

# OMEGA™

4K / UHD

Three-Input Switcher

for HDMI and USB-C with HDBaseT™ and HDMI Outputs



## Version Information

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Version	Release Date	Notes
1	May 2019	Initial release

## Welcome to Atlona!

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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://atlona.com/registration>

## Sales, Marketing, and Customer Support

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## Operating Notes

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**IMPORTANT:** Visit <http://atlona.com/product/AT-OME-ST31A> for the latest firmware updates and User Manual.

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

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## Coverage

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

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

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

OR

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

OR

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

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

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

## Coverage Periods

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

### Limited Product Warranty Terms – New Products

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

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

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

## Remedy

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

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

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

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- Damage, deterioration or malfunction resulting from the installation or removal of this product from any installation, any unauthorized tampering with this product, any repairs attempted by anyone unauthorized by Atlona to make such repairs, or any other cause which does not relate directly to a defect in materials and/or workmanship of this product.
- Equipment enclosures, cables, power supplies, batteries, LCD displays, and any accessories used in conjunction with the product(s).
- Products purchased from unauthorized distributors, dealers, resellers, auction websites and similar unauthorized channels of distribution.

### Disclaimers

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

### Limitation on Liability

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

### Exclusive Remedy

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

### Other Conditions

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

## Important Safety Information



CAUTION: TO REDUCE 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.

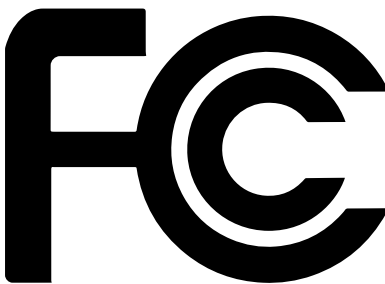


The information bubble is intended to alert the user to helpful or optional operational instructions in the literature accompanying the product.

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

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The Atlona **AT-OME-ST31A** is a 3×1 switcher and HDBaseT transmitter with HDMI and USB-C inputs. Part of the Omega™ Series of integration products for modern AV communications and collaboration, it features mirrored HDMI and HDBaseT outputs, two-channel audio de-embedding to an analog balanced audio output, and is HDCP 2.2 compliant. The USB-C input is ideal for AV interfacing for newer Mac®, Chromebook™, and Windows® PCs, as well as smartphones and tablets. Video signals up to 4K/60 4:2:0 can be transmitted over HDBaseT up to 330 feet (100 meters). All inputs and the local HDMI output support 4K HDR and 4K/60 4:4:4 at HDMI data rates up to 18 Gbps. Additionally, 4K downscaling to 1080p is available for the HDMI output when connected to an HD sink. The OME-ST31A is designed for use with Omega™ Series receivers and switchers, select HDVS Series receivers, the AT-UHD-EX-100CE-RX receiver, and other Atlona switchers with HDBaseT inputs.

## Features

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- 3×1 HDBaseT switcher with HDMI and USB-C inputs
- Mirrored HDBaseT and HDMI outputs
- Selectable 4K to 1080p downscaling
- Remote PoE (Power over Ethernet) over HDBaseT or local powering
- Automatic input selection and automatic display control
- Audio de-embedding

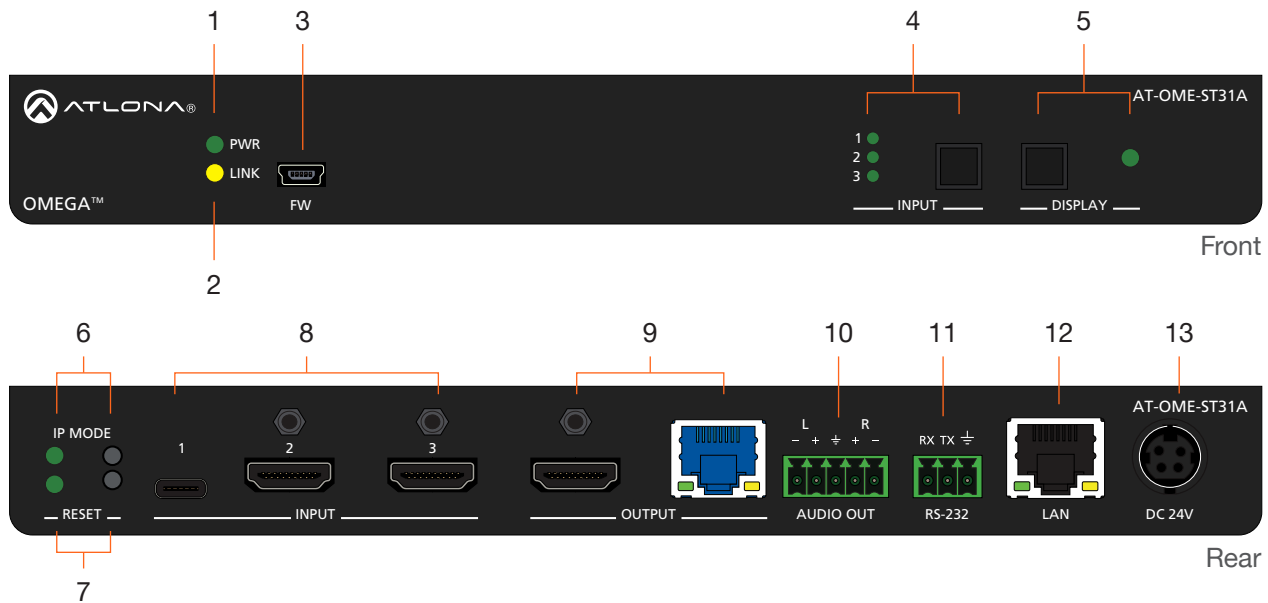
## Package Contents

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1 x AT-OME-ST31A  
1 x USB-C cable  
2 x Mounting brackets  
4 x Mounting screws  
1 x Installation Guide



## Panel Description



### 1 PWR Indicator

This LED indicator glows solid green when the unit is powered.

### 2 LINK Indicator

This LED indicator glows solid yellow when an HDBaseT link is established, between the AT-OME-ST31A and the receiver.

### 3 FW

Connect a mini-USB cable from this port to update the firmware. Refer to [Updating the Firmware \(page 46\)](#) for more information.

### 4 INPUT button

Press and release this button to cycle through each of the inputs. The LED indicators will display the currently active input, and correspond to each of the numbered inputs on the rear panel of the unit.

### 5 DISPLAY button

Press this button to power-on or power-off the connected display.

### 6 IP MODE

Press and release this button to set the IP mode or display the current IP address on the connected display. Refer to [IP Configuration \(page 13\)](#) for more information.

### 7 RESET

Press and release this button to reset the unit to factory-default settings. Refer to [Resetting to Factory Defaults \(page 21\)](#) for more information.

### 8 INPUT ports

Connect a USB-C cable from a video source to **INPUT 1**. Connect HDMI cables to **INPUT 2** and **INPUT 3** from HD/UHD sources.

### 9 OUTPUT ports

Connect an HDMI from the HDMI port to a display or other sink device. Connect an Ethernet cable (CAT-5e or better), from the HDBaseT port to a compatible HDBaseT receiver. These ports are mirrored.

### 10 AUDIO OUT

Connect a 5-pin captive screw block to this port. This port provides audio de-embedding of the source to an audio output device.

### 11 RS-232

Connect the included 3-pin captive screw block to this port. Refer to [Solution Setup and Configuration Guide \(page 35\)](#) for more information.

### 12 LAN

Connect an Ethernet cable from this port to the network.

### 13 DC 24V

Connect the optional 24 V DC power supply to this power receptacle.

# Installation

## Connection Instructions

1. Connect HDMI cables from HD/UHD sources to **INPUT 2** and **INPUT 3**.
2. Connect a USB-C cable from a source to **INPUT 1** on the switcher.
3. Connect an Ethernet cable, from the **HDBaseT** port to a compatible HDBaseT receiver.



**NOTE:** The AT-OME-ST31A is powered by a receiver unit using PoE over HDBaseT. If a PoE over HDBaseT receiver is not used, then the AT-OME-ST31A must be powered using the optional 24 V DC power supply\* (not included). When used with the external power supply, the AT-OME-ST31A can provide power to the connected USB-C device as well as a PoE over HDBaseT receiver. The power supply (part no. AT-PS-245-D4) can be purchased from Atlona.

Refer to the tables below for recommended cabling when using Atlona products with HDBaseT technology. The green bars indicate the signal quality when using each type of cable. Higher-quality signals are represented by more bars. *These tables are for guidance, only. Performance may vary, based on environmental factors.*

Core	Shielding	CAT5e	CAT6	CAT6a	CAT7
Solid	UTP (unshielded)	■	■■■	■■■■	N/A
	STP (sheilded)	■■	■■■■	■■■■■	■■■■■

Cable	Max. Distance @ 4K	Max. Distance @ 1080p
CAT5e	295 feet (90 meters)	330 feet (100 meters)
CAT6a / CAT6a / CAT7	330 feet (100 meters)	330 feet (100 meters)



**IMPORTANT:** Stranded or patch cable is not recommended due to performance issues. Sheilded cables are strongly recommended to minimize signal noise and interference.

4. Connect an HDMI cable from the **HDMI** output port to a display or other sink device.



**NOTE:** The HDMI and HDBaseT **OUTPUT** ports are mirrored, meaning that the same A/V signal is transmitted over both ports.

5. Connect an Ethernet cable from the **LAN** port to the Local Area Network. This will allow access to the built-in web server, and provide remote control of the AT-OME-ST31A.
6. OPTIONAL: Connect an RS-232 cable from the control device to the **RS-232** port on the AT-OME-ST31A. Refer to [Solution Setup and Configuration Guide \(page 35\)](#) for more information.
7. OPTIONAL: Connect a 5-pin captive screw block to the AUDIO OUT port to provide audio de-embedding to an audio output device.

### Notes on Scaling

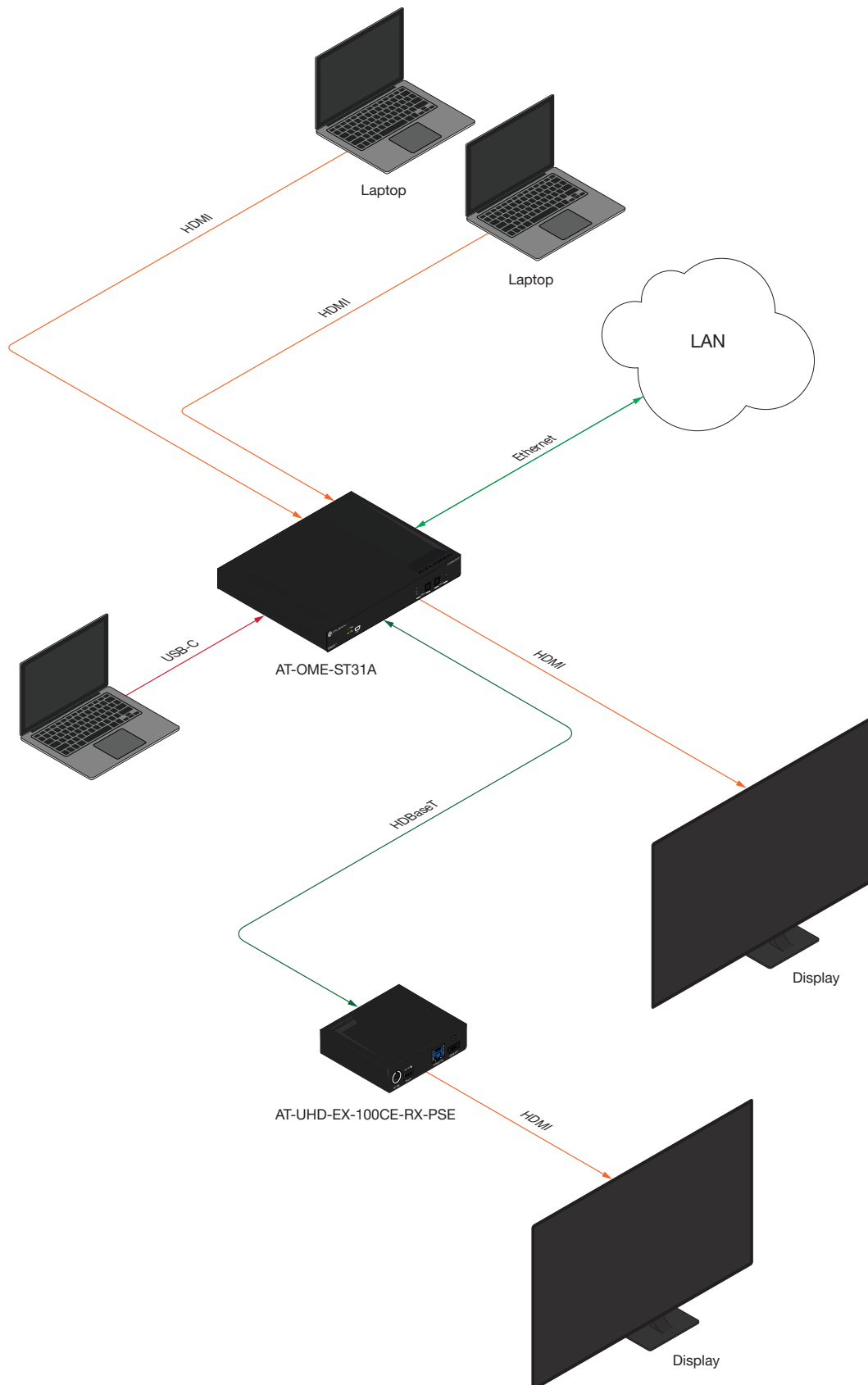
The following section provides important information about how the AT-OME-ST31A processes 4K (UHD) video signals.

1. The HDMI **OUTPUT** port supports up to 4K @ 60 Hz, 12-bit, with HDR.
2. If the source is 4K, and the HDMI **OUTPUT** port is connected to a 1080p (not 4K-capable) display, then the output will be down-scaled as follows:

Input	Output
4K @ 24 Hz	1080p @ 24 Hz
4K @ 30 Hz	1080p @ 30 Hz
4K @ 60 Hz, 4:2:0	1080p @ 60 Hz, YUV/RGB 4:4:4

3. HDR / Dolby Vision / HLG formats cannot be down-scaled to 1080p.
4. The internal scaler will be bypassed if the connected display supports the resolution and timing information from the source device.
5. The HDBaseT **OUTPUT** port supports up to 4K @ 60 Hz. However, HDR is only supported at lower resolutions.
6. The HDBaseT **OUTPUT** port will down-sample to 4:2:0, if the source is 4K @ 60 Hz, 4:4:4, 8-bit. However, the HDMI **OUTPUT** will remain at 4K @ 60 Hz, 4:4:4, 8-bit, if the output is connected to a 4K-capable display.

## Connection Diagram



## IP Configuration

The AT-OME-ST31A is shipped with DHCP enabled. Once connected to a network, the DHCP server (if available), will automatically assign an IP address to the unit. If the AT-OME-ST31A is unable to detect a DHCP server within 15 seconds, then the unit will use a self-assigned IP address within the range of 169.254.xxx.xxx.

Use an IP scanner, along with the MAC address on the bottom of the unit, to identify the unit on the network. If a static IP address is desired, the unit can be switched to static IP mode. The default static IP address is 192.168.1.254.

### Switching the IP Mode Using the Front Panel

1. Make sure the AT-OME-ST31A is powered, by connecting an Ethernet cable between a compatible HDBaseT receiver, such as the AT-UHD-EX-RX-PSE or AT-HDVS-SC-RX, and the **HDBaseT** port on the back of the unit.
2. Press and hold the **IP MODE** button, on the rear of the unit.
3. Release the button once the LED indicator, next to the **IP MODE** button, begins to flash green. The number of flashes will indicate the currently selected IP mode.

PWR LED flashes	Description
Four	DHCP mode
Two	Factory Static IP mode (IP address set to 192.168.1.254)

### Setting the IP Address using the Web Server

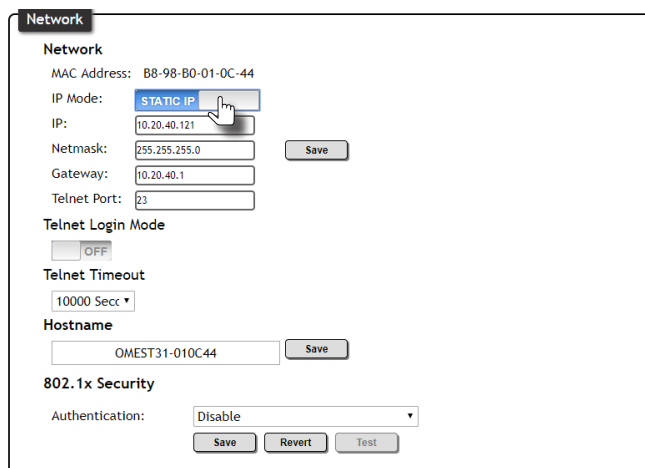
Refer to the [System Page \(page 33\)](#) in the web server, to set the AT-OME-ST31A to either DHCP or static IP mode. In order to access the web server, the IP address of the AT-OME-ST31A must be known. By default, the AT-OME-ST31A is set to DHCP mode and will automatically be assigned an IP address by a DHCP server.

1. Open the desired web browser and enter the IP address of the AT-OME-ST31A. Refer to [Introduction to the Web Server \(page 22\)](#) for more information.
2. Log in, using the required credentials. The factory-default username and password are listed below.

Username: admin

Password: Atlona

3. Click **System** in the menu bar.
4. Click the **IP Mode** toggle and set it to the **STATIC IP** position.
5. Enter the IP address, subnet mask, and gateway in the **IP**, **Netmask**, and **Gateway** fields, respectively.
6. Click the **Save** button, next to the Netmask field, to commit all changes. To undo changes and revert to DHCP mode, click the **IP Mode** toggle.



### Auto IP Mode

If the AT-OME-ST31A is unable to detect a DHCP server within 15 seconds, then the unit will use a self-assigned IP address within the range of 169.254.xxx.xxx. If this occurs, connect the AT-OME-ST31A to a computer running Microsoft Windows® and follow the procedure below.

1. Click **Start > Settings > Control Panel > Network and Sharing Center**.
2. Click **Change adapter settings**.
3. Right-click on the adapter that is used to establish a wired connection to the network, and select **Properties** from the context menu.
4. Under the **Ethernet Properties** dialog box, select **Internet Protocol Version 4** and then click the **Properties** button.
5. Click the **Use the following IP address** radio button.



**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.

6. Enter the desired static IP address or the IP address provided by the network administrator. If the PC does not require Internet access or if a statically-assigned IP address is being used, then an IP address of 169.254.xxx.xxx can be entered.
7. Set the subnet mask to 255.255.0.0.
8. Click the **OK** button then close all **Control Panel** windows.












### Displaying the IP Address

To display the IP address of the AT-OME-ST31A, on the connected display, press and release the **IP MODE** button.

## Device Operation

### LED Indicators

The LED indicators on both the front and rear of the unit provide basic information on the current status of the AT-OME-ST31A.

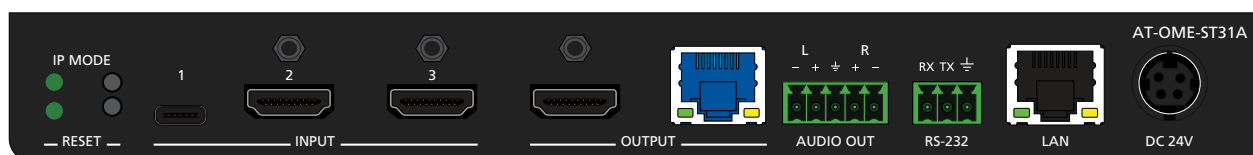
LED			Description
PWR	Solid green		<ul style="list-style-type: none"> <li>Unit is receiving power using the optional 24 V DC power supply (not included) or the Ethernet cable connected between the HDBaseT OUTPUT port and a PoE over HDBaseT-compatible receiver.</li> </ul>
	Off		<ul style="list-style-type: none"> <li>Unit is not powered.</li> </ul>
LINK	Solid yellow		<ul style="list-style-type: none"> <li>An HDBaseT link is established between the transmitter and the receiver.</li> </ul>
	Off		<ul style="list-style-type: none"> <li>The link integrity between the AT-OME-ST31A and the HDBaseT receiver is compromised.</li> <li>Check the HDBaseT connections and/or try a different cable.</li> </ul>
1, 2, 3	Solid green		<ul style="list-style-type: none"> <li>The input is the currently selected (active) input.</li> </ul>
	Off		<ul style="list-style-type: none"> <li>The input is not active.</li> </ul>
IP MODE	Flash green (4x)		<ul style="list-style-type: none"> <li>Unit is being set to DHCP mode. Refer to <a href="#">Switching the IP Mode Using the Front Panel (page 13)</a> for more information.</li> </ul>
	Flash green (2x)		<ul style="list-style-type: none"> <li>Unit is being set to Static IP mode and will be assigned the IP address of 192.168.1.254.</li> </ul>
	Off		<ul style="list-style-type: none"> <li>Normal operating mode.</li> </ul>
RESET	Flash green (3x)		<ul style="list-style-type: none"> <li>Unit is being set to factory-default settings. Refer to <a href="#">Resetting to Factory Defaults (page 21)</a> for more information.</li> </ul>
	Off		<ul style="list-style-type: none"> <li>Normal operating mode.</li> </ul>

### Input Switching

Switching between any of the three input ports can be performed either manually or automatically. The following section covers both methods.

#### Manual Switching

1. Press and release the **INPUT** button on the front panel to cycle between **INPUT 1** (USB-C), **INPUT 2** (HDMI), and **INPUT 3** (HDMI) inputs. The **USB-C** input (INPUT 1) is the factory-default setting.



After the **INPUT** button is pressed, the INPUT LED indicator will display the currently active input. In this example, **INPUT 2** (HDMI) is the active input and is indicated by LED indicator 2, on the front panel.



2. Press the **INPUT** button again to switch to **INPUT 3**.
3. Press the **INPUT** button once more to return to **INPUT 1**.

Manual input switching can also be performed under the [A/V Settings Page \(page 25\)](#) of the web server, by clicking the **Input Selection** drop-down list and selecting the desired input. In addition, the x1AVx1 command can also be used. Refer to the *Application Programmer's Interface* for more information.

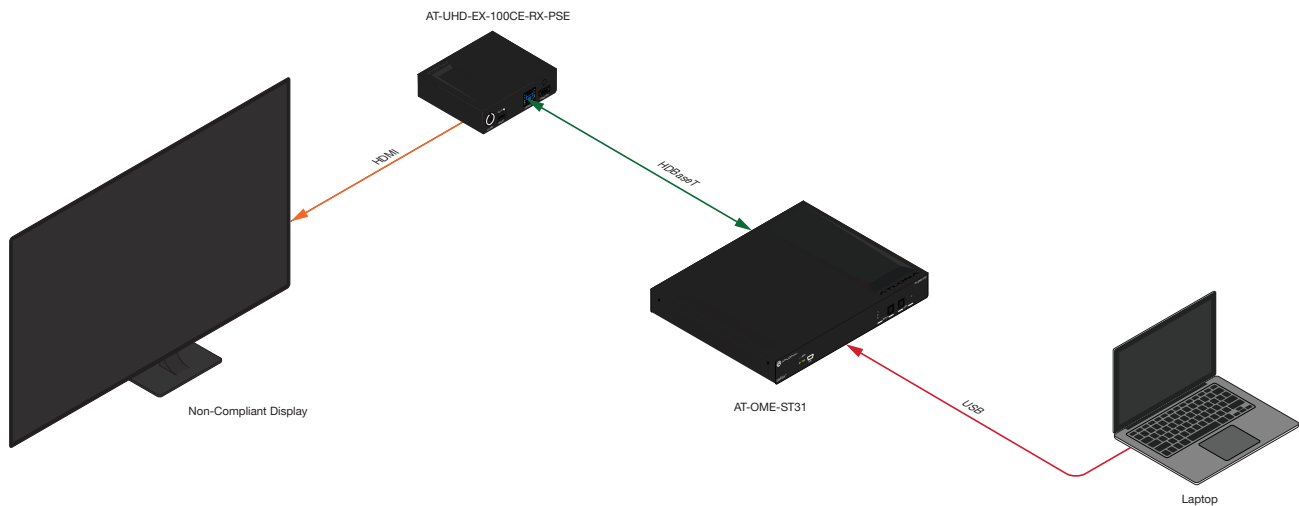


**NOTE:** The AT-OME-ST31A retains the currently selected input, even after the unit is powered-off then powered-on.



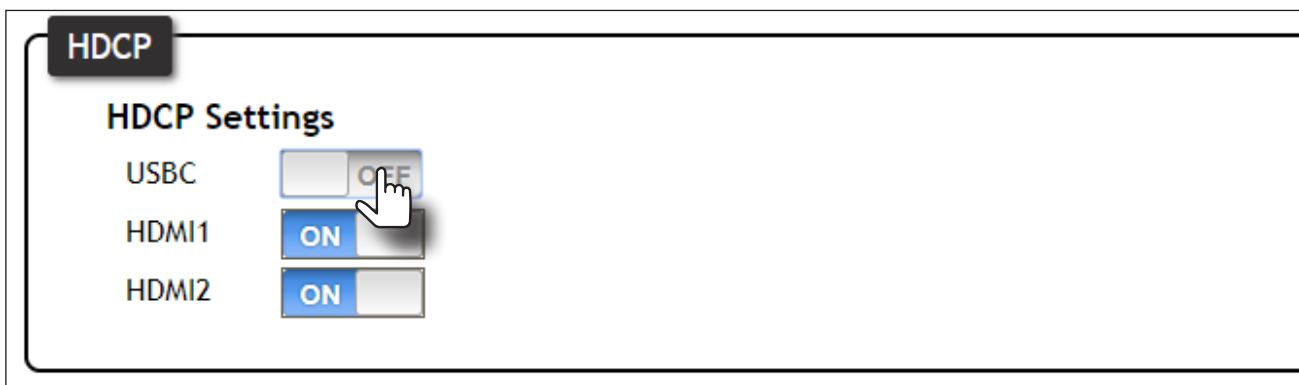
## HDCP Content

Normally, if a source is transmitting HDCP content to a display that is not HDCP-compatible, then the resulting image on the display can be “snow”, image flickering, or no picture. For example, in the illustration below, a laptop source is connected to the AT-OME-ST31A. A non-compliant display is connected to a receiver, which is connected to the AT-OME-ST31A using HDBaseT.



By default, the laptop may transmit HDCP content. However, when connected to a display that does not support HDCP, the laptop must be instructed to send non-HDCP content, in order for the content to be displayed.

1. Open the desired web browser and enter the IP address of the AT-OME-ST31A.
2. Log in as the **admin** user with the required credentials. The factory-default username and password for the admin user are listed below:  
  
Username: admin  
Password: Atlona
3. Click **A/V Settings** in the menu bar and locate the **HDCP** section.
4. Click the **USBC** toggle switch and set it to the **OFF** position. This will instruct the source device to send non-HDCP content, if possible. If the display is unable to receive HDCP content, then a green splash screen will appear on the connected display.



**NOTE:** Not all source devices are capable of transmitting non-HDCP content. For example, Sony PlayStation® gaming consoles and Mac® computers always transmit HDCP-encrypted content.

## Controlling Audio

The AT-OME-ST31A provides complete control over both audio muting and audio input sources. Audio muting can be controlled on both HDMI and HDBaseT outputs. Analog audio can also be embedded on the HDBaseT or HDMI outputs using a 3.5 mm mini-stereo cable.

### Audio Output Muting

1. Open the desired web browser and enter the IP address of the AT-OME-ST31A.
2. Log in as the **admin** user with the required credentials. The factory-default username and password for the admin user are listed below:

Username: admin  
Password: Atlona

3. Click **A/V Settings** in the menu bar.
4. Locate the **Audio** section.
5. Click the toggle switch for the desired output. To mute the audio output on the **HDBaseT Output**, click this toggle switch to the **OFF** position. To re-enable the audio for that output, set the toggle switch to the **ON** position.



### De-Embedding Audio



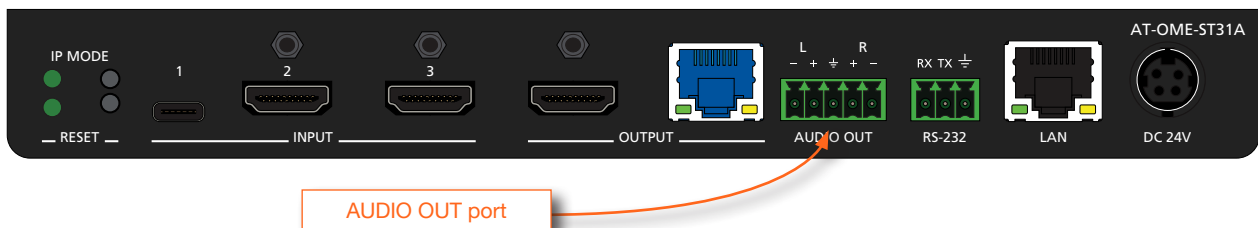
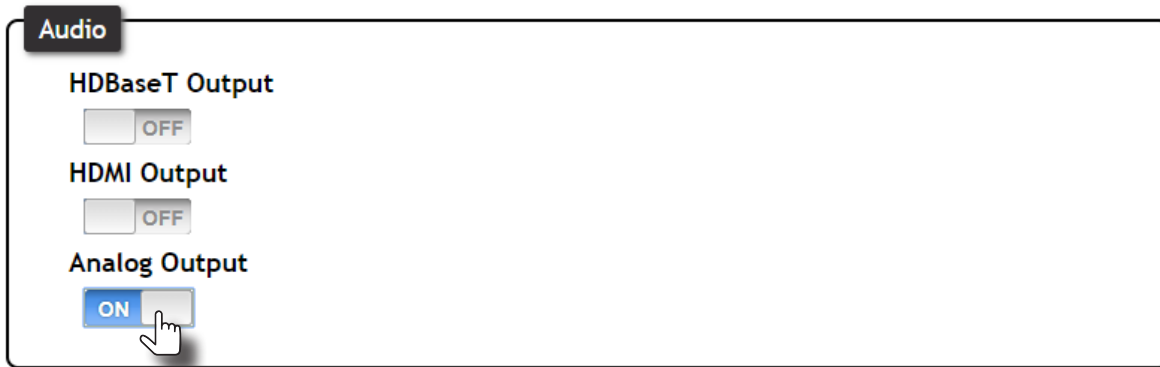
**IMPORTANT:** The AT-OME-ST31A will only de-embed two-channel LPCM audio. Down-mixing multichannel audio to two-channel audio is not supported.


1. Open the desired web browser and enter the IP address of the AT-OME-ST31A.
2. Log in as the **admin** user with the required credentials. The factory-default username and password for the admin user are listed below:

Username: admin  
Password: Atlona

3. Click **A/V Settings** in the menu bar.

4. Locate the **Audio** section. Any of the three inputs can be set to receive either the existing digital audio from the source, or an external analog source.
5. Set the **Analog Output** toggle switch to the **ON** position. Audio from the source will be de-embedded and output on the **AUDIO OUT** port.



 **NOTE:** Video must accompany the audio at all times. This product does not support audio-only ("free-run" mode) output.


## Password Management

The AT-OME-ST31A allows the administrator password to be changed. The password applies to both the web interface and Telnet sessions.

1. Open the desired web browser and enter the IP address of the AT-OME-ST31A.
2. Log in as the **admin** user with the required credentials. The factory-default username and password for the admin user are listed below:

Username: admin  
 Password: Atlona

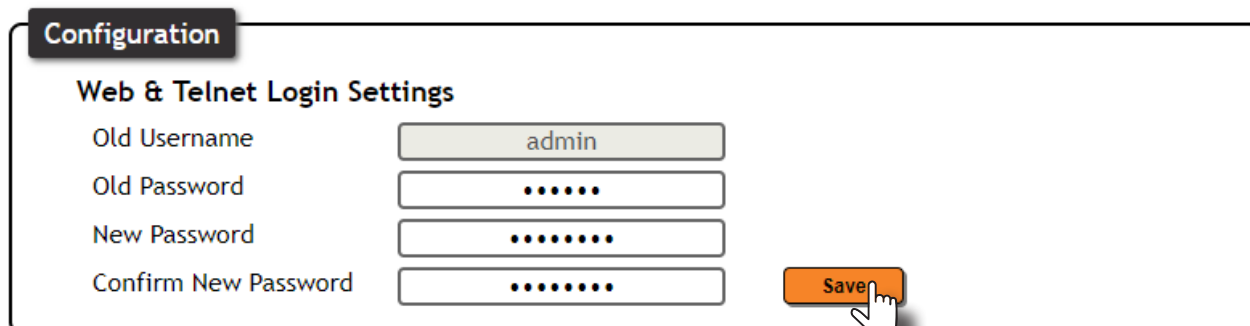
3. Click the **Config** tab.



The screenshot shows the AT-OME-ST31A Config page. The top navigation bar includes tabs for Info, AVI Settings, Display, RS-232, EDID, Time, Config (selected), and System. A Logout link is in the top right. The main content area is titled 'Configuration' and contains a 'Web & Telnet Login Settings' section with the following fields: Old Username (admin), Old Password, New Password, and Confirm New Password. A Save button is located at the bottom right of this section.

4. Enter the current password in the **Old Password** field.
5. Enter the new password in the **New Password** field.
6. Retype the new password in the **Confirm New Password** field.

**NOTE:** Password fields will always be masked for security purposes.



This is a close-up of the 'Web & Telnet Login Settings' form. It includes the following fields: Old Username (pre-filled with 'admin'), Old Password, New Password, and Confirm New Password. All password fields are masked with dots. A 'Save' button is highlighted with a mouse cursor pointing at it.

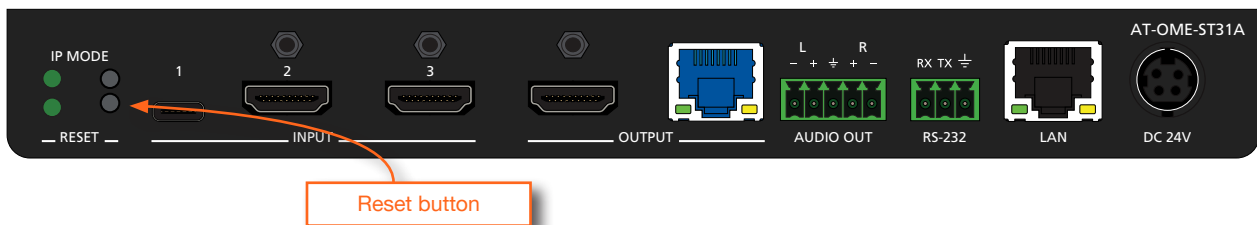
7. Click the **Save** button to commit changes. To login with the new username, click **Logout** in the upper-right corner of the screen, then enter the login credentials for the user on the **Login** page.

### Resetting to Factory Defaults

If necessary, the AT-OME-ST31A can be reset to factory-default settings. Note that the AT-OME-ST31A will be placed in DHCP mode, as part of the reset procedure. The AT-OME-ST31A can also be reset through the web server. Both procedures will be covered in this section.

#### Using the Rear Panel

1. Press and hold the **RESET** button on the rear panel for approximately 10 seconds.
2. Release the **RESET** button once the LED indicator begins to flash. The LED indicator will flash three times to indicate that the reset procedure has completed.



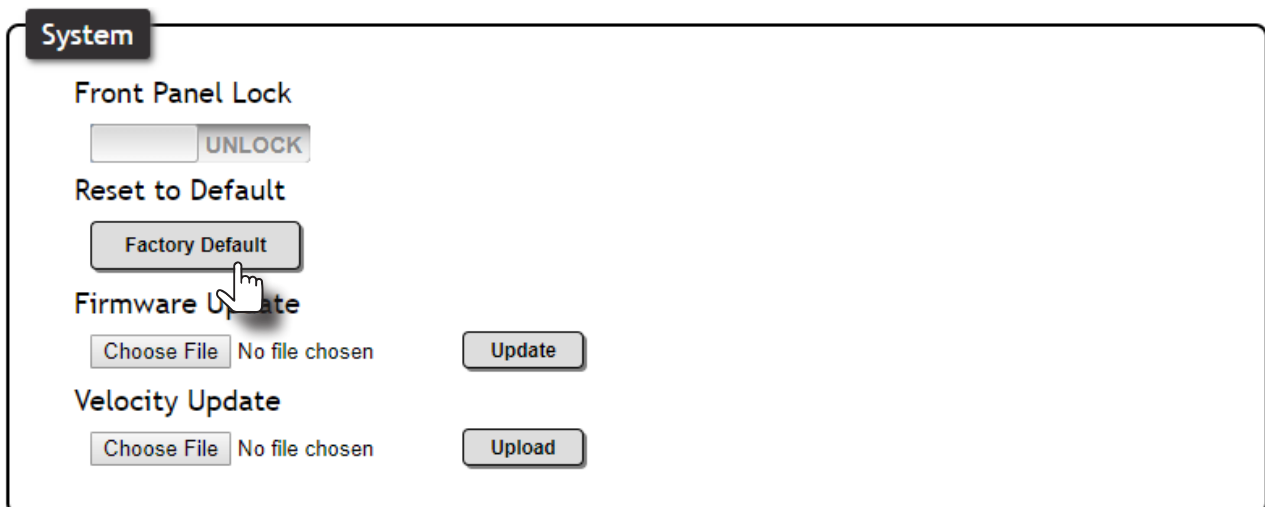
#### Using the web Server

1. Launch a web browser and login to the web server. Refer to [Introduction to the Web Server \(page 22\)](#) for more information. The default username and password are listed below:

Username: **admin**

Password: **Atlona**

2. Click **System** in the menu bar and locate the **System** section.
3. Click the **Factory Default** button.



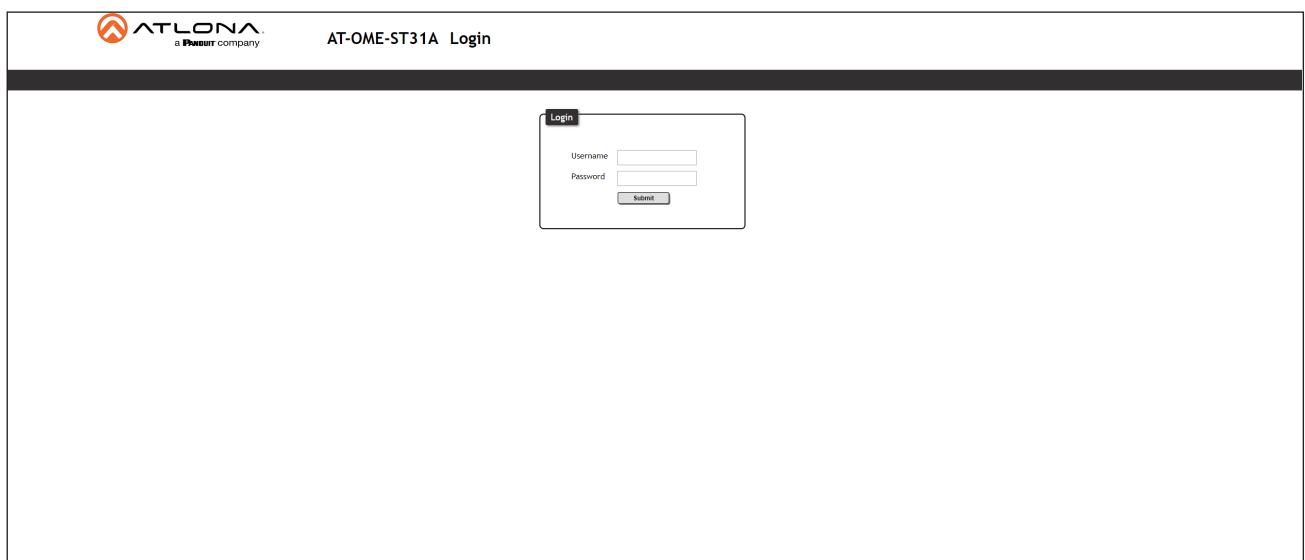
4. Once the **Login** screen appears, the reset procedure will be complete.

# Configuration and Management Interfaces

## Introduction to the Web Server

The AT-OME-ST31A includes a built-in web server. Atlona recommends that the web server be used to set up the AT-OME-ST31A, as it provides intuitive management of all features. Follow the instructions below to access the webGUI.

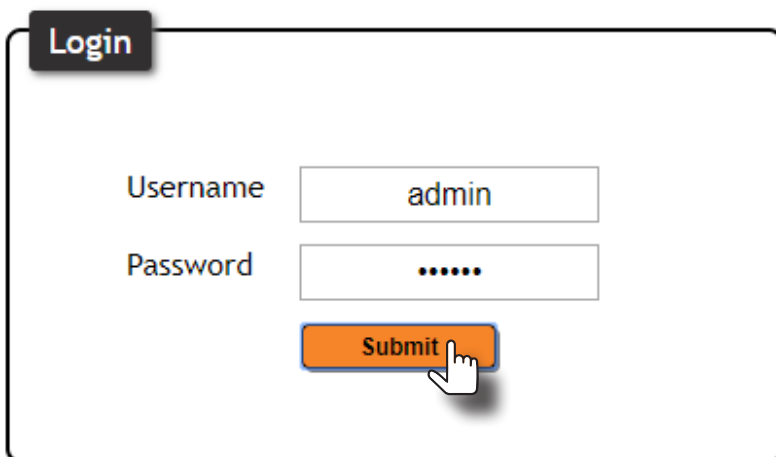
1. Make sure that an Ethernet cable is connected between the LAN port on the AT-OME-ST31A and the network.
2. Launch a web browser and enter the IP address of the unit. If the default static IP address is being used, enter 192.168.1.254.
3. The AT-OME-ST31A **Login** page will be displayed.



The screenshot shows the AT-OME-ST31A Login page. At the top, there is a header with the Atlona logo and the text 'AT-OME-ST31A Login'. Below the header, there is a login form with the following fields:

- Username**: A text input field.
- Password**: A text input field.
- Submit**: A button.

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

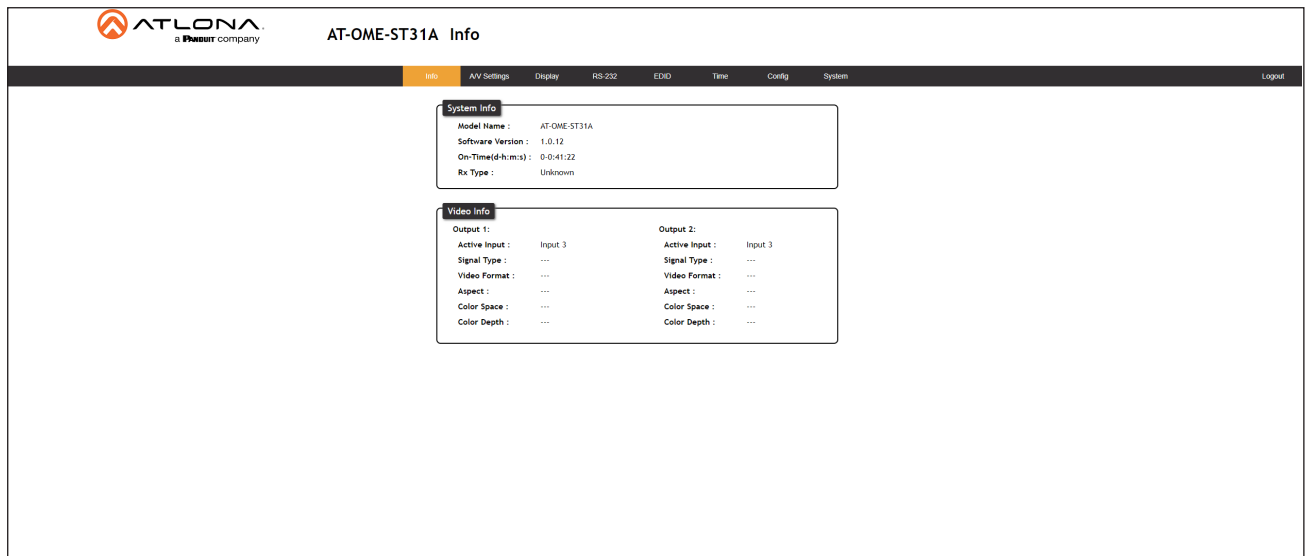


This close-up screenshot shows the login form with the following details:

- Username**: The text 'admin' is entered in the input field.
- Password**: The input field contains masked characters (dots).
- Submit**: The button is highlighted with a hand cursor, indicating it should be clicked.

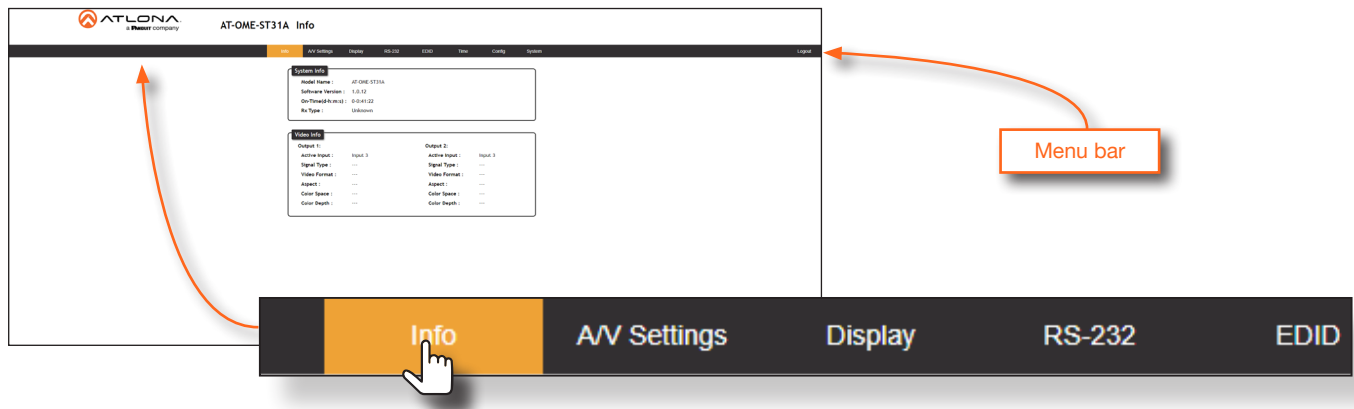
## Configuration and Management Interfaces

7. The **Info** page will be displayed.

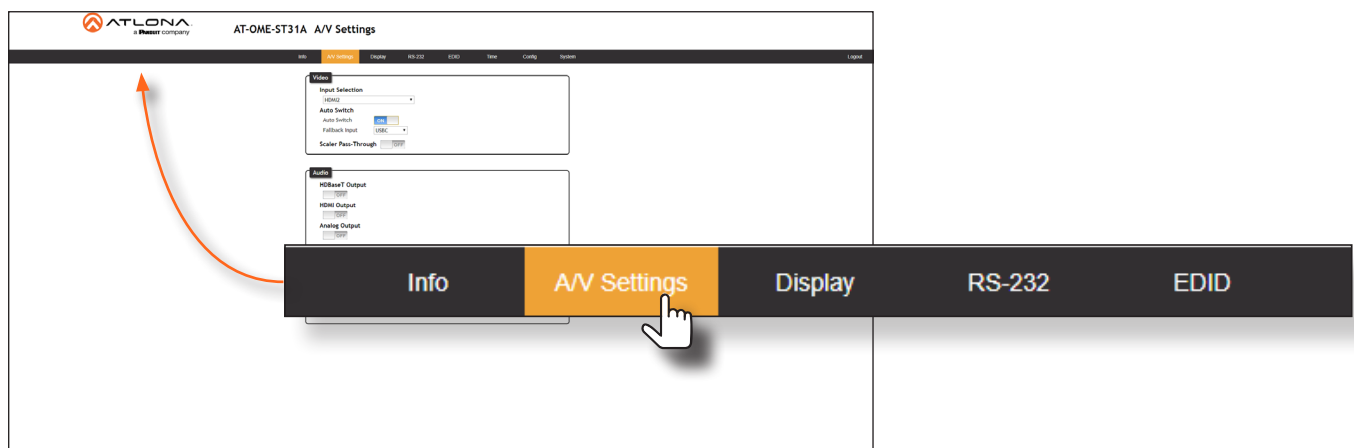


### Menu Bar

The dark-colored bar, near the top of the screen, is the menu bar. When the mouse is moved over each menu element, it will be highlighted in light orange. Once the desired menu element is highlighted, click the left mouse button to access the settings within the menu.



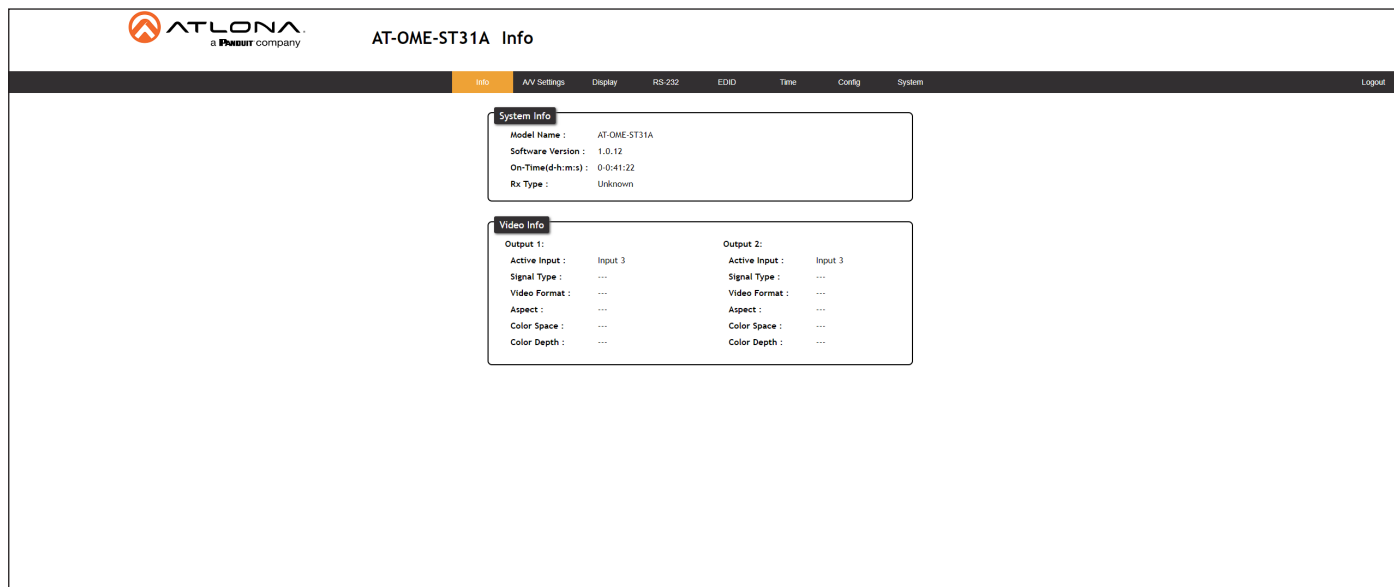
In this example, clicking **A/V Settings**, in the menu bar, will display the **A/V Settings** page.



## Configuration and Management Interfaces

### Info Page

After logging in, the **Info** page will be displayed. The **Info** page provides various information about the receiver, including the model name, software version, and video information.



The screenshot shows the AT-OME-ST31A Info page. The header includes the ATLONA logo and the title 'AT-OME-ST31A Info'. Below the header is a navigation bar with tabs: Info (selected), A/V Settings, Display, RS-232, EDID, Time, Config, System, and Logout. The main content area displays two sections: 'System Info' and 'Video Info'.

System Info	
Model Name :	AT-OME-ST31A
Software Version :	1.0.12
On-Time(d-h:m:s) :	0-0:41:22
Rx Type :	Unknown

Video Info			
Output 1:		Output 2:	
Active Input :	Input 3	Active Input :	Input 3
Signal Type :	---	Signal Type :	---
Video Format :	---	Video Format :	---
Aspect :	---	Aspect :	---
Color Space :	---	Color Space :	---
Color Depth :	---	Color Depth :	---

#### Model Name

The model SKU of this product.

#### Software Version

The version of firmware that the AT-OME-ST31A is running. Always make sure to check the AT-OME-ST31A product page, on the Atlona web site, for the latest version of firmware.

#### On-Time(d-h:m:s)

Displays how long the system has been powered since the last reboot/reset.

#### RxType

If a receiver is connected to the AT-OME-ST31A, then it will be displayed in this field. Otherwise, "Unknown" will be displayed if no receiver is connected.

#### Active Input

The currently selected (active) input.

#### Signal Type

The type of input signal.

#### Video Format

The input resolution of the source device.

#### Aspect

Aspect ratio of the input signal.

#### Color Space

Displays the color space and chroma sub-sampling of the input signal.

#### Color Depth

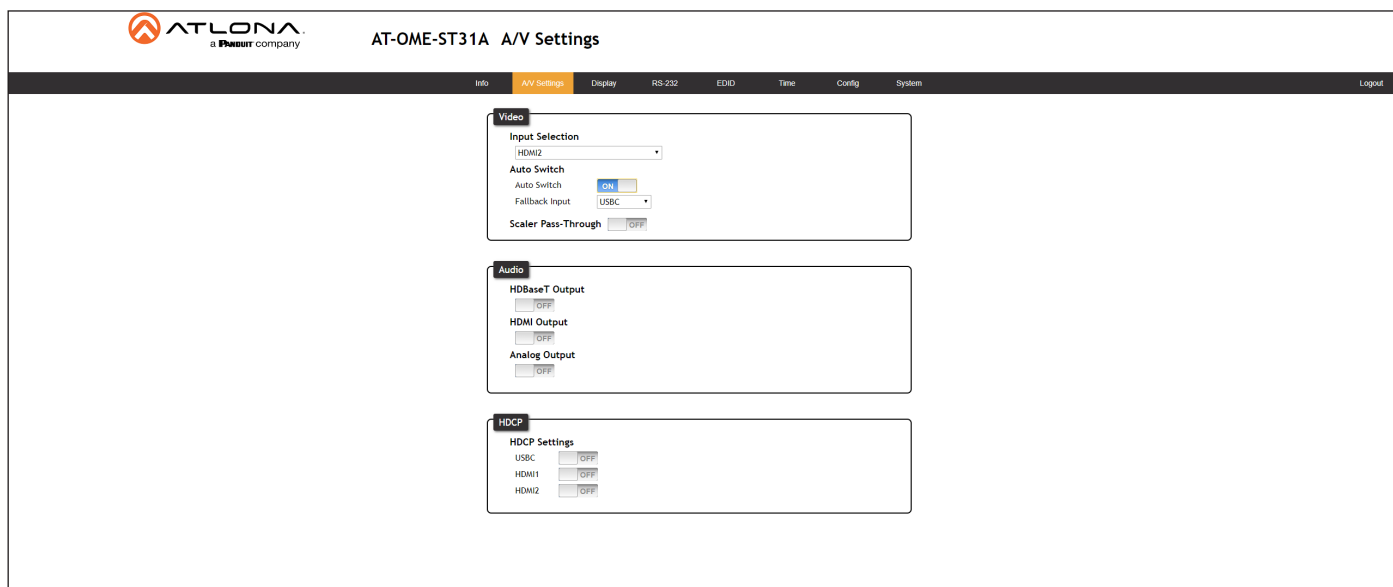
The color depth of the input signal.



## Configuration and Management Interfaces

### A/V Settings Page

The **A/V Settings** page is divided into three sections: **Video**, **Audio**, and **HDCP**. The **Video** section allows the preferred input timing to be selected as well as whether or not HDCP content is allowed to pass. The **Audio** section provides options to control the output audio volume, muting, treble, and bass. The **HDCP** section provides management of HDCP and non-HDCP content.



#### Input Selection

Click this drop-down list to manually select the desired input.

Input	Description
USBC	Sets <b>INPUT 1</b> as the active input.
HDMI1	Sets <b>INPUT 2</b> as the active input.
HDMI2	Sets <b>INPUT 3</b> as the active input.

#### Auto Switch

Three controls are available under the Auto Switch feature.

- Auto Switch**  
 Click this toggle switch to enable or disable auto-switching. When enabled, the AT-OME-ST31A will automatically switch to the another port, if the signal is disrupted on the currently active input. The port to be switched to, is defined in the **Fallback Input** drop-down list. Refer to [Input Switching \(page 16\)](#) for more information.
- Fallback Input**  
 Click this drop-down list to select the fallback port. If the source is disconnected from the active port, then the switcher can be configured to automatically switch to the desired port. Click the **Auto Switch mode** toggle to enable or disable auto-switching.

Input	Description
Previous	Automatically switches to the input that was connected last.
USBC	Switches to the <b>INPUT 1</b> .
HDMI1	Switches to the <b>INPUT 2</b> .
HDMI2	Switches to the <b>INPUT 3</b> .

## Configuration and Management Interfaces

### Scaler Pass-Through

Click this toggle switch to enable or disable the scaler pass-through feature. When set to the **ON** position, no scaler processing is used and the output resolution / timing will be the same as the input source. When disabled (**OFF**), 4K content will be down-scaled to 1080p. By default, this feature is set to the **OFF** position, which provides scaling capability.

### Audio

Manages audio settings for inputs and outputs.

- **HDBaseT Output**

Set this toggle to the **OFF** position to mute the audio on the **HDBaseT OUTPUT** port. The default setting is **ON**.

- **HDMI Output**

Set this toggle to the **OFF** position to mute the audio on the **HDMI OUTPUT** port. The default setting is **ON**.

- **Analog Output**

Set this toggle to the **OFF** position to mute the audio on the **AUDIO OUT** port. To de-embed audio from the source, set this toggle to the **ON** position. The default setting is **ON**.



**IMPORTANT:** The AT-OME-ST31A will only de-embed two-channel LPCM audio. Down-mixing multichannel audio to two-channel audio is not supported.

### HDCP

Each input provides control of how HDCP content is handled. Some source devices will send HDCP content if an HDCP-compliant display (sink) is detected. However, there may be applications where sending HDCP content is not desired. Setting the port to the **OFF** position, will instruct the source to send non-HDCP content to the display. Note that not all sources have this capability.



**NOTE:** Setting this feature to **OFF**, for any source, does *not* provide decryption of HDCP content to non-HDCP compliant sink devices. Sources such as Mac® computers and the Sony PlayStation® will *always* transmit HDCP content.

- **ON**

When set to **ON**, the source will transmit HDCP content to the AT-OME-ST31A.

- **OFF**

When set to **OFF**, non-HDCP content will be transmitted (if possible) to the AT-OME-ST31A.

## Configuration and Management Interfaces

### Display Page



#### CEC Command

Click the **ON** button to send the power-on command to the display device. Click the **OFF** button to toggle the power state to off.

*Consumer Electronics Control (CEC): Atlona has confirmed proper CEC functionality with several current models of Samsung, Panasonic, and Sony displays. However, it is not guaranteed that CEC will work with all displays. Many manufacturers do not support the CEC “off” command, and older displays use proprietary commands. Atlona only supports displays that use the CEC command structure defined in HDMI 1.2a. It is recommended that dealers request an evaluation product from Atlona, before designing a system using the CEC protocol. If this is not possible, then other control methods will need to be considered, in order to control displays using Atlona products.*

#### Display Auto Power On

Set this toggle to **ENABLED** to allow the AT-OME-ST31A to send the power-on command to the display when an A/V signal is detected. When the A/V signal is no longer present, the AT-OME-ST31A will send the power-off command to the display. If this feature is not desired, then set to **DISABLED**. This feature is disabled by default.

#### Auto power off timer

Sends the command to power-off the display when an A/V signal is no longer present. Click the toggle to enable or disable this feature.

#### Lamp cool down timer

Sets the cool-down interval, in seconds, before the projector can be powered-off. During this time interval, the projector will not accept any “power on” or “power off” commands until the last “power off” command has been processed and the projector lamp has completed the cool-down cycle. Range: 0 to 300.

#### Display Warm-Up Timer

Click this drop-down list to select the display warm-up time interval. Range: 10 to 300. The default value is 10 seconds.

## Configuration and Management Interfaces

### Control Type

Sets the control method for sending commands. The following options are available: RS-232, IP, CEC.

Setting	Description
RS-232	RS-232 is used to send commands.
IP	Commands are sent over IP.
CEC	Uses CEC to send commands.

### RS-232 / IP Commands

Provides customization of RS-232 / IP control device commands.

- **Manufacturer**  
Click this drop-down list to select the manufacturer of the control device. As of this writing, only **Generic** can be selected.
- **Products**  
Click this drop-down list to select the product. As of this writing, only **Generic** can be selected.
- **Model**  
Click this drop-down list to select the model. As of this writing, only **Generic** can be selected.

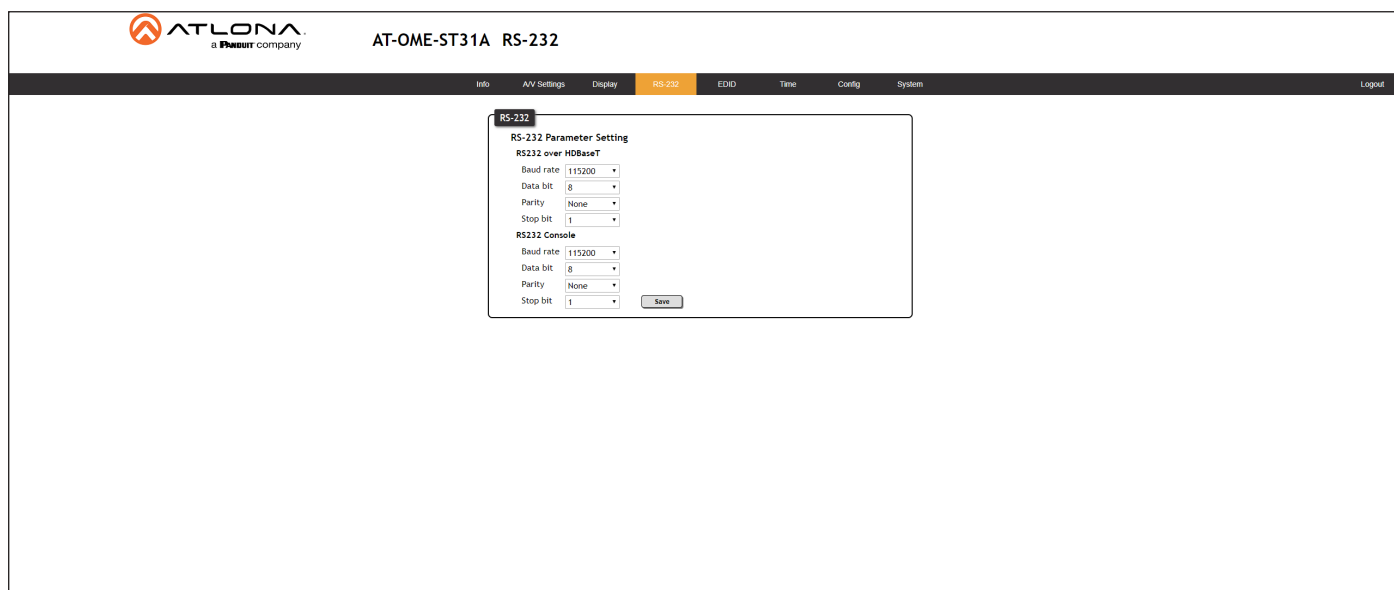
### Repeat Command

- **Status**  
Click this toggle switch to set to **ENABLE** or **DISABLED**. Enabling this feature will re-send the command. Specify the number of times that the command is transmitted by setting the **Times** value. This feature is set to **DISABLED** by default.
- **Times**  
Click this drop-down list to specify the number of times the command is sent. When the **Status** toggle switch is set to **ENABLE**, the default number of times is set to 2.

### ON, OFF, Volume+, Volume-, Mute, Mute on, Mute off

These fields will need to be populated with the correct strings (either hex or ASCII format) for each function, which control the display device. If hexadecimal values are used, then use the /x delimiter at the end of the command string.

### RS-232 Page



### RS-232 Parameter Setting

This section allows the RS-232 settings to be specified for HDBaseT and Console.

- RS232 over HDBaseT**

If the AT-OME-ST31A is connected to a device such as the AT-UHD-EX-100CE-RX-PSE, the drop-down list boxes will be disabled and the HDBaseT baud rate will be locked at 115200. If the AT-OME-ST31A is connected to another HDBaseT device, such as the AT-UHD-CLSO-824, each of these drop-down list boxes can be set to the baud rate of the HDBaseT RS-232 settings on the corresponding device. Refer to [Solution Setup and Configuration Guide \(page 35\)](#) for more information.

- RS232 Console**

When the AT-OME-ST31A is connected to a device, such as the AT-HDVS-200-RX, the drop-down list boxes will be disabled and the HDBaseT baud rate will be locked at 115200.

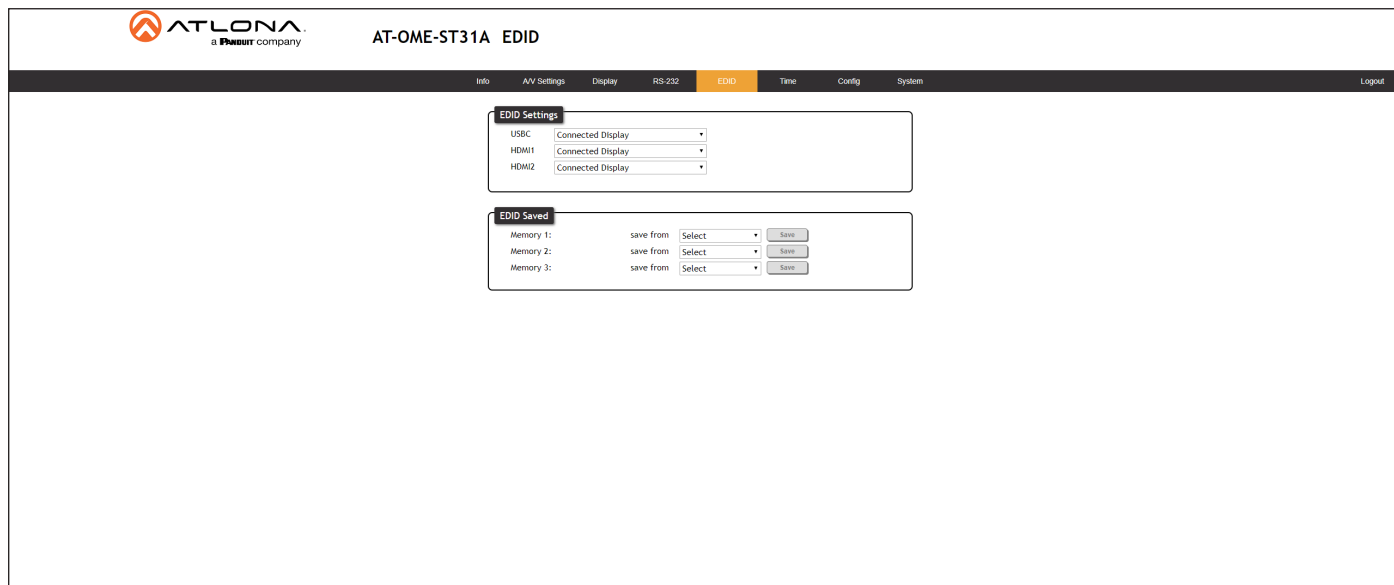
Setting	Description
Baud rate	Sets the baud rate. The following options are available: 2400, 9600, 19200, 38400, 56000, 57600, 115200.
Data bit	Sets the number of data bits used to represent each character of data. The following options are available: 7 or 8.
Parity	Sets the parity bit, which can be included with each character to detect errors during the transmission of data. The following options are available: None, Odd, or Even.
Stop bit	Sets the stop bit. Stop bits are sent at the end of each character, allowing the client to detect the end of a character stream. The following options are available: 1 or 2.

- Save**

Click this button to commit all changes.

## Configuration and Management Interfaces

### EDID Page



#### EDID Settings

Click these drop-down lists to select the desired EDID to be used for each input. The following EDID presets are available. When selecting an EDID, make sure that the display/sink device is capable of supporting the resolution/timing. If the sink device is not able to support a feature, then the source will not be displayed. Selecting the **Connected Display** EDID will provide the most compatible settings for most displays. In addition, three memory locations are available for storing captured EDID data.

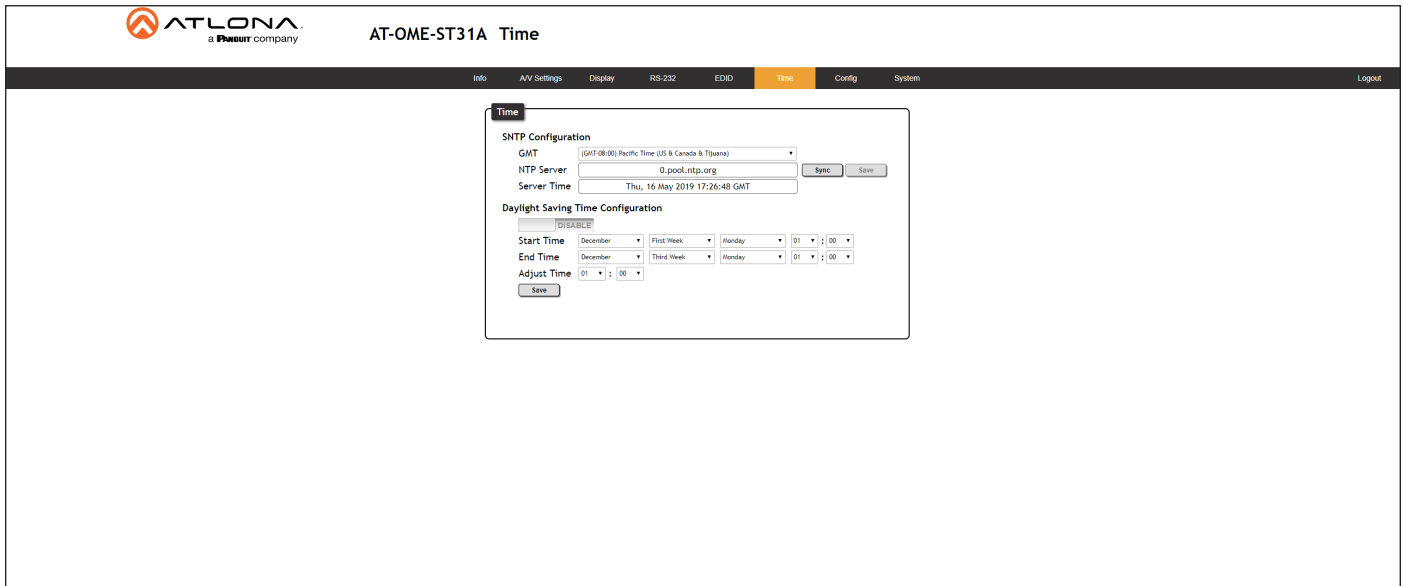
EDID listing	
Connected Display	1440x900 2CH
3840x2160 2CH - NO HDR Support	1366x768 2CH
1920x1200 2CH	1280x800 2CH
1920x1080 2CH	1280x720 2CH
1920x1080 MCH	1024x768 2CH
1600x900 2CH	

#### EDID Saved

The AT-OME-ST31A provides eight memory locations used for storing captured EDID data. Click these drop-down lists to select and store the external EDID.

## Configuration and Management Interfaces

### Time Page



**ATLONA**  
a PANUIT company

**AT-OME-ST31A Time**

Info AV Settings Display RS-232 EDID **Time** Config System Logout

**Time**

**SNTP Configuration**

GMT (GMT-08:00) Pacific Time (US & Canada & Tijuana)

NTP Server 0.pool.ntp.org

Server Time Thu, 16 May 2019 17:26:48 GMT

**Daylight Saving Time Configuration**

☐ **DISABLE**

Start Time December First Week Monday 01 : 00

End Time December Third Week Monday 01 : 00

Adjust Time 01 : 00

Save

### SNTP Configuration

Simple Network Time Protocol (SNTP) is a simplified version of the Network Time Protocol (NTP), and can be used to set the time for the unit. SNTP is used to receive time services from other servers. However, it cannot be used to provide time servers to other systems.

- **GMT**  
Click this drop-down list to select the Greenwich Mean Time (GMT) for the current location.
- **NTP Server**  
Enter the desired NTP server address in this field. After entering the NTP server address, click the **Sync** button.
- **Sync button**  
Click this button to sync with the server, after entering the desired NTP server address.
- **Save button**  
Click this button to commit changes to the NTP Server field. If a save is not performed, then the NTP server address will not be saved.
- **Server Time**  
This field will display the current time.

### Daylight Saving Time Configuration

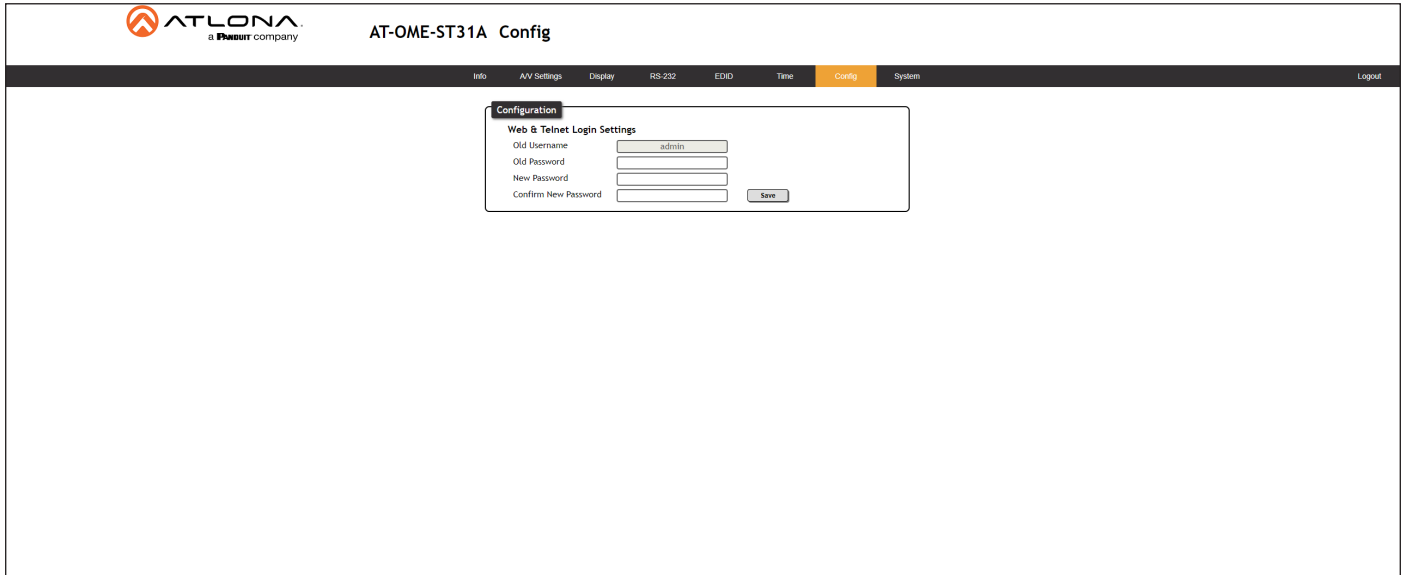
Click the toggle switch button to **ENABLE** or **DISABLE** Daylight Saving Time (DST). This feature is disabled by default.

- **Start Time**  
Click each of these drop-down lists to select the month, week, day, and time (HH:MM) when DST begins.
- **End Time**  
Click each of these drop-down lists to select the month, week, day, and time (HH:MM) when DST ends.
- **Adjust Time**  
Click these drop-down lists to set the hour and minute to adjust the clock for DST.
- **Save**  
Click this button to commit all changes.

## Configuration and Management Interfaces

### Config Page

The **Config** page provides management of the administrator password. The administrator username (“admin”) cannot be changed.



The screenshot shows the AT-OME-ST31A Config page. The top header includes the Atlona logo and the title "AT-OME-ST31A Config". Below the header is a navigation bar with tabs: Info, A/V Settings, Display, RS-232, EDID, Time, Config (selected), and System. A "Logout" link is on the far right. The main content area is titled "Configuration" and contains a section for "Web & Telnet Login Settings". This section has four input fields: "Old Username" (pre-filled with "admin"), "Old Password", "New Password", and "Confirm New Password". A "Save" button is located to the right of the "Confirm New Password" field.

#### Old Username

This field cannot be changed. “admin” is the administrator user.

#### Old Password

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

#### New Password

Enter the new password for the “admin” username in this field.

#### Confirm New Password

Verify the new password by retyping it in this field.

#### Save

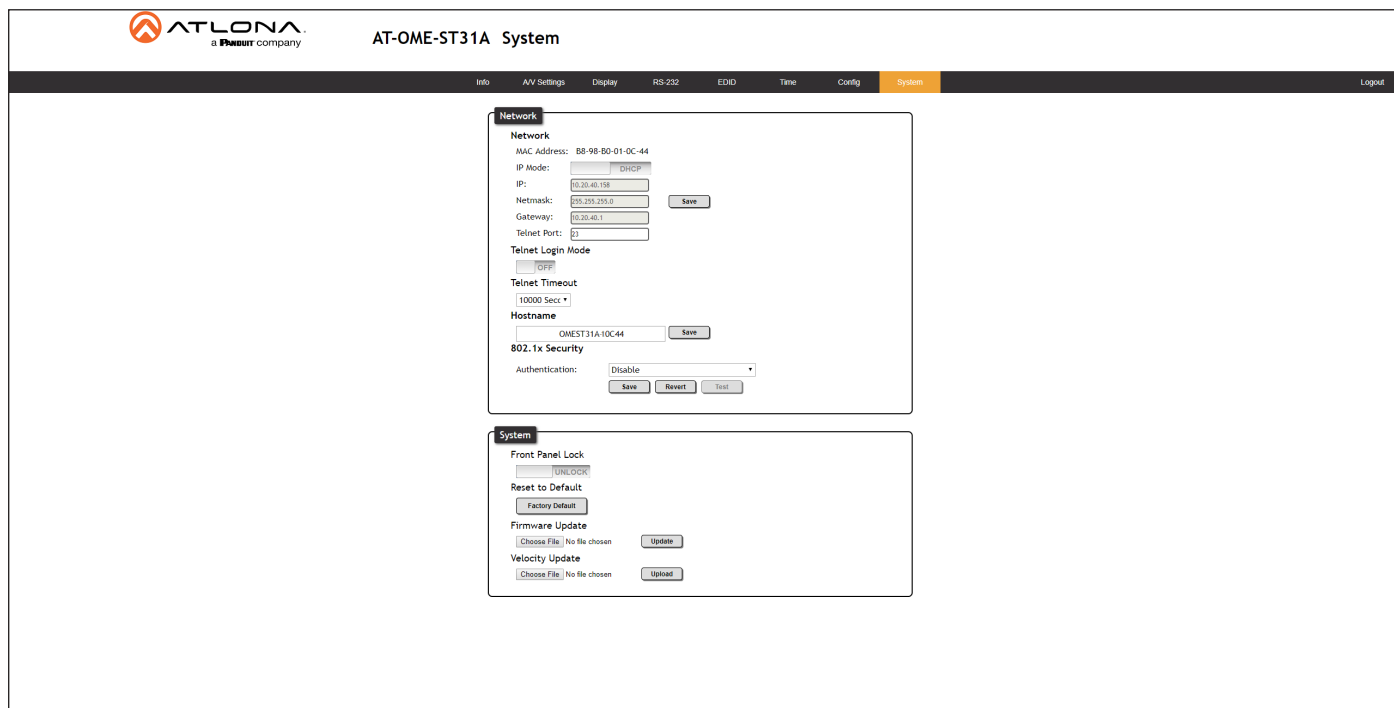
Click this button to commit all changes.



## Configuration and Management Interfaces

### System Page

The **System** page is divided into two sections: **Network** and **System**. The **Network** section allows configuration of the IP settings of the AT-OME-ST31A. The **System** section provides controls for resetting the AT-OME-ST31A to factory-default settings and updating the firmware.



### MAC Address

This field displays the MAC address of the AT-OME-ST31A.

### IP Mode

Click this toggle switch to set the AT-OME-ST31A to **DHCP** or **STATIC IP** mode. The default setting is **DHCP** mode.

### IP

Enter the IP address of the AT-OME-ST31A in this field. This field will only be available when **IP Mode** is set to **STATIC IP**. The default static IP address of the AT-OME-ST31A is 192.168.1.254.

### Netmask

Enter the subnet mask of the AT-OME-ST31A in this field. This field will only be available when **IP Mode** is set to **STATIC IP**.

### Gateway

Enter the gateway (router) IP address in this field. This field will only be available when **IP Mode** is set to **STATIC IP**.

### Telnet Port

Enter the desired Telnet port (for Telnet sessions) in this field. The default port is 23.

### Telnet Login Mode

Click this toggle switch to set the Telnet Login Mode to **ON** or **OFF**. If set to **ON**, then login credentials (same as web server) will be required when starting a Telnet session.

## Configuration and Management Interfaces

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### Telnet Timeout

Click this drop-down list to select the timeout interval, in seconds. Range is: 1 to 10000 seconds, or Never.

### Hostname

Displays the hostname of the AT-OME-ST31A, as it would appear on a network. To change the hostname, type the new hostname in this field and click the **Save** button.

### Authentication

Click this drop-down list to select the authentication method when using the 802.1x security protocol.

### Front Panel Lock

Click this toggle switch to **LOCK** or **UNLOCK** the AT-OME-ST31A.

### Reset to Default

Click the **Factory Default** button to reset the AT-OME-ST31A to factory-default settings.

### Firmware Update

Click the **Choose File** button to begin the firmware update procedure. Refer to [Updating the Firmware \(page 46\)](#) for more information.

### Velocity Update

Click the **Choose File** button to update the AT-OME-ST31A, within Velocity.

# Solution Setup and Configuration Guide

The following sections provide step-by-step instructions for the following topics:

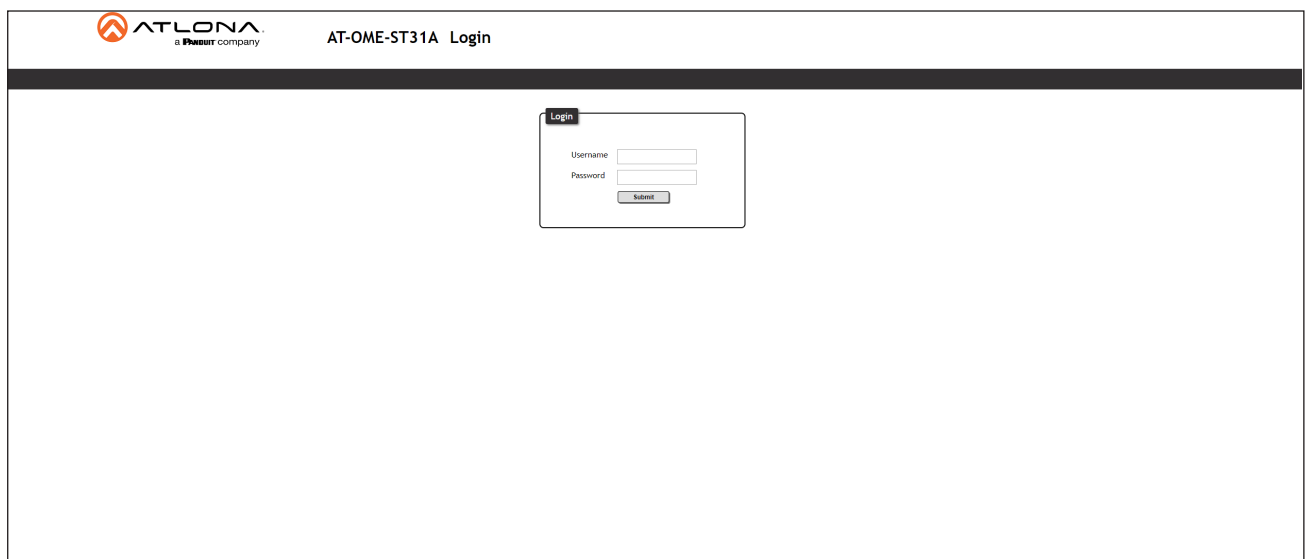
- Input Auto-Switching
- Display Control
- Control Mode

## Input Auto Switching

The AT-OME-ST31A provides auto-switching capability. By default, this feature will automatically switch the input to the most recently-connected or powered source when a source is disconnected. For example, if the connection sequence is **HDMI 2 > USB-C > HDMI 1**, and a source is disconnected from the **USB-C** port, then the AT-OME-ST31A will automatically switch to the **HDMI 1** port (the last-connected port). The fallback port can also be customized to switch to any of the available inputs.

Auto-switching is enabled (On), by default, and can be enabled or disabled through the built-in web server. Refer to [Configuration and Management Interfaces \(page 22\)](#) for more information if necessary.

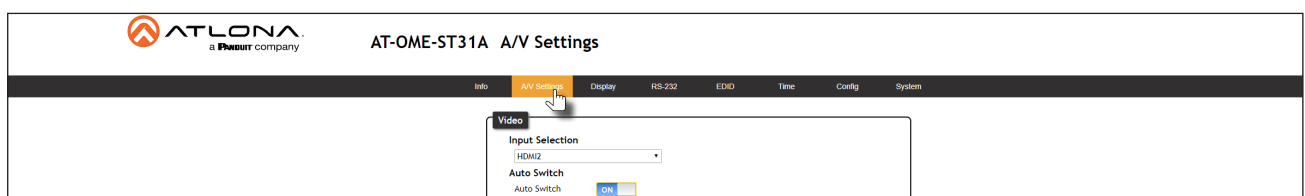
1. Launch a web browser.
2. In the address bar, type the IP address of the AT-OME-ST31A.



3. Enter the login credentials and click the **Submit** button. The default credentials are listed below:

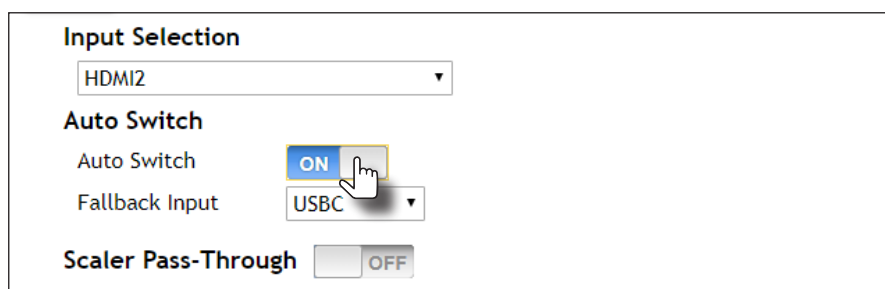
Username: admin  
 Password: Atlona

4. Click the **Submit** button or press the [ENTER] key.
5. Click **A/V Settings** in the menu bar. The **A/V Settings** page will be displayed.



## Solution Setup and Configuration Guide

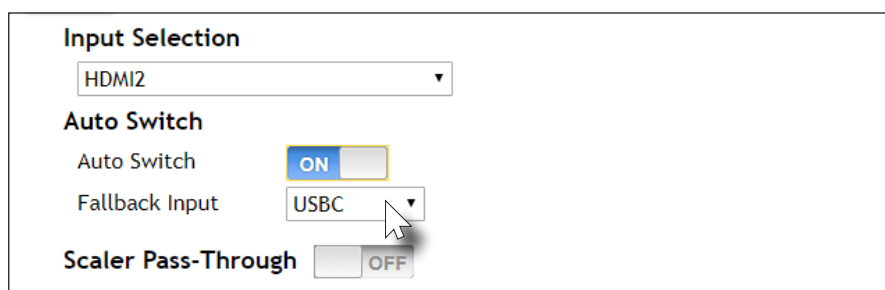
6. Click the **Auto Switch** toggle button to enable (ON) or disable (OFF) auto-switching.



The screenshot shows a configuration window with the following elements:

- Input Selection:** A dropdown menu currently set to "HDMI2".
- Auto Switch:** A toggle switch labeled "ON" is being clicked by a mouse cursor.
- Fallback Input:** A dropdown menu currently set to "USBC".
- Scaler Pass-Through:** A toggle switch labeled "OFF".

7. Click the **Fallback Input** drop-down list to select the desired mode of operation.



The screenshot shows the same configuration window as before, but with the mouse cursor clicking on the "USBC" option in the "Fallback Input" dropdown menu.

Fallback Input	Description
USBC	Automatically switches to USB-C.
HDMI1	Automatically switches to HDMI 1.
HDMI2	Automatically switches to HDMI 2.
Previous (default setting)	The switcher will return to the previous (last connected) input. If no input is found, then it will attempt to switch to a ternary port.

8. Configuration is complete. Changes are automatically saved.



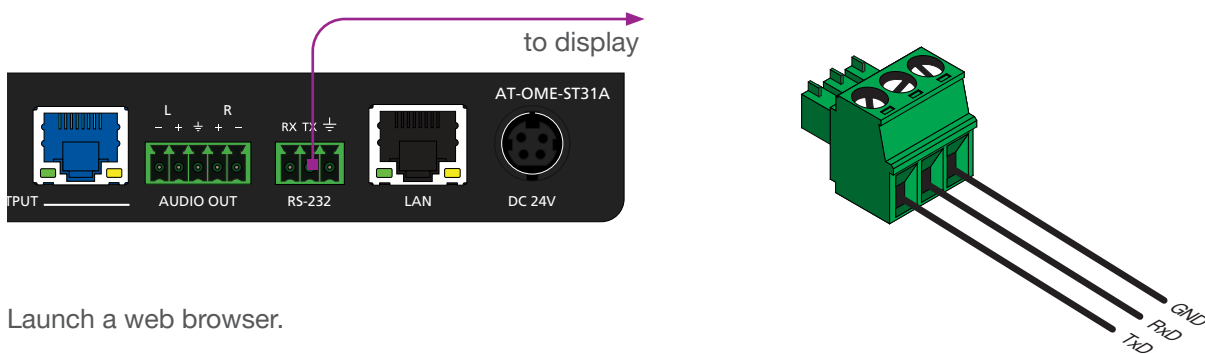
**NOTE:** The AT-OME-ST31A retains the currently selected input, even after the unit is powered-off then powered-on.

### Display Control

The AT-OME-ST31A provides both a **LAN** and **RS-232** port, which allows commands to be sent from the AT-OME-ST31A to a connected display over a serial cable or over Ethernet. No external control system is required. The **DISPLAY** button can be programmed to toggle power on the display, allowing for convenient control of the display device from the location of the source.

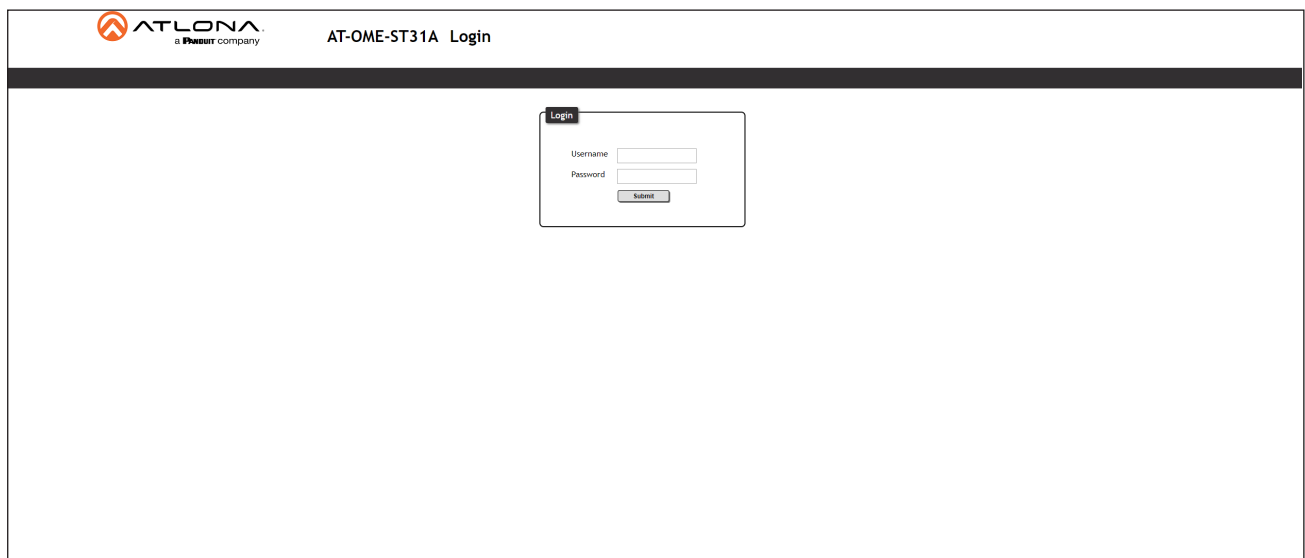
#### Using RS-232

1. Connect a serial cable from the **RS-232** port on the AT-OME-ST31A, to the RS-232 port on the display. The included 3-pin captive screw connector should be wired as shown.

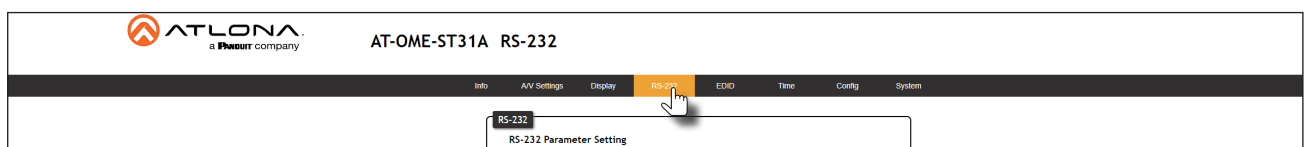


2. Launch a web browser.
3. In the address bar, type the IP address of the AT-OME-ST31A.
4. The **Login** page will be displayed. Enter the required credentials. The default credentials are shown below:

Username: admin  
Password: Atlona

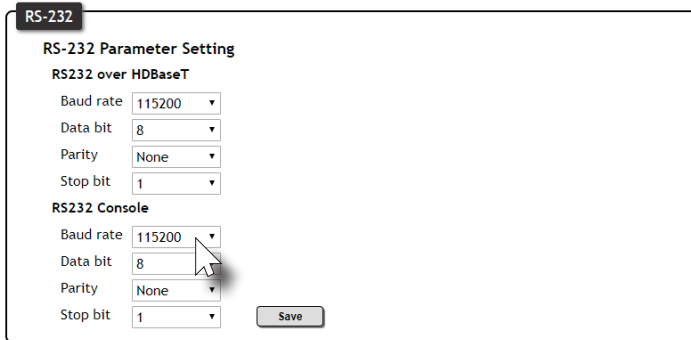


5. Click the **Submit** button or press the [ENTER] key on the keyboard.
6. Click **RS-232** in the menu bar. The **RS-232** page will be shown.



## Solution Setup and Configuration Guide

- Set the RS-232 settings for the display (sink) device, under the **RS232 Console** section. These settings must match the device settings for the display. Otherwise, RS-232 control will not function. Refer to the User Manual of the display device for information.
- Click the **Save** button to commit changes.



**RS-232**

**RS-232 Parameter Setting**

**RS232 over HDBaseT**

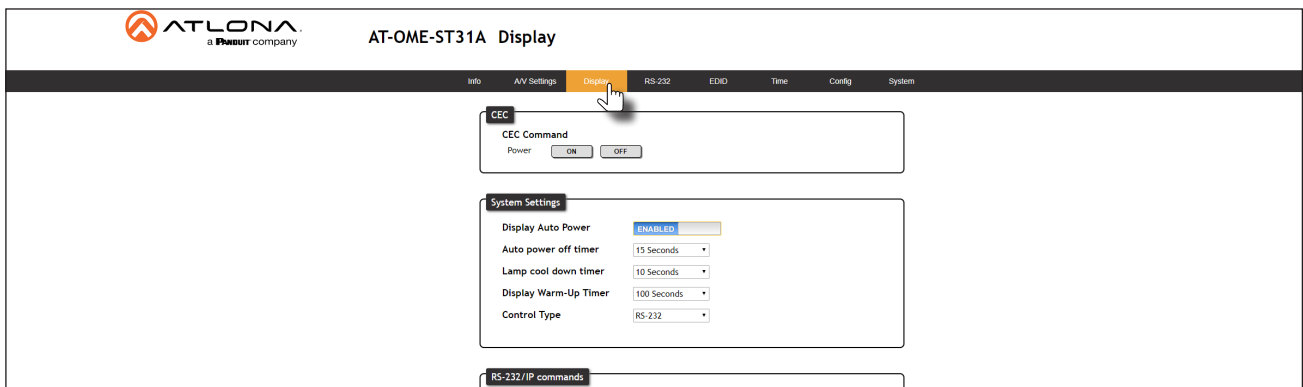
Baud rate: 115200  
Data bit: 8  
Parity: None  
Stop bit: 1

**RS232 Console**

Baud rate: 115200  
Data bit: 8  
Parity: None  
Stop bit: 1

**Save**

- Click **Display** in the menu bar. The **Display** page will be shown.



**ATLONA**  
a PANUIT company

**AT-OME-ST31A Display**

Info AV Settings **Display** RS-232 EDID Time Config System

**CEC Command**

Power

**System Settings**

Display Auto Power: ☒ **ENABLED**

Auto power off timer: 15 Seconds

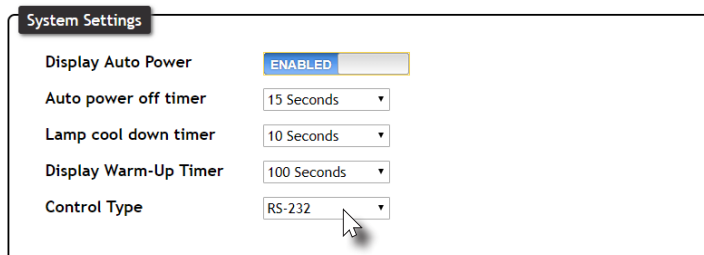
Lamp cool down timer: 10 Seconds

Display Warm-Up Timer: 100 Seconds

Control Type: RS-232

**RS-232/IP commands**

- Under **System Settings**, click the **Control Type** drop-down list and select **RS-232**.



**System Settings**

Display Auto Power: ☒ **ENABLED**

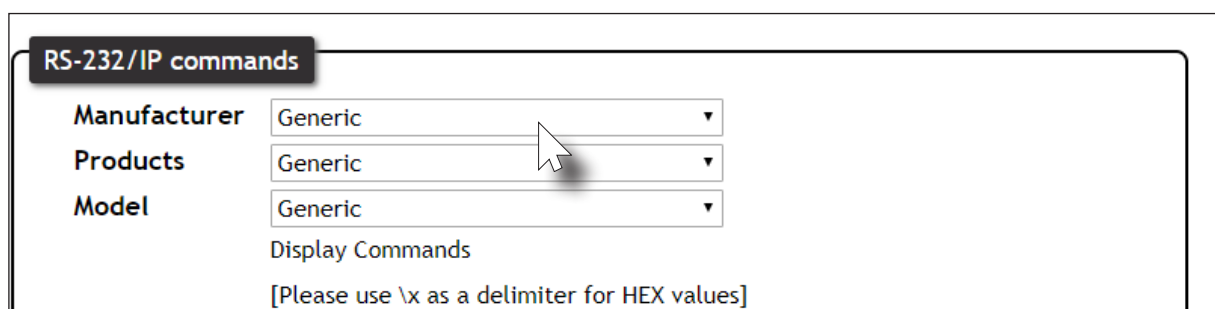
Auto power off timer: 15 Seconds

Lamp cool down timer: 10 Seconds

Display Warm-Up Timer: 100 Seconds

Control Type: RS-232

- Scroll down to the bottom of the page and locate the **RS-232 / IP commands** section.
- Click the **Manufacturer** drop-down list to select the manufacturer of the device that is being controlled.



**RS-232/IP commands**

**Manufacturer**: Generic

**Products**: Generic

**Model**: Generic

**Display Commands**

[Please use \x as a delimiter for HEX values]

## Solution Setup and Configuration Guide

13. Continue fine-tuning the device selection by clicking the **Products** and **Model** drop-down lists. Once all fields have been set to the proper values, the AT-OME-ST31A will populate the command fields with the proper values, based on the selected device.



**NOTE:** If the manufacturer/model is not listed in the drop-down lists, then the command fields can be entered manually. Consult the User Manual for the display/sink device to obtain the correct command format.

14. Click the **Send** button to test each command.

### HEX Command Strings

- a. Enter the hexadecimal command string in the correct field. An example *power-on* command for a display might be:

```
\xBE\xEF\x03\x06\x00\xBA\xD2\x01\x00\x00\x60\x01\x00\x0D
```

This command would be entered under the **Set command** field, under **ON**. Consult the documentation for the display for the correct command strings.

- b. Make sure the command string is terminated correctly. In most cases, a CR (carriage return) should be specified. In the example above, “\x0D” is the hexadecimal value for a carriage return.

### ASCII Command Strings

- a. Enter the ASCII command string in the correct field. An example *power-on* command for a display might be:

```
PWON
```

This command would be entered under the **Set command** field, under **ON**. Consult the documentation for the display for the correct command strings.

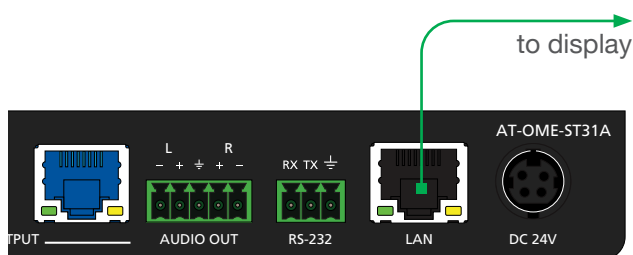
15. Click the **Save** button to commit all changes.

## Solution Setup and Configuration Guide

### Using IP

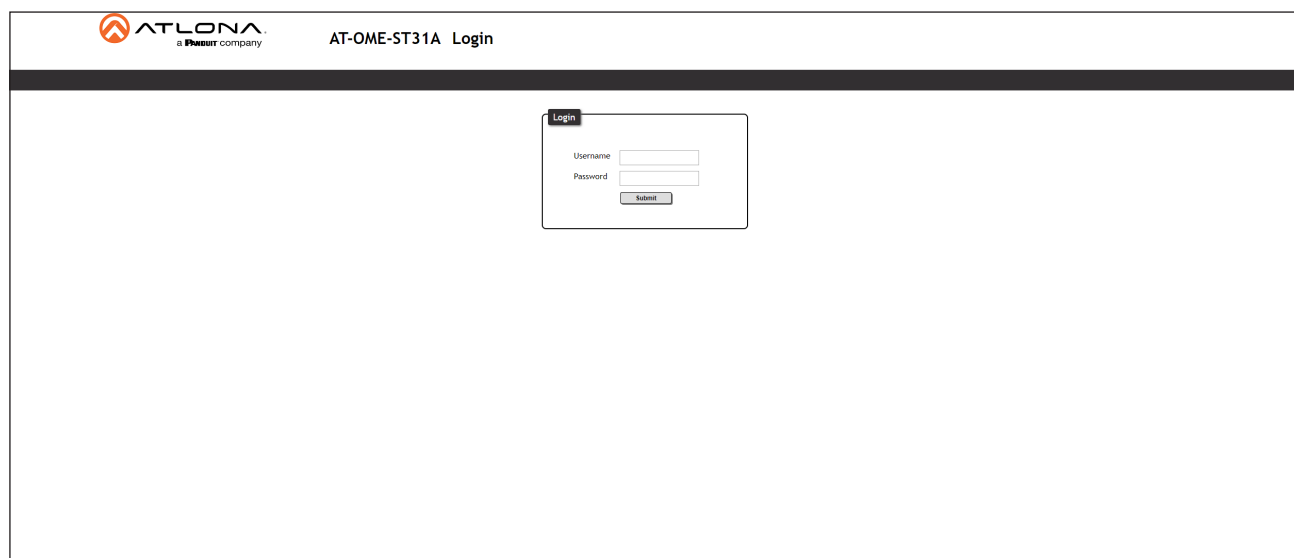
Instead of using a serial cable to send commands, this method uses an Ethernet cable to send commands from the AT-OME-ST31A to the display device.

1. Connect an Ethernet cable from the **LAN** port on the AT-HD-SC-500, to the LAN port on the display.

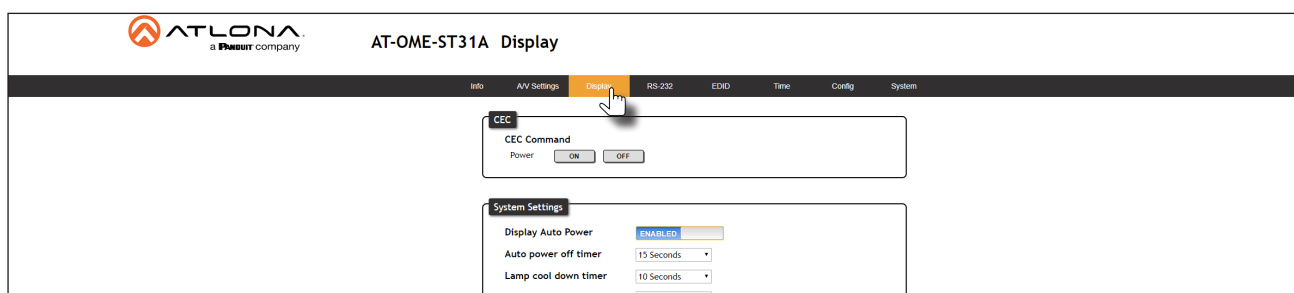


2. Launch a web browser.
3. In the address bar, type the IP address of the AT-HD-SC-500.
4. The **Login** page will be displayed. Enter the required credentials. The default credentials are shown below:

Username: admin  
 Password: Atlona



5. Click the **Submit** button or press the [ENTER] key on the keyboard.
6. Click **Display** in the menu bar. The **Display** page will be shown.





## Solution Setup and Configuration Guide

7. Under **System Settings**, click the **Control Type** drop-down list and select **IP**.

**System Settings**

Display Auto Power	<input type="checkbox"/> DISABLED
Auto power off timer	15 Seconds ▼
Lamp cool down timer	10 Seconds ▼
Display Warm-Up Timer	10 Seconds ▼
Control Type	IP ▼

8. Locate the **TCP/IP Settings of Controlled Device** section and enter the following information:

**a. IP Mode**

If the device does not require a login, then set this drop-down value to **Non-Login**. If the device requires login credentials, select **Login** from the drop-down list. Note that if **Login** is selected, then the **Username** and **Password** fields will need to be populated with the required login credentials.

**b. IP Address**

Enter the IP address of the device to be controlled.

**c. Port**

Enter the port in this field.

**d. Username**

This field is only required if **IP Mode** is set to **Login**. Enter the username login credential in this field.

**e. Password**

This field is only required if **IP Mode** is set to **Login**. Enter the username login credential in this field.

**TCP/IP Settings of Controlled Device**

IP Mode	Non-Login ▼
IP Address	192.168.0.35
Port	23
Username	admin
Password	.....
<input type="button" value="Save"/>	

9. Scroll down to the bottom of the page and locate the **RS-232 / IP commands** section.

10. Click the **Manufacturer** drop-down list to select the manufacturer of the device that is being controlled.

**RS-232/IP commands**

Manufacturer	Generic ▼
Products	Generic ▼
Model	Generic ▼

## Solution Setup and Configuration Guide

11. Continue fine-tuning the device selection by clicking the **Products** and **Model** drop-down lists. Once all fields have been set to the proper values, the AT-OME-ST31A will populate the command fields with the proper values, based on the selected device.



**NOTE:** If the manufacturer/model is not listed in the drop-down lists, then the command fields can be entered manually. Consult the User Manual for the display/sink device to obtain the correct command format.

12. Click the **Send** button to test each command.

### HEX Command Strings

- a. Enter the hexadecimal command string in the correct field. An example *power-on* command for a display might be:

```
\xBE\xEF\x03\x06\x00\xBA\xD2\x01\x00\x00\x60\x01\x00\x0D
```

This command would be entered under the **Set command** field, under **ON**. Consult the documentation for the display for the correct command strings.

- b. Make sure the command string is terminated correctly. In most cases, a CR (carriage return) should be specified. In the example above, “\x0D” is the hexadecimal value for a carriage return.

### ASCII Command Strings

- a. Enter the ASCII command string in the correct field. An example *power-on* command for a display might be:

```
PWON
```

This command would be entered under the **Set command** field, under **ON**. Consult the documentation for the display for the correct command strings.

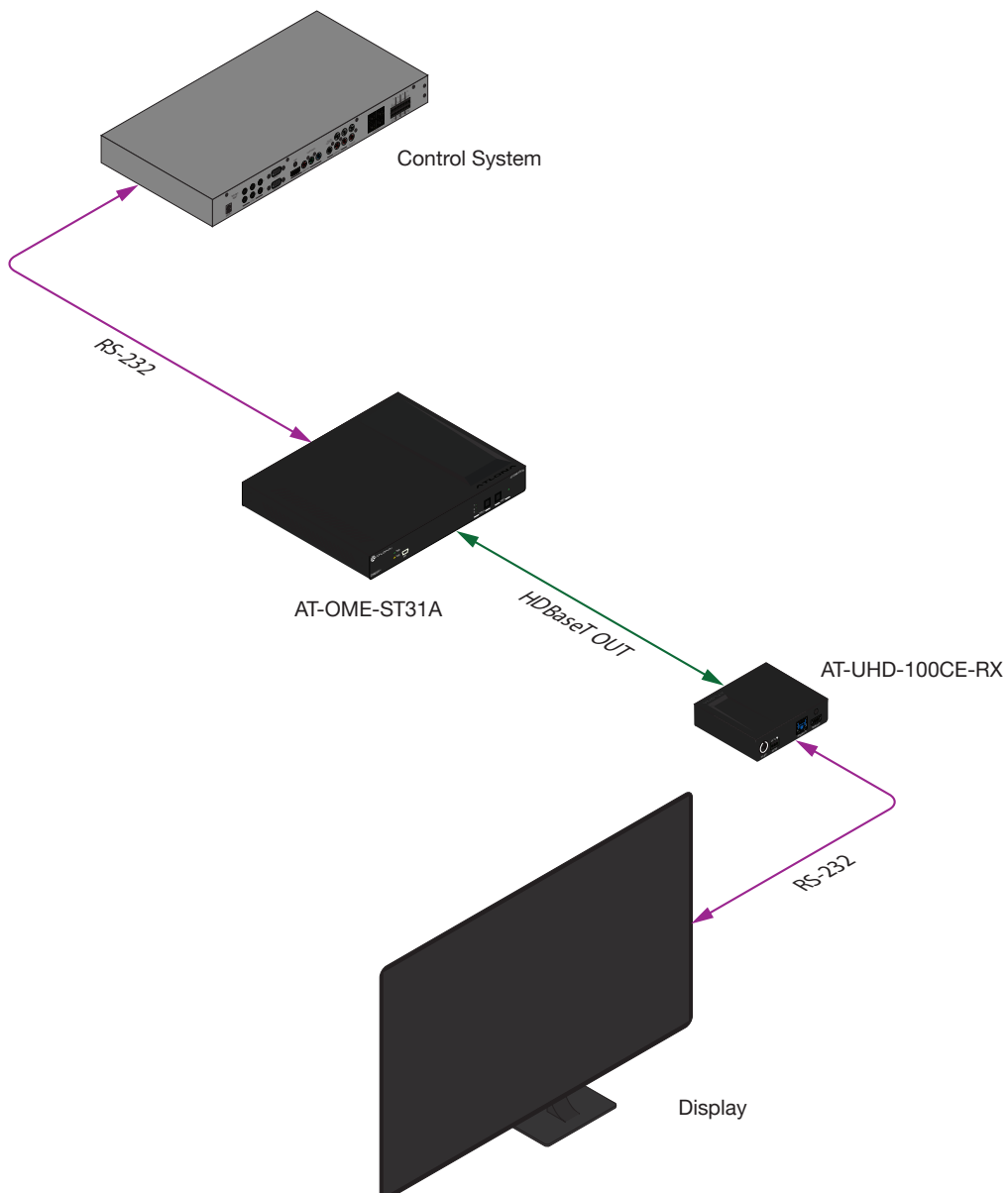
13. Click the **Save** button to commit all changes.

## Solution Setup and Configuration Guide

### Pass-through mode

In pass-through mode, RS-232 commands are sent to the AT-OME-ST31A and then transmitted over HDBaseT to the receiver unit, and then to the display (sink) device.

1. Connect the RS-232 cable between the control system and the AT-OME-ST31A.
2. Connect an Ethernet cable from the desired **HDBaseT OUT** port to a receiver.
3. Connect an RS-232 cable between the display (sink) and the receiver.



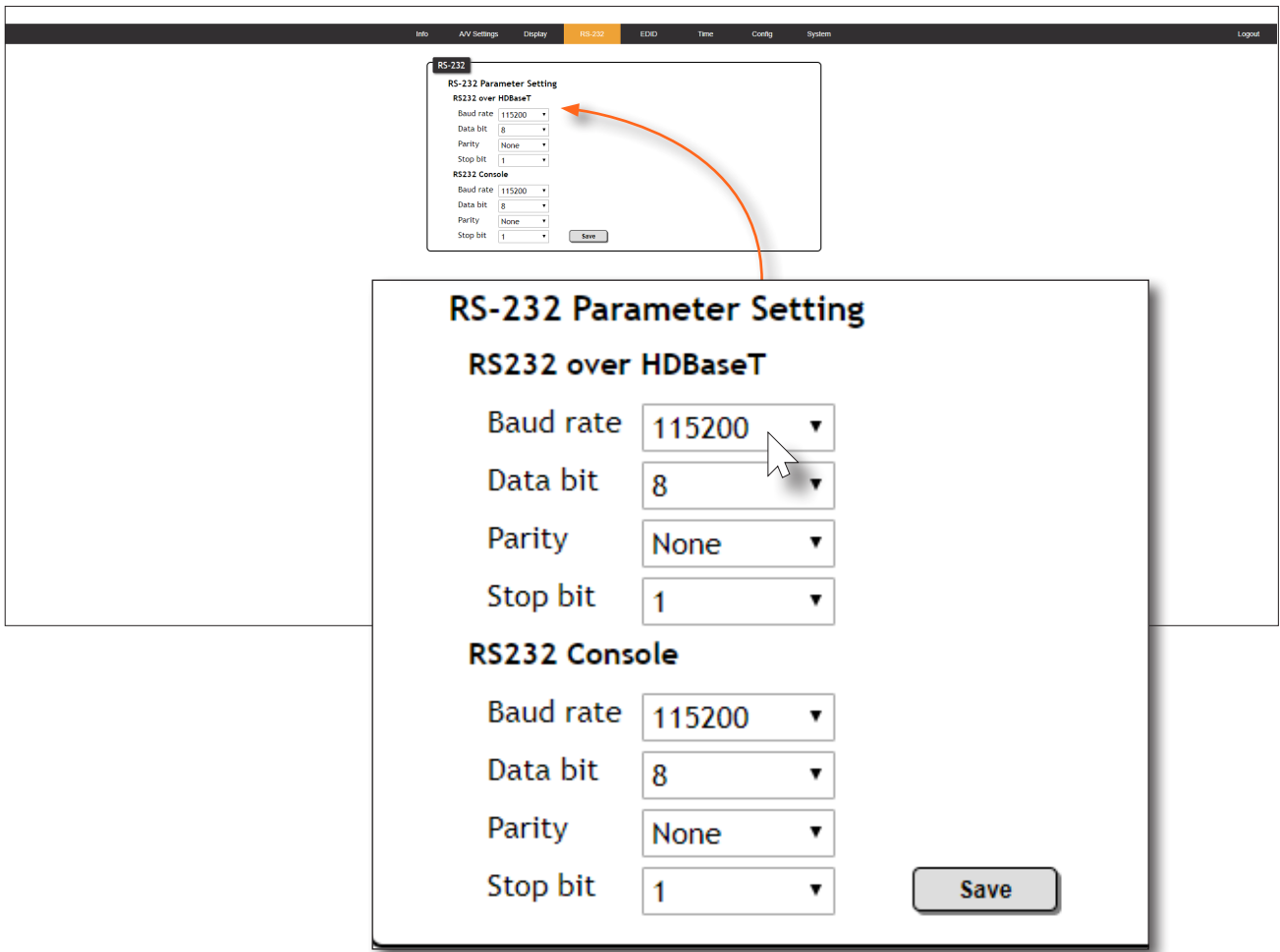
## Solution Setup and Configuration Guide

1. Launch a web browser and login to the web server. Refer to [Introduction to the Web Server \(page 22\)](#) for more information. The factory-default username and password are listed below:

Username: **admin**

Password: **Atlona**

2. Click **RS-232** in the menu bar.
3. Select the proper baud rate, data bit, parity, and stop bit settings for the **HDBaseT OUTPUT** port. These settings must correspond with the RS-232 settings of the display (sink) device.



**RS-232 Parameter Setting**

**RS232 over HDBaseT**

Baud rate: 115200 ▼

Data bit: 8 ▼

Parity: None ▼

Stop bit: 1 ▼

**RS232 Console**

Baud rate: 115200 ▼

Data bit: 8 ▼

Parity: None ▼

Stop bit: 1 ▼

**Save**

4. Click the **Save** button to commit changes.
5. Use the following command to send a command to the display (sink) device, where display\_command is the command data to send:

RS232Zone4[display\_command\$0d]

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

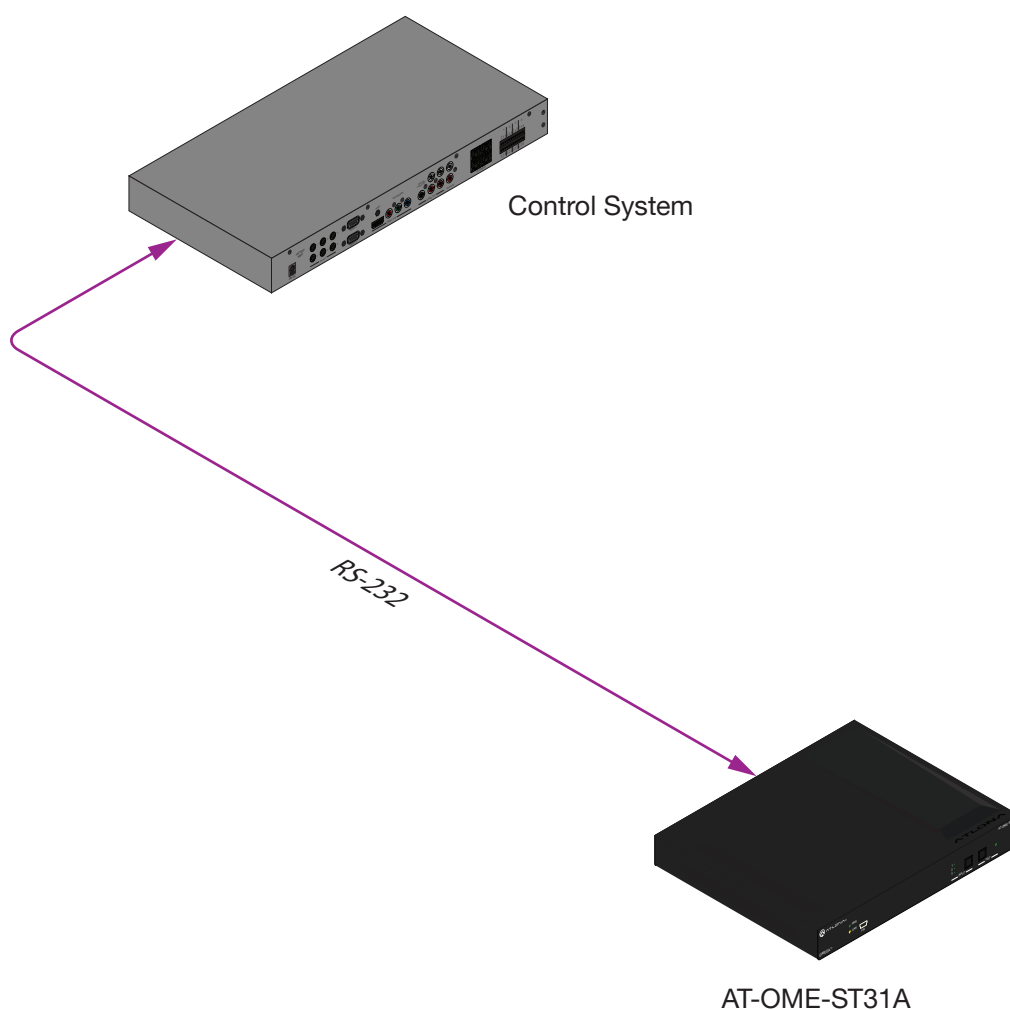
## Control Mode

In control mode, RS-232 commands are sent from a computer or control system (DTE) to the AT-OME-ST31A (DCE). This method allows direct control of the matrix for routing, IP configuration, powering-on / powering-off and other functions.



**NOTE:** The **RS-232** port on the AT-OME-ST31A runs at a baud rate of 115200. The control unit must be set to the same baud rate, in order to communicate with the AT-OME-ST31A.

1. Connect the RS-232 cable between the control system and the AT-OME-ST31A.
2. Set the baud rate of the computer/control system to 115200. If the control system is not set to this baud rate, then the AT-OME-ST31A will not respond to RS-232 commands.
3. Refer to the *Applications Programming Interface* for a listing of available commands.



## Appendix

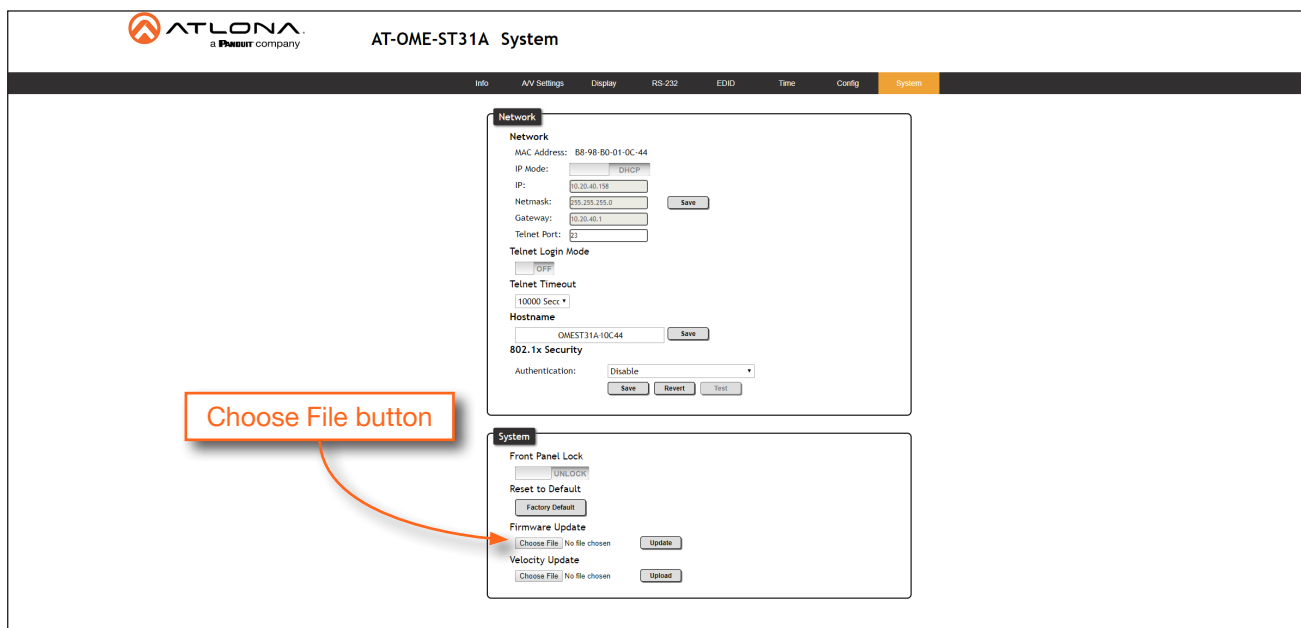
### Updating the Firmware

Updating the firmware can be completed using either the USB interface or the web server. Atlona recommends using the web server for updating the firmware. However, if a network connection is not available, the AT-OME-ST31A firmware can be updated using a USB-A to USB mini-B cable.

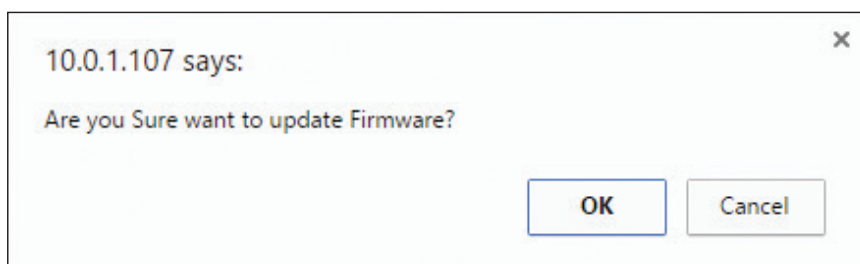
#### Using the Web Server

Requirements:

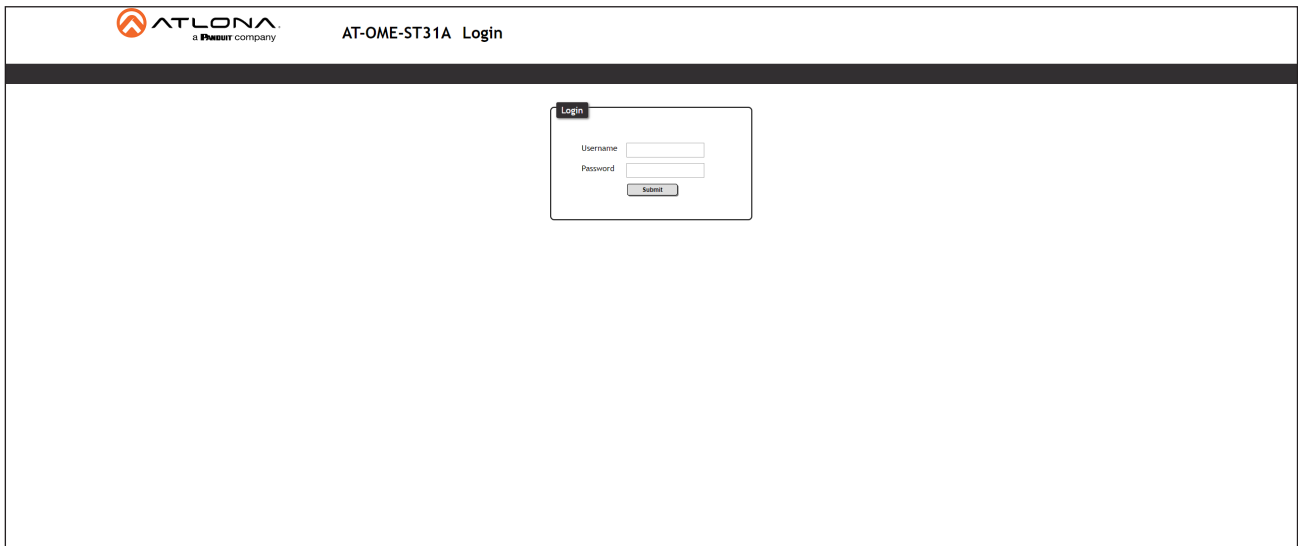
- AT-OME-ST31A
  - Firmware file
  - Computer running Microsoft Windows
1. Connect an Ethernet cable from the computer, containing the firmware, to the same network where the AT-OME-ST31A is connected.
  2. Go to the [System Page \(page 33\)](#) in the web server.



3. Click the **Choose File** button, under the **Firmware Update** section.
4. Browse to the location of the firmware file, select it, and click the **Open** button.
5. Click the **Update** button, under the **Firmware Update** section.
6. The following message box will be displayed.



7. Click the **OK** button to begin the firmware update process. Click the **Cancel** button to cancel the process.
8. After the firmware update process is complete, the **Login** screen will be displayed.



### Using USB

Requirements:

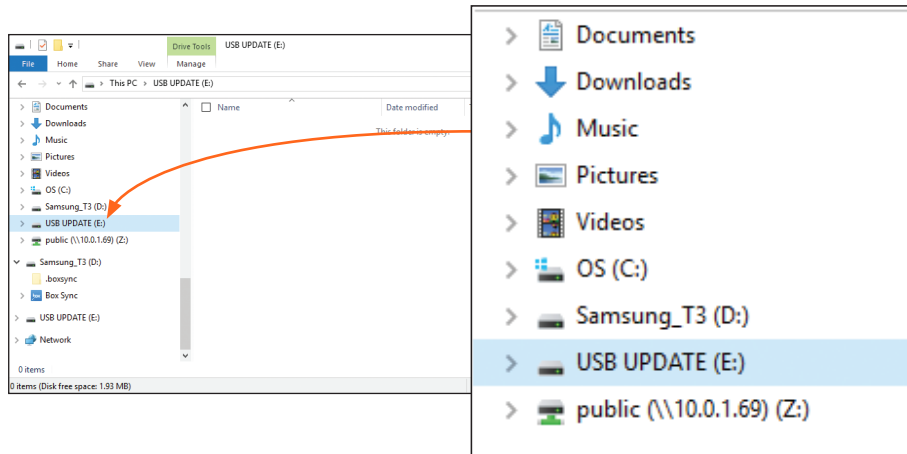
- AT-OME-ST31A
- Firmware file
- Computer running Windows
- USB-A to USB mini-B cable

1. Disconnect power from the AT-OME-ST31A.
2. Connect a USB-A to USB mini-B cable between the PC and the firmware port on the AT-OME-ST31A. The unit will be powered by the USB cable.



3. The USB UPDATE folder will be displayed.

If this folder is not displayed, automatically, select the USB UPDATE drive from Windows Explorer.



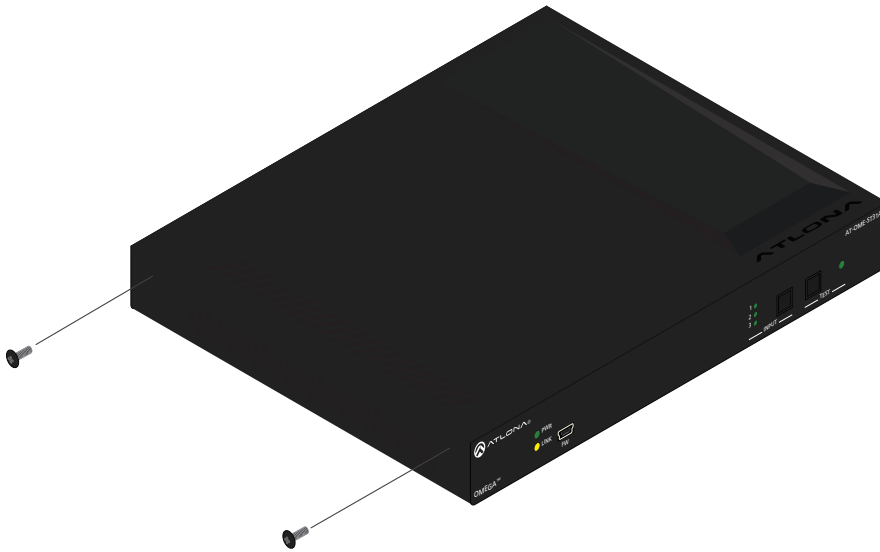
4. Delete all files from the USB UPDATE drive, if any are present.
5. Drag-and-drop the firmware file to the drive.
6. After the file has been copied, disconnect the USB cable from both the computer and the AT-OME-ST31A.
7. The firmware update process is complete.



## Mounting Instructions

The AT-OME-ST31A includes two mounting brackets, which can be used to attach the unit to any flat surface. Use the two enclosure screws, on the sides of the unit to attach the mounting brackets.

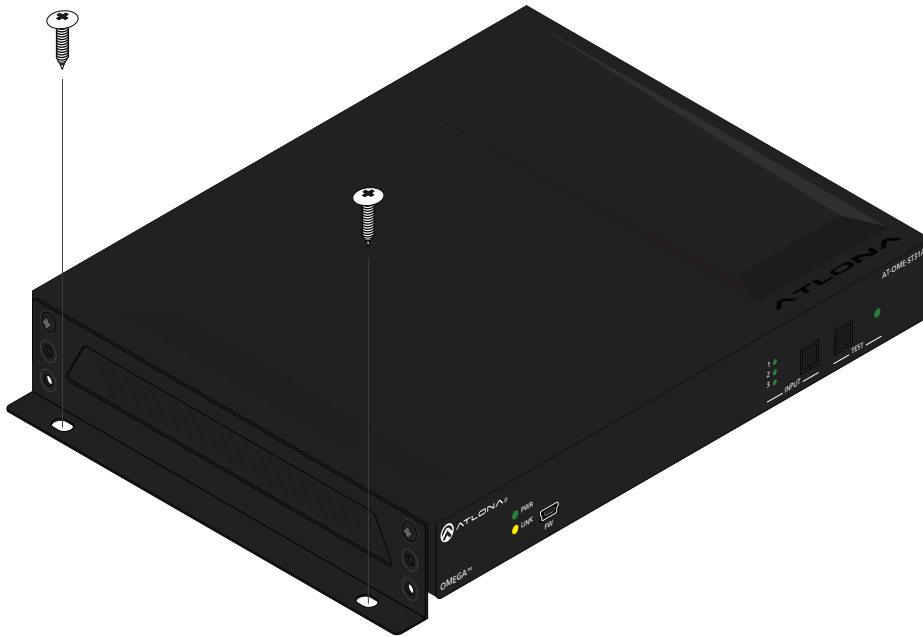
1. Using a small Phillips screwdriver, remove the two screws from the left side of the enclosure.



2. Position one of the mounting brackets, as shown below, aligning the holes on the side of the enclosure with one set of holes on the mounting bracket.
3. Use the screws from Step 1 to attach the mounting bracket.



4. Repeat steps 1 and 2 to attach the second mounting bracket to the opposite side of the unit.
5. Mount the unit to a flat surface using the oval-shaped holes, on each mounting bracket. If using a drywall surface, a #6 drywall screw is recommended.



## Specifications

Video		
HDMI Specification	HDMI 2.0 <sup>(1)</sup> , HDCP 1.4, 2.2	
UHD/HD/SD	4096x2160 (DCI) @ 60 <sup>(1)</sup> /30/25/24 Hz, 3840x2160 (UHD) @ 60 <sup>(1)</sup> /30/25/24 Hz, 1080p @ 60/59.9/50/30/29.97/25/24/23.98 Hz, 1080i @ 60/59.94/50 Hz, 720p @ 60/59.94/50 Hz, 576p @ 50 Hz, 576i @ 50 Hz, 480p @ 60/59.96 Hz, 480i @ 60 Hz	
VESA	2560x1600, 2048x1536, 1920x1200, 1680x1050, 1600x1200, 1440x900, 1400x1050, 1280x1024, 1280x800, 1366x768, 1360x768, 1152x864, 1024x768, 800x600, 640x480	
Scaler <sup>(2)</sup>	IN	OUT
	4K @ 24 Hz	1080p @ 24 Hz
	4K @ 30 Hz	1080p @ 30 Hz
	4K @ 60 Hz, 4:2:0	1080p @ 60 Hz (YUV/RGB, 4:4:4)
USB-C	Up to 4K/UHD @ 60Hz	
Color Space	YUV, RGB	
Chroma Subsampling	4:4:4, 4:2:2, 4:2:0	
Color Depth	8-bit, 10-bit, 12-bit	
HDR	HDR10, Hybrid-Log Gamma (HLG), and Dolby® Vision™ @ 60Hz; HDMI and USB-C ports only	

Audio	
Pass-Through Formats	PCM, Dolby® Digital, Dolby Digital Plus™, Dolby TrueHD, Dolby Atmos®, DTS® Digital Surround™, DTS-HD Master Audio™, and DTS:X®
Sample Rate	32 kHz, 44.1 kHz, 48 kHz, 88.2 kHz, 96 kHz, 176.4 kHz, 192 kHz
Bit Rate	24 Mbits/s max
<b>Analog Audio</b>	
Format	2-channel stereo
Balanced Output	+4 dBu, nominal gain; +20 dBu headroom
Frequency Response	20 Hz to 20 kHz, ±0.5 dB
THD + N	< 0.004% @ 20 Hz to 20 kHz
SNR	> 105 dB @ 1 kHz, zero clipping @ 0 dBFS, unweighted

Protocols	
Supported	HTTP, Telnet
Addressing	DHCP, static
Authentication	IEEE 802.1x: PEAP/MSCHAPv2 or EAP-TLS

Control	
RS-232	Device control and configuration; supports baud rates from 2400 to 115200
IP	Device control and configuration
CEC	Device control and configuration

Connectors	
HDMI IN	2 - Type A, 19-pin female
HDMI OUT	1 - Type A, 19-pin female
USB-C	1 - USB Type-C v3.1, 24-pin female
HDBaseT OUT	1 - RJ45
LAN	1 - RJ45, 10/100/1000 Mbps
RS-232	1 - 3-pin captive screw (bidirectional)
AUDIO OUT	1 - 5-pin captive screw, balanced/unbalanced, 2-channel
DC 24V	1 - 4-pin, locking

## Appendix

USB				
USB-C Device Charging Capability		60 W @ 20 V / 3 A, 36 W @ 12 V / 3 A, and 15 W @ 5 V / 3 A		
Controls and Indicators				
INPUT, DISPLAY		2 - momentary, tact-type		
IP MODE, RESET		2 - momentary, tact-type, recessed		
PWR indicator		1 - LED, green		
LINK indicator		1 - LED, yellow		
INPUT indicators: 1, 2, 3		3 - LED, green		
Resolution / Distance		4K/UHD - Feet / Meters		1080p - Feet / Meters
HDMI IN/OUT	15	5	30	10
CAT5e	295	90	330	100
CAT6/6a/7	330	100	330	100
Signal				
Maximum TMDS Clock		600 MHz (300 MHz over HDBaseT)		
HDBaseT		10 Gbps		
Power				
Consumption		101.5 W (with USB charging) 24.2 W (without USB charging)		
External Power Supply (optional) <a href="#">AT-PS-245-D4</a>		Input: 110 - 220 V AC, 50/60 Hz Output: 24 V DC, 3 A Safety: FCC, RCM, cULus, CE, RoHS		
Environmental				
Operating Temperature		+32 to +113 °F 0 to +45 °C		
Storage Temperature		-4 to +140 °F -20 to +60 °C		
Operating Humidity (RH)		20% to 95%, non-condensing		
Chassis				
Dimensions (H x W x D)		1.02 in x 8.62 in x 5.98 in 26 mm x 219 mm x 152 mm		
Weight		1.95 lbs 0.88 kg		
Safety		CE, FCC, RoHS		

- (1) 4K/UHD p60 4:4:4 supported on input/output HDMI and USB-C input ports, 4K/UHD p60 4:2:0 is supported on HDBaseT output.  
 (2) Scaler does not support frame rate conversion.

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