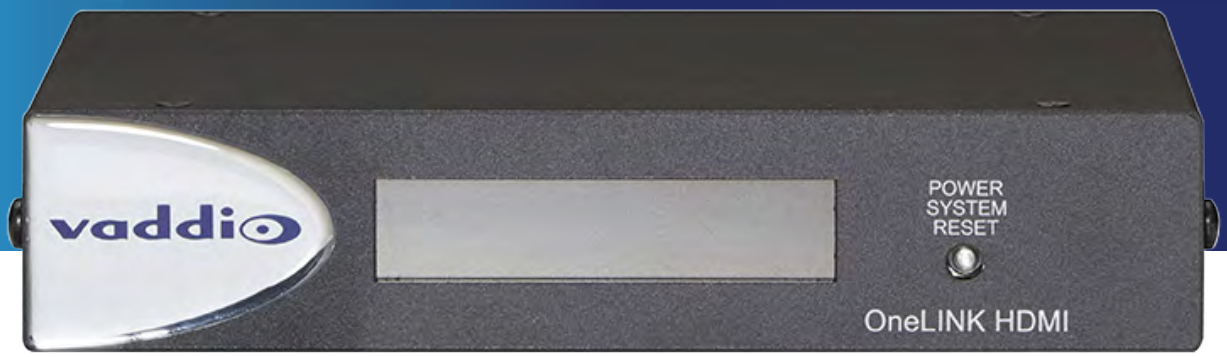

Integrator's Complete Guide to the

OneLINK HDMI

Extension Module for HDBaseT Cameras

Document 411-0005-30 Rev. B

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Overview

This guide covers the OneLINK™ HDMI extension module for HDBaseT cameras:

- 999-1105-043, North America
- 999-1105-143, UK and Europe
- 999-1105-943, Australia and New Zealand

This guide provides information about:

- Unpacking and installing the OneLINK HDMI extension module
- The OneLINK extension module's physical features
- Configuring the OneLINK extension module
- Specifications
- Troubleshooting and maintenance
- Warranty and compliance/conformity information

Features

- Video, power, network, and control on a single Cat-5e(or better) cable
- Distances up to 328 ft (100 m) using Cat-5e cable
- Works with RoboSHOT™ 20 UHD, RoboSHOT HDBT, and other HDBaseT™ cameras
- Simple, economical, fast installations
- Bidirectional control via Ethernet and RS-232
- Passes uncompressed HDMI® video up to 2160p/29.97
- Compatible Vaddio rack mounts are available

Unpacking

Make sure you received all the items you expected.

North America

Part Number 999-1105-043:

- OneLINK HDMI extension module
- 48 VDC, 1.36 A power supply
- AC cord set for North America
- Quick Start Guide

UK and Europe

Part Number 999-1105-143:

- OneLINK HDMI extension module
- 48 VDC, 1.36 A power supply
- AC cord set for UK
- AC cord set for Europe
- Quick Start Guide

Australia and New Zealand

Part Number 999-1105-943:

- OneLINK HDMI extension module
- 48 VDC, 1.36 A power supply
- AC cord set for Australia and New Zealand
- Quick Start Guide

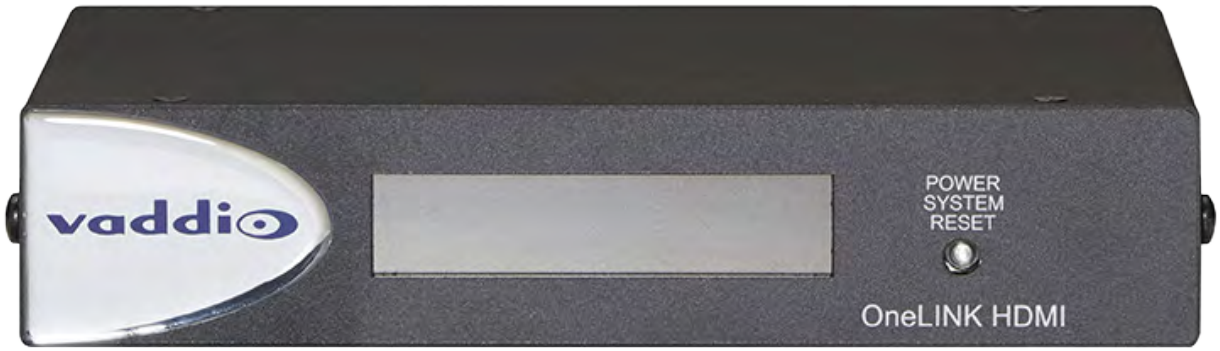
A Quick Look at the OneLINK HDMI Camera Extension Module

This section covers the physical features of the OneLINK HDMI extension module for HDBaseT cameras.

Note

The extension module is not a camera control device. You cannot access camera control from the OneLINK HDMI camera extension module's IP address.

Front Panel

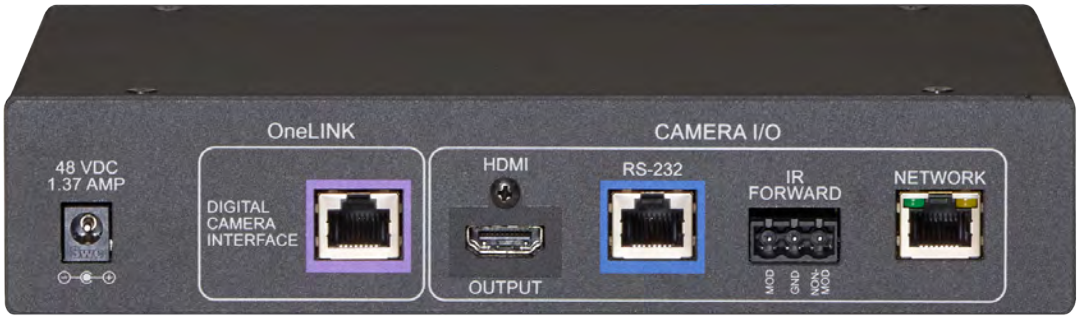


- **Data Display** – Shows the IP and MAC addresses for the OneLINK extension module (not the camera). Use the IP address to access the OneLINK web interface.
- **Power System Reset button** (recessed) – Illuminates when the OneLINK extension module has power. Press to reset the extension module if necessary.

Note

To discover the attached camera's IP address for access to its web interface, point the IR Remote Commander at the camera and press the Data Screen button to see the camera's IP address on the HDMI video output.

Back Panel



From the left:

- **Power Input Jack** – Use the extension module's 48VDC, 1.36A power supply.
- **OneLINK Interface Port** – Connect a Cat-5e (or better) cable to the camera. This bidirectional connection carries video, network connectivity, RS-232 control, and 12 VDC power.
- **HDMI Output** – HDMI video output from the camera.
- **RS-232 port** – Connect to a camera controller.
- **IR Forwarding** – To forward IR signals from the camera, if available. Modulated and non-modulated outputs provided.
- **Network IP Port** – Connect the OneLINK HDMI extension module to the network.

Installing the Camera Extension Module

This section covers:

- Things to know before you start the installation
- Basic connection example

Rack mounting brackets are available for the OneLINK HDMI camera extension module.

Don't Void Your Warranty!

Caution

This product is for indoor use only. Do not install it outdoors or in a humid environment. Do not allow it to come into contact with any liquid.

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

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

All information about this product is available for download at www.vaddio.com/support – no cost, no registration required.

Cabling Notes

Cable distance between the OneLINK extension module and the camera is a maximum of 328 feet (100 m).

In noisier RF or EMI environments - when in doubt, use shielded Cat-6 cable.

For RS-232 cabling, use Cat-5 or Cat-5e/6 cable with standard RJ-45 connectors between the OneLINK HDMI extension module and the controller.

Note

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

Pro Tip

To prevent tragic mishaps, label both ends of every cable.

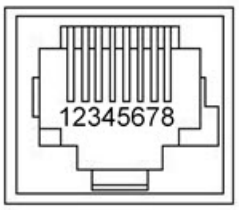
Mounting the Extension Module

If you purchased a mounting kit for this product, follow the instructions supplied with the mount.

RS-232 and IR Forwarding Port Connector Pin-Outs

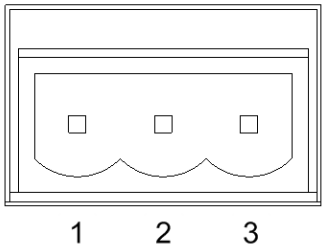
RS-232 Control Port

RJ-45 connection for a camera controller



1. Unused
2. Unused
3. Unused
4. Unused
5. Unused
6. GND
7. RX (from TX of controller)
8. TX (to RX of controller)

IR output on Euro style 3-pin:



1. Modulated IR
2. Common Ground
3. Non-modulated IR

Basic Connections

Here is a fairly simple way to connect a RoboSHOT 20 UHDcamera (shown) or other HDBaseT camera using the OneLINK HDMI camera extension module. This example also shows a ProductionVIEW PCC connected directly to the OneLINK HDMI extension module via RS-232, with a PCC Premier camera controller also able to control the camera from elsewhere on the network.

Configuring the Camera Extension Module

The OneLINK HDMI camera extension module provides a web interface to allow configuration and administration using a browser.

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

If the network has a DHCP server, the OneLINK HDMI extension module will get its IP address, gateway and routing information automatically and you will be able to browse to it. In the absence of a DHCP server, the extension module's default IP address is 169.254.10.1 and its subnet mask is 255.255.255.0. The front panel display shows the IP address.

If it is 169.254.10.1, then the OneLINK HDMI extension module is using its default static IP address. See Network Configuration for more information.

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

Note

The camera extension module is not a camera control device. To configure the camera, use the camera's web interface. Point the remote at the camera and press the Data Screen button to display the camera's IP address on the video output.

Compatible Web Browsers

We have tested this product with these web browsers:

- Chrome®
- Firefox®
- Microsoft® Internet Explorer®
- Safari®

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

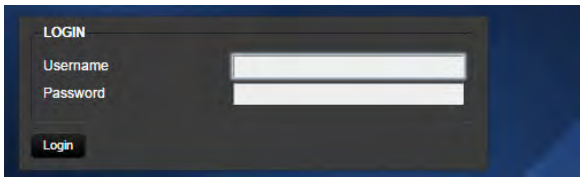
Got it? Then it's time...

All aboard for the tour of the web interface!

Accessing the Web Interface as Admin

LANDING PAGE

1. Make sure the OneLINK HDMI extension module is connected to the network, or directly to a PC.
2. Read the IP address from the display on the front.
3. Enter the IP address in your browser's address bar. Either a login dialog or the Help page opens.
4. If the login dialog opens, log in with the username **admin** and the admin password. (Default password: **password**)



If the Help page opens, click Admin. Then enter the admin password in the login dialog.

After you log in, the System page opens.

Web Interface Cheat Sheet

When you log in as Admin, you have access to the pages for all system administration tasks.

What do you need to do?	Go to this page
Reboot, restore factory defaults, or run firmware updates	System
Find the current firmware version	System
Add or change information about the room where the equipment is installed, or the phone number for A/V support	Room Labels
Configure time zone or NTP settings	Networking
View or change the OneLINK HDMI extension module's hostname	Networking
Configure IP addressing	Networking
Change the Admin password	Security
Specify whether idle sessions close automatically	Security
View or download diagnostic logs for technical support	Diagnostics
Access contact information for Vaddio technical support	Help

For your convenience, the navigation panel also provides an elegant Logout button for ending your session gracefully.

Configuring Network Settings

NETWORKING PAGE

Things you can do on this page:

- Specify time zone and NTP server
- Assign a hostname to the OneLINK HDMI camera extension module
- Specify DHCP or static IP addressing for the camera extension module
- Set up other networking information

After you enter or change information on this page, click Save.

Note

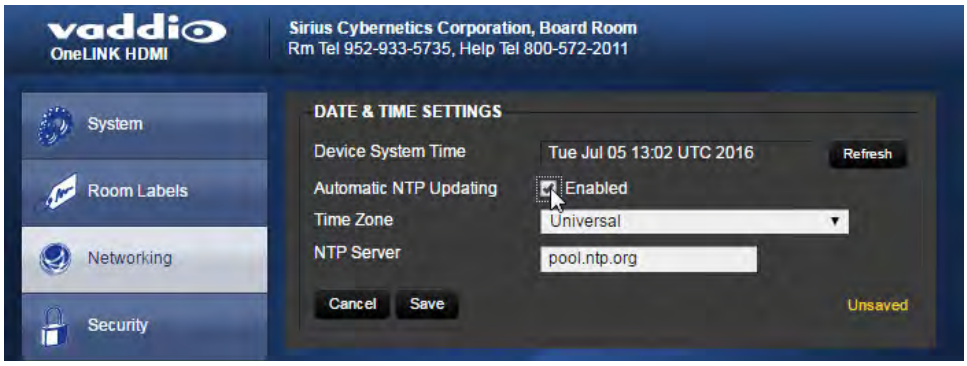
Changes on the OneLINK HDMI web interface do not affect the attached camera's network configuration. The camera has its own separate IP address. Use the camera's own web interface to configure the camera.

Note

DHCP is the default setting, but the extension module will use the default address of 169.254.10.1 if no DHCP server is available.

Specifying Time Zone and NTP Server

1. To use NTP and to make the time zone and NTP server editable, enable Automatic NTP Updating.
2. Select the desired time zone from the list.
3. If desired, specify the NTP server to use. Otherwise, use the default.



4. Click Refresh to update the displayed date and time.

Assigning a Hostname

The default hostname for the OneLINK HDMI camera extension module is the string `vaddio-onelink-hdmi-` followed by the module's MAC address. You can change this in the Hostname field.

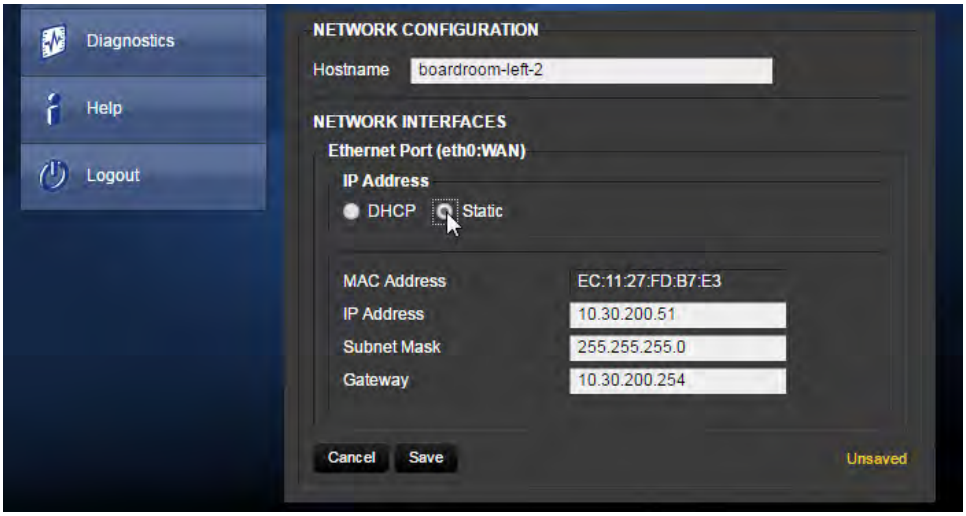
Network Configuration

By default, the OneLINK HDMI extension module is configured to use DHCP. If the LAN has a DHCP server, the OneLINK HDMI camera extension module will get its IP address, gateway and routing information automatically. If your network uses static IP addressing, you will need to assign an IP address, subnet mask, and gateway.

Caution

Do not change DHCP/Static addressing, IP address, subnet mask, or gateway unless you are very familiar with the characteristics and configuration of the network where you install the camera. Errors in network configuration can make the OneLINK HDMIextension module and the camera inaccessible from the network.

You can connect a computer directly to the extension module's network port and browse to its web interface to configure its static IP address and other networking information. You may need a crossover cable.



Managing Access and Passwords

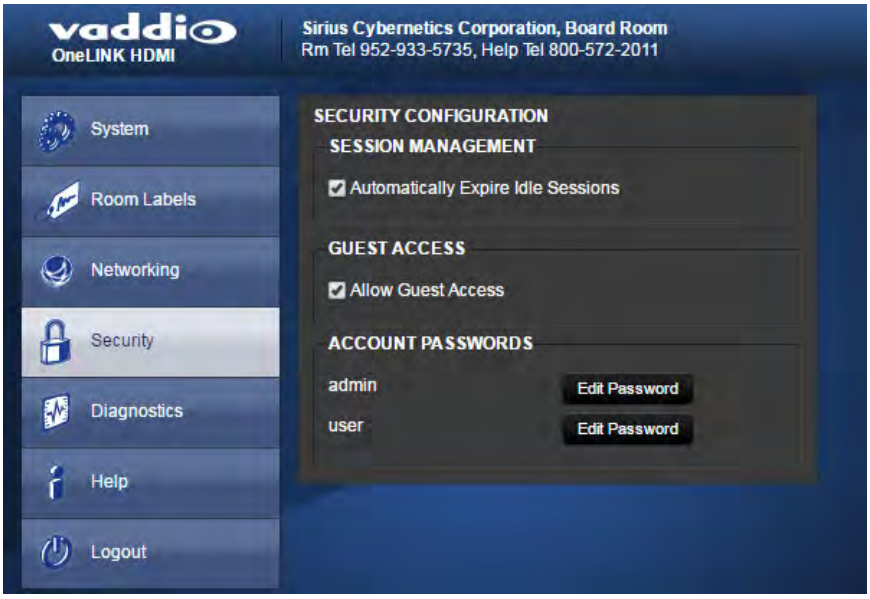
SECURITY PAGE

Things you can do on this screen:

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

Note

For best security, Vaddio strongly recommends changing the user and admin passwords from the default. Using the default passwords leaves the product vulnerable to tampering.



Pro Tip

Make sure you have a way to remember the admin password.

Adding Room Information to the Web Interface

ROOM LABELS PAGE

On this page, you can provide information about the OneLINK HDMI camera extension module's location:

- Name of the organization
- Name of the room where the equipment is installed
- Phone number of the room where the equipment is installed
- Phone number for the AV or IT support team

This information appears on every page of the OneLINK HDMI web interface.

Note

This does not affect the room information (if any) presented on the web interface for the attached camera.

Rebooting, Updating, and Resetting

SYSTEM PAGE

On the System page, you can:

- View system information
- Reboot the OneLINK HDMI extension module
- Back up and restore configuration data
- Restore factory presets
- Select firmware update files and run the updates (there will be some over the life of the OneLINK Interface)

The system information includes the version – so you don't need to guess about whether the latest update has already been installed.

Reboot

This may help if the camera attached to the OneLINK HDMI extension module stops responding as you expect.

In the System Utilities section of the System page, click Reboot.

Save or Restore Configuration

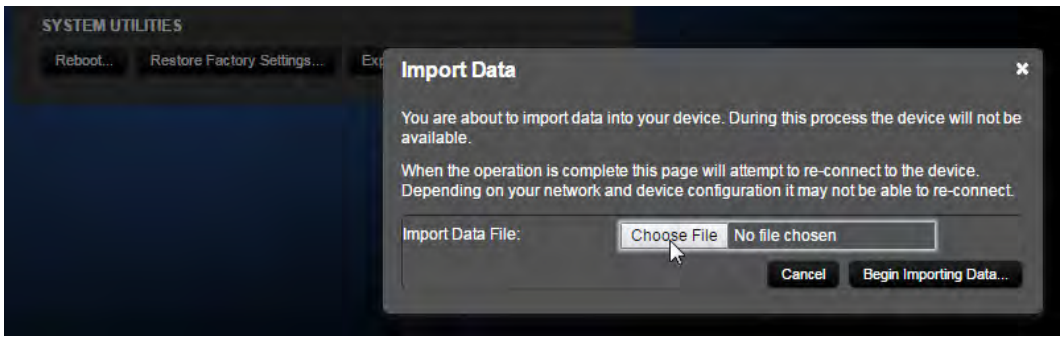
At this time, configuration data can only be restored (imported) if the extension module is using the same version of firmware as when the configuration was saved (exported).

To save the OneLINK HDMI extension module's current configuration:

Click Export Data. The configuration file downloads to your computer's default download location.

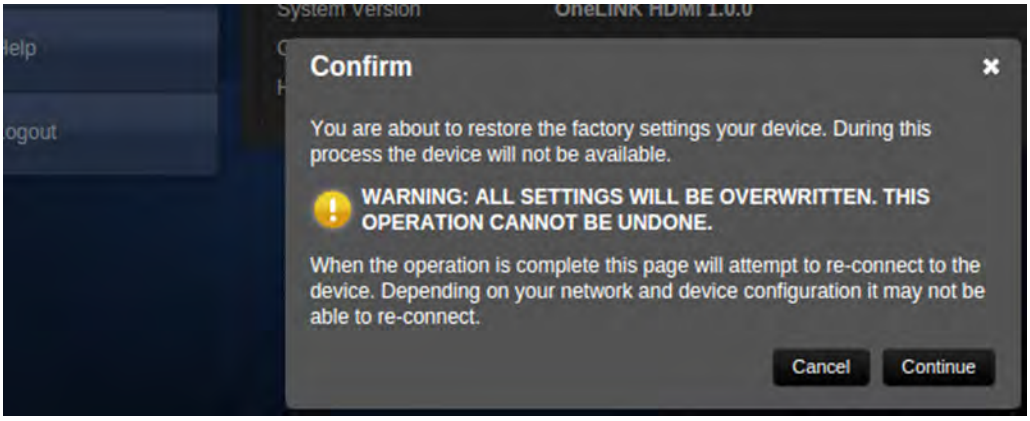
To restore an exported configuration:

1. Click Import Data. The Import Data dialog opens.
2. Click Choose File, and select the configuration file. The filename is the same as the OneLINK HDMI extension module's hostname, with the file extension `.dat` - for example, `vaddio-onelink-hdmi-EC-11-27-FD-B7-E3.dat`. The extension module loads the configuration and reboots.



Restore Factory Settings

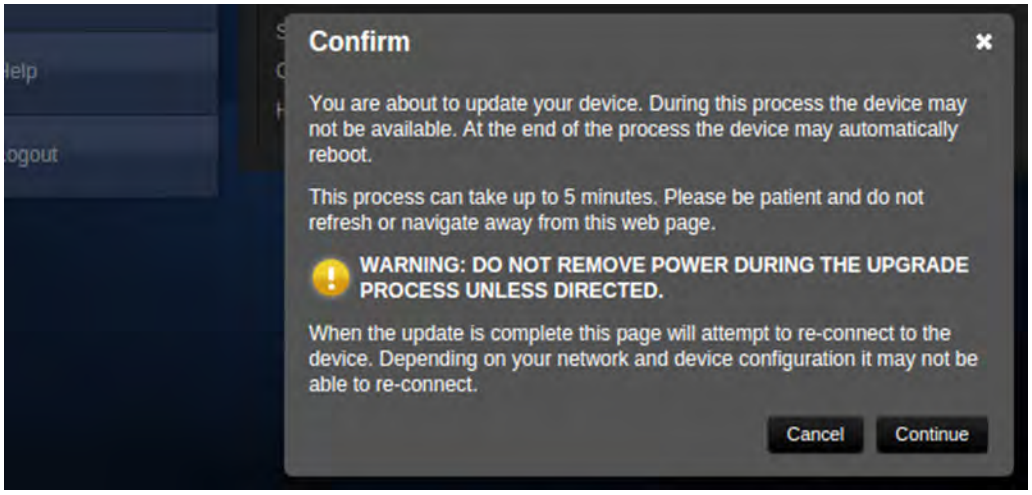
Click Restore Factory Settings to return to the default configuration. Read the confirmation message before you click on Continue or Cancel.



Start a Firmware Update

1. Be sure you have downloaded the appropriate update file to your computer.
2. Click Choose File from the Firmware Update section of the System page, and select the update file.

3. Click Begin Firmware Update.
4. READ the information in the Confirm dialog box and be sure you understand it. This stuff is boring, but it could save you a lot of time and aggravation.



5. When you are ready to start the update, click Continue. A progress message box opens to show the firmware update is in progress.
6. If the update process presents warnings or error messages, read them carefully.
7. Contact Vaddio technical support if you encounter any problems with the update.

Contacting Vaddio Technical Support

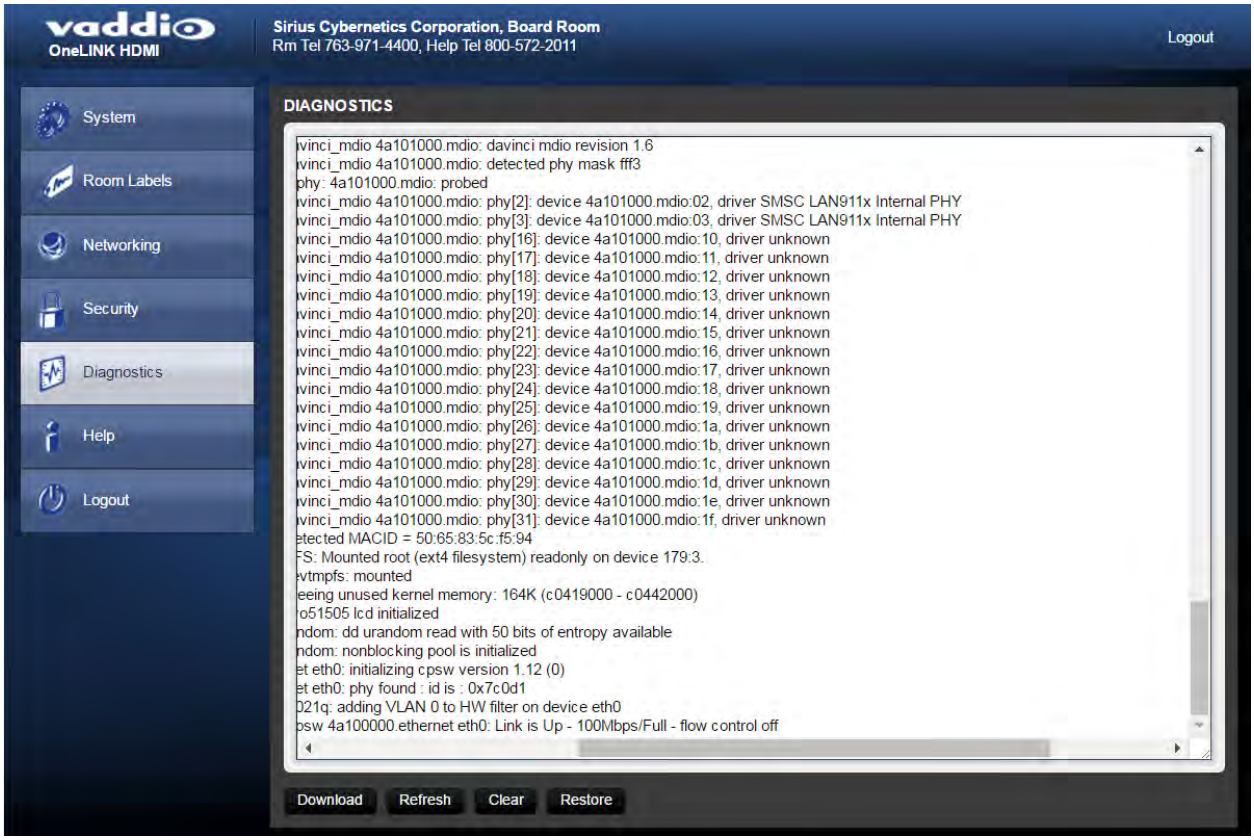
HELP PAGE

This page provides Vaddio Technical Support contact information.

Viewing Diagnostic Logs

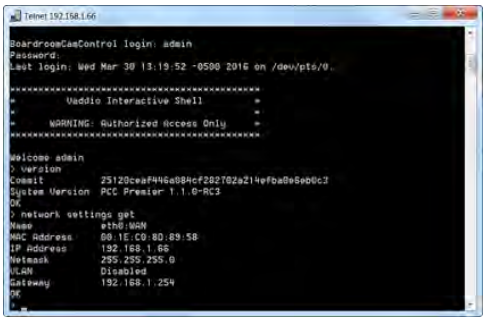
DIAGNOSTICS PAGE

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



Telnet Serial Command API

The Vaddio Telnet serial command API is a high-level, text-based command line interface. Use a Telnet client to access the API via the network. The default Telnet port is 23. Telnet sessions require the administrator account login.



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

Things to know about control via Telnet session:

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

Typographical conventions:

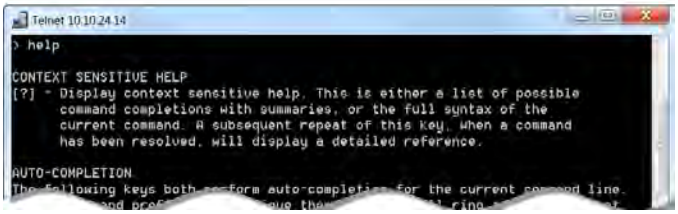
- { x | y | z} – Choose x, y, or z.
- <variable> – Substitute the desired value here.
- < x - y > – Valid range of values is from x through y.
- [parameter] – Parameter is not required.

Note

The commands in this guide refer to the OneLINK HDMI camera extension module. To control the camera itself, open a Telnet session to the camera's IP address and use the camera's Telnet commands.

help

Displays an overview of the CLI syntax.

Synopsis	help
Example	**help** 

link power

Sets the camera connection on or off.

Note

The camera extension module is not a camera control device. To set the camera to standby instead of powering it off, use the camera's remote or other camera control interface to issue a standby command directly to the camera.

Synopsis	link power { on | off }	
Options	`off`	Powers off the camera connection.
	`on`	Powers on the camera connection.

Examples	`>link power off`
	`OK`
	`>`
	Powers off the camera connection.	

network settings get

Returns the current network settings for MAC address, IP address, subnet mask, and gateway.

Synopsis	network settings get

Example	`> network settings get`
	`Name eth0:WAN`
	`MAC Address 00:1E:C0:F6:CA:7B`
	`IP Address 192.168.1.67`
	`Netmask 255.255.255.0`
	`VLAN Disabled`
	`Gateway 192.168.1.254`
	`OK`
	`>`

network ping

Sends an ICMP ECHO_REQUEST to the specified IP address or hostname.

Synopsis	network ping [count <count>] [size <size>] <destination-ip>	
Options	<count>	The number of ECHO_REQUEST packets to send. Default is five packets.
	<size>	The size of each ECHO_REQUEST packet. Default is 56 bytes.
	<destination-ip>	The IP address where the ECHO_REQUEST packets will be sent.
Examples	>**network ping 192.168.1.66** PING 192.168.1.66 (192.168.1.66): 56 data bytes 64 bytes from 192.168.1.66: seq=0 ttl=64 time=0.476 ms 64 bytes from 192.168.1.66: seq=1 ttl=64 time=0.416 ms 64 bytes from 192.168.1.66: seq=2 ttl=64 time=0.410 ms 64 bytes from 192.168.1.66: seq=3 ttl=64 time=0.410 ms 64 bytes from 192.168.1.66: seq=4 ttl=64 time=3.112 ms --- 192.168.1.66 ping statistics --- 5 packets transmitted, 5 packets received, 0% packet loss round-trip min/avg/max = 0.410/0.964/3.112 ms > Sends five ECHO_REQUEST packets of 56 bytes each to the host at 192.168.1.66.	
	>**network ping count 10 size 100 192.168.1.1** Sends 10 ECHO_REQUEST packets of 100 bytes each to the host at 192.168.1.1. The command returns data in the same form as above.	

system reboot

Reboots the system either immediately or after the specified delay. Note that a reboot is required when resetting the system to factory defaults (system factory-reset).

Synopsis	system reboot [<seconds>]	
Options	<seconds>	The number of seconds to delay the reboot.
Examples	>**system reboot** OK > The system is going down for reboot NOW! onelink-hdmi-D8-80-39-62-A7-C5 Reboots the system immediately. >**system reboot 30** Reboots the system in 30 seconds. The response appears at the end of the delay.	

system factory-reset

Gets or sets the factory reset status. When the factory reset status is on, the extension module resets to factory defaults on reboot.

Note
This does not reset the camera.

Synopsis	system factory-reset { get | on | off}	
Options	`get`	Returns the camera's current factory reset status.
	`on`	Enables factory reset on reboot.
	`off`	Disables factory reset on reboot.

Examples	`>`**`system factory-reset get`**
	`factory-reset (software):  off`
	`factory-reset (hardware):  off`
	`OK`
	`>`
	Returns the factory reset status.
	This evaluates the most recent `system factory-reset` on or off command, if one has been received, then reads the rear panel DIP switches and returns the status `on` if they are all in the down position.
	`>`**`system factory-reset on`**
	`factory-reset (software):  on`
	`factory-reset (hardware):  off`
	`OK`
	`>`
	Enables factory reset upon reboot.
	Note
	This command does not initiate a factory reset. The factory reset takes place on the next reboot.	

version

Returns the current firmware version of the extension module.

Synopsis	version

Example	**`version`**
	Returns current firmware version information in a form something like this:
	`Commit  9116ca13deff8990088d5ef9fa40903c094da1bb`
	`HDLink  RX4.6.1*0.04-TX4.6.1*0.03`
	`System Version  OneLINK HDMI 1.0.1`
	`OK`
	`>`

sleep

Pauses for the specified number of milliseconds before evaluating and executing the next command.

Synopsis	sleep <milliseconds>	
Options	<milliseconds>	The number of milliseconds (1 to 10000) to pause.
Example	>**sleep 7000** OK > Pause for 7 seconds (7000 milliseconds) before returning.	

history

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

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

exit

Ends the command session and closes the socket.

Synopsis	exit
Example	**exit**

Specifications

Capabilities

Video output passed from camera	HDMI 1.4b – matches camera resolution, up to 2160p/29.97	**Power to camera**	12 VDC, 3 Amp
Compatible cameras	RoboSHOT 20 UHD, RoboSHOT HDBT, other HDBaseT cameras	**OneLINK HDMI power supply**	48 VDC, 1.36 Amp
Maximum cable length	328 ft (100m) Cat-5e cable; shielded Cat-6 recommended where EMI/RF interference is an issue		

Physical and Environmental

Height	1.72 in. (44 mm)/1U	**Operating temperatute**	0 °C to 40°C (32°F to 104°F)
Width	8.375 in. (213 mm)/half-rack	**Operating humidity**	20% to 80% RH (non-condensing)
Depth	6.00 in. (152 mm)	**Storage temperature**	0° to 40° C (32°F to 104°F)
Weight	1.55 lbs. (703 g)	**Storage humidity**	20% to 80% RH (non-condensing)

Troubleshooting

Keep in mind that the OneLINK HDMI extension module is a connectivity solution, not a control device. When the camera connected to the OneLINK HDMI extension module doesn't behave as you expect, check the camera's indicator light before you do anything else. If the camera is a RoboSHOT series camera, its indicator light is blue during normal operation. Other common status indications for Vaddio cameras:

- Purple – in standby (low power) mode.
- Yellow – firmware update in progress.
- Off – no power to the camera.

Refer to the camera manual for more information on camera status indications and troubleshooting.

Next, check the OneLINK HDMI web interface for error messages.

If neither of these reveal the problem, use this table to determine whether it's time to call Vaddio Technical Support.

Caution

The camera and the OneLINK extension module become hot to the touch during normal operation. Use caution when servicing them.

What is it doing?	Possible causes	Check and correct
The camera is not receiving power (status light is off)	The camera is not connected to the OneLINK module.	Connect the cable from the OneLINK module to the camera.
	The power pack for the OneLINK module is not plugged in to main power.	Plug the power pack into a wall outlet.
	The OneLINK cable is bad.	Replace the cable.
	The wall outlet is not active. (Check by finding out if it powers something else, such as a laptop or phone charger.)	Plug the OneLINK power pack into a different outlet.
	The OneLINK module is bad. ("He's dead, Jim.")	Contact your reseller or Vaddio Technical Support.
The camera is on, but its web interface is not available.	The camera is not using the IP address you browsed to.	Point the remote at the camera and press the Data Screen button to see the camera's IP address on the HDMI video output.
	The Ethernet cable is not connected to the OneLINK module.	Make sure all cables are connected.
	The Ethernet cable is bad.	Replace the cable.
Comm errors / cannot discover camera	Ethernet or RS-232 cable connected to the wrong port	Check the cable connections.
	The OneLINK module is connected to the wrong type of camera	Be sure the OneLINK module is connected to an HDBaseT-capable camera output.

What is it doing?	Possible causes	Check and correct
The camera is on but not transmitting video.	Possible camera issue	Refer to troubleshooting in the camera manual.
Camera does not go to ready state; indicator remains purple	Camera firmware may be out of date	Check the camera's firmware version; update the camera firmware if necessary
	Possible cable issue	Test with shorter cables. Try re-terminating the cable.
Video drops out repeatedly	Possible cable length issue	Try Cat-5e cable. Higher-grade cable = more twists, longer length of individual conductors.
	Possible cable inductance issue	Do not store excess cable by coiling it neatly. Best practice: Build cables to the required length.

Pro tip

A short cable can be useful when you are troubleshooting problems, but is not recommended for extended periods of operation.

Warranty Information

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

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

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

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

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

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

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

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

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

Compliance and Declarations of Conformity

Compliance testing was performed to the following regulations:

- FCC Part 15 (15.107, 15. 109), Subpart B Class A
- ICES-003, Issue 4: 2004Class A
- EN 55022 A: 2006 + A1: 2007 Class A
- KN24 2008 (CISPR 24: 1997 + A1: 2000 + A2: 2002) Class A
- KN22 2008 (CISPR 22: 2006) Class A
- EMC Directive 2004/108/EC Class A
- EN 55024: A2: 2003 Class A
- EN 60950-1:2006+A11: 2009+A1: 2010+A12: 2011 Safety

FCC Part 15 Compliance

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15, Subpart B, of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his/her own expense.

Operation is subject to the following two conditions: (1) This device may not cause interference, and (2) This device must accept any interference including interference that may cause undesired operation of the device.

Changes or modifications not expressly approved by Vaddio can affect emission compliance and could void the user's authority to operate this equipment.

ICES-003 Compliance

Industry Canada Industrie Canada

This digital apparatus does not exceed the Class A limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

Le présent appareil numérique n'emet pas de bruits radioélectriques dépassant les limites applicables aux appareils numeriques de la classe A préscrites dans le Règlement sur le brouillage radioélectrique édicte par le ministère des Communications du Canada.

European Compliance

CE

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 55022:2010Conducted and Radiated Emissions

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

- EN 61000-4-2: 1995 + Amendments A1: 1998 + A2: 2001 Electrostatic Discharge
- EN 61000-4-3: 2006 + A1: 2008 Radiated Immunity
- EN 61000-4-4: 2004 + Corrigendum 2006 Electrical Fast Transients
- EN 61000-4-5: 2006 Surge Immunity
- EN 61000-4-6: 2009 Conducted Immunity
- EN 61000-4-8: 2010 Power Frequency Magnetic Field
- EN 61000-4-11: 2004 Voltage Dips, Interrupts and Fluctuations

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

- EN 61000-4-2 Electrostatic Discharge
- EN 61000-4-3 Radiated Immunity
- EN 61000-4-4 Electrical Fast Transients
- EN 61000-4-5 Surge Immunity
- EN 61000-4-6 Conducted Immunity
- EN 61000-4-8 Power Frequency Magnetic Field
- EN 61000-4-11 Voltage Dips, Interrupts and Fluctuations

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

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

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