VADDIO™ Quick-Connect™ CCU HE120 Kit for the Panasonic® AW-HE120 (camera not included)

Part Numbers without Camera:
998-6127-000: Quick-Connect CCU Kit for the AW-HE120 Camera (camera not included) - North America
998-6127-000: Quick-Connect CCU Kit for the AW-HE120 Camera (camera not included) - International

Vaddio WallVIEW™ CCU HE120 with the Panasonic AW-HE120 (camera included)

Part Numbers with Camera:
999-6127-000K: WallVIEW CCU HE120 System with Black AW-HE120 (camera included) - North America
999-6127-001K: WallVIEW CCU HE120 System with Black AW-HE120 (camera included) - International

999-6127-000W: WallVIEW CCU HE120 System with White AW-HE120 (camera included) - North America
999-6127-001W: WallVIEW CCU HE120 System with White AW-HE120 (camera included) - International

Touchboards
205 Westwood Ave, Long Branch, NJ 07740
Phone: 866-94 BOARDS (26273) / (732)-222-1511
Fax: (732)-222-7088 | E-mail: sales@touchboards.com

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Overview:

The Vaddio Quick-Connect CCU system for the AW-HE120 camera allows the user to control the color output of the camera's image sensor through both Red and Blue Gain controls, Detail, Chroma, Gamma, Total Pedestal, as well as Iris and Gain levels, to provide a higher quality image. In addition, there are also Red and Blue Pedestal parameters. In addition, there are also Pedestal, Gamma and Chroma adjustments for added fine-tuning of the camera's image.

Figure: Front Panel of the Quick-Connect CCU for the AW-HE120 Camera

The Panasonic AW-HE120 uses standard RS-422 control protocol. To be 100% compatible with Vaddio equipment, everything is included to convert Vaddio's RS-232 to RS-422. This allows for the operation with the complete line of Vaddio ProductionVIEW™ consoles (Precision Camera Controller, ProductionVIEW HD, ProductionVIEW HD MV and the ProductionVIEW HD-SDI MV with integrated multi-viewers.

The CCU has many features, including Tally illumination on the front panel and on the on the camera which allows the presenter to know which camera is live and what CCU to adjust if a tweak is needed. Genlock is delivered to the camera over Cat-5 with a level adjustment on the EZIM CCU. The ability to store settings on two discrete Scene buttons is included, and buttons for Auto White Balance, One Push White Balance and Auto Iris programming are also available.

The AW-HE120 HD PTZ Camera features a 20x zoom lens and a three (3), 1/3-type 2.2 megapixel CMOS imager sensors. The systems are available as a WallVIEW CCU HE120 System with the camera included, or as a Quick-Connect CCU Kit, without the camera. The Quick-Connect CCU for the AW-HE120 has the ability to produce remarkable video in a wide range of shooting conditions

Important Safeguards:

Read and understand all instructions and warranty statements 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.

General Safeguard: Use only the power supply provided with the system. Use of any unauthorized power supply will void any and all warranties. Please do not cut the secondary side (or the DC side) of the power supply and attempt to extend the power to the camera. The warranty is voided when the cable is cut.

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.

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.

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 free of charge.

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Information:
For RS-232 control information, please see the full-length Technical Manual for the Panasonic AW-HE120. This manual can be found either on the Panasonic or the Vaddio website.

Unpacking:

Carefully remove the device(s) and all parts from the packaging. Please do not toss the packaging yet, just set it aside where it won't be in the way. Unpack and identify the following parts:

998-6127-000: Quick-Connect CCU Kit (NO CAMERA) for the AW-HE120 Camera - North America

- Quick-Connect CCU (P/N: 998-1105-032) for the AW-HE120
- One(1) 2-pin Molex 5.0mm Euro-style connector for the Tally Input
- One (1) 36 VDC Switching power supply with power cord for North America
- One (1) EZIM CCU (998-6700-002)
- Two (2) 6-32 x .188" Pan Head for attaching EZIM to the Wall Mount
- One (1) HD Break-out Cable for EZIM CCU to Camera (not shown)
- One (1) DE-9F to RJ-45F, RS-232 to RS-422 Adapter (998-1005-232)
- One (1) CommFront CVT-485_422-1 RS-232 to RS-422 Converter
- One (1) 1' Cat 5 Patch Cable
- One (1) Heavy Duty, Gusseted Wall Mount 535-2000-223
- Four (4) 800-616, #8 x 1.25" Sheet Metal Screws
- Four (4) 800-617, Wall Anchors (EZ Anchors)
- Two (2) 85033, ¼" x 20 x 0.5" Pan Head Screws
- Documentation

998-6127-001: Quick-Connect CCU Kit (NO CAMERA) for the AW-HE120 Camera - International

- One (1) Quick-Connect CCU (P/N: 998-1105-032) for the AW-HE120
- One(1) 2-pin Molex 5.0mm Euro-style connector for the Tally Input
- One (1) 36 VDC Switching power supply
- One (1) Euro Power Cord
- One (1) UK Power Cord
- One (1) EZIM CCU (998-6700-002)
- Two (2) 6-32 x .188" Pan Head for attaching EZIM to the Wall Mount
- One (1) HD Break-out Cable for EZIM CCU to Camera (not shown)
- One (1) DE-9F to RJ-45F, RS-232 to RS-422 Adapter (998-1005-232)
- One (1) CommFront CVT-485_422-1 RS-232 to RS-422 Converter
- One (1) 1' Cat 5 Patch Cable
- One (1) Heavy Duty, Gusseted Wall Mount 535-2000-223
- Four (4) #8 x 1.25" Sheet Metal Screws
- Four (4) Wall Anchors (EZ Anchors)
- Two (2) ¼" x 20 x 0.5" Pan Head Screws
- Documentation

999-6127-000K: WallVIEW CCU HE120 System - Black Camera - North America
One (1) 998-6217-000 Quick-Connect CCU Kit Complete as Listed Above for the AW-HE120
One (1) Panasonic AW-HE120K Black Camera Complete with manual and accessories by Panasonic

999-6127-001K: WallVIEW CCU HE120 System - Black Camera - International
One (1) 998-6217-001 Quick-Connect CCU Kit Complete as Listed Above for the AW-HE120
One (1) Panasonic AW-HE120K Black Camera Complete with manual and accessories by Panasonic

999-6127-000W: WallVIEW CCU HE120 System - White Camera - North America
One (1) 998-6217-000 Quick-Connect CCU Kit Complete as Listed Above for the AW-HE120
One (1) Panasonic AW-HE120W White Camera Complete with manual and accessories by Panasonic

999-6127-001W: WallVIEW CCU HE120 System - White Camera - International
One (1) 998-6217-001 Quick-Connect CCU Kit Complete as Listed Above for the AW-HE120
One (1) Panasonic AW-HE120W White Camera Complete with manual and accessories by Panasonic

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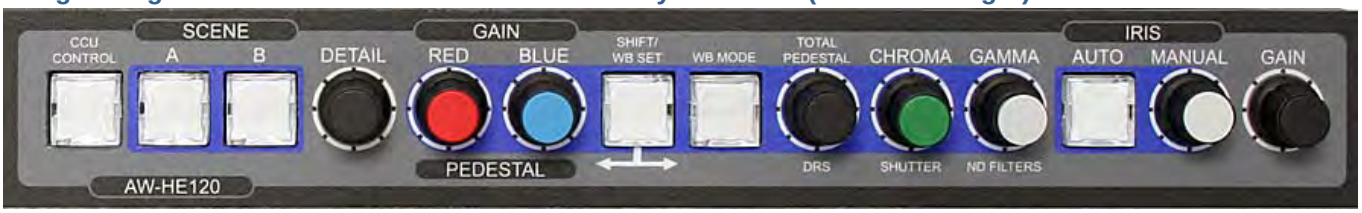
Anatomy of the CCU Controlled Camera System

Image: The Quick-Connect CCU Front Panel Controls (left to right)

Tally Light: The blue LED tally light on the front panel is tied to the tally contacts on the rear panel allowing the user to easily track which camera interface is being used in a multi-camera system by supplying a simple contact closure (i.e. from ProductionVIEW Super Joystick or ProductionVIEW HD).

LCD Display: Backlit (blue) display indicates which mode is active (CCU CONTROL or PTZ CONTROL). In CCU CONTROL mode, when a rotary encoder is touched, the name of the control being actuated and the value of that assigned parameter will be displayed.

Image: Magnification of Control Buttons and Rotary Encoders (from left to right)



CCU Control Switch: Backlit (blue) SPDT switch, lit when activated, blocks the incoming PTZ controls on the RS-232 input and allows the end user to make adjustments to the camera image characteristics. When off or deactivated, PTZ information is passed to the camera and the front panel controls are deactivated to avoid latency.

Scene A and B: Two camera adjustment scenes (A & B) can be stored into microprocessor memory. When lit (backlit blue SPDT switch), the scene is activated. To store a scene, the user adjusts the controls and touches and holds the scene button down until the button blinks.

Detail: The Detail control sharpens or softens objects in the frame.

Red & Blue Gain: The Red and Blue Gain encoders adjust the red and blue gain of the signal when AWB is disengaged.

Shift/WB Set: Shift on mode allows features that are below the CCU knob. Shift off mode allows features listed above the CCU knob.
The White Balance controls/adjusts the color levels automatically when engaged. Turn off AWB to manually adjust the Red and Blue gain.

WB Mode: Toggles between white balance modes AWB A, AWB B, ATW, 3200K, 5600K. AWB A or AWB B must be engaged to manually adjust the Red and Blue controls. See Panasonic manual.

Pedestal: Controls the absolute black level of an image.
Chroma: Controls 7 levels of variability of the overall color of the image being captured.
Gamma: Adjusts the overall brightness of an image.

Auto Iris: The Auto Iris mode automatically adjusts the iris and gain of the camera. To manually adjust the iris or gain, turn off this control.

Manual Iris: The manual iris control allows the user to set the iris manual to one of the 18 settings available.

Gain: The Gain control boosts the signal level when the iris is open all the way, and there is not enough lighting available. To manually adjust the gain Auto Iris must be off.

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Shift to Bottom Row Controls:

Red and Blue Pedestal: These controls allow the Red and Blue Pedestal to be adjusted (see Panasonic manual).

DRS: Dynamic Range Stretch optimizes images that have a wide contrast range. When dark, bright and intermediate areas are all in the same image or rapidly changing lighting changes occur frequently, DRS estimates a gamma curve and knee slope for each image pixel to minimize blocked shadows and blown highlights. Set to off to disable the DRS feature.

Shutter: Choose between settings: 1/100, 1/250. 1/500, 1/1000, 1/2000, 1/4000, 1/10,000 and Syncroserve.

ND Filter: This is for selecting the transmissivity of the ND filter (light-dimming filter), which is incorporated in the lens. Four positions (Off, 1/4, 1/16. 1/64).

The menus and controllability of the AW-HE120 is rather extensive, so please see the Panasonic manual for further explanation of the control parameters.

Image: Rear Panel Connections and Controls (left to right)

Power Supply Input: The Quick-Connect CCU uses a 36VDC, 2.78 Amp power supply on a 5.5mm OD x 2.5mm ID connector.

Power on RJ-45: Power is provided on a Cat-5 cable to EZIM CCU (EZCamera Interface Module).

RS-232 IN on RJ-45: RS-232 Input from ProductionVIEW™, Precision Camera Controller or PTZ controller. Daisy Chain control is not supported.

RS-232 OUT / G/L Out on RJ-45: RS-232 and G/L outputs on Cat-5 provide control and sync to the EZIM CCU. NOTE: See Appendix 1 for information on adjusting Genlock Gain on the EZIM CCU.

Tally on 2-pin Molex 5.0mm Euro-Style connector: A contact closure lights the blue LED on front panel allowing indication of which CCU and camera combination is active in a multi-camera CCU installation. A tally command will also be sent to the camera via RS-232 to illuminate the LED on the cameras that have on-board tally lights (Vaddio and BRC Series cameras).

G/L Input on BNC-F: For use with black burst generators to externally sync the cameras. This input is transmitted through a differential amplifier to a receiver at the EZIM CCU. The G/L gain adjustment is on the EZIM CCU or the receive side of the signal.

Camera Feature Switches: The CCU interface has an 8-position dip switch on the rear panel to allow future functionality. All switches should be in the down position.

Y-Gain: Adjusts Y-Gain and allows the user to fine tune the video signal especially over longer cable lengths. Adjust to taste and system requirements.

Distance: Distance Adjustments for Cat. 5 cable (<100', 200', 300', 400'+) equalizes the length of the twisted pairs for improved video performance.

Video Outputs: Four Video Signals at any one time can be transmitted from the EZIM CCU concurrently allowing the CCU system to return HD and SD at the same time. Note: Simultaneous SD requires the camera is equipped correctly.

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Connector Labels and Supported Video Signals

Y/Y:	Y of YPbPr - or - Y (luminance) of Y/C on BNC-F connector
PB/C:	PB of YPbPr - or - C (chrominance) of Y/C on BNC-F connector
PR:	PR of YPbPr only on BNC-F connector
COMP:	Composite (CVBS) Video on BNC-F connector

Video RJ-45: This RJ-45 receives the camera's four (4) differential video signals from the EZIM CCU to the Quick-Connect CCU on Video Cat-5 cable.

Image: EZIM CCU Top Panel (left to right) and ISO View of EZIM CCU

EZIM CCU:
Top Connector Panel and
25-pin side connector shown

POWER RJ-45: The EZIM CCU receives 36 VDC on one Cat-5 cable (all 4-pair) from the CCU.

Be sure to mark the Power Cat-5 and avoid plugging it into a place it doesn't belong.

G/L Gain Potentiometer: Adjust this level control to the level that works with the system. This control exists to compensate for the length of the cable used.

RS-232 IN / G/L IN RJ-45: Connect this RJ-45 with a Cat-5 cable to the RS-232 OUT / G/L OUT RJ-45 on the back of the CCU.

Video RJ-45: This RJ-45 sends the camera's four (4) video signals on 4-pr (differential video) from the EZIM CCU to the Quick-Connect CCU on Cat-5 cable.

Installation:

Installation Basics:
The WallVIEW CCU system was specifically designed for installation on a vertical wall surface with Cat-5 cable connectivity for Video, Power and Control signaling (three Cat-5 cables are required). Installation is simplified in that no custom 8-Pin mini-din cables or expensive plenum coax cables are needed and no power outlets are required near the camera bracket. All cabling is routed to the head-end using Cat-5 cables using standard straight through RJ-45 connectors (568B termination). "Pass-thru" type RJ-45 connectors should never be used.

Before Installing:

- Locate the camera mounting location paying close attention to camera viewing angles, lighting conditions, possible line of site obstructions, and checking for in-wall obstructions where the camera is to be mounted. Pick a mounting location that will optimize the performance of the camera.

Pre-wire all cabling as required, test and mark the cables POWER, VIDEO and CONTROL. Do not guess at the cable's function and try the "process of elimination method" and plug the POWER cable into all the RJ-45 jacks to see which one cable powers the camera. In all likelihood, this method will cause damage to your system and your warranty will be voided.

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Please do not use "pass-thru" type RJ-45 connectors. The Vaddio Cat-5 wiring standard uses pins 7 and 8 on both the video and the control Cat-5e cables. The pass-through connectors have proven to provide insufficient connectivity for these important signals. They are "ok" for voice and data, but not for video and control.

Step By Step Mounting Instructions:

Step 1:
After determining the optimum location of the camera system, mark locations for the four screw holes and cable pass-thru (vertical oval). Install the drywall mounts and cut the hole for the cable pass-thru. At this point, do not install the Wall Mount.

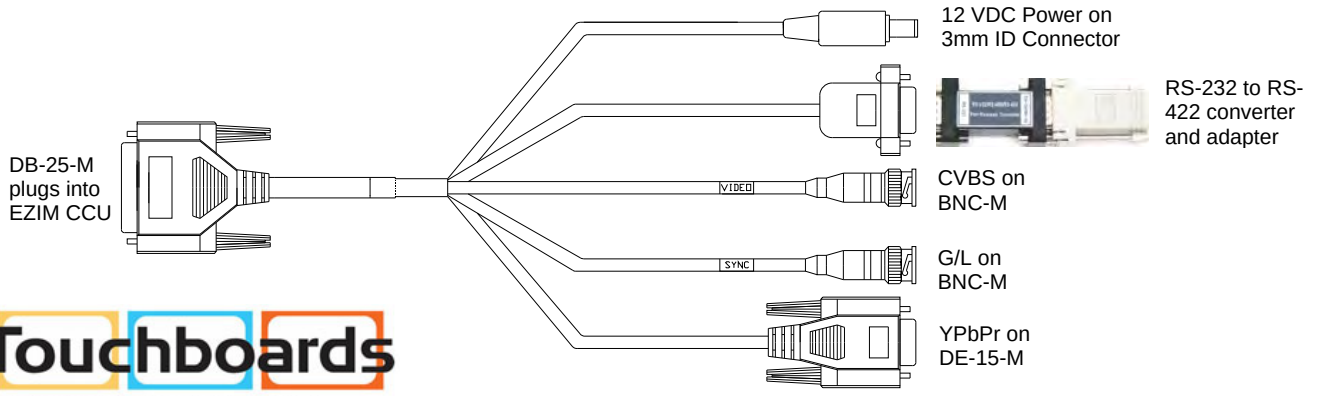
Image: Heavy duty wall mount
The wall mount may be mounted directly to a 3-gang wall box or to drywall with the appropriate wall anchors.

Step 2:
Connect the break out cable to the EZIM CCU. Mount the EZIM CCU and break out cable in the back of the wall mount, using the supplied screws and two tapped screw holes.

Image: Heavy Duty Wall Mount
Wall mount shown with EZIM CCU and HD break out cable attached to the back of the mount.

Exact Cable Not Shown

Drawing: High Definition Break Out Cable



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Step 3:
Take the Wall Mount, with the EZIM CCU and break out cable installed, and place it against the drywall anchors or 3-gang wall box, making sure to pull the three Cat-5 cables through the oval pass-through hole. Finger-tighten the screws to the mount and confirm that the base is level. Tighten the screws firmly. If the bracket is to be mounted on a 3-gang wall box, use the screws supplied with the electrical box.

Step 4:
Confirm that the Cat-5 cables are terminated correctly, by testing them with a continuity tester. Connect the break out cables to the appropriate ports on the AW-HE120. The break out cable for the HE 100 has an RS-232 to RS-422 adapter in-line, with a 1 ft. CAT-5 cable, which connects to the Controller port on the back of the camera. Push the camera into place and dress the cables. Secure the camera to the mount and using the ¼"-20 screws.

Step 5:
The Quick-Connect CCU interface has an 8-position dip switch on the rear panel (see page 4). Set Dip Switch 2 to the UP position. All other switches should be in the DOWN position.

Description Dip Switch (Up = ON) →	1	2	3	4	5	6	7	8
Panasonic AW-HE120 • Setting the #2 dip switch to the UP position allows Vaddio's ProductionVIEW controllers and switchers to recognize the camera.	DN	UP	DN	DN	DN	DN	DN	DN

Step 6:
The Quick-Connect CCU is a 1-RU rack mount interface that breaks out the signals from the Cat. 5 cables back to the standard connectors. Connect the other side of the appropriate Cat-5 cable to the CCU except for power.

Note: Plugging the POWER CAT-5 Cable into the wrong RJ-45 may cause damage to the camera system and void the warranty.

Completing the Installation:
Connect the Power Cat-5 cable to the CCU and connect the Vaddio 36 VDC power supply to an AC outlet. Power will travel down the Power Cat-5 cable to the EZIM CCU, powering the camera. The camera will "Home" to a centered position ready for control information from the IR Remote or camera controller. To insure proper continuity of control and operation of the cameras, the RS-232 controller (control system or joystick) must be powered on after the camera. Move the camera and test the video.

Setting the AW-HE120 Video Format and Output Settings:
With the IR Remote Control, enter the camera's menu system and set the camera's Picture Format, which ranges from 480/29.97psF to 1080/30p.

NOTE: Not all of the resolution options on the AW-HE120 will be recognized by the receiving device (ProductionVIEW HD or HD video monitor, etc.), so be sure to select an appropriate resolution for your external device that is connected to the Quick-Connect CCU.

Setting the Camera Output Mode:
The modes are RGB, YPbPr and Y/C Use only YPbPr with the Quick-Connect CCU.

Connecting the Tally Port (optional)
The CCU system is capable of illuminating a Tally light on the front of the Quick-Connect enclosure. This light provides a visual indicator to the equipment operator to know which camera is live during a broadcast. In addition the tally function will illuminate the tally light on the front of the camera lens, to allow the presenter to know which camera is live.

The basic system connectivity is illustrated on the next page.

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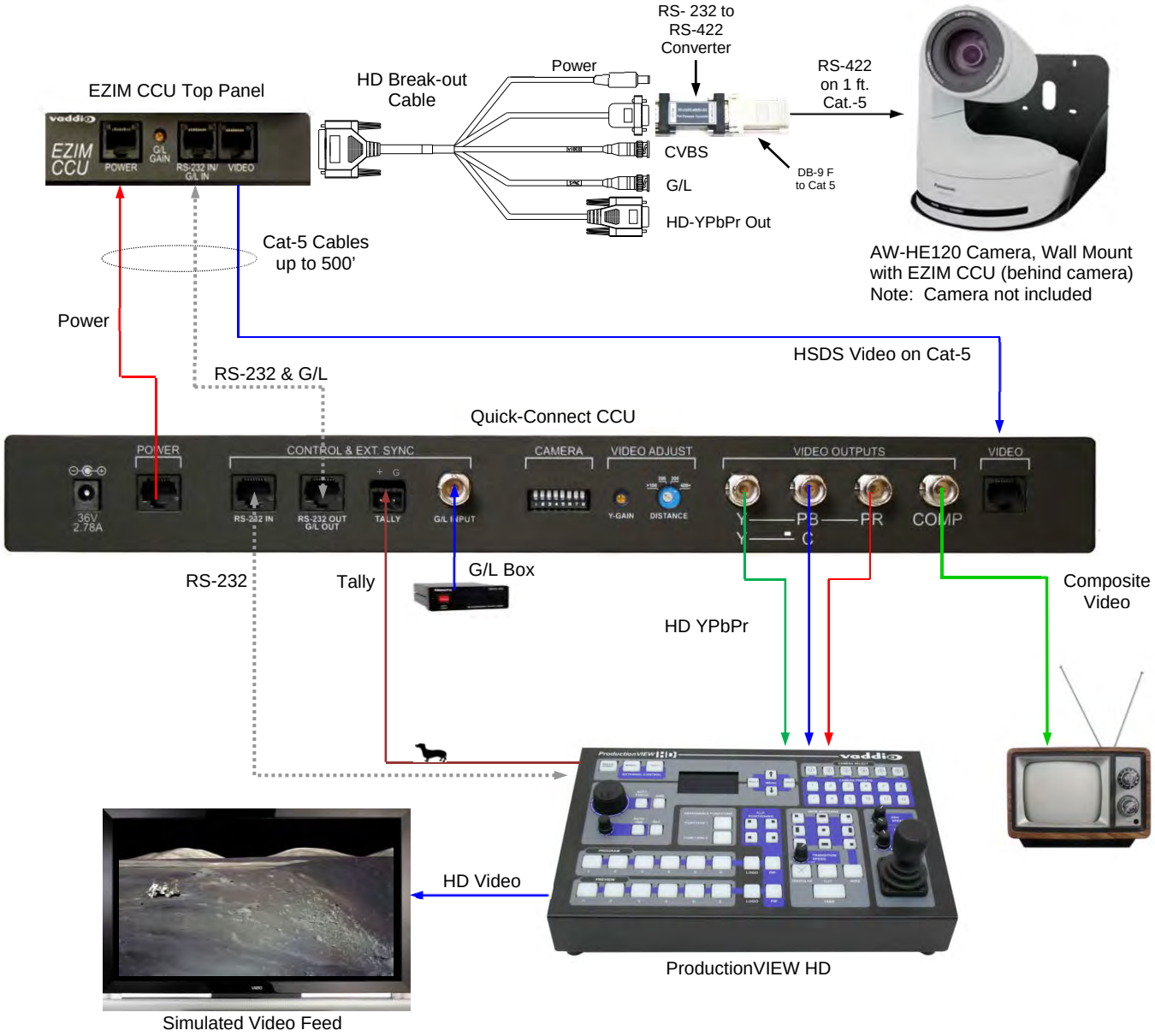
Drawing: Basic System Connectivity

Wiring Diagram Example:

System Configuration Notes:

The Quick-Connect CCU System uses a Cat-5 (all 4-pairs) for power to ensure the motors receive the required current to operate properly. The Video Cat-5 cable uses all four pairs for video (YPbPr & CVBS). The RS-232 Cat-5 provides communication to the camera for CCU, PTZ control and G/L (where applicable) to the camera. These Cat. 5 cables can be run up to 500' (152.4m). See Appendix 1 for wiring and pin-out information.



Optimizing System Performance:

Optimizing the CCU settings will help achieve maximum performance from the system. Difficult lighting is one of the most challenging problems video system integrators face. The Vaddio CCU will provide the flexibility to fine tune for variables such as cable length, day/night lighting transitions and lighting color temperature.

- **CCU Control Mode:** CCU's that are sold with cameras other than Vaddio will have a CCU Control button with the scene controls. Make sure and select CCU Control if available prior to making CCU adjustments. PTZ control will not be available in this mode.

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- **Adjust the Y Gain Settings*:** Enable both Auto Iris and Auto White Balance prior to adjustment. Make sure the distance adjustment is set at its lowest setting. Adjust the trim pot on the back of the CCU counter-clockwise until picture fades or drops out (cable length dependent). Adjust clockwise just past the setting where picture is restored. Leave the distance adjustment** at its lowest setting unless recommended by Vaddio technical support.

- **Adjust Iris and Digital Gain Settings:** Disable Auto Iris. Set the Iris to its largest aperture (lowest 'f' number). Adjust the Gain until the image is too dark and then bring it back until it is properly exposed. Exposures that require high gain settings will have a grainy video image. Adjust the detail settings for a smoother image.

- **Adjust Color to Taste:** Required adjustments will vary based on the environment. The CCU allows the set-up of several scenes so settings are available for a variety of conditions. Adjust the Chroma level to taste. Adjust Red/Blue levels next. Adjusting for skin tones or using a color chart is an easy way to find a good baseline setup.

*Y Gain adjustment not active on CCU when using the SDI option
**Distance adjustment not active on CCU when using the SDI option

General Specifications

Quick-Connect CCU HE120 (Please see specs for Panasonic camera in the Panasonic manual)	
Part Numbers	998-6897-000: Quick-Connect CCU Kit for the BRC-H900 Camera (camera not included) - North America 999-6897-001: Quick-Connect CCU Kit for the BRC-H900 Camera (camera not included) - International
• **Quick-Connect CCU Interface**	
Connectors	Power Connector: 5.5mm OD x 2.5mm ID Power RJ-45: Supplies 36V to EZCamera Interface Module Regulator Control In RJ-45: Accepts RS-232 from ProductionVIEW or other non-daisy-chain control systems Control Out RJ-45: Passes RS-232 and Sync video feed to camera EZIM Tally: 2-Pin Phoenix type spring cage connector Video Inputs: BNC Connector for Sync Video Outputs: BNC Connectors for HD Analog Component (Y,PB,PR) / SD (Composite) Video RJ-45: Transports HD video from camera EZIM
Camera Select Switch	For Future Use – All switches should be in the down position
Video Adjustments	Y-Gain (luminance gain) for fine tuning over longer cable distances Distance Compensation: 100', 200', 300', 400'+
CAT-5 Cable Distance	Up to 500' (152.4m)
Power Supply	36 VDC, 2.78 Amp
Dimensions	1-RU Rack Mount - 1.75" H x 19" W x 6" D (4.45 cm x 4.26 cm x 15.24 cm)
• **EZCamera Interface Module CCU (EZIM)**	
Connectors	Three (3) RJ-45 Connectors One DB-25 for Power, Video, Control & Genlock
Cable Assembly	DB-25M to DE-15, DE-9, BNC x 2, 3mm ID Power Connector
Power Regulator	Supplies 12VDC to Cameras
Dimensions	3" H x 4.5" W x 1.2" D (7.6 cm x 11.4 cm x 3 cm)
• **Wall Mount H900 P/N: 535-2000-225**	
Materials	12-Gauge CRS with Black Powder Coat Paint
Dimensions	8" H x 8.5" W x 13.5" D (20.3 cm x 21.6 cm x 34.3 cm)
Weight	Approx. 6 lbs. (2.7kg)

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Warranty Information:

(See Vaddio Warranty, Service and Return 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. Please see Vaddio's Service Terms and Conditions at vaddio.com for specific details and policies.

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 installation (plugging things in wrong), 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 will only advance replace out of box failures or random equipment failures up to 30 days after the purchase date (not the install date).

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 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 clearly on the shipping label 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, or unauthorized repair. Cutting the power supply cable on the secondary side (low voltage side) to extend the power to the device 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 in the product
- Keep this device away from food and liquid
- For smears or smudges on the product, wipe with a clean, soft cloth
- 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 or Drainage Culverts
- In inclement weather
- Dry environments with an excess of static discharge
- In salt water estuaries
- In a Under severe vibration

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Compliance and CE Declaration of Conformity - Quick-Connect CCU and EZIM CCU

MADE IN THE USA

Compliance testing was performed to the following regulations:

• FCC Part 15, Subpart B	Class A
• ICES-003, Issue 4: 2004	Class A
• European Standard EN 55022 A: 1998 + A1: 2000	Class A
• European Standard EN 55024: 1998 + Amendments A1: 2001 + A2: 2002	Class A
• EMC Directive 89/336/EC	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.

Industry Canada Industrie Canada

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'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

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 89/336/EC

EN 55022 A: 1998 + A1: 2000	Conducted and Radiated Emissions
EN 55024: 1998 + Amendments A1: 2001 + A2: 2002	Immunity
• 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

Please see the Panasonic manual for compliance information on the AW-HE120 PTZ Camera.

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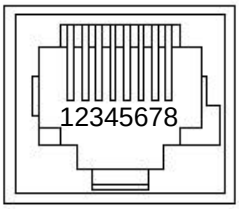
Appendix 1: Cable Pin-outs for the Quick-Connect CCU System

Quick-Connect CCU Pin-out Assignments:

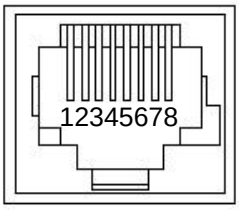
Power Connector RJ-45

Pin	Signal
1)	Power +
2)	Power -
3)	Power +
4)	Power -
5)	Power +
6)	Power -
7)	Power +
8)	Power -



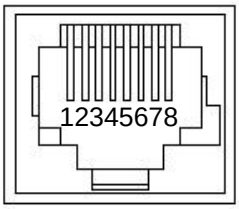
RS-232 IN Connector RJ-45

Pin	Signal - RS-232
1)	Not Used
2)	Not Used
3)	Not Used
4)	Not Used
5)	Not Used
6)	GND
7)	RXD (from TXD)
8)	TXD (to RXD)



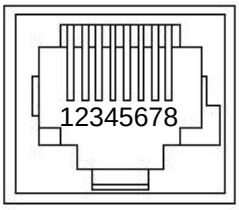
RS-232 / G/L OUT Connector RJ-45

Pin	Signal - RS-232
1)	Not Used
2)	Not Used
3)	Not Used
4)	G/L
5)	G/L GND
6)	GND
7)	TXD (to RXD)
8)	RXD (from TXD)



Video Connector RJ-45

Pin	Signal	
	SD	HD
1)	CVBS +	CVBS +
2)	CVBS GND	CVBS GND
3)	Y+	Y+
4)	C+	PB+
5)	C GND	PB GND
6)	Y GND	Y GND
7)	Not Used	PR+
8)	Not Used	PR-



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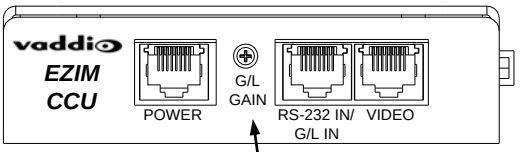
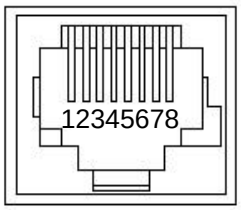
Appendix 1 (continued)
EZIM CCU Pin-out Assignments



Power Connector RJ-45

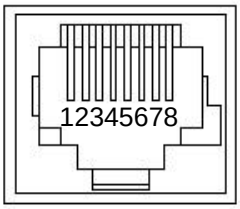
Pin	Signal
1)	Power +
2)	Power -
3)	Power +
4)	Power -
5)	Power +
6)	Power -
7)	Power +
8)	Power -



Genlock Gain Adjustment:
Genlock Gain is set at the factory to the 3 o'clock position, which provides standard black-burst level. Adjust the gain level up or down if required to synchronize the camera to other devices.

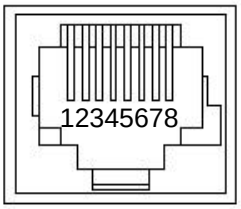
RS-232 IN Connector

Pin	Signal - RS-232
1)	Not Used
2)	Not Used
3)	Not Used
4)	G/L+
5)	G/L GND
6)	GND
7)	RXD (from TXD)
8)	TXD (to RXD)



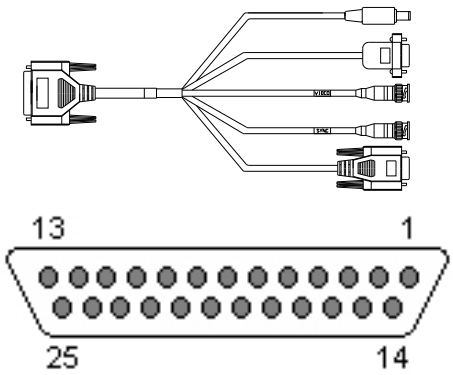
Video Connector RJ-45

Pin	Signal SD	HD
1)	CVBS +	CVBS +
2)	CVBS GND	CVBS GND
3)	Y+	Y+
4)	C+	PB+
5)	C GND	PB GND
6)	Y GND	Y GND
7)	Not Used	PR+
8)	Not Used	PR-



DB-25 Connector

Pins	Signal
1	CVBS GND
14	CVBS
2	G/L GND
15	G/L
3	NC
16	GND IN
4	TXD IN
17	RXD IN
5	NC
18	NC
6	NC
19	NC
7	GND - PR
20	PR
8	GND - C/PB
21	C/PB
9	GND - Y/Y
22	Y/Y
10	GND - PWR
23	GND - PWR
11	GND - PWR
24	12V - PWR
12	12V - PWR
25	12V - PWR
13	12V - PWR



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Touchboards
205 Westwood Ave, Long Branch, NJ 07740
Phone: 866-94 BOARDS (26273) / (732)-222-1511
Fax: (732)-222-7088 | E-mail: sales@touchboards.com

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