ATLONA
a PANDUIT company

4K/UHD
8x4 HDBaseT and HDMI
Matrix Switcher with PoE

AT-UHD-CLSO-840 | Atlona Manuals
Switchers

Version Information

Version	Release Date	Notes
2	09/18	New format

Welcome to Atlona!

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

Registration only takes a few minutes and protects this product against theft or loss. In addition, you will receive notifications of product updates and firmware. Atlona product registration is voluntary and failure to register will not affect the product warranty.

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

Sales, Marketing, and Customer Support

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Operating Notes

IMPORTANT: Visit http://www.atlona.com/product/AT-UHD-CLSO-840 for the latest firmware updates and User Manual.

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

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:

- 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

- 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

- 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 products is the purchaser’s exclusive remedy and Atlona 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 products and is non-transferrable to any subsequent purchaser(s) or owner(s) of these products.

Coverage Periods

Atlona 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 and Discontinued Products

- 3 years from proof of purchase date for all Refurbished (B-Stock) and Discontinued 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 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 atlona.com.

Exclusions

This Limited Product Warranty excludes:

- Damage, deterioration or malfunction caused by any alteration, modification, improper use, neglect, improper packaging 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.

Important Safety Information

CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN

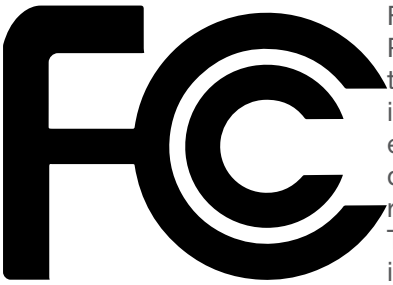
CAUTION: TO REDUCT THE RISK OF ELECTRIC SHOCK
DO NOT OPEN ENCLOSURE OR EXPOSE TO RAIN OR MOISTURE.
NO USER-SERVICEABLE PARTS INSIDE REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance instructions in the literature accompanying the product.

The information bubble is intended to alert the user to helpful or optional operational instructions in the literature accompanying the product.

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this product near water.
6. Clean only with a dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install or place this product near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of a polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the product.
11. Only use attachments/accessories specified by Atlona.
12. To reduce the risk of electric shock and/or damage to this product, never handle or touch this unit or power cord if your hands are wet or damp. Do not expose this product to rain or moisture.
13. Unplug this product during lightning storms or when unused for long periods of time.
14. Refer all servicing to qualified service personnel. Servicing is required when the product has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the product, the product has been exposed to rain or moisture, does not operate normally, or has been dropped.

FCC Statement



FCC Compliance and Advisory Statement: This hardware device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions: 1) this device may not cause harmful interference, and 2) this device must accept any interference received including interference that may cause undesired operation. This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a commercial installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed or used in accordance with the instructions, may cause harmful interference to radio communications. However there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures: 1) reorient or relocate the receiving antenna; 2) increase the separation between the equipment and the receiver; 3) connect the equipment to an outlet on a circuit different from that to which the receiver is connected; 4) consult the dealer or an experienced radio/TV technician for help. Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment. Where shielded interface cables have been provided with the product or specified additional components or accessories elsewhere defined to be used with the installation of the product, they must be used in order to ensure compliance with FCC regulations.

Table of Contents

Table of Contents

Introduction

The Atlona **AT-UHD-CLSO-840** is a 4K/UHD 8×4 matrix switcher for HDMI and HDBaseT with eight inputs, four discrete outputs, audio integration capabilities, and Ethernet-enabled 100 meter HDBaseT extension with PoE remote device powering. It is ideal for presentation environments with content on multiple displays, as well as videoconferencing, presentation capture, and divisible rooms.

The CLSO-840 supports resolutions up to 4K/UHD at 60 Hz with 4:2:0 chroma subsampling. Ethernet pass-through allows HDBaseT Ethernet extension from a control system or network. Audio system integration is streamlined with audio embedding and de-embedding, dedicated input and output gain controls, and a five-band EQ for each output. The CLSO-840 is configured and managed using Atlona Management System software to simplify installation and enable remote monitoring and support.

Features

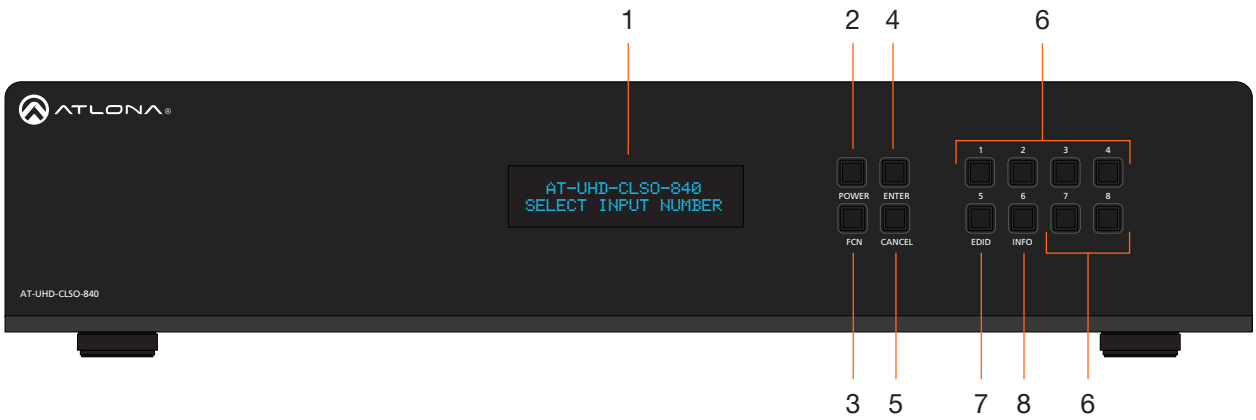
- 8×4 matrix switcher with HDBaseT and HDMI inputs and outputs
- 4K/UHD capability @ 60 Hz with 4:2:0 chroma subsampling
- Extended distance HDMI extension
- 8×4 audio matrix switching for de-embedded audio
- HDMI audio embedding
- PoE power source – remotely powers PoE-compatible transmitters and receivers
- HDCP 1.4 compliant
- EDID management
- HDCP management
- TCP/IP and RS-232 control
- IP to RS-232 translation
- Multichannel audio
- Front panel button controls and LCD menu display
- Rack mountable 2U, full-rack width enclosure

Package Contents

1 x AT-UHD-CLSO-840
8 x Captive screw connector, 5-pin
1 x Captive screw connector, 3-pin
1 x IEC C13 power cable
2 x Mounting ears
1 x Installation Guide

Panel Description

Front



1 **Front Panel Display**
This 16-character, two-row display provides the status of the matrix during various operations.

2 **POWER**
Press this button to power-on or place the matrix in standby mode. The button is backlit to indicate the current state: When the matrix is powered, the button will be solid blue. In standby mode, the button will be red. Refer to Powering the Matrix (page 17) for more information.

3 **FCN**
Press this button to select the desired function. Refer to Displaying the System Settings (page 20) for more information.

4 **ENTER**
Press this button to confirm operations or view the current status for inputs. Refer to Routing Inputs to Outputs (page 21) for more information.

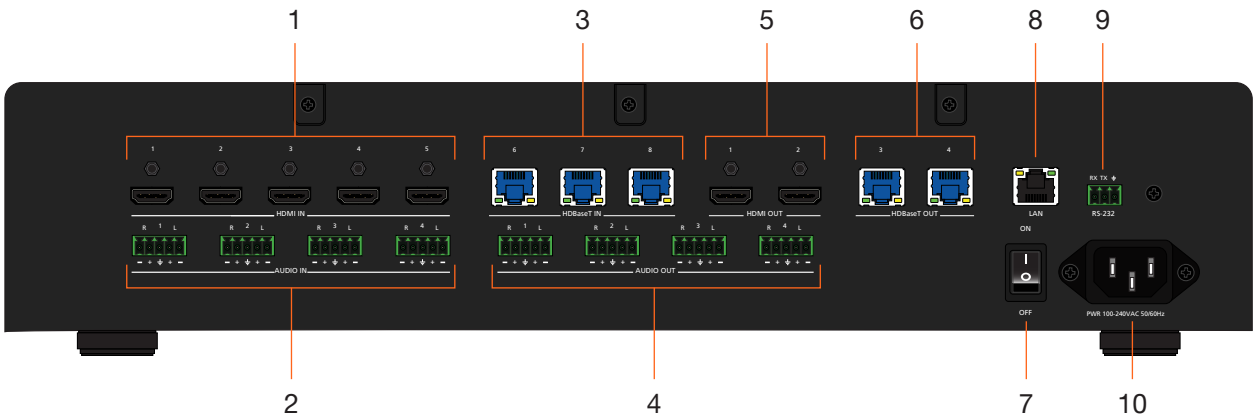
5 **CANCEL**
Press this button to abort the current operation, return to the previous menu, or go to the home screen. Refer to Routing Inputs to Outputs (page 21) for more information.

6 **Routing / Function Buttons**
Press these buttons to manage routing operations and other functions.

7 **EDID**
Press this button, in conjunction with the **FNC** button, to save and load EDID data. Refer to EDID Management (page 41) for more information.

8 **INFO**
Press this button to display the current firmware version, IP address, and MAC address of the matrix. Refer to Displaying the System Settings (page 20) for more information.

Rear



1 HDMI IN
Connect up to five 4K UHD source devices to these ports using HDMI cables.

2 AUDIO IN
Connect up to four analog audio sources to these ports using the included 5-pin captive screw blocks. Refer to Audio Connectors (page 12) for wiring information. These analog audio ports provide the option of replacing the HDMI source audio, and embedding analog audio on the outputs.

3 HDBaseT IN
Connect up to three PoE-compatible transmitters, such as the AT-UHD-EX-100CE-TX, to these ports using Ethernet cable.

4 AUDIO OUT
Connect these ports to the analog inputs of a DSP, audio amplifier, or other output device, using the included 5-pin captive screw blocks. Refer to Audio Connectors (page 12) for wiring information.

5 HDMI OUT
Connect up to two local displays to these ports using HDMI cables.

6 HDBaseT OUT
Connect up to two PoE-compatible receivers to these ports using Ethernet cable.

7 ON/OFF
Press this button to power-on or power-off the matrix.

8 LAN
Connect an Ethernet cable from this port to the Local Area Network (LAN).

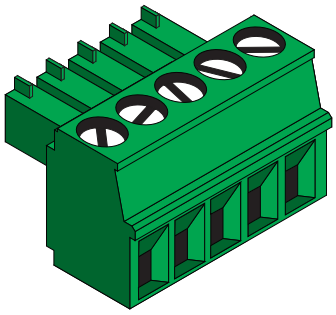
9 RS-232
Connect an RS-232 control device to this port using the included 3-pin captive screw block.

10 PWR 100-240VAC 50/60Hz
Connect the included power cable from this receptacle to an available AC power outlet.

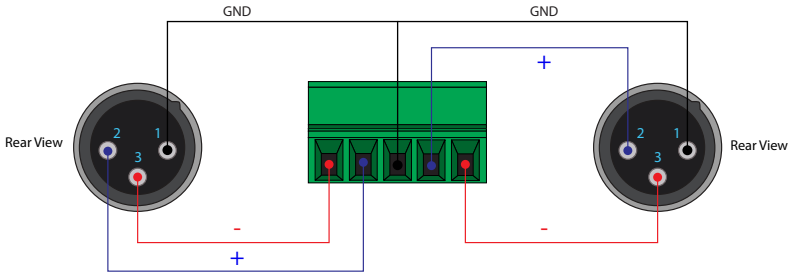
Installation

Audio Connectors

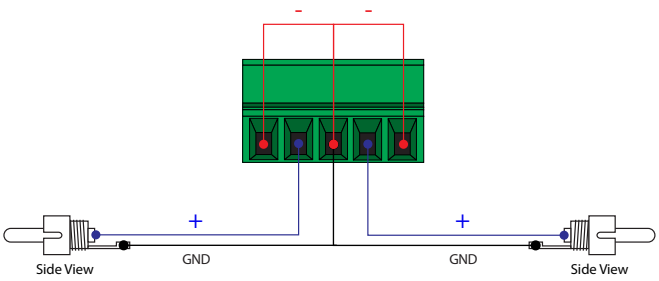
The **AUDIO IN** and **AUDIO OUT** ports on the AT-UHD-CLSO-840 provide analog inputs and outputs, respectively, for audio. Use the included 5-pin captive screw blocks to connect either balanced or unbalanced analog sources/ outputs.



Balanced XLR Wiring

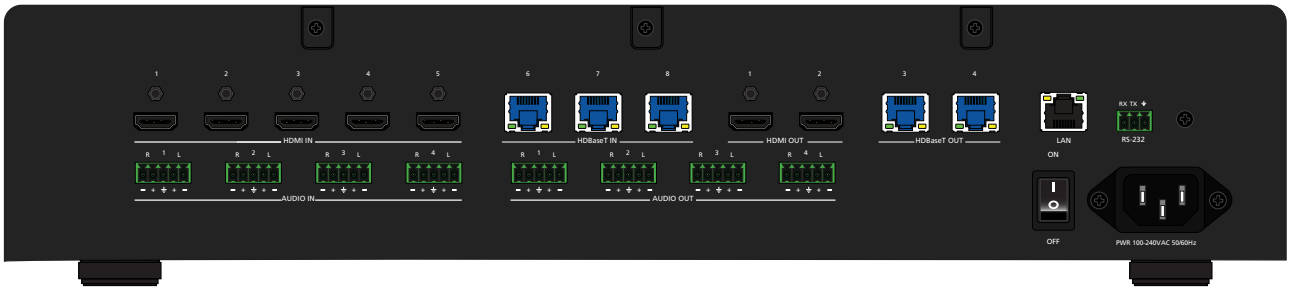


Unbalanced RCA Wiring



Connection Instructions

1. Connect up to five HD/UHD sources to the **HDMI IN** (**1** - **5**) ports.
2. Connect up to three PoE-compatible transmitters (e.g. AT-HDVS-210H-TX-WP) to the **HDBaseT IN** (**6** - **8**) ports using Ethernet cables.
3. Connect up to two UHD/HD displays to the **HDMI OUT** (**1** - **2**) ports using HDMI cables.
4. Connect up to two PoE-compatible receivers (e.g. AT-UHD-EX-100CE-RX, AT-HDVS-200-TX, AT-HDVS-SC-RX) to the **HDBaseT OUT** (**3** - **4**) ports using Ethernet cables.
5. Connect an Ethernet cable from the **LAN** port to a Local Area Network (LAN). This step is required in order to access the Web GUI and/or use the matrix for IP control.



6. Connect the included power cable from the **PWR 100-240VAC 50/60Hz** power receptacle to an available AC power outlet.

OPTIONAL

7. Connect up to four analog audio sources to the **AUDIO IN** (**1** - **4**) ports using the included 5-pin captive screw blocks. Refer to Audio Routing (page 25) for more information.
8. Connect up to four audio output devices (e.g. AT-GAIN-60) to the **AUDIO OUT** (**1** - **4**) ports using the included 5-pin captive screw blocks. Refer to Audio Routing (page 25) for more information.

Setting the IP Mode

The AT-UHD-CLSO-840 is shipped with DHCP enabled. Once connected to a network, the DHCP server (if available), will automatically assign an IP address to the unit. If no DHCP server is found or available, then the matrix will be set to the following IP settings:

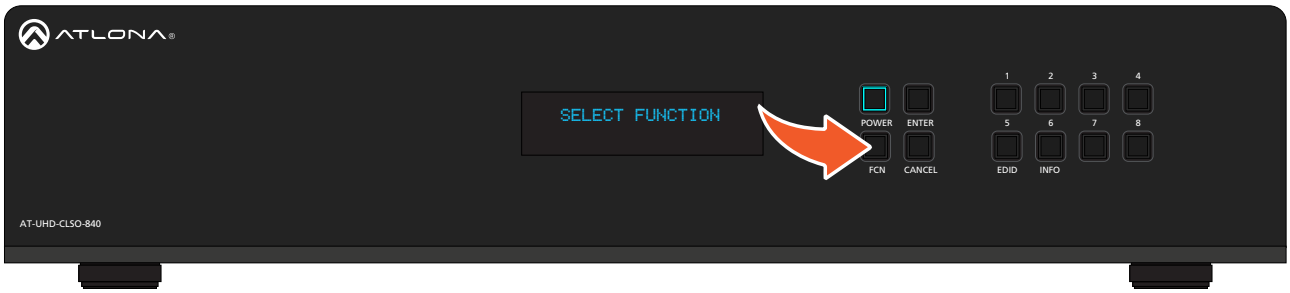
Default IP settings

Description	Setting
IP address	192.168.0.150
Netmask	255.255.255.0
Gateway	0.0.0.0

The front-panel display can be used to identify the IP address of the matrix. The AT-UHD-CLSO-840 can also be set to a static IP address, if necessary.

Using the Front Panel

1. Make sure the home screen is displayed. If the home screen is not displayed, press the **CANCEL** button to return to the home screen.
2. Press and release the **FNC** button to display the **SELECT FUNCTION** screen.



3. Press button **4** to display the IP mode screen.

```
1. IP DHCP
2. IP STATIC
```

4. Press button **2** to select IP Static mode. The matrix will display a prompt to confirm the selection.

```
IP STATIC ADDRESSING
ENTER TO CONFIRM
```

5. Press the **ENTER** button to confirm the selection. The matrix will reboot and will indicate that the IP change is taking place.

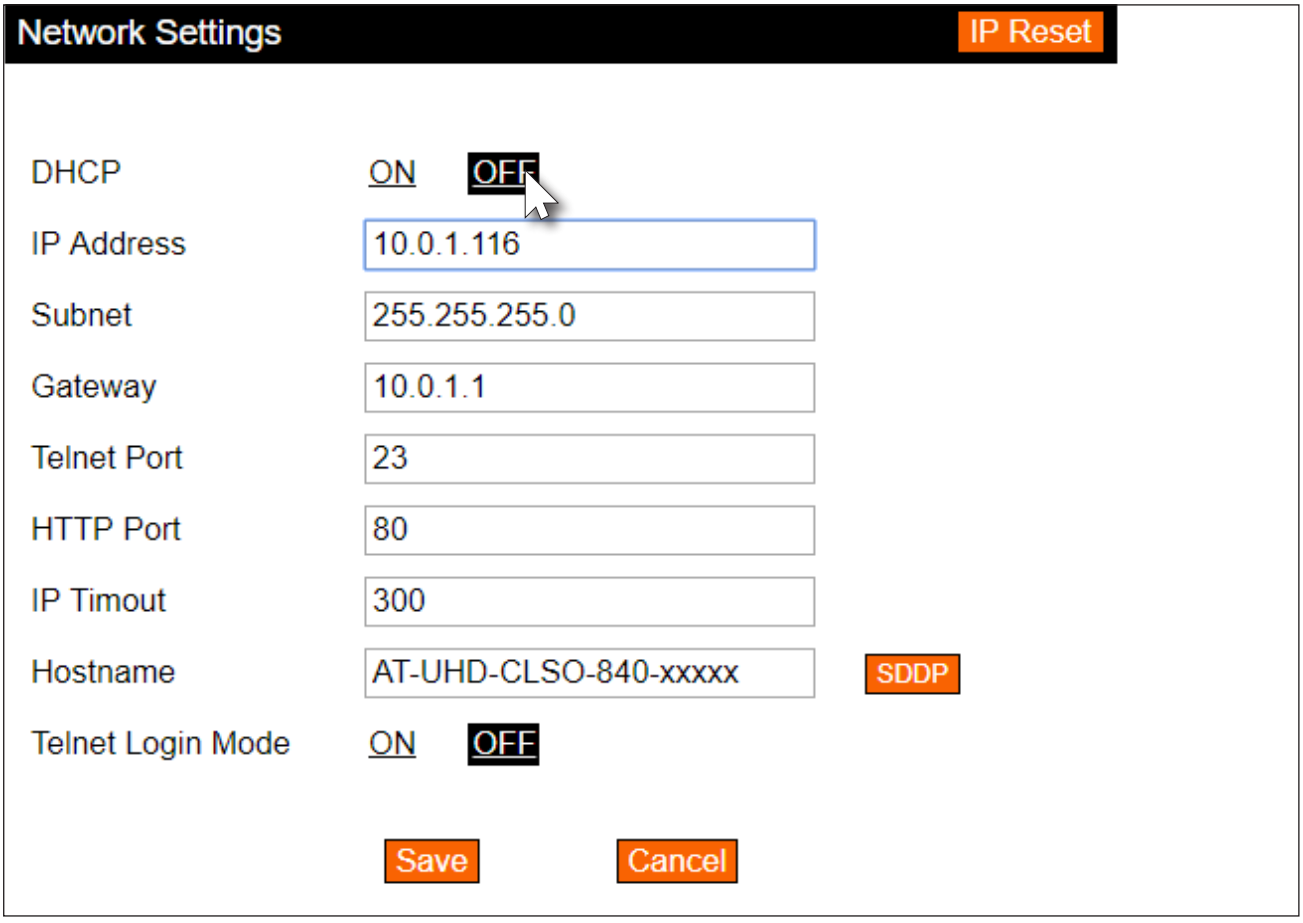
```
IP CHANGE TO STATIC
REBOOTING SYSTEM...
```

Once the matrix completes the reboot process, it will display the home screen. When the matrix is set to static IP mode, the default IP address of 192.168.1.254 is used.

To place the matrix in DHCP mode, repeat the above steps and press button **2** when the IP mode screen is displayed.

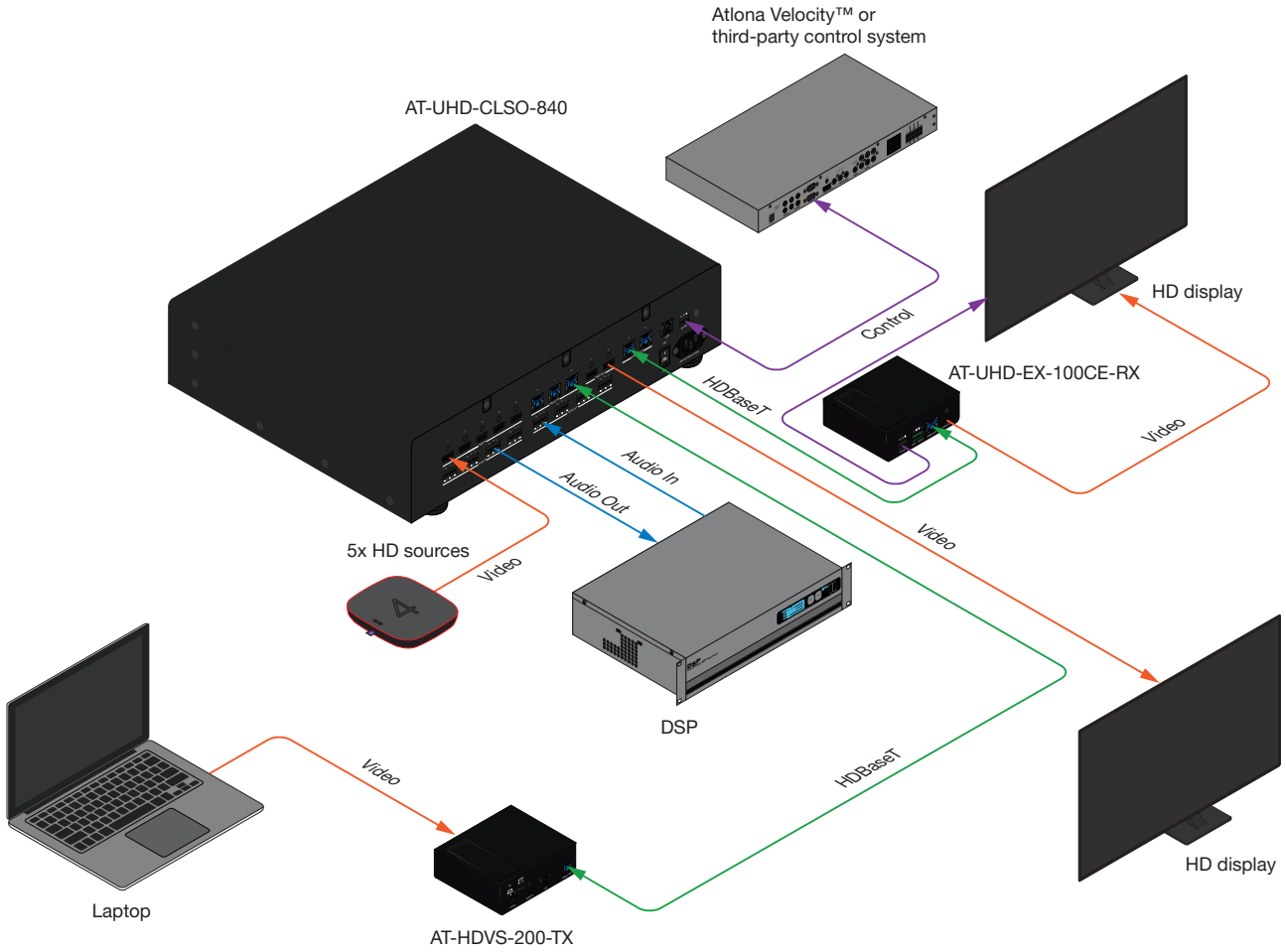
Using the web GUI

1. Login to the web GUI. Refer to Introduction to the Web GUI (page 55) for more information.
2. Click **Network**, under the **Settings** section in the menu bar on the left side of the screen.
   - Click **ON**, next to **DHCP**, to set the matrix to DHCP mode. If set to DHCP mode, the IP Address, Subnet, and Gateway fields will automatically be assigned by the DHCP server (if one exists). If no DHCP server can be found, the matrix will be assigned the static IP address of 192.168.0.150 with a subnet mask of 255.255.255.0.
   - Click **OFF** to set the matrix to static IP mode. When set to static IP mode, enter the required information in the **IP Address**, **Subnet**, and **Gateway** fields, as shown in the illustration below.



3. Click the **Save** button to commit changes.

Connection Diagram

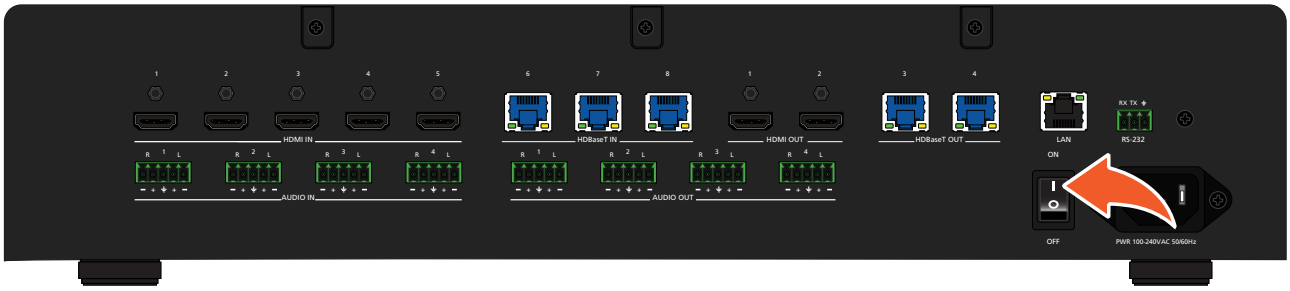


Basic Operation

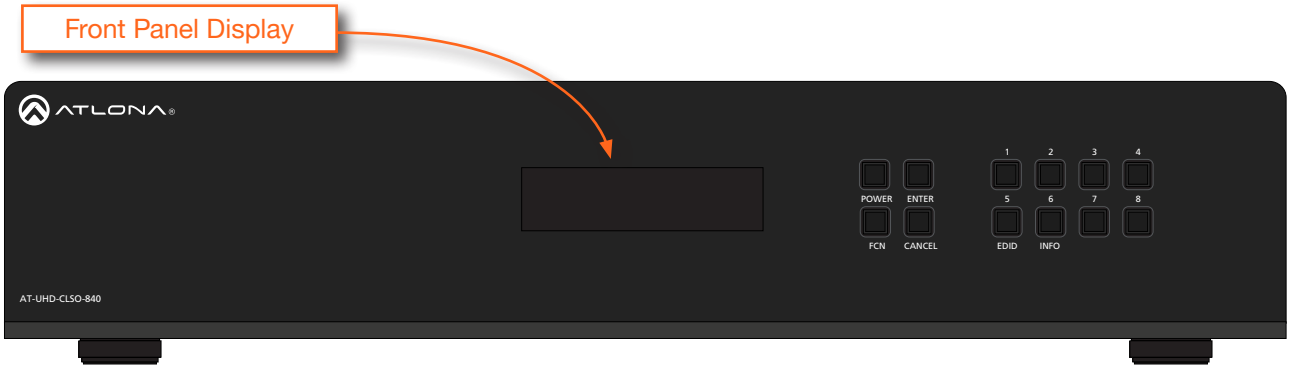
Powering the Matrix

The master power button is located on the rear panel of the matrix. This rocker switch allows power to be applied to the matrix.

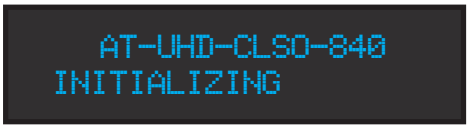
1. Press the **ON/OFF** button so that it is in the **ON** position. To power-off the matrix, push the button to the **OFF** position. When the matrix is powered, the **POWER** button, on the front panel, will be backlit with a solid blue light.



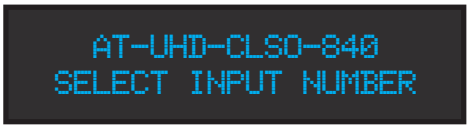
NOTE: If the matrix does not power, check to make sure that the power cable, on the rear of the unit, is connected to an active AC wall outlet. Also verify that the **ON/OFF** switch is in the **ON** position.



2. The front panel display will indicate that the matrix is initializing. After a few moments the home screen will be displayed.

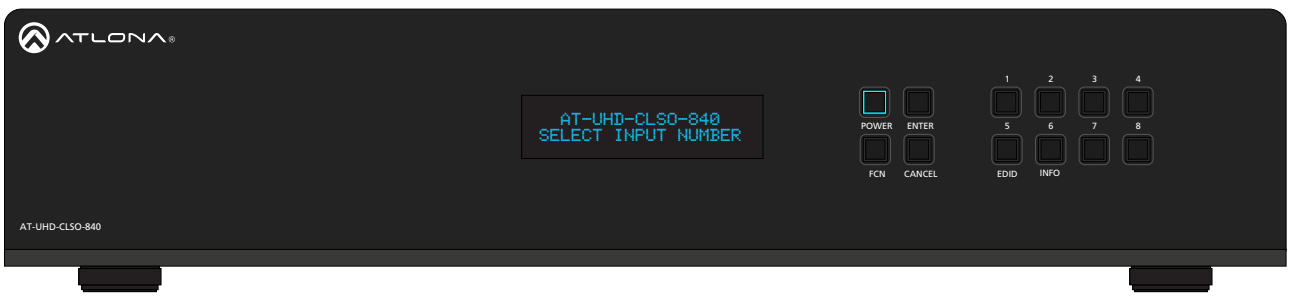


Initialization Screen



Home Screen

3. The matrix is now ready for operation.



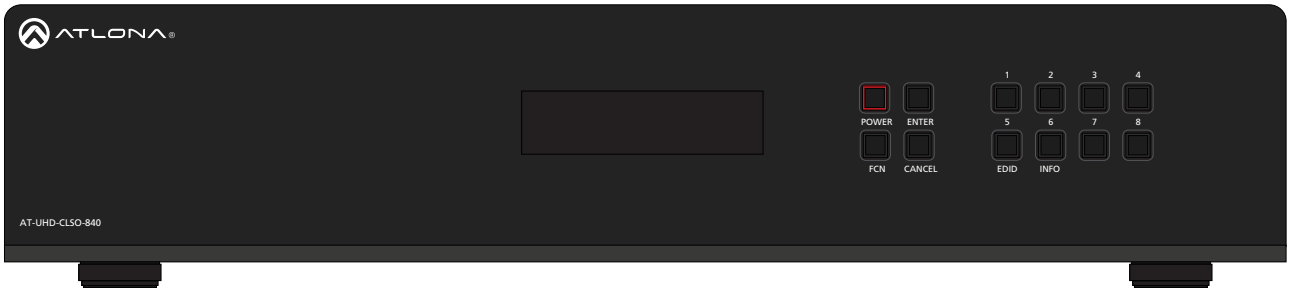
Standby Mode

The **POWER** button on the front panel of the matrix, allows the matrix to be powered-on or placed in standby mode.

1. Locate the **POWER** button on the front panel. When the matrix is in normal operating mode, the **POWER** button will be backlit by a solid blue light. In this mode, operations using the front panel buttons, web GUI, or through API commands can be performed.
2. Press the **POWER** button, on the front panel to place the matrix in standby mode.

The matrix will power-down and be placed in a low-power state and the **POWER** button will be backlit by a solid red light.

When the matrix is in standby mode, operations using the front-panel buttons are suspended. However, access to the matrix, through the web GUI or API commands is still available.



3. Press the **POWER** button again, to power-on the matrix and return to normal operating mode.

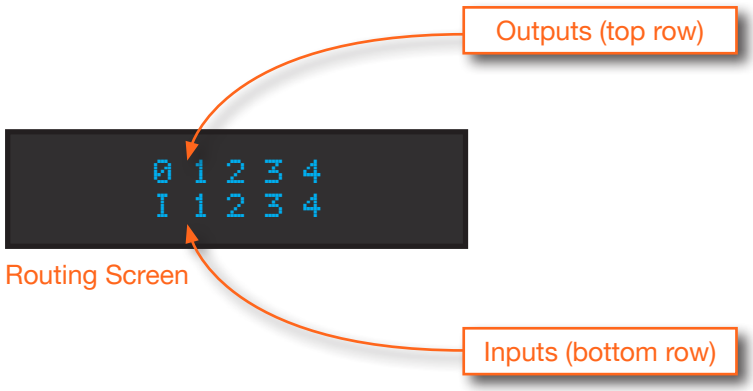
Viewing Matrix Settings

The front panel display provides the current status of the matrix and its settings. The buttons on the front panel can be used to display the current routing settings as well as network settings.

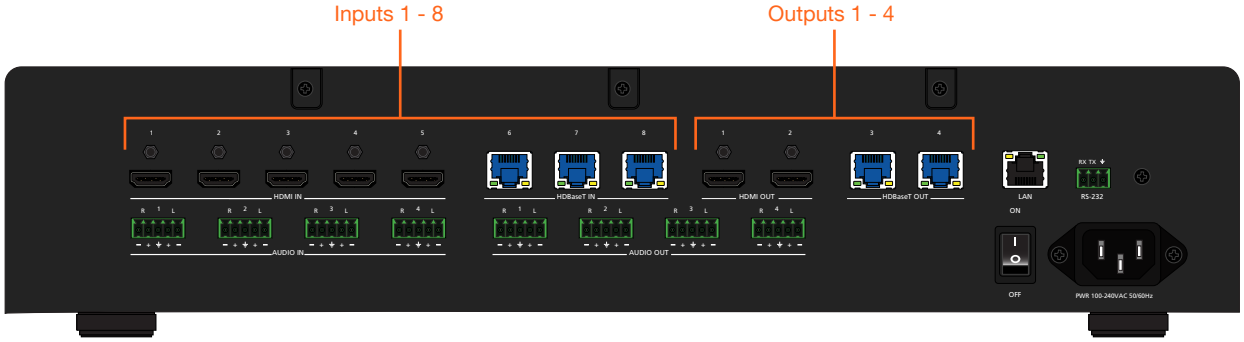
Viewing the current routing state

1. Make sure the home screen is displayed. If the home screen is not displayed, press the **CANCEL** button to return to the home screen.
2. Press the **ENTER** button to display the routing screen.

By default, the AT-UHD-CLSO-840 is set to a “one-to-one” routing state. This means that each input is routed to its associated output: 1-to-1, 2-to-2, etc., as shown below. The matrix features five HDMI and three HDBaseT inputs. There are two HDMI and two HDBaseT outputs.



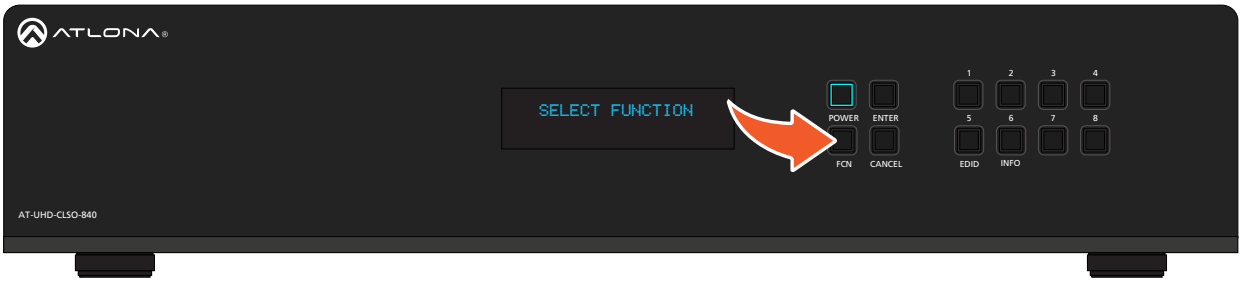
The AT-UHD-CLSO-840 features five HDMI inputs and three HDBaseT inputs. In addition, there are two HDMI outputs and two HDBaseT outputs.



3. Press the **CANCEL** button to return to the home screen. If the **CANCEL** button is not pressed within 10 seconds, then the matrix will automatically return to the home screen.

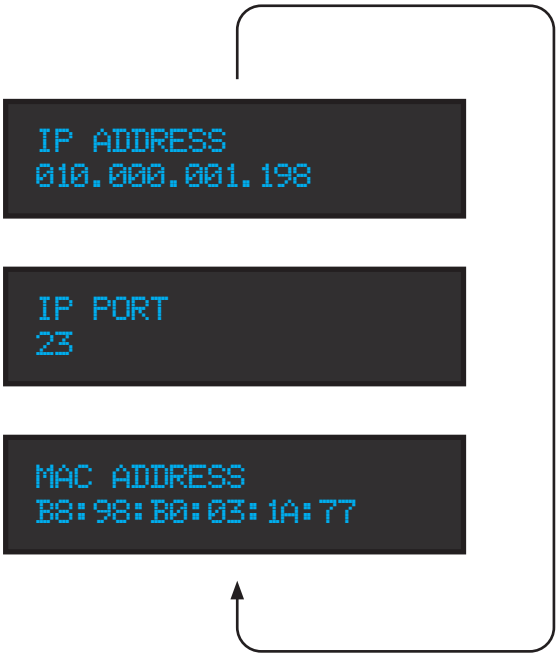
Displaying the System Settings

1. Make sure the home screen is displayed. If the home screen is not displayed, press the **CANCEL** button to return to the home screen.
2. Press and release the **FNC** button to display the **SELECT FUNCTION** screen.



3. Press and release the **INFO** button to display the firmware version.

4. Consecutively press the **INFO** button to cycle through each of the following screens:



5. Press the **CANCEL** button to return to the home screen. If the **CANCEL** button is not pressed within 10 seconds, then the matrix will automatically return to the home screen.

Routing Inputs to Outputs

When the AT-UHD-CLSO-840 is shipped from the factory, the matrix is set to “one-to-one” routing mode. This means that input 1 is routed to output 1, input 2 is routed to output 2, and so on. The following section describes how to change the routing state. When changing the routing state, the input is specified first, then the output.

The AT-UHD-CLSO-840 can route individual inputs to outputs or can route a single input to all outputs, simultaneously.

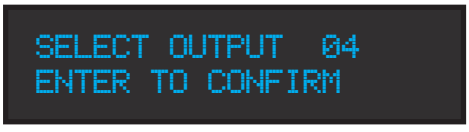
Single Input-to-Output Routing

Using the Front Panel

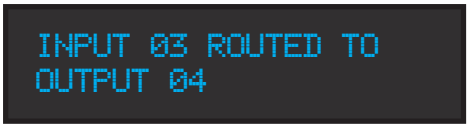
1. Make sure the home screen is displayed. If the home screen is not displayed, press the **CANCEL** button to return to the home screen.
2. Press and release the desired input from the bank of numerical buttons on the front panel. In this example, **HDMI IN 3** will be selected by pressing button **3**.

3. Press the **ENTER** button to confirm the selected input. If a different input is desired, press the **CANCEL** button to return to the home screen, then press the button of the desired input.

4. Press the button for the desired output. If a different output is desired, press the **CANCEL** button to return to the home screen, then press the button of the desired output. In this example, **HDBaseT OUT 4** will be selected by pressing button **4**.



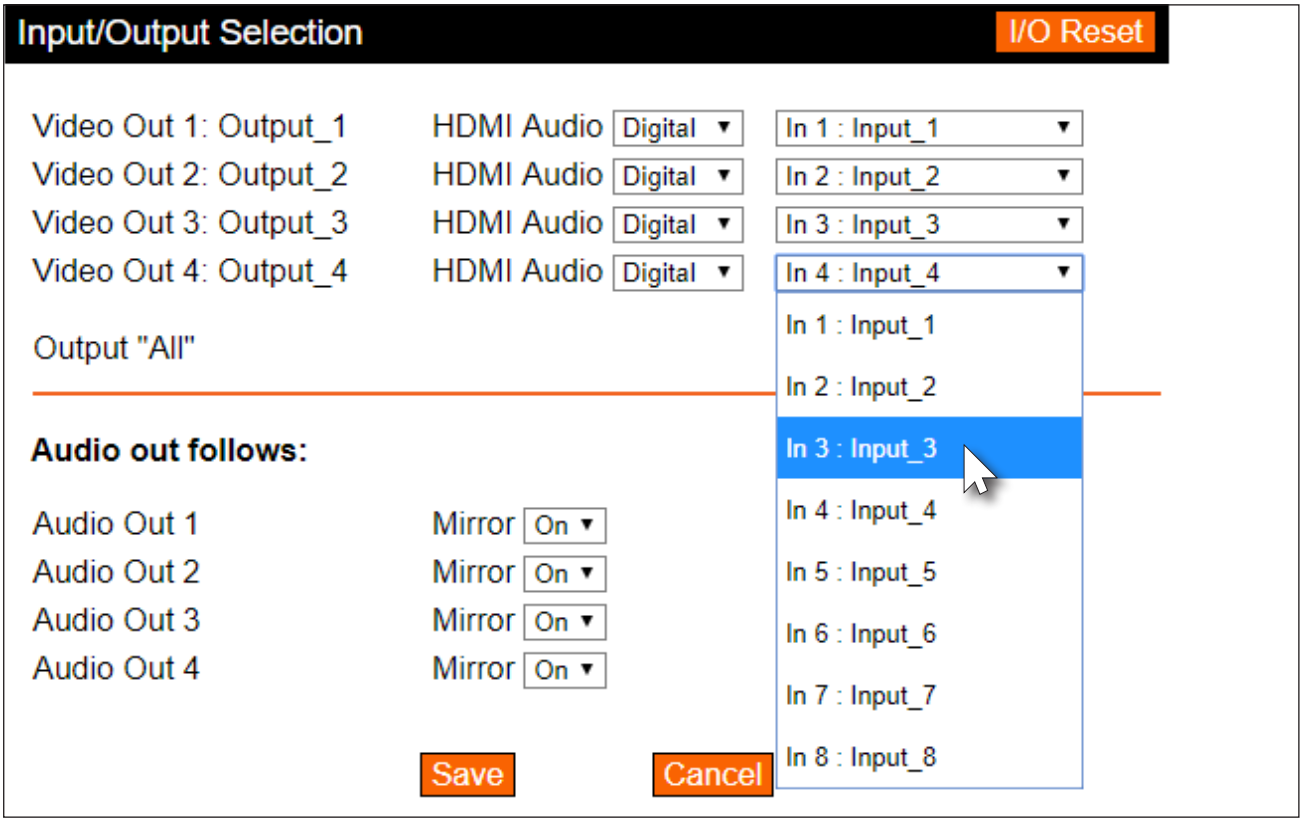
5. Press the **ENTER** button to complete the routing process. The front panel display will confirm the current routing selection.



Using the web GUI

As in the previous example, **HDMI IN 3** will be routed to **HDBaseT OUT 4**.

1. Login to the web GUI. Refer to Introduction to the Web GUI (page 55) for more information.
2. Click **I/O**, under the **Configuration** section, in the menu bar on the left side of the screen.
3. Under the **Input/Output Selection** section, locate the desired output where the input will be routed.
4. In the row labeled **Video Out: Output_4**, click the drop-down list to the far right, and select **In 3 : Input_3**.



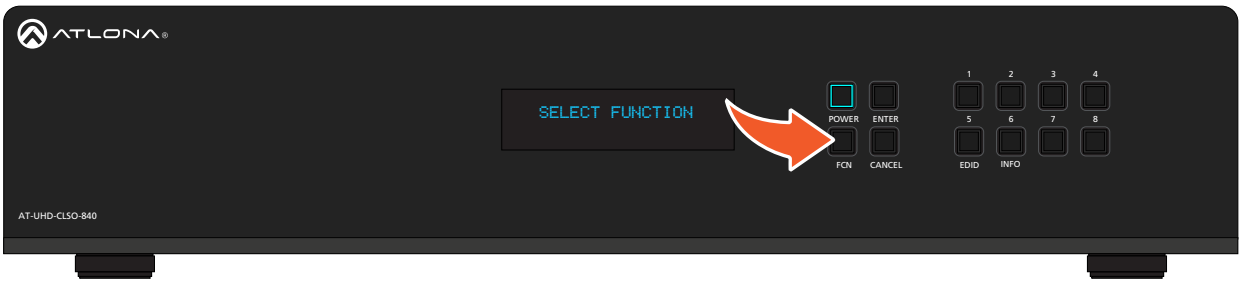
5. Click the **Save** button to commit changes. **HDMI IN 3** is now routed to **HDBaseT OUT 4**.

Routing a Single Input to All Outputs

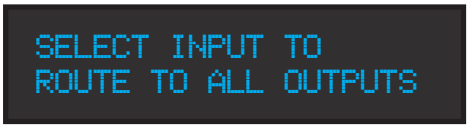
Using the Front Panel

This procedure will route a single input to all eight outputs.

1. Make sure the home screen is displayed. If the home screen is not displayed, press the **CANCEL** button to return to the home screen.
2. Press and release the **FNC** button to display the Select Function screen.



3. Press button **1** to execute the Route To All Outputs function.

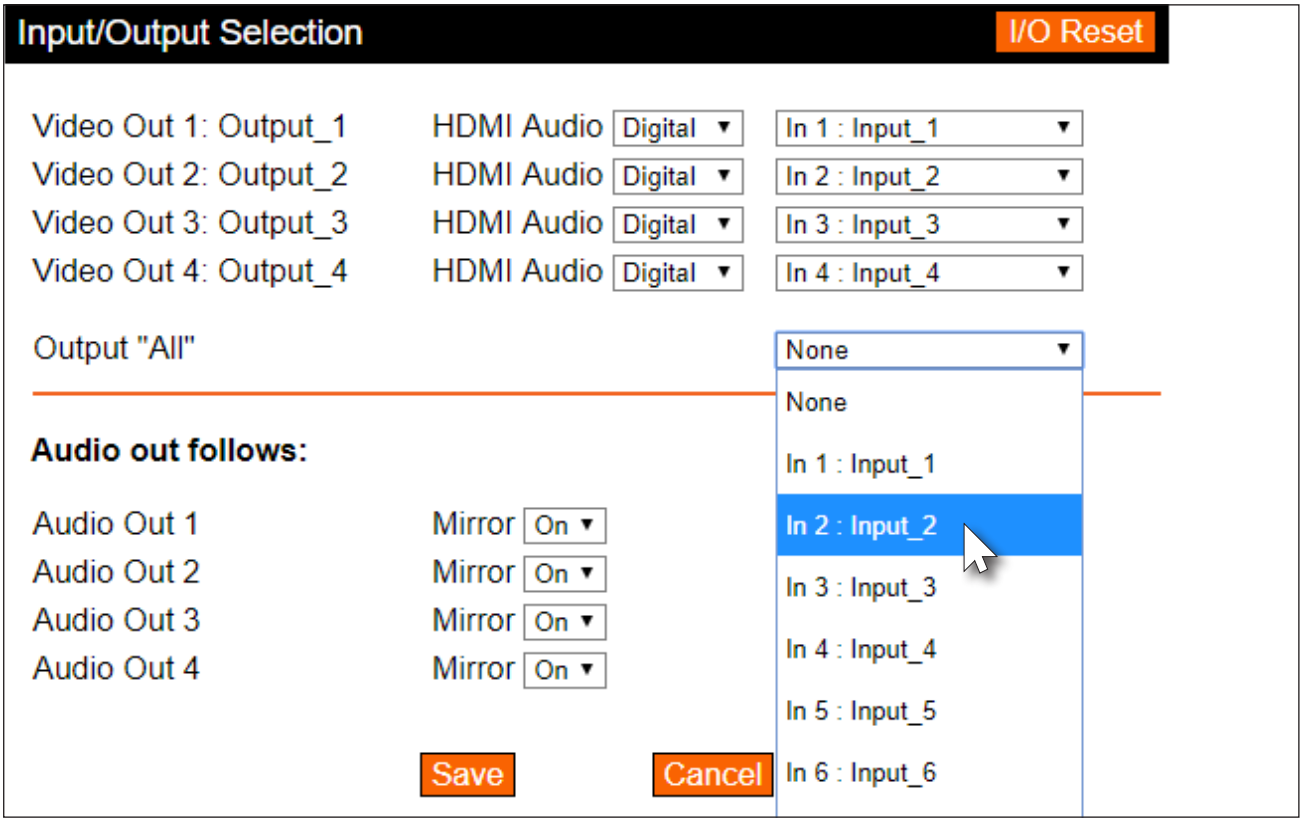


4. Press the button for the desired input. In this example, **HDMI IN 2** is selected by pressing button **2**. The front panel display will confirm the current routing selection.

Using the web GUI

As in the previous example, **HDMI IN 2** will be routed to all outputs.

1. Login to the web GUI. Refer to Introduction to the Web GUI (page 55) for more information.
2. Click **I/O**, under the **Configuration** section, in the menu bar on the left side of the screen.
3. Under the **Input/Output Selection** section, click the **Output "All"** drop-down list and select the input to be routed. In this example, **HDMI IN 2** will be selected.

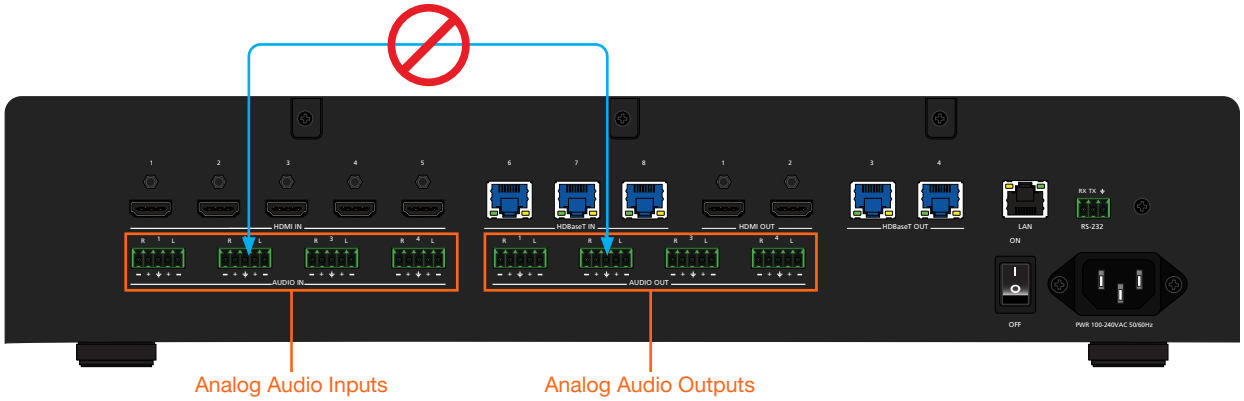


4. Click the **Save** button to commit changes. **HDMI IN 2** is now routed to all outputs.

Audio Routing

The AT-UHD-CLSO-840 provides various options for embedding, de-embedding, and routing audio. Audio routing is managed through the web GUI or using API commands. The following section provides details on each option.

IMPORTANT: Direct routing between **AUDIO IN** and **AUDIO OUT** ports is not supported, as shown below.



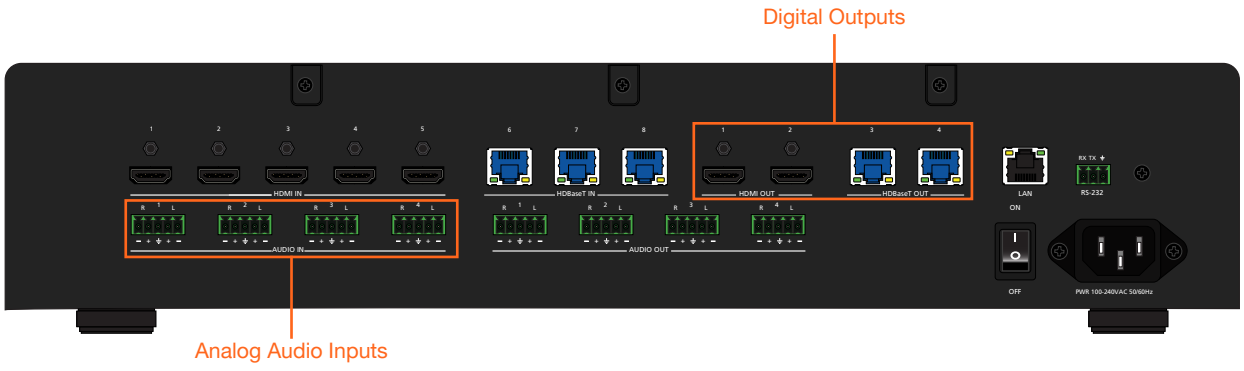
Default Audio Routing

The factory-default setting for audio routing is shown in the table below.

Input		Output
HDMI IN 1	→	HDMI OUT 1
HDMI IN 2	→	HDMI OUT 2
HDMI IN 3	→	HDBaseT OUT 3
HDMI IN 4	→	HDBaseT OUT 4

Analog Audio Inputs to Digital Outputs

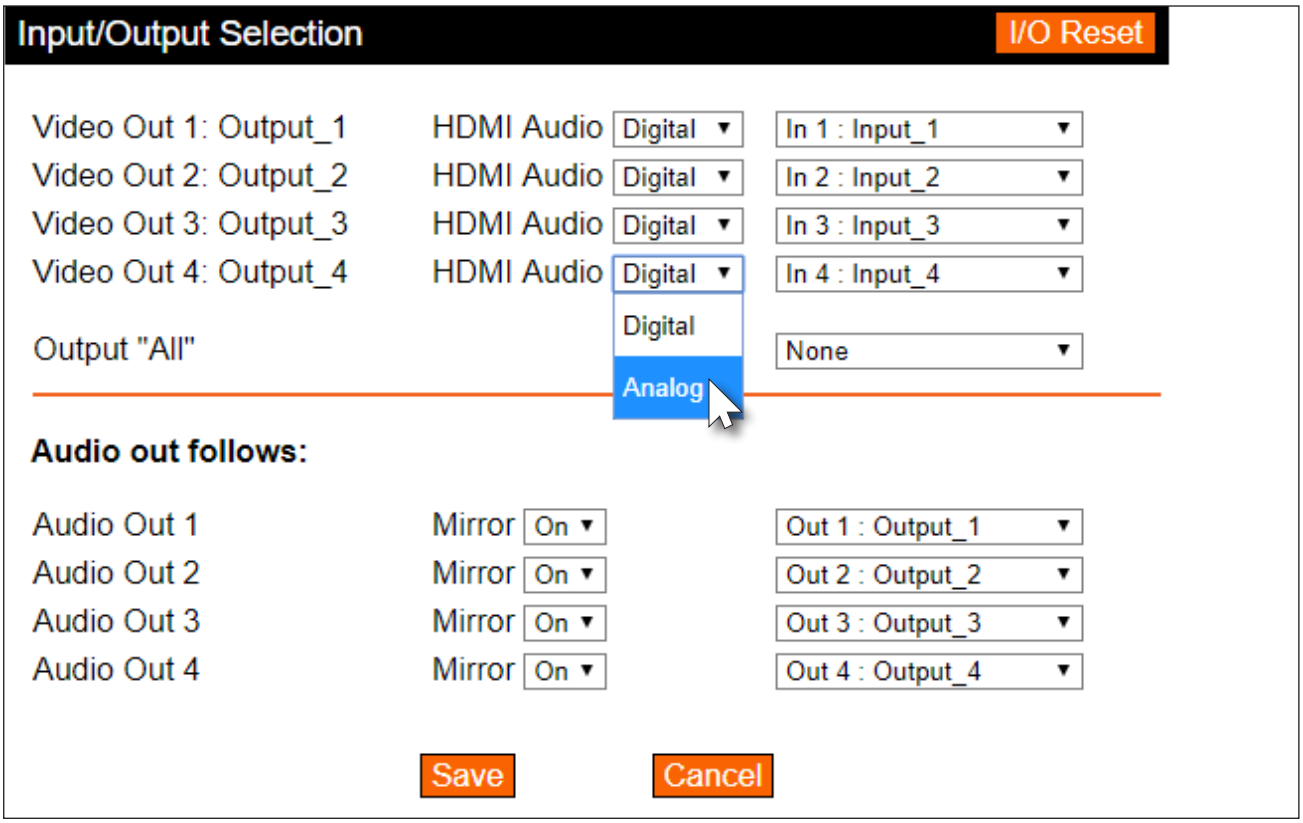
Analog audio on **AUDIO IN 1 - 4** can be embedded on the digital outputs (**HDMI OUT 1 - 2**, **HDBaseT 3 - 4**), respectively. Note that the routing for each analog audio input is fixed and cannot be changed, as shown in the table on the next page.



Routing table for analog audio inputs to digital outputs.

Input		Output
AUDIO IN 1	→	HDMI OUT 1
AUDIO IN 2	→	HDMI OUT 2
AUDIO IN 3	→	HDBaseT OUT 3
AUDIO IN 4	→	HDBaseT OUT 4

1. Login to the web GUI. Refer to Introduction to the Web GUI (page 55) for more information.
2. Click **I/O**, under the **Configuration** section, in the menu bar on the left side of the screen.
3. Under the **Input/Output Selection** section, locate the desired output which will receive the analog audio source. In this example, the analog audio connected to **AUDIO IN 4,** will be configured to replace the digital audio on **HDBaseT OUT 4**.
4. Click the **HDMI Audio** drop-down list and select **Analog**.

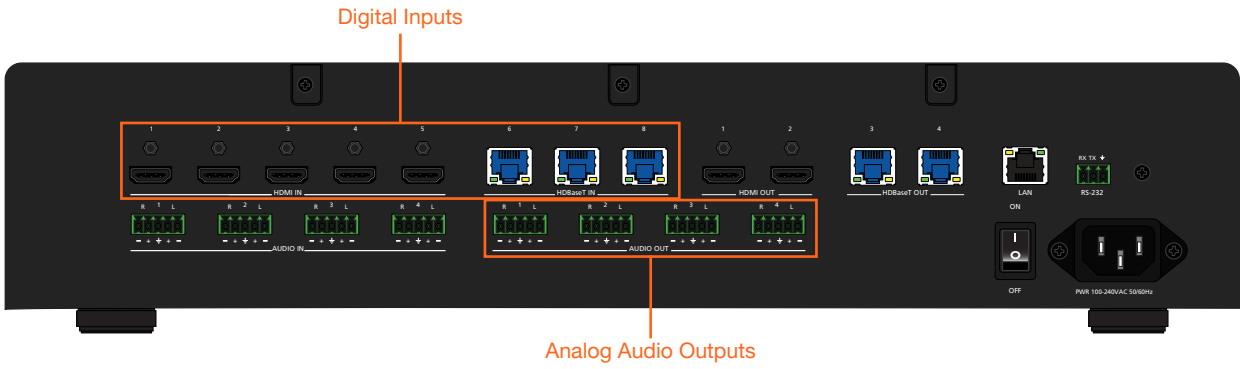


5. Click the **Save** button to commit changes. To switch back to the HDMI audio source, select **Digital** from the **HDMI Audio** drop-down list.

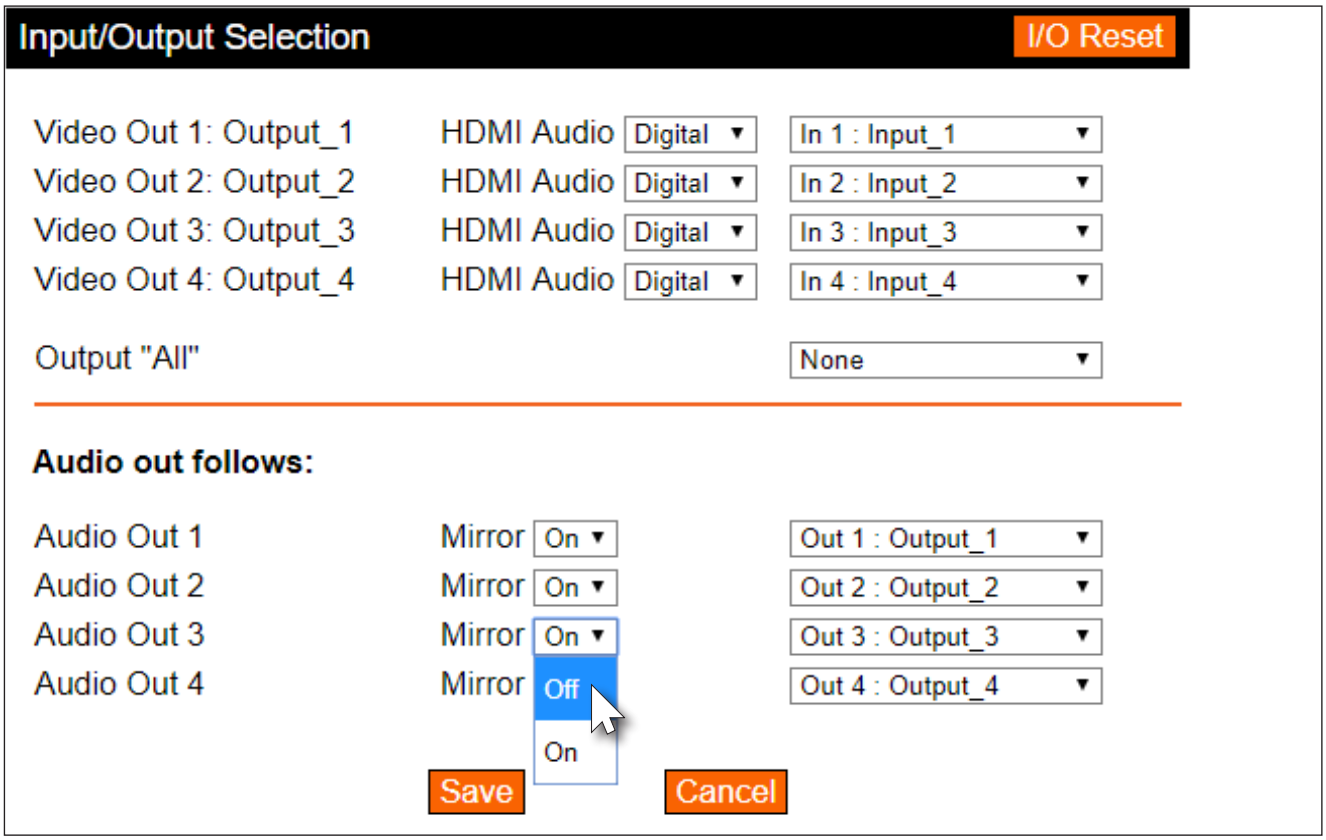
Digital Inputs to Analog Audio Outputs

Audio can be de-embedded from the digital inputs (**HDMI IN 1 - 5**, **HDBaseT 6 - 8**) and routed to any one of the analog audio outputs (**AUDIO OUT 1 - 4**). Source audio is automatically down-mixed to two-channel audio.

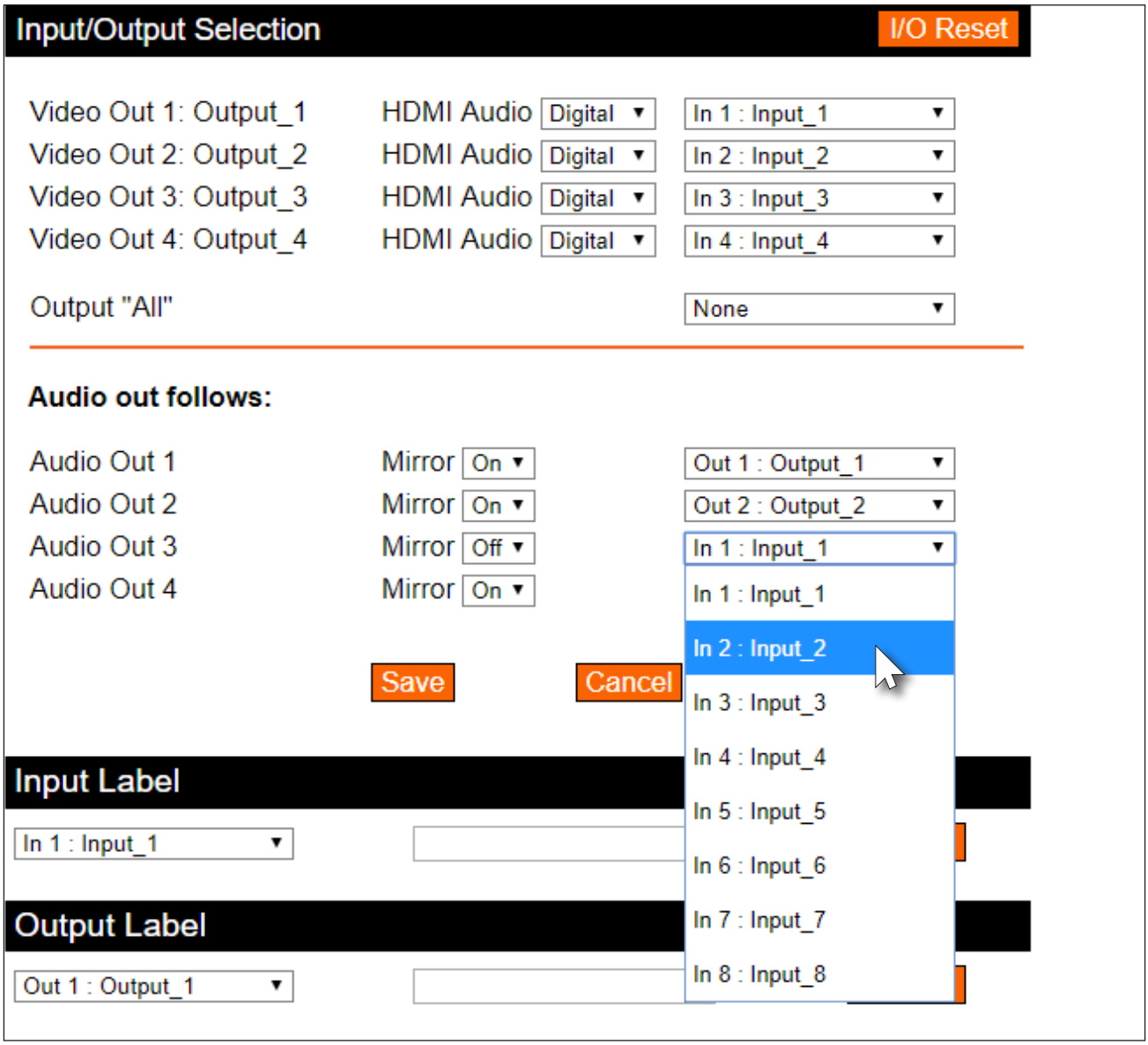
NOTE: Only LPCM audio can be down-mixed to two-channel audio. Bitstream audio formats, such as Dolby® Digital or DTS® are not supported.



1. Login to the web GUI. Refer to Introduction to the Web GUI (page 55) for more information.
2. Click **I/O**, under the **Configuration** section, in the menu bar on the left side of the screen.
3. Locate the desired output under the **Audio out follows** section. In this example, digital audio from **HDMI IN 2** will be routed to **AUDIO OUT 3**.
4. Click the **Mirror** drop-down list for **Audio Out 3**, and select **Off**. Once mirroring is disabled, the drop-down list to the right will display the available inputs.



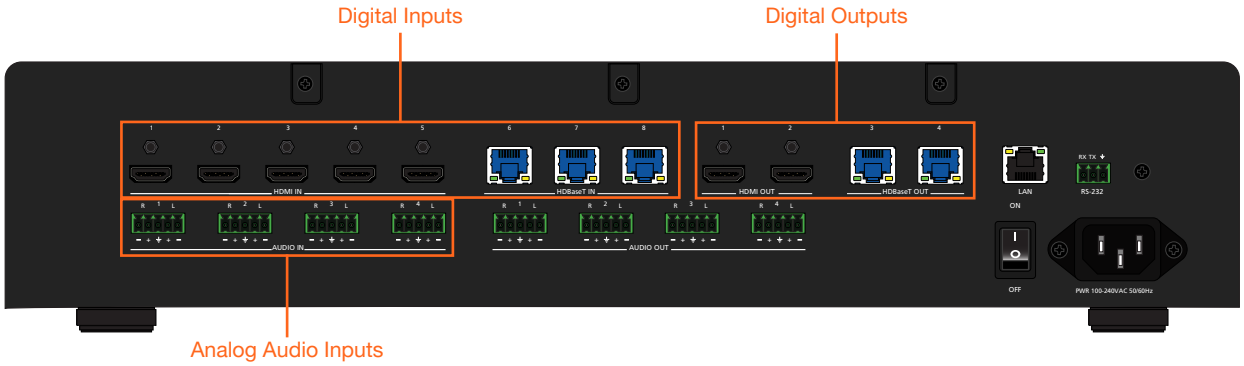
5. Click the drop-down list, to the right of the **Mirror** drop-down list, and select **In 2: Input 2**.



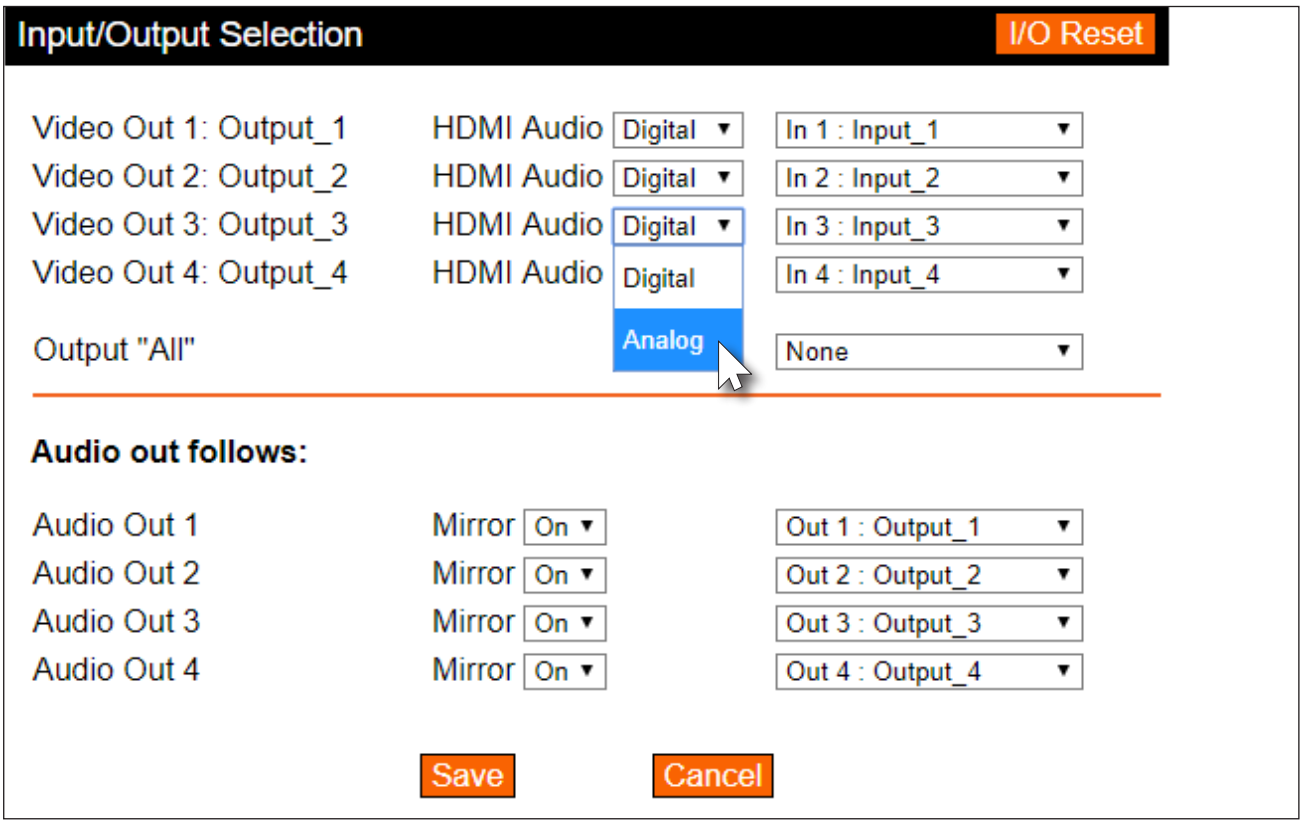
6. Click the **Save** button to commit changes. Digital audio from **HDMI IN 2** is now down-mixed to two-channel audio and output to **AUDIO OUT 3**.

Analog or Digital Audio to Digital Outputs

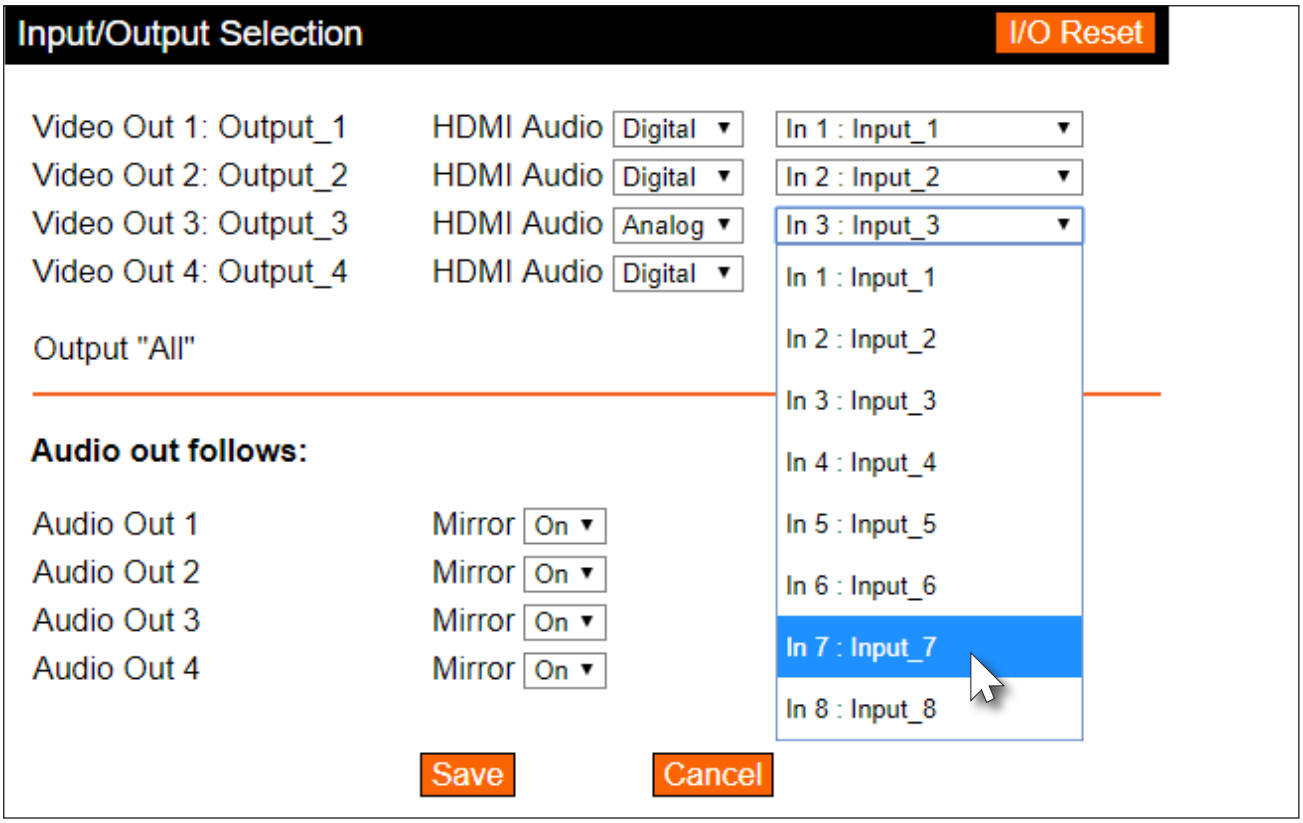
Audio from digital inputs (**HDMI IN 1 - 5**, **HDBaseT 6 - 8**) or analog inputs (**AUDIO IN 1 - 4**) can be routed to any of the digital outputs (**HDMI IN 1 - 2**, **HDBaseT 3 - 4**). In addition, any one of the analog audio inputs can be used to replace the digital audio from the source, if desired. The resulting audio operation is routed to the desired digital output.



1. Login to the web GUI. Refer to Introduction to the Web GUI (page 55) for more information.
2. Click **I/O**, under the **Configuration** section, in the menu bar on the left side of the screen.
3. Under the **Input/Output Selection** section, locate the desired output which will receive the A/V signal. In this example, a separate analog audio source on **AUDIO IN 1**, will replace the digital audio on the **HDBaseT IN 7** port. The resulting audio operation will be routed to **HDBaseT OUT 3**.
4. Click the **HDMI Audio** drop-down list, next to **Video Out 3: Output_3**, and select **Analog**.



5. Click the drop-down list, directly to the right, and select **In 7: Input_7**. This will select the **HDBaseT In 7** port.



6. Click the **Save** button to commit changes. The analog audio source on **AUDIO IN 1** will now replace the digital audio on the **HDBaseT IN 7** port, and the result will be output on **HDBaseT OUT 3**.

Audio Mirroring

Audio *mirroring* can be enabled or disabled:

- When enabled, the audio from the source that is being viewed, can be routed to a specified **AUDIO OUT** port. This allows the audio to be processed by a DSP or other audio output device.
- When disabled, audio from any of the input ports (**HDMI IN 1 - HDMI IN 5**, **HDBaseT IN 6 - HDBaseT IN 8**) ports can be routed to a specified **AUDIO OUT** port.

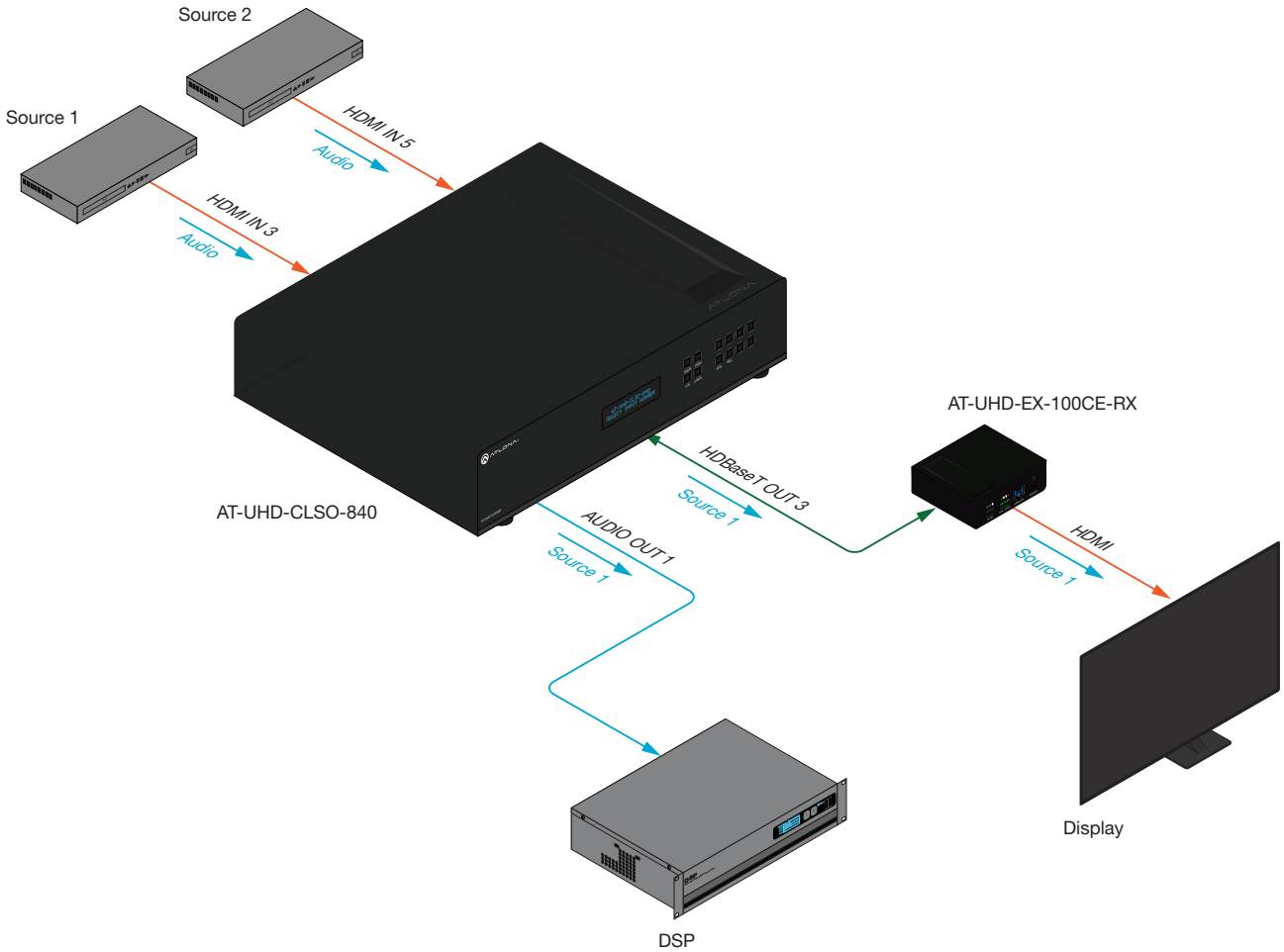
NOTE: Audio mirroring only supports LPCM audio. Bitstream audio formats, such as Dolby® Digital or DTS® are not supported.

Enabling Audio Mirroring

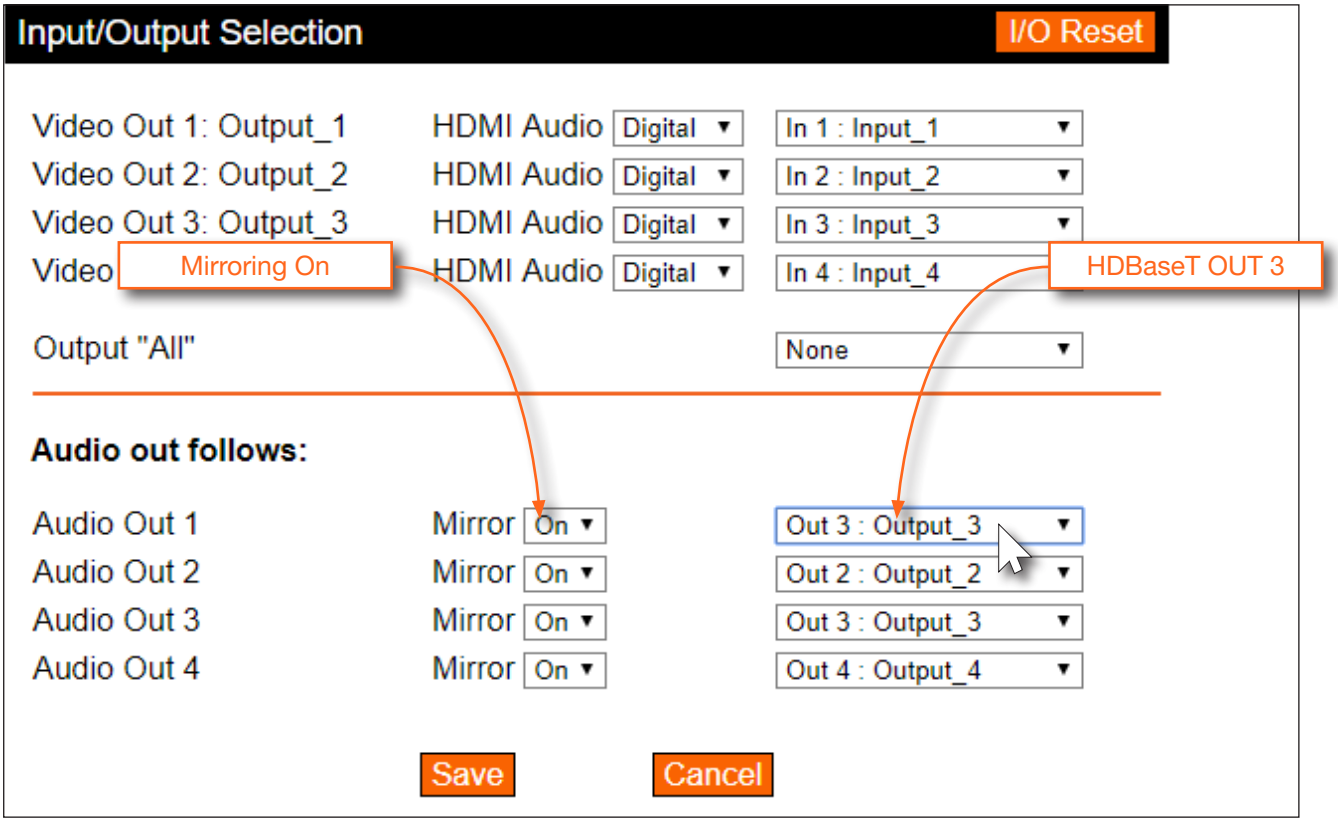
In the diagram below, audio mirroring has been enabled. Note that the embedded HDMI audio from Source 1 is being sent to both the DSP (connected to the **AUDIO OUT 1** port) and the Display (connected to the **HDBaseT OUT 3** port using the AT-UHD-EX-100CE-RX receiver). The blue arrows denote only the audio path.

The instructions on the next page provide the necessary steps to duplicate this setup.

Diagram showing audio mirroring



1. Login to the web GUI. Refer to Introduction to the Web GUI (page 55) for more information.
2. Click **I/O**, under the **Configuration** section, in the menu bar on the left side of the screen.
3. Locate the desired output under the **Audio out follows** section. As shown in the diagram on the previous page, the audio from **HDBaseT OUT 3** is mirrored to the **AUDIO OUT 1** port.
4. Click the **Mirror** drop-down list for **Audio Out 1**, and select **On**.
5. Select **Out 3 : Output_3** from the drop-down list for **Audio Out 1**. This instructs the matrix to mirror the audio on **HDBaseT OUT 3** to the **AUDIO OUT 1** port.



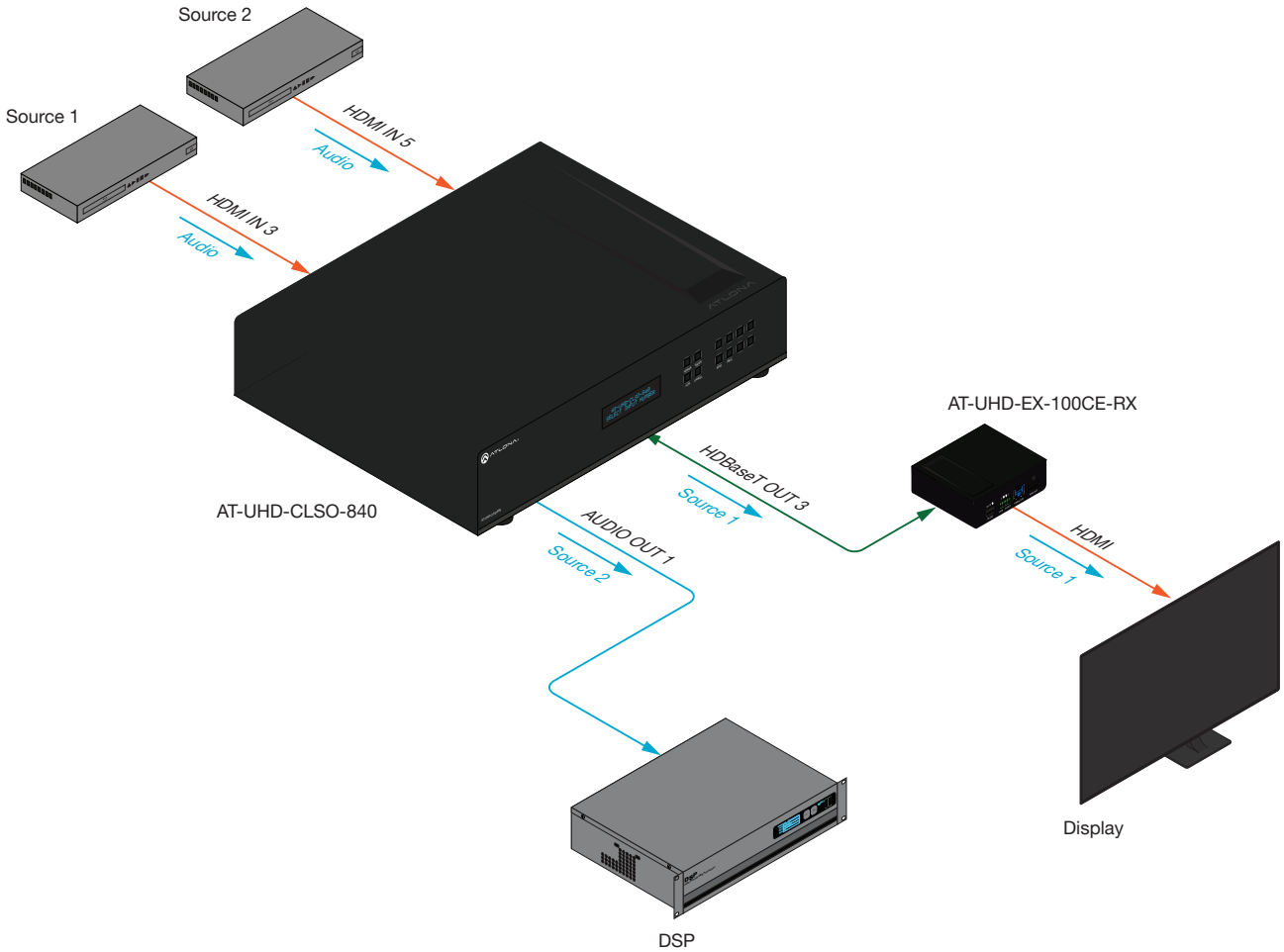
Disabling Audio Mirroring

When mirroring is disabled, the audio on an **AUDIO OUT** port can be selected from any of eight inputs.

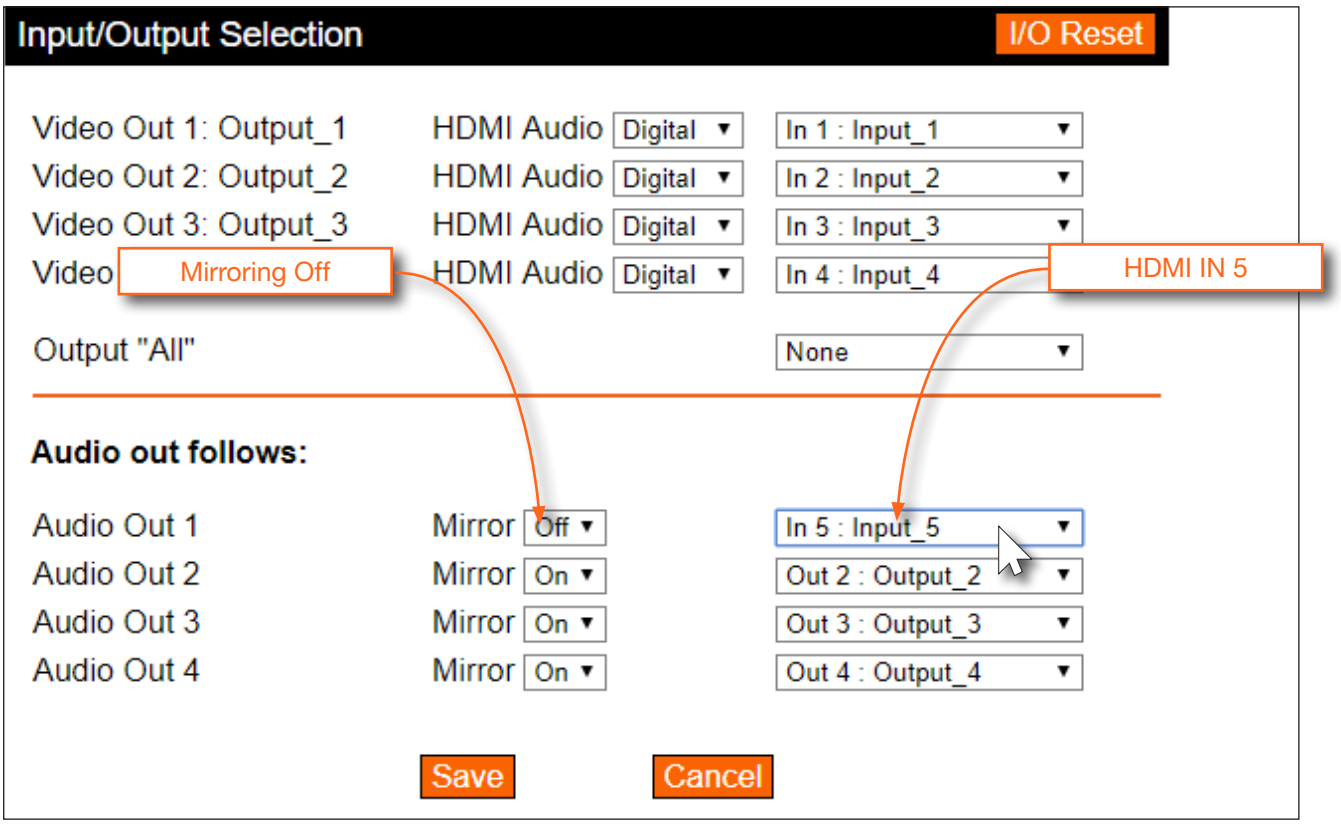
In the example below, audio mirroring has been disabled, allowing the audio from a different source (Source 2 connected to **HDMI IN 5**) to be routed to the DSP (**AUDIO OUT 1**). In this way, the Display (connected to **HDBaseT OUT 3** using the AT-UHD-EX-100CE**)** can continue to receive both audio and video from Source 1. Configurations such as this are useful for classrooms and lecture halls.

The instructions on the next page provide the necessary steps to duplicate this setup.

Diagram showing audio mirroring disabled.



1. Login to the web GUI. Refer to Introduction to the Web GUI (page 55) for more information.
2. Click **I/O**, under the **Configuration** section, in the menu bar on the left side of the screen.
3. Locate the desired output under the **Audio out follows** section. In this example, the audio from **HDMI IN 5** is output on the **AUDIO OUT 1** port. The audio can then be sent to a separate DSP or other audio output device.
4. Click the **Mirror** drop-down list for **Audio Out 1**, and select **Off**. Performing this operation allows **AUDIO OUT 1** to receive audio from a different input.
5. Select **In 5 : Input_5** from the drop-down list for **Audio Out 1**.

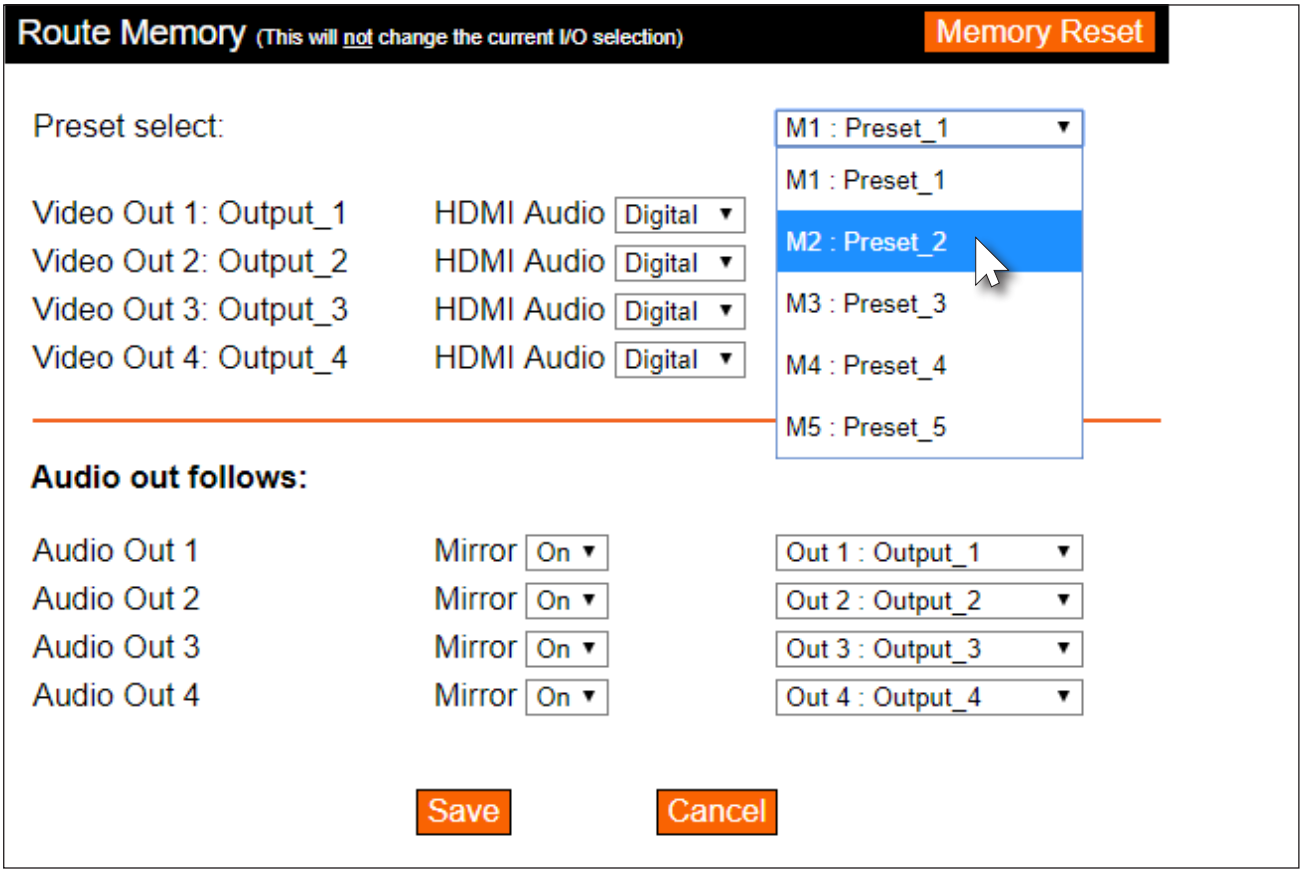


Creating and Editing Routing Presets

Using presets provides a quick and efficient way of switching between multiple routing configurations. The AT-UHD-CLSO-840 provides five memory locations that can be used to store each preset. The following section covers creating, editing, and using routing presents.

Creating a Routing Preset

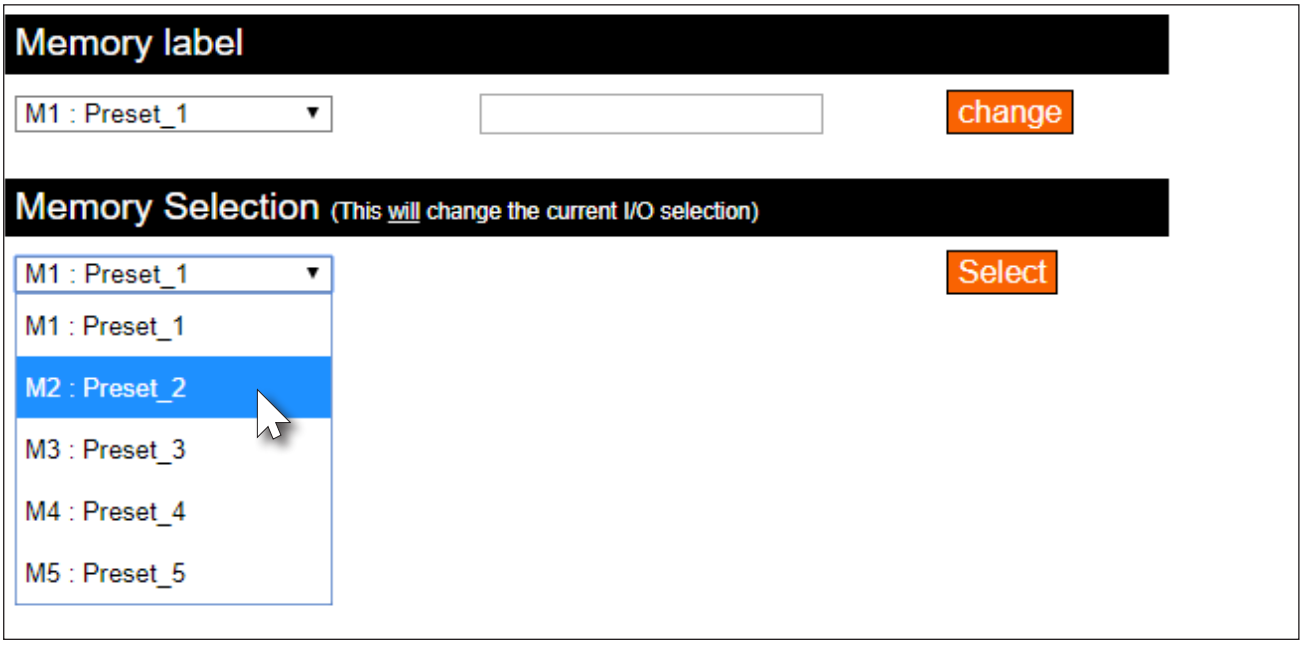
1. Login to the web GUI. Refer to Introduction to the Web GUI (page 55) for more information.
2. Click **Route Memory**, under the **Configuration** section, in the menu bar on the left side of the screen.
3. Create the desired routing state(s). Video and audio routing is similar to the **I/O** screen. Refer to Routing Inputs to Outputs (page 21) and Audio Routing (page 25) more information.
4. Click the **Preset select** drop-down list and select the desired memory preset location. In this example below, **Preset_2** will be used to store the current routing state.



5. Click the **Save** button to commit changes.

Recalling a Preset

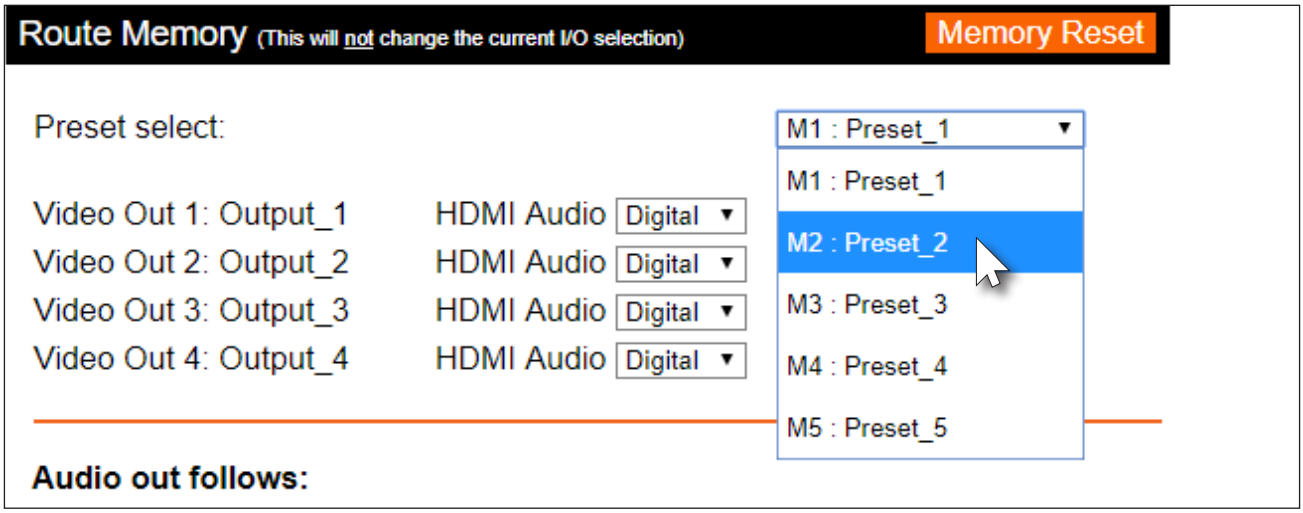
1. Login to the web GUI. Refer to Introduction to the Web GUI (page 55) for more information.
2. Click **Route Memory**, under the **Configuration** section, in the menu bar on the left side of the screen.
3. Click the drop-down list under **Memory Selection** and select the desired preset. In this example, **M2 : Preset_2** is being selected.



4. Click the **Select** button to invoke the selected routing state.

Editing Presets

1. Login to the web GUI. Refer to Introduction to the Web GUI (page 55) for more information.
2. Click **Route Memory**, under the **Configuration** section, in the menu bar on the left side of the screen.
3. Select the desired preset from the **Preset Select** drop-down list.

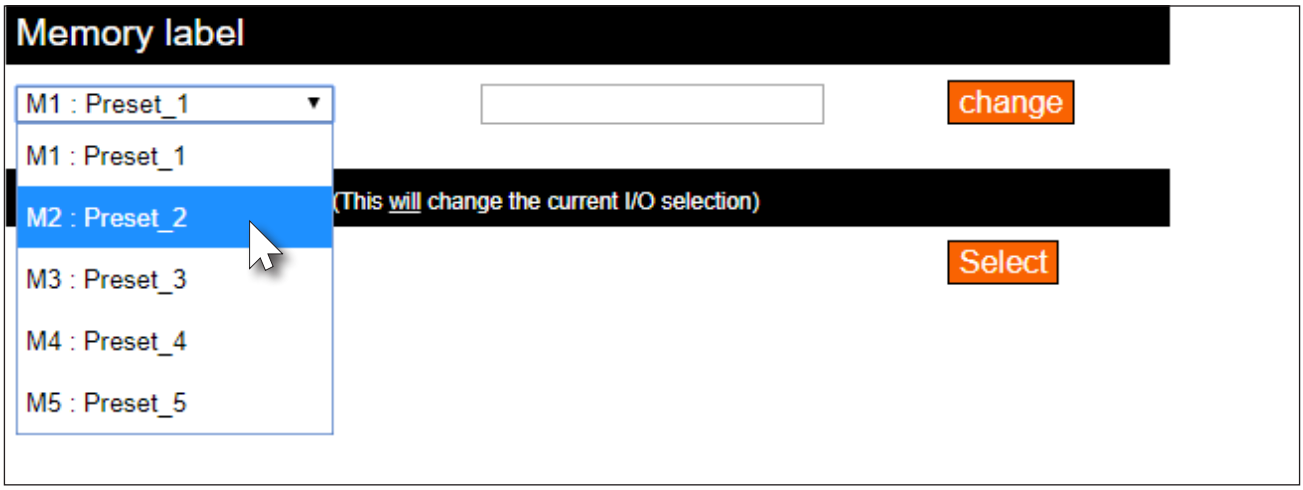


4. Make the desired routing changes to the selected preset. For more information on how to modify routing states, refer to Routing Inputs to Outputs (page 21) and Audio Routing (page 25).
5. Click the **Save** button to commit changes.

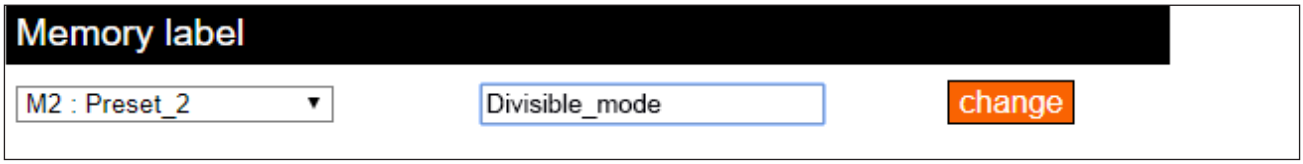
Renaming Presets

By default, each of the five memory locations used for routing presets are **M1 : Preset_1**, **M2 : Preset_2**, and so on. When dealing with multiple presets, it is helpful to use more descriptive names for easy identification.

1. Login to the web GUI. Refer to Introduction to the Web GUI (page 55) for more information.
2. Click **Route Memory**, under the **Configuration** section, in the menu bar on the left side of the screen.
3. Select the desired preset from the **Memory label** drop-down list.



4. Enter the name of the preset in the **Memory label** text field, as shown in the example below.
5. Click the **change** button to commit the change.



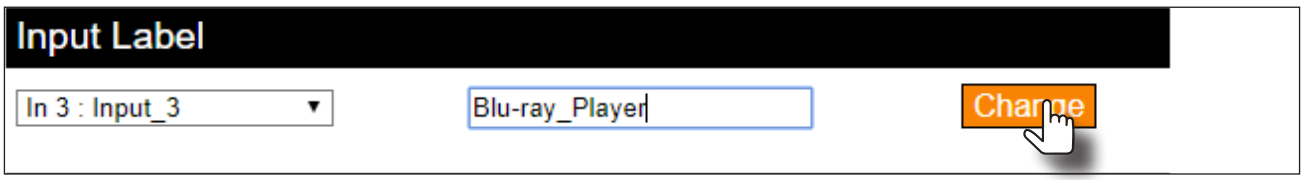
Input and Output Management

When dealing with multiple sources and multiple output devices, within the web GUI, it can be useful to assign descriptive names to each input and output.

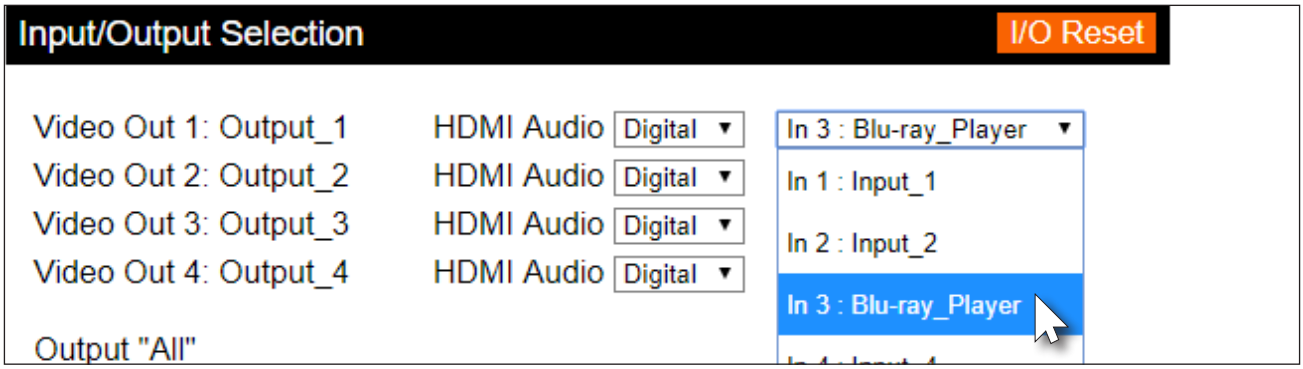
Renaming Inputs

1. Login to the web GUI. Refer to Introduction to the Web GUI (page 55) for more information.
2. Click **I/O**, under the **Configuration** section, in the menu bar on the left side of the screen.
3. Click the **Input Label** drop-down list and select the input to be renamed.

4. Enter the desired name of the input in the **Input Label** field. When entering the name of the input, spaces and special characters are not permitted. In this example, **In 3 : Input_3** is being renamed as **Blu-ray_Player**.
5. Click the **Change** button to save the change.



All instances for the new input name will now be displayed, throughout the web GUI, as shown:

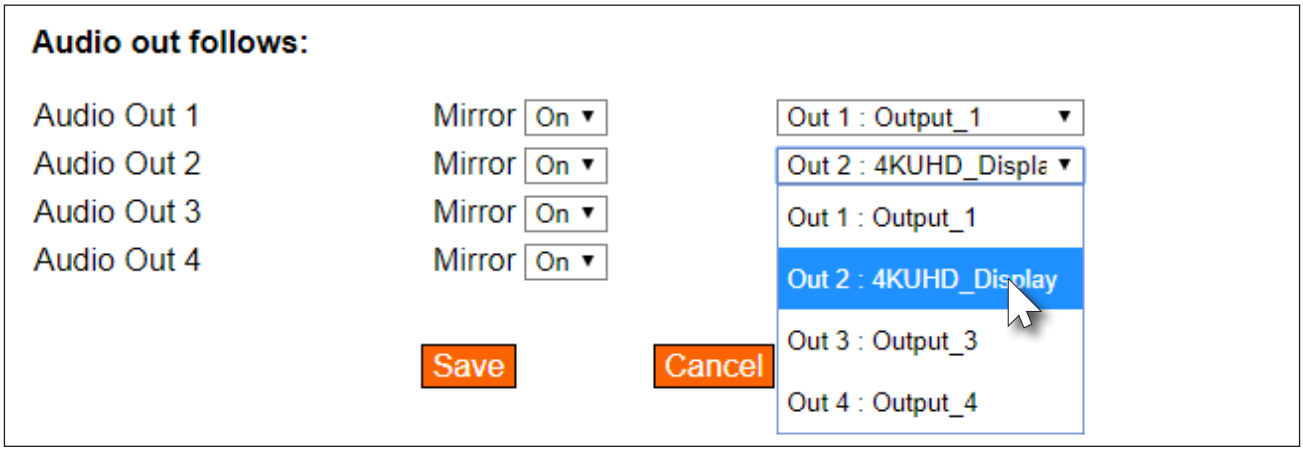


Renaming Outputs

1. Login to the web GUI. Refer to Introduction to the Web GUI (page 55) for more information.
2. Click **I/O**, under the **Configuration** section, in the menu bar on the left side of the screen.
3. Click the **Output Label** drop-down list and select the output to be renamed.

4. Enter the desired name of the input in the **Output Label** field. When entering the name of the output, spaces and special characters are not permitted. In this example, **Out 2 : Output_2** is being renamed as **4KUHD_Display**.
5. Click the **Change** button to save the change.

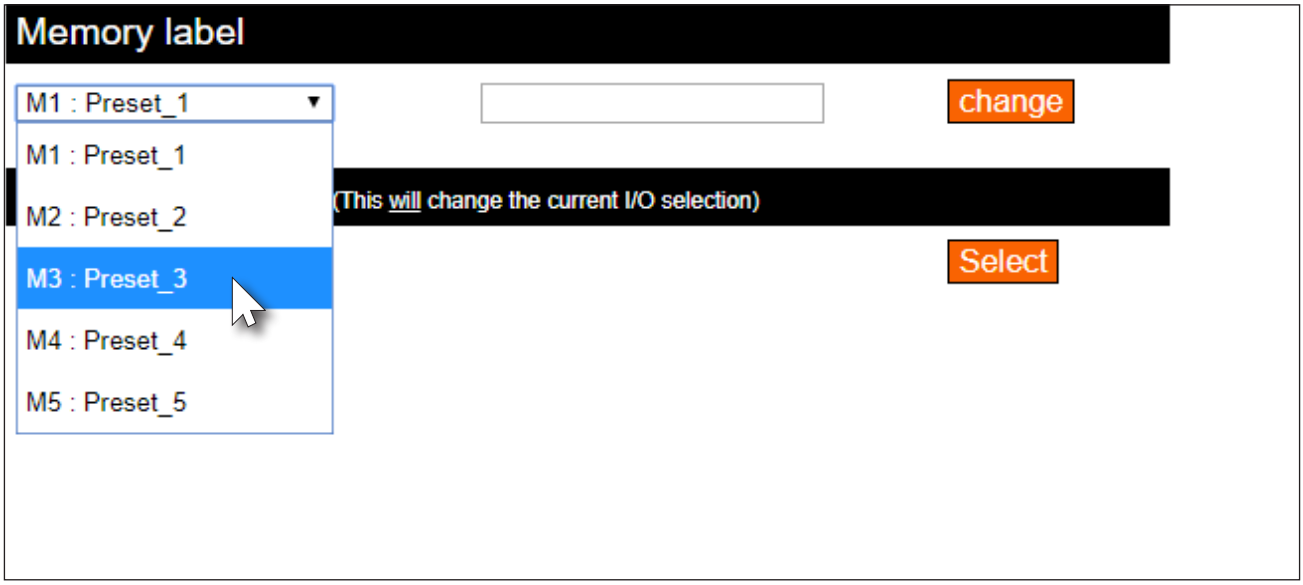
The new name will now be displayed when an output is selected, as shown:



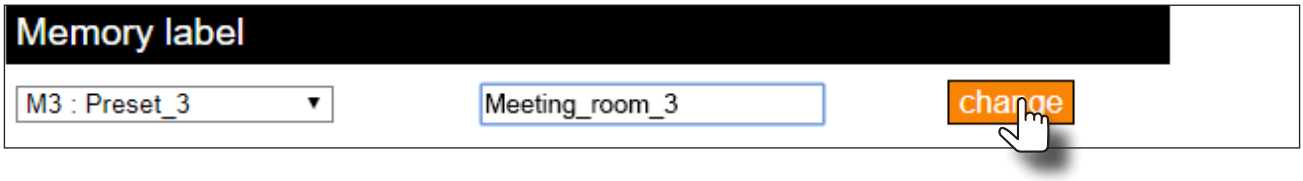
Renaming Memory Presets

In addition to providing inputs and outputs with more descriptive names, memory presets can also be renamed as desired, within the web GUI.

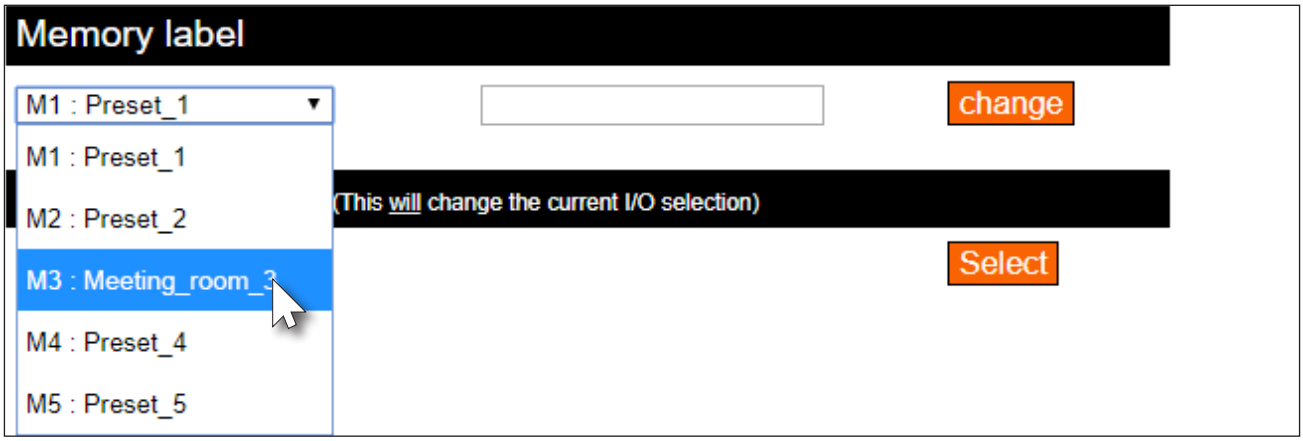
1. Login to the web GUI. Refer to Introduction to the Web GUI (page 55) for more information.
2. Click **Route Memory**, under the **Configuration** section, in the menu bar on the left side of the screen.
3. Click the **Memory label** drop-down list and select the memory location to be renamed.



4. Enter the desired name of the input in the **Memory label** field. When entering the name of the preset , spaces and special characters are not permitted. In this example, **M3 : Preset_3** is being renamed as **Meeting_room3**.
5. Click the **Change** button to save the change.



The new name will now be displayed when an input is selected, as shown:



EDID Management

EDID is an acronym for Extended Display Identification Data. Before a source can send a picture and/or audio to a display (or other sink device), the source requests information from the display on what video and audio formats it can support. Once the source has this information, it will send the supported picture and audio resolution that is supported by the display. By default, the AT-UHD-CLSO-840 loads a “default” EDID on all inputs. This particular EDID provides the source with the highest common resolution and audio information that is supported by all connected displays.

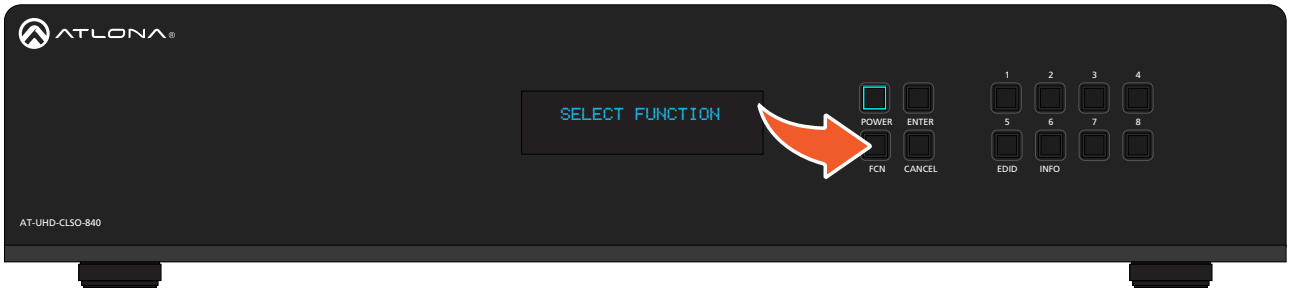
For example, if the matrix is connected to a single 1080p display and two 4K/UHD displays, the 1080p resolution will be used, allowing all three displays to display a picture. However, there may be instances where a specific EDID is desired. The AT-UHD-CLSO-840 allows EDID data to be stored, loaded, and copied.

Loading EDID Presets

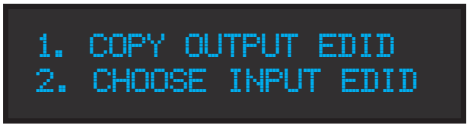
Using the Front Panel

The AT-UHD-CLSO-840 provides 14 pre-programmed internal EDID selections. These EDID presets can be loaded to any one of the eight inputs (HDMI or HDBaseT). Custom EDID data can also be copied to any input. Refer to Copying a Downstream EDID (page 44) for more information.

1. Make sure the home screen is displayed. If the home screen is not displayed, press the **CANCEL** button to return to the home screen.
2. Press the **FNC** button to display the **SELECT FUNCTION** screen.



3. Press the **EDID** button to display the EDID screen.



4. Press button **2** to select Choose Input EDID.
5. Enter the input to where the EDID will be copied. Valid entries are 1 through 8.

   Once the input is entered, the matrix will confirm the entry. If another input is desired, enter it using the front panel buttons. Information on the current EDID will also be displayed on this screen.

6. Press the **ENTER** button to confirm the entry.
7. Press button **3** to select the **INT** (internal) option.

8. Select the desired EDID by pressing button 1 or 2. Press button **1** to move forward through the list of EDID selections. Press button **2** to move backward through the list. Refer to the table below for a list of available EDID selections.

The following table lists the available EDID selections.

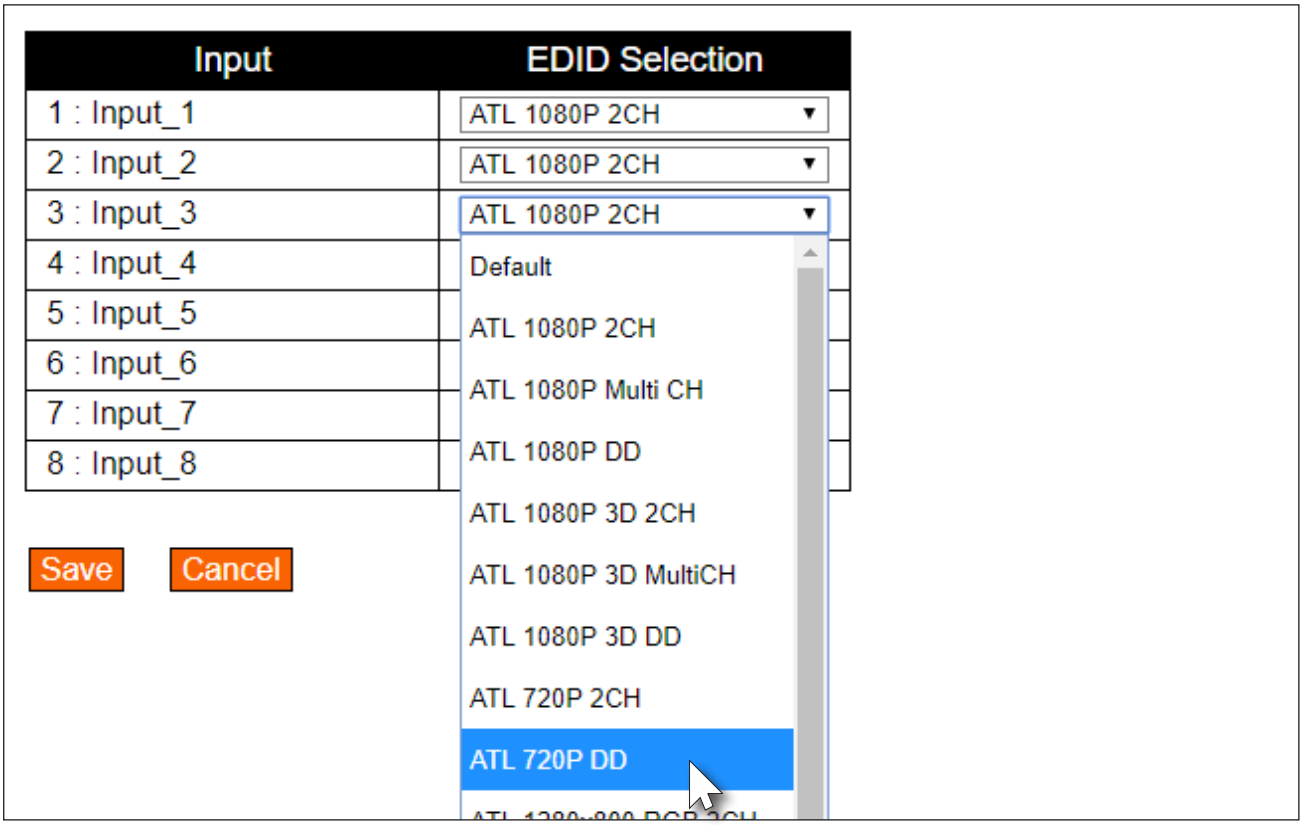
EDID	Front Panel Display	EDID	Front Panel Display
EDID 01	ATL 1080P 2CH	EDID 09	ATL 1280x800 RGB CH
EDID 02	ATL 1080P Multi CH	EDID 10	ATL 1366x768 RGB CH
EDID 03	ATL 1080P DD	EDID 11	ATL 1080P DVI
EDID 04	ATL 1080P 3D 2CH	EDID 12	ATL 1280x800 RGB DVI
EDID 05	ATL 1080P 3D MultiCH	EDID 13	ATL 4K30 2CH
EDID 06	ATL 1080P 3D DD	EDID 14	ATL 4K30 MultiCH
EDID 07	ATL 720P 2CH	EDID 15	ATL 4K60 2CH
EDID 08	ATL 720P DD	EDID 16	ATL 4K60 MultiCH

9. Press the **ENTER** button to copy the selected EDID to the input.

Using the web GUI

1. Login to the web GUI. Refer to Introduction to the Web GUI (page 55) for more information.
2. Click **EDID**, under the **Configuration** section in the menu bar on the left side of the screen.
3. Click the EDID Selection drop-down list, next to the desired input, to select the EDID. In this example, the **ATL 720P DD** EDID is being selected for **HDMI IN 3**.

   Note that if a custom EDID was stored in memory, from a downstream sink device, it will also be displayed in the drop-down list. Refer to Copying a Downstream EDID (page 44) for more information.



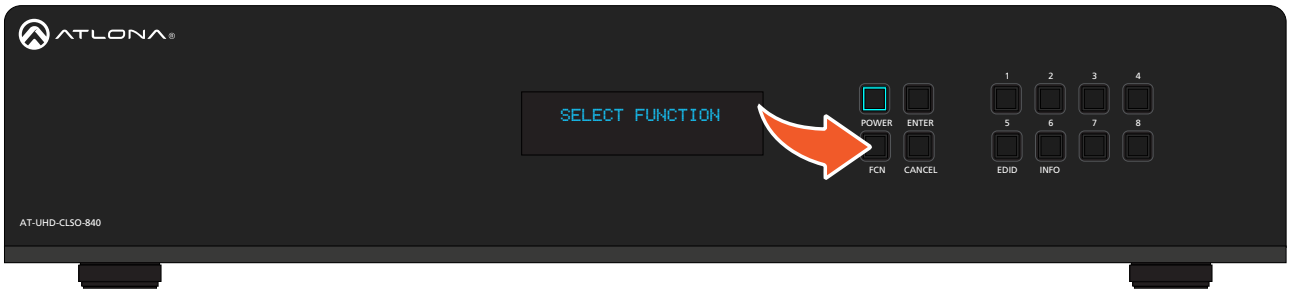
4. Click the **Save** button to commit changes. The source device, routed to this input, will now use this EDID instead of the downstream EDID (of the sink device).

Copying a Downstream EDID

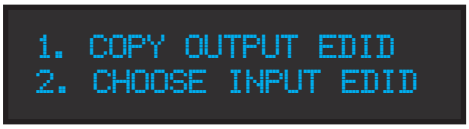
In some instances, it may be desirable to use the EDID of a connected display, and store it for later use. The AT-UHD-CLSO-840 provide four memory locations that can be used to store custom EDID data. Once the EDID is stored in memory, it can be copied to any input. These memory locations are non-volatile, meaning that even if the matrix is powered-off, the EDID data will be retained in these memory locations.

Using the Front Panel

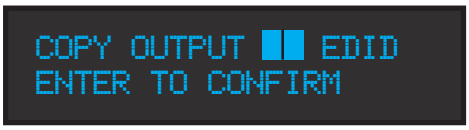
1. Make sure a display/sink device is connected to the output where the EDID will be captured. For example, to capture the EDID on **HDMI OUT 1**, a display/sink device must be connected to that port.
2. Start from the home screen. If the home screen is not displayed, press the **CANCEL** button to return to the home screen. Press the **FNC** button to display the **SELECT FUNCTION** screen.



3. Press the **EDID** button to display the EDID screen.



4. Press button **1** to select Copy Output EDID.
5. Enter the output from which the EDID will be copied. Valid entries are 1 through 4.



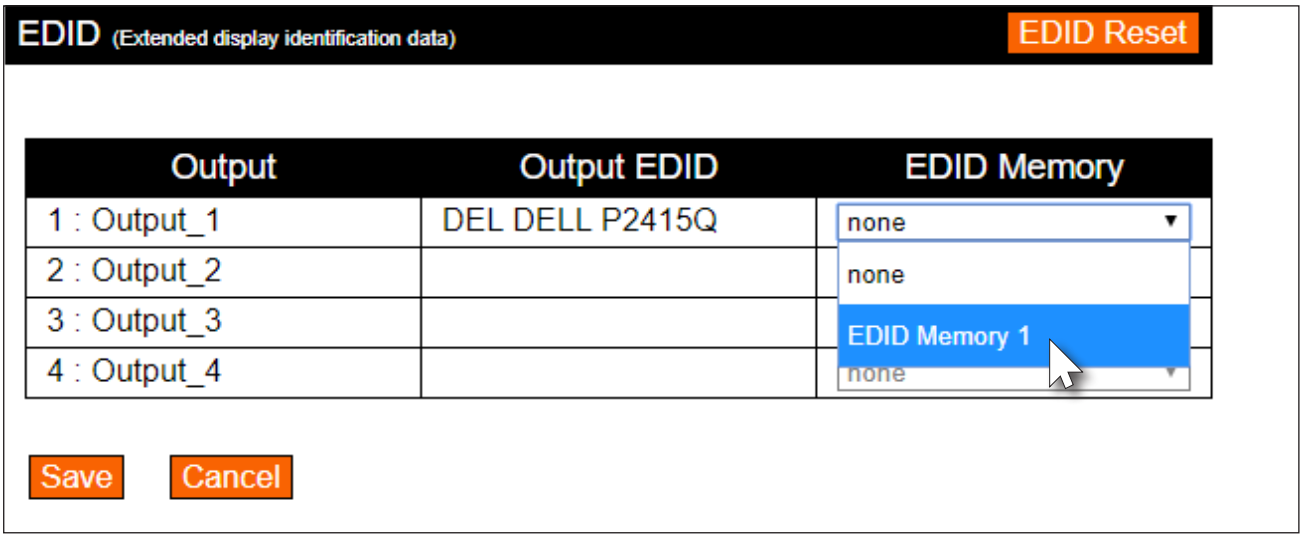
Once the output is entered, the matrix will confirm the entry. If copying the EDID fails, then a “failure message” will be displayed.

EDID copied successfully.

EDID copy failed.

Using the web GUI

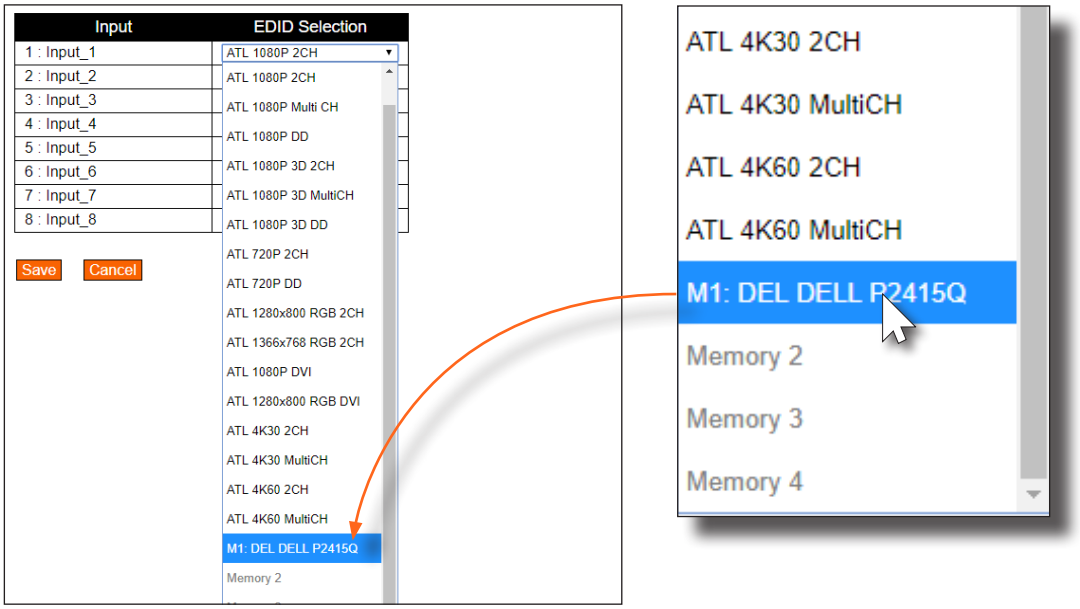
1. Verify that a display or other sink device is connected to the output from which the EDID will be read. In this example, a display is connected to **HDMI OUT 1**.
2. Login to the web GUI. Refer to Introduction to the Web GUI (page 55) for more information.
3. Click **EDID**, under the **Configuration** section in the menu bar on the left side of the screen.
4. Click the **EDID Memory** drop-down list for the output, where the sink is connected, and select the memory location. Each of the four outputs has an associated memory location: **Output_1** = **EDID Memory 1**, **Output_2** = **EDID Memory 2**, and so on.



4. Click the **Save** button to commit changes. If the EDID is recorded successfully, then a message will be displayed indicating that the EDID was saved to the selected memory location.

   The stored EDID can now be copied to any of the available inputs, as shown in the illustration, below. Refer to EDID Management (page 41) for more information.

   To clear all stored EDID data from the AT-UHD-CLSO-840, click the **EDID Reset** button, shown in the illustration above.

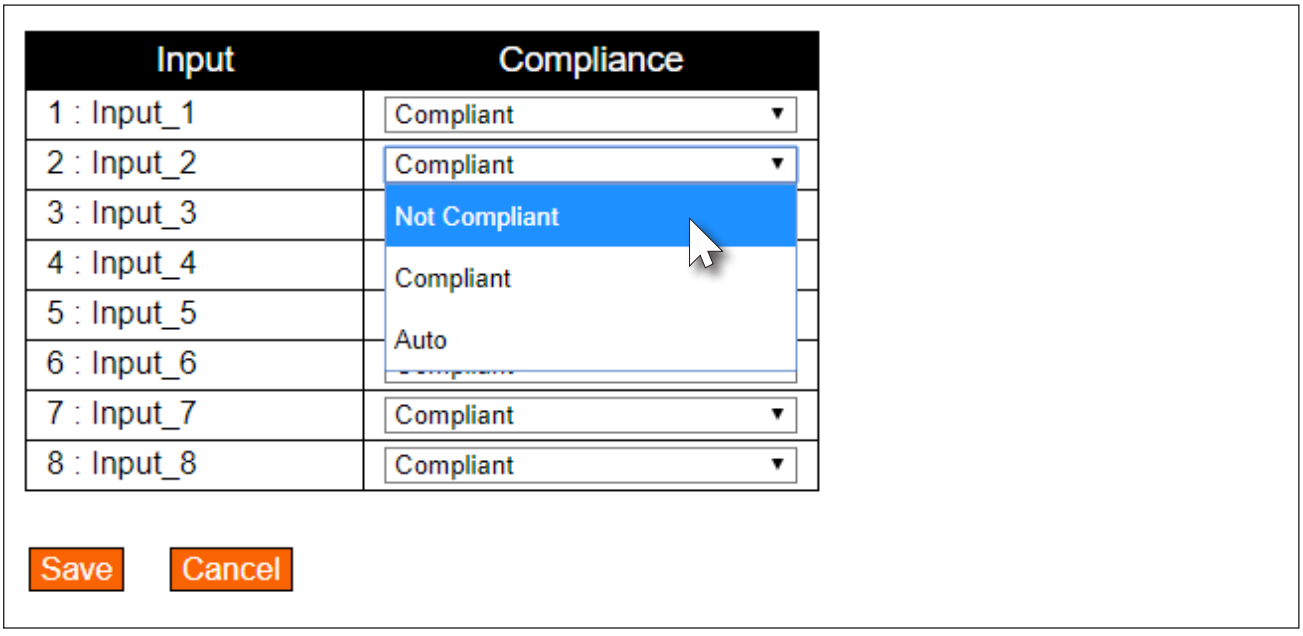


HDCP Management

Some devices will automatically transmit HDCP content if an HDCP-compliant display/sink is detected. The AT-UHD-CLSO-840 provides a method for controlling this behavior. Note that setting this value to **Not Compliant** will not decrypt or strip HDCP content from a protected signal.

1. Login to the web GUI. Refer to Introduction to the Web GUI (page 55) for more information.
2. Click **HDCP**, under the **Configuration** section in the menu bar on the left side of the screen.
3. Click the **Compliance** drop-down list for the input, and select the desired setting.

Value	Description
Compliant	Instructs the source to send HDCP content.
Not Compliant	Instructs the source to send non-HDCP content (if possible) to a non-HDCP display and/or sink device. **NOTE:** Setting an input to this value does not decrypt or "strip" HDCP content from a protected signal.
Auto	Allows the input to automatically select the mode, based on the compatibilities of the display/sink device.



4. Click the **Save** button to commit changes. Click **Cancel** to abort changes. To reset HDCP compliance setting to factory-defaults, click the **HDCP Reset** button near the top of the page.

Managing Users

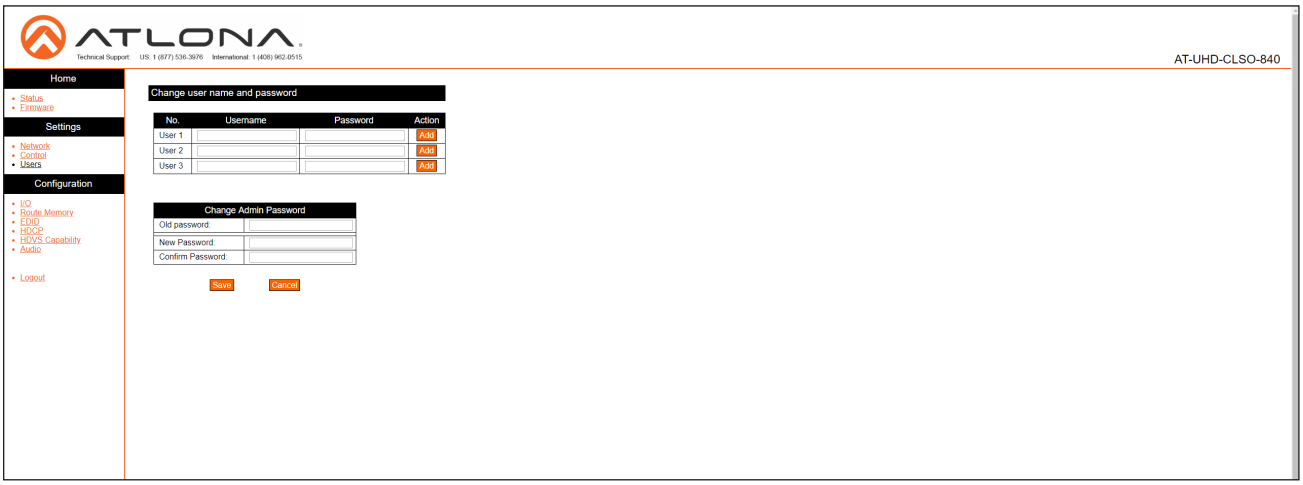
The AT-UHD-CLSO-840 allows the **admin** user to create, edit, and remove additional TCP/IP users. All users have the same level of access to control the AT-UHD-CLSO-840. However, only the **admin** user is allowed to manage other users. Up to three additional users can be created.

Adding Users

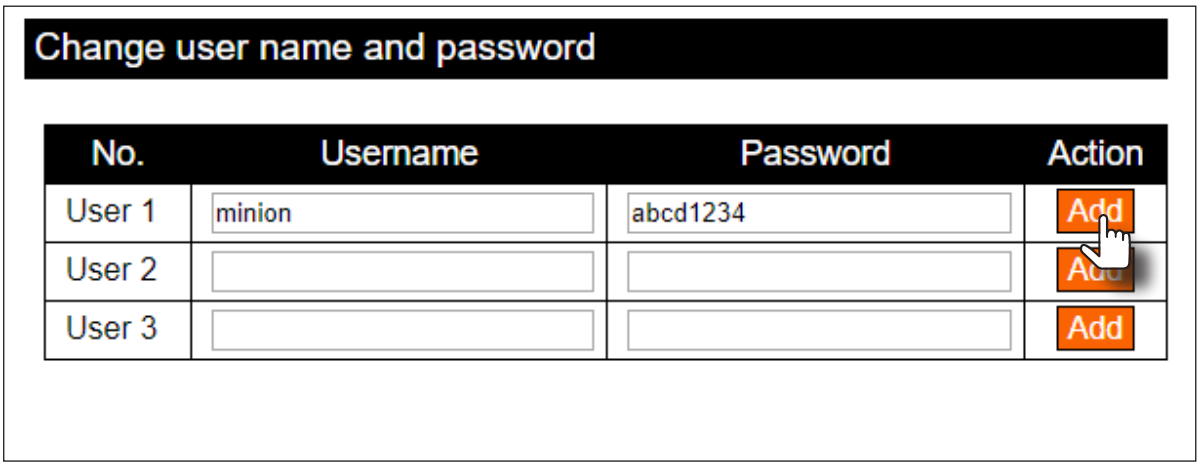
1. Open the desired web browser and enter the IP address of the AT-UHD-CLSO-840.
2. Log in as the **admin** user with the required credentials. The factory-default username and password for the admin user are listed below:

   Username: admin
   Password: Atlona

3. Click the **Users** tab.

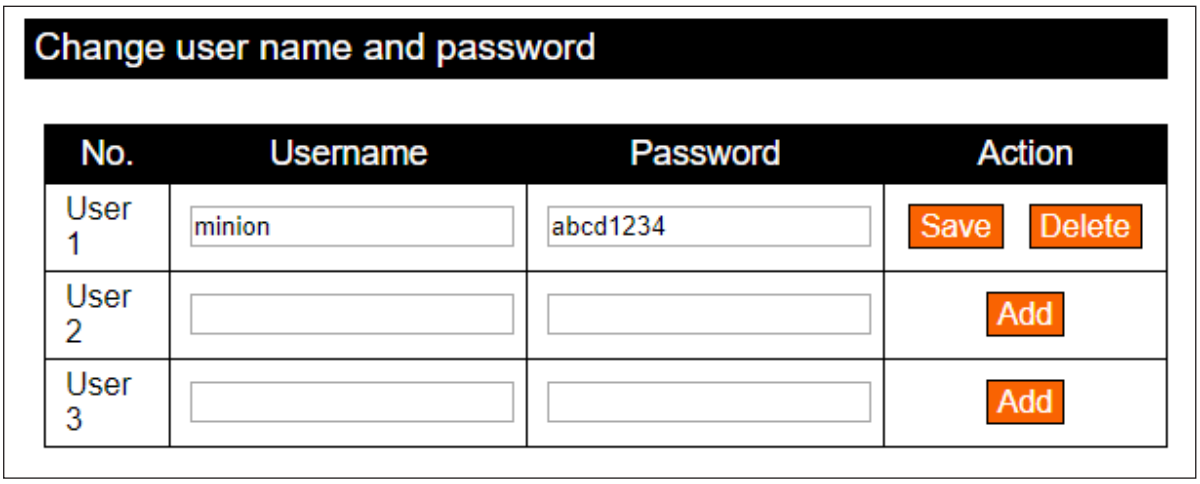


4. Enter the desired username and password for the desired user field: User 1, User 2, or User 3.



5. Click the **Add** button, under the **Action** column, next to the user field.

6. Once created, the new user and the associated password will appear under the **All User Login Settings** section. To login with the new username, click **Logout** in the upper-right corner of the screen, then enter the login credentials for the user on the **Login** page.



Editing / Deleting Users

The username and password of a user can be changed using this method.

1. Open the desired web browser and enter the IP address of the AT-UHD-CLSO-840.
2. Log in as the **admin** user with the required credentials. The factory-default username and password for the admin user are listed below:

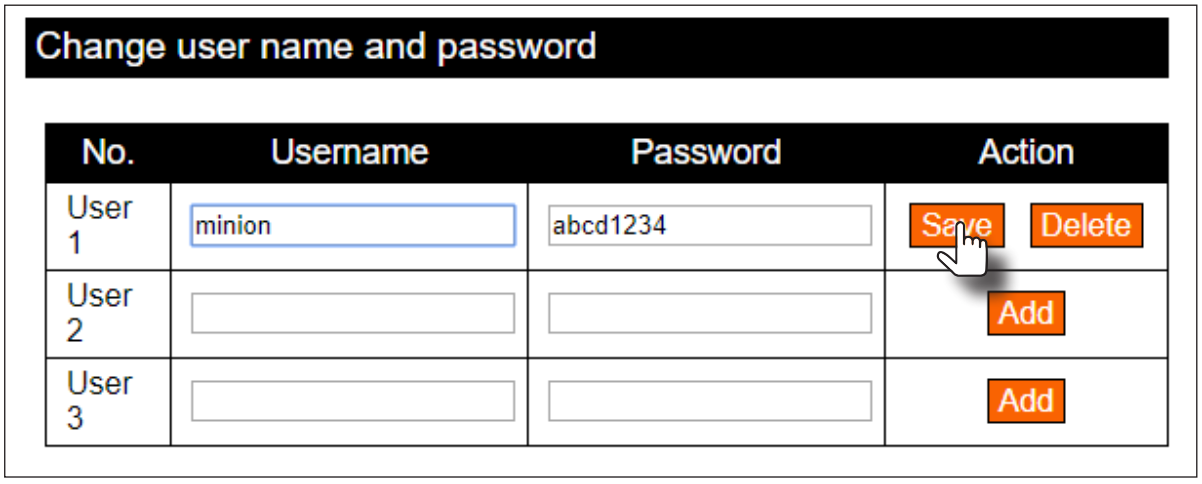
   Username: admin
   Password: Atlona

3. Click the **Users** tab.

Editing Users

a. Click in the **Username** or **Password** field for the desired user and update the current information.

b. Click the **Save** button to commit changes.



Deleting Users

a. Click the **Delete** button next to the user to be deleted. Note that no prompt will be provided to confirm the deletion of the desired user.

Advanced Operation

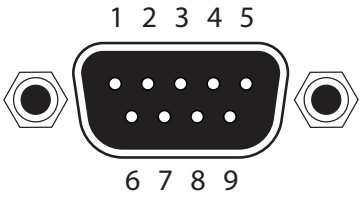
RS-232 Control

The AT-UHD-CLSO-840 provides RS-232 control between an automation system and an RS-232 device using a captive screw connector block. The AT-UHD-CLSO-840 provides two modes of RS-232 control: Pass-through mode and control mode.

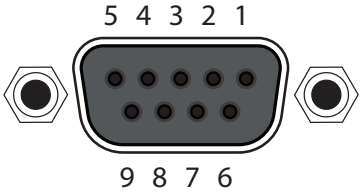
RS-232 is serial data protocol that allows Data Terminal Equipment (DTE) devices, such a computer or control system, to communicate with Data Communication Equipment (DCE) devices, such as the AT-UHD-CLSO-840, amplifier, or display. Although IP control is available, RS-232 still plays an integral part of many control systems.

Although the 25-pin D-type connector (DB-25) was defined as the RS-232 standard, it is now commonly implemented in a nine-pin (DE-9) connector package and is numbered, as shown below.

DE-9 (male)



DE-9 (female)



DTE Pin Descriptions

Pin	Signal	Description
1	DCD	Data Carrier Detect
2	RxD	Receive Data
3	TxD	Transmit Data
4	DTR	Data Terminal Ready
5	GND	Ground (Signal)
6	DSR	Data Set Ready
7	RTS	Request to Send
8	CTS	Clear to Send
9	RI	Ring Indicator

DCE Pin Descriptions

Pin	Signal	Description
1	DCD	Data Carrier Detect
2	TxD	Transmit Data
3	RxD	Receive Data
4	DSR	Data Set Ready
5	GND	Ground (Signal)
6	DTR	Data Terminal Ready
7	CTS	Clear to Send
8	RTS	Ready to Send
9	RI	Ring Indicator

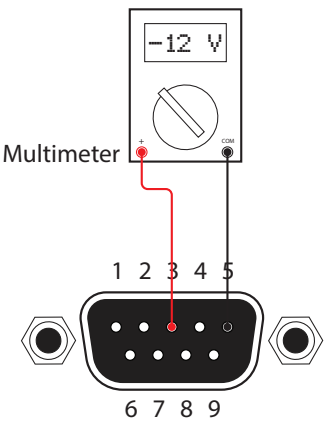
Determining the Port Type

Most DTE devices provide a male connector, while DCE devices have a female connector. However, this is not always the case. If the port type is unknown, then a multimeter can be used to determine whether the port is DTE or DCE:

1. Turn on the multimeter and set it to measure DC voltage.
2. Connect the positive and negative leads to pins 3 and 5, respectively.
3. Check the voltage reading:

   If the voltage is between -3 V DC and -15 V DC, then the device is DTE. Otherwise, it is DCE.

   Voltage levels between -3 V and -15 V DC represent a logic “1”.
   Voltage levels between +3 V and +15 V DC represent a logic “0”.



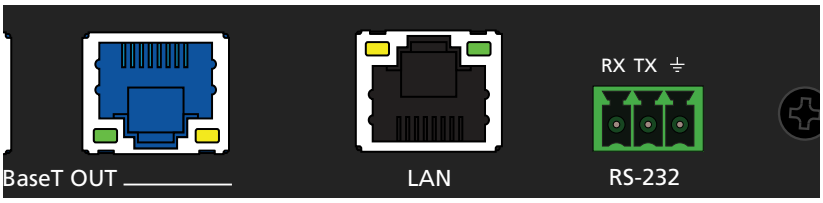
Cable Assembly

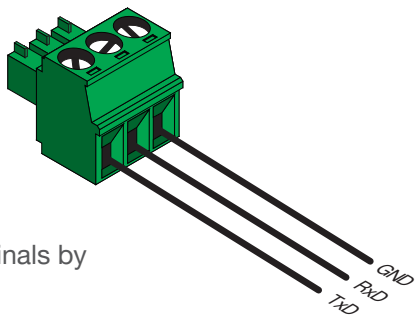
When connecting a DTE device to a DCE device, a *straight-through* cable should be used. A straight-through cable is wired in such a way that the pins on one side of the cable are connected to the corresponding pins on the opposite side of the cable, as shown in the table below. However, the AT-UHD-CLSO-840 will use only TxD, RxD, and GND signals when communicating with a control system or computer.

Straight-Through Cable

Pin	Signal		Signal	Pin
1	DCD	⟷	DCD	1
2	RxD	⟷	TxD	2
3	TxD	⟷	RxD	3
4	DTR	⟷	DSR	4
5	GND	⟷	GND	5
6	DSR	⟷	DTR	6
7	RTS	⟷	CTS	7
8	CTS	⟷	RTS	8
9	RI	⟷	RI	9

1. Identify the DE-9 connector that will be attached to the control system or computer (DCE) equipment.
2. Remove the DE-9 connector at the opposite end of the cable with wire cutters.
3. Remove at least 1” of the cable insulation to expose each of the nine wires.
4. Locate a multimeter and set it to the “continuity” function.
5. Attach one of the leads from the multimeter to pin 2 on the DE-9 connector.
6. Take the other lead and probe each of the wires on the opposite end of the cable. When the wire connected to that pin is detected, the multimeter will emit an audible tone. Once this occurs, identify the current wire, and move it to the side.
7. Repeat step 6 for pin 3 and pin 5 on the DE-9 connector.
8. Group the remaining wires and pull them aside. Electrical tape can be use to secure the wires to the outside of the RS-232 cable.
9. Remove at least 3/16” (5 mm) of insulation from the TxD, RxD, and GND wires.



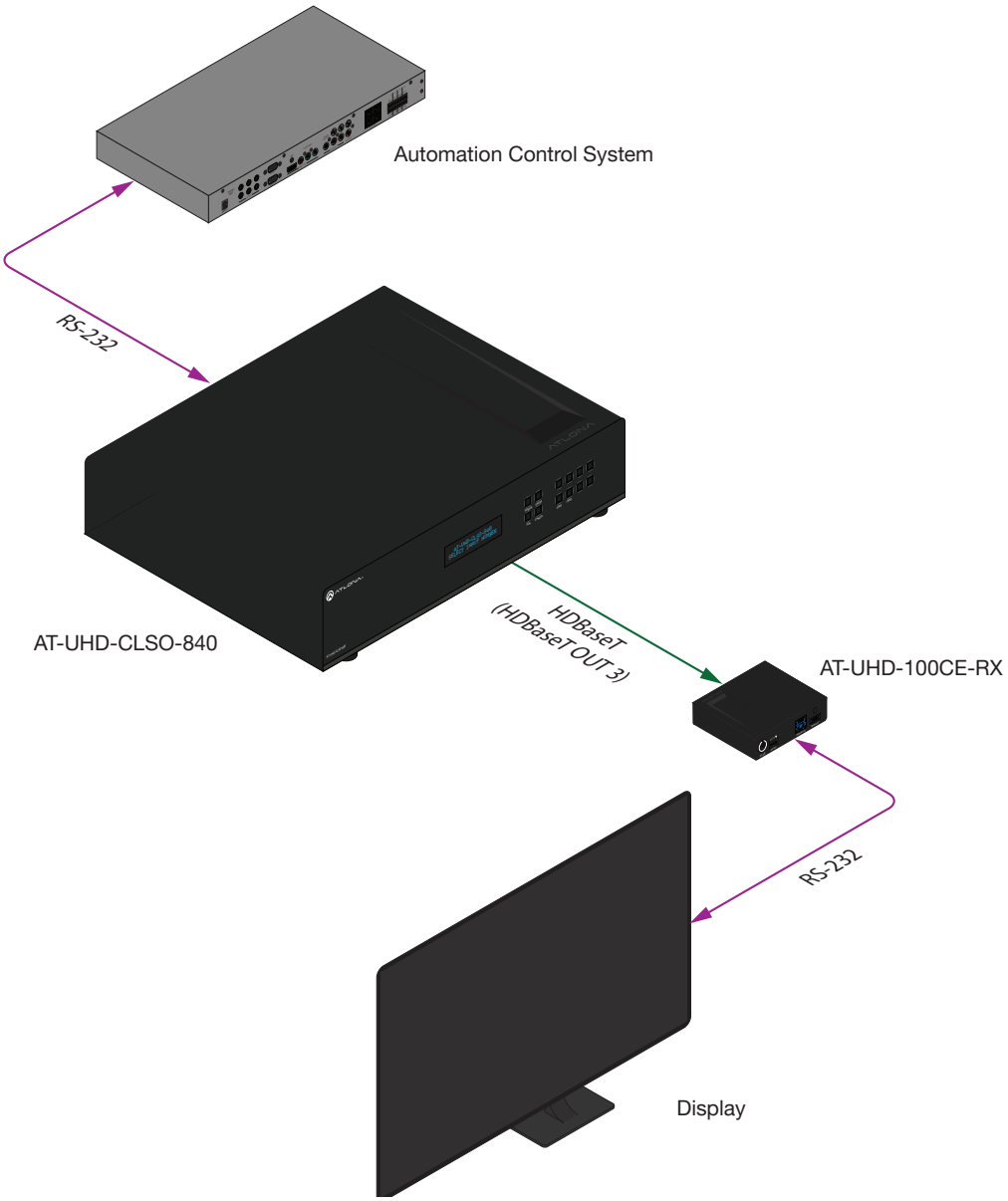


10. Locate the included 3-pin captive screw block and open each of the terminals by turning the screws counter-clockwise, using a small regular screwdriver.
11. Insert the TxD, RxD, and GND wires into correct terminal, as shown, and tighten the screws to secure each wire. Do no overtighten.
12. Connect the captive screw connector to the **RS-232** port on the AT-UHD-CLSO-840.

Pass-through mode

In pass-through mode, RS-232 commands are sent to the AT-UHD-CLSO-840 and then transmitted over HDBaseT to the receiver unit, and then to the display (sink) device.

1. Connect the RS-232 cable between the control system and the AT-UHD-CLSO-840. Refer to Cable Assembly (page 51) for instructions on preparing the cable.
2. Connect an Ethernet cable from the desired **HDBaseT OUT** port to a receiver. In this example, the HDBaseT cable is connected from **HDBaseT OUT 3** to an AT-UHD-100CE-RX receiver.
3. Connect an RS-232 cable between the display (sink) and the receiver.

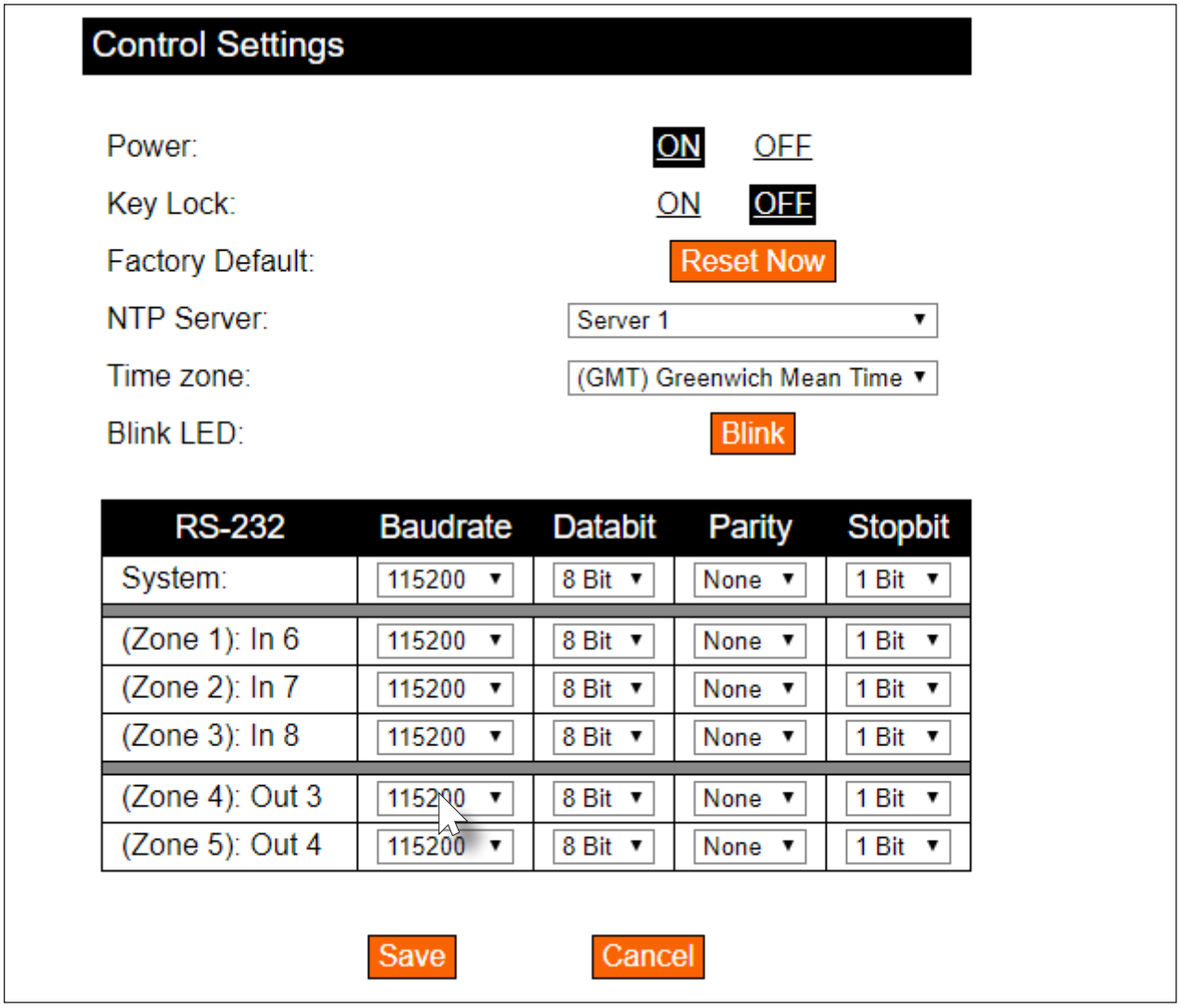


4. Launch a web browser and login to the web GUI. Refer to Introduction to the Web GUI (page 55) for more information. The factory-default username and password are listed below:

   Username: **root**
   Password: **Atlona**

5. Click **Control** in the side menu bar.

6. Select the proper baud rate, data bit, parity, and stop bit settings for the HDBaseT OUT port. These settings must correspond with the RS-232 settings of the display (sink) device. Referring to the example diagram, on the previous page, **HDBaseT OUT 3** (Zone 4) will need to be configured.



7. Click the **Save** button to commit changes.

8. Use the following command to send a command to the display (sink) device, where display_command is the command data to send:

   RS232Zone4[display_command$0d]

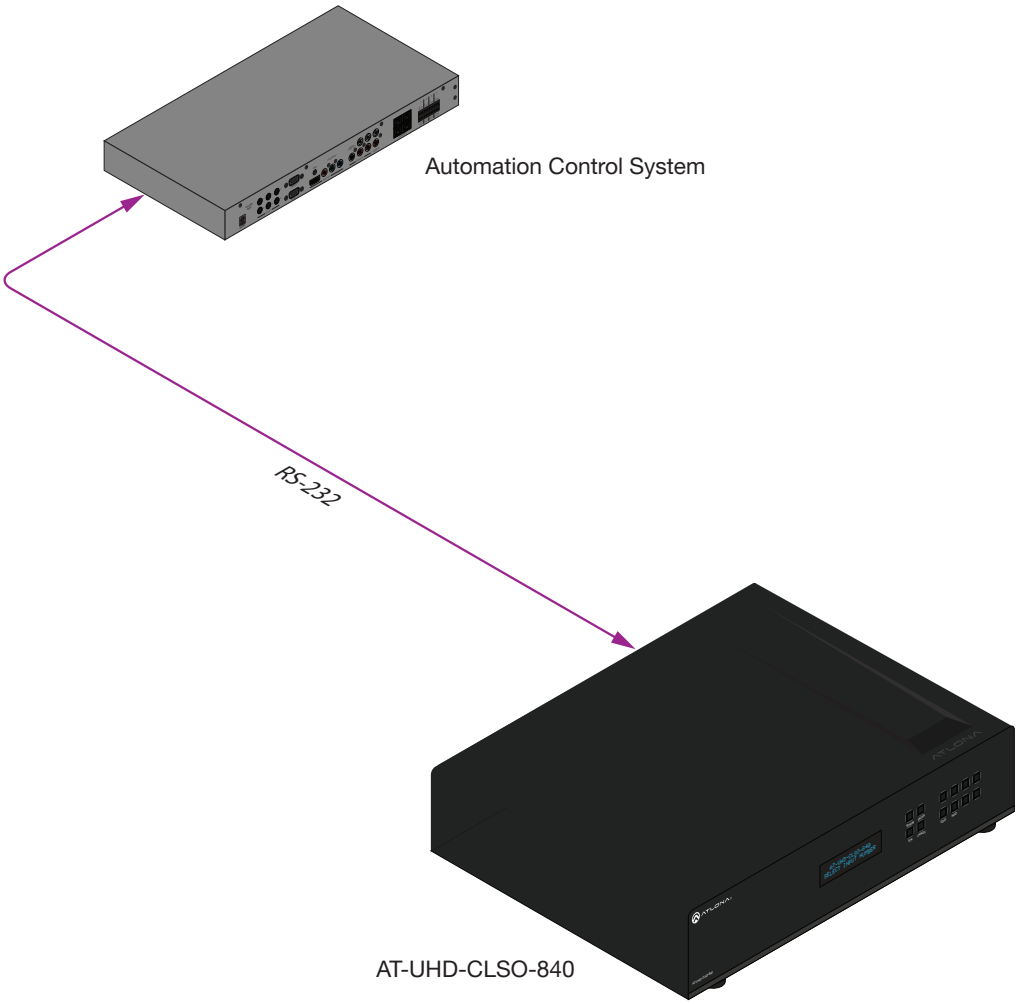
   $0d (carriage return) should only be added to end of the string if the sink device is expecting this character.

Control mode

In control mode, RS-232 commands are sent from a computer or control system (DTE) to the AT-UHD-CLSO-840 (DCE). This method allows direct control of the matrix for routing, IP configuration, powering-on / powering-off and other functions.

NOTE: The **RS-232** port on the AT-UHD-CLSO-840 runs at a baud rate of 115200. The control unit must be set to the same baud rate, in order to communicate with the AT-UHD-CLSO-840.

1. Connect the RS-232 cable between the control system and the AT-UHD-CLSO-840. Refer to Cable Assembly (page 51) for instructions on preparing the cable.
2. Set the baud rate of the computer/control system to 115200. If the control system is not set to this baud rate, then the AT-UHD-CLSO-840 will not respond to RS-232 commands.
3. Refer to the *Applications Programming Interface* for a listing of available commands.



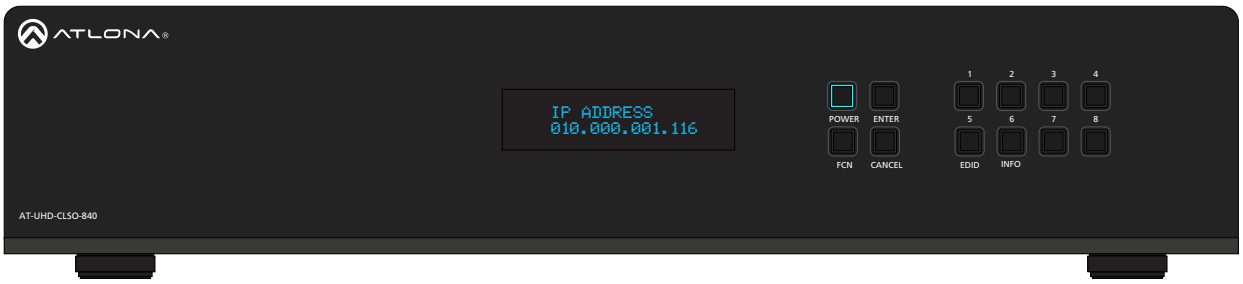
The Web GUI

Introduction to the Web GUI

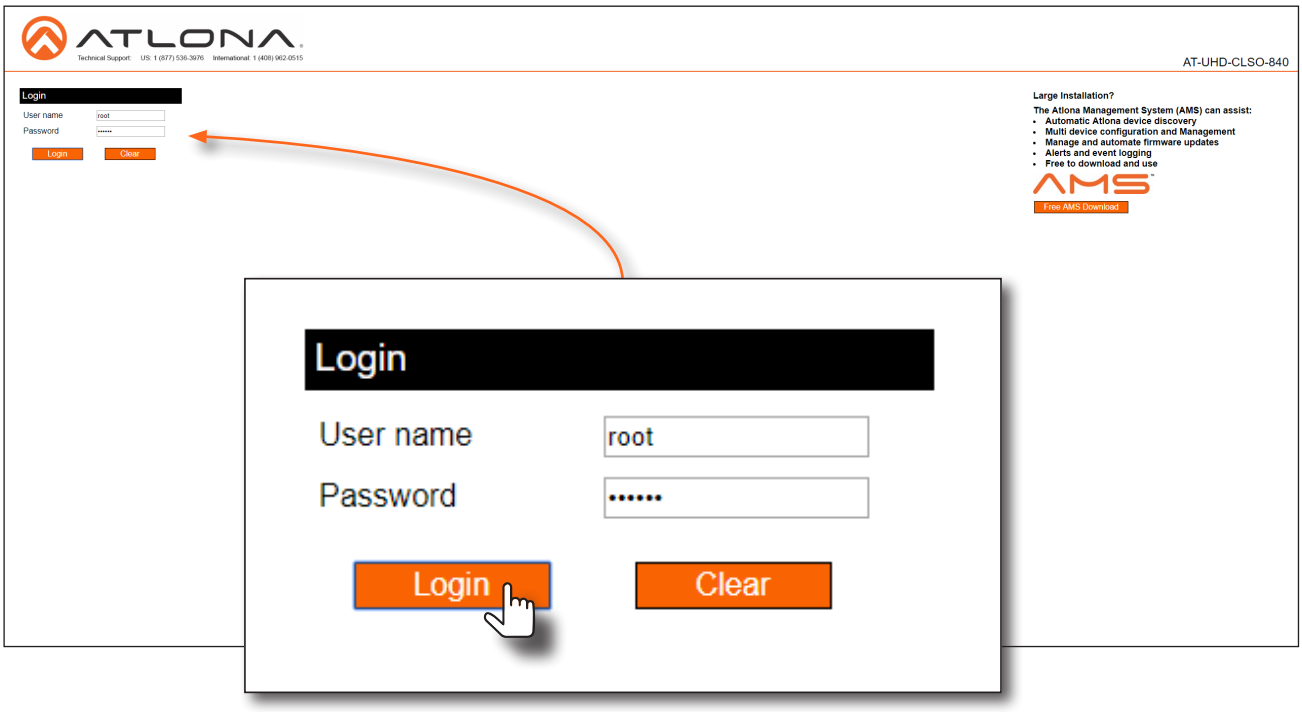
The AT-UHD-CLSO-840 includes a built-in web GUI. Atlona recommends that the web GUI be used to set up the matrix, as it provides intuitive management of all features. Follow the instructions below to access the webGUI.

1. Make sure that an Ethernet cable is connected between the **LAN** port on the AT-UHD-CLSO-840 and the network.
2. Launch a web browser and enter the IP address of the unit. If the default static IP address is being used, enter 192.168.1.254.

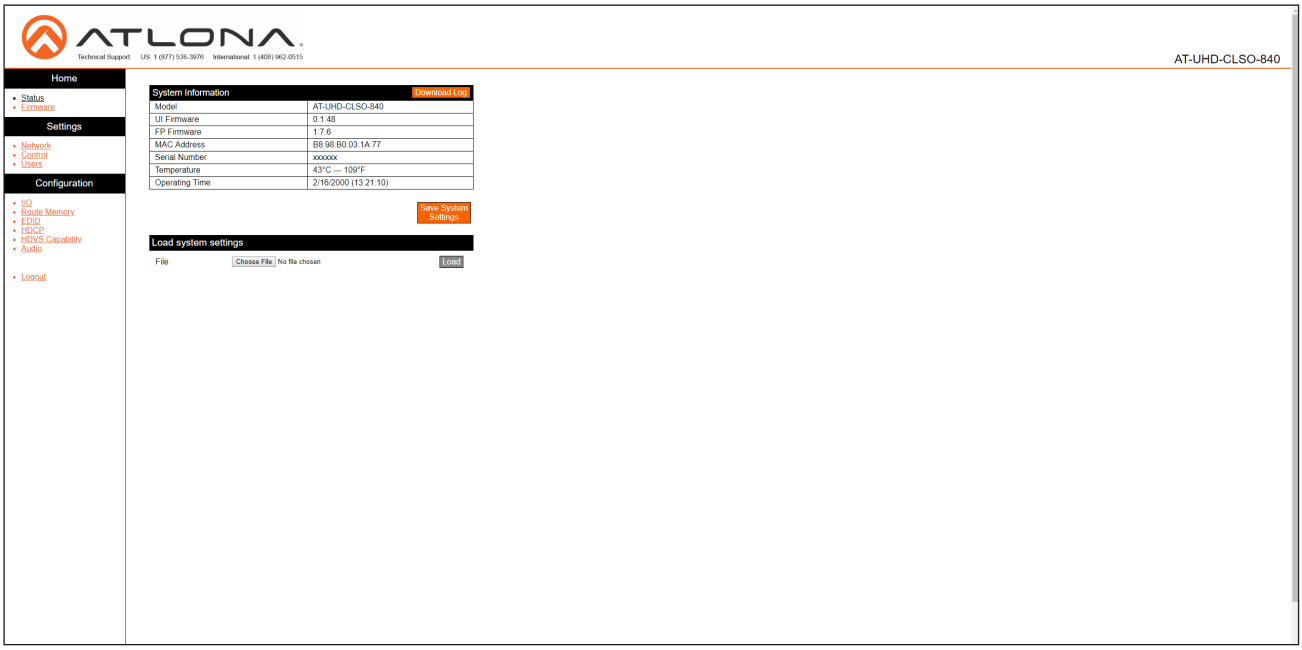
   If the IP address of the AT-UHD-CLSO-840 is not known, press and release the **FNC** button on the front panel, then repeatedly press the **INFO** button until the IP address is displayed, as illustrated in the example below. Refer to Displaying the System Settings (page 20) for more information, if necessary.



3. Enter root, using lower-case characters, in the **User name** field.
4. Type Atlona in the **Password** field. This is the default password. The password field is case-sensitive. When the password is entered, it will be masked.
5. Click the **Login** button or press the ENTER key on the keyboard.

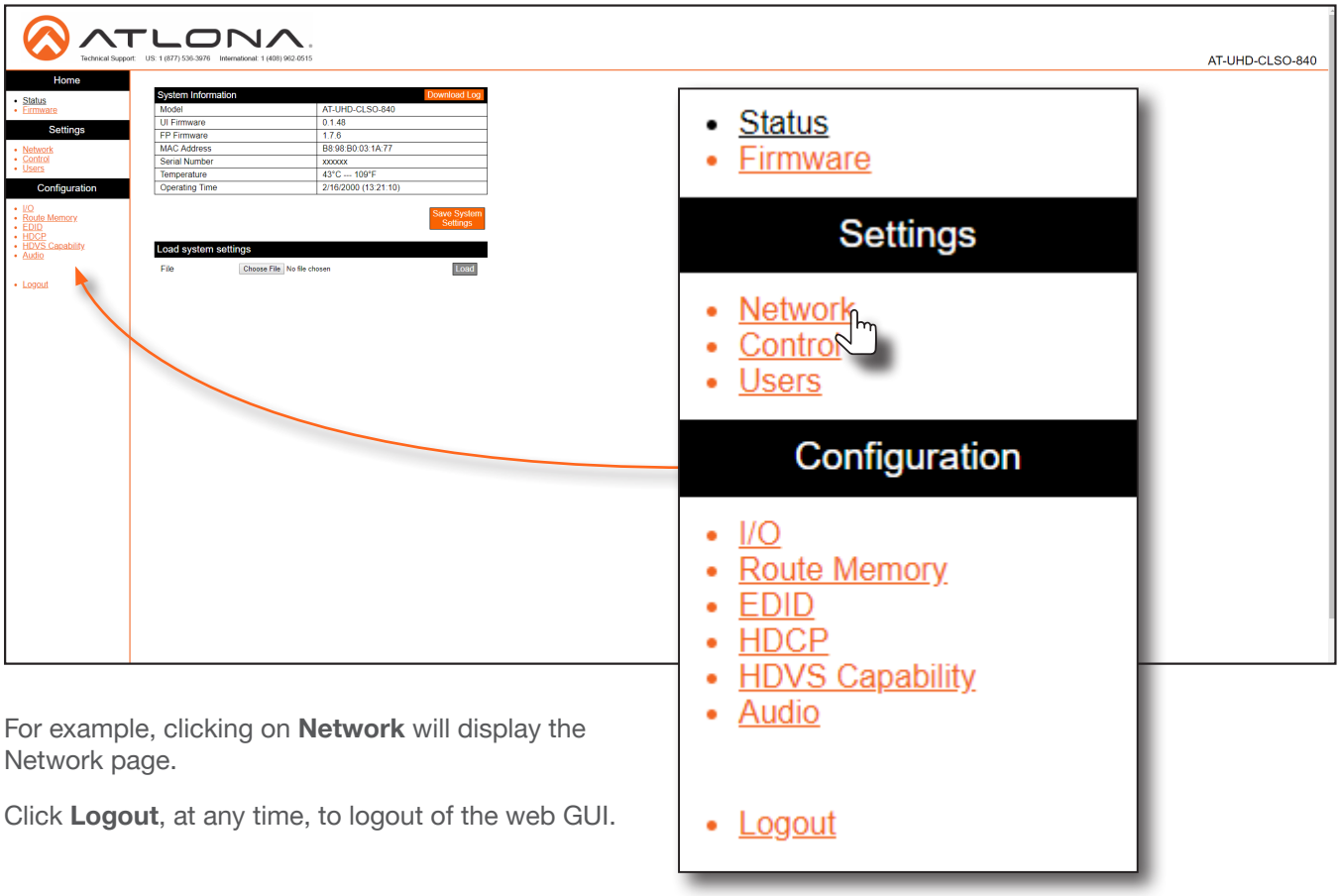


6. The **Status** page will be displayed.



Menu Bar

The window on the left side of the screen is the is the menu bar and lists all available menus. Click on the desired menu item to open that page.

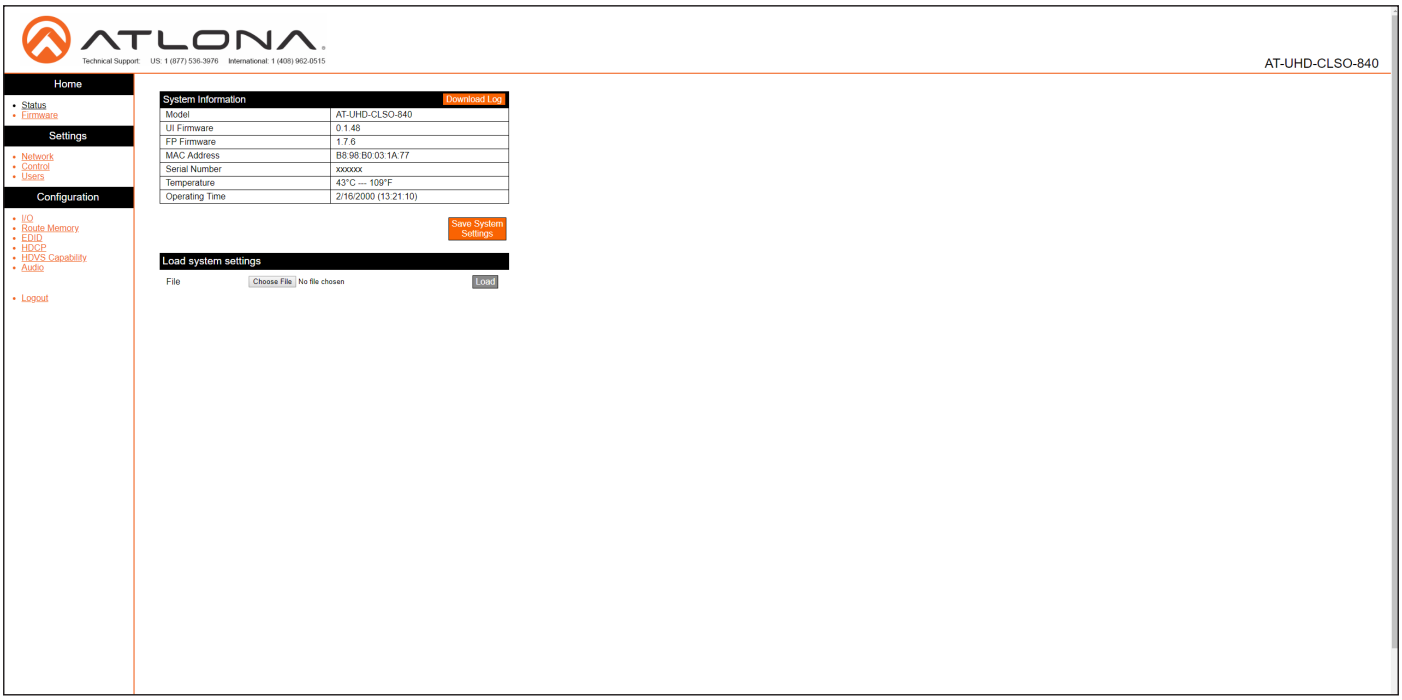


For example, clicking on **Network** will display the Network page.

Click **Logout**, at any time, to logout of the web GUI.

Status page

After logging in, the **Status** page will be displayed. The **Status** page provides basic information about the matrix, including the model name, software version, MAC address, and operating temperature.



System Information

Model
The model (SKU) of this product.

UI Firmware
The firmware version of the user interface (web GUI).

FP Firmware
Version of firmware used to operate the front panel display.

MAC Address
The MAC address of the unit.

Serial Number
The serial number of the unit. The serial number is a 19-digit number that is appended to the model of the matrix, in order to create the hostname identifier.

Temperature
The current operation temperature of the matrix.

Operating Time
The amount of time that has passed since the matrix was rebooted or power-cycled.

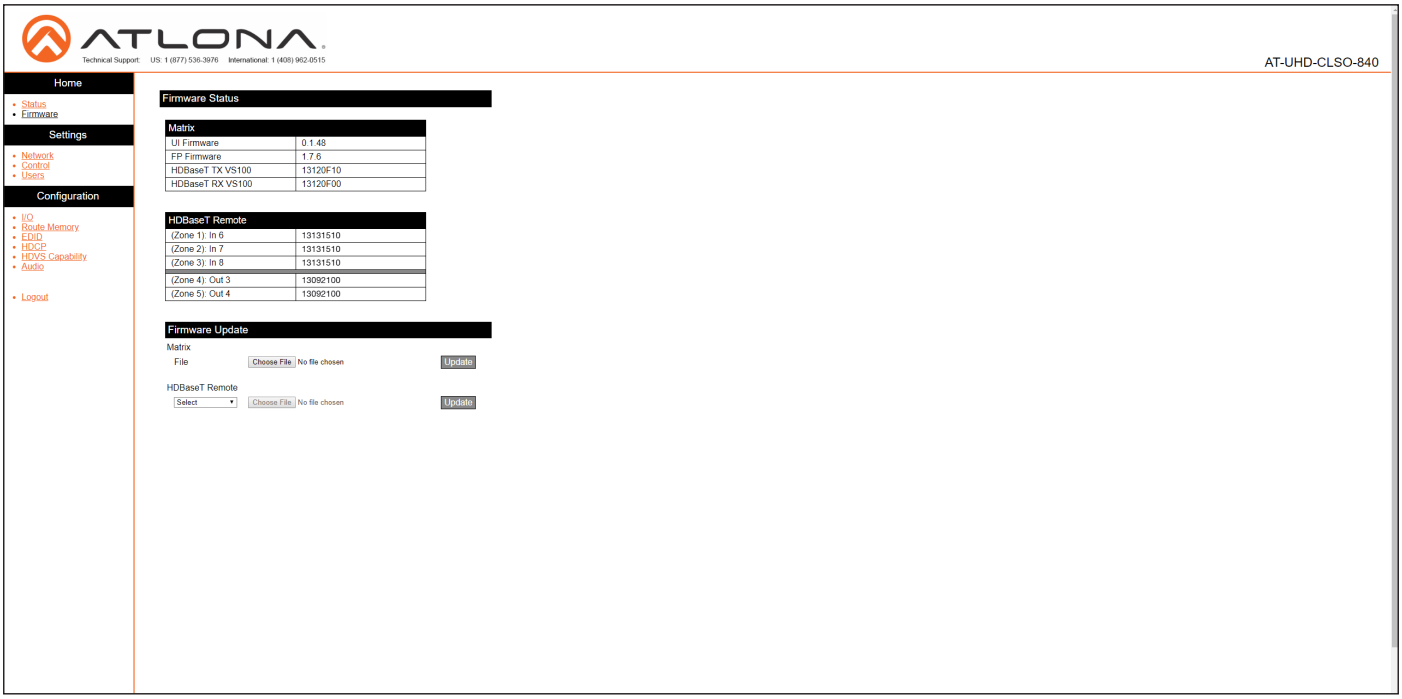
Save System Settings
Click this button to save the current system configuration to a local file.

Load system settings

Choose File
Click this button to select the configuration file to be loaded. Click the **Load** button to upload the file to the system.

Firmware page

This page provides information on the current firmware for the matrix and all connected UHD-EX-based HDBaseT receivers/transmitters. In addition, both matrix and transmitter/receiver (if connected) firmware can be updated here. Refer to Updating the Firmware (page 67) for more information on firmware update procedures.



Matrix

UI Firmware
The firmware version of the user interface (web GUI).

FP Firmware
Version of firmware used to operate the front panel display.

HDBaseT TX VS100
Version of firmware used by the VS100 HDBaseT transmitter chip.

HDBaseT RX VS100
Version of firmware used by the VS100 HDBaseT receiver chip.

HDBaseT Remote

In 6 - In 8
Version of firmware used by the HDBaseT transmitter (if connected).

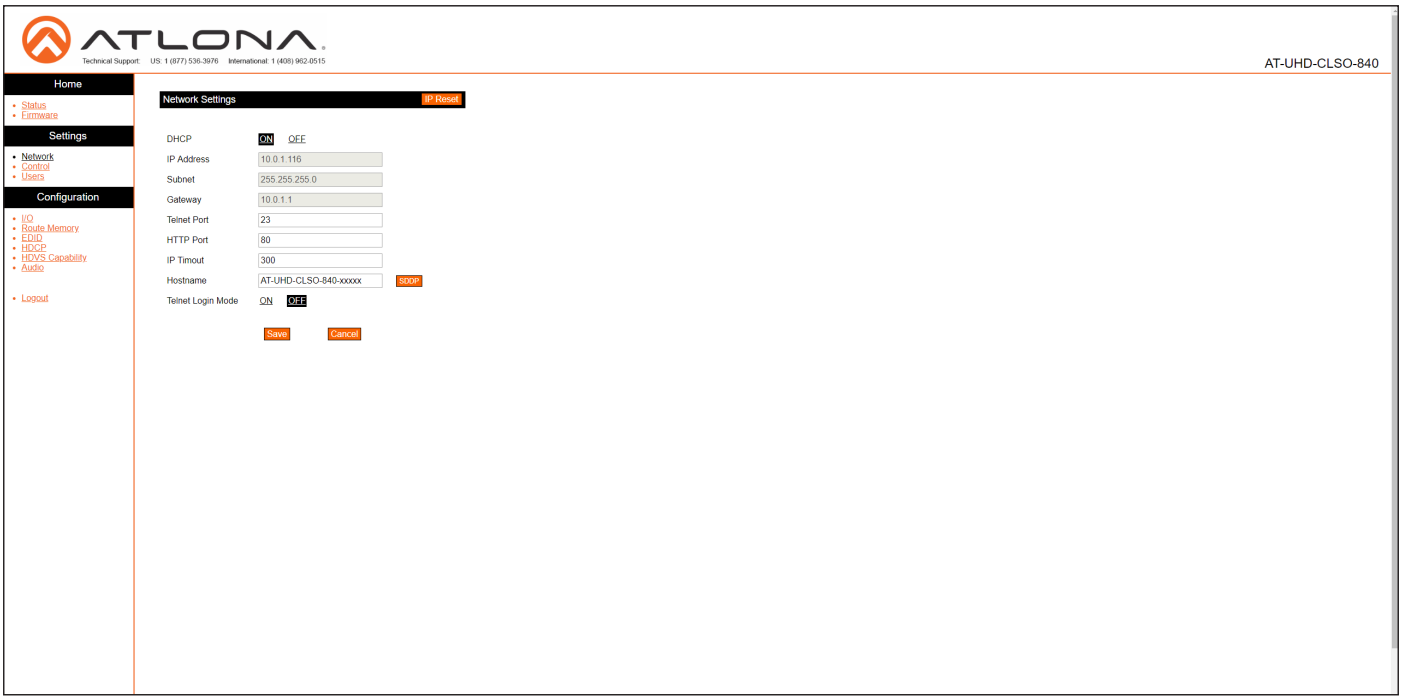
Out 3 - Out 4
Version of firmware used by the HDBaseT receiver (if connected).

Firmware Update

Choose File (Matrix)
Click this button to select the firmware file for the matrix. Click the **Update** button to being the firmware update process.

Choose File (HDBaseT Remote)
Click this button to select the firmware file for the HDBaseT remote device (if connected). Click the **Update** button to being the firmware update process.

Network page



DHCP
Click ON to set the matrix to DHCP mode. If a DHCP server is not found within 15 seconds, then the unit will default to the static IP address of 192.168.0.150. Refer to Setting the IP Mode (page 14) for more information on setting the IP mode. When **Mode** is set to DHCP, the **IP Address**, **Subnet**, and **Gateway** fields will automatically be populated. Click **OFF** to set the matrix to static IP mode.

IP Address
Enter the IP address of the AT-UHD-CLSO-840 in this field. This field will only be available if **DHCP** is set to **OFF**. The default IP address is 192.168.0.150.

Subnet
Enter the subnet mask in this field. This field will only be available if **DHCP** is set to **OFF**.

Gateway
Enter the gateway (router) address in this field. This field will only be available if **DHCP** is set to **OFF**.

Telnet Port
Enter the Telnet listening port in this field.

HTTP Port
Enter the HTTP listening port in this field.

IP Timeout
Enter the timeout interval, in seconds, before the Telnet connection is automatically terminated after no activity. Range: 1 to 3600 (seconds).

Hostname
Enter the hostname of the matrix in this field. This name is used to identify the matrix on a network.

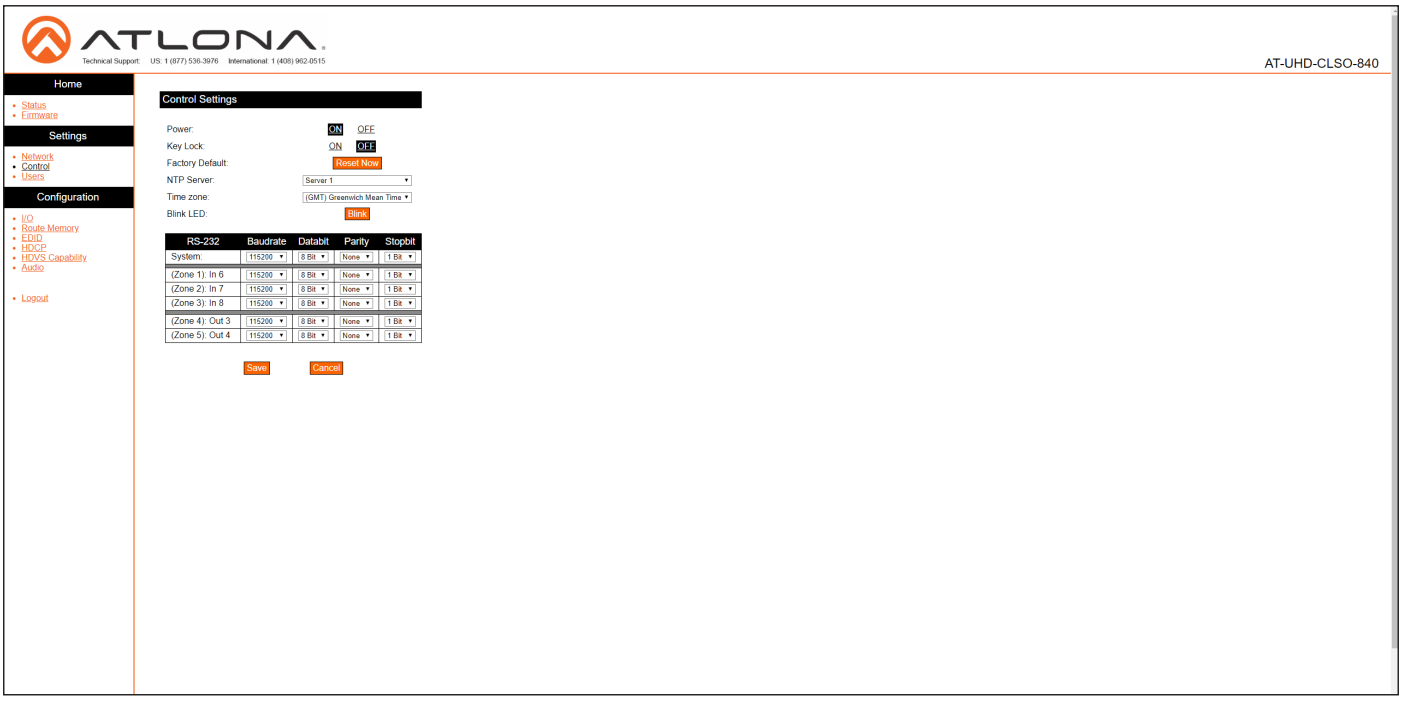
SDDP
Simple Device Discovery Protocol. SDDP is a discovery ("IP scan") protocol authored by Control4® to provide easy integration of the AT-UHD-CLSO-840 with Control4 devices on a network. SDDP functions similar to the UPnP (Universal Plug and Play) protocol. Click this button to invoke SDDP.

Telnet Login Mode
Click **ON** to prompt for login credentials at the start of a Telnet session. Use the same credentials as the web GUI. If set to **OFF**, then no authentication is offered.

Save
Click this button to commit all changes.

Cancel
Click to abort changes.

Control page



Power
Click **ON** to power-on the matrix. Click **OFF** to place the matrix in standby mode. Refer to Standby Mode (page 18) for more information on standby mode.

Key Lock
Click **ON** to lock the button on the front panel. Click **OFF** to unlock the front-panel buttons. When the front-panel buttons are locked, the **POWER** button will flash blue.

Factory Default
Click the **Reset Now** button to set the matrix to factory-default settings.

NTP Server
Click this drop-down list to specify the desired NTP server. Two NTP servers are available: **Server 1** or **Server 2**.

Time Zone
Click this drop-down list to select the desired time zone.

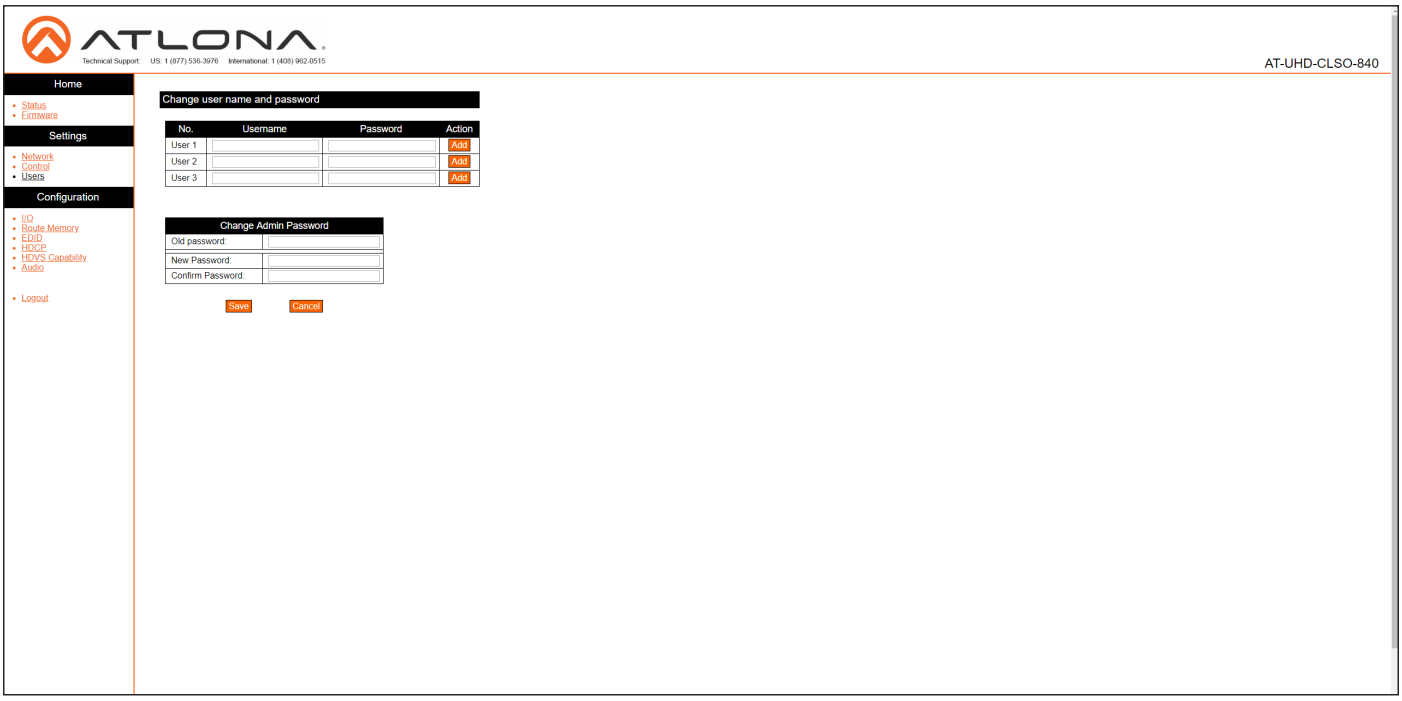
Blink LED
Click the **Blink** button to flash the **POWER** button on the front panel. When clicked, the **Blink** button will read **Blinking**. The **POWER** button will alternately flash blue and red. This process will continue until the **Blinking** button is clicked.

RS-232
Click these drop-down lists to select the required baud rate, data bits, parity bit, and stop bit settings for the device that is being controlled.

Save
Click this button to commit all changes.

Cancel
Click to abort changes.

Users page



Username
Enter the username in this field.

Password
Enter the password for the user in this field.

Add
Click this button to add a TCP/IP user. The **Username** and **Password** fields must be completed before a new user can be added.

Old Password
Enter the current password for the “root” username in this field. The default password is “Atlona”.

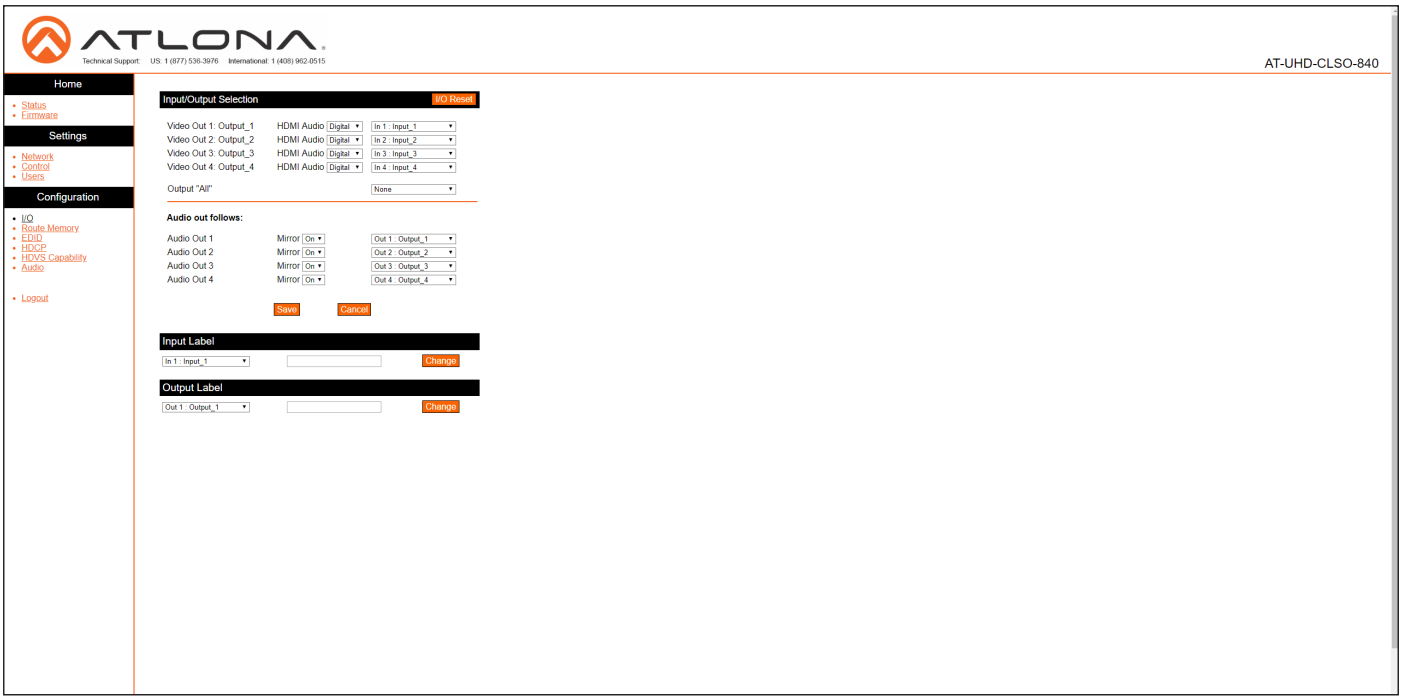
New Password
Enter the new password for the “root” username in this field.

Confirm New Password
Verify the new password by retyping it in this field.

Save
Click this button to commit all changes.

Cancel
Click to abort changes.

I/O page



Input/Output Selection

I/O Reset
Click this button to reset all input/output routing to factory-default settings.

Video Out 1: Output_1 - Video Out 4: Output_4
Click the **HDMI Audio** drop-down list to select either the **Digital** or **Analog** inputs for the audio source. Click the drop-down lists, to the right, to select the desired input for routing. Refer to Routing Inputs to Outputs (page 21) for more information.

Output "All"
Click this drop-down list to select the desired input to be routed to all outputs. Refer to Routing a Single Input to All Outputs (page 23) for more information.

Audio Out 1 - Audio Out 4
Click the **Mirror** drop-down list to enable or disable mirroring on the specified output. Click the output drop-down list to select the desired output (or input). Refer to Audio Routing (page 25) for more information.

Save
Click this button to commit all changes.

Cancel
Click to abort changes.

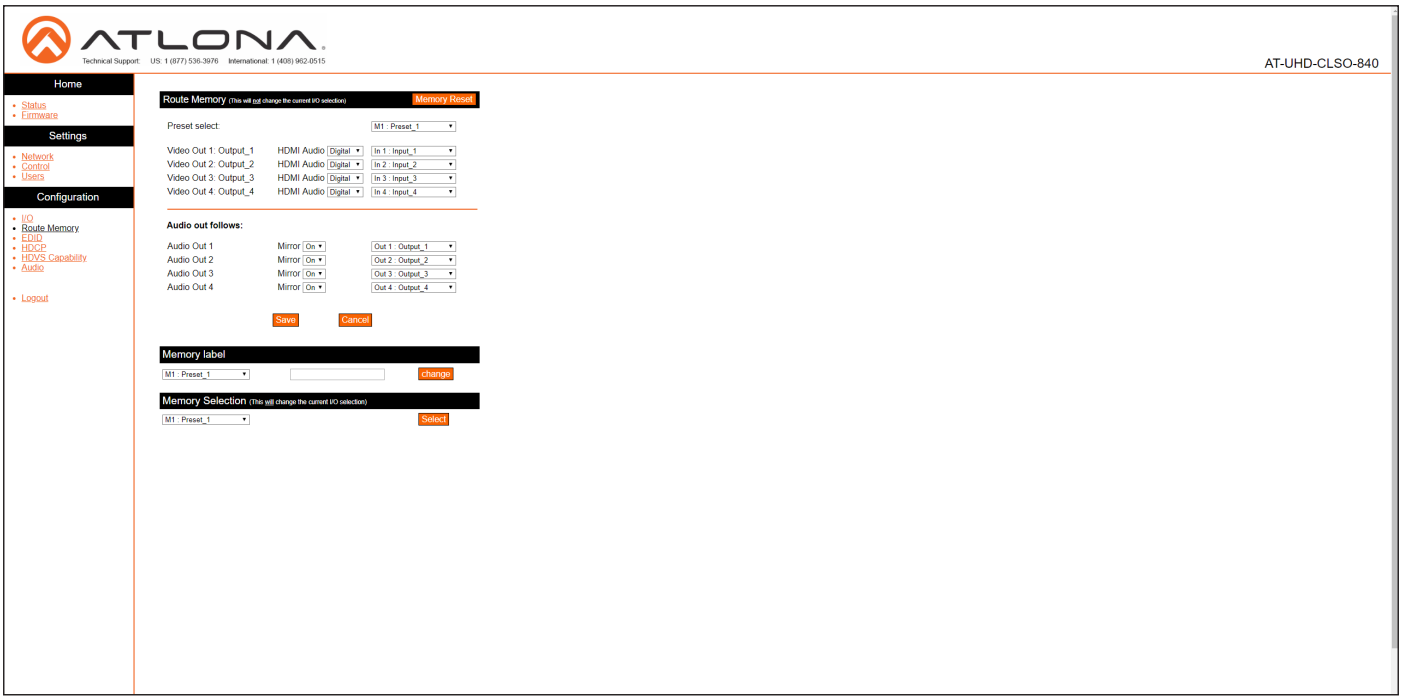
Input Label

Input Label
Click this drop-down list to select the desired input to be labeled. Enter the name of the input in the field to the right of the drop-down list. Click **Change** to commit the input label name. Refer to Renaming Inputs (page 38) for more information.

Output Label

Output Label
Click this drop-down list to select the desired output to be labeled. Enter the name of the output in the field to the right of the drop-down list. Click **Change** to commit the name of the output. Refer to Renaming Outputs (page 39) for more information.

Route Memory page



Route Memory

Memory Reset
Click this button to reset preset memory to factory-default settings. Note that performing this function will erase all memory presets.

Output 1 - Output 4
Click the **HDMI Audio** drop-down list to select either the **Digital** or **Analog** inputs for the audio source. Click the drop-down lists, to the right, to select the desired input for routing. Refer to Routing Inputs to Outputs (page 21) for more information.

Audio Out 1 - Audio Out 4
Click the Mirror drop-down list to enable or disable mirroring on the specified output. Click the output drop-down list to select the desired output (or input). Refer to Audio Routing (page 25) for more information.

Save
Click this button to commit all changes.

Cancel
Click to abort changes.

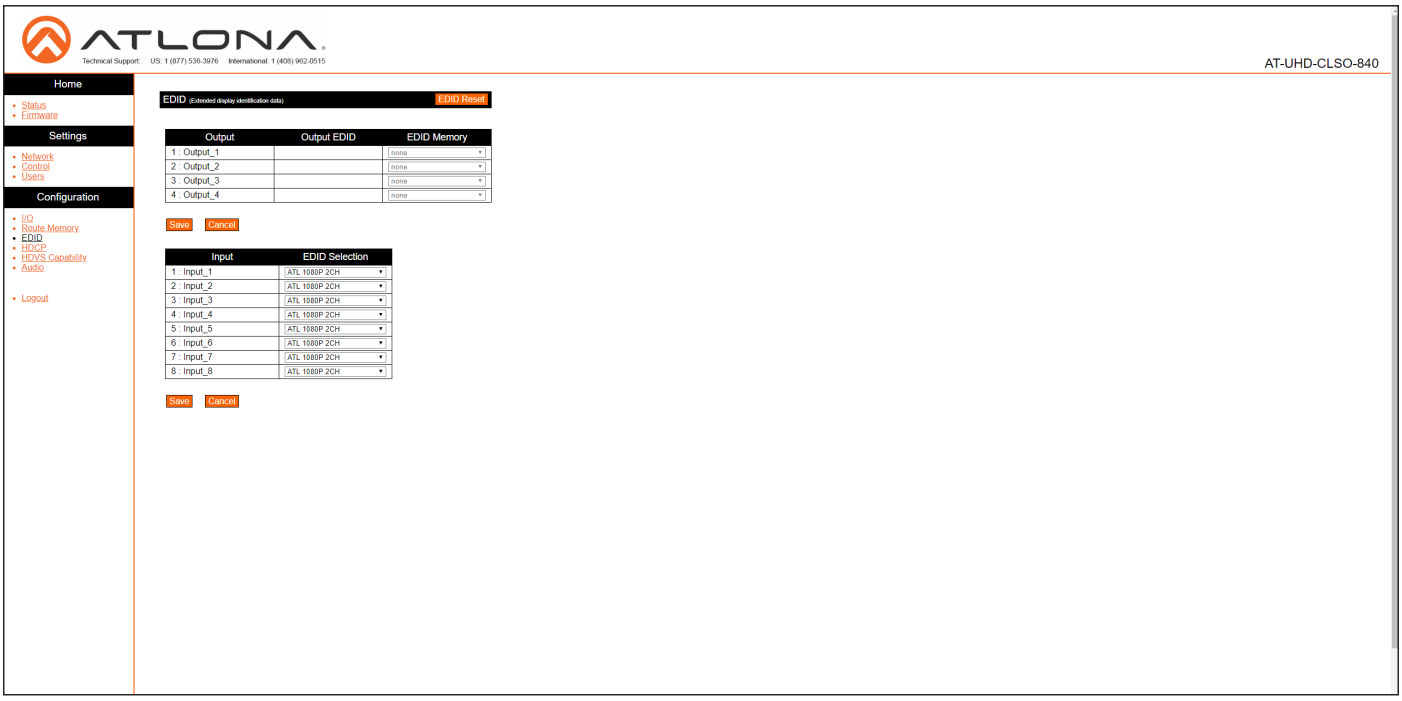
Memory Label

Memory Label
Click this drop-down list to select the desired memory location to be labeled. Enter the name of the memory location in the field to the right of the drop-down list. Click **Change** to commit the label to the memory location. Refer to Renaming Memory Presets (page 40) for more information.

Memory Selection

Memory Selection
Click this drop-down list to select the desired memory preset. Click **Select** to recall the memory preset. Refer to Creating and Editing Routing Presets (page 35) for more information.

EDID page



EDID Reset
Click this button to reset all EDID settings to the factory-default settings. Note that this will erase any stored EDID data in memory.

Output 1 - Output 4
Click the drop-down list to select the memory location where the EDID, under the Output EDID column, will be stored. Note that each drop-down lists is available, only if a sink device is connected to the output.

Save
Click this button to commit all changes for outputs.

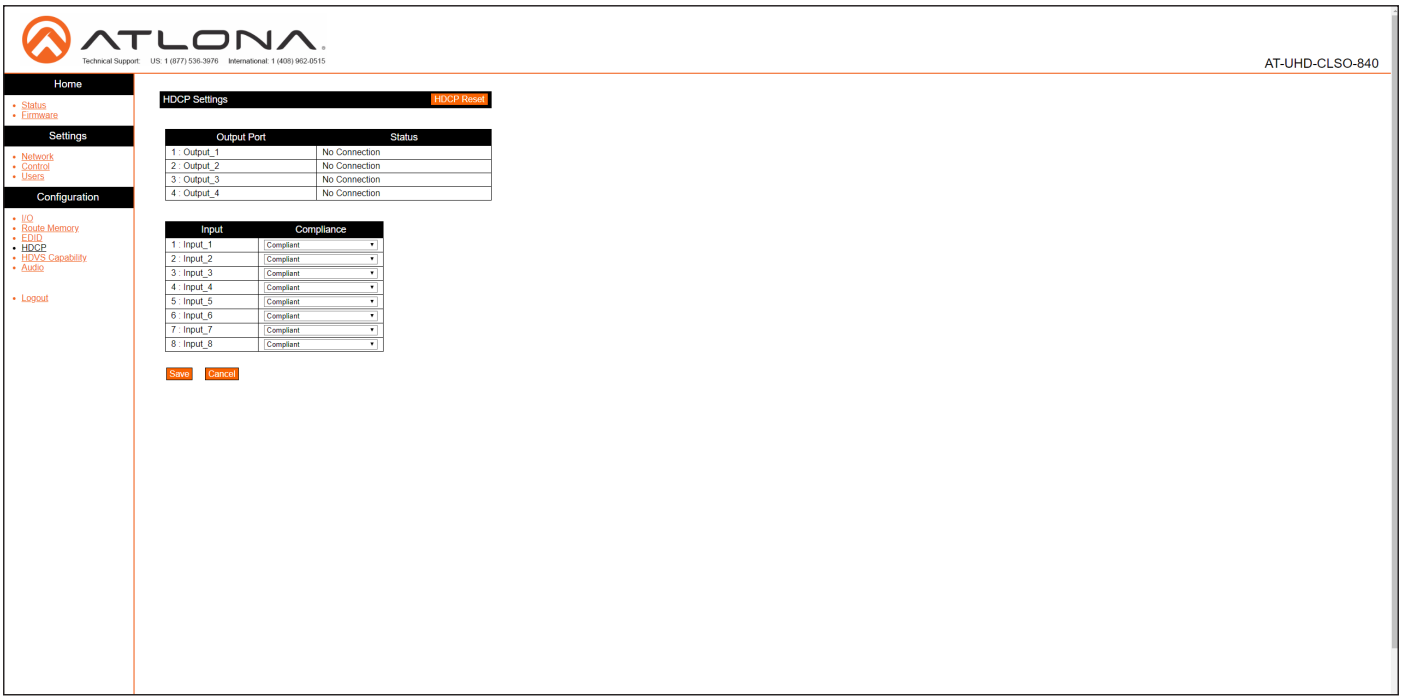
Cancel
Click to abort changes.

Input 1 - Input 8
Click these drop-down lists to assign the desired EDID to an input. Stored EDID data will also be displayed in these drop-down list if EDID data was captured. Refer to EDID Management (page 41) for more information.

Save
Click this button to commit all changes for inputs.

Cancel
Click to abort changes.

HDCP page



HDCP Reset
Click this button to reset all HDCP settings to the factory-default settings.

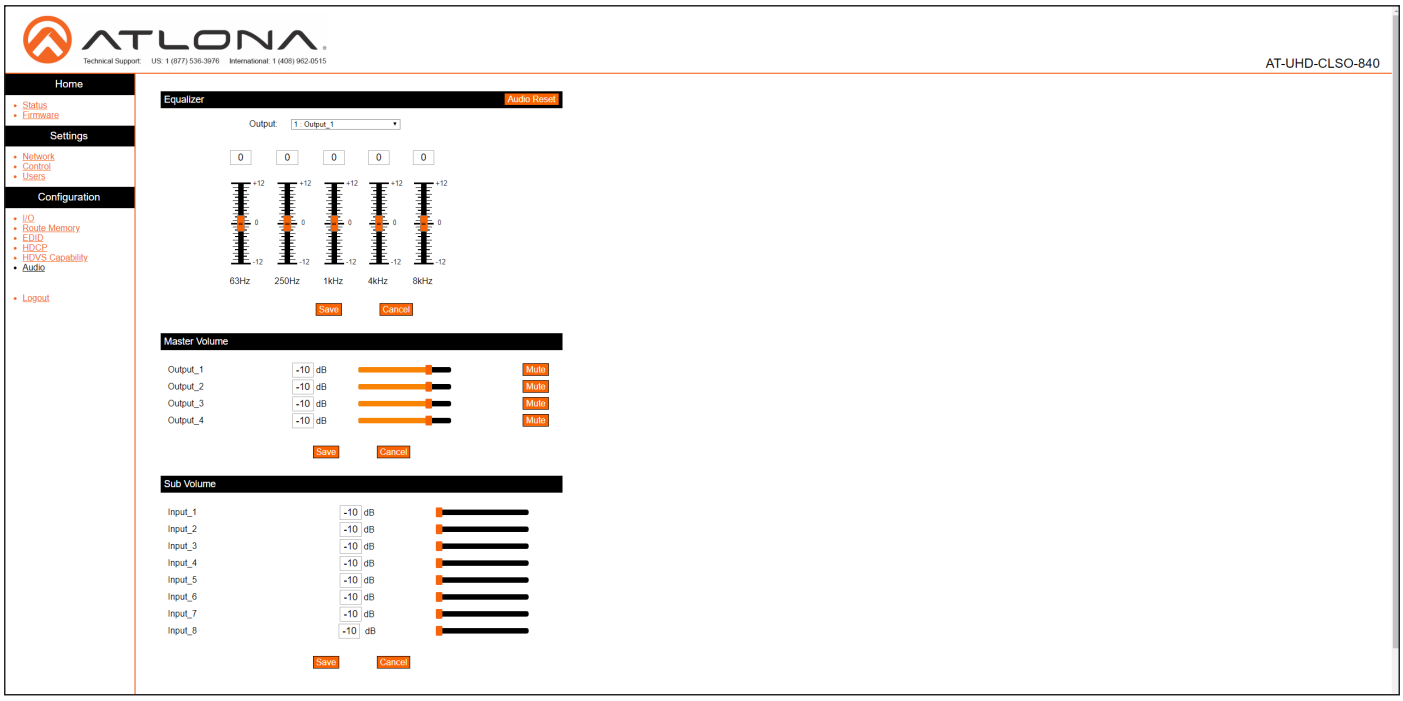
Output 1 - Output 4
Displays the connection status of each output.

Input 1 - Input 8
Click these drop-down lists to select Compliant, Non-Compliant, or Audio. Refer to HDCP Management (page 46) for more information.

Save
Click this button to commit all changes.

Cancel
Click to abort changes.

Audio page



Equalizer

Audio Reset
Click this button to reset all audio settings to factory-defaults.

Output
Each output can be assigned different equalizer settings. Click the drop-down list to select the desired output. Once the output is selected, adjust each equalizer band as needed. Click the **Save** button to commit changes or click the **Cancel** button to abort changes.

Master Volume

Volume Sliders
Click and drag the volume sliders to set the audio level for each output. Click the **Mute** button to mute audio for the specified output. When the audio for an output is muted, the Mute button will read **Unmute**. Click the **Unmute** button to disabling the muting. Click the **Save** button to commit changes. Click the **Cancel** button to abort changes. Audio range for output volume is -79 dB to +15 dB. The default value is -10 dB.

Sub Volume

Volume Sliders
Click and drag the volume sliders to set the audio level for each input. Click the **Save** button to commit changes. Click the **Cancel** button to abort changes. Audio range for output volume is -10 dB to +10 dB. The default value is -10 dB.

Appendix

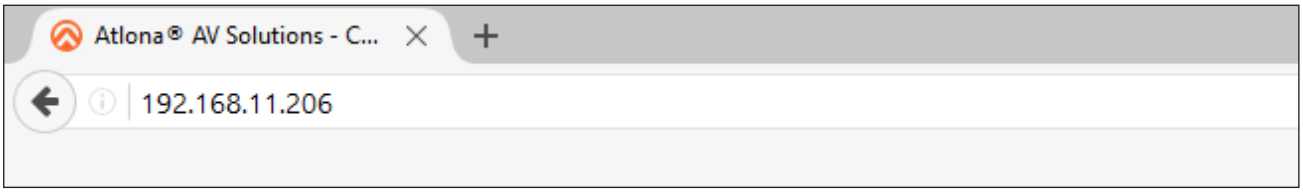
Updating the Firmware

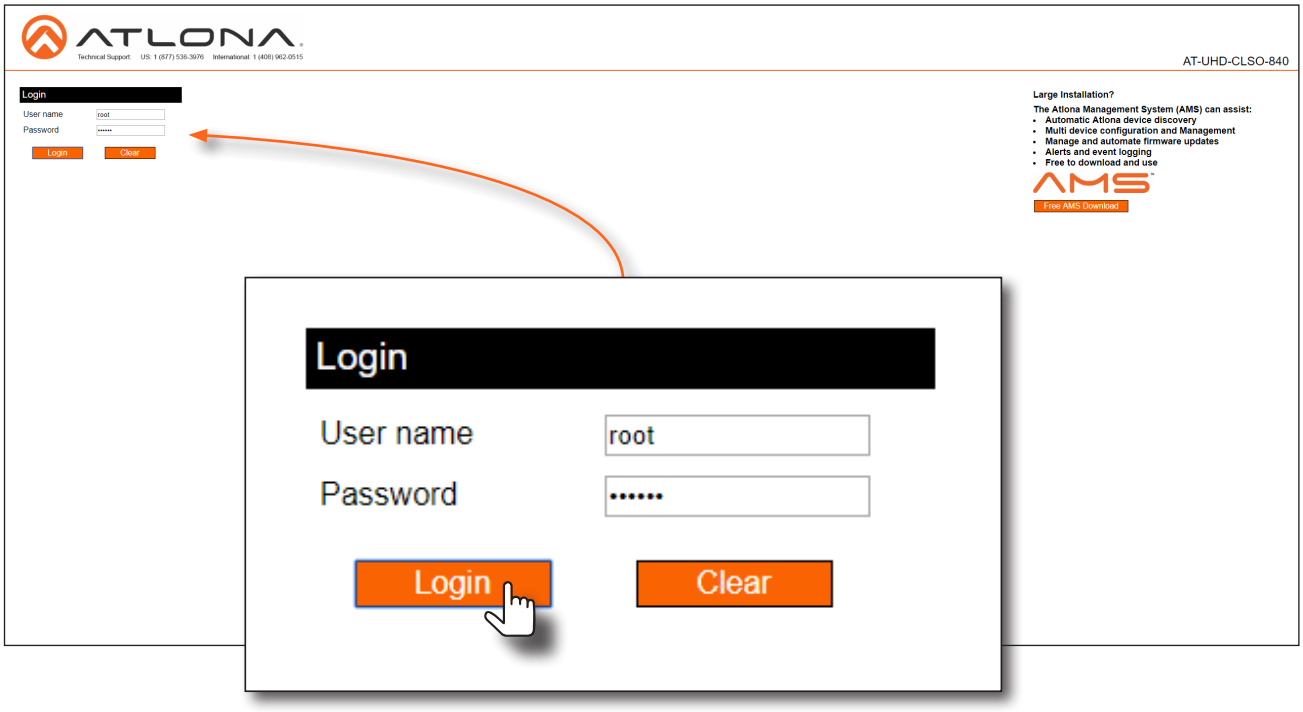
The AT-UHD-CLSO-840 is updated through the web GUI.

Required items:

- New firmware - Downloaded from atlona.com
- IP address of the AT-UHD-CLSO-840
- Computer on the same network as the AT-UHD-CLSO-840
- Username and password to access the web GUI

1. Verify that an Ethernet cable is connected between the AT-UHD-CLSO-840 and the network. The computer used to access the web GUI must be on the same network as the AT-UHD-CLSO-840.
2. Type the IP address of the AT-UHD-CLSO-840 into a web browser, as shown in the example below.



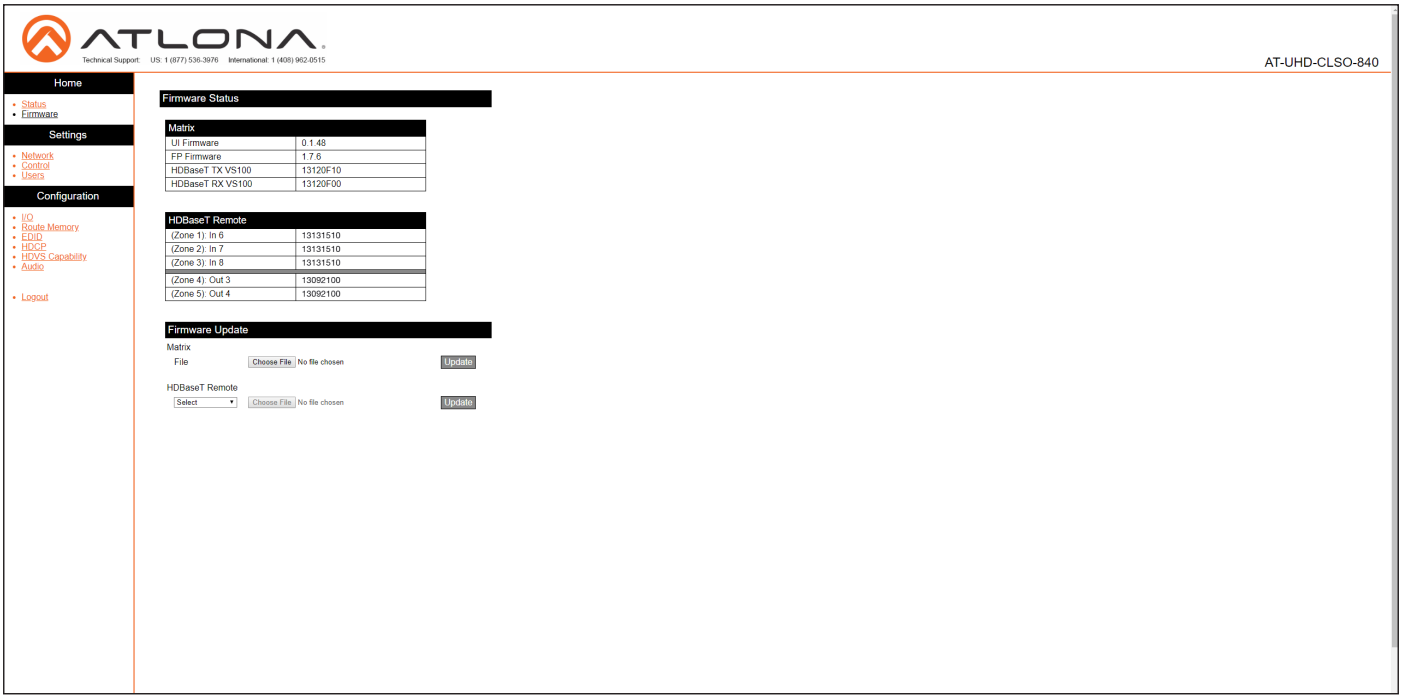


3. The login screen will be displayed. Login using the username and password. The default login credentials are:

   Username: root
   Password: Atlona

4. Click **Status** on the left side of the screen.

7. Click **Firmware**, on the left side of the screen.



8. Click the **Choose File** button, to select the firmware file.
9. Click the **Update** button. A progress bar will be displayed during the update process.
10. Once the update has been completed, re-login to the web GUI.

Cable Termination

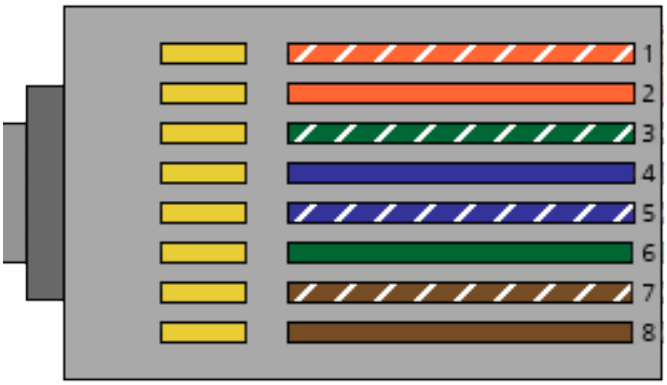
Atlona recommends EIA/TIA-568-B termination. Connector type and size is very important to ensure extenders work correctly. Always use the matching cable type with the correct RJ45 connector.

- CAT5e cables should use only CAT5e RJ45 connectors
- CAT6 cables should use only CAT6 connectors
- CAT6a cables should use only CAT6a connectors
- CAT7 cables should use only CAT7 connectors

Using the wrong size connectors may result in interference causing loss of signal.

WARNING: EZ RJ45 connectors are not recommended with HDBaseT extenders. Doing so may result in interference with audio and video transmission.

EIA/TIA 568-B Termination



1. White - Orange
2. Orange
3. White - Green
4. Blue
5. White - Blue
6. Green
7. White - Brown
8. Brown

Refer to the tables below for recommended cabling when using Altona products with HDBaseT. The green bars indicate the signal quality when using each type of cable. Higher-quality signals are represented by more bars.

Core	Cable Type	CAT5e	CAT6	CAT6a	CAT7
Solid	Unshielded Twisted Pair (UTP)	■■	■■	N/A	N/A
	Shielded Twisted Pair (STP)	■■■	■■■	■■■■	■■■■

IMPORTANT: Stranded or patch cables are not recommended due to performance issues.

Default Settings

The following tables list the factory-default settings, as defined in the web GUI, for the AT-UHD-CLSO-840.

Web GUI Page	Setting	Default Value	
Login	Username Password	root Atlona	
Network	DHCP Telnet Port HTTP Port IP Timeout Hostname Telnet Login Mode	ON 23 80 300 AT-UHD-CLSO-840-xxxxx OFF	
Control	Key Lock NTP Server Time zone Baudrate Databit Parity Stopbit	OFF Server 1 (GMT) Greenwich Mean Time 115200 (all zones) 8 Bit (all zones) None (all zones) 1 Bit (all zones)	
I/O	Video Out 1: Output_1 Video Out 2: Output_2 Video Out 3: Output_3 Video Out 4: Output_4 Output “All” **Audio out follows:** Audio Out 1 Audio Out 2 Audio Out 3 Audio Out 4	HDMI Audio: Digital HDMI Audio: Digital HDMI Audio: Digital HDMI Audio: Digital None Mirror: On Mirror: On Mirror: On Mirror: On	In 1 : Input 1 In 2 : Input 2 In 3 : Input 3 In 4 : Input 4 Out 1 : Output_1 Out 2 : Output_2 Out 3 : Output_3 Out 4 : Output_4
Route Memory	Preset select Video Out 1: Output_1 Video Out 2: Output_2 Video Out 3: Output_3 Video Out 4: Output_4 **Audio out follows:** Audio Out 1 Audio Out 2 Audio Out 3 Audio Out 4	M1 : Preset_1 HDMI Audio: Digital HDMI Audio: Digital HDMI Audio: Digital HDMI Audio: Digital Mirror: On Mirror: On Mirror: On Mirror: On	 In 1 : Input_1 In 2 : Input_2 In 3 : Input_3 In 4 : Input_4 Out 1 : Output_1 Out 2 : Output_2 Out 3 : Output_3 Out 4 : Output_4
EDID	1 : Input_1 2 : Input_2 3 : Input_3 4 : Input_4 5 : Input_5 6 : Input_6 7 : Input_7 8 : Input_8	ATL 1080P 2CH ATL 1080P 2CH ATL 1080P 2CH ATL 1080P 2CH ATL 1080P 2CH ATL 1080P 2CH ATL 1080P 2CH ATL 1080P 2CH	

Web GUI Page	Setting	Default Value
HDCP	1 : Input_1 2 : Input_2 3 : Input_3 4 : Input_4 5 : Input_5 6 : Input_6 7 : Input_7 8 : Input_8	Compliant Compliant Compliant Compliant Compliant Compliant Compliant Compliant
Audio	Output **Equalizer** **Master Volume** Output_1 - Output_4 **Sub Volume** Input_1 - Input_8	1 : Output_1 0 (all bands) -10 dB -10 dB

Mounting Instructions

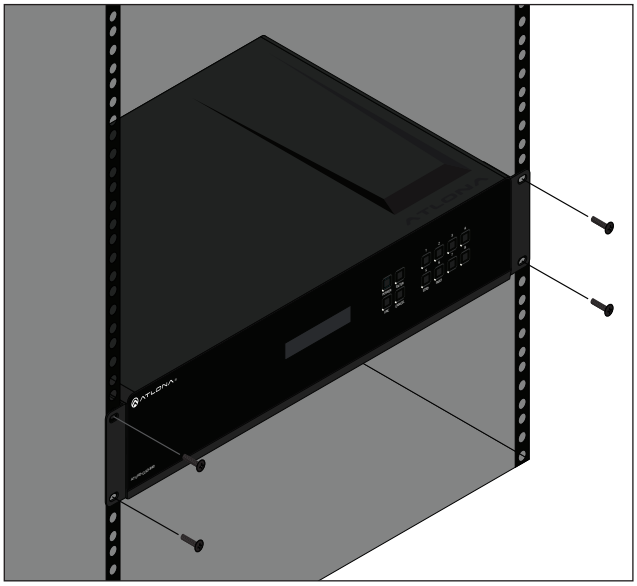
The AT-UHD-CLSO-840 can be mounted in a standard 19-inch rack or placed on top of a desk or table.

Rack Installation

IMPORTANT: To prevent possible fire hazards due to overheating, do not block the ventilation holes on either side of the enclosure, which would prevent proper airflow through the unit. In addition, do not exceed the maximum weight capacity for the rack. Install heavier equipment in the bottom portion of the rack for maximum stability.

1. Remove the two screws from either side of the enclosure.
2. Attach the included rack ears to each side of the AT-UHD-CLSO-840 using the enclosure screws.

3. Install the matrix into a rack, as shown using the included rack screws.



Surface Mounting

The AT-UHD-CLSO-840 can be placed on top of any flat surface. To prevent damage to the surfaces or unnecessary movement of the matrix, four feet have been included.

1. Turn the unit upside down.
2. Install each foot using the included feet screws, the rubber grips of the feet should be facing up during installation.
3. Turn the unit right-side up and place it in the desired location.

Specifications

Connectors, Controls, and Indicators	
HDMI IN	5 - Type A, 19-pin female
HDMI OUT	2 - Type A, 19-pin female
HDBaseT IN	3 - RJ45
HDBaseT OUT	2 - RJ45
AUDIO IN	4 - 5-pin captive screw
AUDIO OUT	4 - 5-pin captive screw
LAN	1 - RJ45
RS-232	1 - 3-pin captive screw
ON/OFF	1 - SPST, rocker
Power receptacle	1 - IEC, 100 - 240 V AC, 50/60 Hz
POWER	1 - momentary, tact-type
ENTER	1 - momentary, tact-type
FCN	1 - momentary, tact-type
CANCEL	1 - momentary, tact-type
EDID	1 - momentary, tact-type
CANCEL	1 - momentary, tact-type
1 - 8	8 - momentary, tact-type

Video	
UHD/HD/SD	3840×2160@30/25/24Hz*, 1080p@60/59.9/50/30/29.97/25/24/23.98Hz, 1080i@60/59.94/50Hz, 720p@60/59.94/50Hz, 576p@50Hz, 576i@50Hz, 480p@60/59.96Hz, 480i@60Hz
VESA	2560×1600, 2048×1536, 1920×1200, 1680×1050, 1600×1200, 1440×900, 1400×1050, 1280×1024, 1280×800, 1366×768, 1360×768, 1152×864, 1024×768, 800×600, 640×480
Color Space	YUV, RGB
Chroma Subsampling	4:4:4, 4:2:2, 4:2:0
Color Depth	8-bit, 10-bit, 12-bit

Audio	
Analog Output	PCM 2Ch (de-embedded)
HDBaseT Output	PCM 2Ch, LPCM 5.1, LPCM 7.1, Dolby® Digital, Dolby Digital Plus, Dolby TrueHD, DTS® 5.1, DTS-HD Master Audio™
Sample Rate	32kHz, 44.1kHz, 48kHz, 88.2kHz, 96kHz, 176.4kHz, 192kHz
Bit Rate	16-bit, 20-bit, 24-bit

* 3840x2160 @ 30/25/24 Hz supported at RGB 4:4:4 8-bit only.

Appendix

Resolution / Distance	4K - Feet	4K - Meters	1080p - Feet	1080p - Meters
CAT5e/6	230	70	330	100
CAT6a/7	330	100	330	100
HDMI IN/OUT	15	5	30	10

Signal	
Bandwidth	9 Gbps
CEC	Yes
HDCP	1.4 Compliant

Temperature	Celsius	Fahrenheit
Operating	0 to 40	32 to 104
Storage	-40 to 70	-40 to 158
Humidity (RH)	10 to 90, non-condensing	

Power	
Consumption	77 W
Idle Consumption	60 W
Supply	100 - 240 V AC

Dimensions	Millimeters	Inches
H x W x D	88.00 x 438.00 x 306.00	3.46 x 17.24 x 12.04
	99.00 x 438.00 x 306.00	3.90 x 17.24 x 12.04
	88.00 x 482.60 x 306.00	3.46 x 19.00 x 12.04
Rack Unit	2U	

Weight	Kilograms	Pounds
Unit	4.92	10.85

Certification	
Unit	CE, FCC, RoHS, TUV
Power Supply	CE, FCC, Level VI, RoHS, cULus, RCM, CCC