OmniStream™ R-Type
Single-Channel Networked AV Decoder

AT-OMNI-521

Atlona Manuals
Networked AV

Version Information

Version	Release Date	Notes
1	4/18	Initial release
2	7/18	Includes updates to 1.2.1 firmware; AMS updates
3	11/18	1.2.2 firmware; Dolby Vision decoding/licensing, fast switching

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

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Operating Notes

- The Atlona Management System (AMS) is a free downloadable application from Atlona that provides network configuration assistance for this product. This application is available only for the Windows® Operating System and can be downloaded from the Atlona web site.

IMPORTANT: Visit http://www.atlona.com/product/AT-OMNI-521 for the latest firmware updates and User Manual.

NOTE: Scaling and deinterlacing is not supported at 1080i.

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

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

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

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

Exclusions

This Limited Product Warranty excludes:

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

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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.

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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

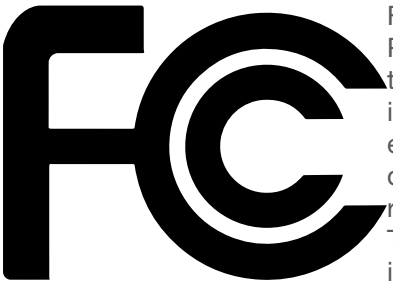
CAUTION: TO REDUCT THE RISK OF ELECTRIC SHOCK
DO NOT OPEN ENCLOSURE OR EXPOSE TO RAIN OR MOISTURE.
NO USER-SERVICEABLE PARTS INSIDE REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

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.

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Introduction

The Atlona **OmniStream™ 521** (**AT-OMNI-521**) is a networked AV decoder for an OmniStream-encoded video stream up to UHD @ 60 Hz and HDR, plus embedded audio and RS-232 or IR control pass-through. It is part of the **OmniStream R-Type Series**, designed for high performance, flexible distribution of AV over Gigabit Ethernet in residential and commercial applications. The OmniStream 521 is HDCP 2.2 compliant and ideal for the latest as well as emerging UHD and HDR displays. It features visually lossless compression, optimized for motion video, pristine-quality imaging, and extremely low, sub-frame latency from encode to decode – critical for demanding applications such as gaming. This decoder includes an HDMI output, high performance upscaling and downscaling, aspect ratio control, and video wall processing, plus presentation enhancement features such as logo insertion and scrolling on-screen text

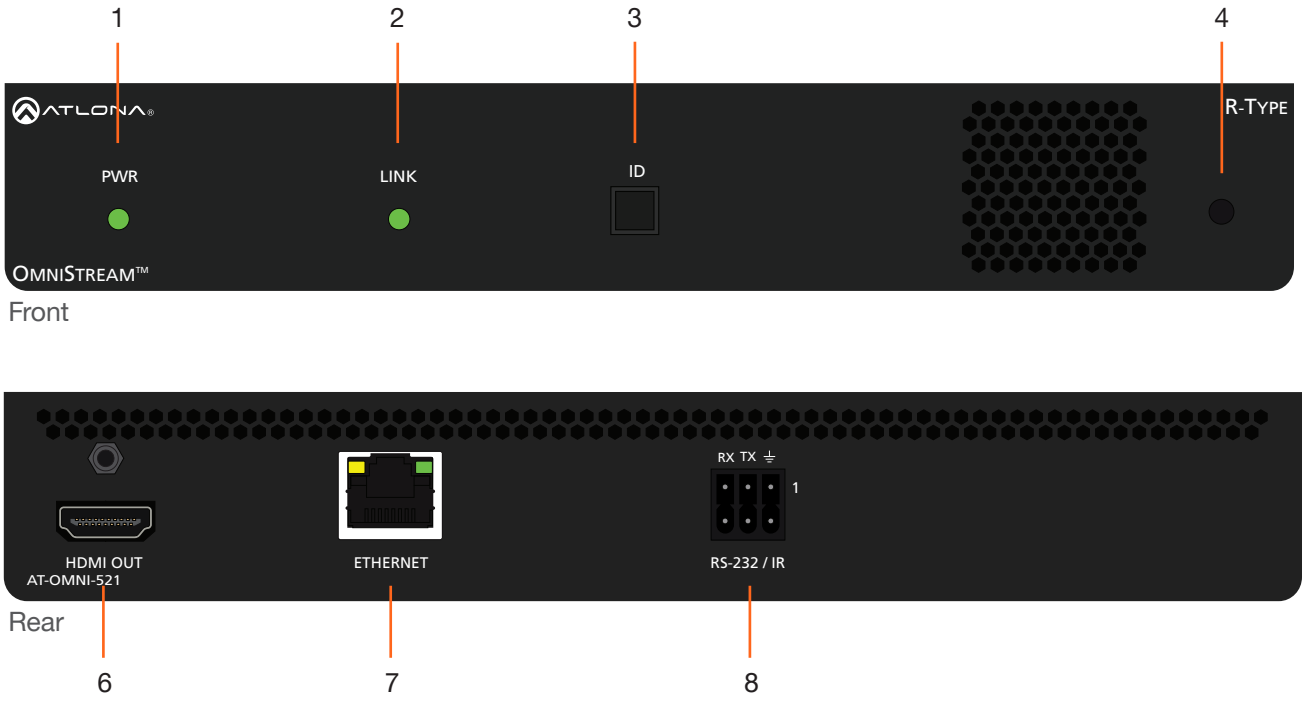
Features

- AV decoder for HDMI® up to 4K/UHD, plus embedded audio and RS-232 or IR control pass-through
- Supports UHD @ 60 Hz plus HDR formats
- High performance, visually lossless video compression
- Pristine-quality downscaling and upscaling
- Simplify integration with plug-and-play network switch compatibility
- Remotely powered via PoE (Power over Ethernet)
- Video wall processing
- Enhance AV presentations with visual enhancements

Package Contents

1 x AT-OMNI-521
1 x Push spring connector, 6-pin
1 x Wall/table mounting brackets
4 x Rubber feet
1 x Installation Guide

Panel Description



1 PWR
This LED indicator glows bright green when the unit is powered.

2 LINK
This LED indicator shows the link status of the decoder.

3 ID
Press this button to send a broadcast message to any network devices that are listening. This button is also used to set the decoder to factory-default settings. Refer to ID Button (page 21) for more information.

4 Reboot button
Press this button, using a small, pointed object to reboot the unit.

5 HDMI OUT
Connect an HDMI cable from this port to a UHD/HD display.

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

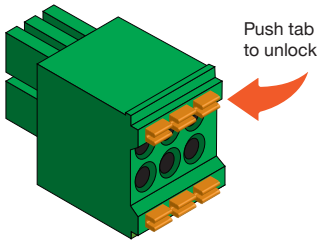
7 RS-232 / IR
Connect the included 6-pin push spring block to connect an automation system and an IR emitter or externder. RS-232 Connections (page 11) for more information.

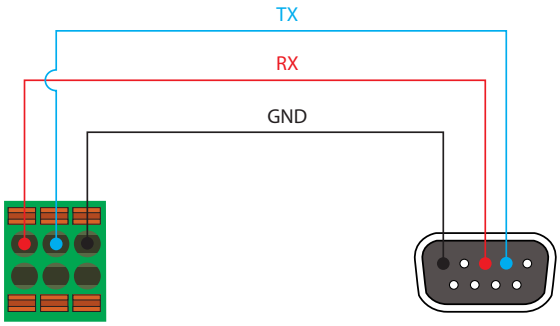
Installation

RS-232 Connections

The AT-OMNI-521 provides RS-232 over IP which allows communication between an automation system and an RS-232 device. This step is optional. Either the top three or bottom three set of terminals can be used for RS-232.

1. Use wire strippers to remove a portion of the cable jacket.
2. Remove at least 3/16” (5 mm) from the insulation of the RX, TX, and GND wires.
3. Insert the TX, RX, and GND wires into correct terminal on the included Phoenix block. If using non-tinned stranded wire, press the orange tab, above the terminal, while inserting the exposed wire. Repeat this step for the TX, RX, and GND connections.

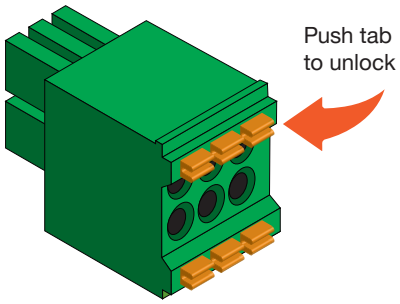




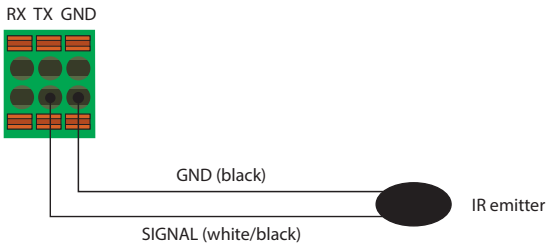
NOTE: Typical DB9 connectors use pin 2 for TX, pin 3 for RX, and pin 5 for ground. On some devices, pins 2 and 3 are reversed.

IR Connections

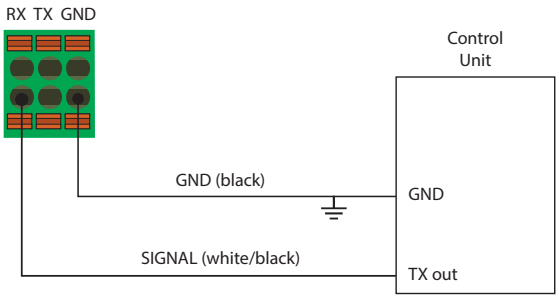
The same port that provides RS-232 connections also supports bidirectional IR pass-through, allowing a device to be controlled from either the headend or the decoder endpoint. This step is optional. Either the top three or bottom three set of terminals can be used for IR. Only the **RS-232 2** port (bottom set of connectors) supports both RS-232 and IR. Therefore, this port must be used for IR connections.



IR emitter configuration



IR extender configuration



The following components are required. Note that other components may also be used. However, Atlona has tested and verified the following components for this application:

- Xantech CB12 1 Zone Connecting Block
- Xantech 12 V PSU
- Atlona AT-IR-CS-RX
- Atlona AT-OMNI-IR-TX

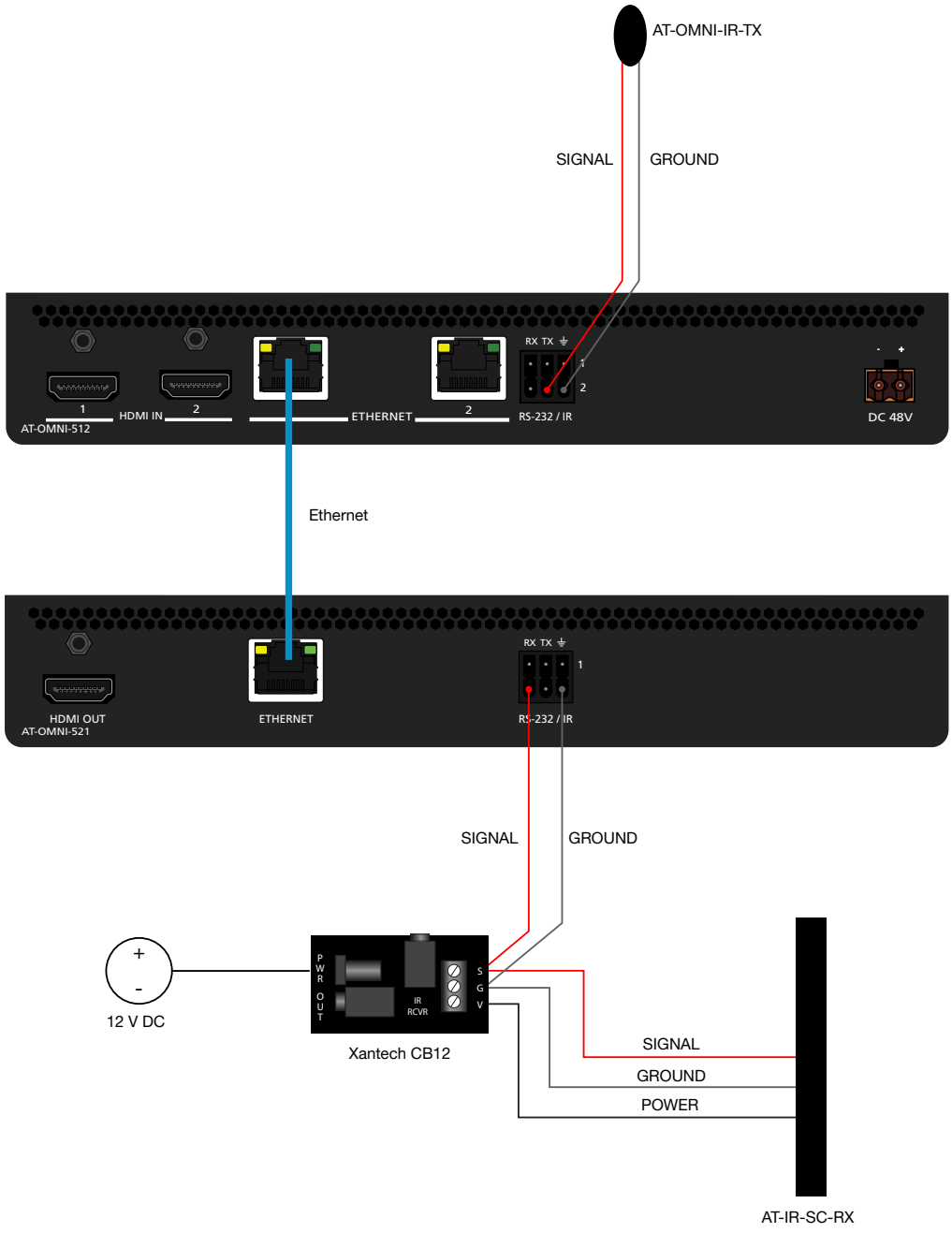
Decoder

1. Connect the SIGNAL, GROUND, and POWER leads from the Xantech CB12 to the AT-IR-SC-RX.
2. On the Xantech CB12, connect the SIGNAL and GROUND leads to the **RX** and ⏚ pins, respectively, of the **RS-232 2** port.
3. Connect the Xantech 12 V power supply (or other compatible 12 V DC power supply) to the Xantech CB12.

Encoder

4. Connect the SIGNAL and GROUND pins, from the AT-OMNI-IR-TX, to the **TX** and ⏚ pins, respectively, of the RS-232 2 port.
5. Refer to the illustration on the next page to verify that the correct connections have been made.

For downstream IR control, either multicast or unicast mode can be used. However, when controlling a source from the decoder (viewing location), unicast mode should be used. Refer to Unicast Mode (page 22) and Multicast Mode (page 24) for more information. Refer to IR Control (page 34) for information on IR configuration within AMS.



IMPORTANT: The IR emitter must be placed no more than 1" from the IR sensor on the device, in order to function properly.

Connection Instructions

1. Connect an Ethernet cable from the **ETHERNET** port on the decoder to a PoE-capable switch on the Local Area Network (LAN).

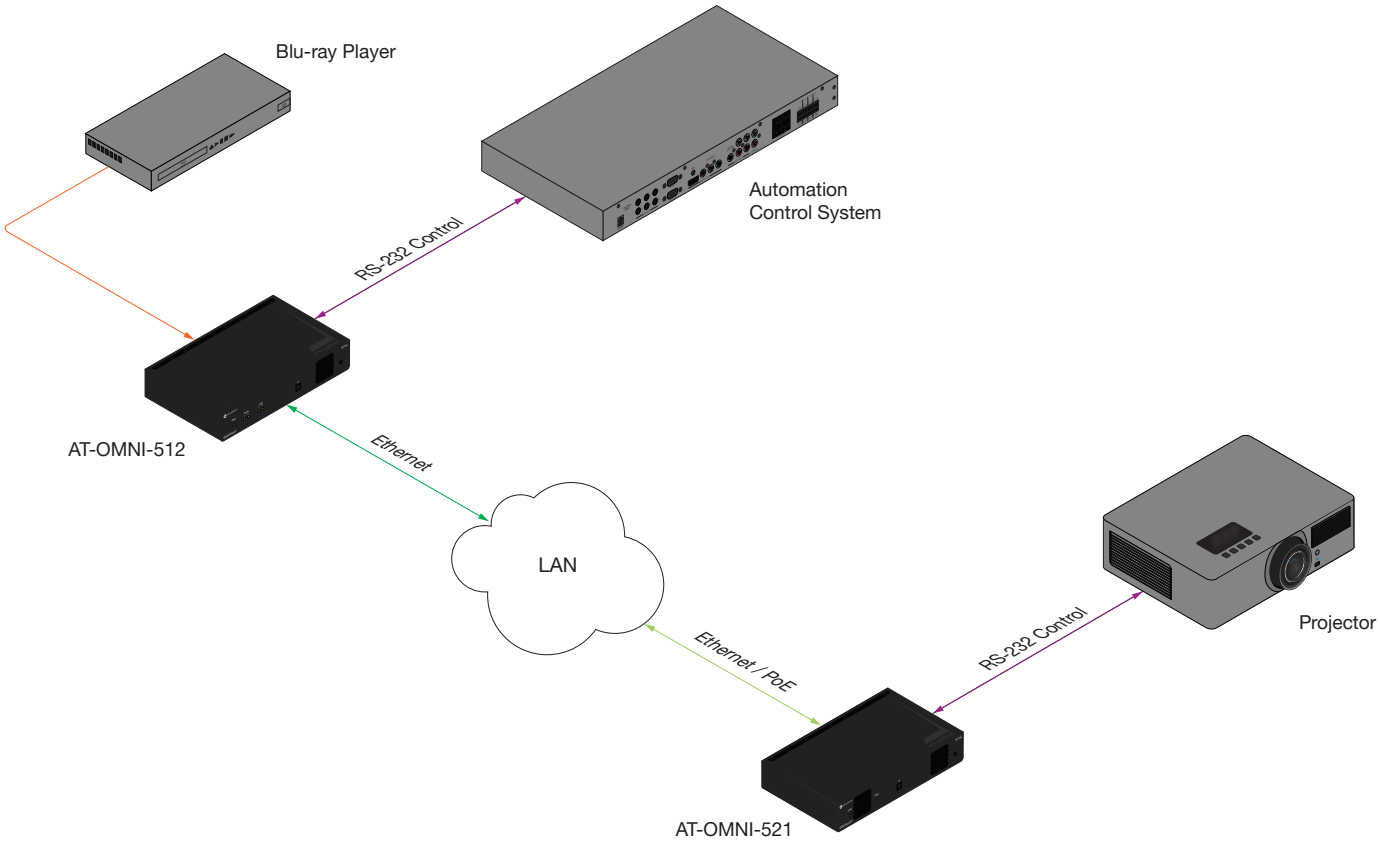
   IMPORTANT: If a PoE-capable switch is not available, a PoE injector (purchased separately) must be used.

2. Connect an HDMI cable from the **HDMI OUT** port to a UHD/HD display.
3. RS-232 (optional)
   - Connect the RS-232 controller/automation system to the **RS-232** port on the decoder.
   - Connect the RS-232 device to the **RS-232** port on the decoder.
4. IR (optional)

   NOTE: The IR emitter or IR receiver must always be connected to the **RS-232 2** port. Refer to IR Control (page 57) for more information.

   - **IR emitter**
     Connect the IR emitter to the **TX** and **GND** pins of the **RS-232 2** port. The IR emitter must be placed no more than 1” from the IR sensor on the device, in order to function properly.
   - **IR extender**
     Connect the IR extender from the **RX** and **GND** pins of the **RS-232 2** port to the associated pins on the control system.
5. Once the unit is powered, the **PWR** indicator, on the front panel, will turn red, then amber, then green.

Connection Diagram



Configuration

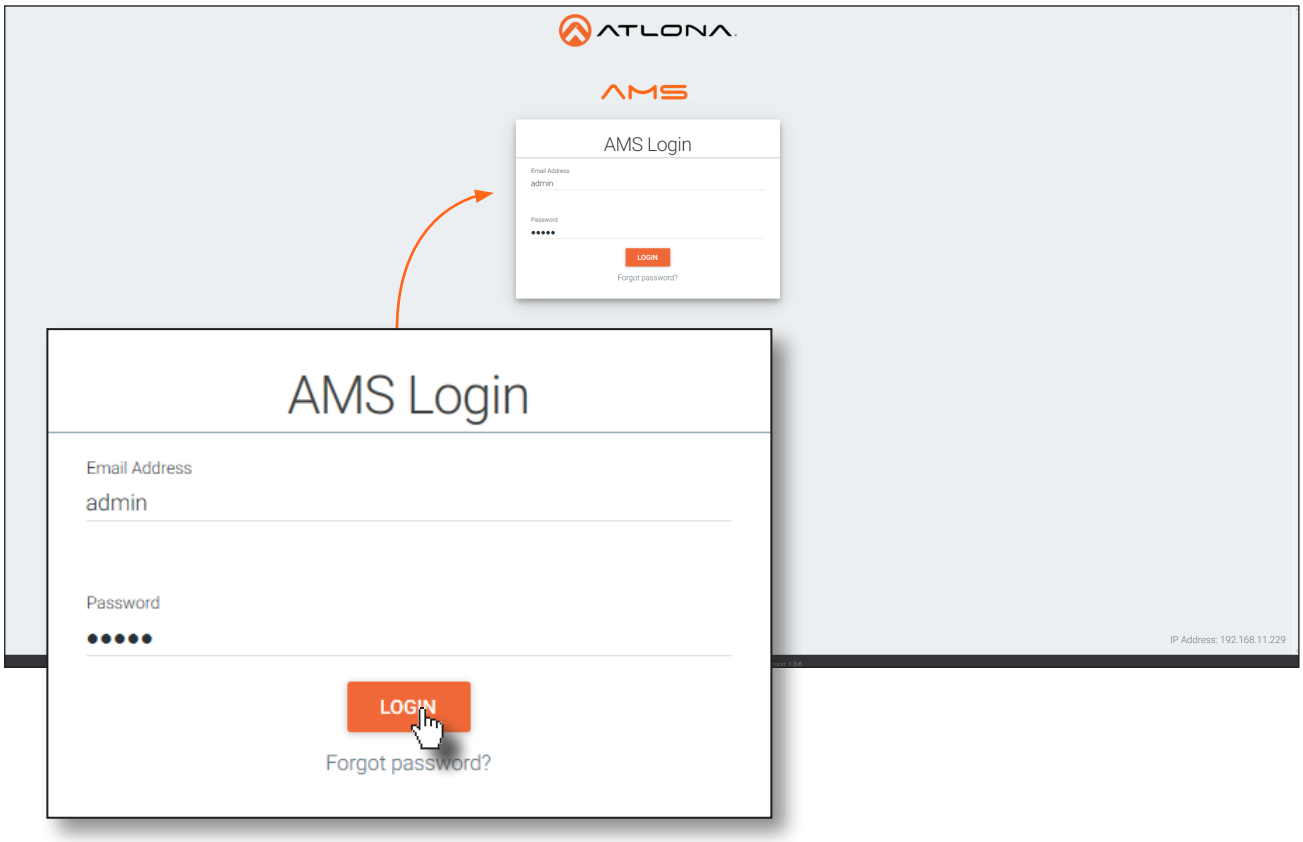
Discovery using AMS

It is recommended that the Atlona Management System (AMS) be used to configure and control OmniStream devices. AMS uses multicast Domain Name Server (mDNS) to automatically configure each AT-OMNI-521 on the network. AMS is free and can be downloaded from https://www.atlona.com/ams.

By default, the AT-OMNI-521 is set to DHCP mode, allowing a DHCP server (if present) to assign the decoder an IP address. Once an IP address has been assigned, the Atlona Management System (AMS) can be used to manage the product on the network. Note that AMS will only be able to discover decoders if they are on the same VLAN.

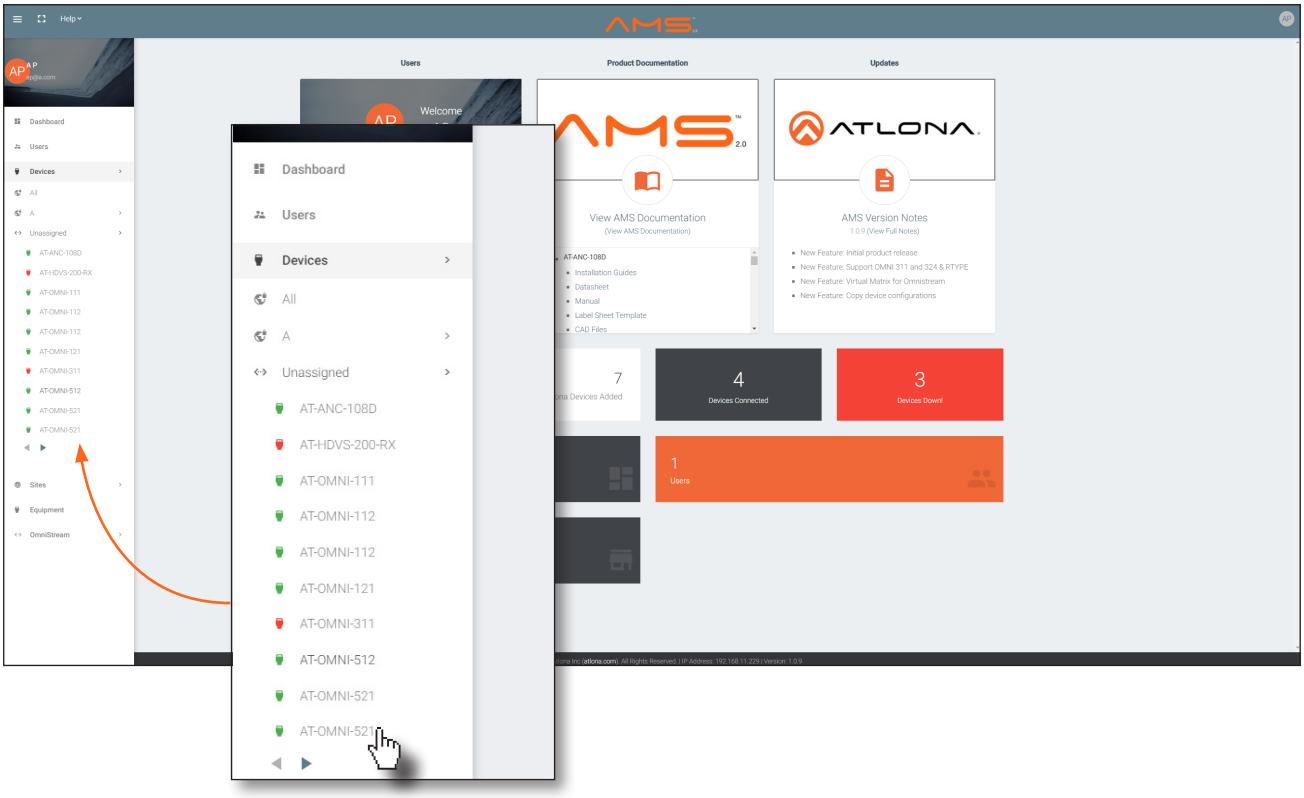
Accessing Decoders in AMS

1. Launch a web browser and enter the IP address of AMS, in the address bar.
2. Enter the required login credentials.



3. Click the **Login** button.
4. The AMS Dashboard will be displayed.
5. Click the ☰ icon, in the upper-left corner of the AMS Dashboard.

6. Click **Devices** from the fly-out menu.
7. Click the **Unassigned** option.



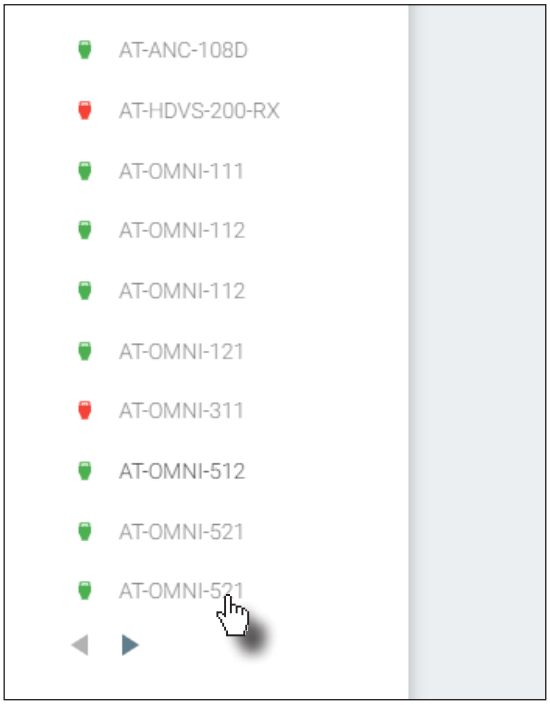
All available OmniStream decoders will be displayed under the **Unassigned** category. When a device is unassigned, it means that the device has not yet been assigned to a site, building, and/or room. Refer to the AMS User Manual for more information on these topics.

If a DHCP server is not found within 60 seconds, the decoder will be placed in Auto IP mode and assigned an IP address within the range of 169.254.xxx.xxx. If this occurs, configure the network interface of the computer that is running AMS, located on the same subnet (169.254.xxx.xxx, subnet mask 255.255.0.0). Refer to Configuring a Static IP Address (page 14) for more information on configuring an decoder in Auto IP mode.

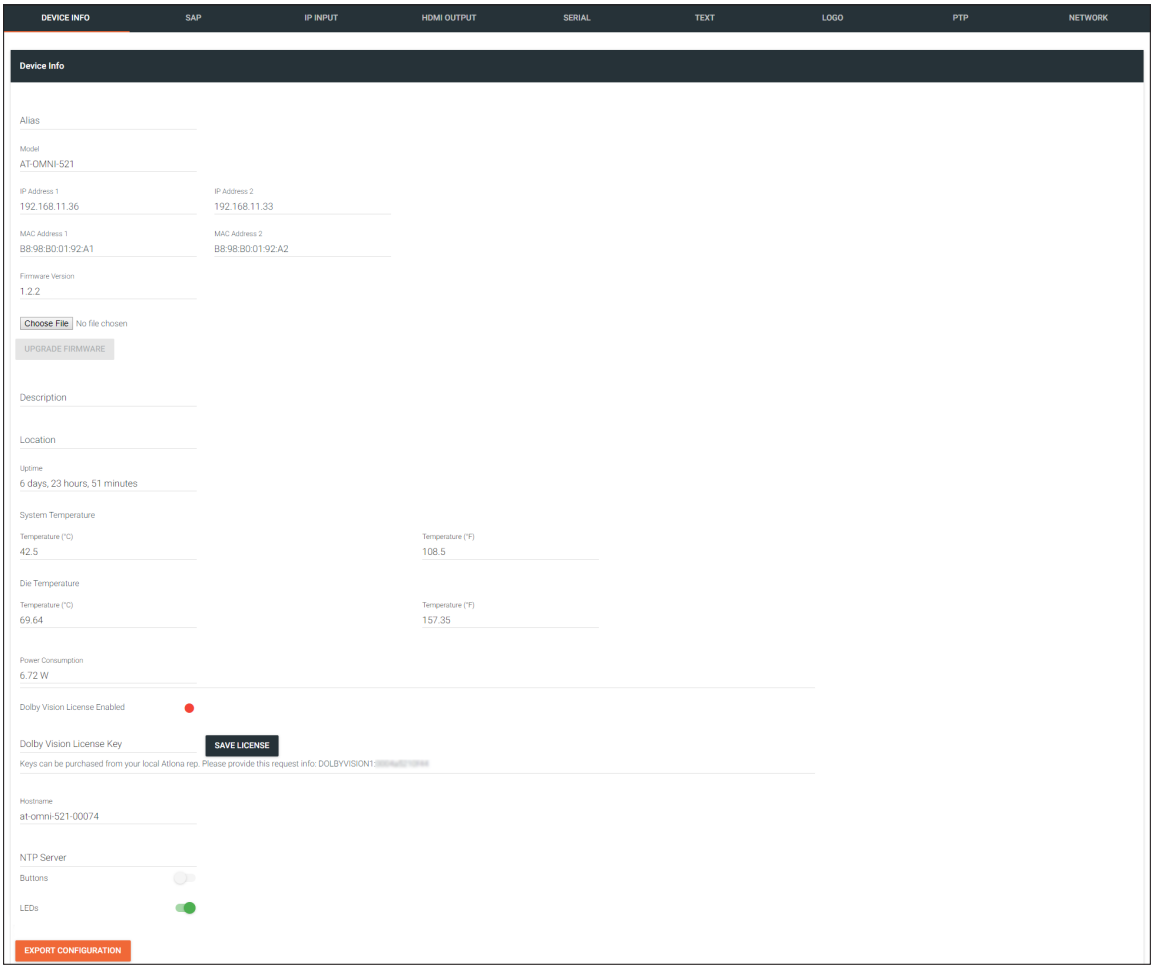
If no AT-OMNI-521 decoders are found, then verify the following:

- The computer that is running AMS must be on the same network as the AT-OMNI-521.
- Remove any network restrictions that may be in place. In order for mDNS to function properly, there must not be restrictions applied to the network.

8. Click the desired AT-OMNI-521 from the **Unassigned** device list.



Once the unit is selected, the control interface for the AT-OMNI-521 will be displayed.



Configuring a Static IP Address

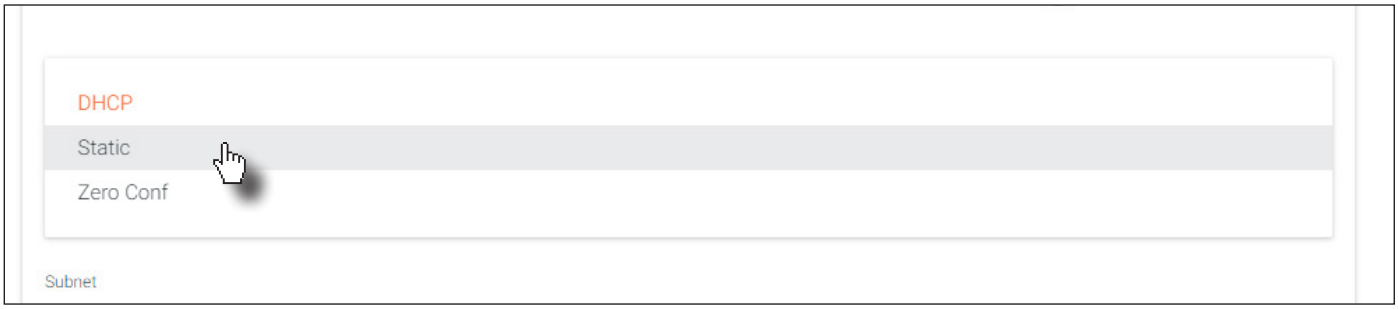
The following section is only required to set the AT-OMNI-521 decoder, currently in Auto IP mode, to a static IP address. If a DHCP server is not found within 60 seconds, decoders are automatically placed in Auto IP mode and will be assigned an IP address within the range 169.254.xxx.xxx. If this occurs, a static IP address can be assigned to the decoder in order for AMS to locate it on the network.

1. Make sure that the AT-OMNI-521 is powered. Power is supplied by connecting an Ethernet cable from the **ETHERNET** port on the decoder to a PoE-capable switch. If a PoE switch is not being used, then a PoE injector (not included) will need to be used.
2. Connect an Ethernet cable from the PC directly to one of the Ethernet ports on the switch. Make sure that the computer being used has AMS installed.
3. Configure the PC to a static IP address that is on the same subnet as the decoder.

IMPORTANT: Before continuing, write down the current IP settings in order to restore them, later. If *Obtain an IP address automatically* and *Obtain DNS server automatically* are selected, then this step is not required.

4. Login to AMS. Refer to Accessing Decoders in AMS (page 16) for information on the login process.
5. Locate the AT-OMNI-521 decoder under the **Unassigned** section within AMS.
6. Click on the device.
7. Under AMS, click **NETWORK** in the menu bar.

8. Click the **DHCP Mode** drop-down list and select **Static**.



9. Enter the required network information for the decoder in the **IP Address**, **Subnet**, and **Gateway** fields.
10. Click the **Save** button in the bottom-right corner, to apply the changes.
11. Disconnect the decoder from the PC and connect it to the network.
12. The decoder is now ready for use.

Basic Operation

LED Indicators

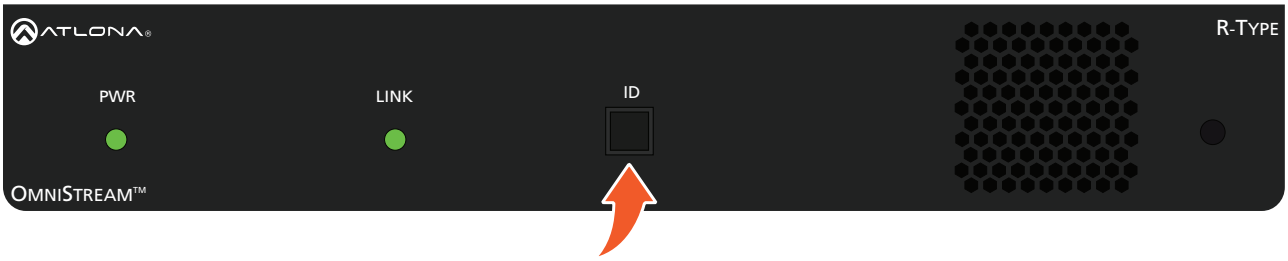
The following table provides a listing of front-panel LED indicators and their status:

LED		Description
PWR	Off ○	Unit is powered off. • If using a PoE switch, make sure that the port on the switch that is connected to the decoder, has PoE enabled. When the decoder is powered using PoE, the **PWR** indicator will be green. • Check the Ethernet cable for possible damage or loose connections. • If a PoE switch is not being used, then a PoE injector (not included) will need to be connected to the decoder.
	Red ●	The decoder is booting.
	Green ●	The decoder is ready.
LINK	Red ●	• The decoder is powered, but no Ethernet cables are connected between the switch and the **ETHERNET** port. • Check the Ethernet cable for possible damage or loose connections.
	Green ●	Link integrity is good between the decoder and the network.

ID Button

The ID button serves two functions:

1. Sends a broadcast message, over the network, to any devices that may be listening.
2. Resets the decoder to factory-default settings.



Broadcast Messaging

Press and release the **ID** button to send a broadcast notification over the network to any devices that may be listening.

Reset to Factory-Default Settings.

1. Press and hold the **ID** button for approximately 30 seconds.
2. The LED indicators on the front panel will flash, then turn “off.”
3. The decoder is now reset and will need to be reconfigured.

WARNING: Performing a factory-default reset will erase all user-programmed settings from the decoder. IP settings are not preserved.

Rebooting OmniStream

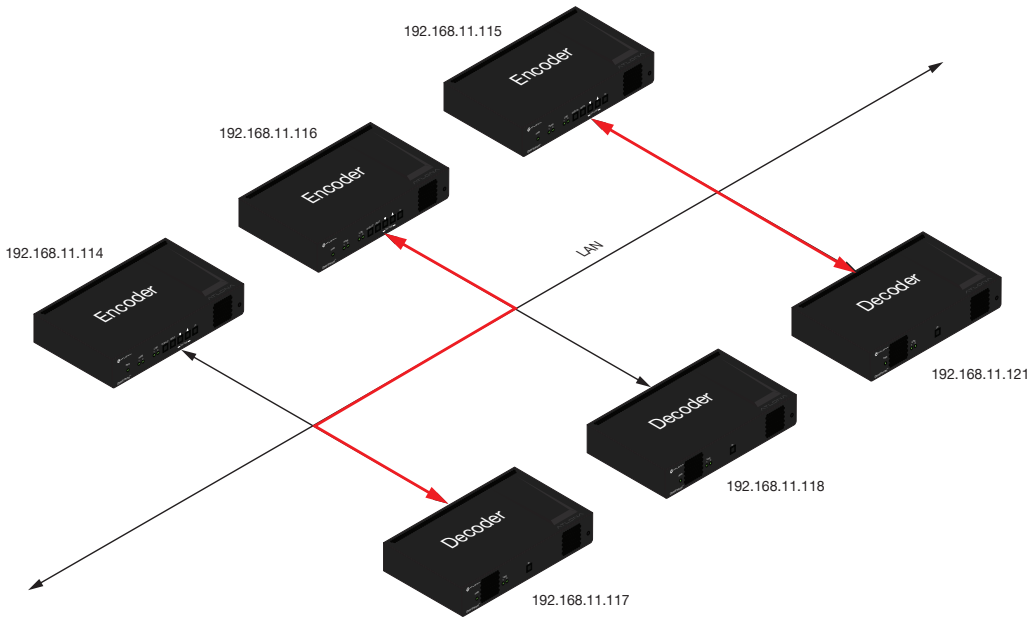
To reboot the OmniStream decoder, press and release the recessed button, on the far-right side of the unit, using a small, pointed object. Rebooting the decoder does not reset the decoder to factory-default settings.

Unicast Mode

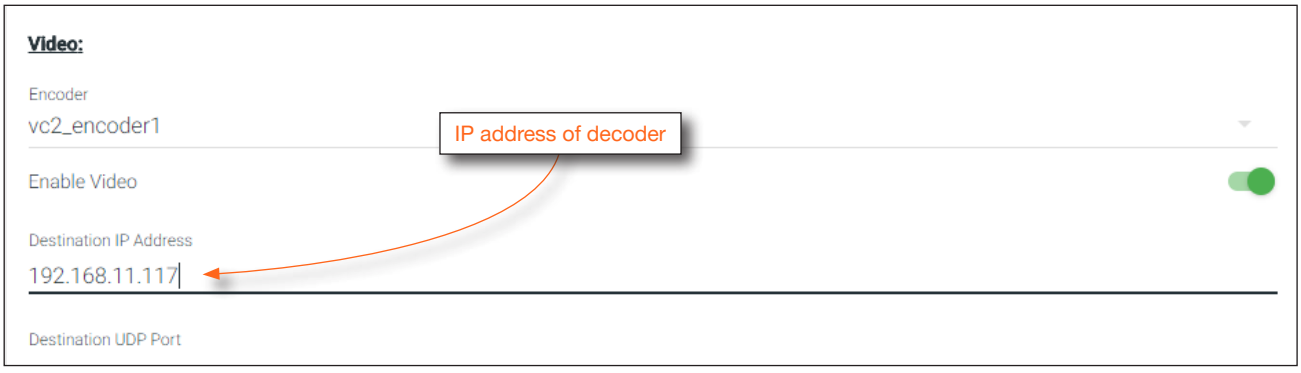
The term *unicast* is used to describe a configuration where information is sent from an encoder to a single decoder. Although it is common to have multiple encoder and decoder units within a system, it may also be desirable to restrict a single encoder to communicate with one decoder. In *unicast* mode, OmniStream encoders and decoders function similar to an n x 1 switcher. Changing the destination IP address at the encoder, will direct the stream to be received by a different decoder.

The illustration below shows three encoders and three decoders on a network, operating in *unicast* mode. The red lines indicate the data paths from each encoder to a separate (single) decoder.

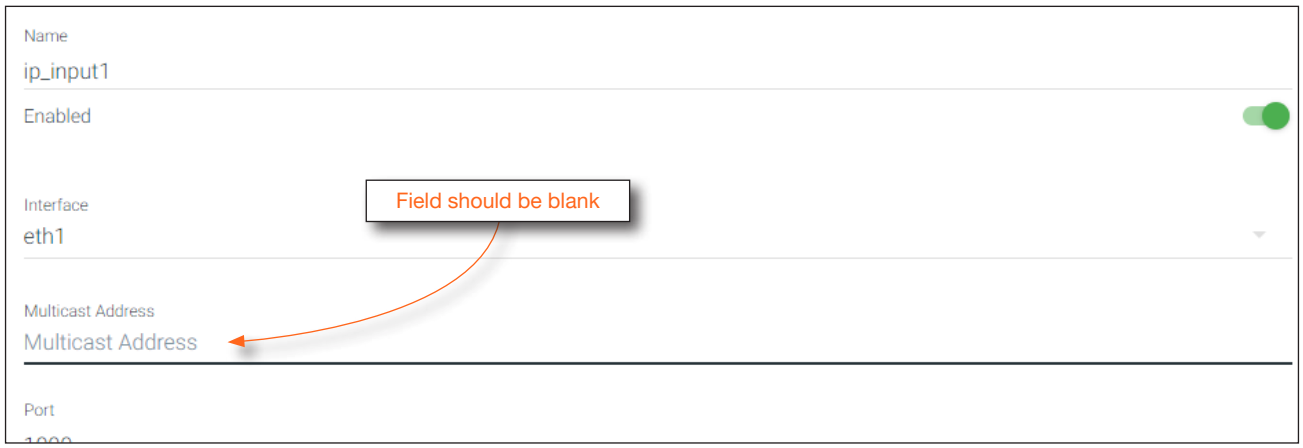
NOTE: By default, both encoders and decoders are shipped in multicast mode.



1. Login to AMS. Refer to Accessing Decoders in AMS (page 16) if necessary.
2. Go to the encoder AMS interface. Refer to the *OmniStream R-Type A/V Encoder User Manual*, if necessary.
3. Click **SESSION** in the menu bar and scroll down to the **Video** section.
4. Enter the IP address of the decoder in the **Destination IP Address** field.



5. Go to the decoder AMS interface.
6. Click **IP INPUT** from the menu.
7. Remove the IP address from the **Multicast Address** field.
8. Click the **SAVE** button to commit changes.



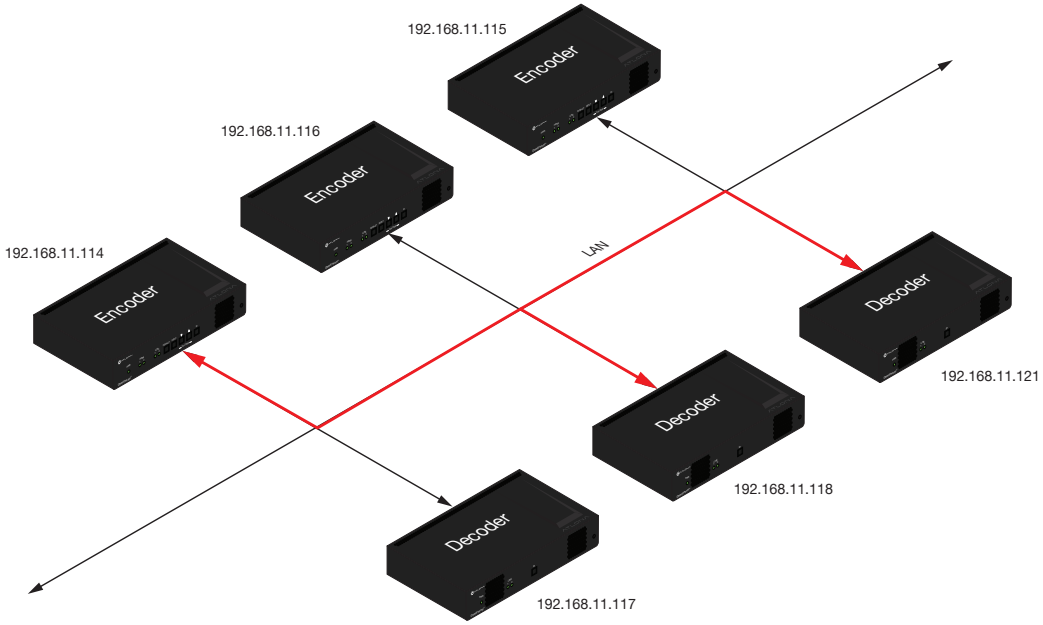
9. Unicast setup is complete. The decoder unit will now receive streams exclusively from the encoder containing the IP address of this decoder.

Multicast Mode

The term *multicast* is used to describe a configuration where information is sent from one or more points to a set of other points. For example, a single encoder can transmit data to multiple decoders. In addition, if multiple encoders are used, each encoder can stream data to any decoder that is not already receiving data from an encoder.
In *multicast* mode, the OmniStream encoders and decoders function similar to a matrix switcher.

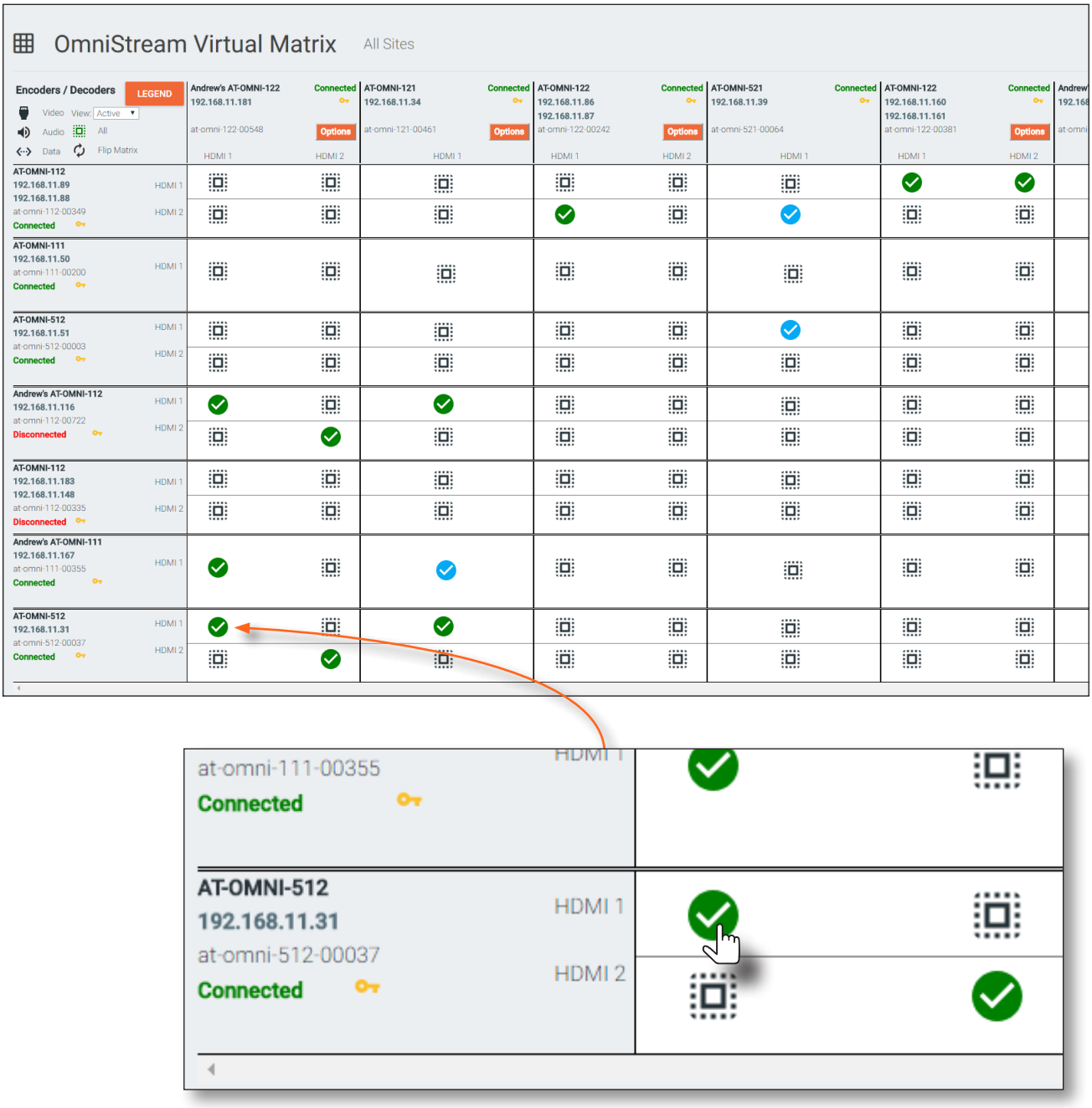
The illustration below shows three encoders and three decoders on a network, operating in *multicast* mode, where multiple decoders are subscribed to a single encoder. The red lines indicate the data paths from an encoder (192.168.11.117) to multiple decoders.

NOTE: By default, both encoders and decoders are shipped in multicast mode.



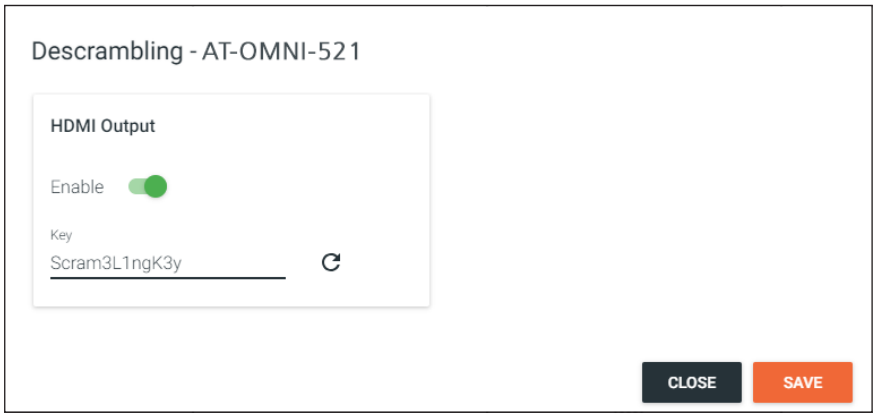
1. Login to AMS. Refer to Accessing Decoders in AMS (page 16), if necessary.
2. The AMS Dashboard will be displayed.
3. Click the ☰ icon, in the upper-left corner of the AMS Dashboard.
4. Click **Virtual Matrix** from the fly-out menu. Refer to The Virtual Matrix (page 84), if necessary.
5. Locate the desired encoder in the Virtual Matrix, as shown on the next page.
6. Create a cross-connection to the desired decoder. When a cross-connection is created, AMS will automatically assign a multicast IP address to both the encoder and decoder. By default, AMS automatically assigns a multicast IP address to each OmniStream encoder and decoder.

   Refer to the illustration on the following page, if necessary.


OmniStream Virtual Matrix
All Sites
Encoders / Decoders
LEGEND
Video
View:
Active
Audio
All
Data
Flip Matrix
Andrew's AT-OMNI-122
192.168.11.181
at-omni-122-00548
Connected
Options
AT-OMNI-121
192.168.11.34
at-omni-121-00461
AT-OMNI-122
192.168.11.86
192.168.11.87
at-omni-122-00242
AT-OMNI-521
192.168.11.39
at-omni-521-00064
AT-OMNI-122
192.168.11.160
192.168.11.161
at-omni-122-00381
HDMI 1
HDMI 2
AT-OMNI-112
192.168.11.89
192.168.11.88
at-omni-112-00349
AT-OMNI-111
192.168.11.50
at-omni-111-00200
AT-OMNI-512
192.168.11.51
at-omni-512-00003
Andrew's AT-OMNI-112
192.168.11.116
at-omni-112-00722
Disconnected
AT-OMNI-112
192.168.11.183
192.168.11.148
at-omni-112-00335
Andrew's AT-OMNI-111
192.168.11.167
at-omni-111-00355
AT-OMNI-512
192.168.11.31
at-omni-512-00037

at-omni-111-00355
Connected
AT-OMNI-512
192.168.11.31
at-omni-512-00037
Connected
HDMI 1
HDMI 2

5. Enter the desired scrambling key using one of the following methods:
   - Manual enter a user-defined key in the **Key** field.



   - Click the icon to generate a random key using AMS. Each time this icon is clicked, a new scrambling key will be generated.

6. Repeat the above process for each session.
7. Click the **Save** button to commit the changes.

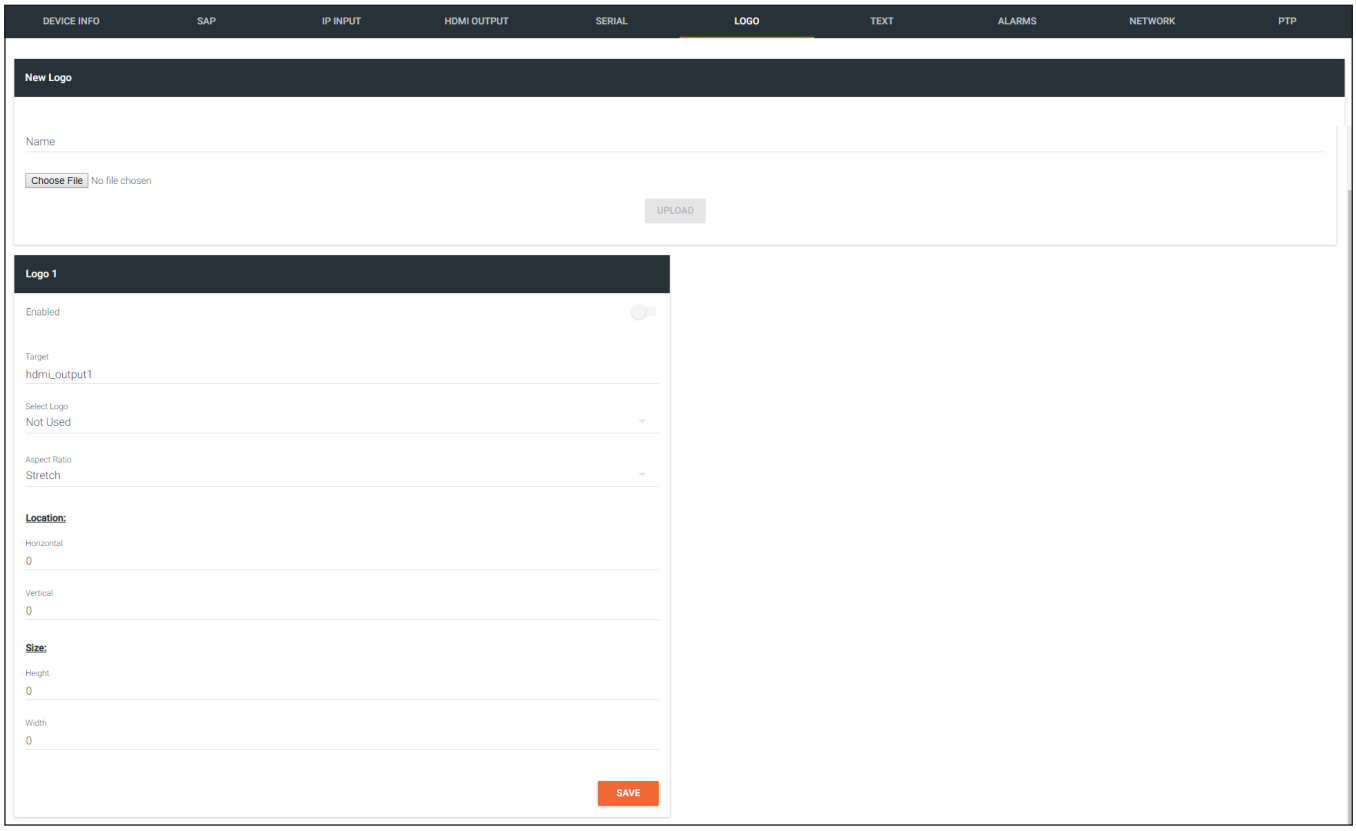
Slate / Logo Insertion

Slate / logo insertion is managed from within AMS. The difference between a “slate” and “logo” is in the size of the image and how it is used: Logos are classified as smaller, low-resolution images that can be positioned at specified locations on the screen. Slates occupy the entire screen. Note that while logos may be used as slates, the image quality will be degraded, as the image will be scaled to fill the screen.

Slate / logo insertion can be performed on both the encoder and decoder. When configured on the encoder, the image that is displayed on the output (decoder) will be from the encoder IP address(es) to which each decoder is subscribed. When configuring on the decoder, the presence of the image is specified on the (individual) HDMI output. Refer to the *OmniStream R-Type A/V Encoder User Manual*, for information on managing slate / logo insertion on encoder units.

NOTE: When using 4K images, the image width must not exceed 30% of the horizontal resolution.

1. Login to AMS. Refer to Accessing Decoders in AMS (page 16) if necessary.
2. Click the **LOGO** tab in the menu bar.



3. Under **New logo**, click the **Choose File** button and select the image to be used. Note that only .png files are valid selections.
4. Enter the name of the image in the **Name** field. If a name is not specified, then the **UPLOAD** button will be disabled.
5. Click the **UPLOAD** button to upload the file.
6. A new logo box will be added with the name of the logo that was provided in Step 4.

NOTE: If the selected image will be used as a *logo*, then proceed with Steps 7 through 9. If the image will be used as a *slate*, skip to Step 10.

7. Click the logo from the **Select Logo** drop-down list. To prevent the image from being displayed, select the Not used option.
8. Click the **Aspect Ratio** drop-down list to set the aspect ratio of the image. Selecting **Keep** will maintain the aspect ratio of the logo source file. Selecting **Stretch** will force the logo to adhere to the user configured settings for the logo size.
9. Set the location of the image by entering the desired values in the **Horizontal** and **Vertical** fields.
10. Define the size of the image by entering the desired values in the **Height** and **Width** fields.
11. Click the **HDMI OUTPUT** tab.
12. Click the **Slate mode** drop-down list, and select **Off**, **Manual**, or **Auto**.
    - **Off**
      Disables the image from being displayed.
    - **Manual**
      The image will always be displayed, superimposed on the source signal, and will remain even if the source signal is lost.
    - **Auto**
      The image will only be displayed when the source signal is lost. For example, this mode is useful in conference room applications for displaying system instructions when no sources are connected.
13. Click the **Slate Logo** drop-down list and select the desired logo. Note that if **Slate Mode** is set to **Off**, then this field will not be visible.
14. Click the **SAVE** button to apply all changes.

Deleting Slates / Logos

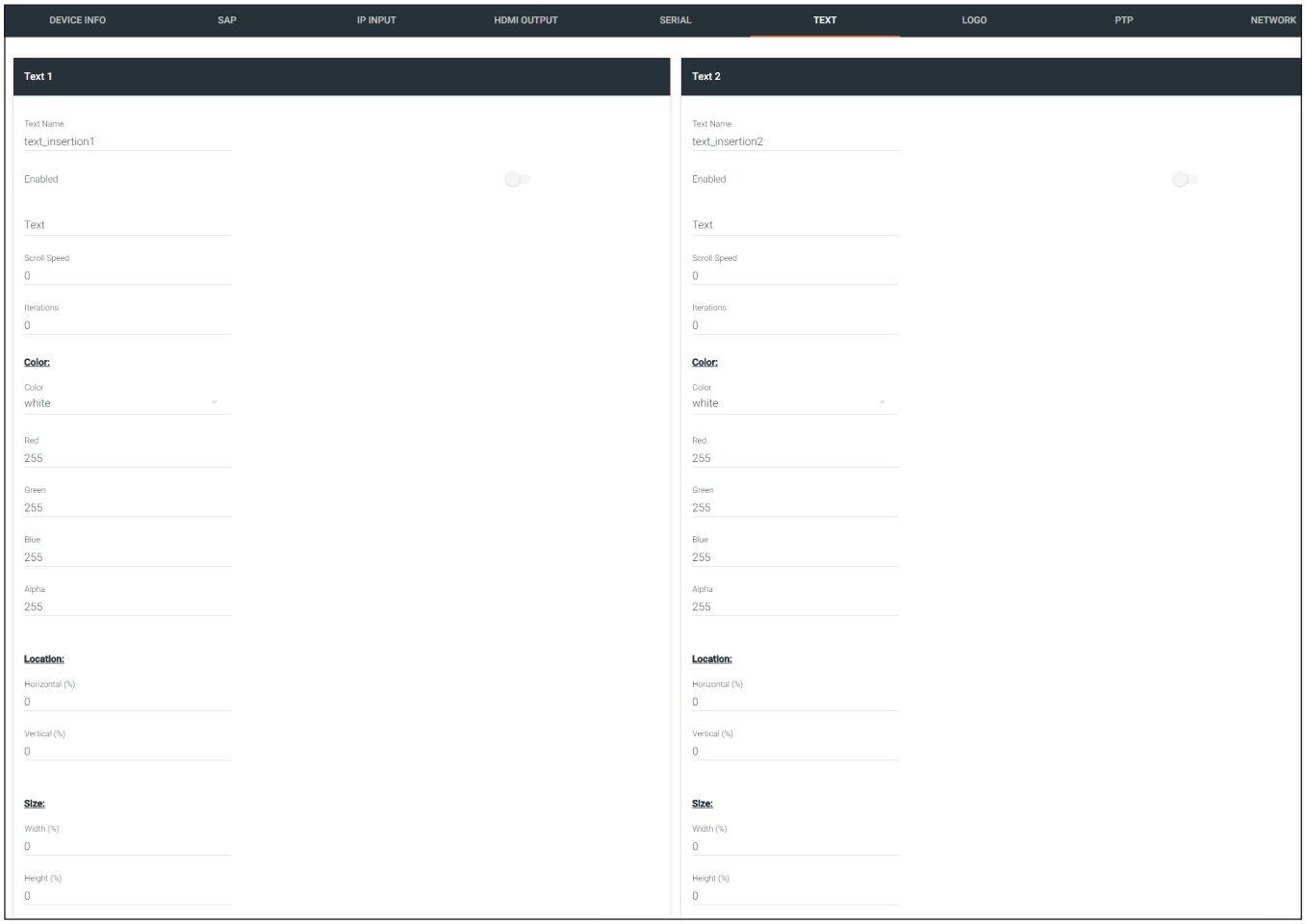
Follow the instructions below to remove a logo from the **Logo** tab.

1. Click the **LOGO** tab in the menu bar.
2. Click the **DELETE** button for the desired logo box. If the **DELETE** button is disabled, do the following:
    a. Scroll down to the **Logo Insertion** boxes.
    b. Click the **Select Logo** drop-down list and select **Not Used**.
    c. Click the **SAVE** button.
    d. Refresh the page.
    e. Click the **DELETE** button to remove the logo.

Text Insertion

Text can be inserted and scrolled across the screen, making it useful for messages and notifications. Several options are available when using text: Scroll speed adjustment (forward, reverse, or static), number of iterations, text color, vertical / horizontal position, as well as transparency.

1. Login to AMS. Refer to Refer to Accessing Decoders in AMS (page 16) if necessary.
2. Click **TEXT** in the menu bar.



3. Click the **Enable** toggle switch, to allow the text to be displayed.
4. In the **Text** field, enter the desired text.
5. Specify the speed of the scrolling text in the **Scroll Speed** field. Values from -255 to 255 are valid. Negative numbers will scroll the text from left to right. Positive numbers will scroll text from right to left.
6. Enter the number of iterations in the **Iteration** field. Set this field to 0 (zero) to set the number of iterations to infinity.
7. Click the **Color** drop-down list to select the color of the text. The **Red**, **Green**, and **Blue** fields can be changed to further modify the color of the text. Adjust the **Alpha** field to control the transparency of the text. A value of 255 is opaque and a value of 0 is transparent. Numbers from 0 to 255 are valid for each of these fields.
8. Specify the location of the text in the **Horizontal (%)** and **Vertical (%)** fields. Each of these values is based on the horizontal and vertical resolution of the screen.

9. Specify the size of the text in the **Width (%)** and **Height (%)** fields. Each of these values is based on the horizontal and vertical resolution of the screen.

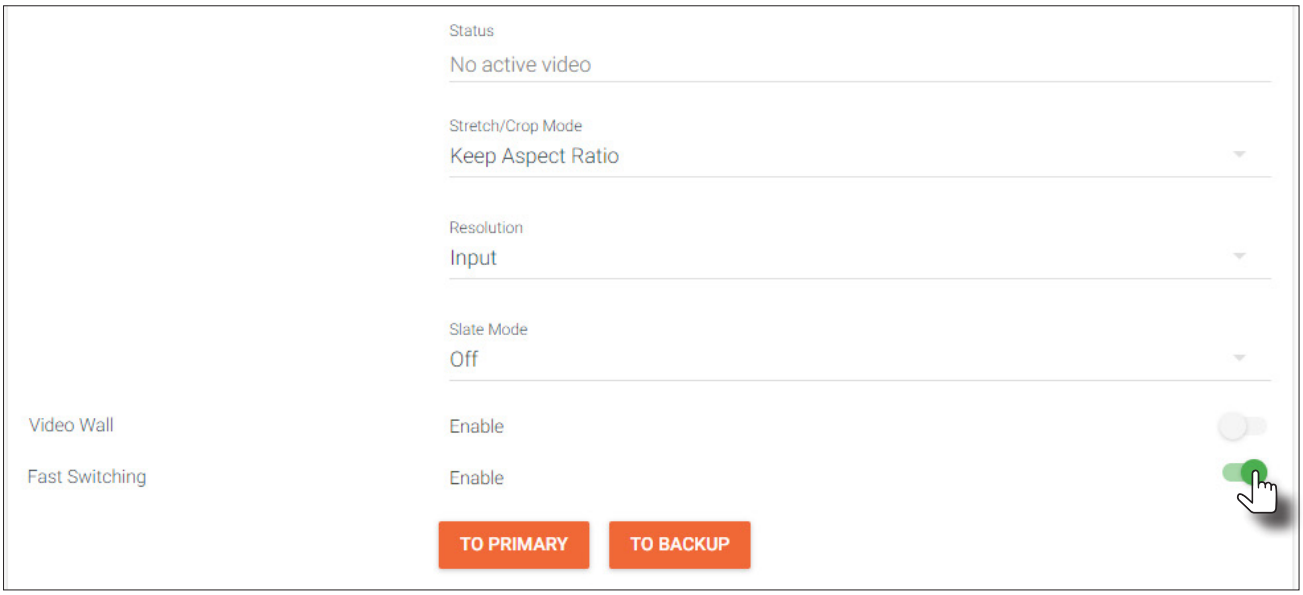
10. Click the **SAVE** button to apply all changes.

Fast Switching

IMPORTANT: If Fast Switching is enabled, latency increases from 0.5 frames to 1.5 frames. When using Fast Switching mode, the output resolution will be 1920x1080p, regardless of the source resolution. Also note that 1080i is not supported in Fast Switching mode.

This feature is a software implementation which vastly improves the HDMI authentication process, resulting in ultra-fast switching between video streams.

1. Login to AMS. Refer to Accessing Decoders in AMS (page 16) if necessary.
2. Click **HDMI OUTPUT** in the menu bar.
3. Scroll down to the **Fast Switching Enable** toggle switch. By default, this feature is disabled and the toggle switch will be gray. Click the toggle switch to enable fast switching. When enabled, the toggle switch will be green.



The following table provides maximum timing, color space, and bit-depth specifications when fast switching is enabled.

Number of Channels	Resolution	Refresh Rate	Color Space	Bit Depth
1	1920 x 1080p	60 Hz	4:4:4	12-bit
2	1920 x 1080p	30 Hz	4:4:4	12-bit

NOTE: When fast-switching is enabled, the output resolution at the decoder endpoint is dependent on both the number of channels on the decoder and the input resolution received from the encoder. Refer to the table below for details.

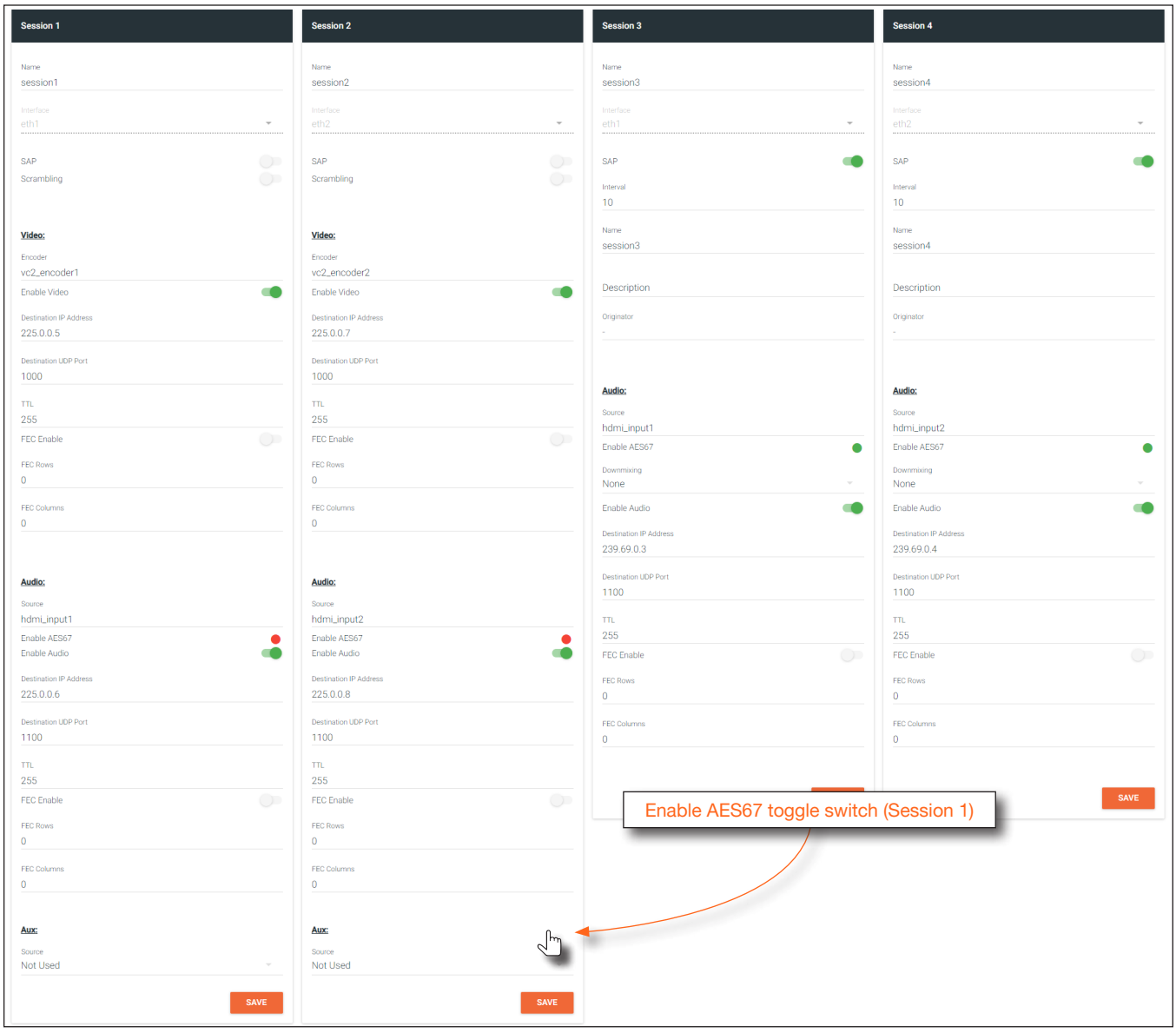
Input Resolution (from Encoder)	Output Resolution (AT-OMNI-121)	Output Resolution (AT-OMNI-122)
1280 x 720p	N/A	N/A
1920 x 1080p @ 60 Hz	N/A	1920 x 1080p @ 30 Hz
> 1920 x 1080p (up to UHD)	1920 x 1080p @ 60 Hz	1920 x 1080p @ 30 Hz

Advanced Operation

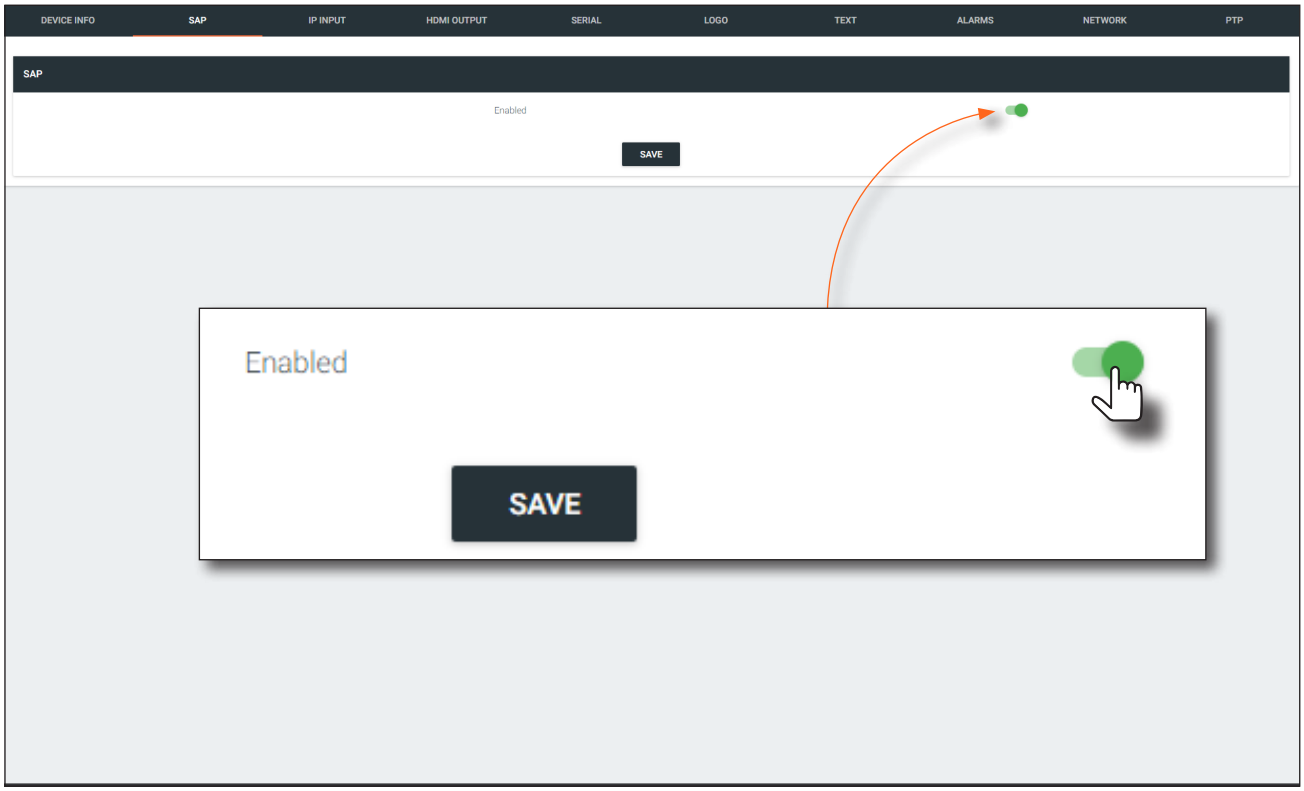
AES67 Audio

AES67 audio is a standard for high-performance audio streaming over IP, providing several features such as synchronization, media clock identification, and connection management. AES67 does not support compressed audio formats, such as Dolby® Digital, and others. Source audio must be transmitted as LPCM 2.0 or 5.1.

1. Login to AMS. Refer to Accessing Decoders in AMS (page 16), if necessary.
2. The AMS Dashboard will be displayed.
3. Click the ☰ icon, in the upper-left corner of the AMS Dashboard.
4. Click **Devices** > **All** and select the desired encoder from the **Device List**.
5. Go to the encoder interface and click **SESSION** in the menu bar. Refer to the *OmniStream R-Type A/V Encoder User Manual*, if necessary.
6. Scroll down to the **Audio** section and click the **Enable AES67** toggle switch to enable or disable this feature. When enabled, the toggle switch will be green.



7. Select the type of downmixing from the **Downmixing** drop-down list, if desired. Available options are: **None**, **Stereo**, or **Mono**.
8. Click the **SAVE** button within the **Session** section.
9. Go to the decoder interface and click **SAP** from the menu bar, at the top of the screen. Under the **SAP** section, click the **Enable** toggle switch and enable SAP. When enabled, the toggle switch will be green. If the decoder is to receive AES67 audio, this step is *required*.
10. Click the **SAVE** button on the **SAP** page.



IR Control

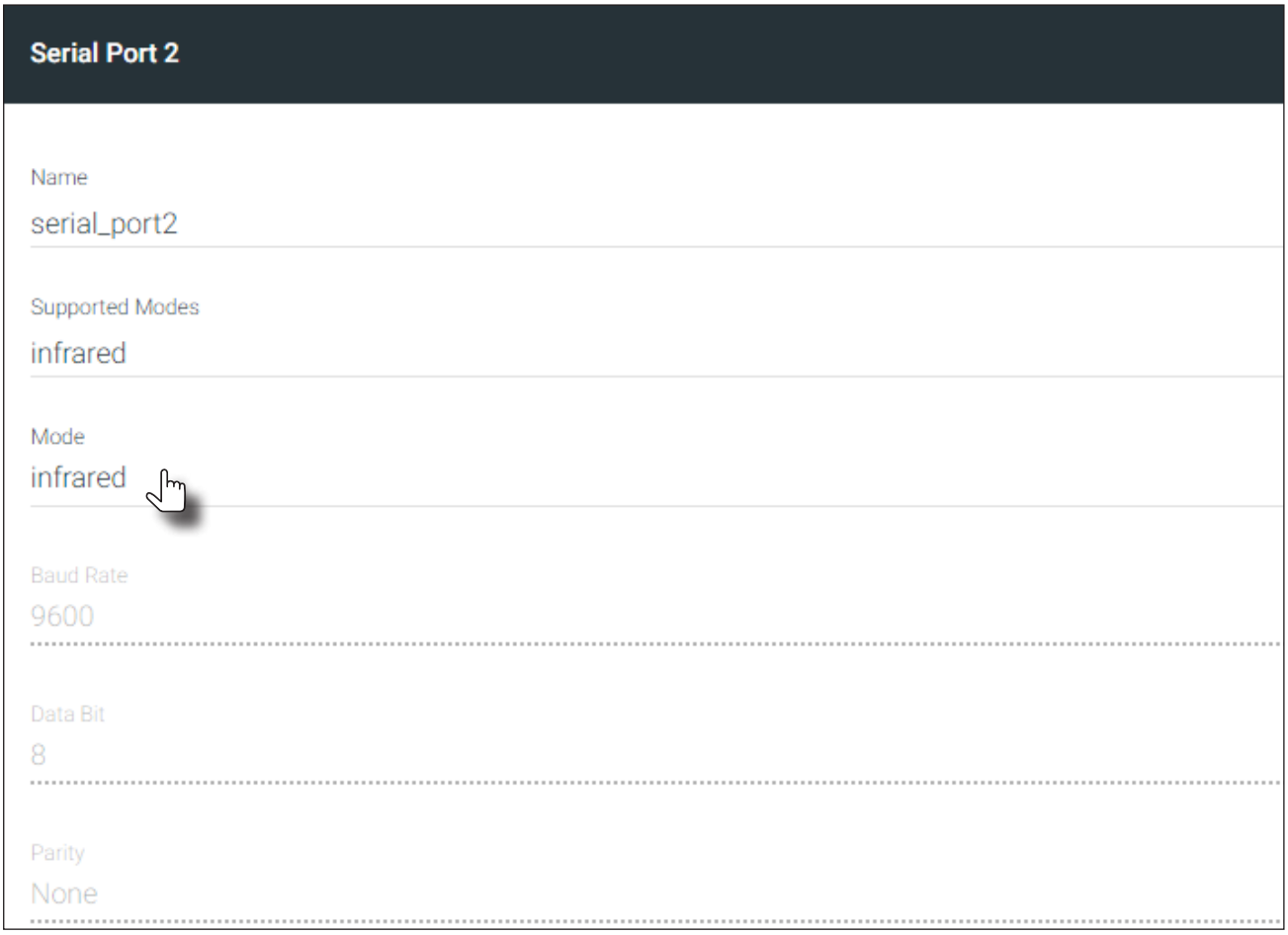
OmniStream provides IR control from either the headend / source location to the displays (downstream) or from the viewing location to the headend (upstream). For downstream IR control, either multicast or unicast mode can be used. However, when controlling a source from the viewing location, unicast mode should be used. Refer to Unicast Mode (page 22) and Multicast Mode (page 24) for more information.

NOTE: IR control is only supported on the **RS-232 / IR 2** (bottom) port. The IR emitter or IR receiver must be connected to this port. Refer to IR Connections (page 12) for wiring information.

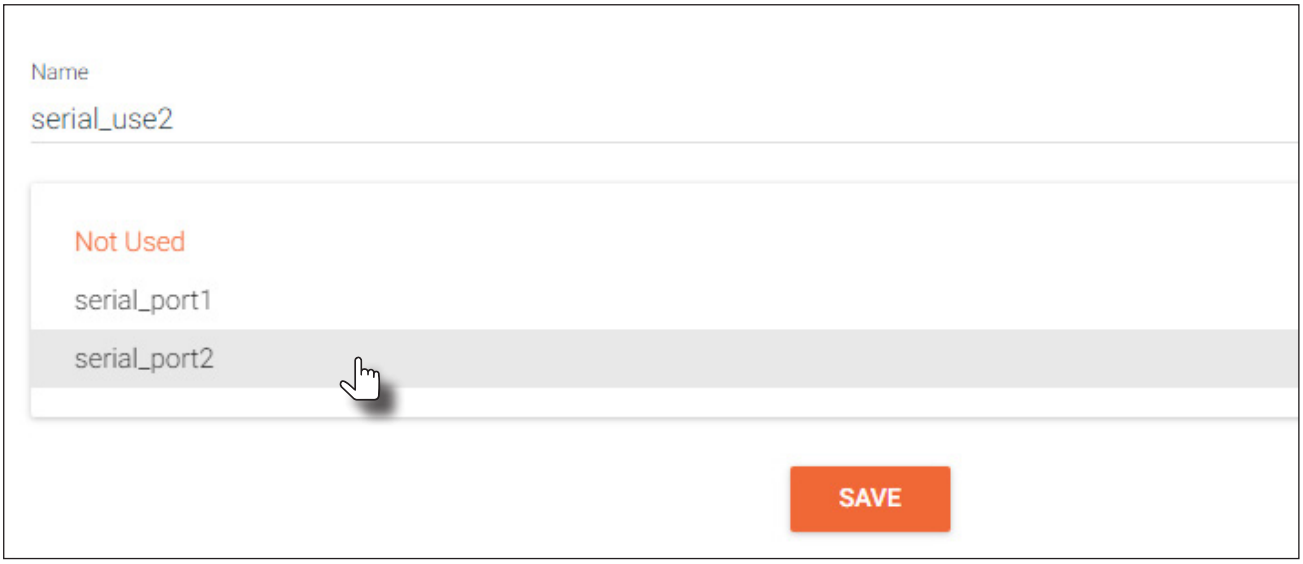
Downstream IR Control

Follow the instructions below to configure AMS to allow IR data to be sent from the encoder to the decoder endpoint.

1. Login to AMS. Refer to Accessing Decoders in AMS (page 16), if necessary.
2. The AMS Dashboard will be displayed.
3. Click the ☰ icon, in the upper-left corner of the AMS Dashboard.
4. Click **Devices** > **All** and locate the desired encoder from the AMS Device List.
5. Click **SERIAL** in the menu bar.
6. Under the **Serial Port 2** section, make sure that the **Mode** drop-down list is set **infrared**. This will be the only option for a single-channel decoder under **Serial Port 2**.

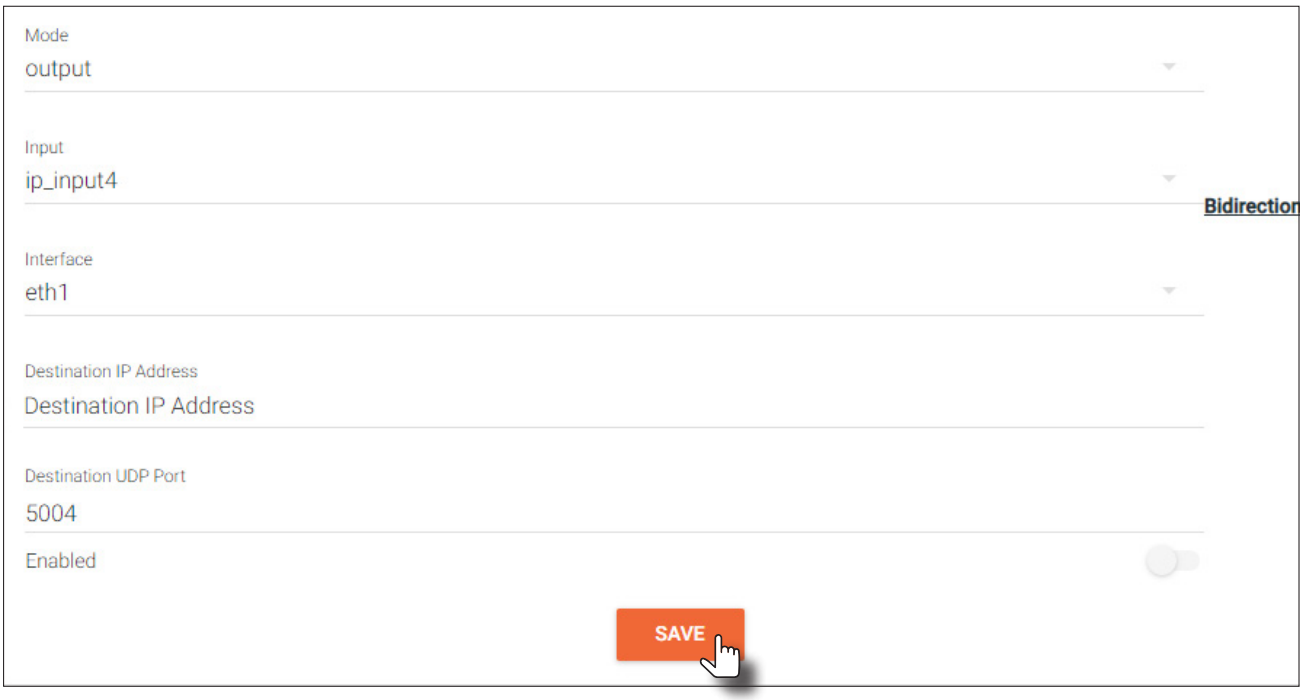


7. Scroll down and locate the **Serial Configuration 2** section.
8. Click the **Port** drop-down list and select **serial_port2**.



9. Click the **Mode** drop-down list and select **Output**.
10. Click the **Input** drop-down list and select the IP input. The selected input must not be currently in use by another session. If the input is already in used, then an error message will be displayed. If this occurs, then select another input.
11. Click the **SAVE** button to commit changes.

If IR signals need to be sent upstream, to the encoder, then follow the instructions under Upstream IR Control (page 36).



Upstream IR Control

In order to send IR data upstream, from the decoder to the encoder, a few additional simple steps are required.

1. Follow steps 1 through 10, under Downstream IR Control (page 34).
2. Enter the IP address, in the **Destination IP Address** field, where the IR data will be sent.
3. Enter the port number in the **Destination UDP Port** field.
4. Click the **Enabled** toggle switch to enable bidirectional control. When enabled, the toggle switch will be green, and will allow IR signals to be sent to the encoder.

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

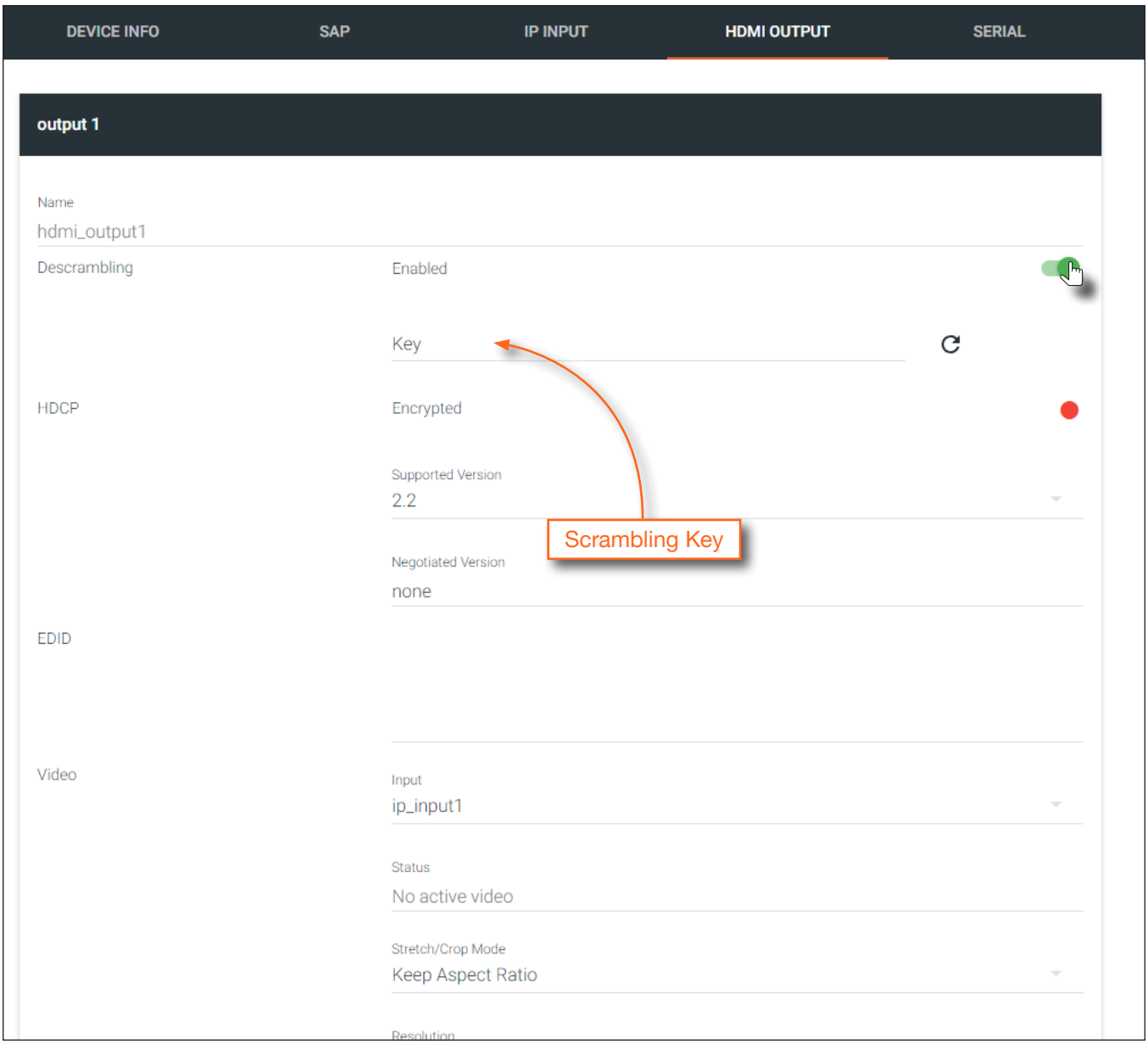
Descrambling

OmniStream supports 128-bit Advanced Encryption Standard (AES) scrambling for both audio and video streams. Descrambling can be enabled or disabled through AMS (before or after the decoding process has started), and can be individually applied to video, audio, or both. Data streams cannot be descrambled; only video and audio can be scrambled. When scrambled information is received from an encoder, it will need to be descrambled before it can be displayed.

When descrambling is enabled, the descrambling key can be found under the **HDMI OUTPUT** page on the decoder.

Standard Method

1. Click **HDMI OUTPUT** in the menu bar.
2. Under the desired Session, click the **Enabled** toggle switch, next to Descrambling, to enable it. Once enabled, the toggle switch will be green and the **Key** field will be displayed.



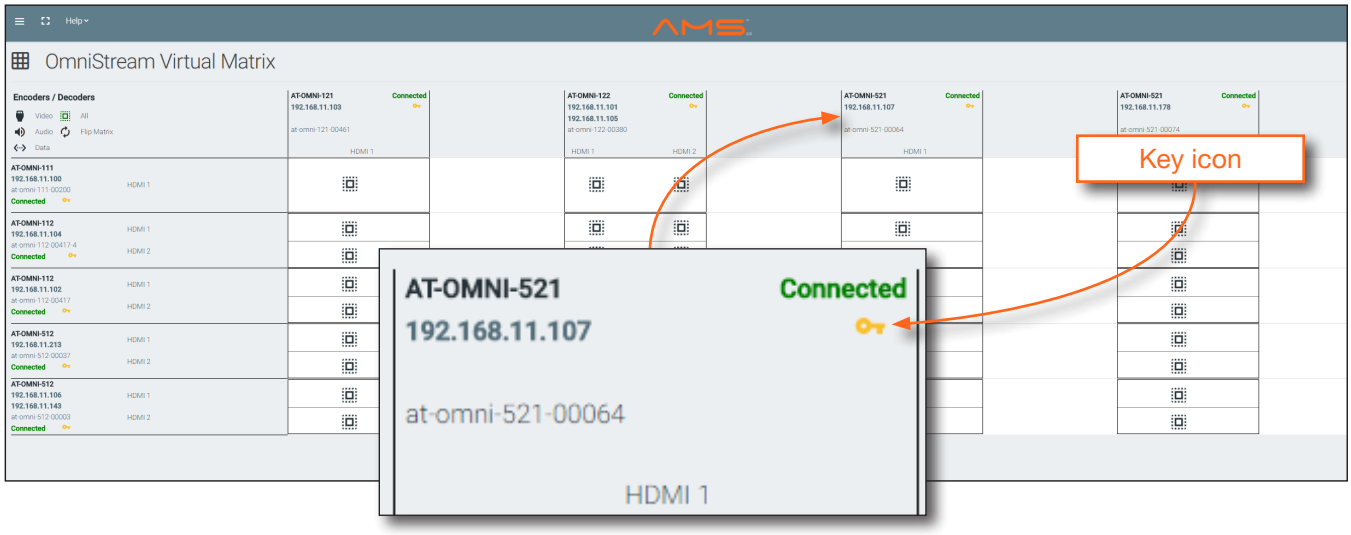
3. Enter the desired scrambling key in the **Key** field.

NOTE: If a user-defined key is specified, then it must be a minimum of eight alphanumeric characters. Special characters and spaces are not permitted.

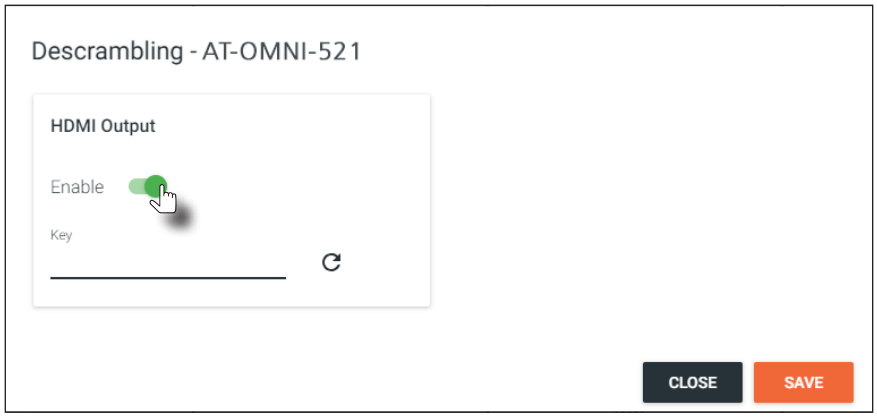
4. Click the **Save** button at the bottom of the page to commit the changes.

Using the Virtual Matrix

1. Access the Virtual Matrix. Refer to The Virtual Matrix (page 84) for more information.
2. Locate the desired encoder or decoder. Scrambling is handled on the encoder; descrambling is handled on the decoder.
3. Click the yellow key icon. The Scrambling dialog box will be displayed. If the key icon for a decoder is clicked, then the Descrambling dialog box will be displayed.



4. Click the **Enable** toggle switch to enable scrambling for the desired session.



Creating Video Walls

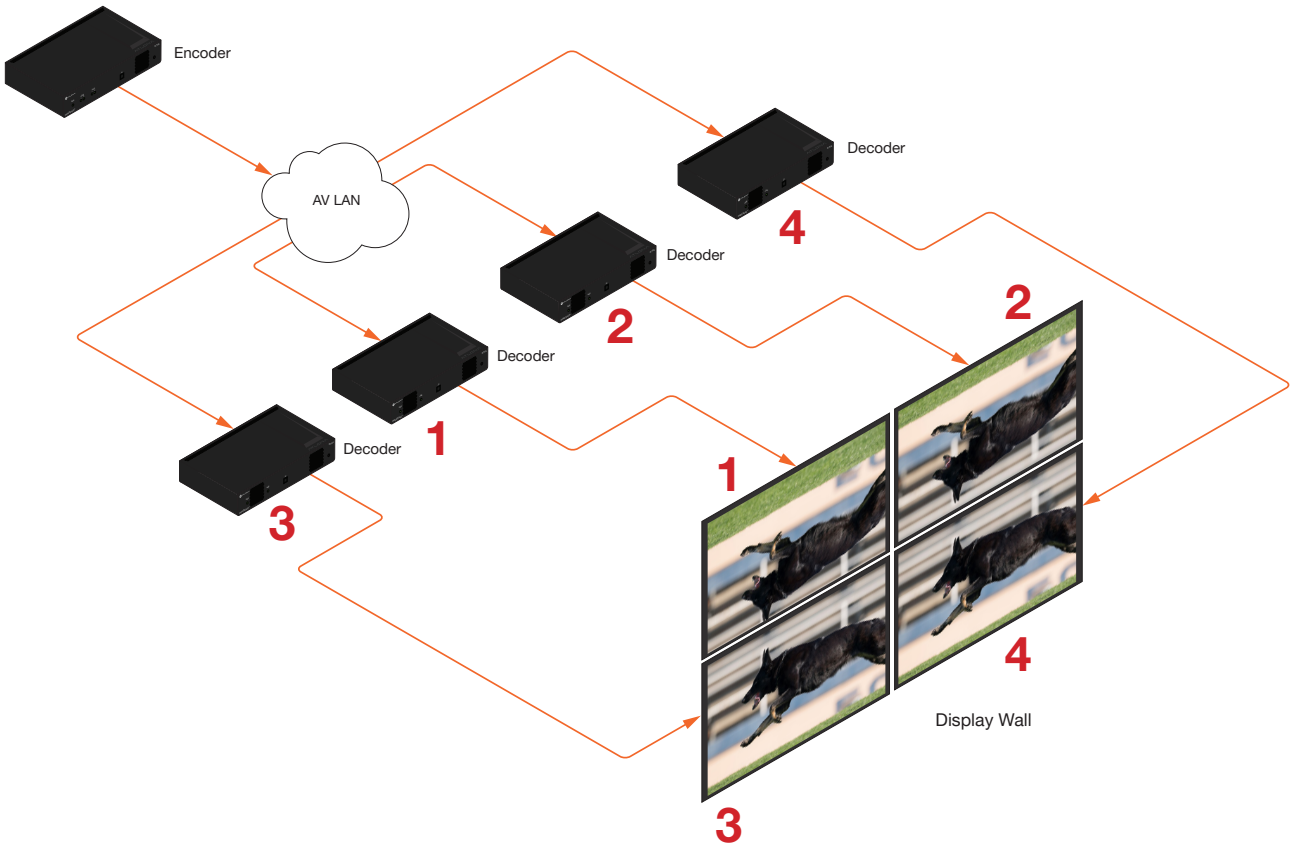
NOTE: OmniStream video walls do not support 1080i sources.

The following table lists the maximum video wall size, based on the resolution of the source.

Resolution	Maximum Video Wall Size
4Kp60	2 x 2
4Kp30	16 x 16
1080p60	n x n (no limit)

The following diagram will be used to illustrate how to configure a 2 x 2 video wall. The details of this diagram are listed below:

- Four decoders are subscribed to a single encoder. Each decoder is connected to a display.
- The encoder is transmitting a 3840 x 2160 video signal.
- The top two displays have been accidentally mounted upside down.



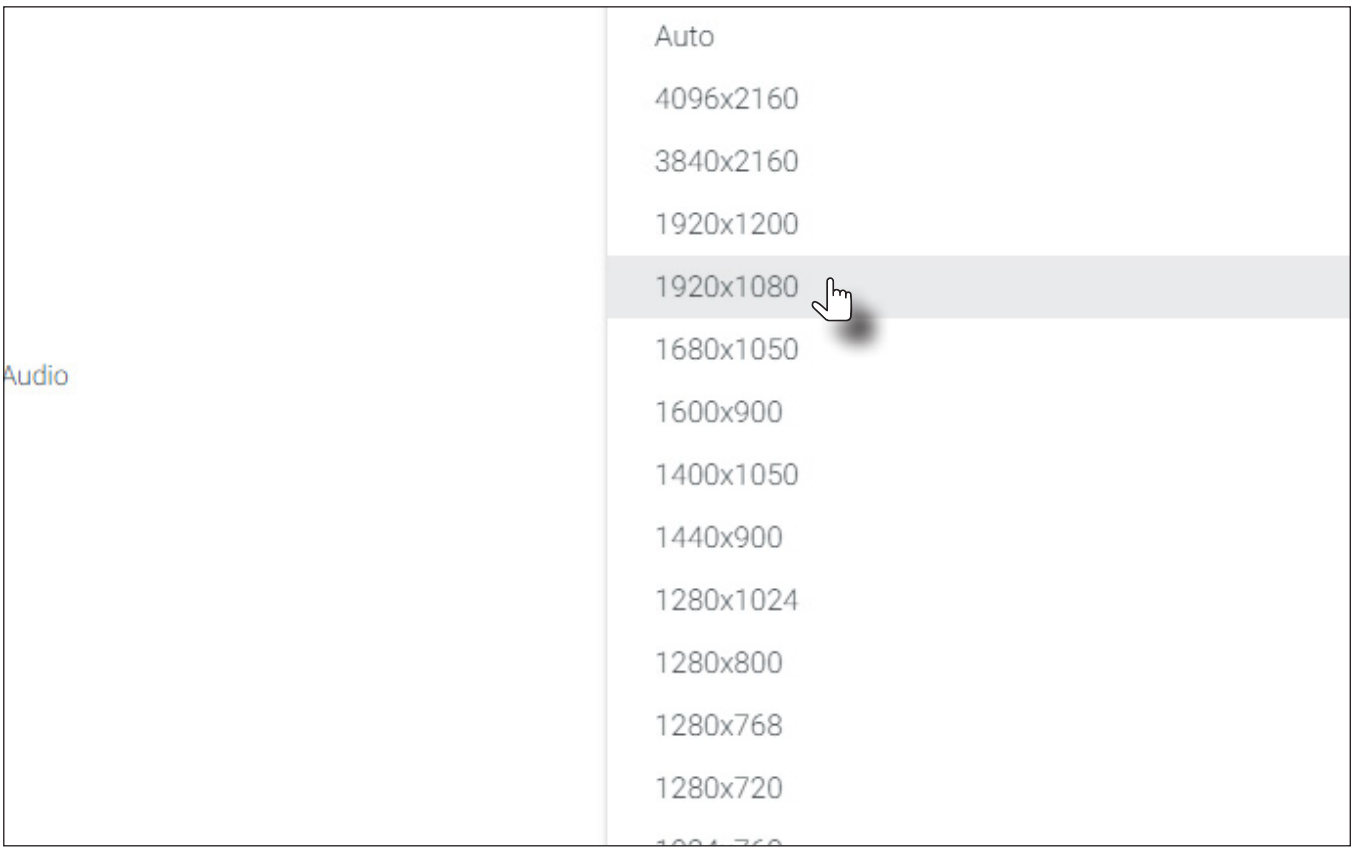
This diagram presents some challenges that need to be met:

a. Since there are four displays, the image from each decoder will need to be scaled to one-forth of the total resolution. The crop-and-scale feature will be used to provide the correct output.

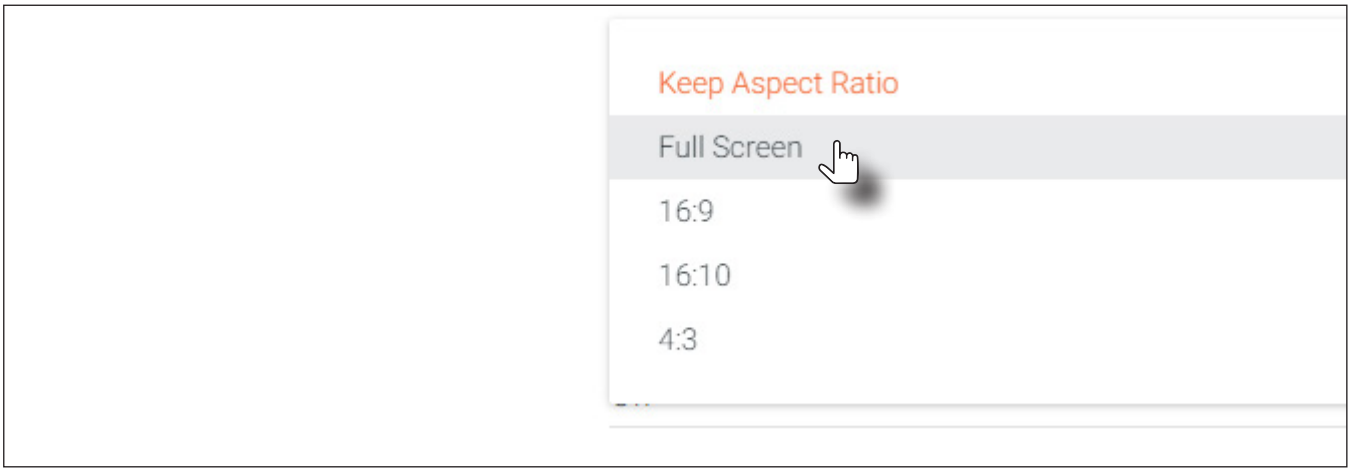
b. The top two displays have been mounted upside-down. To meet this challenge, the rotate feature will be applied to these two displays.

Note that the order in which each image is cropped, scaled, and/or rotated is arbitrary. In this example, the configuration process will begin with Display 1, in the top left.

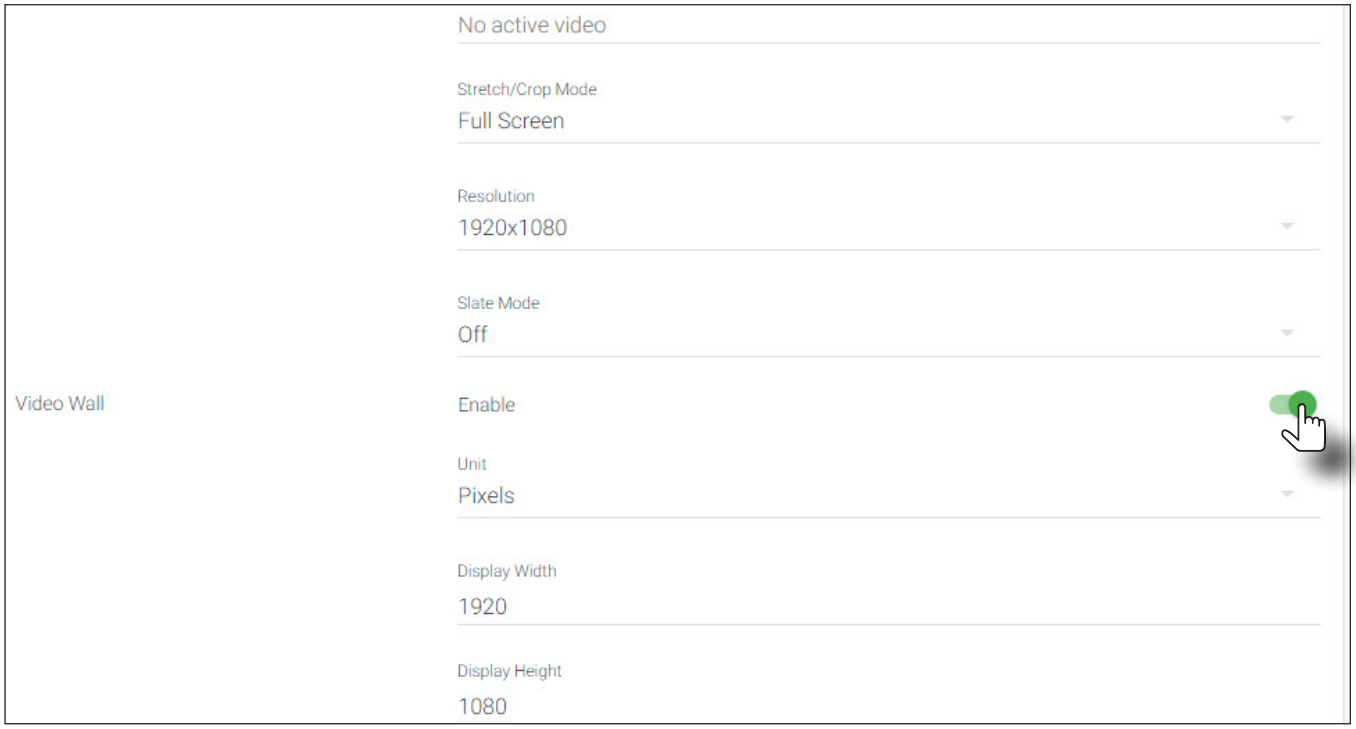
1. Login to AMS. Refer to Accessing Decoders in AMS (page 16) if necessary.
2. Click **HDMI OUTPUT** in the menu bar.
3. Locate the **Resolution** option, in the **Video** section, and select 1920x1080. This will scale the output resolution from each decoder to 1920x1080.



4. Click the **Stretch/Crop Mode** drop-down list and select Full Screen. This guarantees that the image will fill the screen.



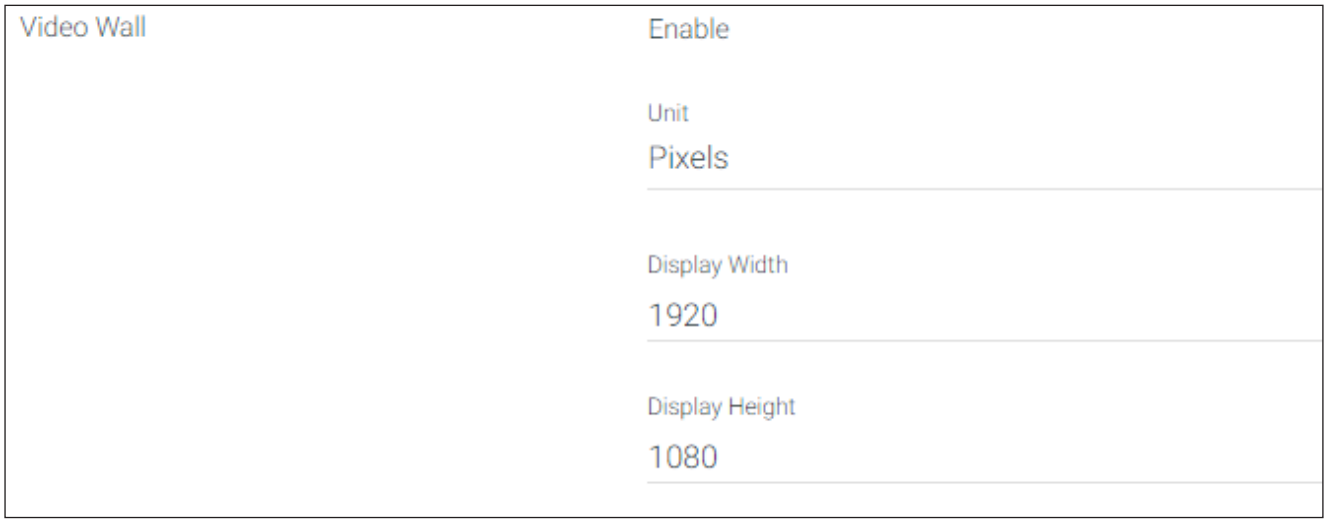
5. Click the **Enable** toggle to activate the **Video wall** option. Once enabled, the **Video wall** section will be expanded and display all available options.



6. Enter the horizontal and vertical resolution of the display in the **Width** and **Height** fields. This is the size of the source to be used for this window of the video wall. The table below, lists width and height examples for a 2x2 video wall, with the specified source resolution.

Source resolution	Width	Height
3840 x 2160 (UHD)	1920	1080
1920 x 1080 (1080p)	960	540

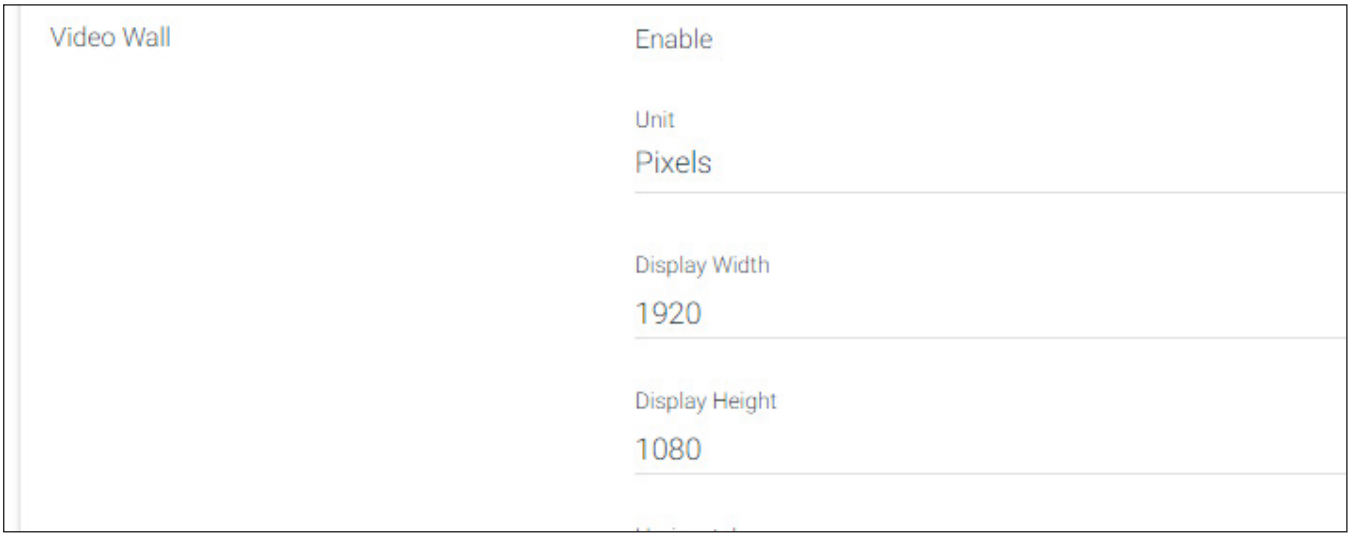
Since the example source is 3840 x 2160, the width and height for the Display 1 (upper-left corner) needs to be set 1920 and 1080, respectively, as shown below.



7. Enter the horizontal and vertical resolution of the display in the **Width** and **Height** fields. This is the size of the source to be used for this window of the video wall. The table below, lists width and height examples for a 2x2 video wall, with the specified source resolution.

Source resolution	Width	Height
3840 x 2160 (UHD)	1920	1080
1920 x 1080 (1080p)	960	540

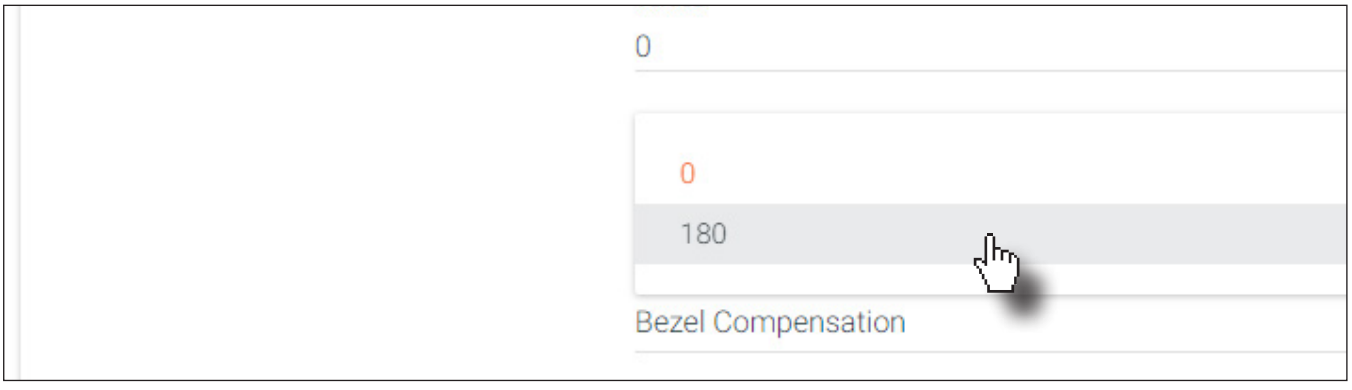
Since the example source is 3840 x 2160, the width and height for the Display 1 (upper-left corner) needs to be set 1920 and 1080, respectively, as shown below.



8. Enter the number of video wall rows in the **Horizontal** field and the number of columns in the **Vertical** field. These values are the pixel start position (upper left most pixel). The table below, lists left and right coordinates for a 2x2 video wall, with the specified source resolution.

Source resolution	Upper Left	Upper Right	Lower Left	Lower Right
3840 x 2160 (UHD)	0, 0	1920, 0	0, 1080	1920, 1080
1920 x 1080 (1080p)	0, 0	960, 0	0, 540	960, 540

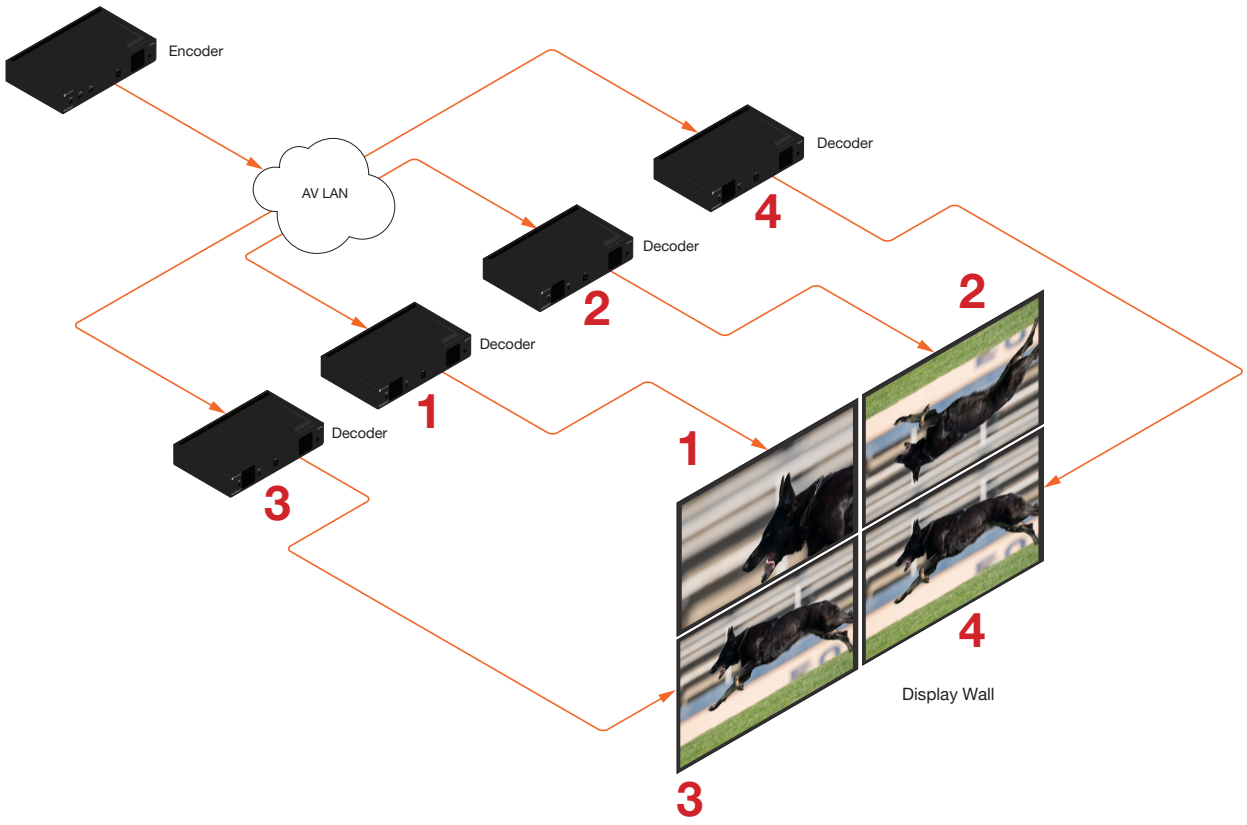
9. Click the **Rotation** drop-down list to select the rotation angle of the image. In this example, select **180** from the drop-down list. The image will be flipped, vertically.



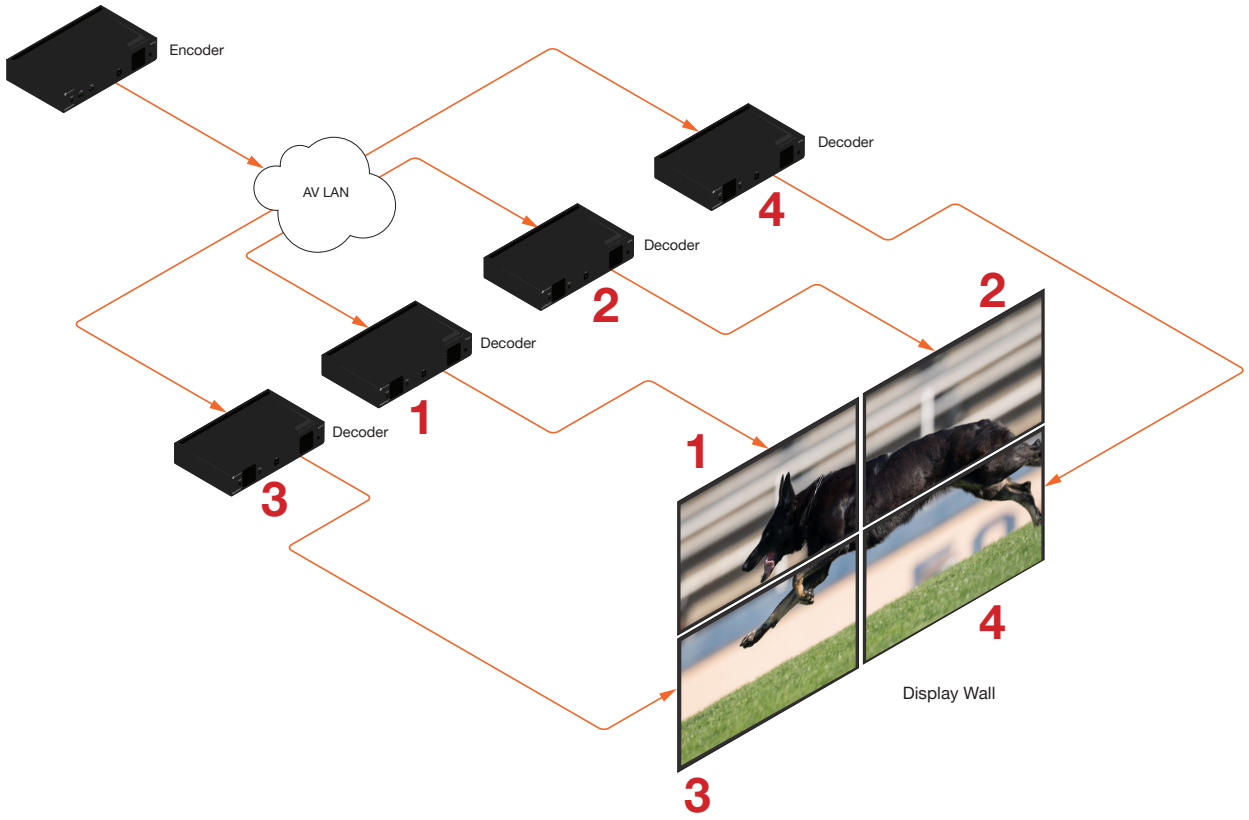
The image on Display 1 has been cropped and rotated and now is displayed correctly.

10. Click the **SAVE** button at the bottom of the screen to accept changes.

11. Repeat steps 1 through 9 for decoders 2, 3, and 4. Note that in this example, at Step 9, decoders 3 and 4 will not require any rotation. In this case, make sure the **Rotation** option is set to 0.



Once all four decoders have been properly configured, the video wall should appear similar to the following:



13. Check the image, on each display, and make sure they are aligned correctly with the other images on the video wall. Use the **Edge Compensation** drop-down list to select the desired bevel compensation. See the next page for more information.

Bezel Compensation

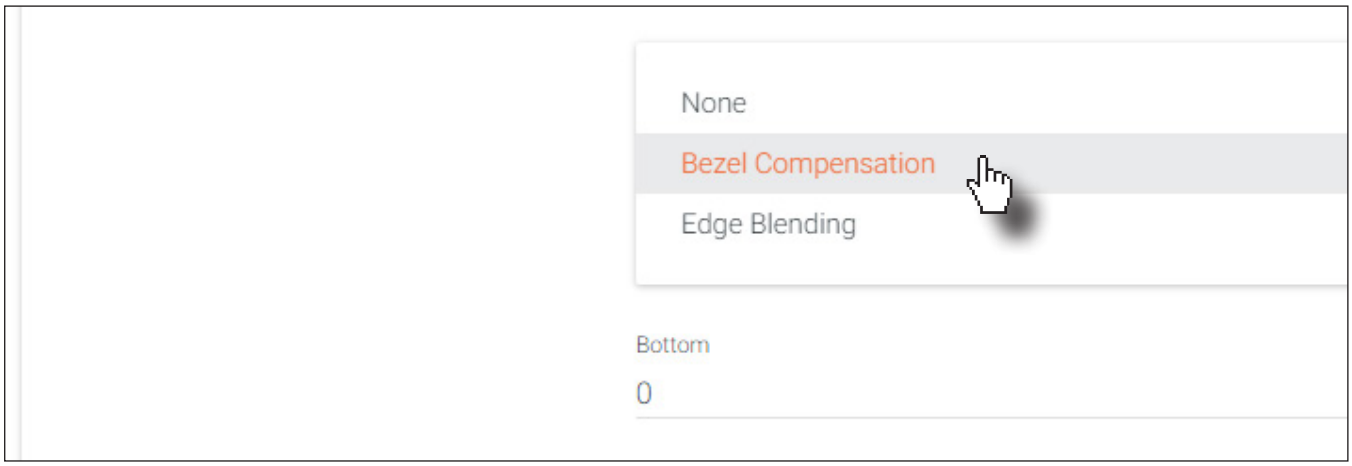
Displays have a region where video is not displayed, called the bezel. This can cause display issues when creating video walls. Bezel compensation takes this area into account when a single video source is mapped across multiple displays. Bezel compensation can be adjusted at any time.

The illustration on the left shows a simple 2x2 video wall without bezel compensation. Note how the Atlona logo is stretched, horizontally. On the right, bezel compensation is used to correct the “distorted” image.

Image without bezel compensation

Image with bezel compensation applied

1. Locate the **Bezel Compensation** from the **Edge Compensation** drop-down list.



2. Adjust the **Top**, **Bottom**, **Left**, and **Right** values, as desired. All entered values are applied to the physical displays in 1 pixel increments. Refer to the examples, below, to properly calculate the amount of bezel compensation.

   If one bezel needs compensating in each direction (e.g. on a 2x2 wall, where only bezel is in the way, in each direction), use the following formula:

$$\textit{Bezel width (px)} = \left(\frac{\textit{Total width (px)}}{\textit{[display area width (in/mm) + bezel width (in/mm)]}} \right) \textit{x bezel width (in/mm)}$$

If two bezels need compensating (e.g. on a 3x3 wall, where the middle display has two bezels is in the way, in each direction), use the following formula:

$$\textit{Bezel width (px)} = \left(\frac{\textit{Total width (px)}}{\textit{[display area width (in/mm) + bezel width \#1 (in/mm) + bezel width \#2 (in/mm)]}} \right) \textit{x bezel width (in/mm)}$$

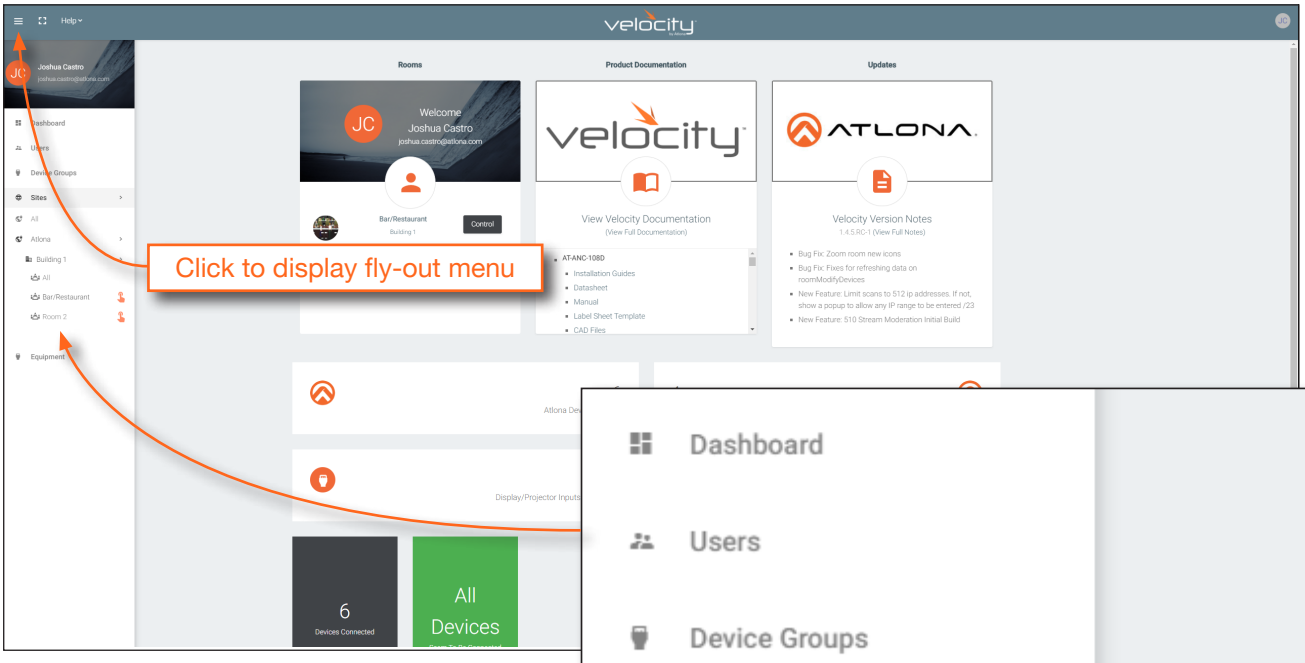
3. Click the **SAVE** button at the bottom of the screen to accept changes.

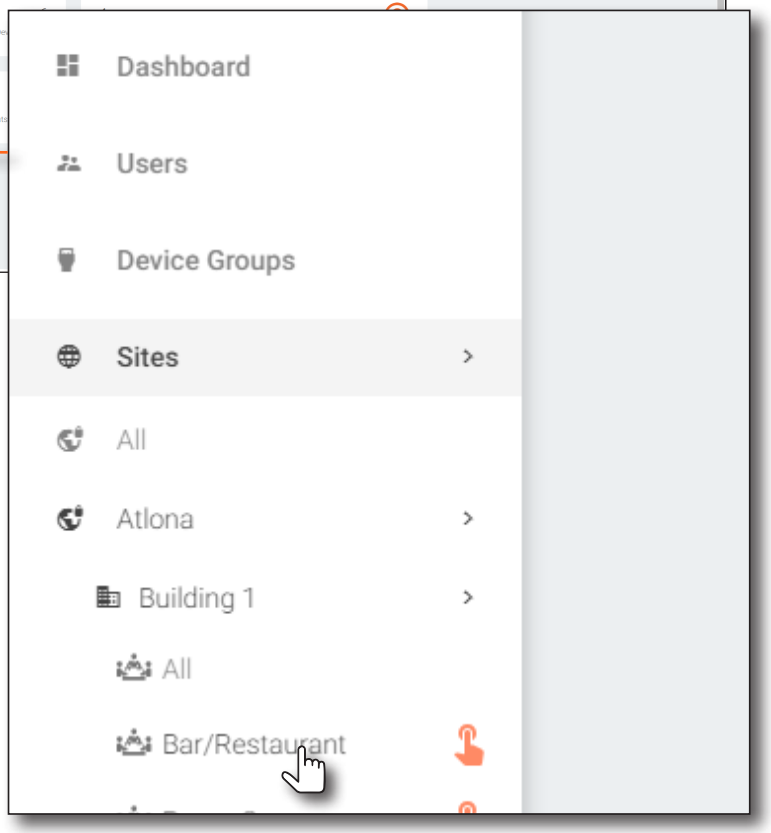
Video Walls using Velocity

The following section provides instructions on creating and using video walls with the Atlona Velocity Control Software. Familiarity with the Velocity software is assumed. Refer to the *Atlona Velocity User Manual* for more information, if necessary.

NOTE: As of this writing, the Velocity™ software is limited to a maximum video wall size of 12 x 12, for resolutions of 4Kp30 and 1080p60.

1. Launch a web browser and enter the IP address of Velocity, in the address bar.
2. Enter the required login credentials.
3. Click the **Login** button.
4. The Velocity Dashboard will be displayed.
5. Click the ☰ icon, in the upper-left corner, to display the fly-out menu.

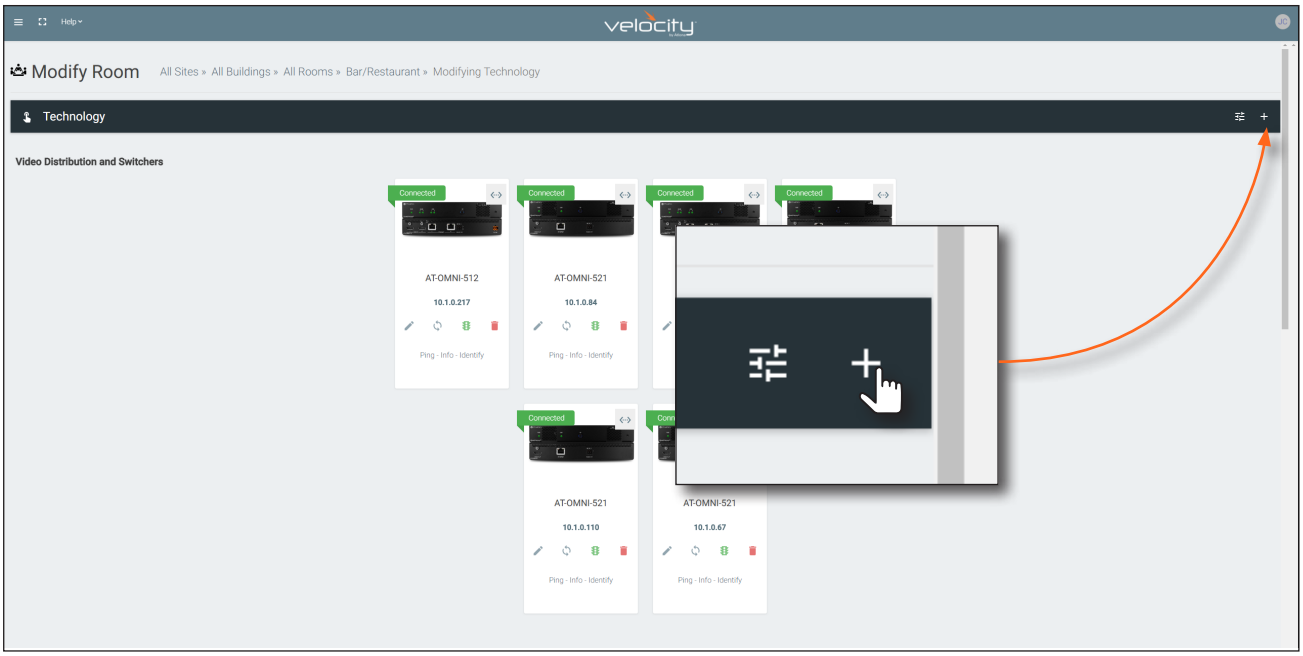




6. Click **Sites** in the menu bar to expand the list of buildings and rooms.
7. Click the desired room from the list.

   In the example on the right, a set of encoders and decoders have been set up in the **Bar/Restaurant** room of **Building 1**. This is where the video wall will be configured.

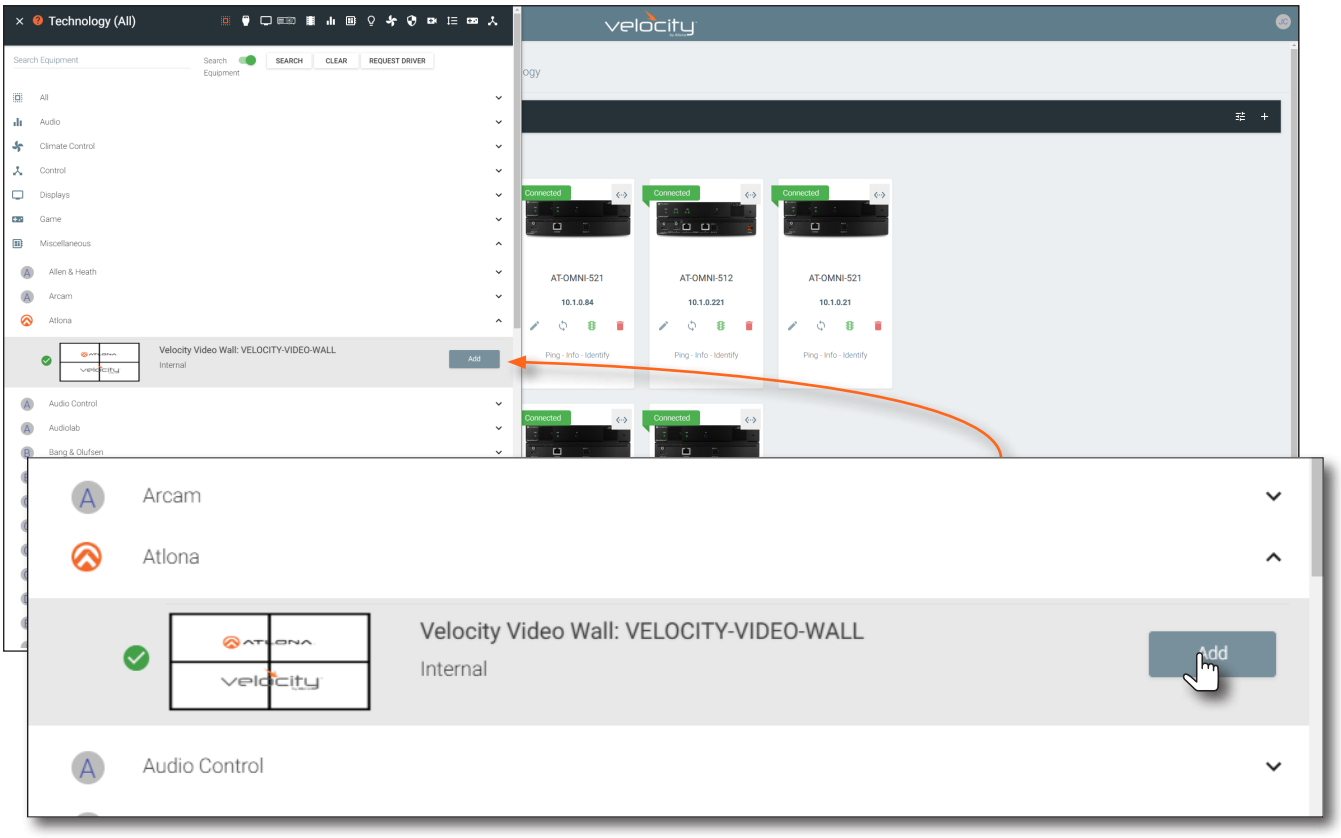
8. The **Modify Room** screen will be displayed. Click the **Add Technology** icon in the top far-right corner of the screen. This icon is represented by the **+** sign.



9. The **Technology** fly-out menu will be display.

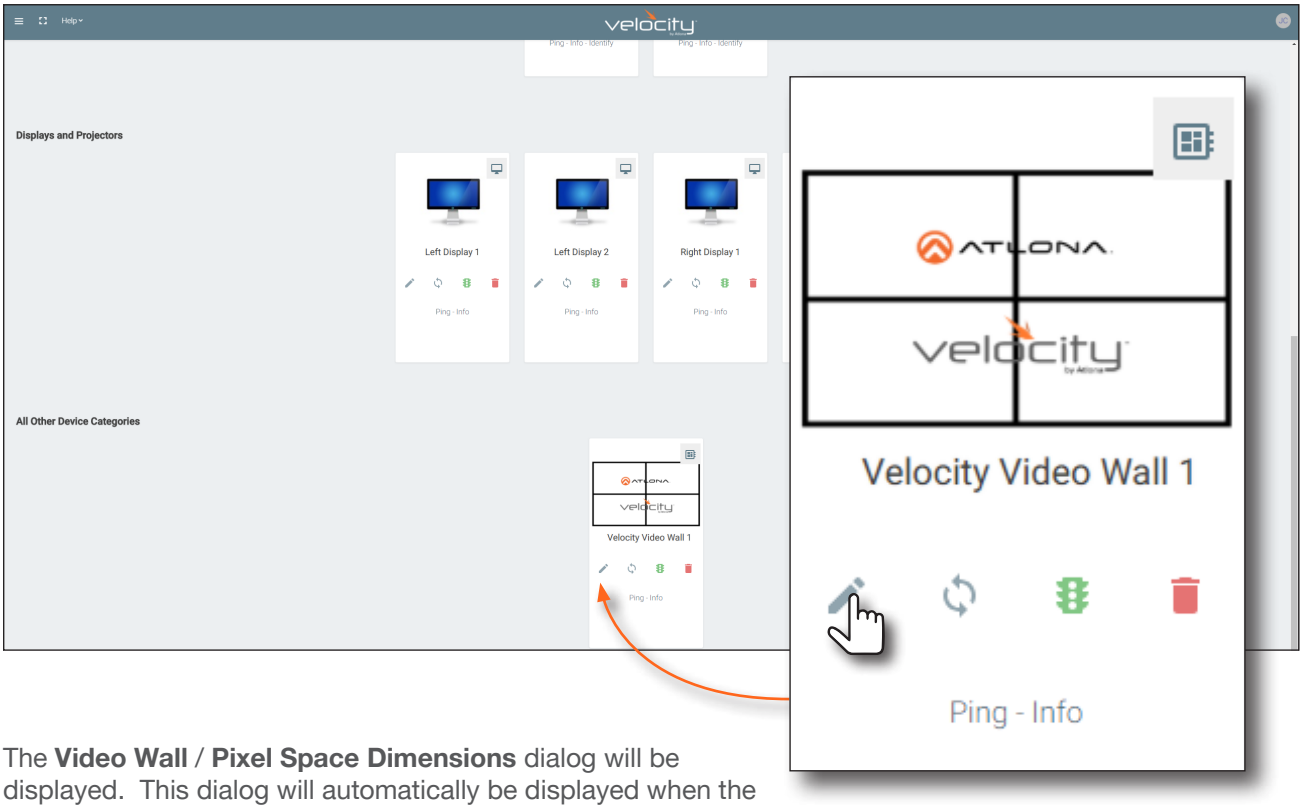
10. In the fly-out menu, click **Miscellaneous** > **Atlona** > to expand the Atlona technology menu.

11. Click the **Quick Add** button for **Velocity Video Wall: VELOCITY-VIDEO-WALL**. The video wall technology will be added to the room.



12. Scroll down to the bottom of the page and locate the **Velocity Video Wall** driver.

13. Click the **Edit** icon. This icon is represented by a pencil.

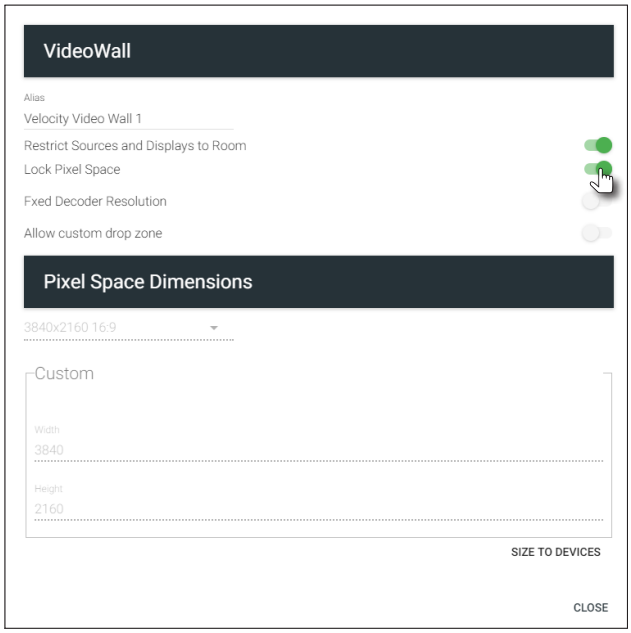


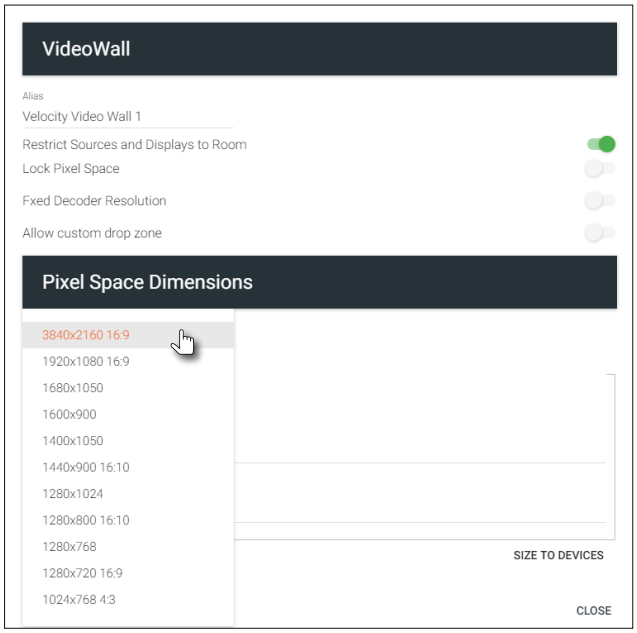
14. The **Video Wall** / **Pixel Space Dimensions** dialog will be displayed. This dialog will automatically be displayed when the video wall driver is edited for the first time.

    The default video wall dimensions are set to 3840 x 2160. To modify the video wall size, follow steps 14a through 14e. To continue with the default video wall dimensions, click the **CLOSE** button and go to step 15.

    a. Click the **Lock Pixel Space** toggle switch to disable it. When disabled, the toggle switch will turn gray.

    b. Under **Pixel Space Dimensions**, click the drop-down list to select the desired video wall dimensions.



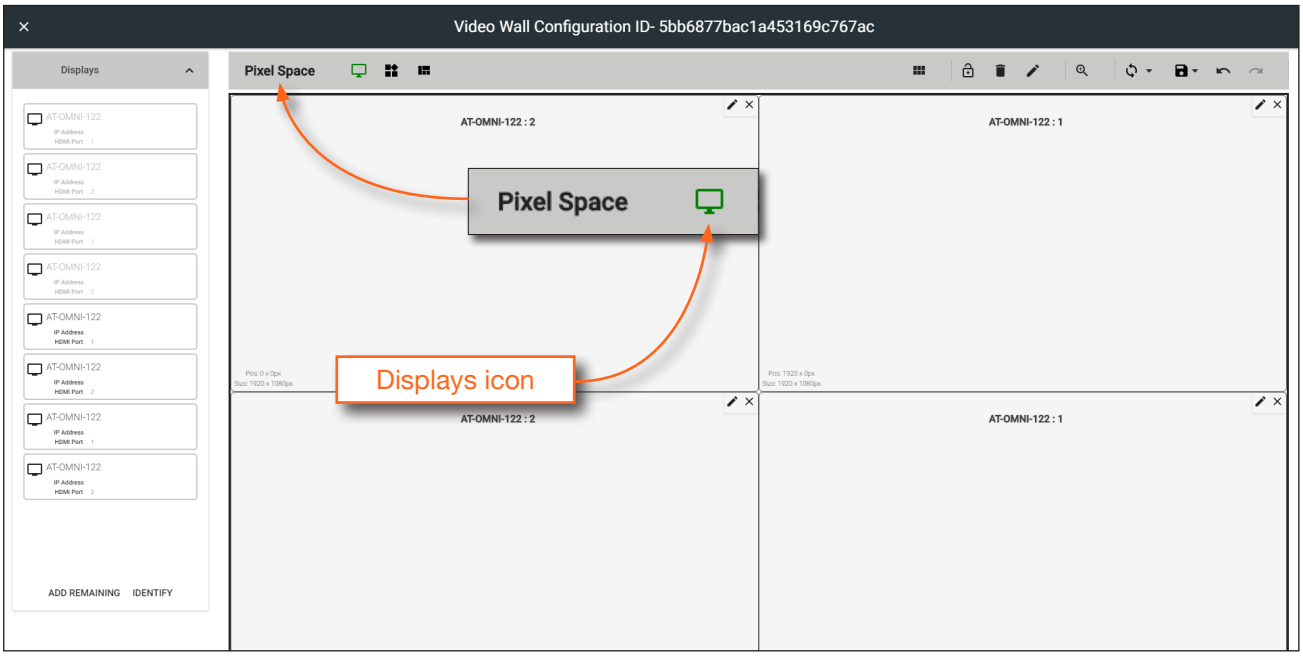


c. To create a custom size for the video wall, enter the desired dimensions under the **Custom** section. Enter the width and height directly, or use the spinner controls at the far end of each field, to adjust the values.

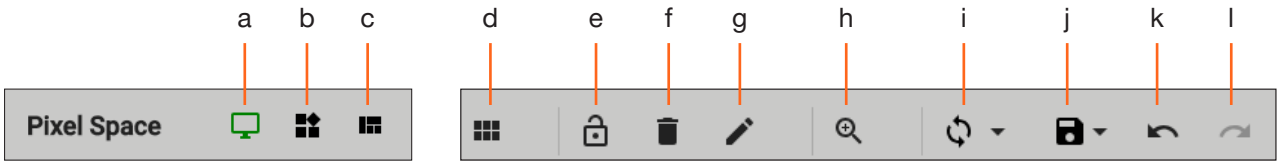
d. Save the video wall dimensions by clicking the **Lock Pixel Space** toggle switch to enable it.

e. Click the **CLOSE** button to dismiss the dialog.

15. The **Video Wall Configuration** screen will be displayed and will automatically be set to edit displays mode. This mode allows displays in the **Pixel Space** window to be added, removed, and arranged. In this mode, the **Displays** icon will be green.



The following identifies each icon in the **Pixel Space** toolbar.



a. Displays
Click to icon to show the Displays window on the left side of the screen. In this mode, displays can be edited.

b. Presets
Click this icon to display the Presets window on the left side of the screen. In this mode, presets can be edited, added, or deleted.

c. Drop Zones
Click this icon to display the Drop Zones window on the left side of the screen. Refer to Creating and Using Drop Zones (page 56) for more information.

d. Auto Arrange
Click this icon to auto-arrange the number of displays in the **Pixel Space** window into the selected number of rows and columns.

e. Lock
When locked, this icon will turn red, and prevent accidental repositioning of displays or changing presets. To unlock the displays (for adjustment purposes), click this icon again.

f. Delete All
Click this icon to delete all displays within the **Pixel Space** window. This icon will only be available if displays are present in the **Pixel Space** window.

a. Pixel Space
Click this icon to display the **VideoWall** dialog box, allowing modification of both the Video Wall and Pixel Space settings.

b. Zoom
Click this icon to display the zoom fly-out slider control. Click and drag the slider to adjust the zoom factor of the **Pixel Space** window.

i. Apply Preset
Click this icon to apply the current preset. Click the down arrow next to this icon to display the Apply Preset fly-out menu. This control defines when Velocity automatically applies a preset: 1) Auto apply preset on save; 2) Auto apply preset on source change.

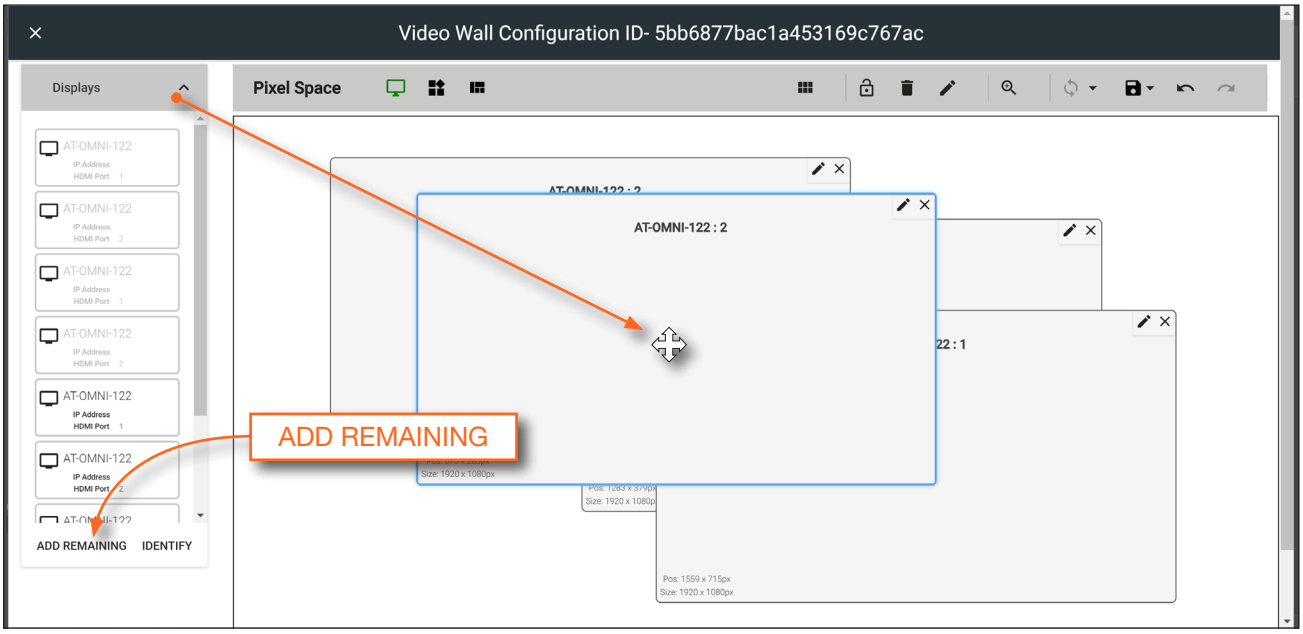
j. Save
Click this icon to save the current layout/settings. Click the down-arrow, next to this icon, to display the Save fly-out menu option, allows enabling or disabling of auto-saving.

k. Undo
Click this icon to undo the last operation.

l. Redo
Click this icon to redo the last operation. Clicking this icon after an undo operation will restore the previous setting.

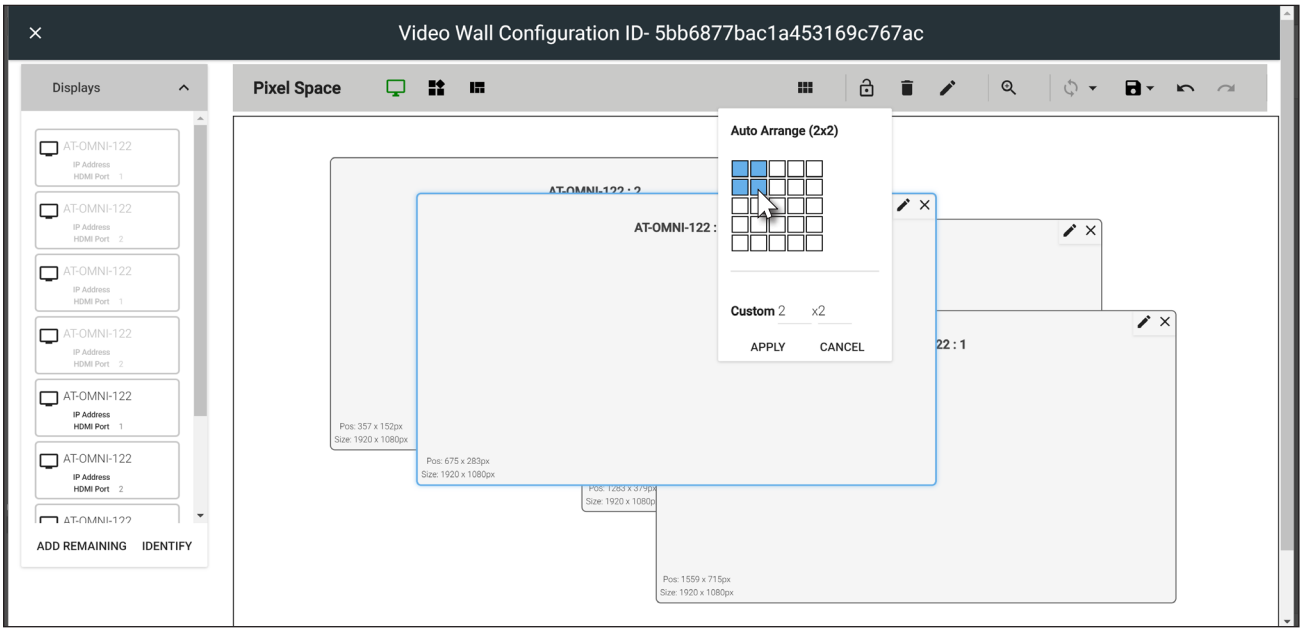
16. Under the **Displays** window, on the left side of the screen, drag and drop the desired displays to the to **Pixel Space** window.

    Alternatively, to add all displays to the **Pixel Space** windows without manually using drag-and-drop, click **ADD REMAINING**, at the bottom of the Displays window. This will automatically populate the **Pixel Space** window with all available displays. For this example, four displays will be added, manually.

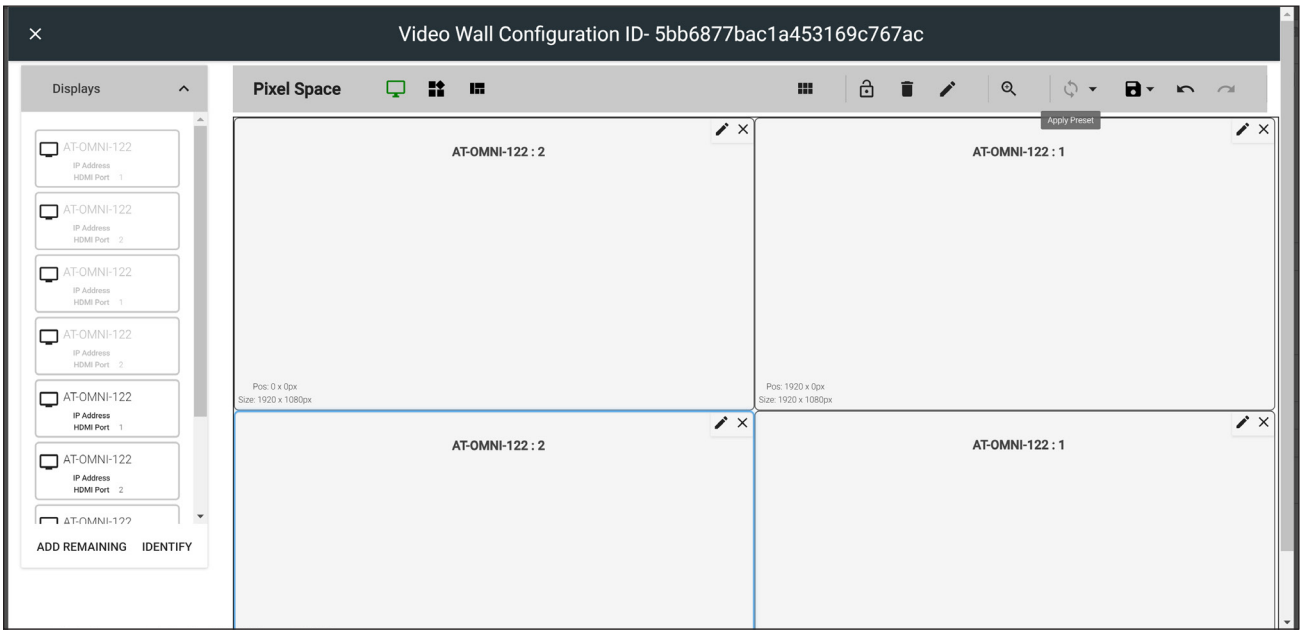


NOTE: The order in which the displays are placed in the **Pixel Space** window is not important and both the number of displays and how they are arranged can always be changed at a later time.

17. Click the **Auto Arrange** icon in menu bar at the top of the **Pixel Space** window. Move the mouse within the **Auto Arrange** pop-up dialog to adjust the size of the video wall. Click the lower right-most blue square of the video wall to commit the selection. In this example, a 2x2 video wall will be created.



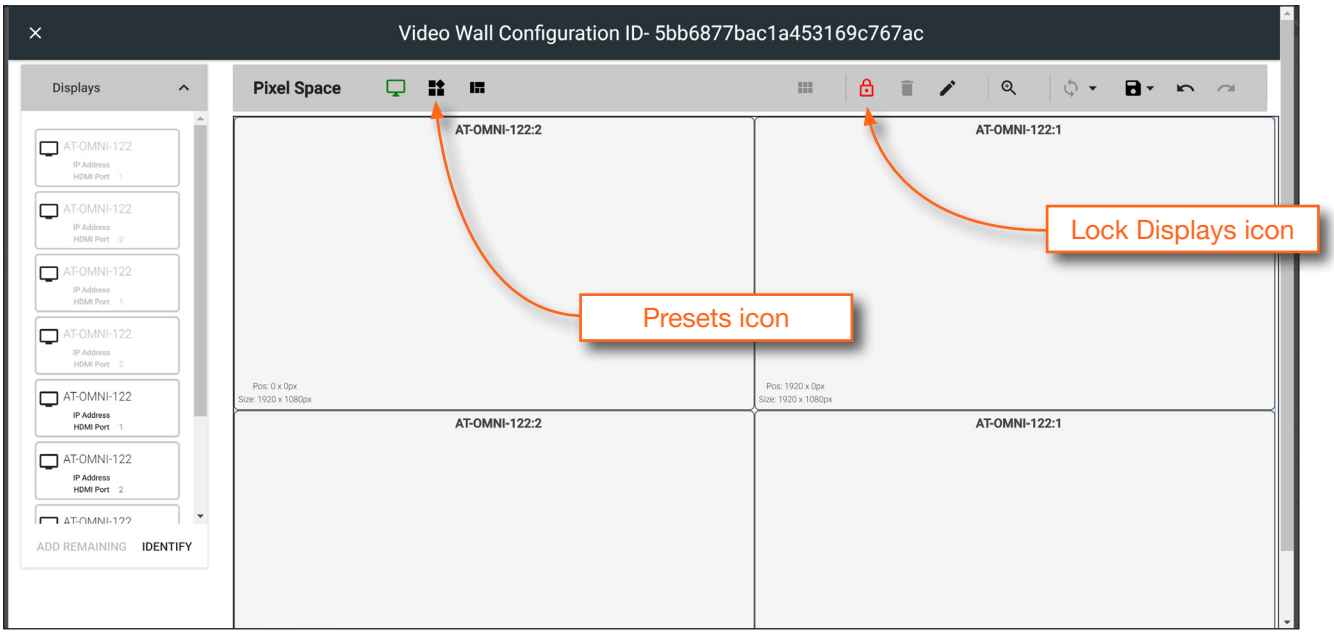
Once **Auto Arrange** has been applied, the **Pixel Space** window will appear similar to the illustration below. It should be noted that each display can be rearranged if necessary. To reposition displays, click and drag them to the appropriate places, within the **Pixel Space** window. Note that each display is identified with a name and an IP address, in the upper-left corner. Refer to the *Atlona Velocity User Manual* for more information on naming devices.



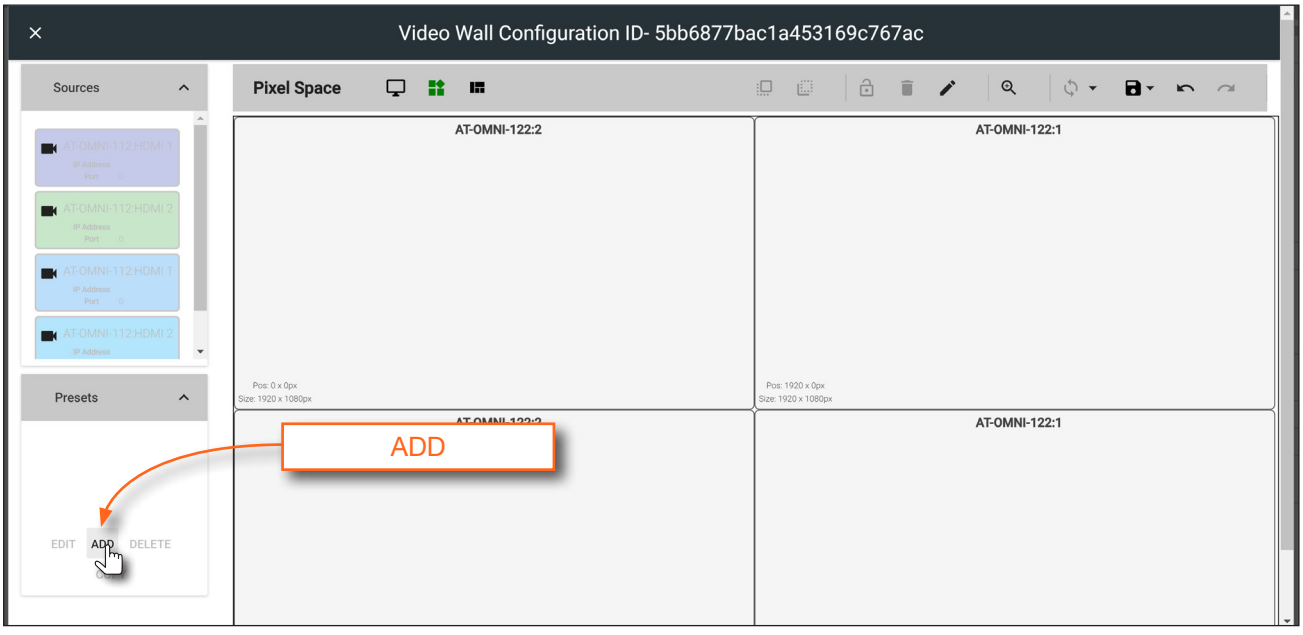
18. Click the **Lock Displays** icon in the menu bar of the **Pixel Space** window. This is optional. However, enabling this feature will prevent accidental repositioning of the displays, during the configuration procedure. When locked, this icon will turn red. Both the **Trash** and **Auto Arrange** icons will be disabled. To unlock the displays (for adjustment purposes), click the **Lock Displays** icon again.

19. Click the **Save** icon in the upper-right corner of the **Pixel Space** window. This will save the current layout.

20. Click the **Presets** icon. When clicked, this icon will turn green and the Presets window will be displayed on the left side of the screen.

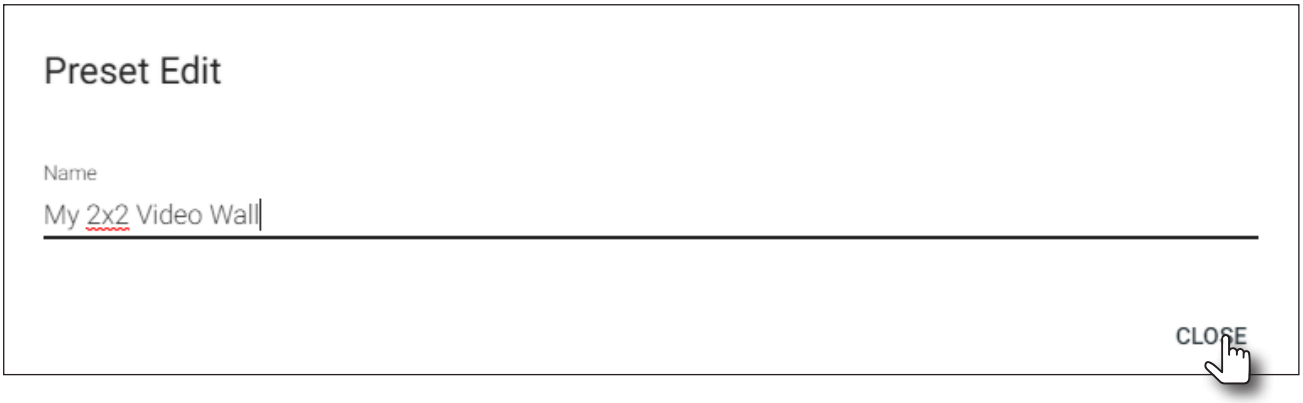


21. Click the **Add**, under **Presets**.

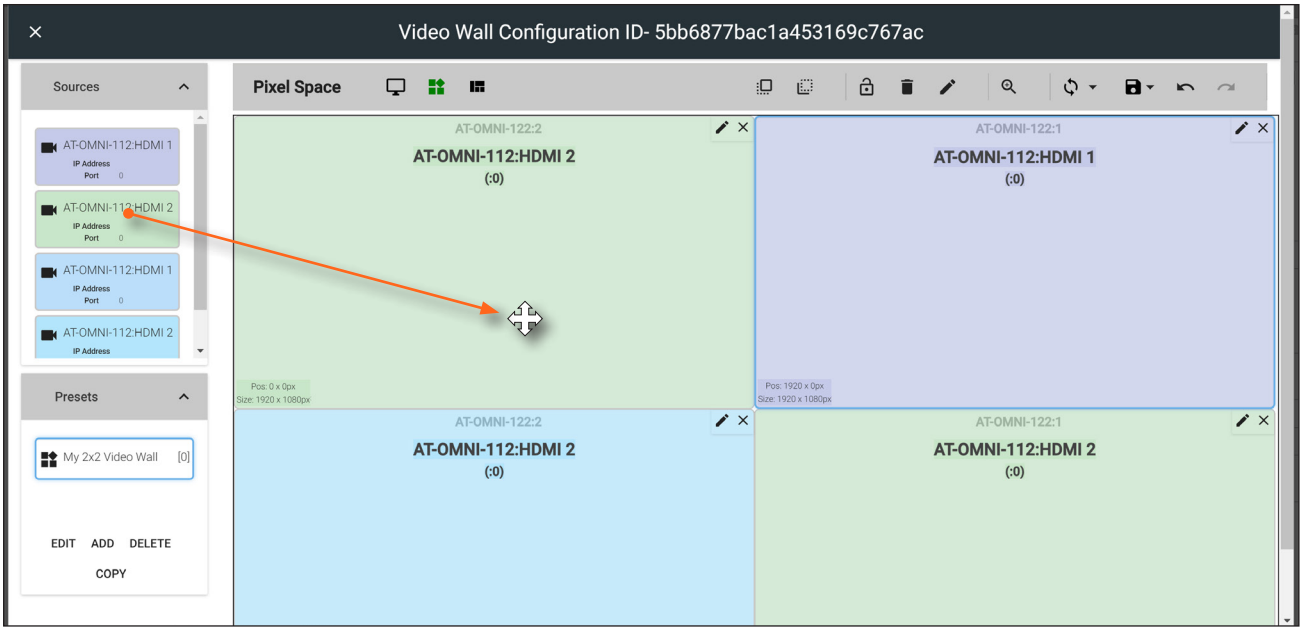


22. Enter than name of the preset in the **Preset Edit** dialog.

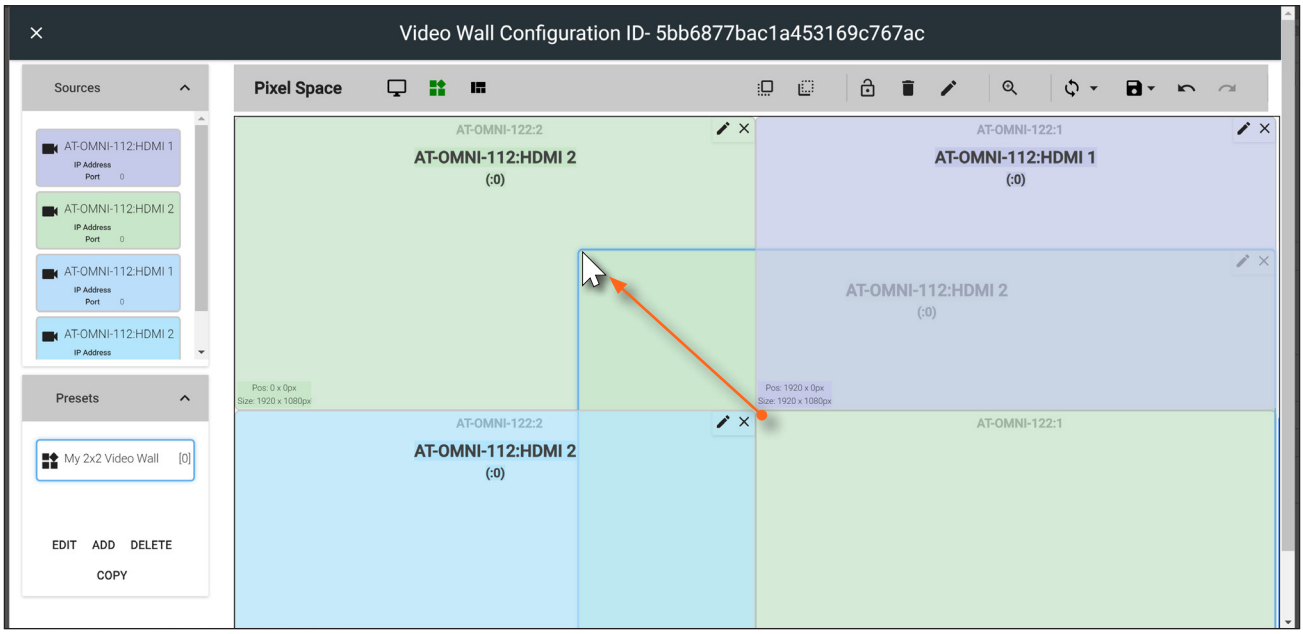
23. Click the **CLOSE** button to save the preset name and dismiss the dialog.



24. Under the **Sources** window, on the left side of the screen, drag and drop the desired source(s) to each display in the **Pixel Space** window. Note that more than one source can be mapped to each display. For example, in the illustration below, the AT-OMNI-512 (225.0.0.19, port 1000) has been mapped to both Left Display 2 (upper-left corner) and Left Display 1 (lower-right corner).



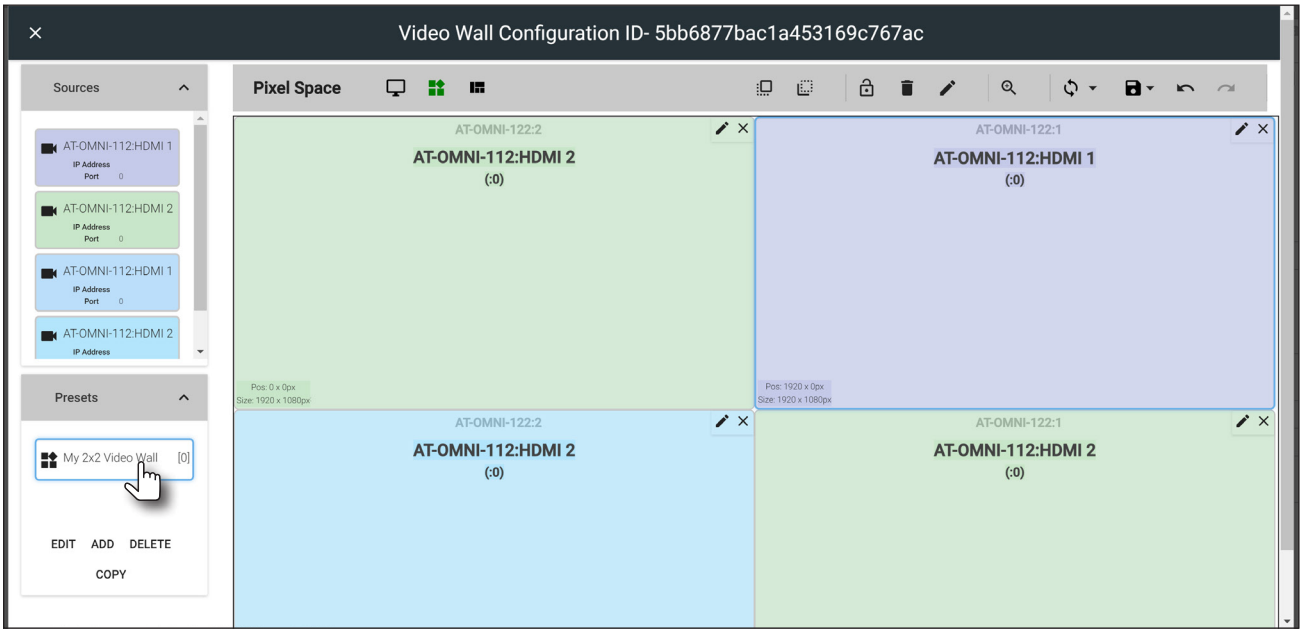
Sources can also be re-sized “on the fly” to achieve the desired presentation. Refer to the illustration on the next page. To re-size a source, click and drag the source window horizontally, vertically, or diagonally. Release the mouse to commit the changes. Refer to the *Atlona Velocity User Manual* for more information on manipulating source windows.



NOTE: When source windows are resized, they will "snap" to the nearest vertical or horizontal border, depending upon the direction that the mouse cursor is being moved. Source windows cannot occupy fractions of a display window.

25. Click **ADD**, under the **Presets** section, on the left side of the screen, to create additional presets.
26. Repeat steps 21 through 23 to create the preset. Once the desired presets have been created, click the preset name under the Presets section to recall it. The video wall will be updated with the selected preset.

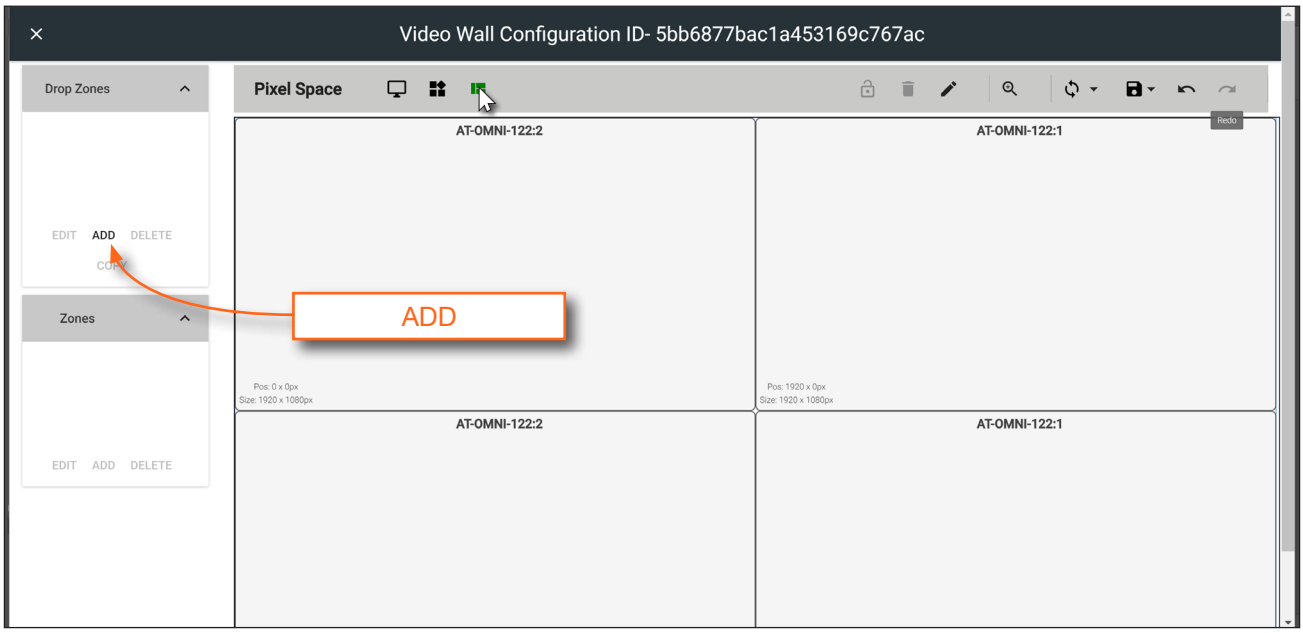
    Refer to the *Atlona Velocity User Manual* for more information on using and recalling presets.



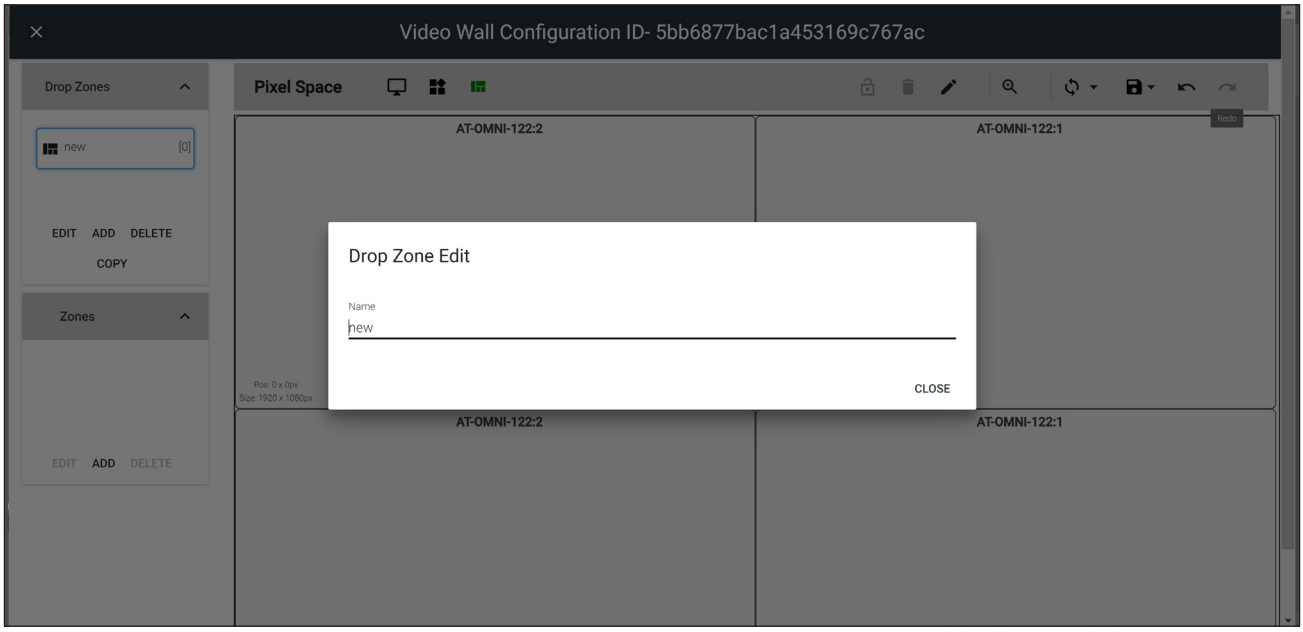
Creating and Using Drop Zones

Drop Zones are “containers”, allowing sources to be placed (“dropped”) in real-time on a video wall. Drop Zones are similar to presets, except that unlike presets, Drop Zone content can be changed on-the-fly within the Video Wall Control Screen.

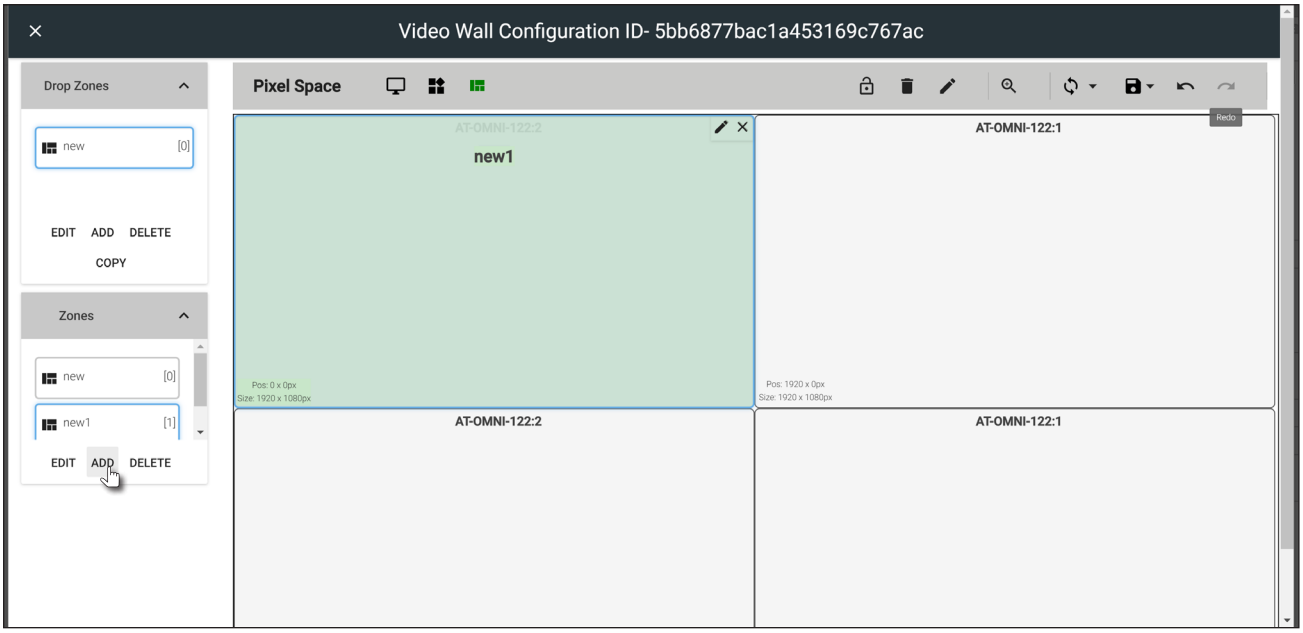
1. Populate the **Pixel Space** window with the desired devices.
2. Click the **Lock Displays** icon to lock the devices in place.
3. Click the **Drop Zones** icon in the **Pixel Space** menu bar.
4. Click **ADD**, under the **Drop Zones** window, on the left side of the screen. This will create the Drop Zone *preset*.



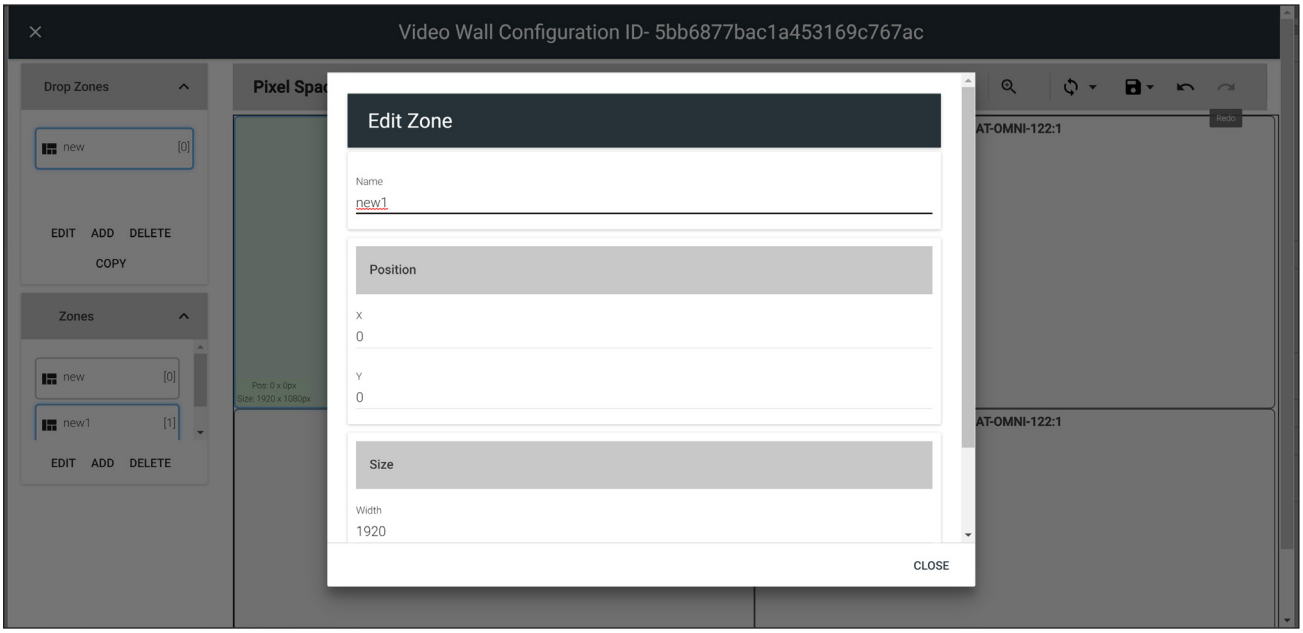
5. Click **EDIT** and provide a name for the Drop Zone in the **Drop Zone Edit** dialog box.
6. Click the **CLOSE** button to commit the change.



7. Click **ADD**, under the **Zones** window.

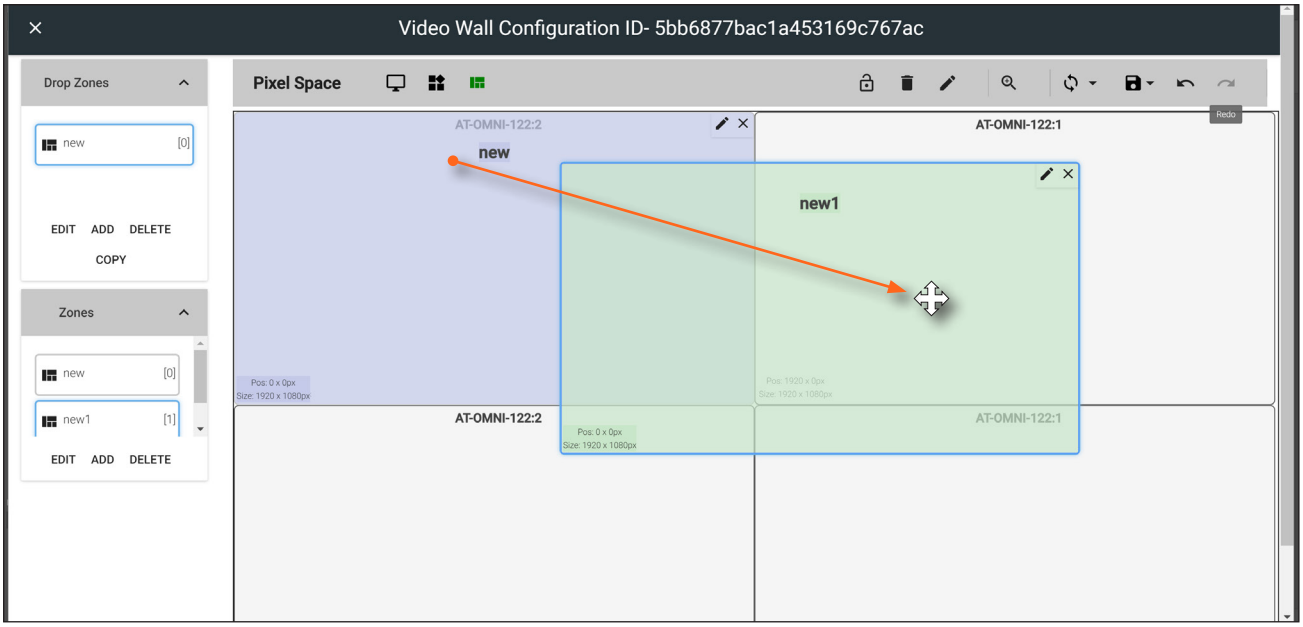


8. Click **EDIT** and provide a name for the Zone, in the **Edit Zone** dialog box. Click **Close** to save the change.

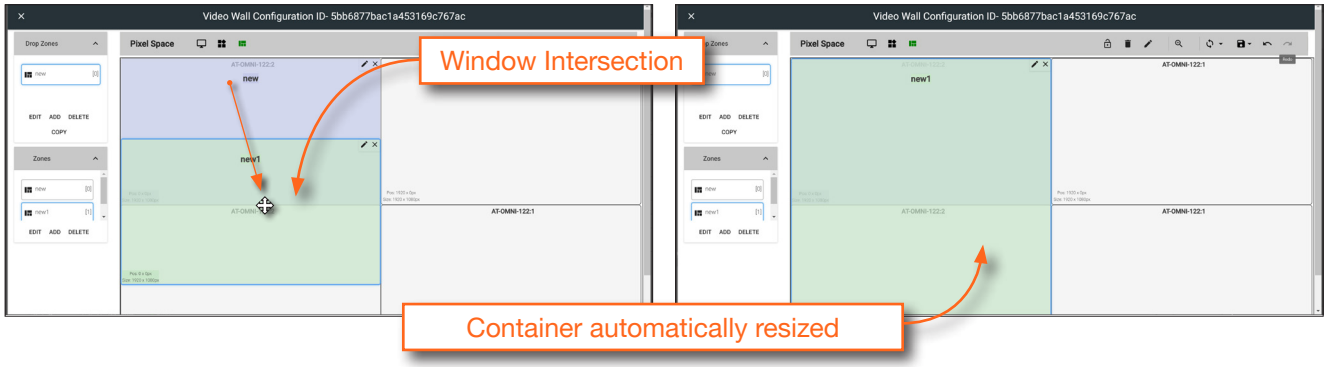


Note that each time the **ADD** button is clicked, a new Drop Zone *container* is created. In this first example, two Drop Zone containers are created. When adding containers, note that the position of each container is created in the same position, within the **Pixel Space** window.

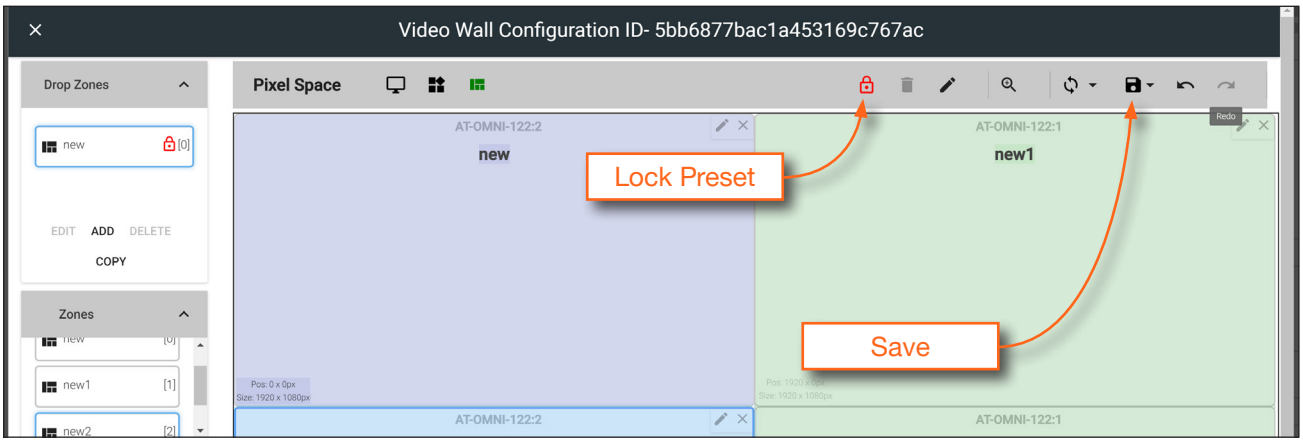
9. Drag each container to the desired area on the video wall. To place a container on each device, left-click and drag, then release when a majority of the window is placed over the device.



If a container is positioned over the intersection of two windows, then it will automatically be resized to accommodate both devices, as shown below. If placed over the corner intersection of more than two windows, then the container will be resized to cover all devices occupying that space.



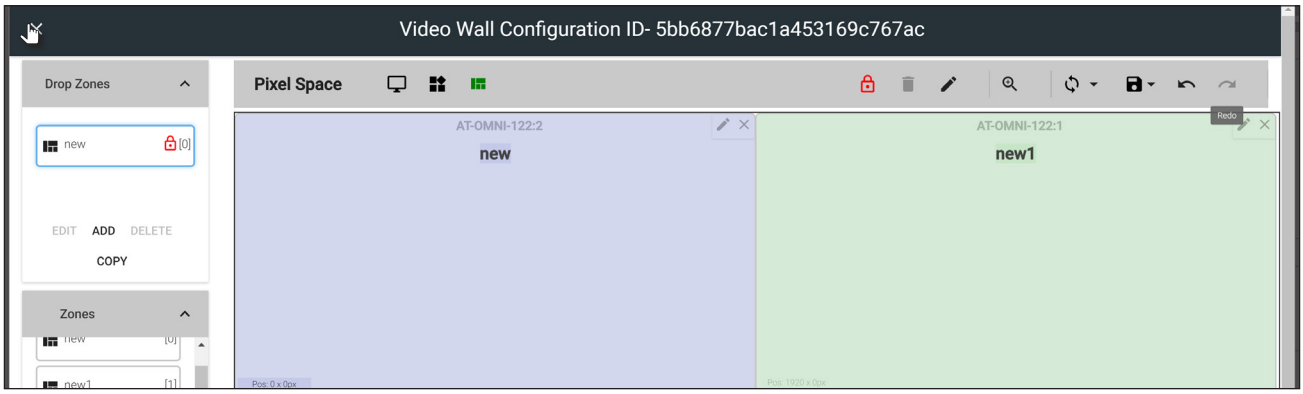
10. Click the **Lock Preset** button, one the containers have been placed in the desired positions.



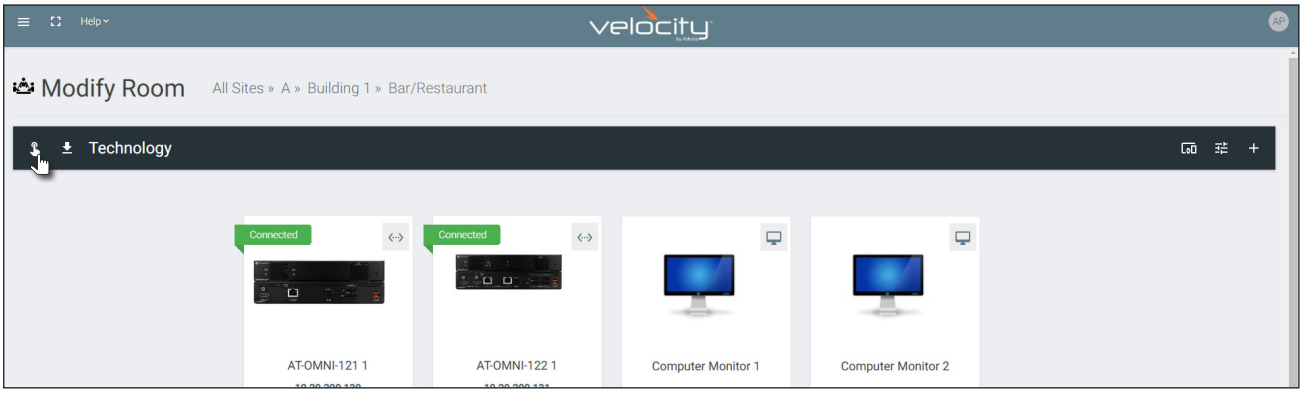
11. Repeat the above steps to create additional Drop Zone presets. Each Drop Zone preset can have a different number of containers. However, the number of containers that are created should not exceed the number of devices within the **Pixel Space** window.

12. Click the **Save** icon to commit all changes.

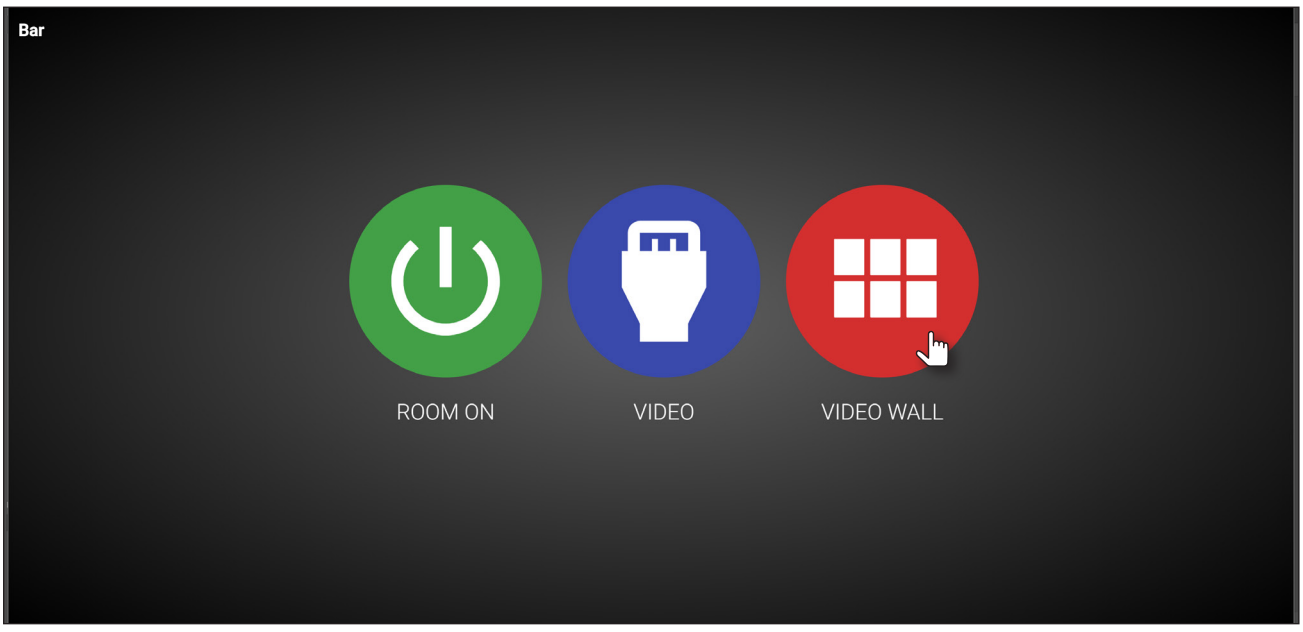
13. Close the **Video Wall Configuration** window, by clicking the **X**, in the upper-left corner of the screen.



14. Click the **Launch Control** icon, in the far-left corner of the **Modify Room** screen.

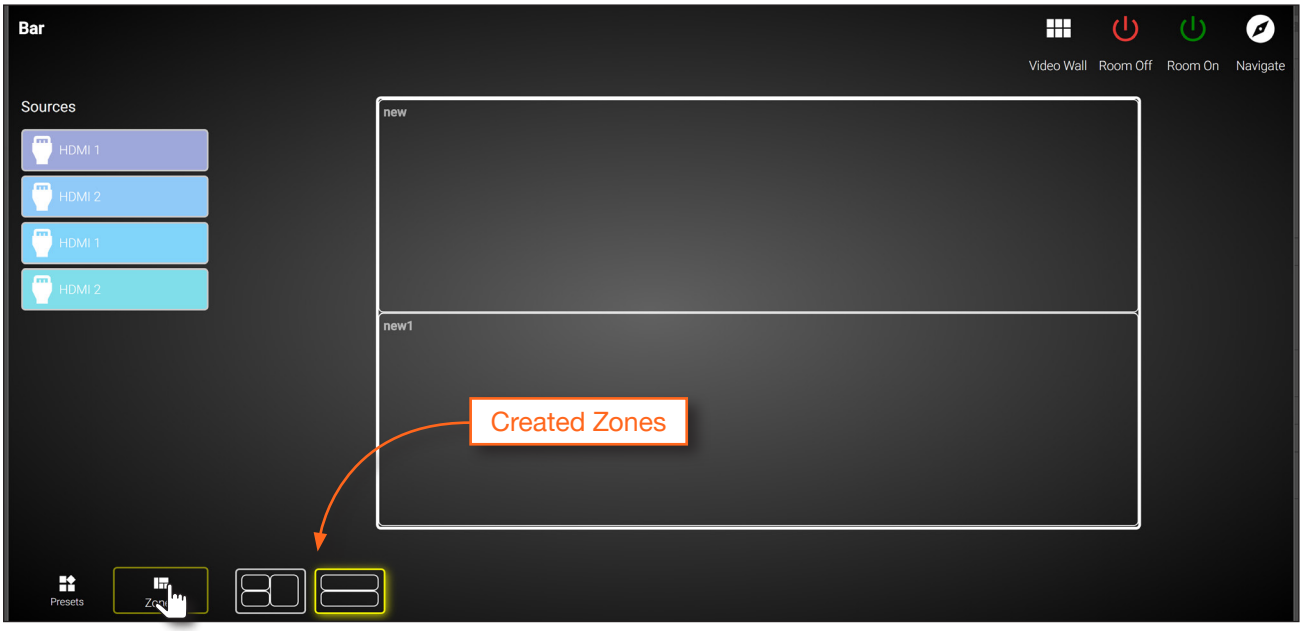


15. Click the **VIDEO WALL** icon.



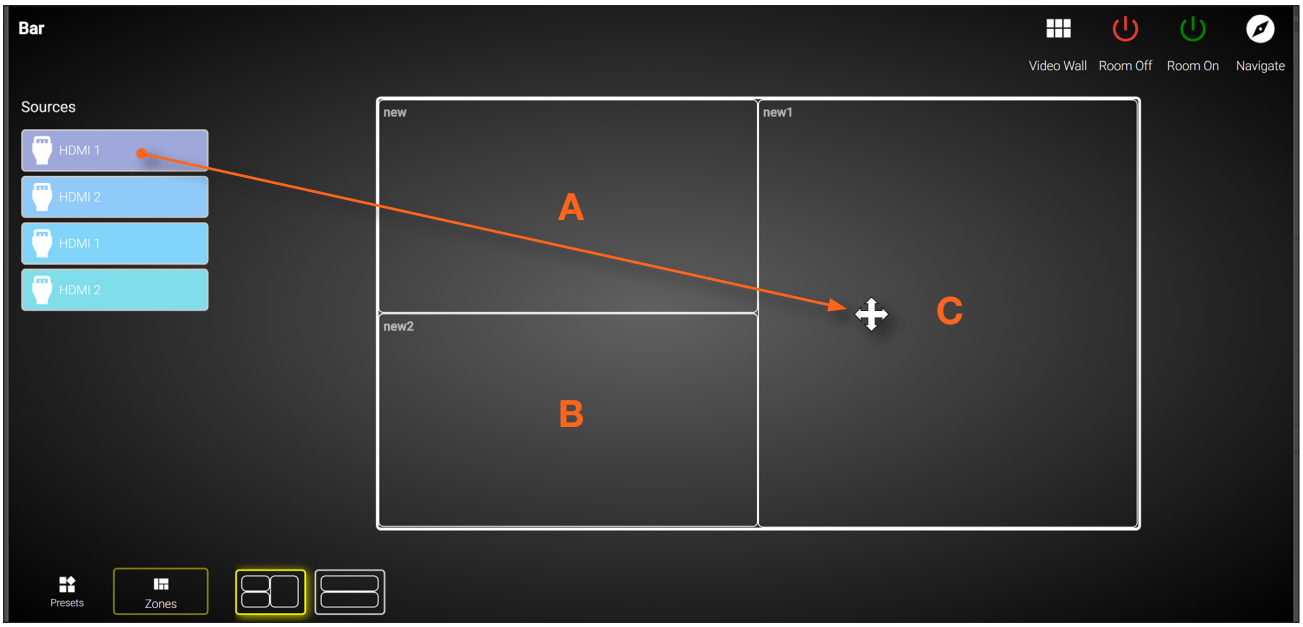
16. The **Presets** portion of the control screen will be displayed. All presets that were created, will be listed on the left-hand side of the screen, as shown below. Note in this example, only one preset was created. Click the desired preset to recall it.

17. Click **Zones**, in the lower-left corner of the screen to access the Drop Zones, which were created earlier. In the example example below, two Drop Zones were created.



The first Drop Zone that was created, shows two containers on the left, and a single container on the right. The second Drop Zone, only uses two containers: one on the top and one on the bottom. The Preset which we created is a 2x2 video wall and represents the physical layout of the displays. Drop Zones are containers and act as a “map” to where the video sources will be applied. Refer to the next page for an example.

The first Drop Zone will can dynamically apply sources to the preset, which is a 2x2 video wall, to the top-left, bottom-left, and both or only one display(s) on the right-hand side. Some possible combinations are shown below. Drop Zone containers have been labeled alphabetically, for reference.



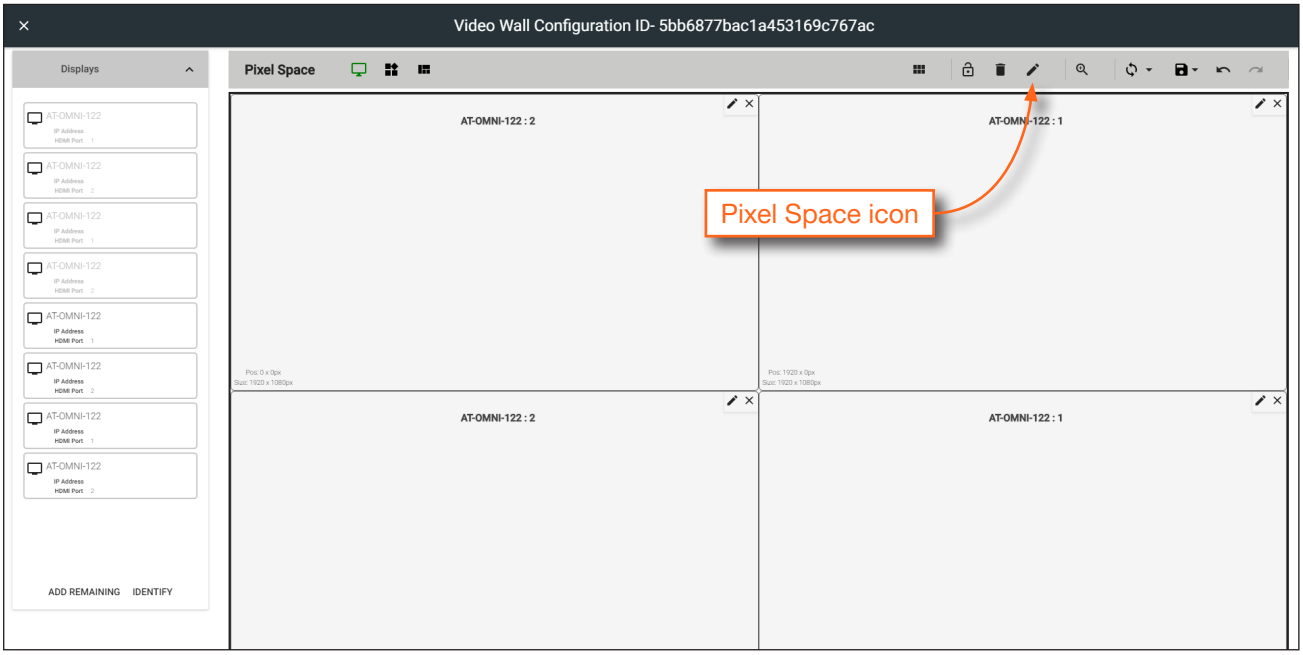
Note that although the top-right and bottom-right displays are physically separate, dragging and dropping a source from the left-hand side of the screen to Drop Zone container “C”, will “map” the source to both displays.

To change to a different source, drag and drop a source from the left-hand side of the screen to the source to be replaced.

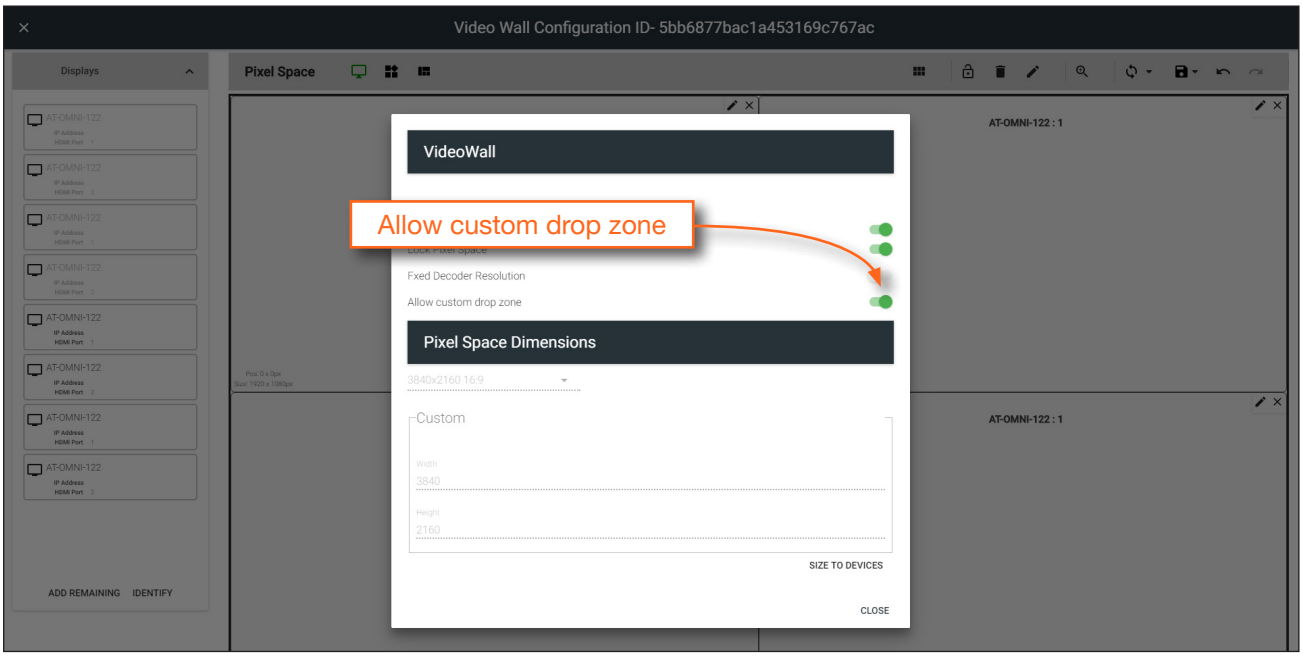
Custom Drop Zones

In addition to creating user-defined Drop Zones, the Velocity Video Wall also includes a Custom Drop Zone. This unique type of Drop Zone allows dynamic re-sizing of sources to be mapped across any of the decoders.

1. Return to the **Video Wall Configuration** screen and click the **Pixel Space** icon, in the **Pixel Space** menu bar.

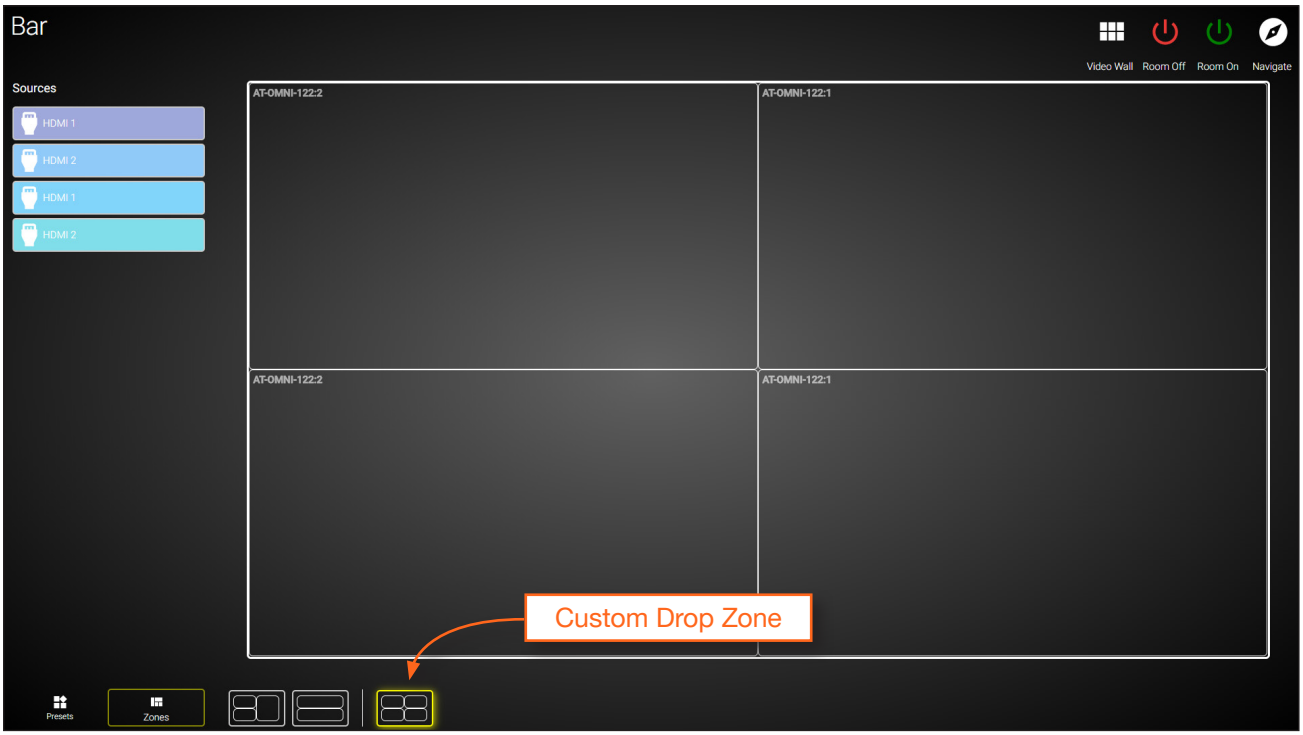


2. Click the **Allow custom drop zone** toggle switch to enable it. When enabled, this toggle switch will be green.

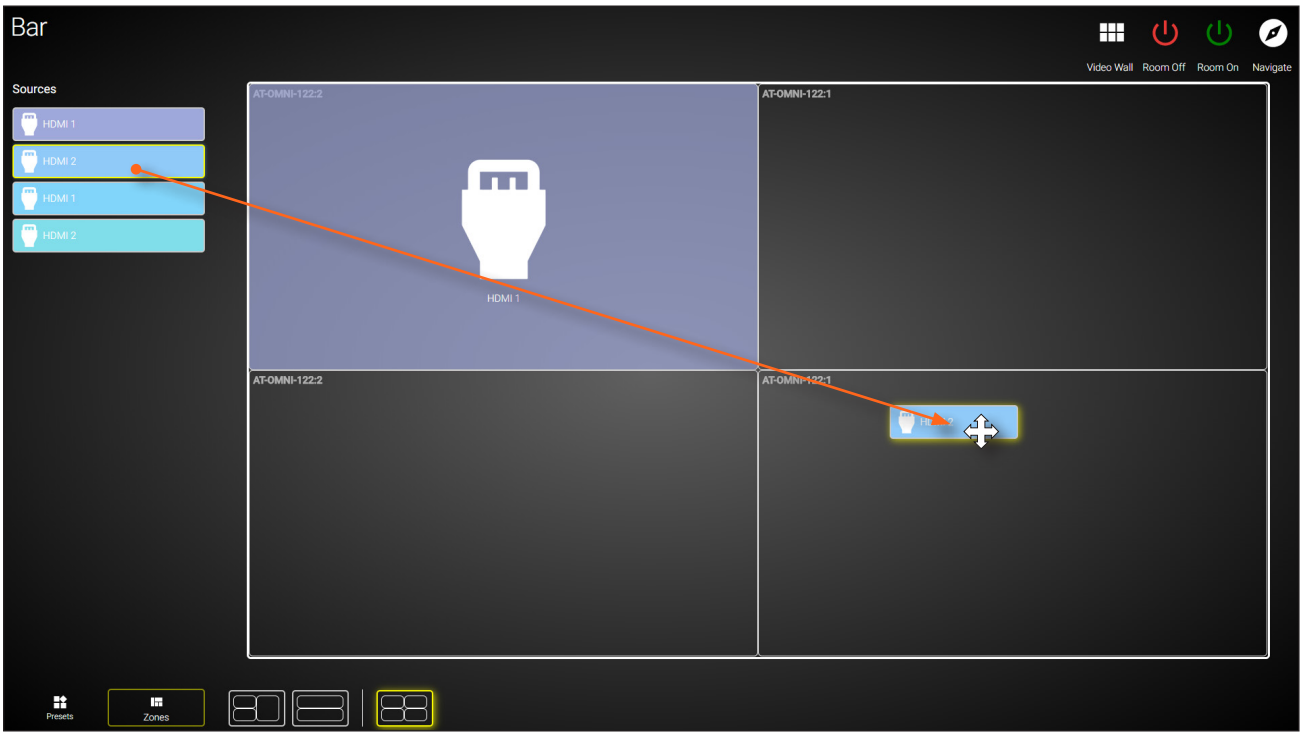


3. Click **CLOSE** to save changes and dismiss the dialog box.
4. Click the **Save** icon in the top-right portion of the **Video Wall Configuration** screen to commit changes.

5. Close the **Video Wall Configuration** screen and then click the **Launch Control** icon on the **Modify Room** screen.
6. Click the **VIDEO WALL** icon to enter video wall control screen.
7. Click **Zones** at the bottom of the screen, then click the **Custom Drop Zone** icon.

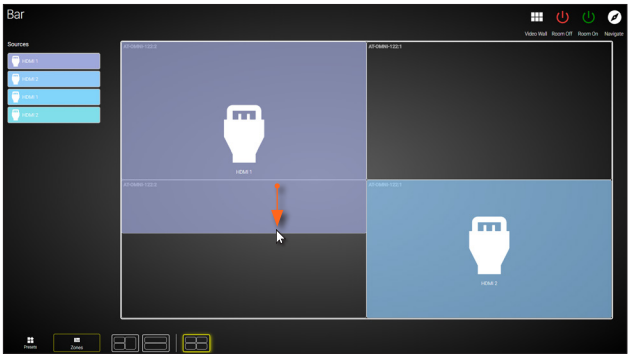


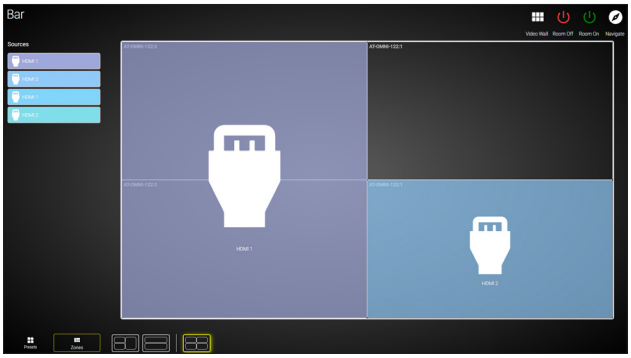
8. Drag-and-drop sources from the left side of the screen, as performed with normal Drop Zones.



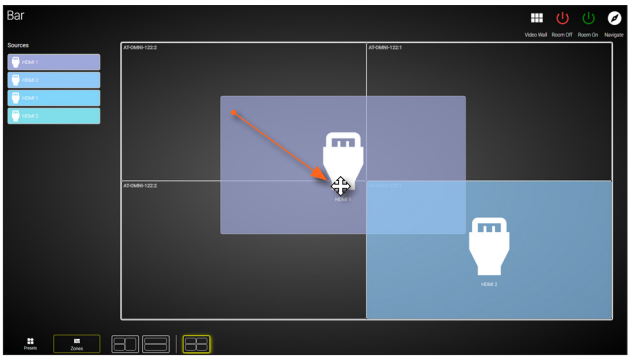
9. Resize or reposition windows by clicking and dragging the edges of each source, horizontally / vertically, to the desired area of a container.

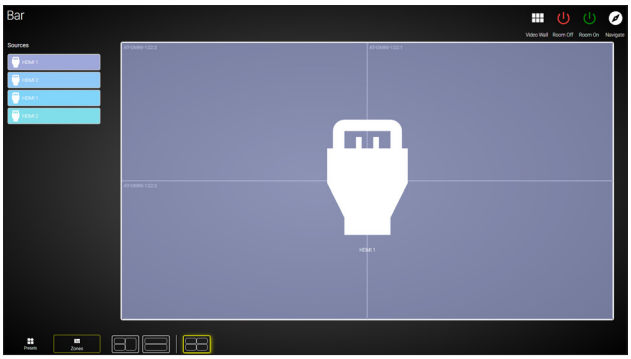
   To reposition the source to a different container(s), click in the middle of a source, then drag and drop to the desired container(s).





   If the source is dropped at the intersection of two containers, the source will automatically be resized to fill both containers. In the example below, the source will be displayed on all four screens.

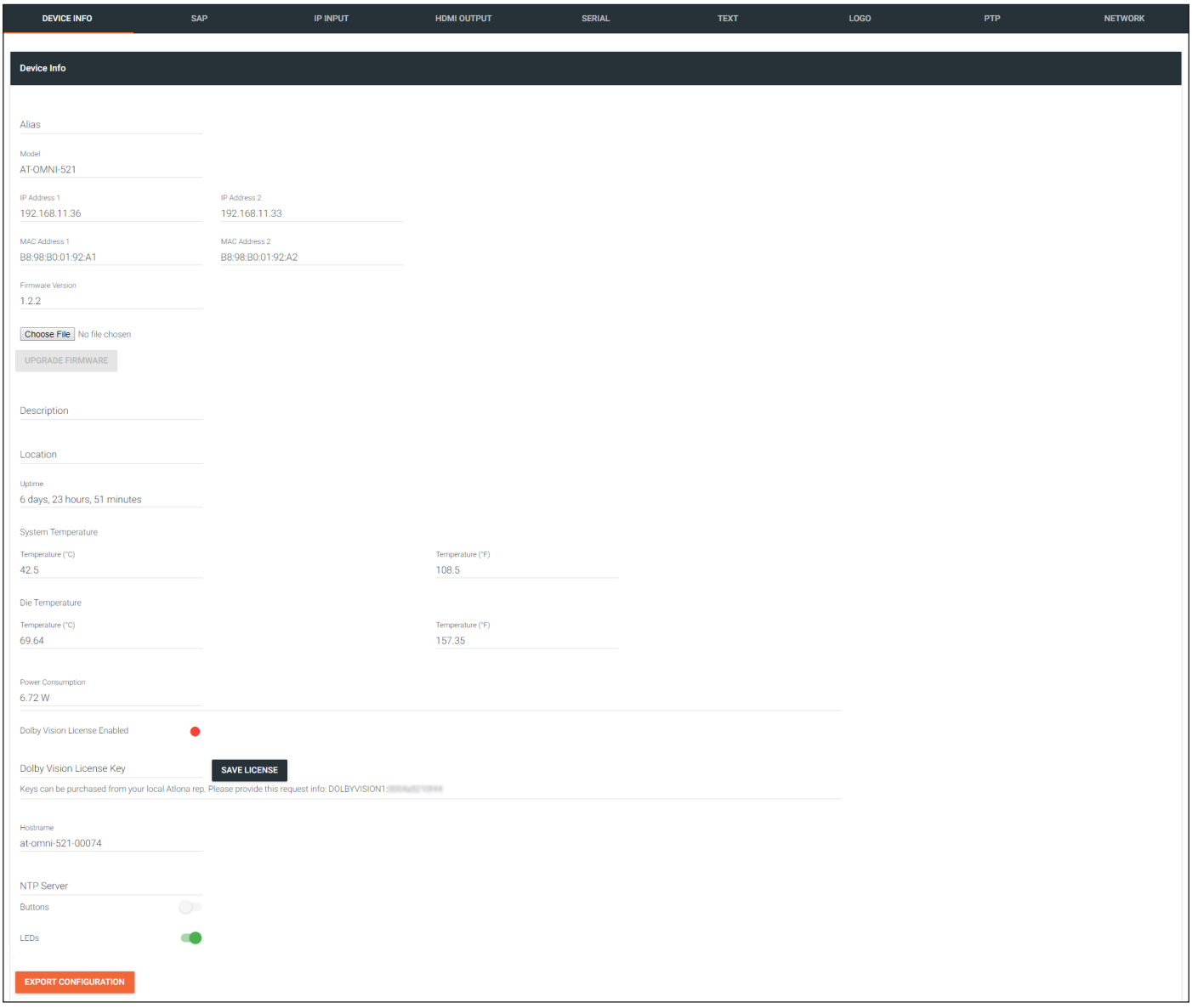




The AMS Interface

Device Info page

The **Device Info** page provides general information about the decoder. The encoder has an identical interface.



Alias
Enter a name for the unit in this field. This is optional.

Model
The mode number of the unit.

IP Address
Displays the IP address of the **ETHERNET** port.

MAC Address
Displays the MAC address of the **ETHERNET** port.

Firmware version
The version of firmware that the unit is running. Always make sure the latest version of firmware is installed.

Choose File
Click this button to select the firmware file when upgrading the firmware.

UPGRADE FIRMWARE
Click this button to begin the firmware upgrade process.

Description
Provides the option of assigning descriptive name to the unit.

Location
Provides the option of assigning descriptor for the location of the unit.

Temperature (°C)
The current internal temperature of the unit, in degrees Celsius.

Temperature (°F)
The current internal temperature of the unit, in degrees Fahrenheit.

Hostname
The hostname of this unit. This can be changed if desired. By default, the host name is automatically created using the model of the unit (AT-OMNI-521) and adding the last five digits of the unit serial number.

NTP Server
Specify the desired NTP server in this field. This provides timestamps for any logs and alarms.

Buttons
Disabling this feature will lock the ID button on the front panel. This is enabled by default.

LEDs
Disabling this feature will turn off all LED indicators on the front panel. This is enabled by default.

Export Configuration
Click this button to export the current configuration settings of the AT-OMNI-521 to a local file on the computer. The configuration file will be saved in .json format. The default file name will be: AT-OMNI-521_settings_[dd-mm-yyyy]_12_7.json.

Choose File
Click this button to select the desired configuration file to be uploaded to the AT-OMNI-521. Once the file is selected, click the **IMPORT CONFIGURATION** button to upload the file.

FACTORY RESET
Click this button to reset the AT-OMNI-521 to factory-default settings. When performing a factory reset, the following options can be selected, by clicking the check box. If no options are selected, then the decoder is reset with no factory-default settings.

See the next page for a description of each option.

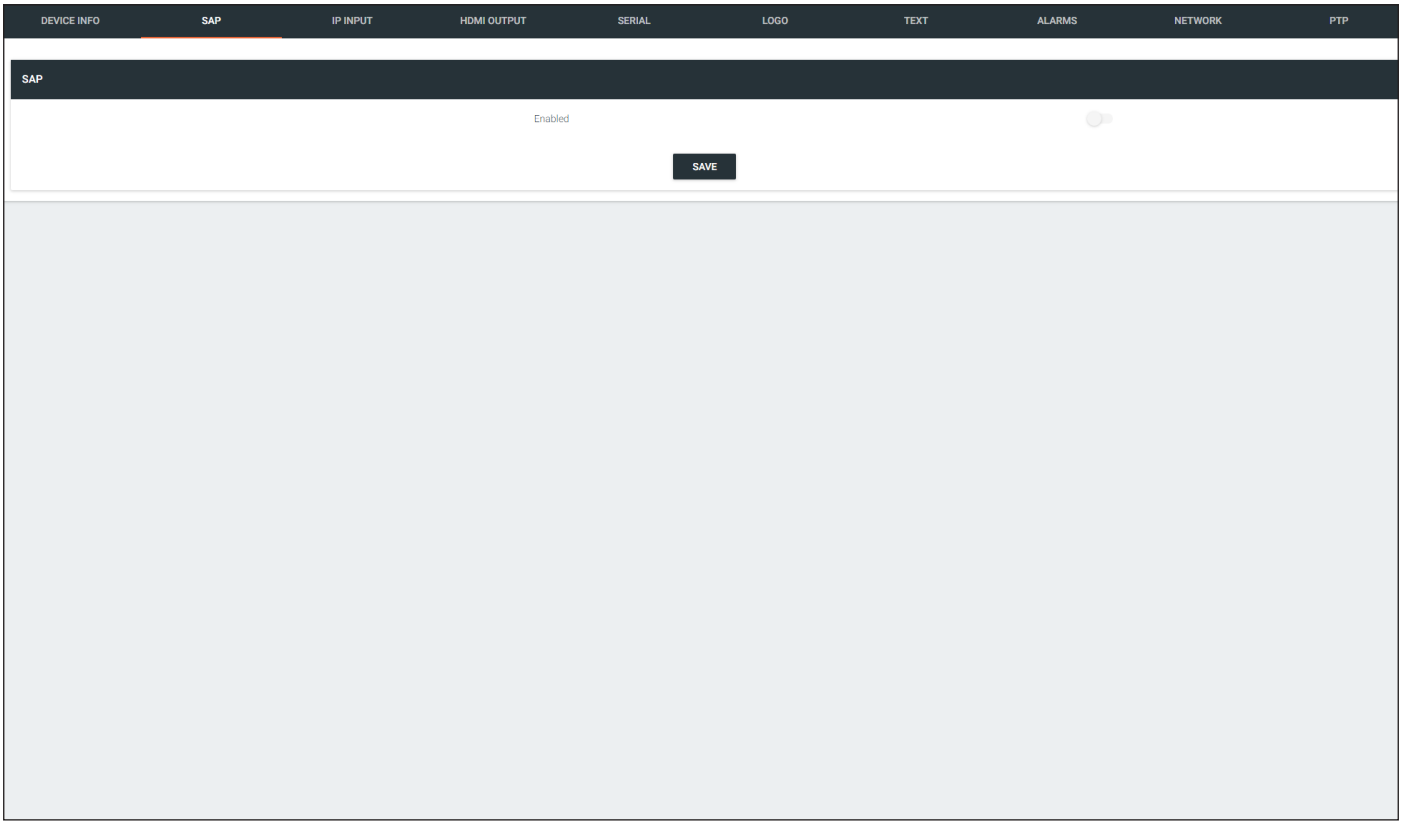
Option	Description
None Checked	Resets the decoder with no factory-default settings.
Reset User	Resets the decoder to factory-default settings and resets custom user information.
Reset Network	Resets the decoder to factory-default settings and resets network information.
Reset Defaults	Resets the decoder to factory-default settings. In addition, static multicast addresses are configured. This option can be used to configure a single decoder to transmit to any number of decoders without using the Virtual Matrix within AMS. **NOTE:** This will not work for multiple decoders on the same network.

REBOOT DEVICE
Click this button to reboot the AT-OMNI-521. No settings are changed during a reboot.

SAP page

The SAP page enables or disables the Session Announcement Protocol protocol. Enabling SAP configures the decoder to look for SAP messages from encoders on the network that are configured to send SAP. Any messages that are discovered will be displayed here.

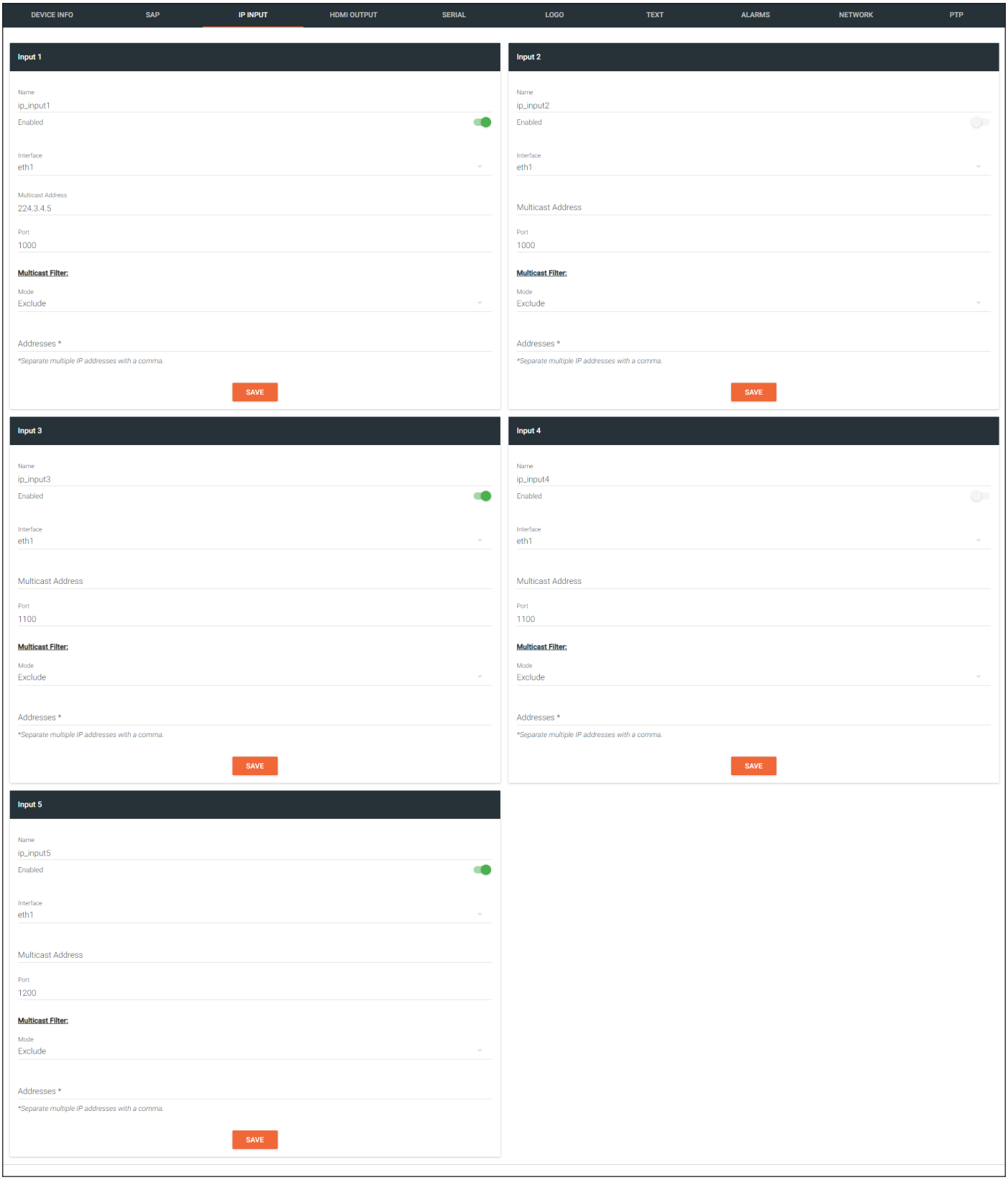
IMPORTANT: For a decoder to receive AES67, SAP must be enabled.



Enabled
Click this toggle switch to enable or disable SAP. If enabled, the decoder will listen for SAP messages. Click the **SAVE** button to commit any changes to this page.

IP Input page

The **IP Input** page provides configuration of each input, the assigned multicast address(es), and ports.



Name
The name used by AMS to identify the IP input.

Enabled
Click this toggle switch to enable or disable the IP input.

Interface
Click this drop-down list to select the physical interface that will be used to carry the IP traffic. Since this is a single-channel decoder, only eth1 will be available. "eth1" describes the **ETHERNET** port on the decoder.

Multicast Address
Enter the multicast address of the decoder stream.

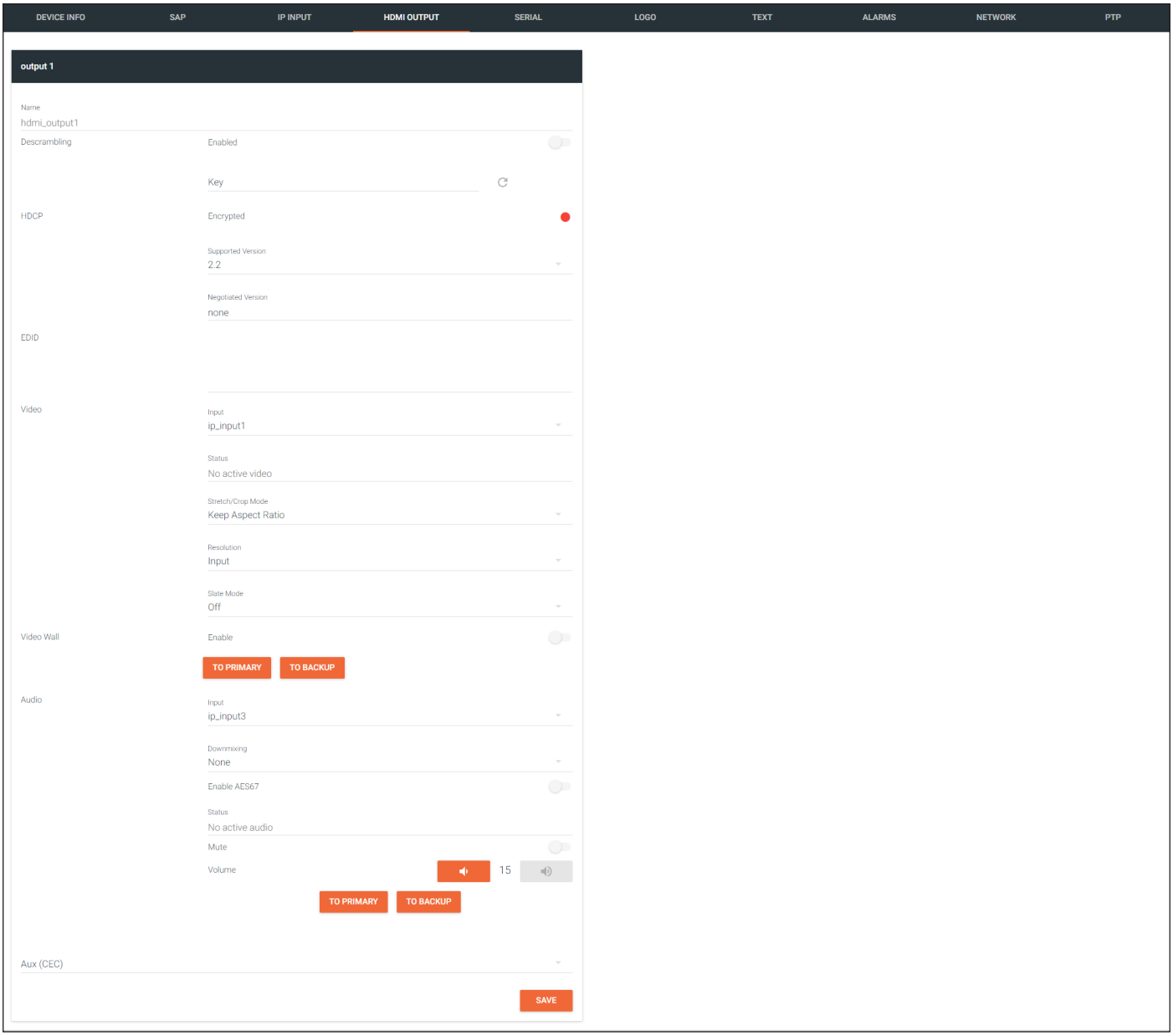
Mode
Click this drop-down list to select the mode. Mode can be set to **exclude** or **include** and is specifically used when using Source Specific Multicast (SSM). SSM will only function if the network is properly set up to support it.

Mode	Description
exclude	Multicast content coming from the source mentioned in the **Addresses** section will be excluded (blocked).
include	Multicast content coming from the source mentioned in the **Addresses** section, on the next page, to be streamed to the decoder.

Addresses
Enter the IPv4 address of the decoder(s) in this field and is used as the SSM include/exclude list. Use the comma delimiter to separate multiple IP addresses. When using non-SSM networks, this field is ignored.

HDMI Output page

The **HDMI Output** page provides options to configure the output streams.



Name
The name used by AMS to identify the HDMI output.

Enabled
Click this toggle switch to enable or disable de-scrambling.

Key
Enter the scrambling key in this field. The scrambling key must be contain a minimum of eight characters. Special characters and spaces are not permitted.

Encrypted
Indicates if the HDCP handshake with the sink device was successful or not. If this indicator is green, then the handshake was successful.

Supported Version
Click this drop-down list to select the version of HDCP to be supported: 2.2, 1.4, or None. If None is selected, then HDCP-enctrypted content cannot be passed-through.

NOTE: If the decoder is connected to a sink that is not capable of HDCP 2.2, then the supported version must be set to 1.4.

Negotiated Version
The version of HDCP that the decoder negotiated with the sink device.

EDID
This is a read-only field and cannot be modified. The data in this field is the EDID of the display to which the decoder is connected. To specify a different EDID for the source, the EDID data must be provided at the encoder. Refer to the AT-OMNI-512 User Manual for more information.

Input
Click this drop-down list to select the desired primary video input. Select **generator** to use the internal signal generator. Select the **Not Used** option to leave the video input unassigned. Inputs are configured under the IP Input page (page 69).

Status
Displays the current video input status.

Stretch/Crop Mode
Click this drop-down list to select the desired aspect ratio on the output.

Mode	Description
Keep Aspect Ratio	The output aspect ratio is the same as the source (input).
Full Screen	Scales the video source to fill the entire screen.
16:9	The output is displayed as 16:9, which is the common HDTV format.
16:10	The output is displayed as 16:10.
4:3	Output is set to 4:3. Note that when an HDTV format is converted to 4:3, up to 30% of the horizontal portion of the image will be cropped.

Resolution
Sets the output resolution. To keep the output resolution the same as the input resolution, select **Input** from the drop-down list. Select **Auto** to have the decoder automatically choose whether to pass the input resolution to the output or to scale it, depending on the capabilities reported by the EDID of the sink device.

Available Resolutions	
Input	Auto
4096x2160	3840x2160
1920x1080	1280x720

Slate Mode
Click this drop-down list to select the slate mode. Refer to Slate / Logo Insertion (page 27) for more information.

Frame Rate Conversion
Click this drop-down list to select the desired frame rate conversion mode. This feature is used when configuring video walls.

Input
Click this drop-down list to select the desired primary audio input. Select the **Not Used** option to leave the audio input unassigned. Inputs are configured under the IP Input page (page 69).

Downmixing
Select **Stereo** from this drop-down list to mix-down audio channels to two-channel stereo. To leave the audio unchanged, select **None**.

Status
Displays the current audio input status.

AES67
This option puts the decoder in AES67 mode and must be enabled for the decoder to receive AES67 streams. It must be disabled to receive OmniStream pass-through audio streams.

Mute
This feature only applies to PCM audio. For compressed audio signals, this option is ignored. Click this toggle switch to enable or disable audio muting.

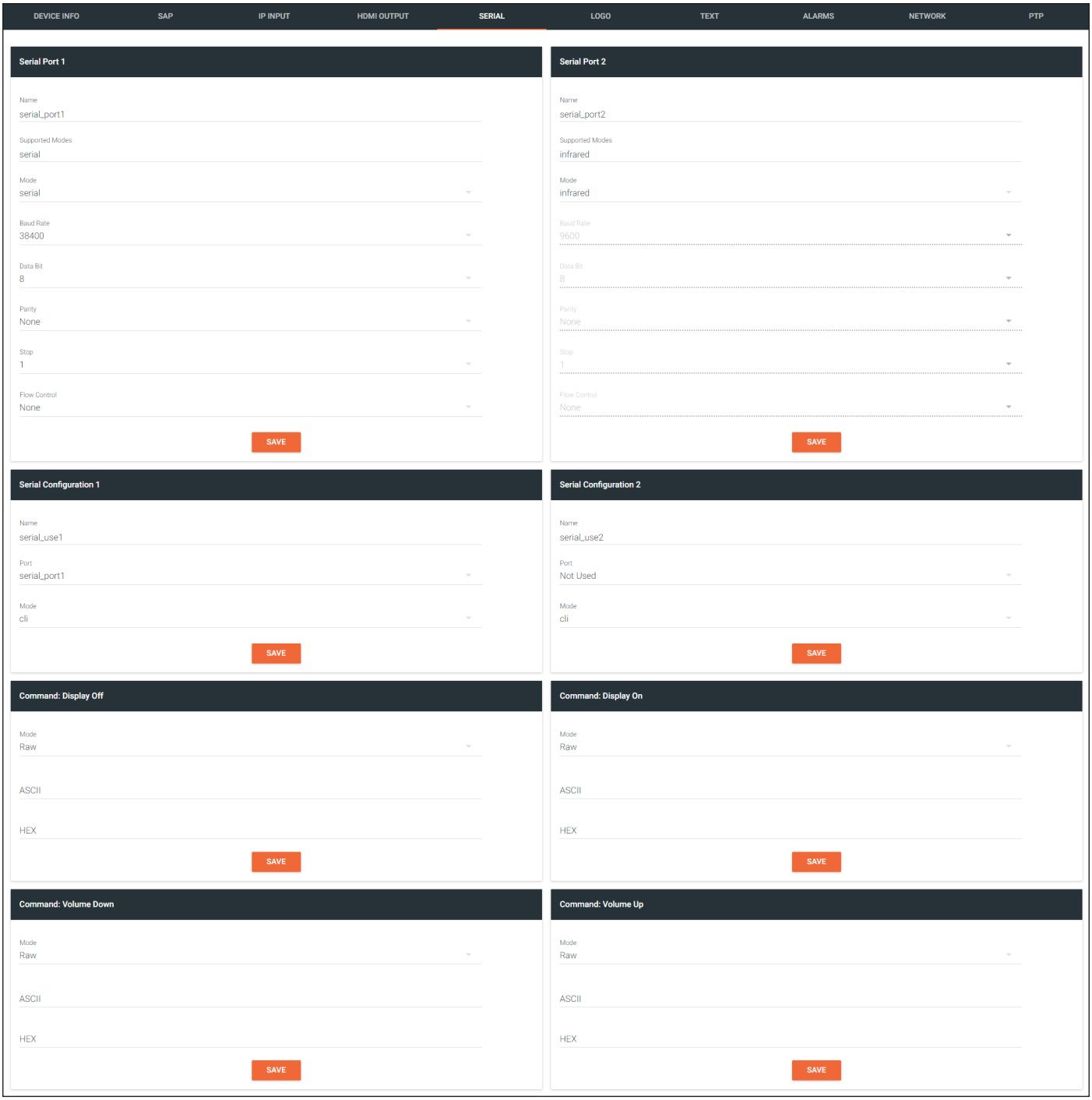
Volume
This feature only applies to PCM audio. For compressed audio signals, this option is ignored. Click the speaker icon on the left to reduce the output volume. Click the speaker icon on the right to increase the output volume. The current output level is displayed between the two icons. Maximum volume output is 15.

Aux
Click this drop-down list to select the input used to send CEC commands (aux data).

Video Optimization
This option is locked to Motion Video and cannot be changed.

Serial page

The **Serial** page provides serial port configuration when using control signals.



Serial Port

Name
The name used by AMS to identify the serial port.

Supported Modes
Lists the supported protocols.

Mode
Click this drop-down list to select the desired serial mode: Infrared or Serial.

Baud Rate
Click this drop-down list to select the desired baud rate.

Data
Click this drop-down list to select the number of data bits.

Parity
Click this drop-down list to select the parity bit.

Stop
Click this drop-down list to select the stop bit.

Flow
Click this drop-down list to select the type of flow control.

Serial Configuration

Name
The name used by AMS to identify the serial port.

Port
Click this drop-down list to select the port: serial_port1, serial_port2, or Not Used.

Mode
Click this drop-down list to select the desired control mode. Currently, only cli (command line interface) is supported.

Command

Command
Each of these The **Command** blocks are used to enter the command string for the desired operation: Display Off, Display On, Volume Down, and Volume Up.

Interpret on
Click this drop-down list to select where the command will be interpreted.

Interpret on	Description
decoder	Commands are interpreted at the decoder.
encoder	Commands are interpreted at the encoder.

ASCII
Enter the ASCII representation of the command string in this field.

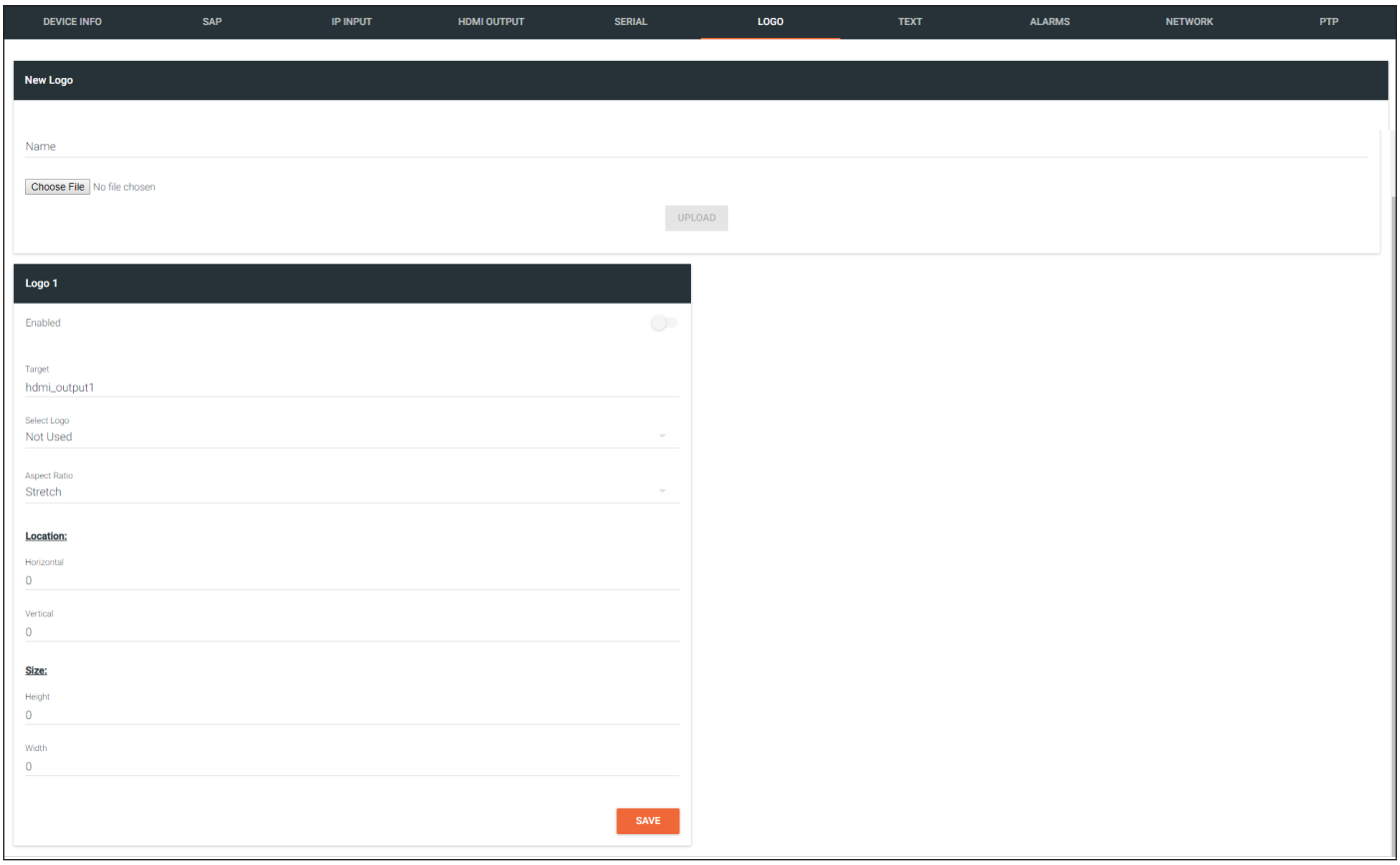
HEX
Enter the hexadecimal representation of the command in this field.

NOTE: When entering the command string, it is not required to enter the string under both the ASCII and HEX fields. The decoder requires that one field be completed.

Logo page

The **Logo** page provides the ability to upload a custom logo. This logo will be displayed when no video signal is detected. Separate logos can be uploaded: one for each channel.

Refer to Slate / Logo Insertion (page 27) for more information on using logos



New Logo

Name
Enter a name for the logo in this field.

Choose File
Click this button to select the logo file to be uploaded. Files must be in .png format and must not exceed 5 MB (5210000 bytes) in size. When an image file is uploaded, it will appear in the **Logo** drop-down list.

UPLOAD
Click this button to upload the logo file to the AT-OMNI-521.

Logo

Enabled
Click the toggle switch to enable or disable the logo. If the toggle switch is green, then the logo will be enabled.

Target
The name used by AMS to identify the decoder.

Select Logo
Click this drop-down list to select the desired logo. If no logo files are uploaded, then this will be set to Not Used.

Aspect Ratio
Click this drop-down list to select the type of aspect ratio to be applied to the logo.

Horizontal
Enter the horizontal position of the logo on the screen.

Vertical
Enter the vertical position of the logo on the screen.

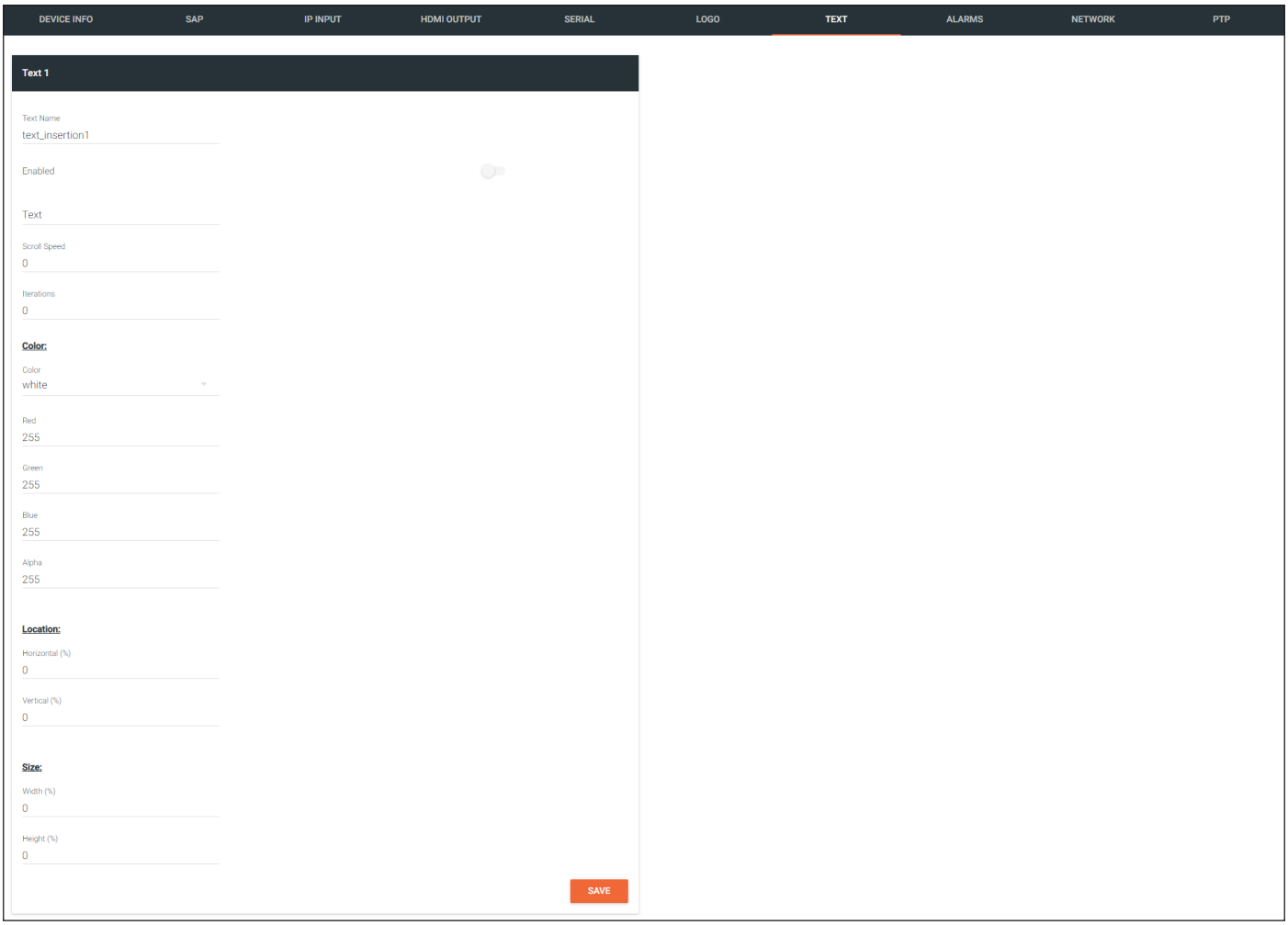
Height
Enter the horizontal resolution of the logo, in pixels.

Width
Enter the vertical resolution of the logo, in pixels.

NOTE: Maximum logo resolution (both height and width) is 1/4 of the video resolution.

Text page

The **Text** page provides the ability to configure text scrolling. Refer to Text Insertion (page 29) for more information.



Text Name
The name used by AMS to identify the text.

Enabled
Click this toggle switch to enable or disable the text. When the toggle switch is green, the text will be enabled.

Text
Enter the desired text in this field.

Scroll Speed
Enter the scrolling speed in this field. Values from -255 to 255 are valid. Negative numbers will scroll the text from left to right. Positive numbers will scroll text from right to left.

Iterations
Enter the number of iterations in the **Iteration** field. Set this field to 0 (zero) to set the number of iterations to infinity.

Color

Red, Green, Blue, Alpha
Enter the RGBA values for each of the respective fields, to specify the color and transparency of the text. Enter the desired value in the **Alpha** field to control the transparency of the text. A value of 255 is opaque and a value of 0 is transparent. Numbers from 0 to 255 are valid for each of these fields.

Location

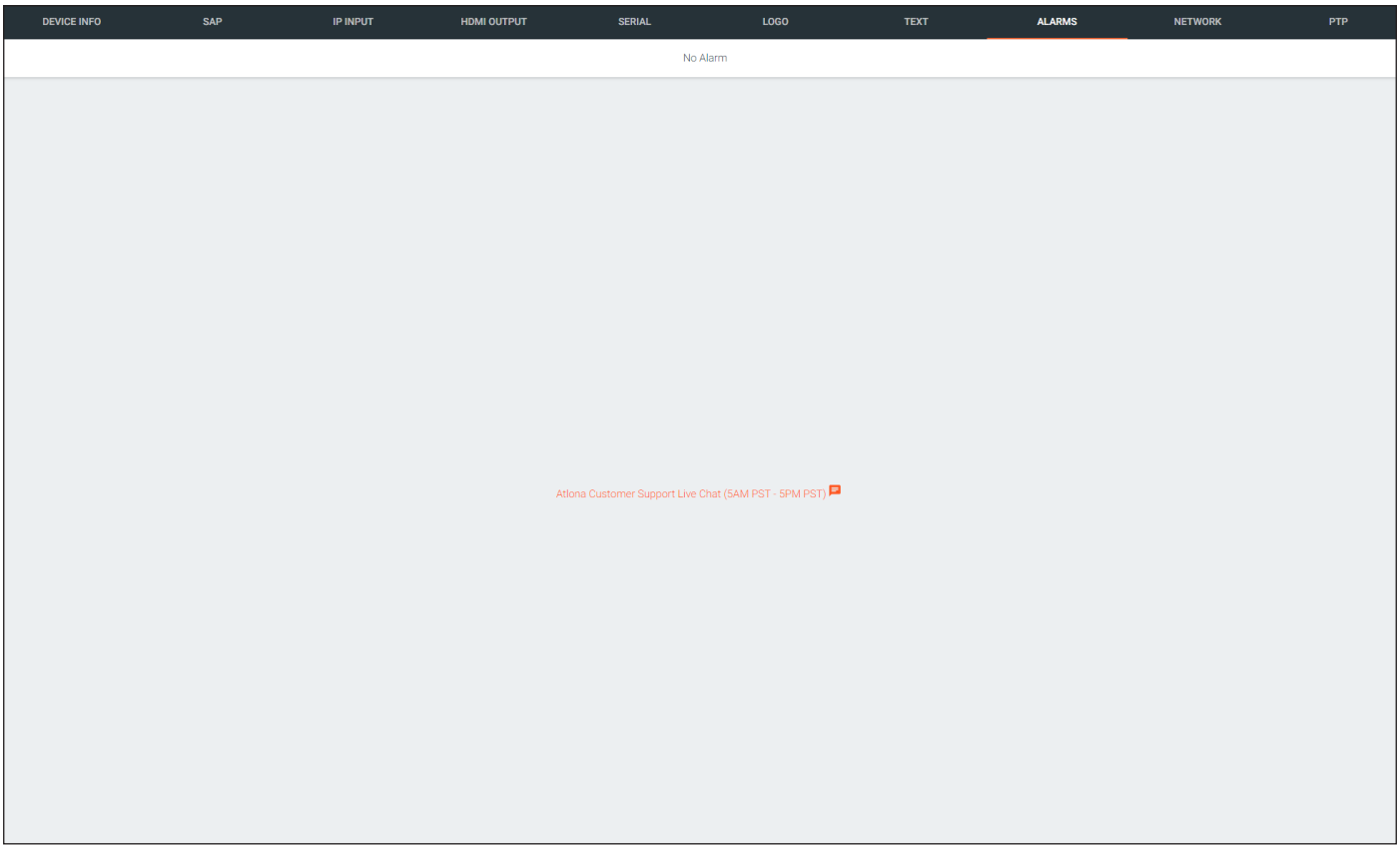
Horizontal (%), Vertical (%)
Specify the location of the text in the Horizontal (%) and Vertical (%) fields. Each of these values is based on the horizontal and vertical resolution of the screen.

Size

Width (%), Height (%)
Specify the size of the text in the Width (%) and Height (%) fields. Each of these values is based on the horizontal and vertical resolution of the screen.

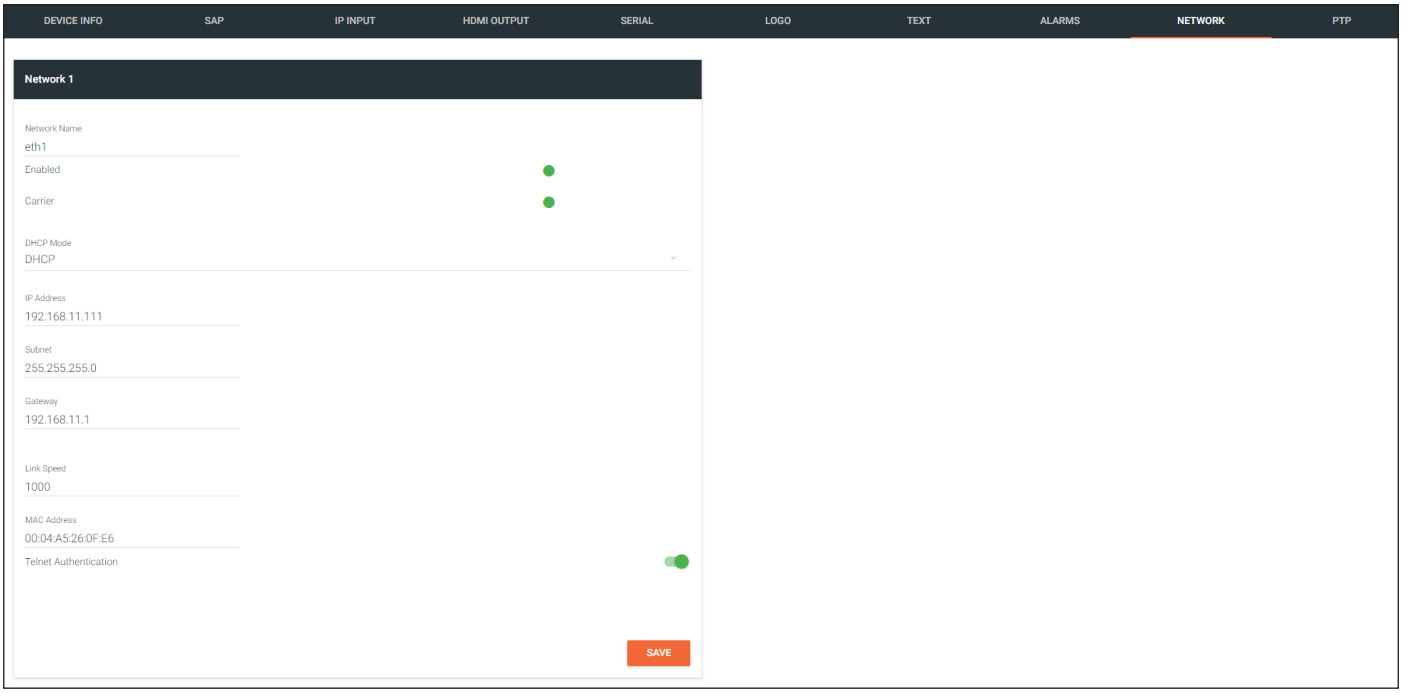
Alarms page

The **Alarms** page lists any alarms that may have been triggered. When OmniStream is functioning normally, this page will be blank, as shown below.



Network page

The **Network** page provides the ability to enable or disable DHCP mode for each network interface. When DHCP mode is disabled, the IP address, subnet mask, and gateway must be provided.



Name
The name used by AMS to identify the interface.

Enabled
This indicator displays whether or not the video stream for this channel is active. If the indicator is green, then the video stream is active.

Carrier
If this indicator is green, then an active link exists. Otherwise, this indicator will be red if no link exists.

DHCP Mode
Click this drop-down list to select the desired network mode. Select DHCP to let the DHCP server (if present) assign the decoder the IP settings; **Subnet** and **Gateway** fields will automatically be populated. When **Static** mode is selected, the information for the **IP Address**, **Subnet**, and **Gateway** fields must be entered.

IP Address
Displays the IP address used by the channel. This field can only be changed if **Static** mode is selected.

Subnet
Displays the subnet mask for the channel. This field can only be changed if **Static** mode is selected.

Gateway
Displays the gateway (router) address for the channel. This field can only be changed if **Static** mode is selected.

Link Speed
Displays the port speed in Mbps.

MAC Address
The MAC address of the Ethernet channel.

Telnet Authentication
Click this toggle switch to enable or disable Telnet authentication. If the toggle switch is green, then login credentials will be required at the start of a Telnet session.

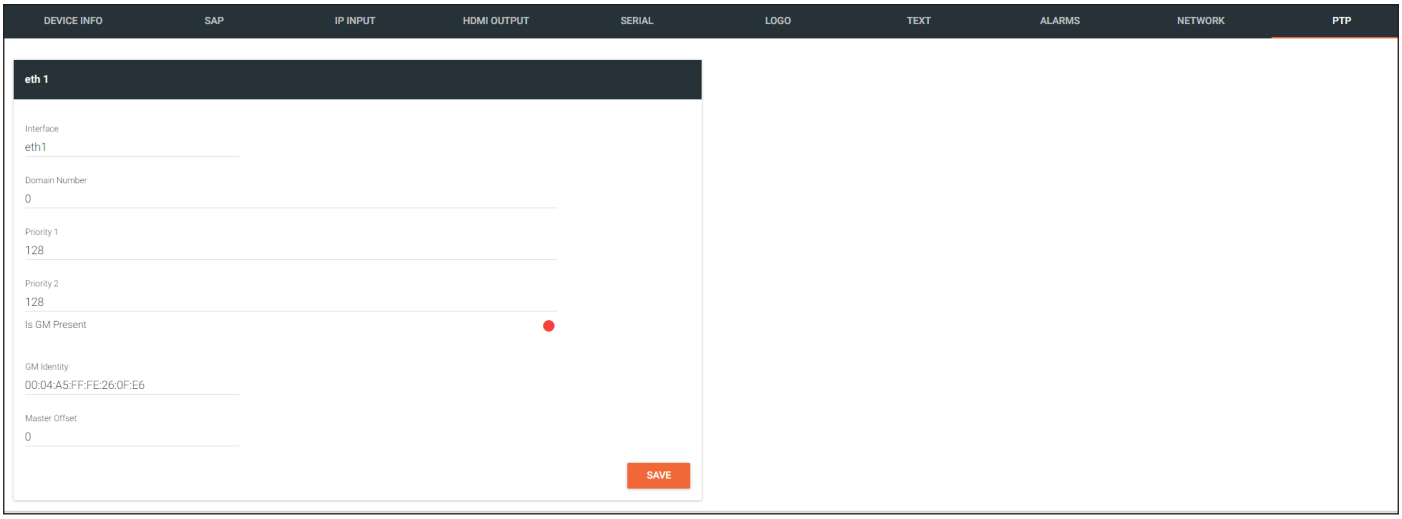
SAVE
Click this button to commit all changes to this page.

PTP page

The **PTP** page provides options for adjust Precision Time Protocol (PTP) for AES-67 audio streams. PTP is used by AES67 to keep all audio streams synchronized.

For a system utilizing PTP, all devices undergo an automatic self-election process to choose the interface to be used as the PTP grandmaster (GM) clock, based on the accuracy of the device's clock and the device's configured priority. A lower priority number means the unit is more likely to get selected as GM.

NOTE: If a new device is added to the network and the GM changes, a brief outage will be experienced while all connected devices synchronize with the new clock. Because of this, Atlona recommends that one unit gets manually defined as the GM and have both **Priority 1** and **Priority 2** fields be set to 1.



Interface
The name used by AMS to identify the interface.

Domain Number
Enter the domain number in this field. Valid entries are 0 through 127.

Priority 1
Enter the priority number in this field.

Priority 2
Enter the priority number in this field.

Is GM Present
This indicator displays the existence of a grandmaster clock for the specified PTP domain number. If the indicator is green, then the grandmaster clock exists on this interface.

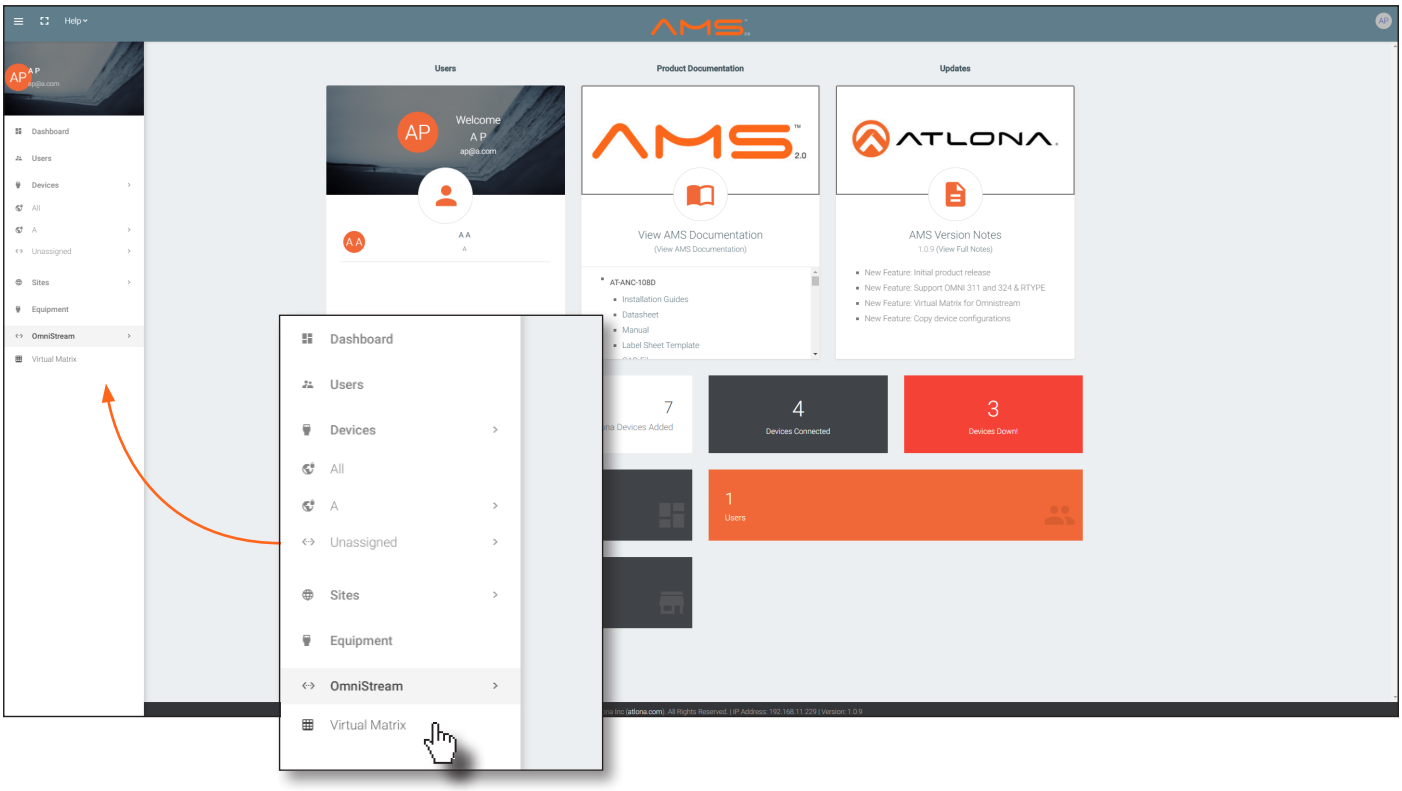
GM Identity
The grandmaster clock identity. If this field is blank, then it means that this interface is the grandmaster clock.

Master Offset
Displays the grandmaster clock offset.

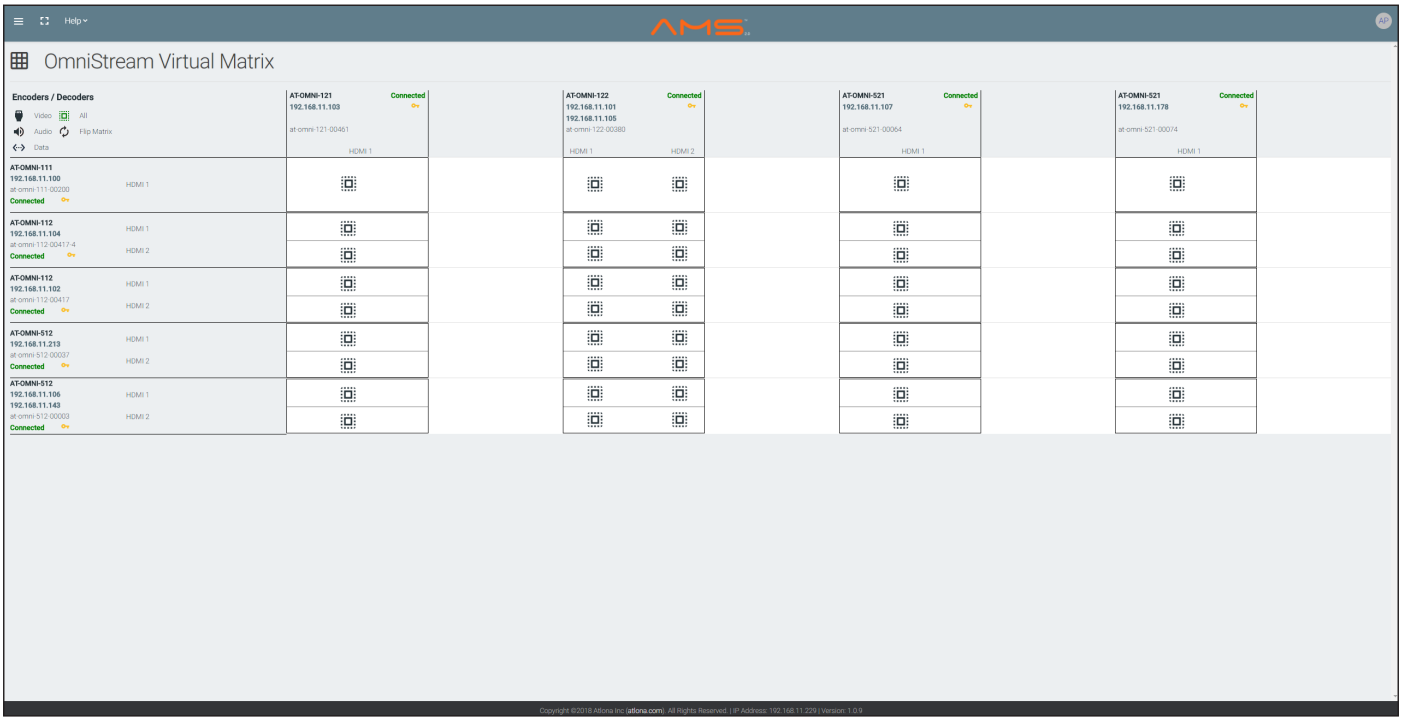
The Virtual Matrix

Accessing the Virtual Matrix

1. In AMS, click **Devices** from the fly-out menu.
2. Click the **OmniStream** option.
3. Click **Virtual Matrix**.



4. The **OmniStream Virtual Matrix** page will be displayed.



Layout and Operation

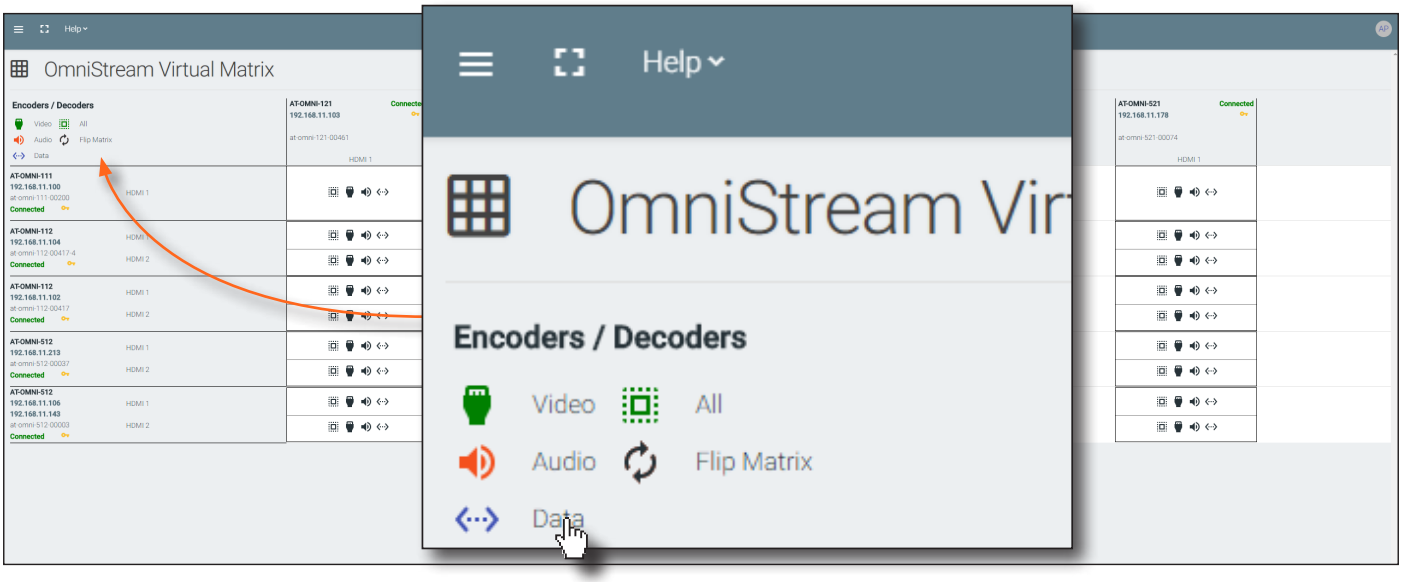
The illustration below, shows a multiple OmniStream units (encoders and decoders). The Virtual Matrix is organized into rows and columns.

The blue circle with the checkmark indicates that these two OmniStream units are connected to one another. The third column shows an OmniStream R-Type decoder (AT-OMNI-521). The fourth row shows an OmniStream R-Type encoder (AT-OMNI-512). In this example, the source signal on **HDMI 1 IN** (encoder) is being sent out, over the network, and will be displayed on **HDMI 1** on the decoder. This will create a *cross-connection*, which connects both the encoder and decoder together.

- **Creating a cross-connection**
  To route an input on an encoder to an output, locate the row and column where an input and output intersect, then click the square with the dots around it.

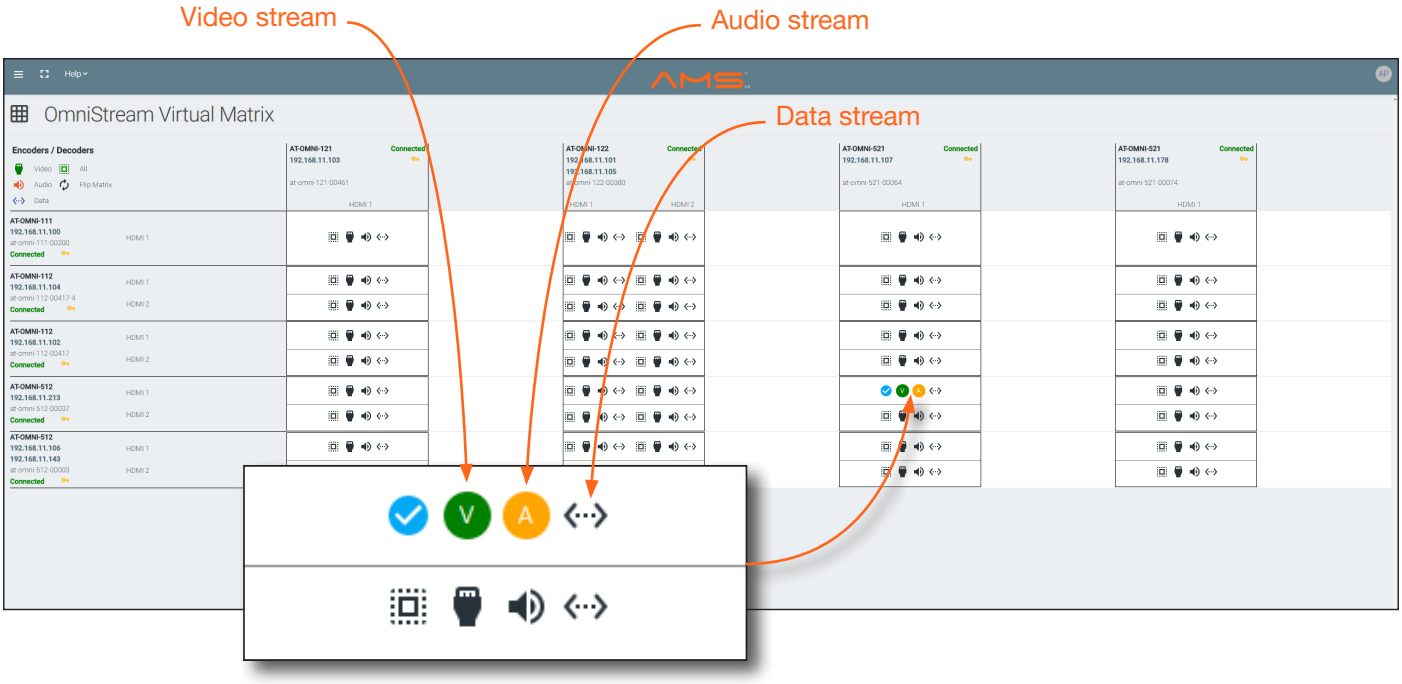
- **Removing a cross-connection**
  To remove a *cross-connection*, click on the desired circle icon with the check mark symbol. The square with the dots around it will be displayed indicating that the *cross-connection* has been removed.

- To view the individual streams for video, audio, and data, click the icons on the upper-left corner of the screen.



When these icons are clicked, the associated icons will be displayed in the rows and columns of the Virtual Matrix.

Symbol	Description
V	Video only
A	Audio only
D	Data only
✓	Connected; not all signals are active
✓	Connected; all streams are being used



- Since HDMI (both audio and video) is being used, the V (video) and A (audio) icons are displayed. The blue circle with the checkmark indicates that the cross-section has been created. However, not all streams are being used. Refer to the chart below.
- Note that the data stream (the icon with two arrows and three dots), which is used for control, is not being displayed as a dark-blue circle with the letter “D”. This is because the data stream is not currently being used. For example, if RS-232 were being transmitted, then the data icon would be displayed.
- The icons in the upper-left corner can also act as a filter. This allows for a clear breakdown of where signals are being routed and is useful when several encoders and decoders are used on a network.

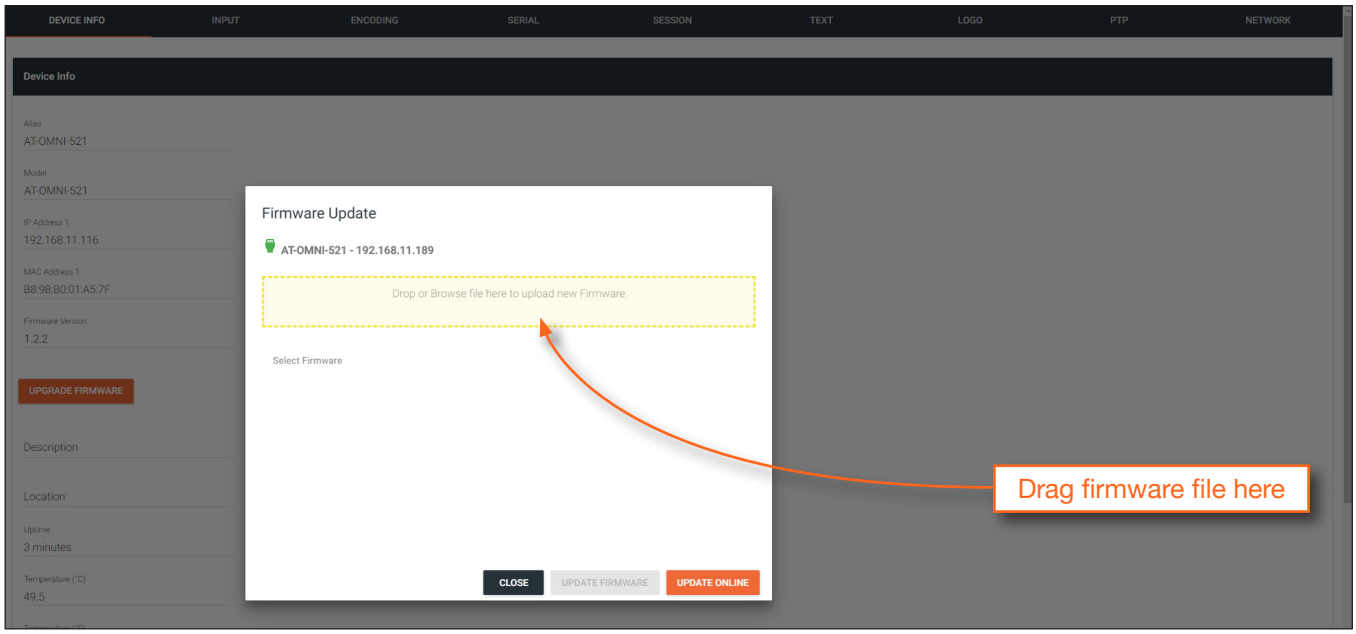
Appendix

Updating the Firmware

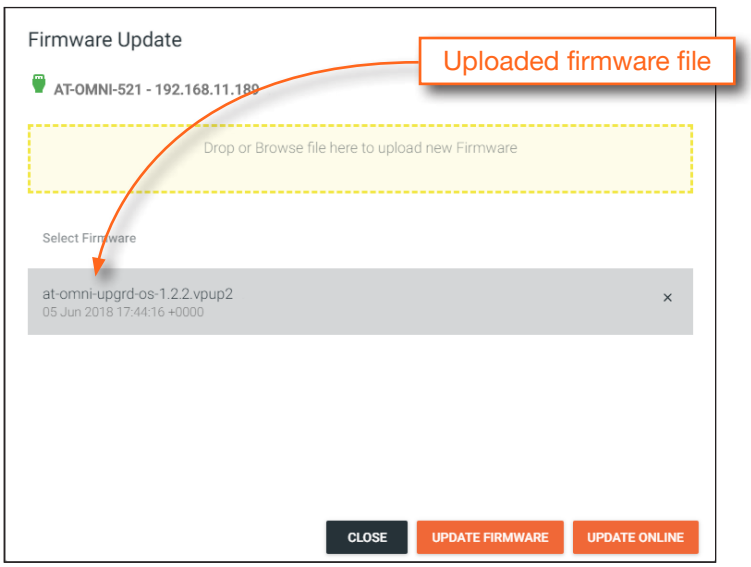
Firmware updates are managed through the Atlona Management System (AMS) software.

IMPORTANT: If updating to 1.2.1 from version 1.0, OmniStream units must first be updated to version 1.1.

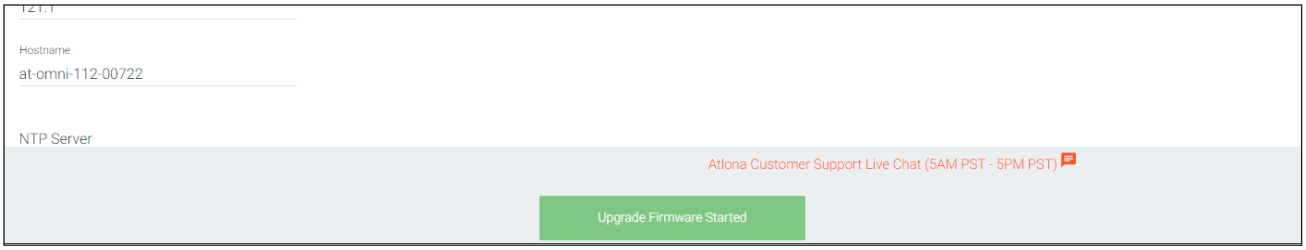
1. Click **DEVICE INFO** in the menu bar.
2. Click the **UPDATE FIRMWARE** button to display the **Firmware Update** dialog.



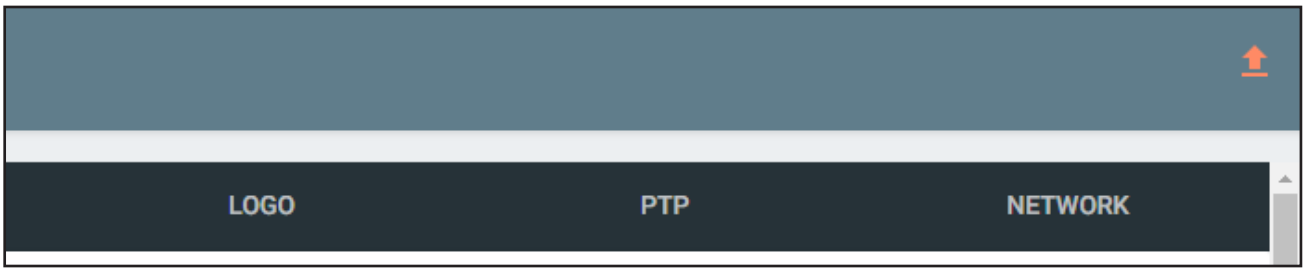
3. Click and drag the firmware file to yellow box, to upload the firmware to the device. OmniStream firmware files use the .v2pup file extension. Once the firmware file has been uploaded, it will appear under the **Select Firmware** section of the dialog box.
4. Click the **UPDATE FIRMWARE** button to begin the update process.
5. Click and drag the firmware file to yellow box, to upload the firmware to the device. OmniStream firmware files use the .v2pup file extension. Once the firmware file has been uploaded, it will appear under the **Select Firmware** section of the dialog box.
6. Click on the firmware file name to highlight it.
7. Click the **UPDATE FIRMWARE** button, at the bottom of the dialog box, to begin the update process.



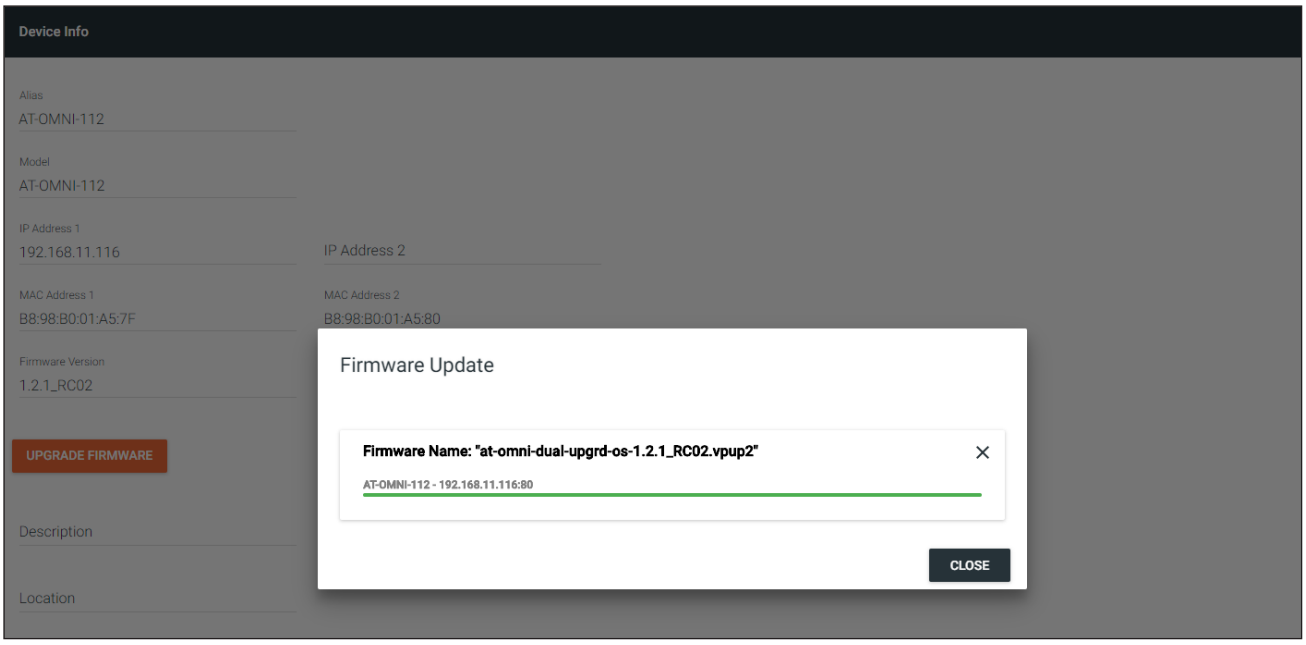
After the **UPDATE FIRMWARE** button is clicked, the Upgrade Firmware Started message box will be displayed.



8. Click the orange up-arrow icon, in the upper-right corner of the screen, as shown below. If this icon is orange, it indicates that a firmware update is in progress.



The progress bar for the update process will be displayed. The update process should take a few seconds.



9. Click the “X” to close out the progress bar window, then click the **CLOSE** button to dismiss the **Firmware Update** message box.
10. The firmware update process is complete.
11. Clear the web browser cache and refresh the web page. The new firmware version will appear in the **Firmware Version** field, in the **DEVICE INFO** page.

Installing Dolby® Vision™ Licenses

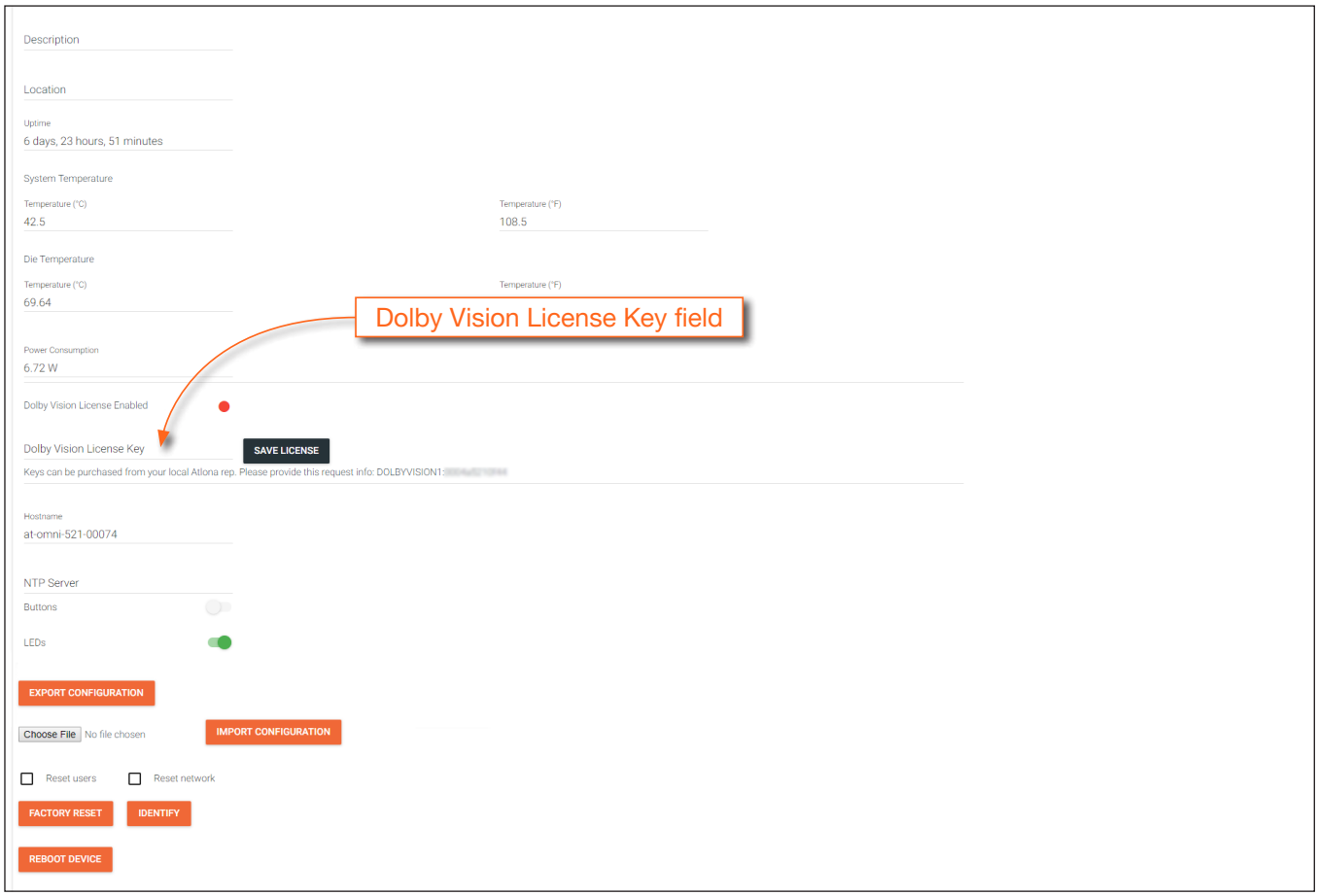
In order for the decoder to process Dolby Vision content, a license must be installed. For dual-channel decoders, if both channels will be using Dolby Vision, then two licenses (one per channel) must be installed. The Dolby Vision license can be purchased when the OmniStream product(s) are purchased or they can be purchased after deployment.

There are two SKUs for Dolby Vision Licensing. Identify the license type from the table below.

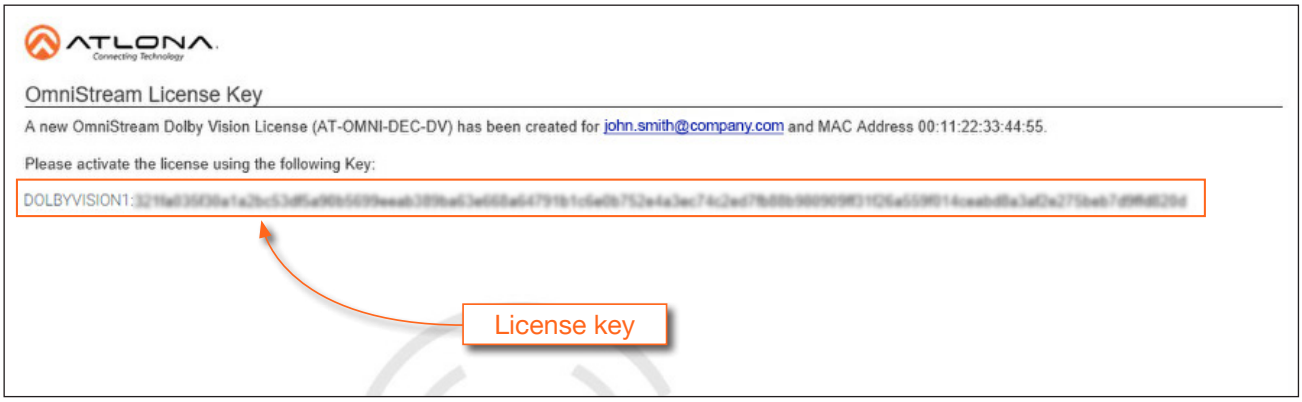
SKU	Product Application	License Notes
AT-OMNI-DEC-DV1	AT-OMNI-121	
	AT-OMNI-122	Applies to channel 1 only.
	AT-OMNI-521	
AT-OMNI-DEC-DV2	AT-OMNI-122	Applies to channel 2 only; the AT-OMNI-DEC-DEV2 license requires that the AT-OMNI-DEC-DV1 is already installed.

Products Purchased with Dolby Vision

1. Login to AMS. Refer to Accessing Decoders in AMS (page 16) if necessary.
2. Select the desired OmniStream decoder from the list of devices. The **DEVICE INFO** screen will be displayed.
3. Scroll down and identify the **Dolby Vision License Key** field.



4. Locate the email that was received from Atlona (example shown below). The e-mail will contain the license key required to activate Dolby Vision on the decoder.

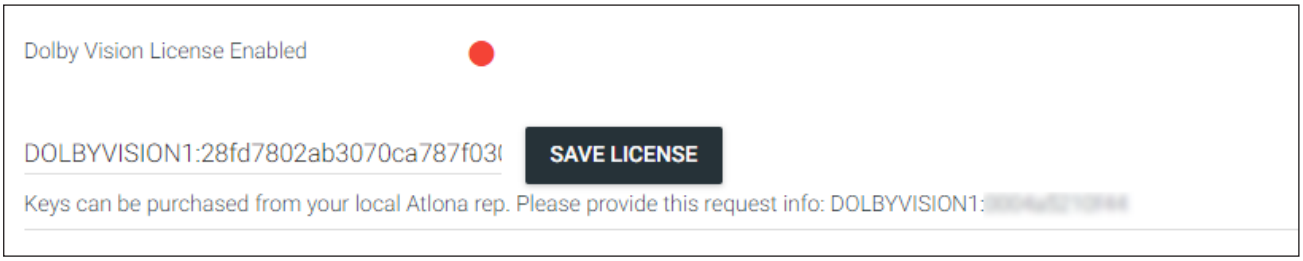


5. Copy and paste the license from the email into the Dolby Vision License Key field. The “DOLBYVISIONn:” prefix, where n = 1 or 2, must be included when entering the license key.

   For example:

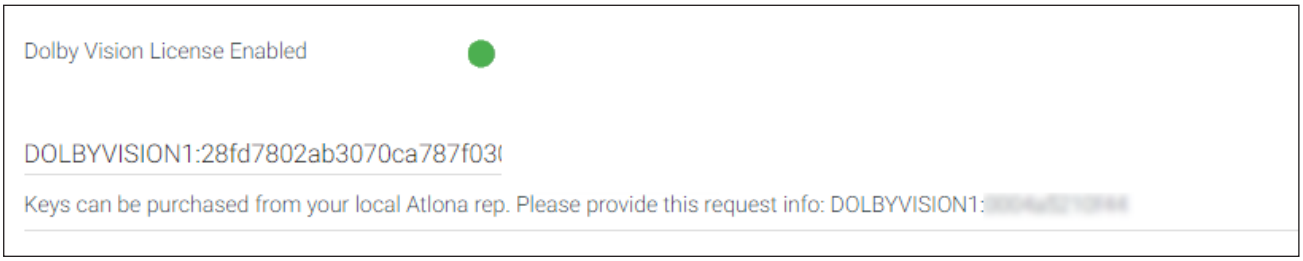
   DOLBYVISION1:28fd7802ab3070ca787f030...

NOTE: If the Dolby Vision license for both channels (dual-channel units, only) was purchased, then the email will contain two separate licenses: DOLBYVISION1 and DOLBYVISION2.



6. Click the **SAVE LICENSE** button to commit changes.

   Once the license key is accepted, the **Dolby Vision License Enabled** indicator will turn green and the **SAVE LICENSE** button will be hidden, as shown below.



7. A pop-up message will be displayed at the bottom of the screen, prompting a reboot. Reboot the OmniStream decoder by clicking the **REBOOT DEVICE** button at the bottom of the **DEVICE INFO** page.

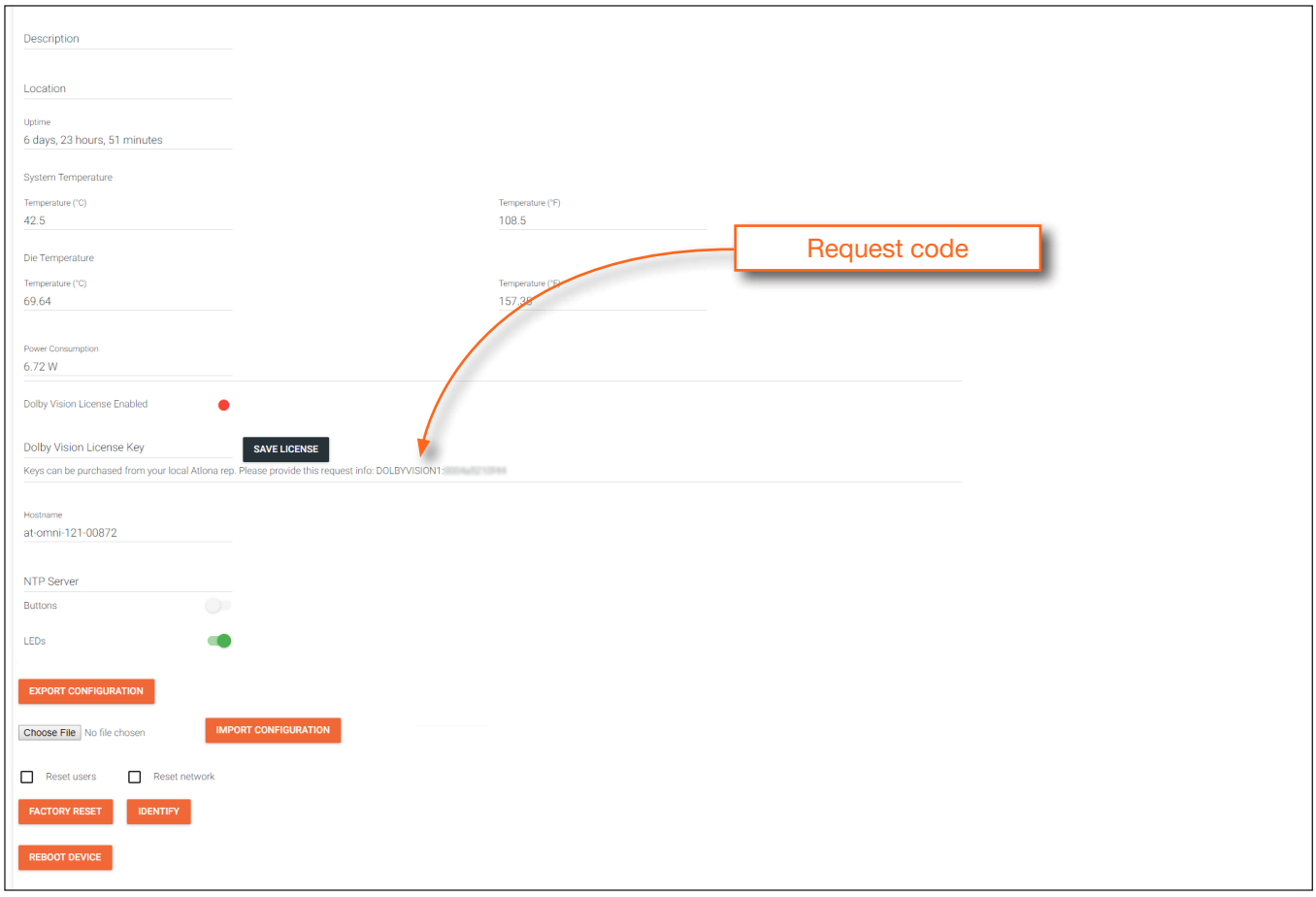
8. License installation is complete.

Activating Dolby Vision on Deployed Decoders

1. Login to AMS. Refer to Accessing Decoders in AMS (page 20), if necessary.
2. Select the desired OmniStream decoder from the list of devices. The **DEVICE INFO** screen will be displayed.
3. Scroll down and identify the **Dolby Vision License Key** field.
4. Locate the request code. The request code is a combination of the string "DOLBYVISIONn:", where n = 1 or 2. The hex string which follows, is the MAC address of the decoder. The request code will look similar to the following:

   DOLBYVISION1:c8afb021acf9

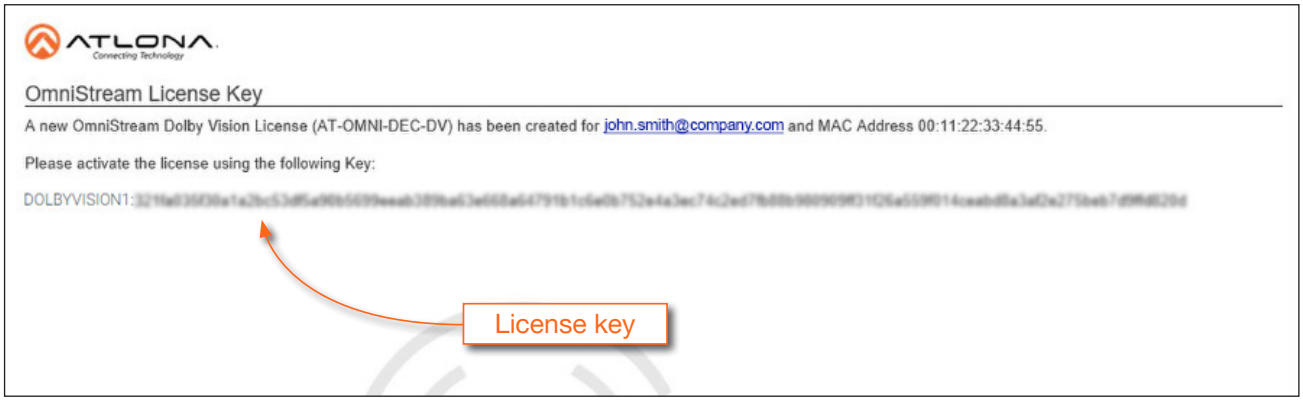
   NOTE: Request codes correspond to different Dolby Vision SKUs: DOLBYVISION1 is for the AT-OMNI-DEC-DV1, while DOLBYVISION2 corresponds to AT-OMNI-DEC-DV2. Refer to the table under Installing Dolby® Vision™ Licenses (page 89) for more information.



5. Send the request code along with a purchase order (PO) to one of the following email addresses:

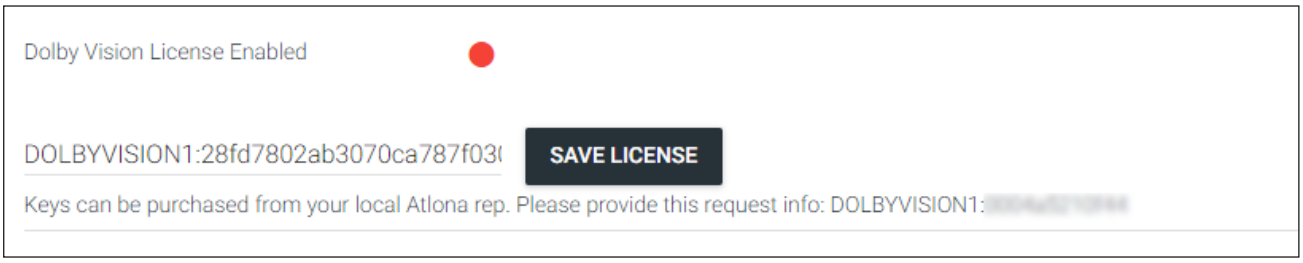
Contact	Location
domesticorders@atlona.com	United States
internationalorders@atlona.com	Outside the United States

6. After the order has been accepted, Atlona will send and e-mail containing the Dolby Vision license key (example shown below).

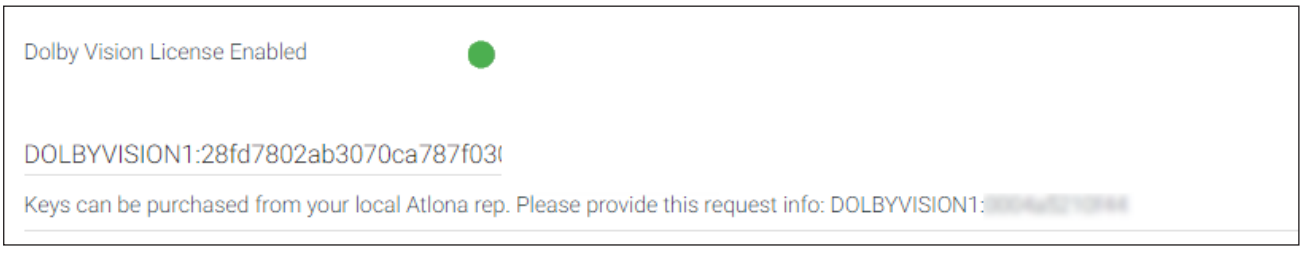


7. Copy and paste the license from the email into the **Dolby Vision License Key** field. The “DOLBYVISION” prefix must be entered as part of the license key. For example:

   DOLBYVISION1:28fd7802ab3070ca787f030...



8. Click the **SAVE LICENSE** button to commit changes. Once the license key is accepted, the **Dolby Vision License Enabled** indicator will turn green and the **SAVE LICENSE** button will be hidden, as shown below.



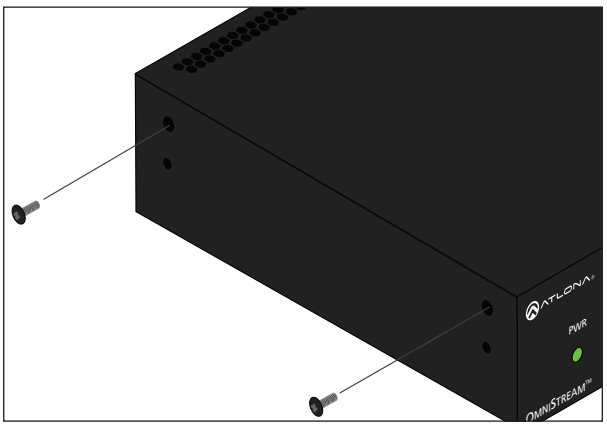
9. A pop-up message will be displayed at the bottom of the screen, prompting a reboot. Reboot the OmniStream decoder by clicking the **REBOOT DEVICE** button at the bottom of the **DEVICE INFO** page.

10. License installation is complete.

Mounting Instructions

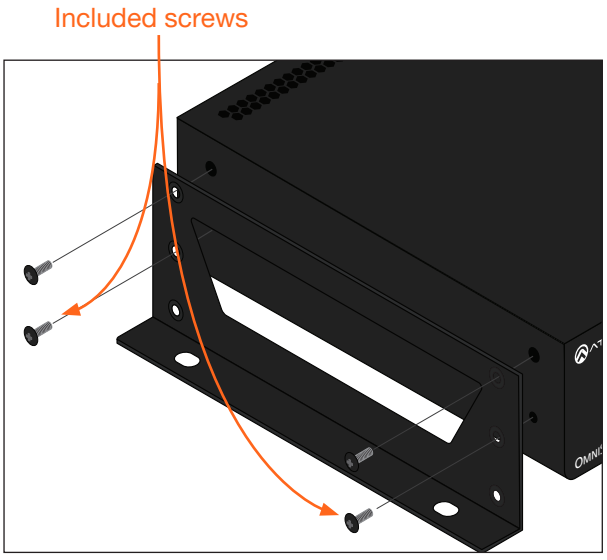
The AT-OMNI-521 decoder includes two mounting brackets and four mounting screws, which can be used to attach the unit to any flat surface.

1. Using a small Phillips screwdriver, remove the two screws from the left side of the enclosure.



2. Position one of the rack ears, as shown below, aligning the holes on the side of the enclosure with one set of holes on the rack ear.

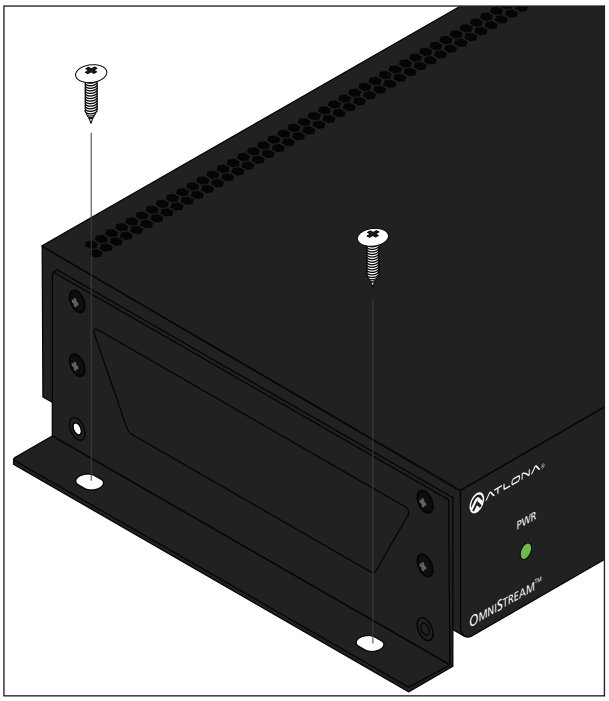
3. Use the enclosure screws to secure the rack ear to the enclosure.



4. To provide added stability to the rack ear, use two of the included screws and attach them to the two holes, directly below the enclosure screws, as shown above.

5. Repeat steps 1 through 4 to attach the second rack ear to the opposite side of the unit.

6. Mount the unit using the oval-shaped holes, on each rack ear. If using a drywall surface, a #6 drywall screw is recommended.



NOTE: Rack ears can also be inverted to mount the unit under a table or other flat surface.

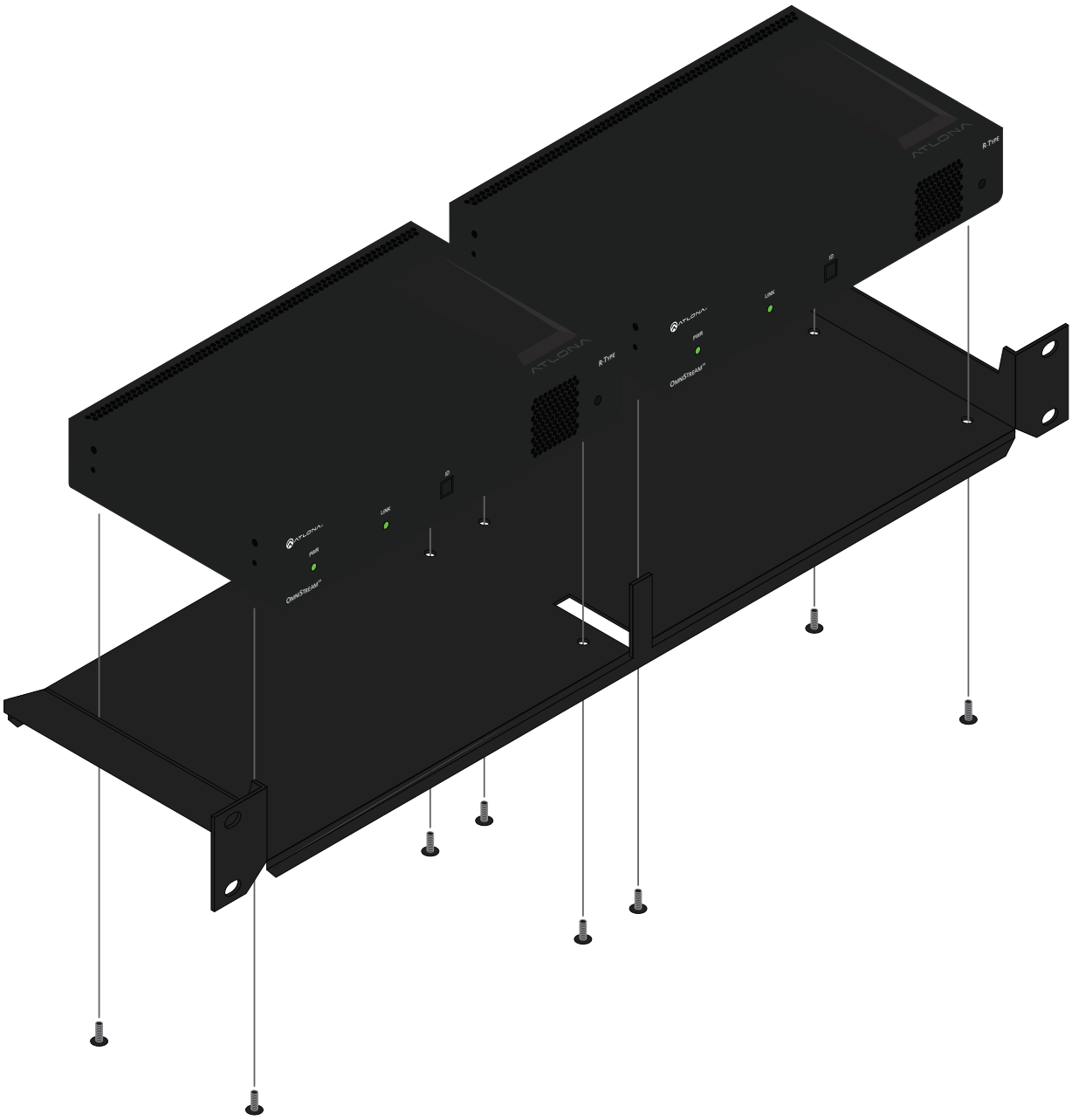
Rack Tray for OmniStream

OmniStream decoders can also be mounted in the OmniStream rack tray (AT-OMNI-1XX-RACK-1RU). The rack tray is sold separately and provides easy mounting and organization of up to two OmniStream encoders/decoders in a convenient 1U rack tray. The OmniStream rack tray can be purchased directly from Atlona.

1. Position the OmniStream products, as shown in the illustration below.
2. Using the included screws, secure each unit to the rack with a Philips screwdriver.

NOTE: OmniStream units can be mounted forward-facing or back-facing, depending upon your requirements.

3. Install the entire assembly into an empty 1U slot in the rack.



Specifications

Video	
HDMI Specification	HDMI 2.0, HDCP 1.4 / 2.2
UHD/HD	4096×2160 (DCI) @60/30/24 Hz, 3840×2160(UHD)@60[1]/50/24/25/30 Hz, 1080p@23.98/24/25/29.97/30 /50/59.94/60 Hz, 1080i[2]@25/29.97/30 Hz, 720p@30/50/59.94/60 Hz
Color Space	YUV, RGB

Decoding	
Density	One decoding engine
Decoding Format	VC-2 (SMPTE-2042)
Video Quality Optimization	Motion Video
Color Depth	8-bit, 10-bit, 12-bit
HDR	HDR10, HLG, Dolby Vision[3]
Bit Rate	900 Mbps
Latency	0.5 frame (e.g. 1080p @ 60 Hz latency is < 8 ms between encoder and decoder) Note: Unusual network configurations may increase overall latency

Audio	
Pass-through	LPCM 2.0, LPCM 5.1, LPCM 7.1, Dolby® Digital, Dolby Digital Plus, Dolby TrueHD, Dolby Atmos®, DTS®, DTS-HD Master Audio™
Down-mixing	Multichannel LPCM to two-channel LPCM
Sample Rate	32 kHz, 44.1k Hz, 48 kHz, 88.2 kHz, 96 kHz, 176.4 kHz, 192 kHz
Bit Depth	Up to 24-bit

Protocols	
Audio Video Streaming	RTP
Audio Transport	AES67
Addressing	DHCP, static
Decryption	AES-128
Management	HTTPS, SSH, SCP, and WebSockets with TLS

Graphics Features	
Text Insertion	Adjustable height/width, scrolling (speed, direction, or static), iterations (up to infinite), positioning, and adjustable color and alpha (transparency) channels.
Slate / Logo Insertion	PNG file format, adjustable aspect ratio (keep or stretch), horizontal/vertical size, screen position; slate mode can be set to off, manual (image always displayed, superimposed on the source signal, and will remain if source signal is lost), auto (image will only be displayed when source signal is lost).

Control	
CEC	Supported and triggered from control systems and OmniStream encoders
RS-232	Device control and configuration; supports baud rates from 2400 to 115200 Bidirectional pass-through from control system to network Bidirectional TCP Proxy (RS-232 commands over IP)
IR	Pass-through from control system to network Pass-through from network to control system

Appendix

Connectors	
HDMI	1 - Type A, 19-pin, female, locking
ETHERNET[4]	1 - RJ45, 10/100/1000 Mbps
RS-232 / IR	1 - Phoenix, 6-pin (2 ports); RS-232 on port 1 and 2, IR on port 2 only

Indicators and controls	
PWR	1 - LED, tricolor (red, amber, green)
LINK	1 - LED, bicolor (red, green)
ID	1 - momentary, tact-type, backlit (blue); sends an identification broadcast message over the network to any listening devices.
Reboot	1 - Momentary, tact-type

Power	
PoE	IEEE 802.3af
Consumption	Up to 12 W
Safety	CE, FCC, cULus, RoHS, RCM

Environmental	
Operating Temperature	+14 to +122 °F -10 to +50 °C
Storage Temperature	-14 to +140 °F -10 to +60 °C
Operating Humidity (RH)	20% to 95%, non-condensing

Chassis	
Dimensions (H x W x D)	1.34 in x 8.19 in x 4.41 in 34 mm x 208 mm x 112 mm
Weight	1.5 lbs / 0.7 kg
Safety	CE, RoHS, FCC

(1) UHDp60 only supports 4:2:0.
(2) Scaling and deinterlacing is not supported at 1080i.
(3) Dolby Vision requires a separate license.
(4) Maximum distance per hop 300 ft (100 m), depending upon network configuration.