

# VADDIO™ ONELINK™ FOR CISCO® SELECT PRECISIONHD CAMERAS

OneLINK - High Speed Digital Bus for HD Digital Video, Power and Control Over One Cat-5e Cable

**Part Numbers:**

999-9550-000 North America

999-9550-001 International



For the Cisco PrecisionHD 1080p 12x and the PrecisionHD 720p Cameras



*Inside Front Cover - Blank*

### Overview:

The Vaddio OneLINK for Cisco Precision HD Cameras is built for use with the Cisco PrecisionHD 1080p 12x and PrecisionHD 720p high definition PTZ cameras and the Cisco C20, C40, C60 and C90 codecs (camera and codec not included).

The OneLINK system uses Vaddio's Super-HSDS™ active high speed digital bus technology for video, power and control over Cat-5e, but with one very important difference: OneLINK uses only One (1) Cat-5e cable for HD digital video, power and control at distances up to 125' (38.1m)...it's remarkable really.

The OneLINK system sends and regulates power to the camera, provides a bi-directional control channel and transmits/receives uncompressed HD digital video, up to and including 1080p/60Hz, all on one (1) Cat-5e cable, hence the name, OneLINK.

The OneLINK is a complete peripheral system and comes with the Quick-Connect, the EZIM, and three (3) 1' (30.5cm) native cables at the camera (HDMI, 5.5mm OD x 2.1 mm ID Coax power cable, and RJ-45 patch cable). A totally awesome camera mount made specifically to mount the PrecisionHD series PTZ cameras and the EZIM is also included.

The OneLINK for Cisco Precision HD cameras also has many additional features including the ability to forward RS-232 information from the camera to the codec and auto recognition of the camera when used with the Cisco C-series codecs.



OneLINK for Cisco PrecisionHD 1080p 12x camera with wall mount and EZIM mounted behind the camera (camera & codec not included)

### 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.



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



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



**Do not use the Cisco/TANDBERG cable, part number 116627 DB-9M to RJ-45, with the Quick-Connect OneLINK camera control port. Unpleasant things may occur.**

### Save These Instructions:

The information contained in this manual 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](http://www.vaddio.com) free of charge.

### Unpacking

Carefully remove all of the parts from the shipping box. Unpack and identify the following parts for the OneLINK system for Cisco PrecisionHD camera:

- One (1) EZIM OneLINK (EZ Interface Module)
- One (1) Quick-Connect OneLINK (1-RU, ½ rack width)
- One (1) Thin Profile PrecisionHD Wall Mount for OneLINK with Mounting Hardware
- One (1) EZCamera Control Adapter (998-1008-232) for OneLINK
- One (1) 48 VDC, 1.37A PowerRite™ Power Supply with AC Cord Set (US or Euro & UK)
- One (1) 1' (30.5mm) HDMI Cable
- One (1) 1' (30.5mm) Cat-5e Patch Cable
- One (1) 1' (30.5mm) 5.5mm OD x 2.1 ID Power Cable
- Documentation

**NOTE:** The PrecisionHD camera is not supplied with this system

### OneLINK I/O:

#### Quick-Connect OneLINK Connectors/Features:



Please do not use the cable # 116627 (DB-9M to RJ-45). Use the supplied Control Adapter and a regular Cat-5e cable to make the connection to the Codec



- 1) **Vaddio Blue LED Power Indicator:** Lit when power supply is plugged in
- 2) **Power Input:** 48 VDC, 1.4 Amp Power Connection, 5.5mm OD x 2.5mm ID, Positive Center
- 3) **OneLINK Port:** Supplies power to the camera, bi-directional RS-232 communication and receives HDMI (digital video) from the camera
- 4) **HDMI Output:** To videoconferencing system
- 5) **RS-232 Control Port:** For communication (TX and RX) between the camera and codec. Please use the provided Control Adapter 998-1008-232 and a regular Cat-5e cable (not supplied) between the codec Camera Port and the Camera Control Port on the Quick-Connect OneLINK. Please do not use the DB-9M to RJ-45 cable # 116627 that ships with the codec.

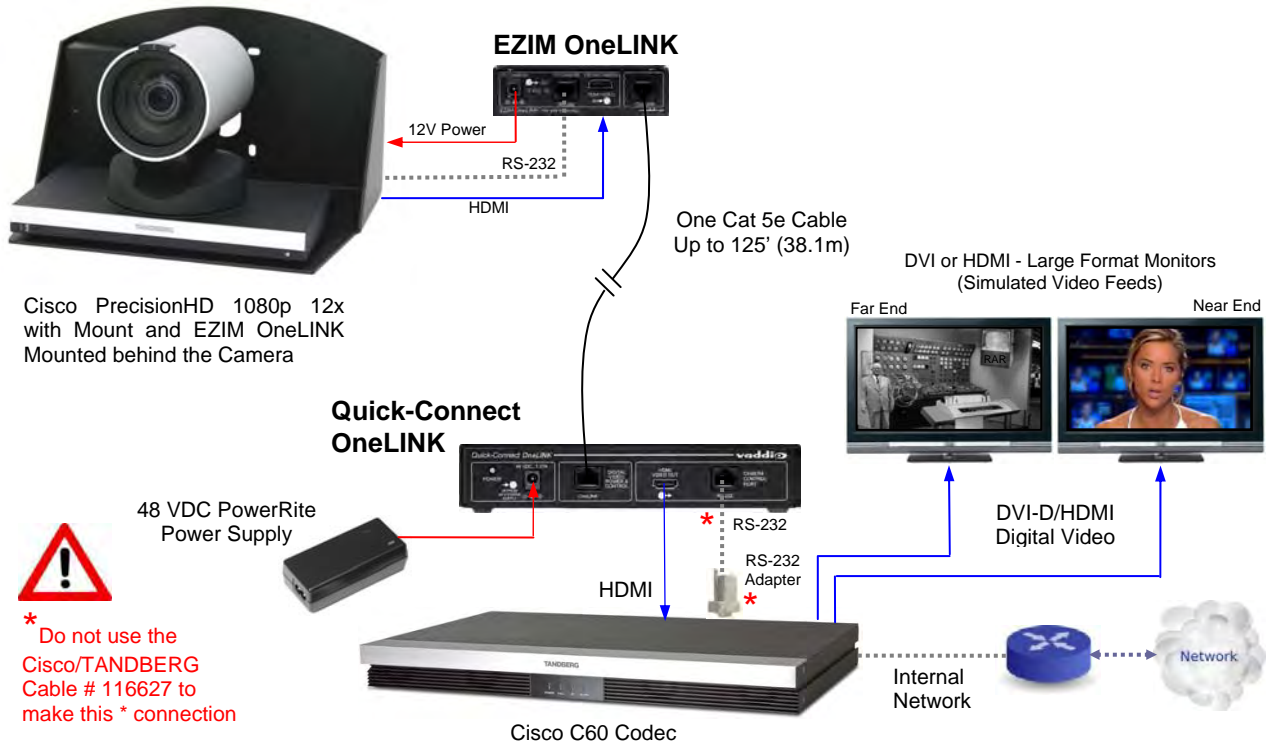
#### Quick-Connect EZIM Connectors/Features:



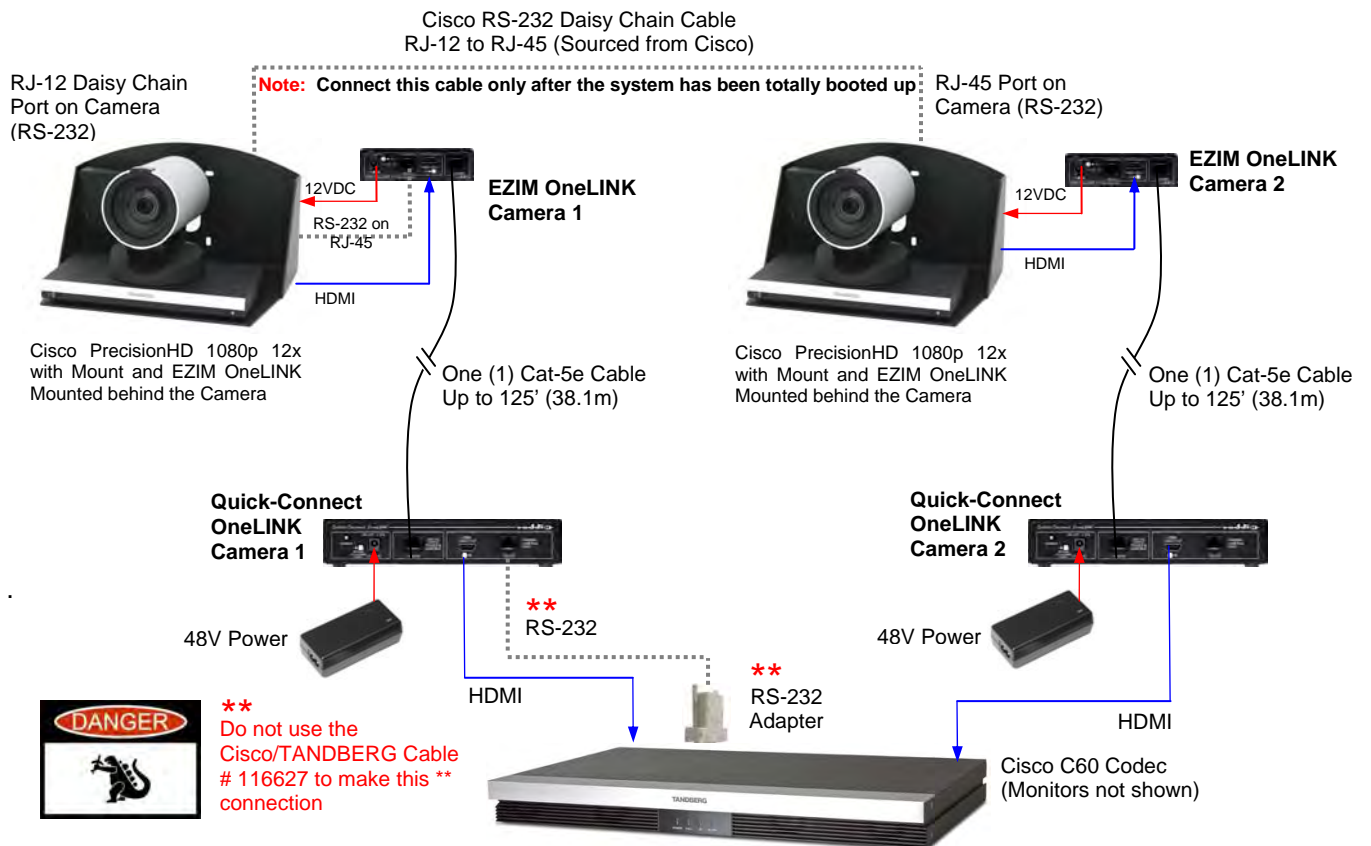
- 6) **Power Output:** 12 VDC, 2 Amp Power Connection to Camera, 5.5mm OD x 2.1mm ID, Positive Center
- 7) **RS-232 Control Port:** For communication (TX and RX) between the camera and codec
- 8) **HDMI Input:** Connect the HDMI output of the camera to the EZIM HDMI VIDEO IN
- 9) **OneLINK Port:** Receives and regulates power, bi-directional RS-232 and transmits HDMI (digital video) from the camera backplane to the Quick-Connect OneLINK and codec

**GENERAL SYSTEM CONNECTIVITY:**

**Basic OneLINK System (Quick-Connect & EZIM) with Cisco Camera and C-Series Codec**



**OneLINK System with Two (2) Cameras and Cisco Daisy Chain Control Wiring Scheme**



## INSTALLATION INSTRUCTIONS

Installation is simplified in that no custom cables or expensive multi-coax plenum cables are needed and no local power outlets are required near the camera bracket. All RJ-45 connectors are to be terminated using TIA/EIA 568B standard.

### Before installing the OneLINK System:

- Choose a camera mounting location while paying close attention to camera viewing angles, lighting conditions, possible line of site obstructions, and checking for in-wall obstructions.
- Pre-wire all cabling as required from the camera location to the Quick-Connect OneLINK.
- Always test all terminations with a Cat-5e tester to ensure proper pin-out of cabling. **Do not use “pass-thru” type RJ-45 connectors (see note at the bottom of page 3).**
- The camera mount can be mounted directly to a 2-gang wall box or to drywall using the supplied anchors.
- If daisy-chaining multiple PrecisionHD cameras, make sure that cabling is run from camera to camera to support Cisco's daisy-chain wiring design (see the Cisco manual).



**Note:** There are some caveats about the Cisco daisy-chain that are important to know when using OneLINK. If the system loses power it will not see the 2<sup>nd</sup> camera in the daisy chain unless the daisy chain cable is removed, the system is rebooted, and after a reboot the daisy chain cable is plugged back in. This is the same for the few firms that turn-off the codec and cameras every night. Remove the daisy chain cable, reboot the system and then plug the daisy-chain cable back in.

### STEP BY STEP:

**Step 1:** After determining the location of the camera, mount the camera to the wall.

**A.** If mounting the camera to the wall using the supplied spiral type drywall fasteners, hold the mount to the intended mounting position and mark the four holes and the ovoid cable pass-thru (into the wall cavity). Install the wall anchors and cut the hole for the cable pass-thru. Attach the mount to the wall with the supplied screws and pull out a level to ensure the camera platform is level. Go to Step 2.

**B.** If mounting to a 2-gang wall box, screw the mount to the box and level it so the camera platform is level.

### Step 2:

Pull a single Cat-5e from the head end location to the camera position. For strict compliance with the European Community EMC Directives, please use a Cat-6a cable. Use of Cat-5e and Cat-6 is 100% functional, but may be prone to EMI, interference from cell phones and A/C motors. Please see CE Declaration Of Conformity on page 10.

### Step 3:

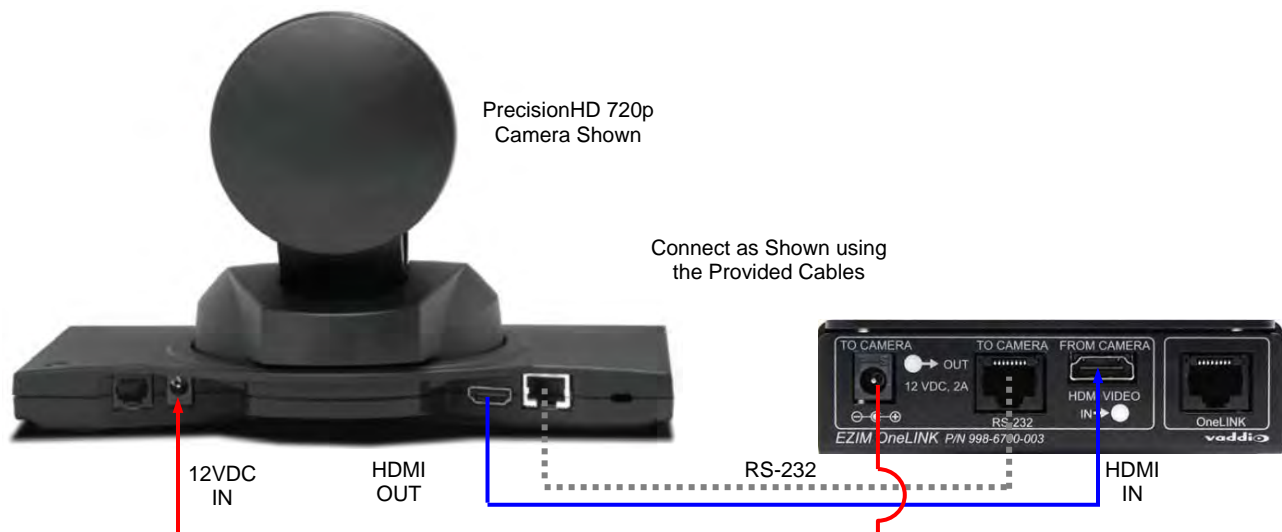
**TEST THE CABLE FOR PROPER OPERATION.** Do not use “pass-thru” type RJ-45 connectors (see note at the bottom of page 3).

### Step 4:

Mount the EZIM OneLINK to the Camera mount using the provided machine screws.

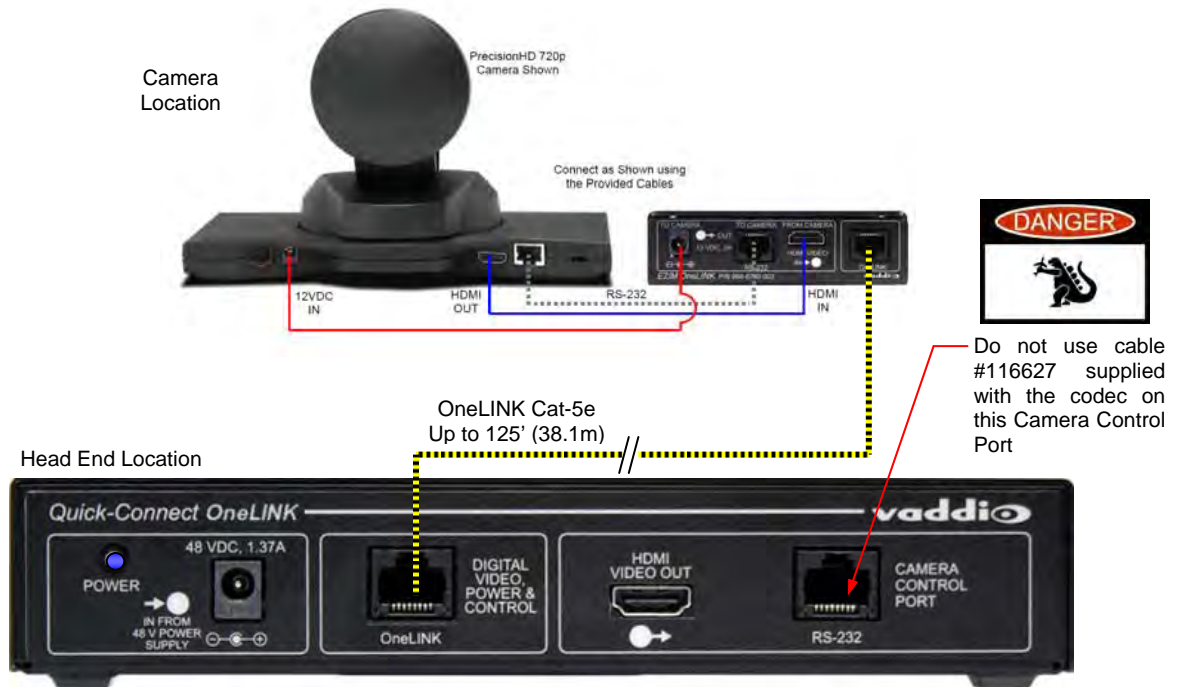
### Step 5:

Connect the provided 1' (30.5cm) cables (HDMI, 5.5mm x 2.1mm and Cat-5e patch cables) to the EZIM and to the Cisco PrecisionHD camera as shown below.



**Step 6:**

Attach the PrecisionHD camera to the mount with the provided 1/4" x 20 screw, tie up the cables neatly and connect the Cat-5e cable from the head end to the connector labeled OneLINK as shown below.

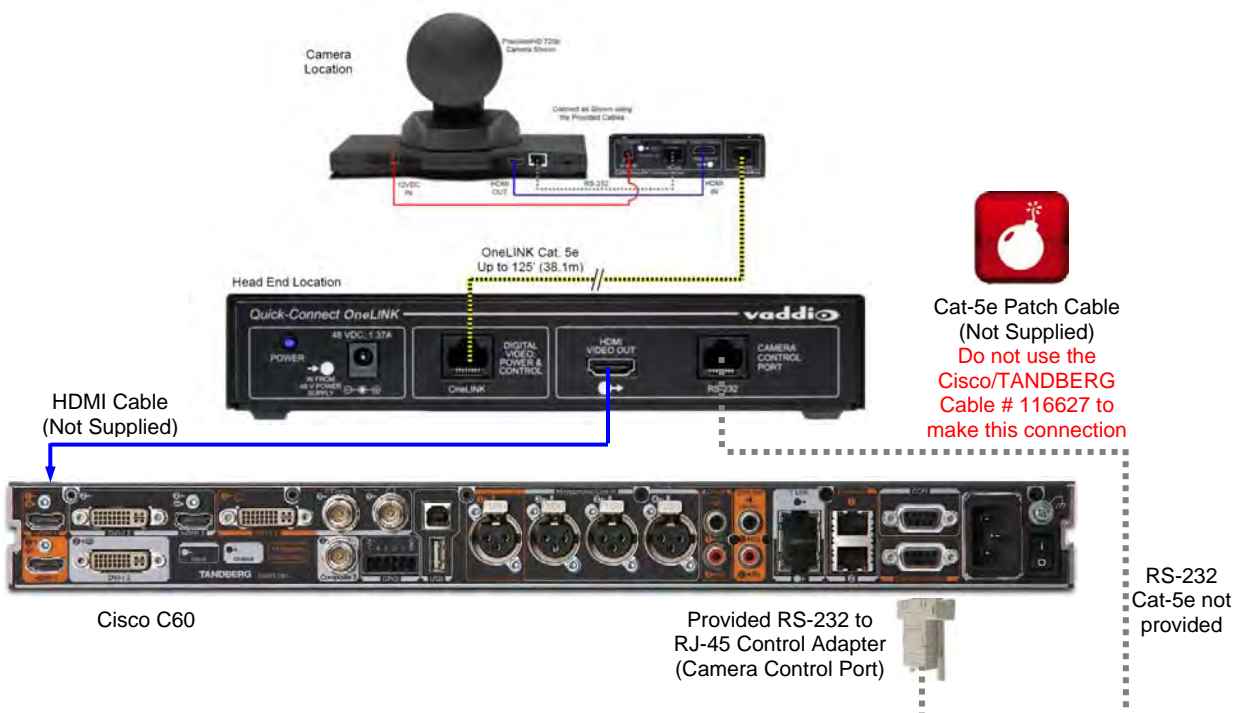


**Step 7:**

At the head end, connect the Cat-5e cable from the camera location to the OneLINK port on the Quick-Connect OneLINK port as shown above.

**Step 8:**

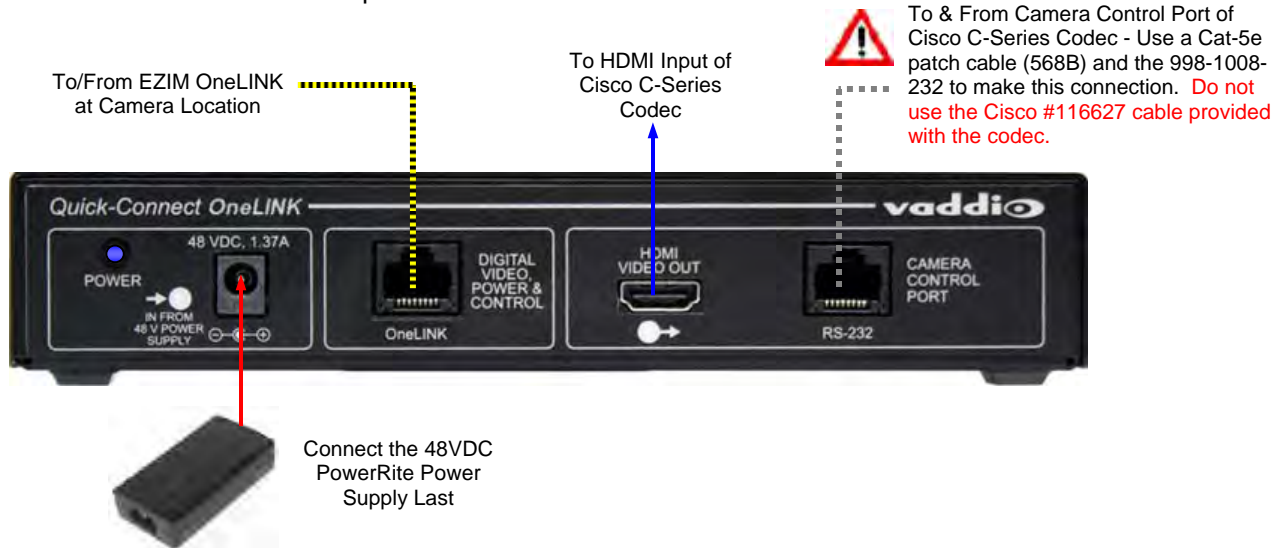
From the Quick Connect OneLINK, connect the HDMI output to the desired codec input. Use the provided 9-Pin RS-232 to RJ-45 adapter to connect the camera control port on the codec to the camera control port on the OneLINK with a Cat-5e cable as shown below. **Do not use the Cisco/TANDBERG DB-9M to RJ-45 Cable # 116627 to make this connection.**



**Step 9:**

With the Codec turned off, connect the 48 VDC power supply to the Quick-Connect OneLINK. The blue LED power light will illuminate and it is ready for the codec to be booted up.

**Note:** If the OneLINK Cat-5e cable is incorrectly terminated or if intermittent connections are the result of the use of pass-thru, EZ type RJ-45 connectors, damage to the system may result. If the units are damaged due to improper cabling, then all implied or expressed warranties are automatically voided. Test your cables and use standard RJ-45 connectors and crimpers.



**Step 10:**

Boot up the codec and the camera will be recognized. Normal IR control operation is available after boot up.

**Note A:** The system boot order should always be OneLINK first then Codec to follow.

**Note B:** If using a daisy-chain cable, first boot up the system as described above, then connect the daisy-chain cable between cameras. If power is lost, the daisy chain must be re-initialized and connected last.

**General Specifications**



OneLINK	
<b>Part Numbers:</b>	<b>999-9550-000</b> - North America, <b>999-9950-001</b> - International (with UK and Euro AC Cord Set)
<b>Connectors</b>	<p><b>Quick-Connect OneLINK:</b></p> <ul style="list-style-type: none"> <li>Vaddio Blue LED Power Indicator</li> <li>5.5mm OD x 2.5mm ID Coaxial Power Connector</li> <li>OneLINK port on RJ-45</li> <li>HDMI</li> <li>RS-232 on RJ-45</li> </ul> <p><b>EZIM OneLINK:</b></p> <ul style="list-style-type: none"> <li>5.5mm OD x 2.1mm ID Coaxial Power Connector</li> <li>RJ-45 for RS-232,</li> <li>HDMI</li> <li>OneLINK port on RJ-45</li> </ul>
<b>Max. Cat 5e Cable Length</b>	Single Cat 5e up to 125' (38.1m)
<b>Power Supply</b>	48 VDC, 1.4 Amp PowerRite Power Supply with AC Cord Set EZIM OneLINK Regulates the Power to the Camera down to 12 VDC
<b>Dimensions (H x W x D)</b>	<b>Quick-Connect:</b> 1.47" (37.34mm) H x 8.0" (203.2mm) W x 4.5" (114.3mm) D, (1/2Rack Size) <b>EZIM:</b> 3.3" (83.8mm) H x 4.3" (109.2mm) W x 1.25" (31.75mm) D
<b>Included Patch Cables for EZIM and PrecisionHD Camera</b>	One (1) 1' (30.5mm) HDMI Cable, One (1) 1' (30.5mm) Cat-5e Patch Cable, One (1) 1' (30.5mm) 5.5mm OD x 2.1 ID Power Cable
<b>Weight</b>	Quick-Connect and EZIM - 2.1 lbs. (0.952543977 kg, give or take)
<b>Accessory Options</b>	998-6000-003 1-RU Dual Rack Mount Plate
<b>Compatible Cameras (Cameras Not Included)</b>	Cisco PrecisionHD 1080p 12x and PrecisionHD 720p (PrecisionHD 1080p4x is not supported except at the end of a daisy chain configuration since it doesn't have a daisy-chain port. The PrecisionHD 10804xS2 is not supported.)
<b>Compatible Codecs</b>	Cisco C-Series; C20, C40, C60 and C90 (Codecs Not Included) (SX-20 Codec is not supported)
<b>Safeguards</b>	<b>Do not use the cable # 116627, DB-9M to RJ-45, to connect the OneLINK to the camera control port of the Codec. The OneLINK will be damaged and the warranty will be voided.</b>



## **WARRANTY INFORMATION** (See Vaddio Warranty Policies posted on vaddio.com for complete details):

**Hardware\* Warranty** - One year limited warranty on all parts. Vaddio warrants this product against defects in materials and workmanship for a period of one year from the day of purchase from Vaddio. If Vaddio receives notice of such defects during the warranty period, they will, at their option, repair or replace products that prove to be defective.

**Exclusions** - The above warranty shall not apply to defects resulting from: improper or inadequate maintenance by the customer, customer applied software or interfacing, unauthorized modifications or misuse, operation outside the normal environmental specifications for the product, use of the incorrect power supply, improper extension of the power supply cable or improper site operation and maintenance.

**Vaddio Customer Service** – Vaddio will test, repair, or replace the product or products without charge if the unit is under warranty and is found to be defective. 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](mailto:support@vaddio.com) or online at [www.vaddio.com](http://www.vaddio.com).

**Return Material Authorization (RMA) Number** - Before returning a product for repair or replacement, request an RMA from Vaddio's technical support. Provide a technician with a return phone number, e-mail address, shipping address, and product serial numbers and describe the reason for repairs or returns as well as the date of purchase and proof of purchase. Include your assigned RMA number in all correspondence with Vaddio. Write your assigned RMA number on the outside of the box when returning the product. All returns are subject to a restocking fee (see warranty policies at vaddio.com).

**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, or unauthorized repair. Cutting the power supply cable on the secondary side (low voltage side) to extend the power to the device (camera or controller) voids the warranty for that device.

**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.

\*Vaddio manufactures its hardware products from parts and components that are new or equivalent to new in accordance with industry standard practices.

### **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 or liquid type substances onto the device.
- Keep this device away from food or liquid.
- For smears or smudges on the devices, wipe with a clean, soft cloth.
- Do not use any abrasive pads or caustic chemicals at any time on any Vaddio equipment.

#### **Operating and Storage Conditions:**

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

- Temperatures above 40°C (104°F) or temperatures below 0°C (32°F)
- High humidity, condensing or wet environments
- In inclement weather
- Dusty environments
- In a swimming pool or coastal cave environments
- Dry environments with an excess of static discharge
- Under severe vibration
- **Do not use the cable # 116627, DB-9M to RJ-45, to connect the Quick-Connect OneLINK to the camera control port of the Codec. Please use only garden variety Cat-5e cable, made with a real RJ-45 crimper and avoid use of the "pass-thru and cut-em-off" type RJ-45 connectors - see Safeguards on page 3.**

## Compliance and CE Declaration of Conformity

Compliance testing was performed to the following regulations:

- FCC Part 15, Subpart B
- ICES-003, Issue 4: 2004
- EN 55022 A: 2006 + A1: 2007(CISPR 22:2005/A1:2005)
- AS/NZS CISPR 22: 2009
- VCCI V-3/2010.04
- Korean Requirements KN22: KCC Notice Number 2009-27
- EMC Directive 2004/108/EC

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



### FCC Part 15 Compliance

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

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

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



### ICES-003 Compliance

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

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



### European Compliance

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

#### CE Compliance Note:

Cat-6a cable is recommended to strictly comply with the European Community EMC Directives. Use of Cat-5e and Cat-6 is functional, but may be prone to EMI, interference from cell phones and A/C motors.

#### Standard(s) To Which Conformity Is Declared:

EMC Directive 2004/108/EC

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

- EN 61000-4-2: 1995 + Amendments A1: 1998 + A2: 2001
- EN 61000-4-3: 2006 + A1: 2008
- EN 61000-4-4: 2004 + Corrigendum 2006
- EN 61000-4-5: 2006
- EN 61000-4-6: 2007
- EN 61000-4-8: 2010
- EN 61000-4-11: Second Edition: 2004
- EN 61000-3-2: 2006
- EN 61000-3-3: 2008

Immunity

Electrostatic Discharge  
Radiated Immunity  
Electrical Fast Transients  
Surge Immunity  
Conducted Immunity  
Power Frequency Magnetic Field  
Voltage Dips, Interrupts and Fluctuations  
Limits - Limitation of Voltage Changes  
Limits - Limits for Harmonic Current Emissions

#### Korean Requirements:

- KN 61000-4-2 with KCC Notice No. 2009-27
- KN 61000-4-3 with KCC Notice No. 2009-27
- KN 61000-4-4 with KCC Notice No. 2009-27
- KN 61000-4-5 with KCC Notice No. 2009-27
- KN 61000-4-6 with KCC Notice No. 2009-27
- KN 61000-4-8 with KCC Notice No. 2009-27
- KN 61000-4-11 with KCC Notice No. 2009-27

**NOTES:**

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---

---



9433 Science Center Drive, Minneapolis, MN 55428  
Toll Free: 800-572-2011 ▪ Phone: 763-971-4400 ▪ FAX: 763-971-4464  
[www.vaddio.com](http://www.vaddio.com)