Atlona 4K HDMI Emulator / Tester

AT-UHD-SYNC

User Manual

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Introduction

The Atlona AT-UHD-SYNC is designed to analyze errors, identify issues and restore failed HDMI signals. The UHD-SYNC's slender, palm sized design ensures easy integration into confined spaces. USB powered, with included USB power suppply or from local USB devices. With presets and learned EDID, the UHD-SYNC provides a solution whenever and wherever it is needed.

Package Contents

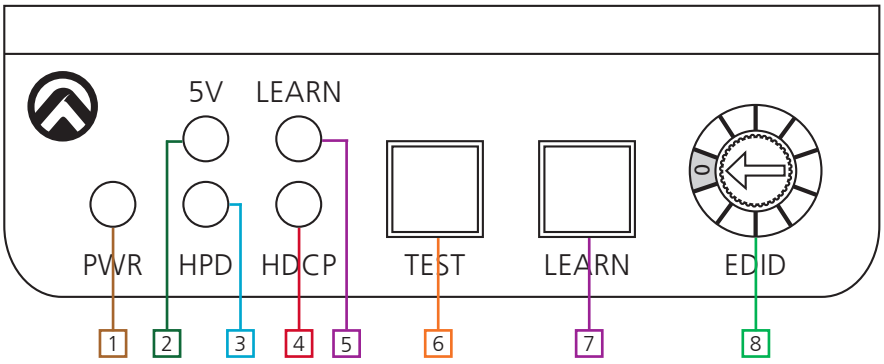
- 1 x AT-UHD-SYNC
- 1 x DC 5V/1A USB power adaptor
- 1 x Mini USB to USB "A" cable
- 1 x Pair of wall mount ears
- 1 x User manual

Features

- Ensures proper operation, for the best performing HDMI audio and video signal between any source and display
- Resolves loss of video, intermittent (flashing) video, snow, or color-space (purple or red) issues
- Test HDMI system components and cables to identify HDCP support. Also detects presence of 5 volt and hot plug detect (HPD) signals
- 4K (UHD) support: Ensures the best video performance
- 5 volt / HPD emulation: Restores A/V signals due to faulty cables or when multiple distribution devices are cascaded
- EDID emulation: 9 unique stored files plus learning capability to ensure the best picture and sound is achieved
- 3 LEDs: indicators: HPD, 5V, HDCP indicators aid in HDMI signal failure analysis
- Signal regeneration: HDMI 1.2 sources can be reliably transmitted with HDBaseT extenders and matrices
- USB power: No wall power supply required! Harvest power from local USB devices to power UHD-SYNC when an AC outlet isn't available
- Palm sized form factor reduces impact within confined spaces
- Locking HDMI connectors
- HDCP compliant

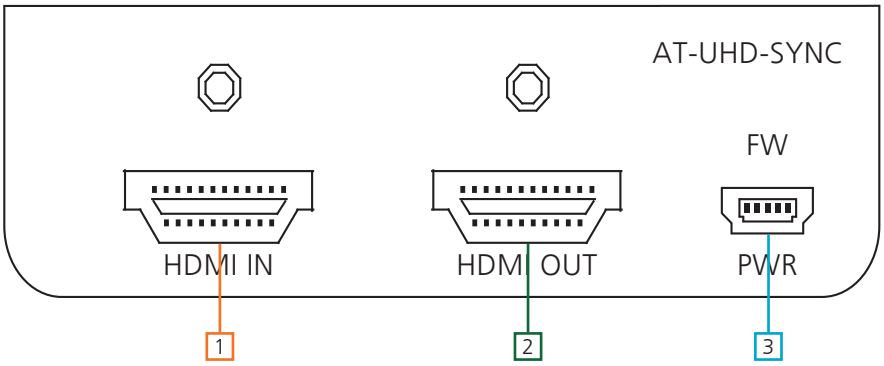
Panel Description

Front Panel



1. PWR LED - Red LED will illuminate when receiving power
2. 5V LED - Green LED will illuminate when receiving a 5V signal from the connected source
3. HPD LED - Green LED will illuminate when detecting a hot plug signal from the video display
4. HDCP LED - Will indicate source/display compliance or non-compliance status.
   (See page 5 for more detail)
5. LEARN LED - Will blink green while it is learning a display's EDID and turn solid if the learning process is successful.
6. TEST button - Test source and display for 5 volt, hot plug presence, and HDCP compliance.
7. LEARN button - Press and hold this button to learn the EDID of the connected display.
   Note: EDID Learning process can only occur when the EDID rotary is set to 0
8. EDID rotary dial - Switch between EDID modes to ensure the best supported video resolution and audio format is transmitted.
   - Mode 0 - EDID learning
   - Mode 1: 1080p - 2Ch audio
   - Mode 2: 1080p - multichannel audio (HD lossless)
   - Mode 3: 1080p 3D - 2Ch audio
   - Mode 4: 1080p 3D - multichannel audio (HD lossless)
   - Mode 5: 1080p 3D - Dolby Digital 5.1
   - Mode 6: 720p - 2Ch audio
   - Mode 7: 1080p DVI
   - Mode 8: 4K - 2Ch audio
   - Mode 9: 4K - multichannel audio (HD lossless)

Back Panel

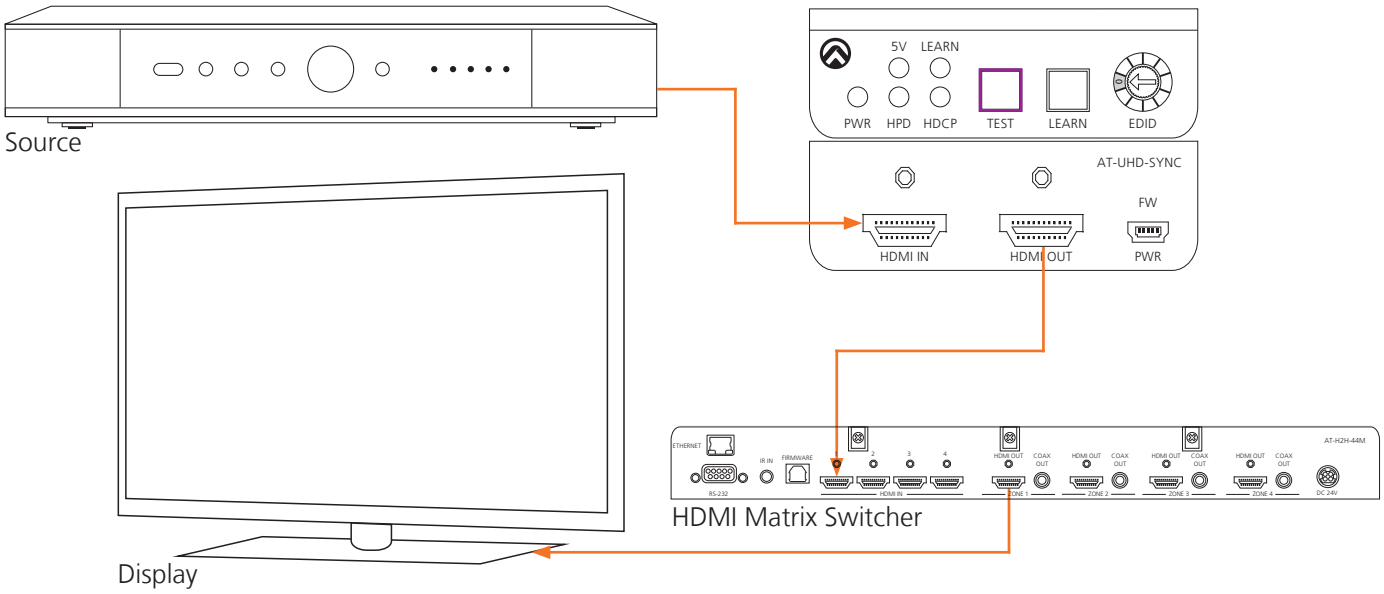


1. HDMI IN - Connect source here
2. HDMI OUT - Connect to a switcher, distribution amplifier, matrix or extender transmitter
3. FW/PWR port - Connect included mini USB to USB (type A) cable here. This port is used for power and firmware updates.

Testing

To start the testing process, press the TEST button, the HDCP, HPD, and 5V LEDs will illuminate. See the below sections to interpret the results.

For testing see the connection diagram below to see which port each device is connected to.



HDCP

Determining a video display's HDCP compliance can be important when using content protected media sources. If a display is not HDCP compliant, the source will not transmit a video signal.

Note: Blu-ray content will not pass to a non compliant display.

A table has been included to make it easier to interpret the result of the HDCP test.

	Source Compliant	Display Compliant	Source NonCompliant	Display NonCompliant
Solid Green LED	X	X		
Solid Red LED	X			X
Blinking Green LED			X	X
Blinking Red LED		X	X	

5V & Hot plug

When an HDMI connection is made between source and HDTV, a 5v signal is transmitted to the display. This triggers a hot plug event from the display indicating that EDID is available for the source to read. If this process fails, no video will be transmitted to the display.

The UHD-SYNC detects signals from the source and display, the corresponding LEDs will illuminate green if the signal is good. Refer to the table below to better interpret the results and the steps required to resolve the HDMI signal.

	No illumination	Solid red	Solid green
5V LED	Defective cable or Source not connected	Signal error from source	Signal is good
Hot Plug Detect LED	Defective cable or Display not connected	Signal error from display	Signal is good

Note: If there is no 5V or hot plug signal, the UHD-SYNC will insert an emulated 5V or HP signal.

EDID (Extended Display Identification Data)

To ensure the best audio and video, the UHD-SYNC has 9 internal EDIDs and the ability to learn a video display's EDID.

Internal Mode

The 9 EDIDs below represent the most common audio format and video resolution combinations, ensuring compatibility.

Mode 1: 1080p - 2Ch audio **3D and multichannel audio will not work in this mode.**
Mode 2: 1080p - Multichannel audio (HD lossless) **3D will not work in this mode.**
Mode 3: 1080p - 2Ch audio - 3D **Multichannel audio will not pass in this mode.**
Mode 4: 1080p - Multichannel audio (HD lossless) - 3D **4K will not pass in this mode**
Mode 5: 1080p - Dolby Digital 5.1 audio - 3D **Only Dolby Digital and 2Ch audio will pass in this mode.**
Mode 6: 720p - 2Ch audio **Multichannel audio will not pass in this mode.**
Mode 7: 1080p DVI **Recommended for use with DVI projectors**
Mode 8: 4K - 2Ch audio **Multichannel audio will not pass in this mode.**
Mode 9: 4K - Multichannel audio (HD lossless) **The highest resolution and audio will pass in this mode.**

Learning Mode

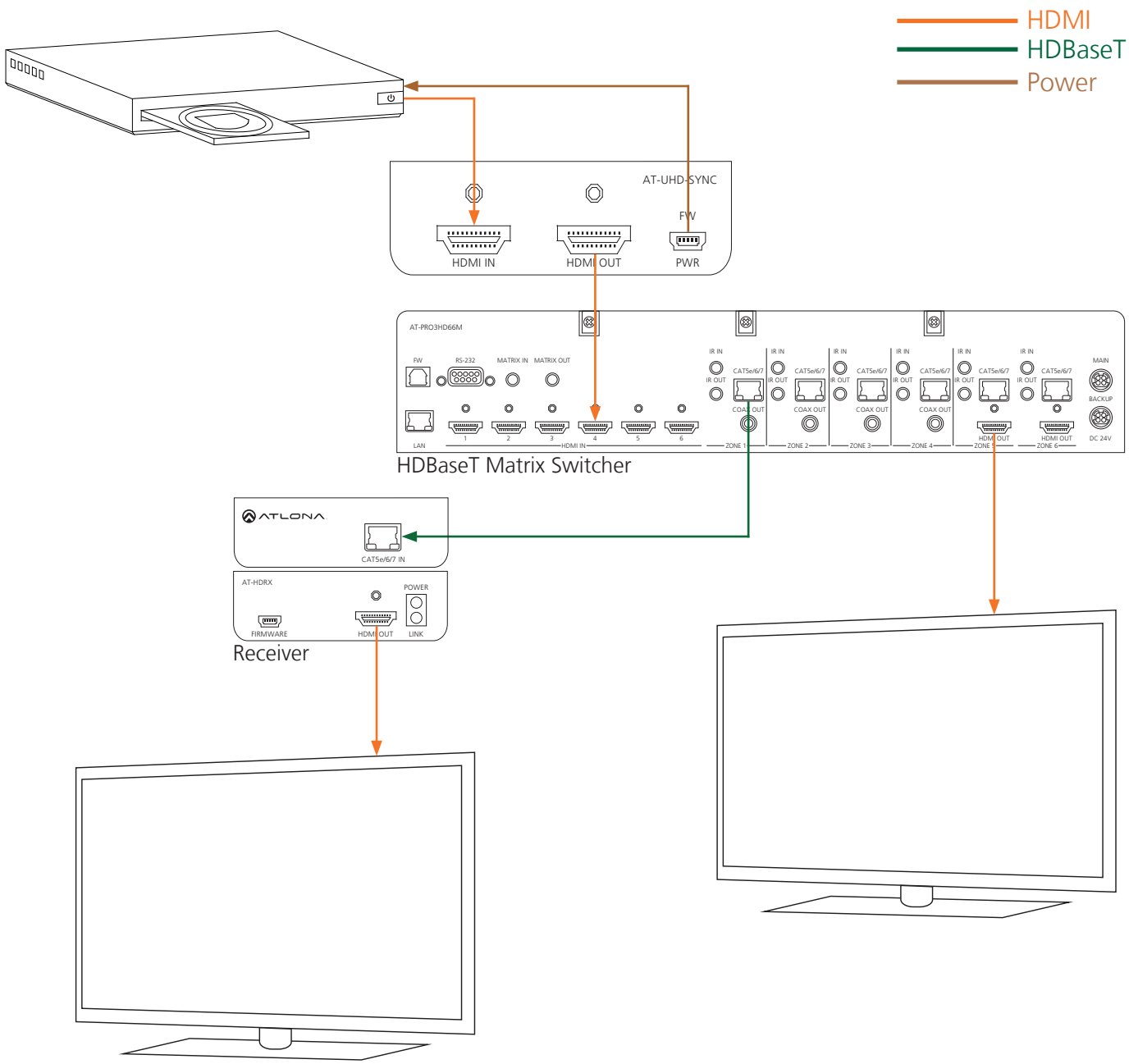
Mode 0 places the UHD-SYNC into learning mode. In mode 0 it's only a few easy steps to learn a display's EDID - Used when a display's EDID can't be received due to faulty cables, component cascading limits, or 9 internal EDID files aren't appropriate.

To learn a display's EDID:
1. Connect an HDMI cable from the UHD-SYNC's HDMI output to the HDMI input on the display.
2. Plug the UHD-SYNC into the A/C wall outlet or local USB using the included mini USB to USB cable
3. Turn the display on
4. Set the rotary dial to 0 (if on a different setting)
5. Press and hold the learn button
    - The learn LED will blink green during this process
    - If the EDID learn process is successful, the LED will turn solid

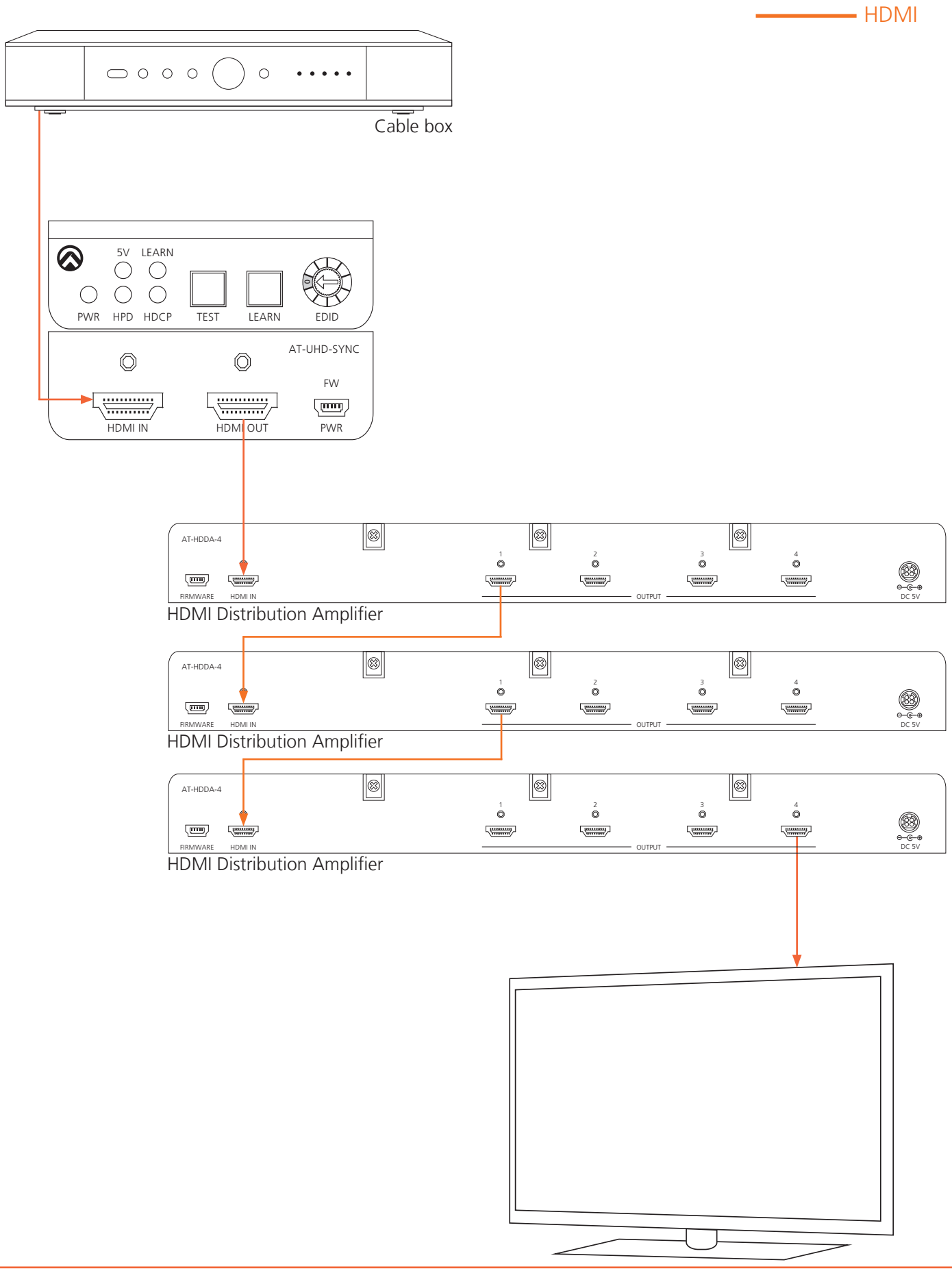
Signal Regneration

The UHD-SYNC performs signal regeneration to resolve clock stretching issues with unsupported HDMI 1.2 devices. (ex. Cable set-top boxes) See page 8 for connection diagram.

Connection and Installation



Connection and Installation (cont.)



Specifications

Video Resolutions		
IN	Supports pass through up to 3840x2160@30Hz (4K Ultra HD) Supports VESA pass through up to 1920x1200	
Colorspace	RGB, Y444, Y422 (8-bit only), xvYCC	
Color Depth	8-bit, 10-bit, 12-bit	
Audio		
Formats	PCM 2Ch, LPCM 5.1, LPCM 7.1, Dolby Digital, DTS 5.1, Dolby Digital Plus, Dolby TrueHD, DTS-HD Master Audio	
Sample Rate	Supports pass through up to 192kHz	
Distance (per port)		
HDMI 8-bit	15 meters	50 feet
HDMI 10-bit / 12-bit / 4K	10 meters	30 feet
Signal		
Bandwidth	10.2 Gbps	
CEC	Pass through	
HDCP	Compliant	
Temperature		
Operating	0°C to 50°C	32°F to 122°F
Storage	-20°C to 60°C	-4°F to 140°F
Humidity	20 to 90% non-condensing	
Power		
Consumption	4W	
Supply	Input: 100-240V ~ 50/60Hz 0.2A Output: +5V -- 1A	
Dimension		
H x W x D	24.32 x 73.09 x 70 (mm)	0.96 x 2.88 x 2.76 (inch)
Weight		
Device	0.09 kg	0.19 lbs
Certification		
Power Supply	CE, FCC, cULus, C-Tick, PSE, CCC	

Safety Information

Safeguards

To reduce the risk of electric shock, do not expose this product to rain or moisture

Do not modify the wall plug. Doing so will void the warranty and safety features.

If the wall plug does not fit into your local power socket, hire an electrician to replace your obsolete socket.

This equipment should be installed near the socket outlet and the device should be easily accessible in the case it requires disconnection.

Precautions

FCC regulations state that any unauthorized changes or modifications to this equipment, not expressly approved by the manufacturer, could void the user's authority to operate this equipment.

Operate this product using only the included external power supply. Use of other power supplies could impair performance, damage the product, or cause fires.

In the event of an electrostatic discharge this device may automatically turn off. If this occurs, unplug the device and plug it back in.

Protect and route power cords so they will not be stepped on or pinched by anything placed on or against them. Be especially careful of plug-ins or cord exit points from this product.

Avoid excessive humidity, sudden temperature changes or temperature extremes.

Keep this product away from wet locations such as bathtubs, sinks, laundries, wet basements, fish tanks, and swimming pools.

Use only accessories recommended by Atlona to avoid fire, shock, or other hazards.

Unplug the product before cleaning. Use a damp cloth for cleaning and not cleaning fluid or aerosols. Such products could enter the unit and cause damage, fire, or electric shock. Some substances may also mar the finish of the product.

Never open, remove unit panels, or make any adjustments not described in this manual. Attempting to do so could expose you to dangerous electrical shock or other hazards. It may also cause damage to your product. Opening the product will void the warranty.

Do not attempt to service the unit. Disconnect the product and contact your authorized Atlona reseller or contact Atlona directly.

Atlona, Inc. (“Atlona”) Limited Product Warranty Policy

Coverage

Atlona warrants its products will substantially perform to their published specifications and will be free from defects in materials and workmanship under normal use, conditions and service.

Under its Limited Product Warranty, Atlona, at its sole discretion, will either:

A) repair or facilitate the repair of defective products within a reasonable period of time, restore products to their proper operating condition and return defective products free of any charge for necessary parts, labor and shipping

OR

B) replace and return, free of charge, any defective products with direct replacement or with similar products deemed by Atlona to perform substantially the same function as the original products

OR

C) refund the pro-rated value based on the remaining term of the warranty period, not to exceed MSRP, in cases where products are beyond repair and/or no direct or substantially similar replacement products exist.

Repair, replacement or refund of Atlona’s products is the purchaser’s exclusive remedy and Atlona’s liability does not extend to any other damages, incidental, consequential or otherwise.

This Limited Product Warranty extends to the original end-user purchaser of Atlona’s products and is non-transferrable to any subsequent purchaser(s) or owner(s) of these products.

Coverage Periods

Atlona’s Limited Product Warranty Period begins on the date of purchase by the end-purchaser. The date contained on the end-purchaser ‘s sales or delivery receipt is the proof purchase date.

Limited Product Warranty Terms – New Products

- 10 years from proof of purchase date for hardware/electronics products purchased on or after June 1, 2013
- 3 years from proof of purchase date for hardware/electronics products purchased before June 1, 2013
- Lifetime Limited Product Warranty for all cable products

Limited Product Warranty Terms – Refurbished (B-Stock) Products

- 3 years from proof of purchase date for all Refurbished (B-Stock) hardware and electronic products purchased on or after June 1, 2013

Remedy

Atlona recommends that end-purchasers contact their authorized Atlona dealer or reseller from whom they purchased their products. Atlona can also be contacted directly. Visit www.atlona.com for Atlona’s contact information and hours of operation. Atlona requires that a dated sales or delivery receipt from an authorized dealer, reseller or end-purchaser is provided before Atlona extends its warranty services. Additionally, a return merchandise authorization (RMA) and/or case number, is required to be obtained from Atlona in advance of returns.

Atlona requires that products returned are properly packed, preferably in the original carton, for shipping. Cartons not bearing a return authorization or case number will be refused. Atlona, at its sole discretion, reserves the right to reject any products received without advanced authorization. Authorizations can be requested by calling 1-877-536-3976 (US toll free) or 1-408- 962-0515 (US/international) or via Atlona’s website at www.atlona.com.

Exclusions

This Limited Product Warranty excludes:

- Damage, deterioration or malfunction caused by any alteration, modification, improper use, neglect, improper packing or shipping (such claims must be presented to the carrier), lightning, power surges, or other acts of nature.
- Damage, deterioration or malfunction resulting from the installation or removal of this product from any installation, any unauthorized tampering with this product, any repairs attempted by anyone unauthorized by Atlona to make such repairs, or any other cause which does not relate directly to a defect in materials and/or workmanship of this product.
- Equipment enclosures, cables, power supplies, batteries, LCD displays, and any accessories used in conjunction with the product(s).
- Products purchased from unauthorized distributors, dealers, resellers, auction websites and similar unauthorized channels of distribution.

Disclaimers

This Limited Product Warranty does not imply that the electronic components contained within Atlona's products will not become obsolete nor does it imply Atlona products or their electronic components will remain compatible with any other current product, technology or any future products or technologies in which Atlona's products may be used in conjunction with. Atlona, at its sole discretion, reserves the right not to extend its warranty offering in instances arising outside its normal course of business including, but not limited to, damage inflicted to its products from acts of god.

Limitation on Liability

The maximum liability of Atlona under this limited product warranty shall not exceed the original Atlona MSRP for its products. To the maximum extent permitted by law, Atlona is not responsible for the direct, special, incidental or consequential damages resulting from any breach of warranty or condition, or under any other legal theory. Some countries, districts or states do not allow the exclusion or limitation of relief, special, incidental, consequential or indirect damages, or the limitation of liability to specified amounts, so the above limitations or exclusions may not apply to you.

Exclusive Remedy

To the maximum extent permitted by law, this limited product warranty and the remedies set forth above are exclusive and in lieu of all other warranties, remedies and conditions, whether oral or written, express or implied. To the maximum extent permitted by law, Atlona specifically disclaims all implied warranties, including, without limitation, warranties of merchantability and fitness for a particular purpose. If Atlona cannot lawfully disclaim or exclude implied warranties under applicable law, then all implied warranties covering its products including warranties of merchantability and fitness for a particular purpose, shall provide to its products under applicable law. If any product to which this limited warranty applies is a "Consumer Product" under the Magnuson-Moss Warranty Act (15 U.S.C.A. §2301, ET SEQ.) or other applicable law, the foregoing disclaimer of implied warranties shall not apply, and all implied warranties on its products, including warranties of merchantability and fitness for the particular purpose, shall apply as provided under applicable law.

Other Conditions

Atlona's Limited Product Warranty offering gives legal rights, and other rights may apply and vary from country to country or state to state. This limited warranty is void if (i) the label bearing the serial number of products have been removed or defaced, (ii) products are not purchased from an authorized Atlona dealer or reseller. A comprehensive list of Atlona's authorized distributors, dealers and resellers can be found at www.atlona.com .

Atlona, Inc Product Registration

Thank you for purchasing this Atlona product. - We hope you enjoy it and will take an extra few moments to register your new purchase.

Registration creates an ownership record if your product is lost or stolen and helps ensure you'll receive notification of performance issues and firmware updates.

At Atlona we respect and protect your privacy, assuring you that your registration information is completely secure. Atlona product registration is completely voluntary and failure to register will not diminish your limited warranty rights.

To register go to: http://www.atlona.com/registration