

# 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	Sep 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>

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## Operating Notes

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**IMPORTANT:** Visit <http://atlona.com/product/AT-OME-MS42> 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.
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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.

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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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### 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.

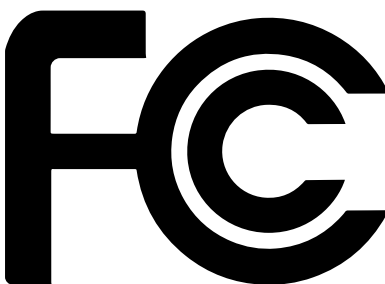


The information bubble is intended to alert the user to helpful or optional operational instructions in the literature accompanying the product.

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.

# Table of Contents

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<b>Introduction</b>	<b>9</b>
<b>Features</b>	<b>9</b>
<b>Package Contents</b>	<b>9</b>
<b>Panel Description</b>	<b>10</b>
Front Panel	10
Rear Panel	11
<b>Installation</b>	<b>12</b>
Audio	12
Connection Instructions	13
Connection Diagram	14
IP Configuration	15
Switching the IP Mode Using the Front Panel	15
Setting the IP Address using the Web Server	15
Displaying the IP Address	15
<b>Device Operation</b>	<b>16</b>
LED Indicators	16
Switching Modes	17
Mirrored Mode	17
Matrix Mode	18
Matrix Mode w/ Static Route	20
Auto-Switching	22
Enabling / Disabling Auto Switching	22
Setting the Fallback Input	23
Scaler Pass-Through	24
Notes on Scaling	25
Audio Management	26
Audio Output Muting	26
De-embedding External Analog Audio	26
HDCP Content	27
EDID Management	28
Using the Downstream EDID	28
EDID Presets	29
Storing EDID Data	30
USB Modes	33
Follow USB	33
Manual	34
Follow Video	35
Setting the System Date and Time	38
Setting Local Time	38
Using an NTP Server	39
Daylight Saving Time (DST)	39
Password Management	41
System Configuration	42
Getting the MAC Address	42
Changing the Network IP Mode	42
Changing the Telnet Port	43
Telnet Login Mode	44
Adjusting Telnet Timeout	45
Setting the Host Name	46
802.1X Security	47
Locking / Unlocking the Front Panel	49
Resetting to Factory-Default Settings	50

## Table of Contents

---

<b>Configuration and Management Interfaces</b>	<b>51</b>
Introduction to the Web Server	51
Info Page	52
A/V Settings Page	53
Display Page	56
RS-232 Page	58
EDID Page	59
USB Page	60
Time Page	61
Config Page	62
System Page	63
<b>Solution Setup and Configuration Guide</b>	<b>65</b>
Display Control	65
CEC Control	65
Using RS-232	68
Using IP	71
Pass-through mode	75
Control mode	77
<b>Appendix</b>	<b>78</b>
Updating the Firmware	78
Mounting Instructions	80
Single Unit Rack Installation	80
Dual Unit Rack Installation	81
Flat Surface	82
Specifications	83

## Introduction

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The Atlona **AT-OME-MS42** is a 4x2 matrix switcher with HDMI, USB-C, and DisplayPort inputs, plus HDMI and HDBaseT outputs. Part of the Omega™ Series of integration products for modern AV communications and collaboration, the OME-MS42 is HDCP 2.2 compliant and features HDBaseT extension for video up to 4K/60 4:2:0, plus embedded audio, control, Ethernet, and USB over distances 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 @ 60, 30, or 24 Hz is available for the HDMI output when connected to an HD sink. The integrated USB extension addresses the challenge of connecting between USB devices at remote locations, and is ideal for software video conferencing and touch or interactive displays. The OME-MS42 includes USB 2.0 and USB-C interfaces for three host PCs, plus two peripheral devices such as a camera, microphone, speakerphone, or keyboard and mouse. It is ideal for video conferencing and many other 4K presentation applications with the OME-EX-RX receiver and OME-SR21 scaling receiver.

## Features

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- 4x2 AV matrix switcher with HDMI, DisplayPort, and USB-C inputs
- USB-C input for AV, data, and device charging<sup>(1)</sup>
- HDBaseT and HDMI outputs with selectable AV switching modes
- USB 2.0 interfacing and extension<sup>(2)</sup> over HDBaseT
- Selectable 4K to 1080p downscaling
- Remote powering using HDBaseT or local powering
- Audio de-embedding
- Automatic display control
- Award-winning 10 year limited product warranty

## Package Contents

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1 x AT-OME-MS42  
1 x Captive screw connector, 5-pin  
1 x Captive screw connector, 3-pin  
1 x USB-C cable  
2 x Mounting plate  
4 x Mounting screw  
1 x Long rack ear  
1 x Short rack ear  
4 x Feet w/rubber grips  
1 x 24 V DC power supply  
1 x IEC power cord  
1 x Installation Guide

(1) Device charging available with optional AT-PS-245-D4 power supply.

(2) Maximum 120 Mbps data rate supported over HDBaseT.

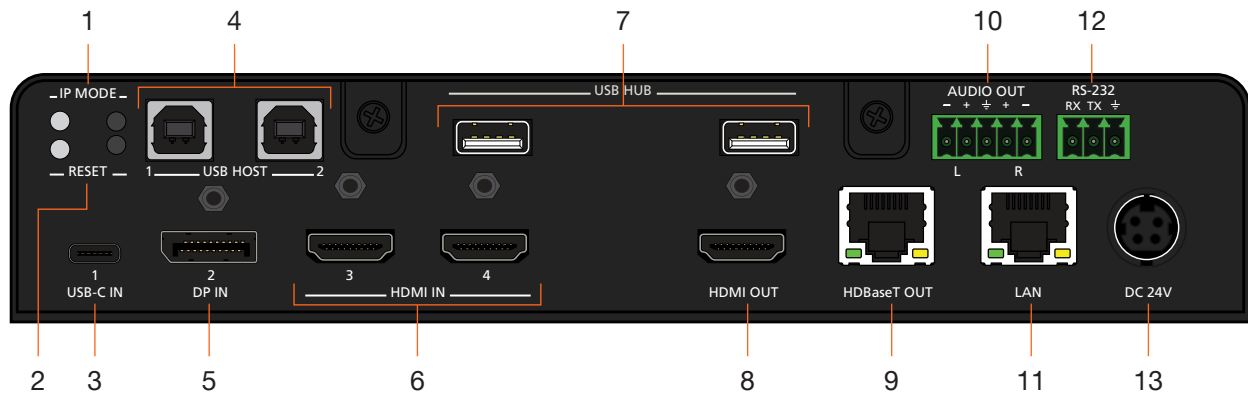
## Panel Description

### Front Panel



- 1 PWR**  
This LED indicator glows solid green when the unit is powered.
- 2 LINK**  
This LED indicator glows solid yellow when an HDBaseT link is established, between the AT-OME-MS42 and a receiver.
- 3 HDMI OUT: Input LED Indicators**  
These LED indicators display which input is routed to the **HDMI OUT** port. A solid blue indicator represents the active input being used.
- 4 HDMI OUT: Input Selection**  
Press and release this button to change the input.
- 5 HDBaseT OUT: Input LED Indicators**  
These LED indicators display which input is routed to the **HDBaseT OUT** port. A solid blue indicator represents the active input being used.
- 6 HDBaseT OUT: Input Selection**  
Press and release this button to change the input.

### Rear Panel



#### 1 IP MODE

Press and release this button to set the IP mode or display the current IP address on the display connected to the **HDMI OUT** port. Refer to [IP Configuration \(page 15\)](#) for more information.

#### 2 RESET

Press and release this button to reset the unit to factory-default settings. Refer to [Resetting to Factory-Default Settings \(page 50\)](#) for more information.

#### 3 USB-C IN

Connect a USB-C cable between from this port to a USB-C source.

#### 4 USB HOST

Connect a USB cable from each of these ports to USB host devices.

#### 5 DP IN

Connect a DisplayPort cable from this port to a DisplayPort source.

#### 6 HDMI IN

Connect an HDMI cable from each of these ports to HDMI sources.

#### 7 USB HUB

Connect USB devices to these USB ports.

#### 8 HDMI OUT

Connect an HDMI cable from this port to a display or other sink device.

#### 9 HDBaseT OUT

Connect a category cable from this port to a compatible receiver unit. Recommended receivers are the AT-OME-SR21 or AT-OME-EX-RX.

#### 10 AUDIO OUT

Connect an audio output device to this port using the included captive screw block. Refer to [Audio \(page 12\)](#) for information on wiring.

#### 11 LAN

Connect an Ethernet cable from this port to the Local Area Network (LAN). The AT-OME-MS42 includes a built-in web server, which can be used to manage and configure the product.

#### 12 RS-232

Connect the included 3-pin captive screw connector block to this port.

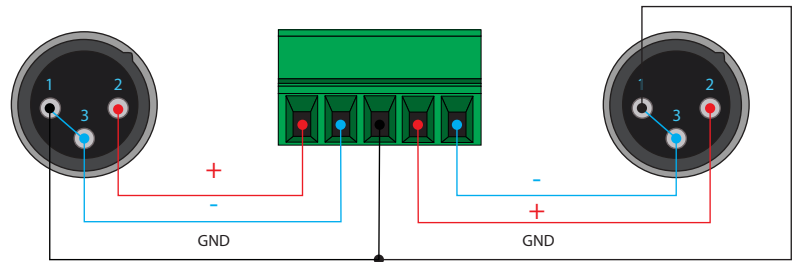
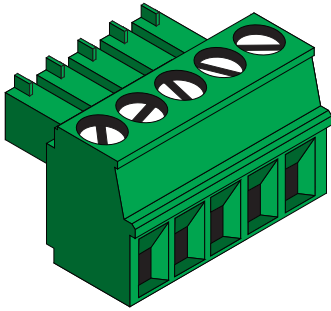
#### 13 DC 24V

Connect the included 24 V DC power supply from this power receptacle to an available AC electrical outlet.

## Installation

### Audio

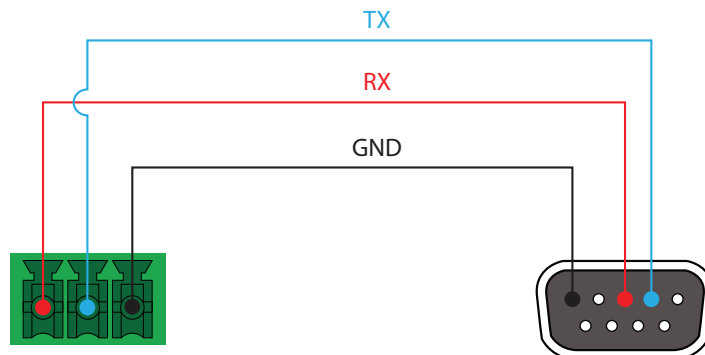
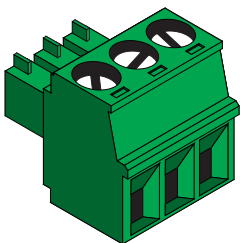
The **AUDIO OUT** connector on the AT-OME-MS42 provides a separate output for balanced audio using XLR connectors. Use the included 5-pin captive-screw terminal block. Balanced audio connections use two signal wires and a ground to minimize interference in audio signals. Unbalanced output audio is not recommended and may require additional equipment.



### RS-232

The AT-OME-MS42 provides an **RS-232** port which can be used to control a display connected to the HDMI output. Atlona recommends controlling the AT-OME-MS42 using IP and reserving the **RS-232** port for local display control.

1. Use wire strippers to remove a portion of the cable jacket.
2. Remove at least 3/16" (5 mm) of insulation from each of the wires.
3. Insert the wires into correct terminal using the included 3-pin captive screw connector.
4. Attach the 3-pin connector block to the **RS-232** port on the AT-OME-MS42.





## Connection Instructions

1. Connect a high-quality USB-C cable from a source to the **USB-C (1)** port.
2. Connect a DisplayPort cable from a source to the **DP IN (2)** port.
3. Connect up to two UHD/HD sources, using HDMI cables, to the **HDMI IN (3)** and **HDMI IN (4)** ports.
4. Connect an HDMI cable from the **HDMI OUT** port to a UHD/HD display.
5. Connect a category cable (CAT-5e or better) from the HDBaseT OUT port to a compatible receiver.

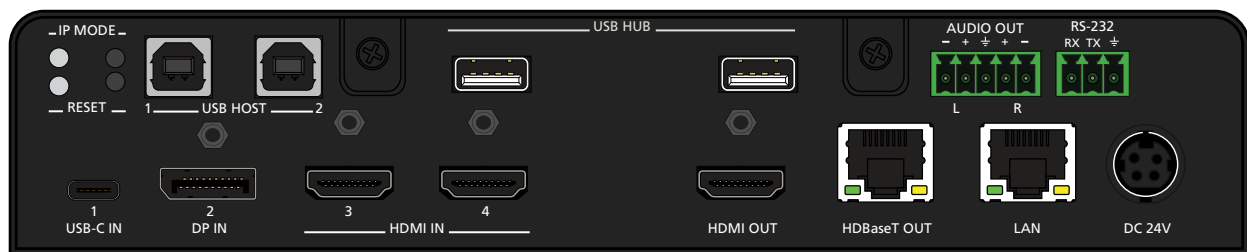
Refer to the tables below for recommended cabling when using Altona products with HDBaseT technology. The green bars indicate the signal quality when using each type of cable. Higher-quality signals are represented by more bars. *These tables are for guidance, only. Performance may vary, based on environmental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

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

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)

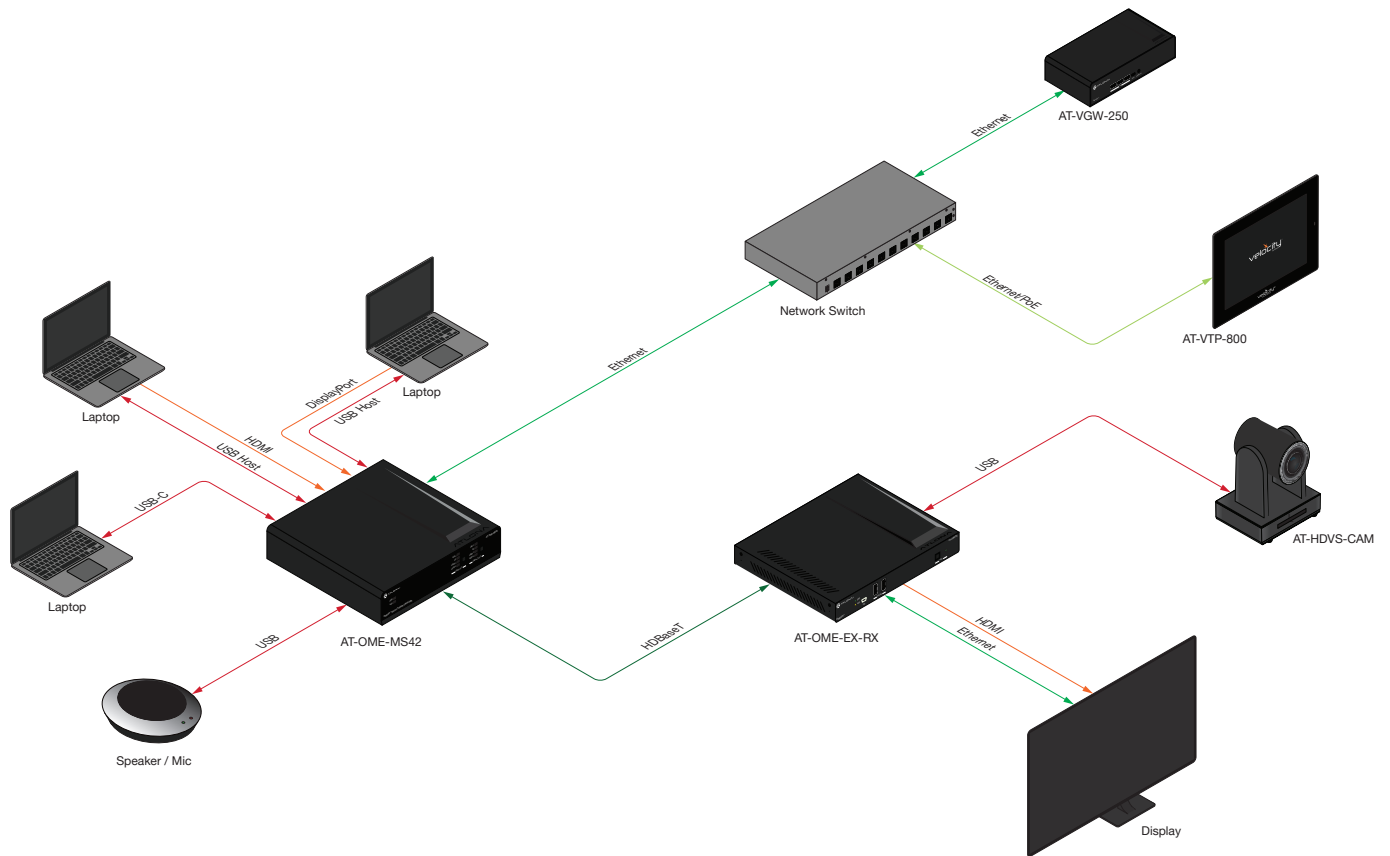


**IMPORTANT:** Stranded or patch cable is not recommended due to performance issues. Shielded cables are strongly recommended to minimize signal noise and interference.



6. Connect up to two USB host devices to the **USB HOST** ports. Refer to [Connection Diagram \(page 14\)](#) for an example application.
7. Connect USB devices to the **USB HUB** ports. Refer to [Connection Diagram \(page 14\)](#) for an example application.
8. Connect an Ethernet cable from the **LAN** port to the Local Area Network (LAN).
9. OPTIONAL: Connect the included 5-pin captive screw connector to the **AUDIO OUT** connector.
10. OPTIONAL: Connect the included 3-pin captive screw block to the RS-232 port. Refer to [Solution Setup and Configuration Guide \(page 65\)](#) for information.
11. Connect the included power supply to the **DC 24V** connector and connect the power cord to an available electrical outlet.

## Connection Diagram



## IP Configuration

The AT-OME-MS42 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-MS42 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-MS42 is powered by connecting the included power supply.
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 [Changing the Network IP Mode \(page 42\)](#) in the built-in web server, to set the AT-OME-MS42 to either DHCP or static IP mode. In order to access the web server, the IP address of the AT-OME-MS42 must be known. By default, the AT-OME-MS42 is set to DHCP mode and will automatically be assigned an IP address by a DHCP server.












### Displaying the IP Address

Press and release the **IP MODE** button to display the IP address of the AT-OME-MS42 on the display connected to the **HDMI OUT** port. The IP address will be displayed in the upper-left corner of the display.

## 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-MS42.

LED		Description
PWR	Solid green 	<ul style="list-style-type: none"> <li>Unit is powered using the included 24 V DC power supply.</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-MS42 and the HDBaseT receiver is compromised.</li> <li>Check the HDBaseT connections and/or try a different cable.</li> </ul>
USB-C DP HDMI 3 HDMI 4	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>Flashes four times to indicate that the unit is being set to DHCP mode. Refer to <a href="#">IP Configuration (page 15)</a> for more information.</li> </ul>
	Flash green (2x) 	<ul style="list-style-type: none"> <li>Flashes twice to indicate that the 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-Default Settings (page 50)</a> for more information.</li> </ul>
	Off 	<ul style="list-style-type: none"> <li>Normal operating mode.</li> </ul>

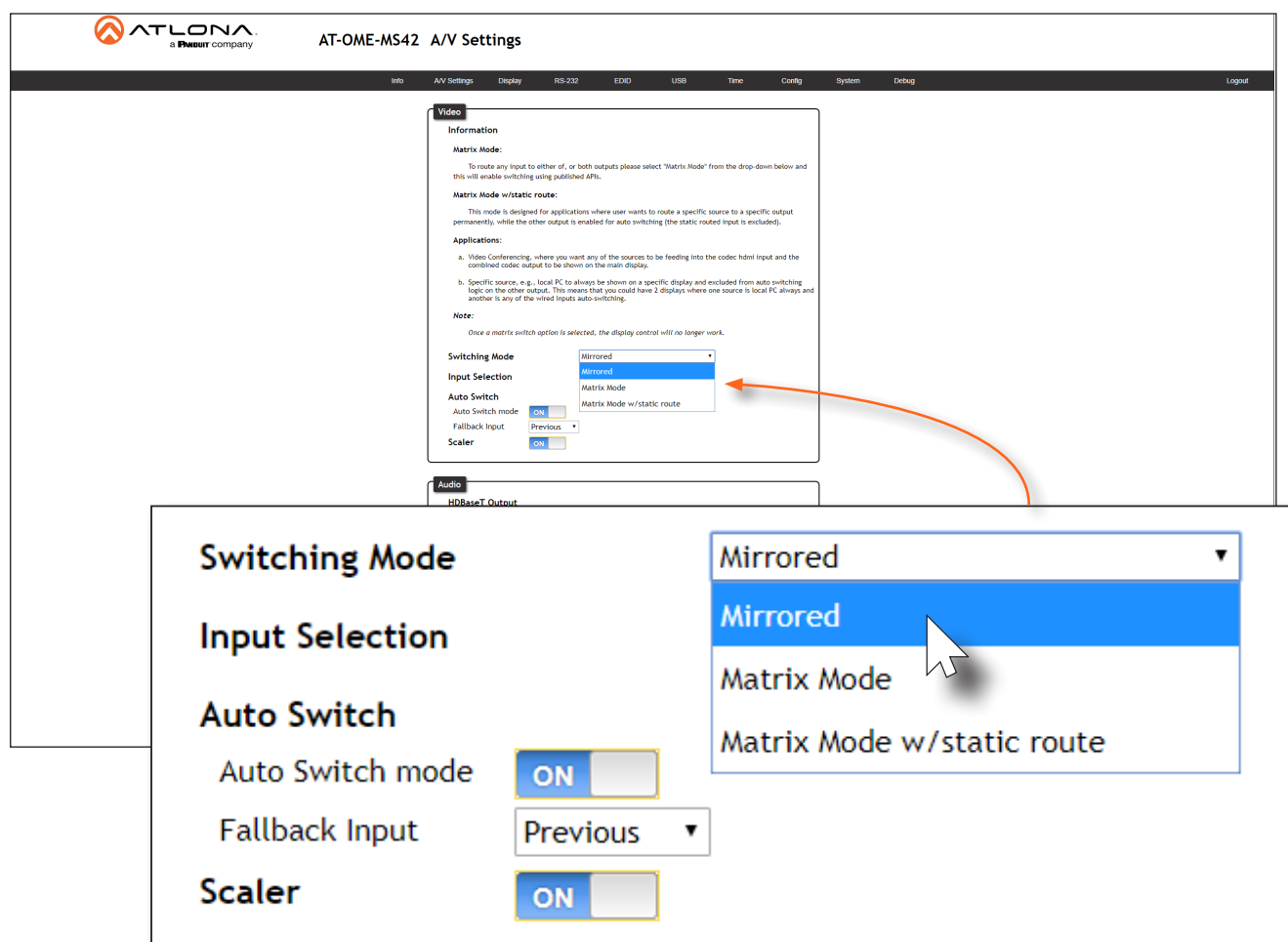
## Switching Modes

The AT-OME-MS42 features three switching modes: Mirrored, Matrix Mode, and Matrix Mode with static route. Each of these modes will be covered in the following section. Switching modes can be configured using the built-in web server.

### Mirrored Mode

This is the default mode. Once video is detected on any of the input ports, the output signal will be displayed on *both* the **HDMI OUT** and **HDBaseT OUT** ports. The active input will be identified on the front panel HDMI LED input indicators. An active input will be displayed as a solid green LED. **Auto-Switching** (page 22) can also be enabled, if desired, to allow the AT-OME-MS42 to automatically switch between inputs, if a new source is connected or an existing source is disconnected.

1. Login to the web server. Refer to [Introduction to the Web Server](#) (page 51) for more information.
2. Click **A/V Settings** in the menu bar.
3. Click the **Switching Mode** drop-down list and select **Mirrored**.



4. Mirrored configuration is complete.

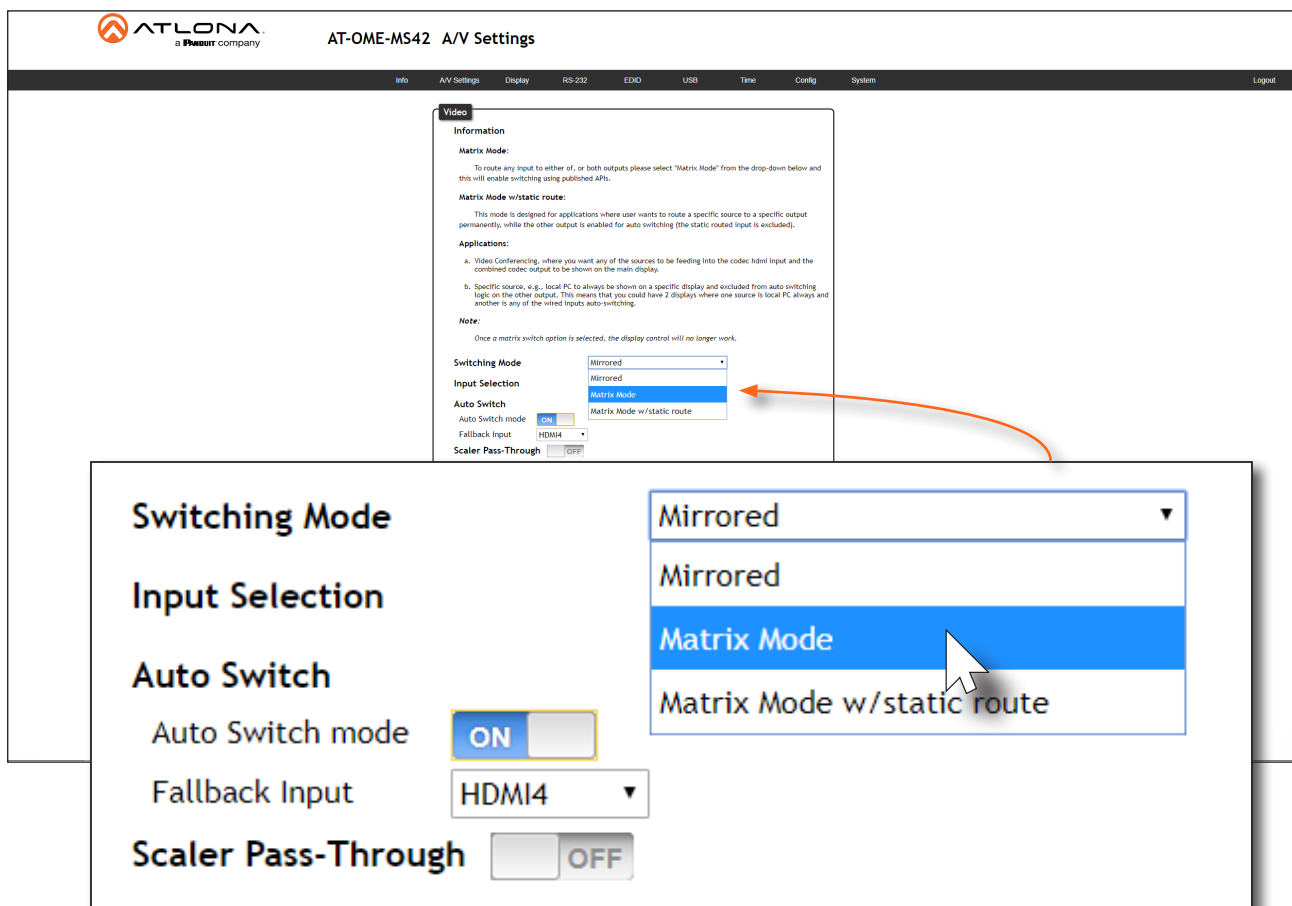
### Matrix Mode

This mode allows the AT-OME-MS42 to independently switch between any input to any output. Auto-switching is disabled in Matrix Mode.

1. Login to the web server. Refer to [Introduction to the Web Server \(page 51\)](#) for more information.
2. Click **A/V Settings** in the menu bar.
3. Click the **Switching Mode** drop-down list and select **Matrix Mode**.



**IMPORTANT:** When the AT-OME-MS42 is set to Matrix Mode, both auto-switching and display control will be disabled.



The screenshot shows the AT-OME-MS42 A/V Settings web interface. The 'Switching Mode' dropdown menu is open, showing options: Mirrored, Mirrored, Matrix Mode (highlighted), and Matrix Mode w/static route. An orange arrow points from the 'Matrix Mode' option in the dropdown to the 'Matrix Mode' option in the 'Switching Mode' dropdown list.

4. The following message will appear near the top of the screen. Click the **OK** button to dismiss the message.

10.20.20.70 says

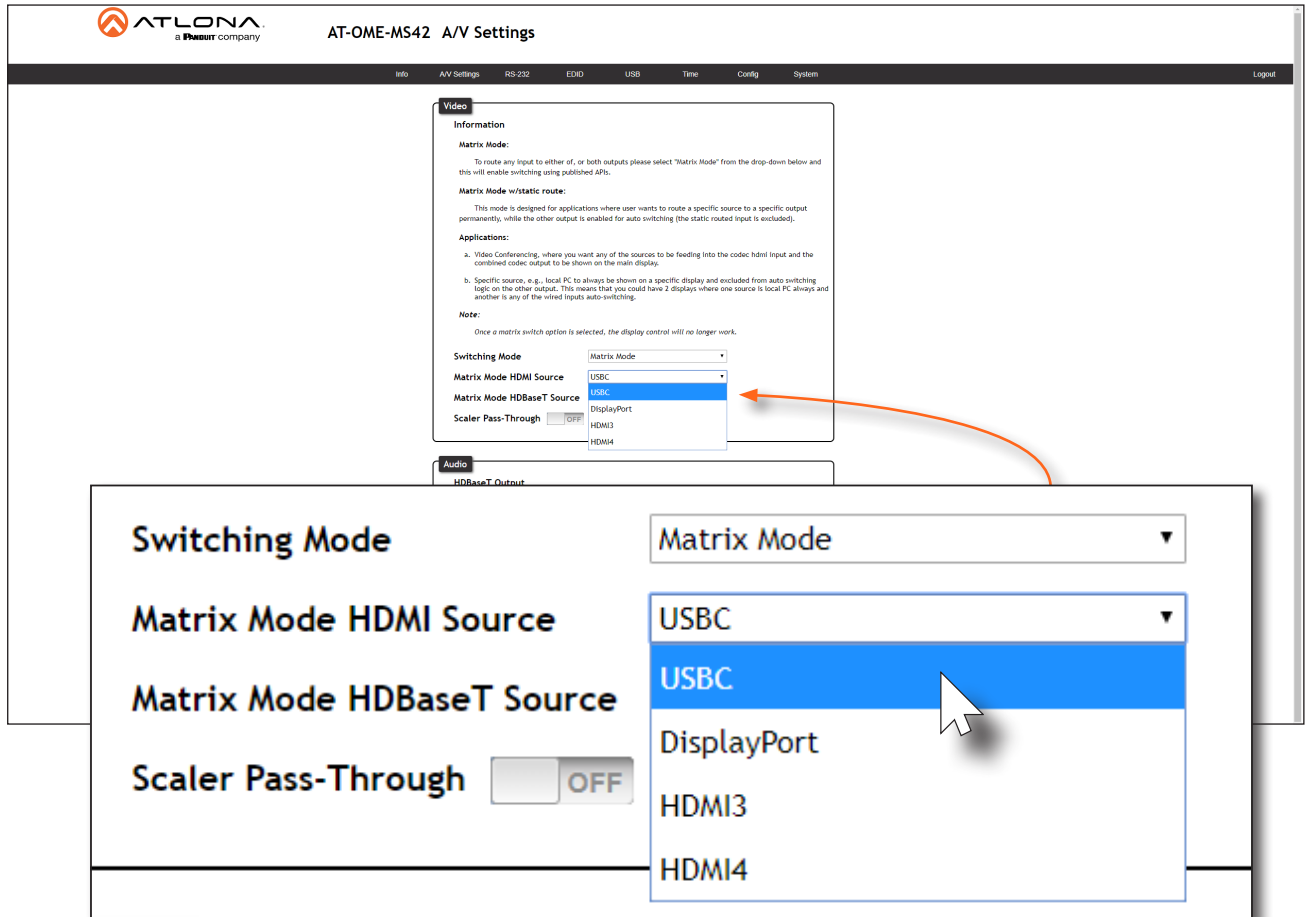
#### Warning!

Display control disabled due to switch mode - Matrix Mode.

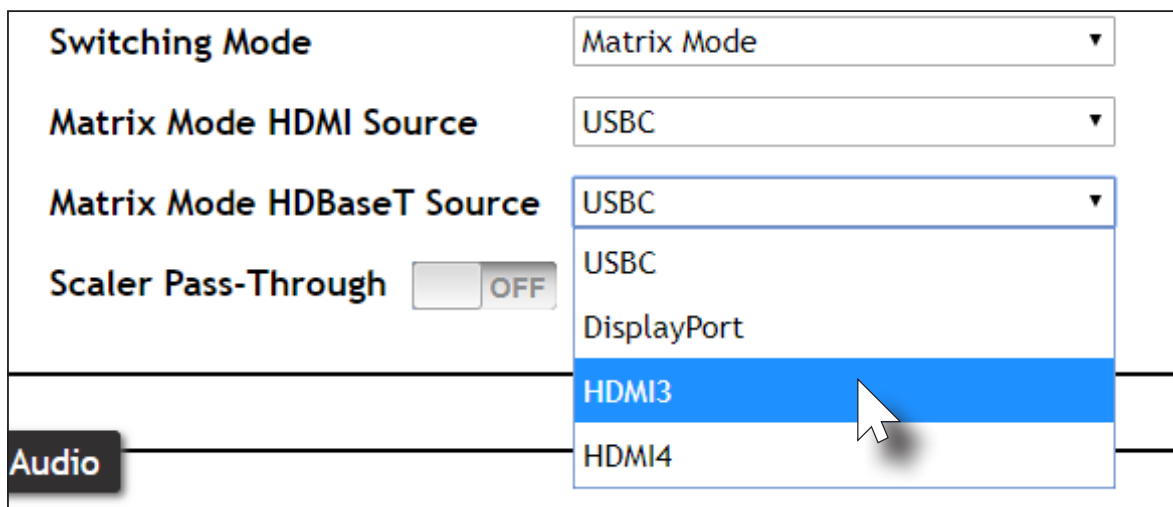
Please change display mode to Mirrored or Static Matrix to re-enable display control.

OK

- Click the **Matrix Mode HDMI Source** drop-down list and select the input to be routed to the **HDMI OUT** port.



- Click the **Matrix Mode HDBaseT Source** drop-down list and select the input to be routed to the **HDBaseT OUT** port.
- Matrix Mode configuration is complete.

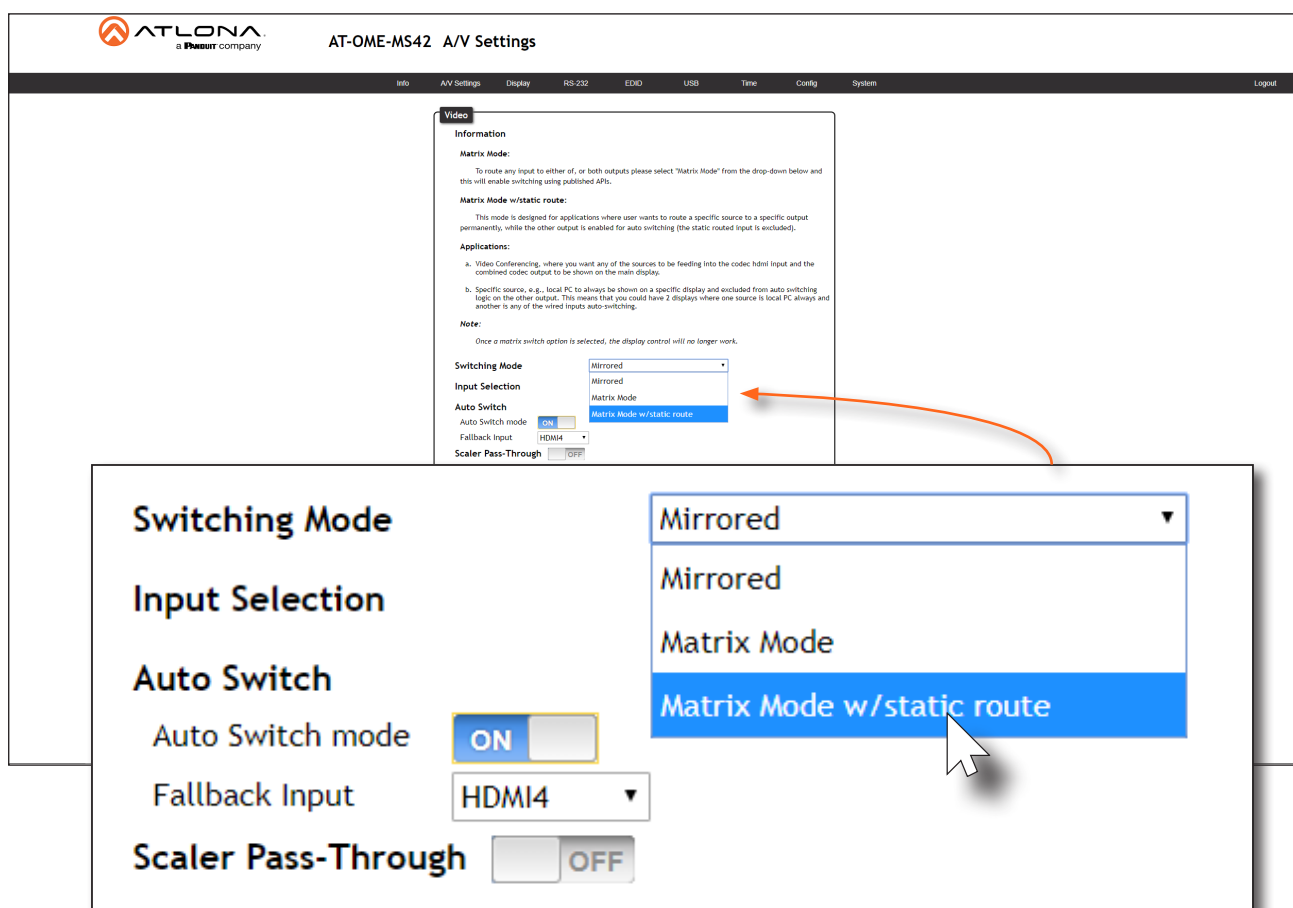


**NOTE:** If the input (source) for the HDBaseT output is not selected, then the input that was selected for the **Matrix Mode HDMI Source** will be also output on the **HDBaseT OUT** port.

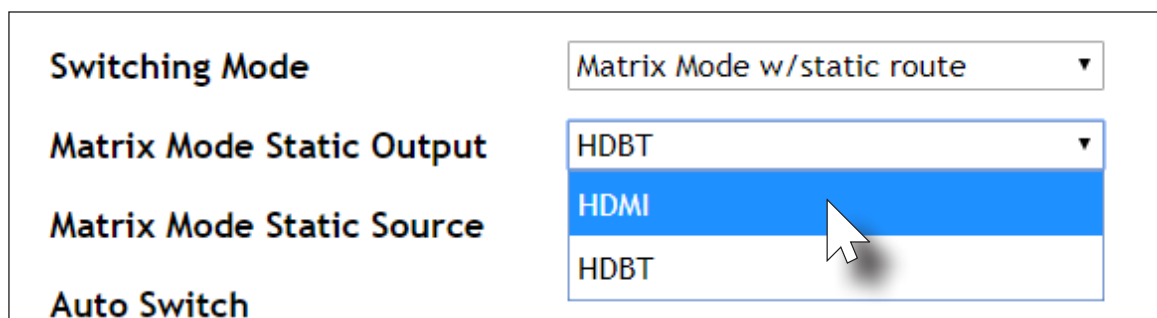
### Matrix Mode w/ Static Route

This mode is desirable when integrating the AT-OME-MS42 with a video conference system. In this mode, both static input and output routing are specified. **Auto-Switching** (page 22) must be enabled. However, the specified static input will be removed from the auto-switching pool. For example, if the **HDMI IN 3** port is specified as a static input, then auto-switching will “skip” this port when auto-switching.

1. Login to the web server. Refer to [Introduction to the Web Server](#) (page 51).
2. Click **A/V Settings** in the menu bar.
3. Click the **Switching Mode** drop-down list and select **Matrix Mode w/ static route**.



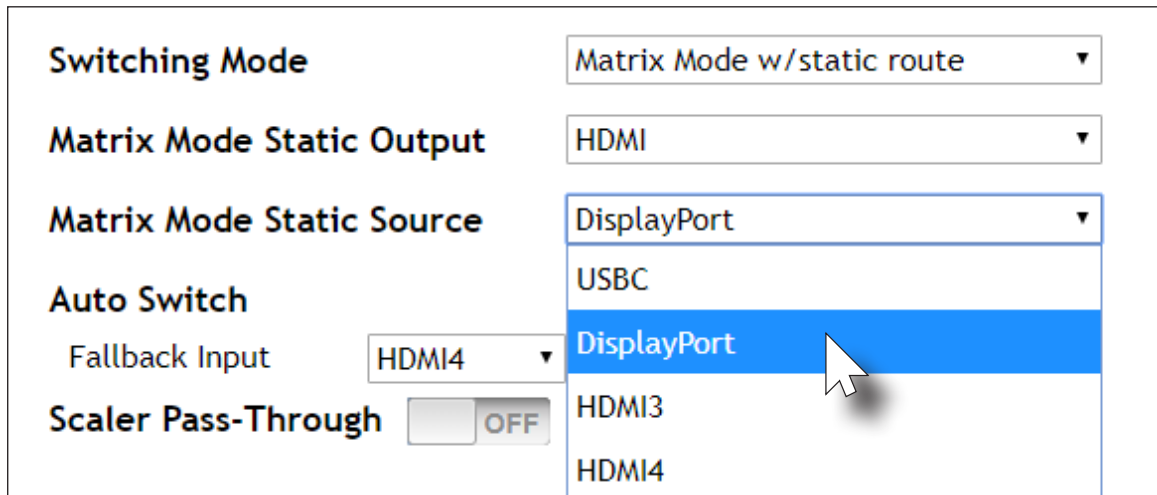
4. Click the **Matrix Mode Static Output** drop-down list and select the output that will be “static”. This is the output that will not change.





- Click the **Matrix Mode Static Source** drop-down to select the source that will be assigned as a “static” source. This source will be routed to the output selected in the **Matrix Mode Static Output** drop-down list.

In this example, the source connected to the DisplayPort input (**DP IN**), will be output to the **HDMI OUT** port. The **DP IN** port is the static source and the **HDMI OUT** port is the static output. This particular configuration will allow the **USB-C** and both **HDMI IN** ports to be routed to the HDBaseT OUT port, as needed.



Switching Mode: Matrix Mode w/static route

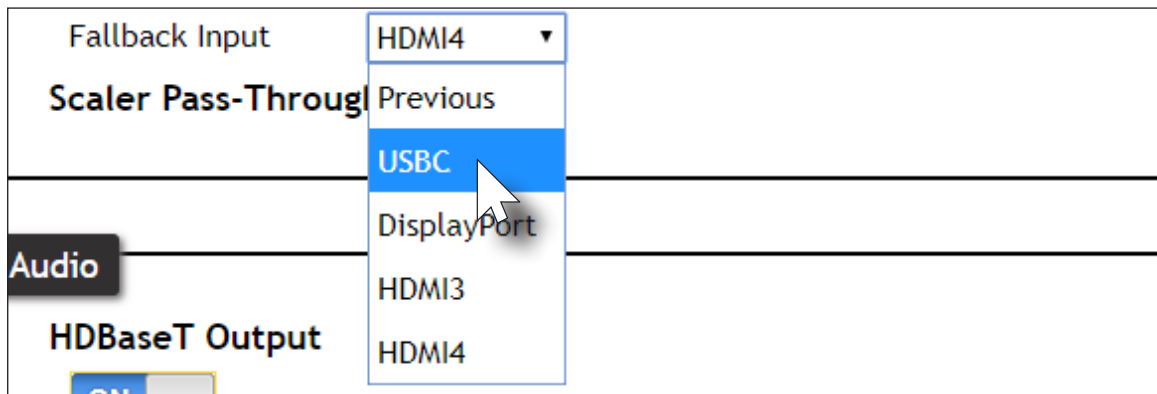
Matrix Mode Static Output: HDMI

Matrix Mode Static Source: DisplayPort (selected)

Auto Switch: HDMI4

Scaler Pass-Through: OFF

- Click the **Fallback Input** drop-down list and select the desired fallback port, if desired. The default setting is **Previous**.



Fallback Input: USBC (selected)

Scaler Pass-Through: Previous

Audio: ON

HDBaseT Output: ON

- Matrix with static route configuration is complete.

### Auto-Switching

The AT-OME-MS42 provides auto-switching capability, which is enabled by default. This feature will automatically switch the input to the most recently-connected source. If a source is disconnected, then the input will automatically be switched to the previously-connected source. If no sources are found, the AT-OME-MS42 will initiate a five-minute countdown timer. If no activity takes place within this time interval, the unit will automatically power-off.



**IMPORTANT:** The auto-switching feature is only available when the **Switching Mode** is set to **Mirrored** or **Matrix mode with static route**. Refer to **Switching Modes (page 17)** for more information.

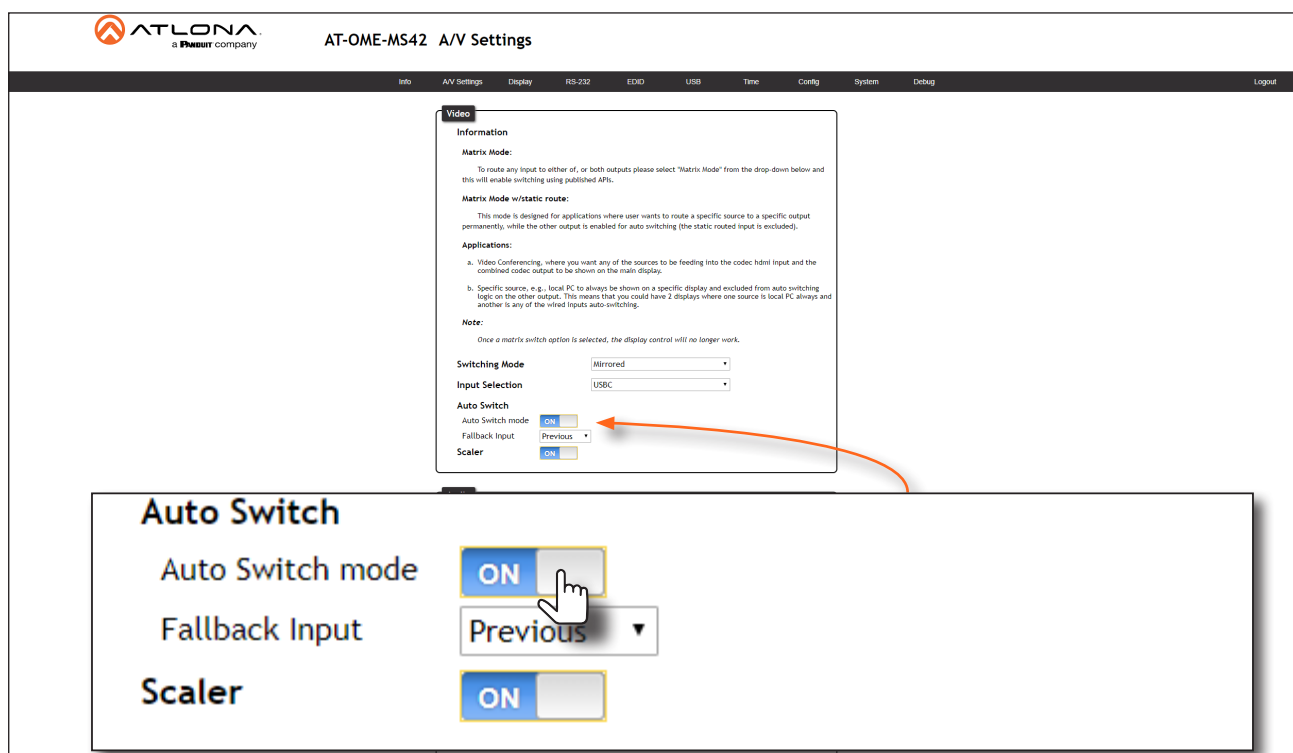
### Enabling / Disabling Auto Switching

By default, auto-switching is enabled on the AT-OME-MS42, allowing the unit to automatically switch between inputs when sources are connected or disconnected. Auto-switching is enabled when set to **Matrix mode with static route** and cannot be disabled.

1. Login to the web server. Refer to **Introduction to the Web Server (page 51)**.
2. Click **A/V Settings** in the menu bar.
3. Verify that the **Switching Mode** is set to **Mirrored**.
4. Click the **Auto Switch mode** toggle switch to the **ON** position to enable auto-switching. This is the default setting. If auto-switching is not desired, click this toggle switch to the **OFF** position. Note that if the previously active input is no longer available that it will fallback to any available input.



**NOTE:** The AT-OME-MS42 retains the currently selected input, even after the unit is powered-off then powered-on. The system should re-evaluate the auto switching logic after power on and select an input.



**Auto Switch**

Auto Switch mode **ON**

Fallback Input Previous

Scaler **ON**

5. Auto switching configuration is complete.

### Setting the Fallback Input

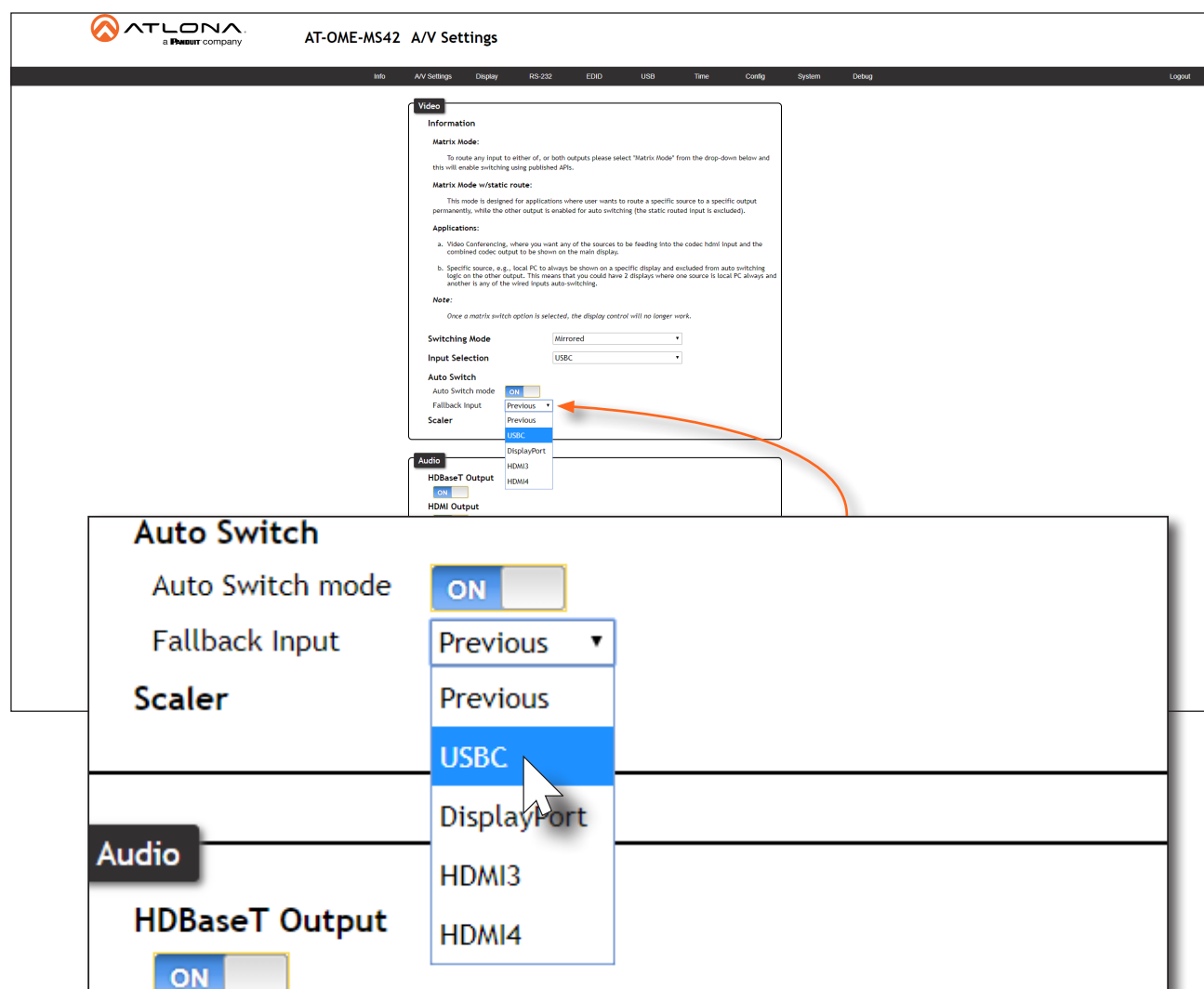
The default fallback port is set to **Previous**. This means if multiple sources are connected, then disconnected, the AT-OME-MS42 will automatically return to last-connected port. If desired, the fallback port can be set to another input.



**IMPORTANT:** The fallback feature is only available when the **Switching Mode** is set to either **Mirrored** or **Matrix Mode w/ static route**. Refer to [Switching Modes \(page 17\)](#) for more information.

1. Login to the web server. Refer to [Introduction to the Web Server \(page 51\)](#).
2. Click **A/V Settings** in the menu bar.
3. Verify that the **Switching Mode** is set to either **Mirrored** or **Matrix Mode w/ static route**.
4. Click the **Fallback Input** drop-down list to select the desired fallback input. The default fallback input is **Previous**.

If **Previous** is selected, then the switcher will return to the last-connected input. If no input is found, then it will attempt to switch to any available input.



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AT-OME-MS42 A/V Settings

Info A/V Settings Display RS-232 EDID USB Time Config System Debug Logout

**Video**

**Information**

**Matrix Mode:**

To route any input to either of, or both outputs please select "Matrix Mode" from the drop-down below and this will enable switching using published APIs.

**Matrix Mode w/static route:**

This mode is designed for applications where user wants to route a specific source to a specific output permanently, while the other output is enabled for auto switching (the static routed input is excluded).

**Applications:**

a. Video Conferencing, where you want any of the sources to be feeding into the codec hdmi input and the combined codec output to be shown on the main display.

b. Specific source, e.g., local PC to always be shown on a specific display and excluded from auto switching logic on the other output. This means that you could have 2 displays where one source is local PC always and another is any of the wired inputs auto-switching.

**Note:**

Once a matrix switch option is selected, the display control will no longer work.

**Switching Mode**

**Input Selection**

**Auto Switch**

Auto Switch mode ☒

Fallback Input

**Scaler**

**Audio**

**HDBaseT Output**

☒

**HDMI Output**

**Auto Switch**

Auto Switch mode ☒

Fallback Input

**Scaler**

**Audio**

**HDBaseT Output**

☒

5. Fallback port configuration is complete.

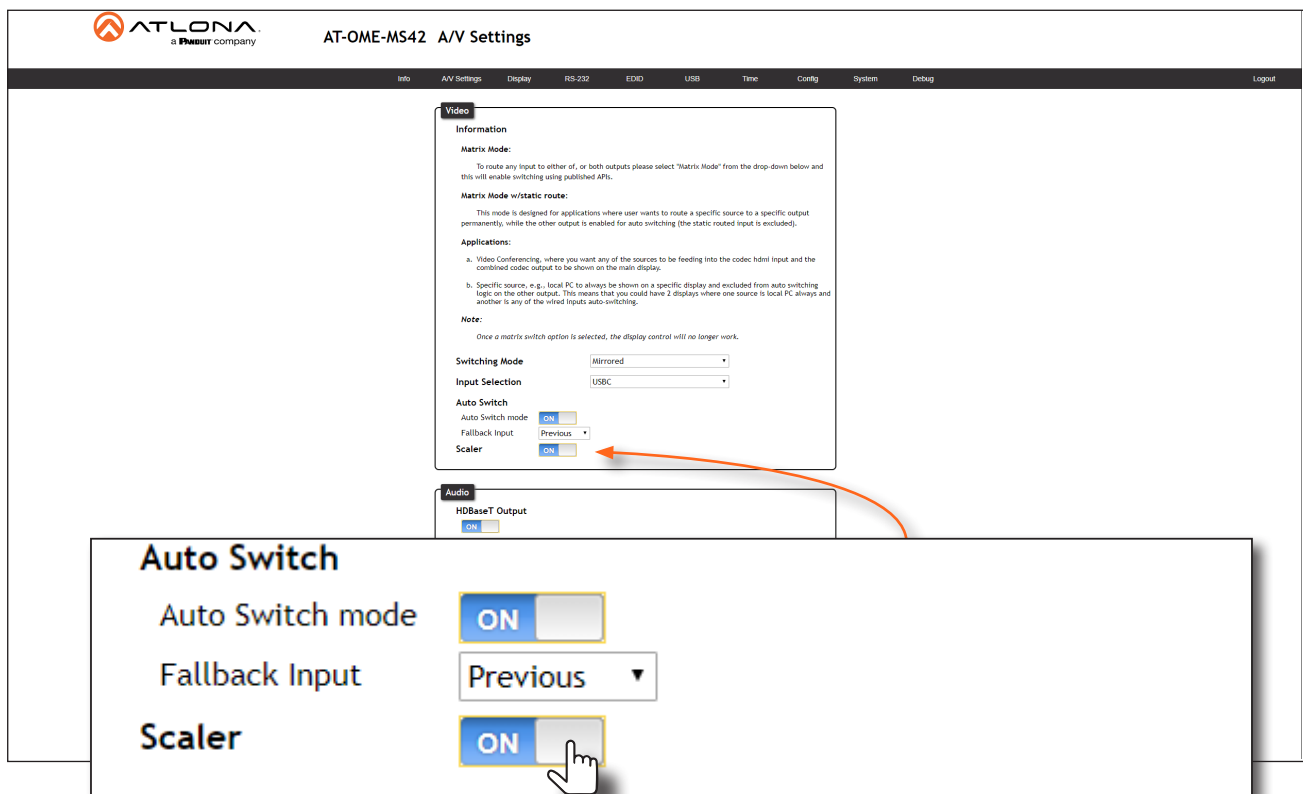
## Scaler Pass-Through

Click this toggle switch to enable or disable the scaler pass-through feature. When set to the **ON** position, 4K content will be down-scaled to 1080p. When set to the **OFF** position, the output resolution / timing will be the same as the input source. The default setting is **ON**.



**IMPORTANT:** The scaler will only downscale the image resolution and does not support frame rate scaling/conversion such as 60 Hz to 30 Hz. The frame rate of the source must be supported by the display device.

1. Login to the web server. Refer to [Introduction to the Web Server \(page 51\)](#).
2. Click **A/V Settings** in the menu bar.
3. Click the **Scaler** toggle switch.



4. The following message box will be displayed. Click **OK** to dismiss the message box.
5. The **Scaler** toggle switch will be set to the **ON** state.
6. Click the toggle switch again, to return the **Scaler** toggle to the **ON** (default) position.

10.20.20.70 says

Frame rate of the source must be accepted by the scaled display. The scaler will only downscale resolution and not framerate. If you experience black screen this may be due to the frame rate not being supported

OK

### Notes on Scaling

The following section provides important information about how the AT-OME-MS42 processes 4K (UHD) video signals.

- The HDMI **OUTPUT** port supports up to 4K @ 60 Hz, 12-bit, with HDR.
- 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

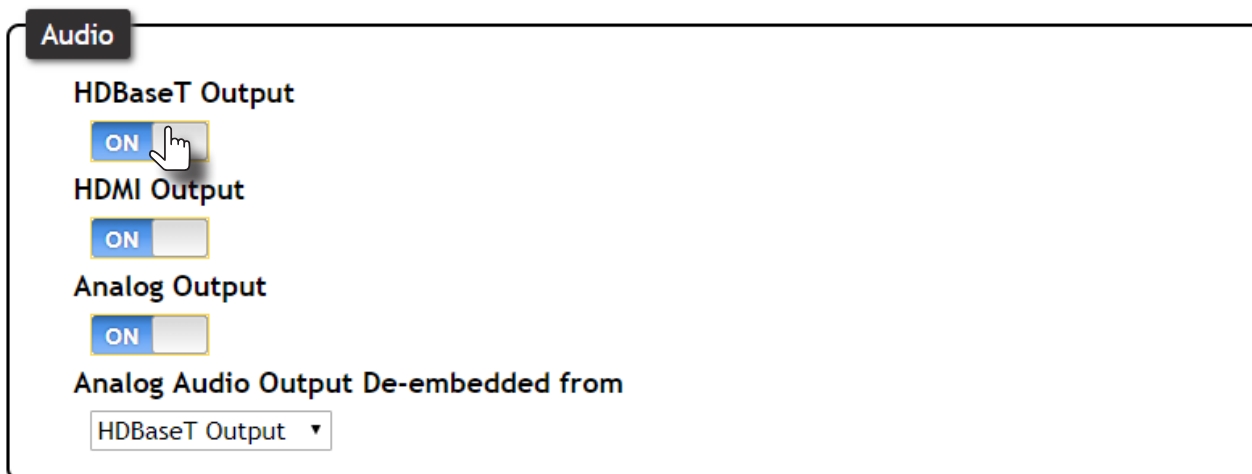
- HDR / Dolby Vision / HLG formats cannot be down-scaled to 1080p.
- The internal scaler will be bypassed if the connected display supports the resolution and timing information from the source device.
- The HDBaseT **OUTPUT** port supports up to 4K @ 60 Hz. However, HDR is only supported at lower resolutions.
- 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.

## Audio Management

The AT-OME-MS42 provides control over audio muting on **HDMI OUT**, **HDBaseT OUT**, and **ANALOG OUT** outputs.

### Audio Output Muting

1. Login to the web server. Refer to [Introduction to the Web Server \(page 51\)](#).
2. Click **A/V Settings** in the menu bar.
3. Locate the **Audio** section.
4. Click the toggle switch for the desired output. For example, 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 External Analog Audio

Digital audio can be de-embedded from the **HDMI OUT** or **HDBaseT OUT** ports and output to the **AUDIO OUT** port. De-embedded audio is limited to analog two-channel audio. Multichannel audio is downmixed to two-channel Linear PCM.

1. Login to the web server. Refer to [Introduction to the Web Server \(page 51\)](#).
2. Click **A/V Settings** in the menu bar.
3. Locate the **Audio** section.
4. Click the **Analog Audio Output De-embedded from** drop-down list to select the desired output.

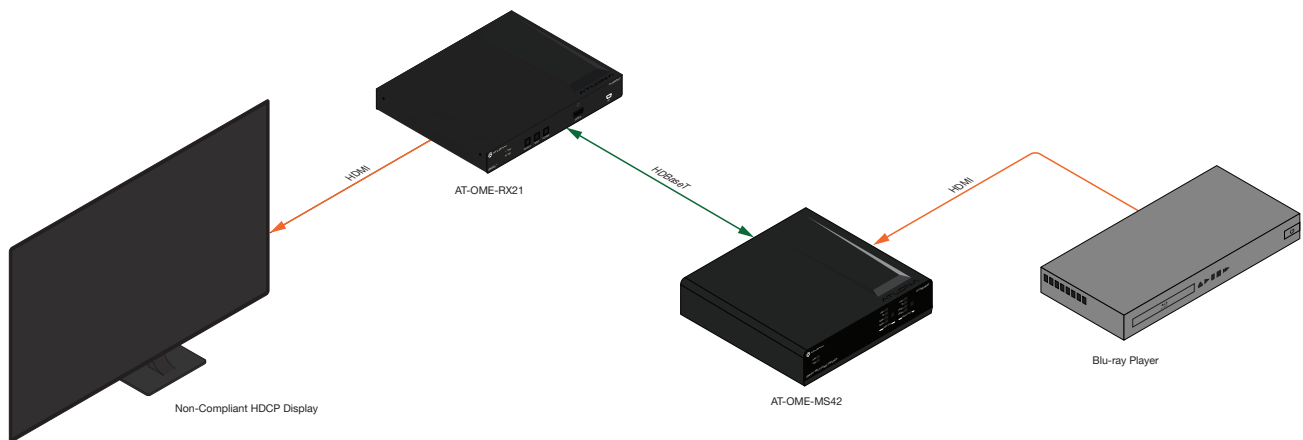
Settings	Description
HDBaseT Output	De-embeds audio from the HDBaseT output
HDMI Output	De-embeds audio from the HDMI output

### 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-MS42. A non-compliant display is connected to a receiver, which is connected to the AT-OME-RX21 using HDBaseT.



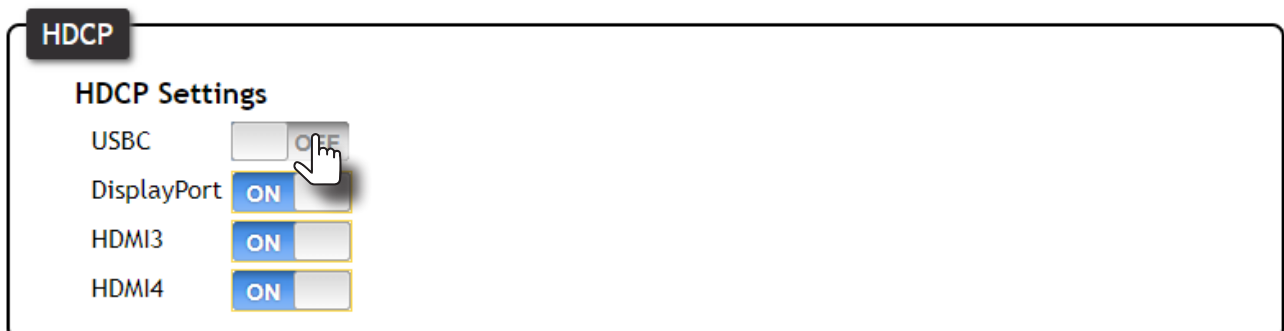
**IMPORTANT:** Not all source devices are capable of transmitting non-HDCP content. For example, Sony PlayStation® gaming consoles and Mac® computers always transmit HDCP-encrypted content.



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. Login to the web server. Refer to [Introduction to the Web Server \(page 51\)](#).
2. Click **A/V Settings** in the menu bar.
3. Locate the **HDCP** section.
4. Click the toggle switch next to the desired input. In this example, clicking the **USBC** toggle switch and setting it to the **OFF** position 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, with the following message:

#### HDCP INCOMPATIBILITY



## EDID Management

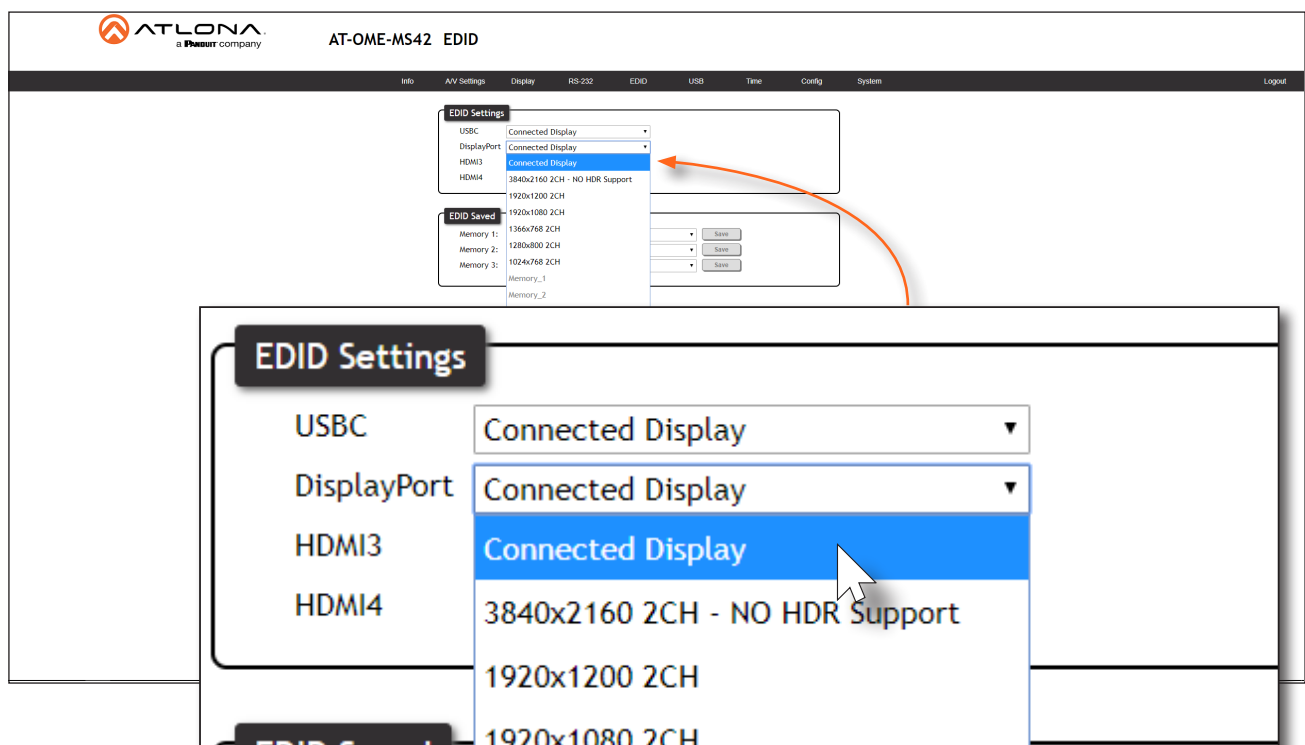
Before a source can send picture and sound to a display device, the source reads the EDID (Extended Display Identification Data) stored in the display. The EDID contains information about what type of video and audio formats are supported by the display. The AT-OME-MS42 can use either the downstream EDID (from the display/sink) or use a built-in EDID preset. EDID data can also be stored in any of three EDID presets. This section will cover each of the following topics:

- Using the Downstream EDID
- EDID Presets
- Storing EDID Data

### Using the Downstream EDID

By default, the AT-OME-MS42 will read the EDID from the display device. The term “downstream” is used to describe any device that receives a signal from another device. For example, if a Blu-ray player is connected to a display, the display is said to be “downstream” of the Blu-ray player.

1. Login to the web server. Refer to [Introduction to the Web Server \(page 51\)](#).
2. Click **EDID** in the menu bar.
3. Locate the **EDID Settings** section.
4. Click the drop-down list, next to the output that is connected to the display device, and select **Connected Display**. For example, if the **DP IN** port is connected to a display, click the **DisplayPort** drop-down list.



5. Downstream EDID configuration is complete.



### EDID Presets

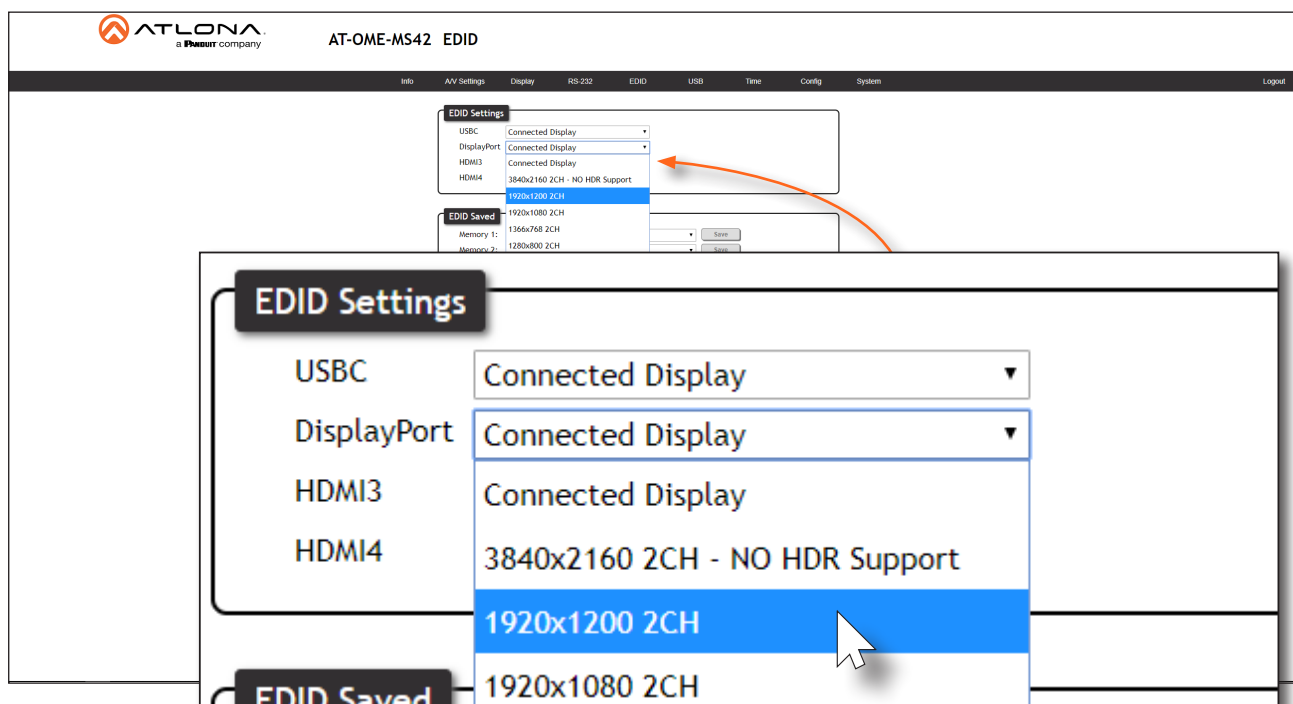
The AT-OME-MS42 provides the option of selecting a preset EDID. The following presets are available. For information on **Memory\_1**, **Memory\_2**, and **Memory\_3** settings, refer to [Storing EDID Data \(page 30\)](#).



**IMPORTANT:** If problems are encountered when using an EDID preset, try using the default setting of **Connected Display**.

EDID Preset	
Connected Display	The default setting. Refer to the previous page details.
3840x2160 2CH - NO HDR Support	3840 x 2160 @ 60 Hz with two-channel audio support.
1920x1200 2CH	1920 x 1200 @ 60 Hz with two-channel audio support.
1920x1080 2CH	1920 x 1080 @ 60 Hz with two-channel audio support.
1366x768 2CH	1366 x 768 @ 60 Hz with two-channel audio support.
1280x800 2CH	1280 x 800 @ 60 Hz with two-channel audio support.
1024x768 2CH	1024 x 768 @ 60 Hz with two-channel audio support.
Memory_1	EDID memory storage 1.
Memory_2	EDID memory storage 2.
Memory_3	EDID memory storage 3.

1. Login to the web server. Refer to [Introduction to the Web Server \(page 51\)](#).
2. Click **EDID** in the menu bar.
3. Locate the **EDID Settings** section.
4. Click the drop-down list, next to the port that is connected to the display device, and select the desired EDID preset. For example, if the **DP IN** port is connected to a display, click the **DisplayPort** drop-down list.

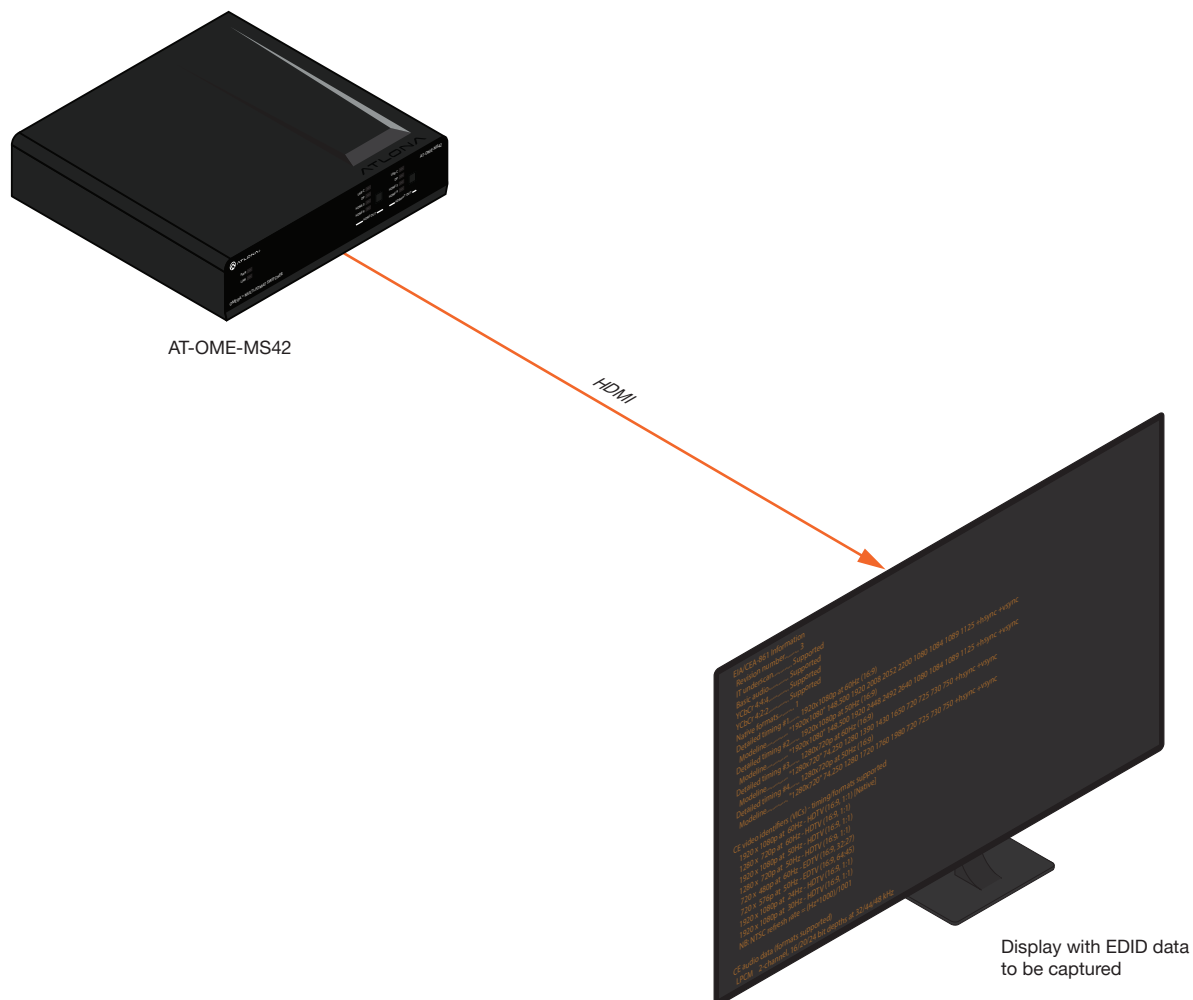


5. EDID preset selection is complete.

## Storing EDID Data

The AT-OME-MS42 provide three memory locations which can be used to store EDID data. Any downstream EDID can be captured and stored in these locations. Each memory location is non-volatile and captured EDID data is stored after power is disconnected from the unit.

1. Connect an HDMI cable from the **HDMI OUT** port on the AT-OME-MS42 to the HDMI input on the display, containing the EDID to be stored.
2. Login to the web server. Refer to [Introduction to the Web Server \(page 51\)](#).



3. Click **EDID** in the menu bar.
4. Locate the **EDID Saved** section.
5. Click the drop-down list, next to the memory location to be used, and select the output which will be used to fetch the EDID. Refer to the next page for more information.

In this example, since the display is connected to the **HDMI OUT** port on the AT-OME-MS42, the **HDMI Output** option is selected. Here, the EDID will be stored in **Memory 1**.

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AT-OME-MS42 EDID

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

**EDID Settings**

USB: Connected Display  
DisplayPort: Connected Display  
HDMI3: Connected Display  
HDMI4: Connected Display

**EDID Saved**

Memory 1: save from Select Save  
Memory 2: save from Select Save  
Memory 3: save from HDMI Output Save  
HDBaseT Output

**EDID Saved**

Memory 1: save from Select Save  
Memory 2: save from Select Save  
Memory 3: save from HDMI Output Save  
HDBaseT Output

- Click the **Save** button next to the drop-down list for the memory location.

**EDID Saved**

Memory 1: save from HDMI Output Save  
Memory 2: save from Select Save  
Memory 3: save from Select Save

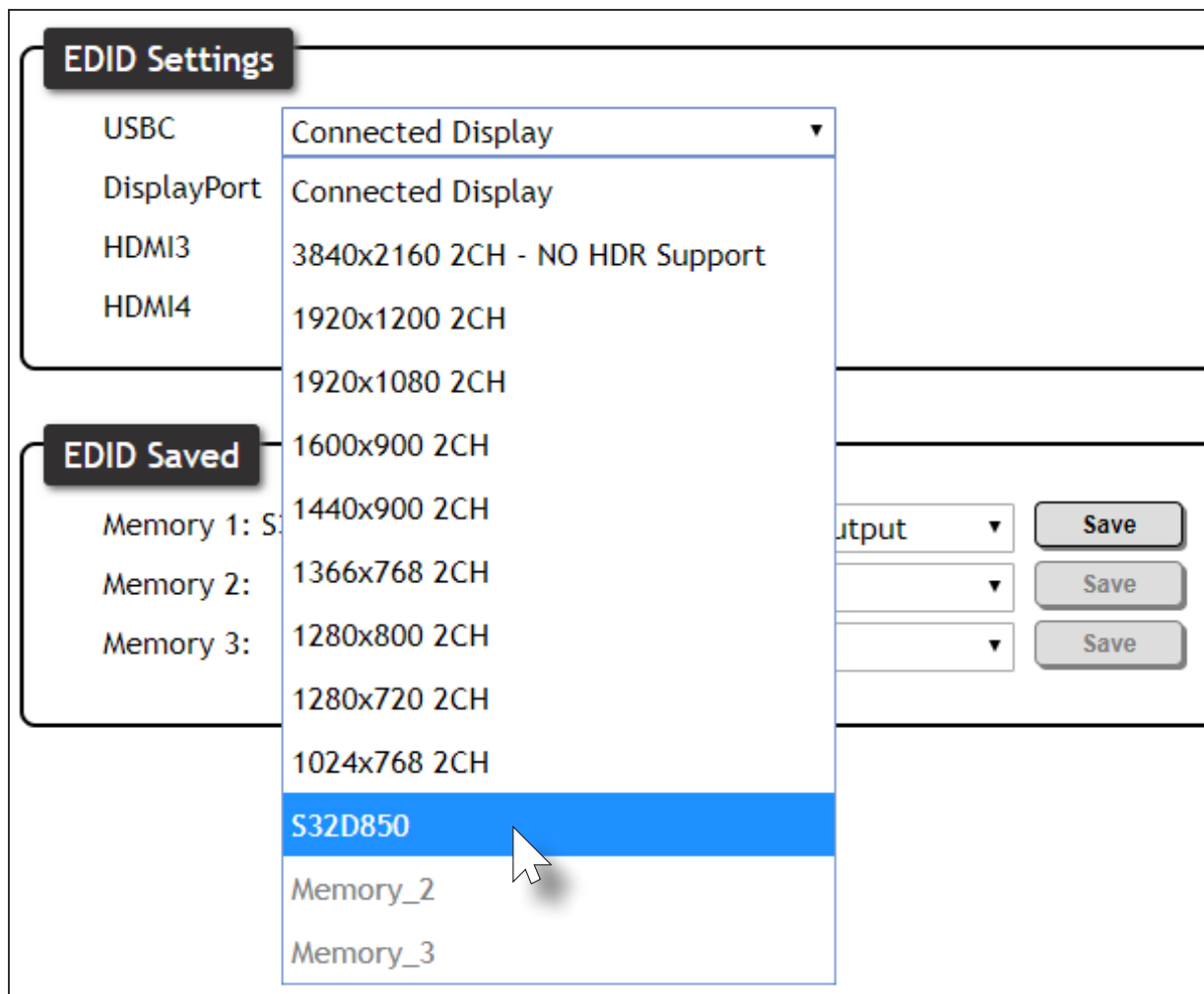
- The saved EDID will appear next to the memory location, as shown below.

**EDID Saved**

Memory 1: S32D850 save from HDMI Output Save  
Memory 2: save from Select Save  
Memory 3: save from Select Save

Saved EDID

8. Click any of the input drop-down list boxes. Note that the stored EDID appears as an available EDID preset for each available input on the AT-OME-MS42.



EDID Settings	
USBC	Connected Display
DisplayPort	Connected Display
HDMI3	3840x2160 2CH - NO HDR Support
HDMI4	1920x1200 2CH
	1920x1080 2CH
	1600x900 2CH
	1440x900 2CH
	1366x768 2CH
	1280x800 2CH
	1280x720 2CH
	1024x768 2CH
	<b>S32D850</b>
	Memory_2
	Memory_3

EDID Saved	
Memory 1: S	
Memory 2:	
Memory 3:	

Output	Save
	Save
	Save

9. The EDID storing procedure is completed.



**NOTE:** Once an EDID is written to a memory location, it can be overwritten with a different EDID, when desired. To overwrite an EDID with a different EDID, repeat steps 5 through 7, above.

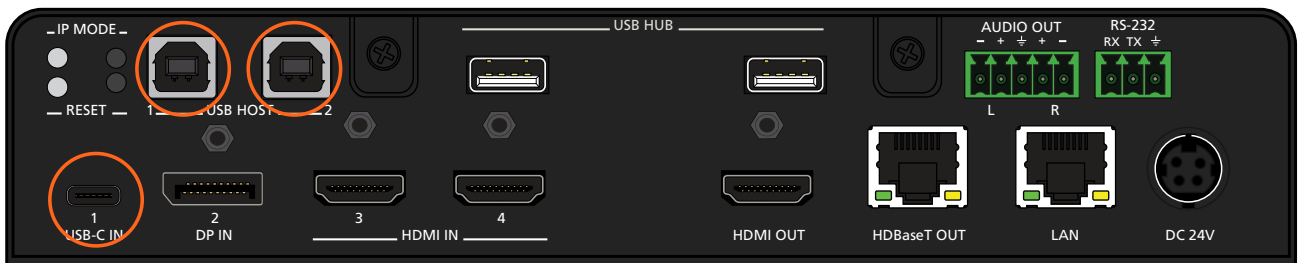
### USB Modes

The AT-OME-MS42 provides three different USB modes: **Follow USB**, **Manual**, and **Follow Video**. Each mode provides different method of controlling USB, based on how the system is connected. All three modes will be covered in this section.

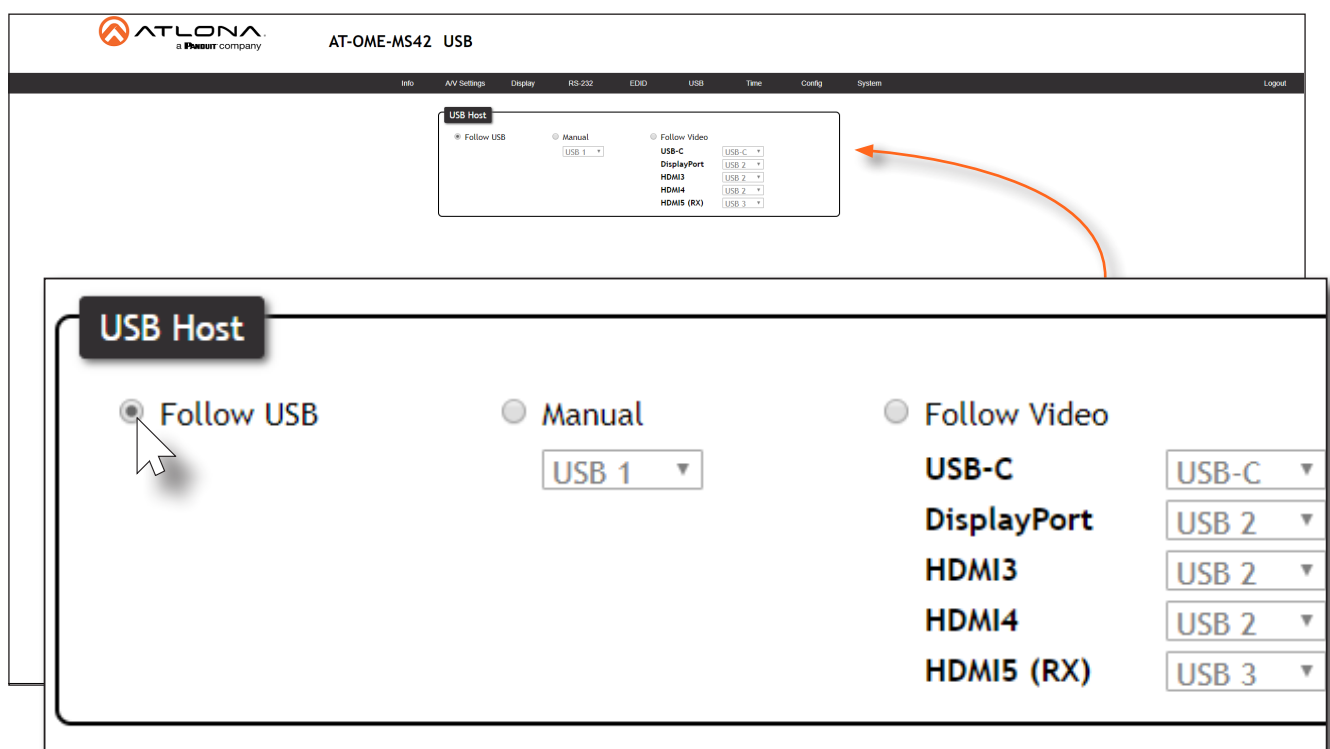
#### Follow USB

This is the default mode and functions similar to auto-switching for video. In this mode, the AT-OME-MS42 will detect which USB ports are connected to a host device. If both USB host ports are connected to host devices, then the AT-OME-MS42 will set the last-connected USB host device as the “active” USB host. Use the procedure below to enable Follow USB mode.

1. Connect the host computers to the USB host ports, as desired. Note that it is not required that both USB host ports be connected to host devices.



2. Login to the web server. Refer to [Introduction to the Web Server \(page 51\)](#).
3. Click **USB** in the menu bar.
4. The **Follow USB** radio button should already be enabled. If not, click this radio button to enable **Follow Video** mode.



Once set to **Follow USB** mode, the AT-OME-MS42 will exhibit the following behavior:

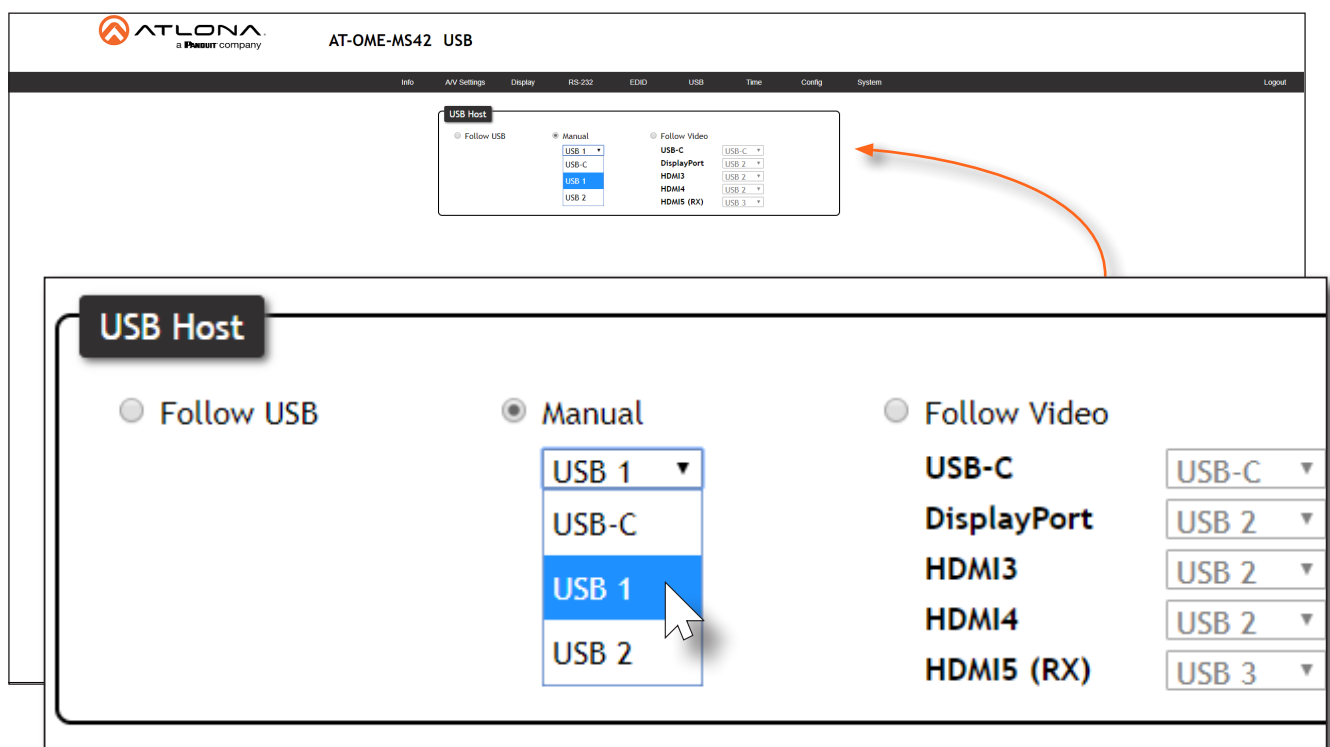
- If only one USB host port is connected, then the AT-OME-MS42 will use the USB host device connected to that port.
- If an another USB host device is connected to the vacant USB host port, then the AT-OME-MS42 will automatically switch to that USB host device.
- If **both USB 1** and **USB 2** host ports are connected, then the AT-OME-MS42 will switch to the USB port that was connected *last*.
- If **both USB 1** and **USB 2** host ports are connected, and one USB host port is disconnected, then the AT-OME-MS42 will automatically switch to the opposite USB host port.

5. Follow USB configuration is complete.

### Manual

This mode provides manual selection of the USB host port to be used.

1. Connect the host computers to the USB host ports, as desired. Note that it is not required that both USB host ports be connected to host devices.
2. Login to the web server. Refer to [Introduction to the Web Server \(page 51\)](#).
3. Click **USB** in the menu bar.
4. Click the **Manual** radio button.
5. Click the drop-down list, under the Manual radio button, to select the desired USB port.
6. Manual USB configuration is complete.



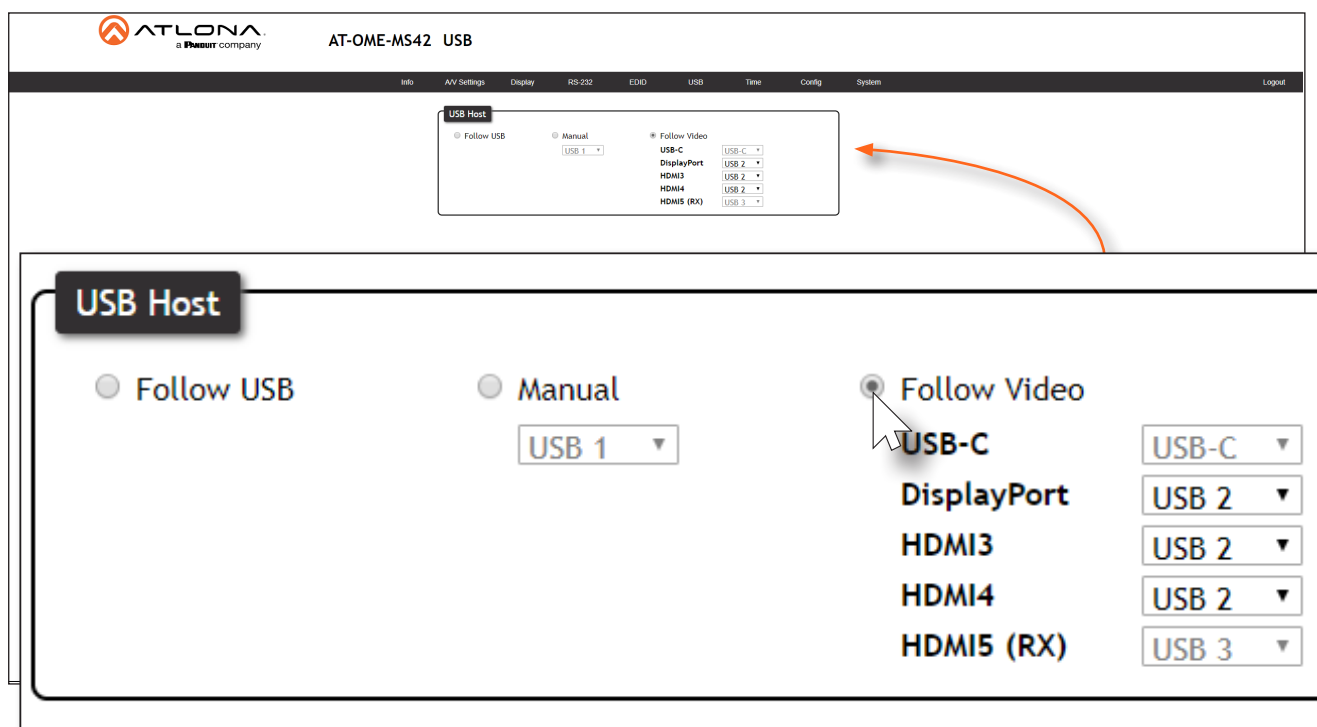
### Follow Video

In this mode, each video input can be assigned to either **USB 1** or **USB 2** host ports. This mode locks the USB host device to the desired video input. Each host device will have access to the same USB devices, when video switching occurs.

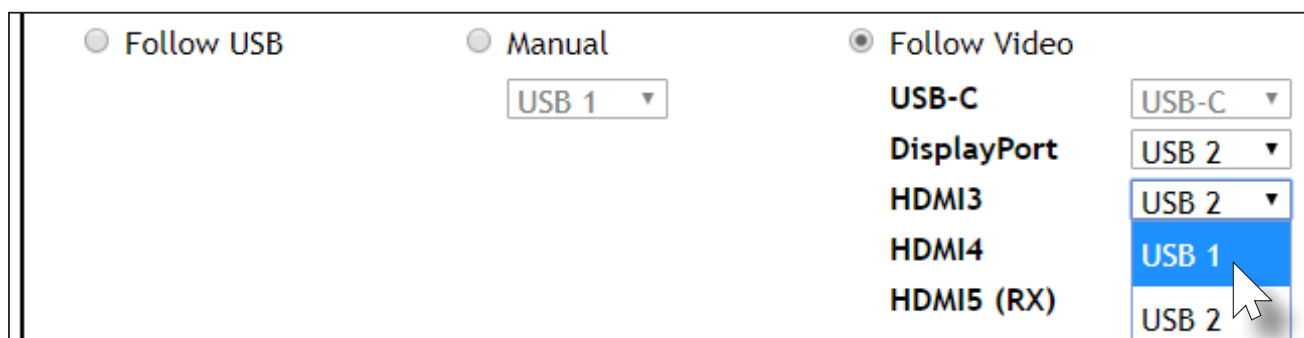
1. Connect the host computers to the USB host ports. Note that it is not required that both USB host ports be connected to host devices.
2. Login to the web server. Refer to [Introduction to the Web Server \(page 51\)](#).
3. Click **USB** in the menu bar.
4. Click the **Follow Video** radio button. The factory-default **USB Host** assignments for Input 1 through Input 4 are shown in the illustration below.



**NOTE:** Refer to the HDMI5 (RX) port, in the dialog box, below. Although the AT-OME-MS42 has four physical video inputs, a receiver with an HDMI input is considered a fifth input. Also note the presence of a third USB port.



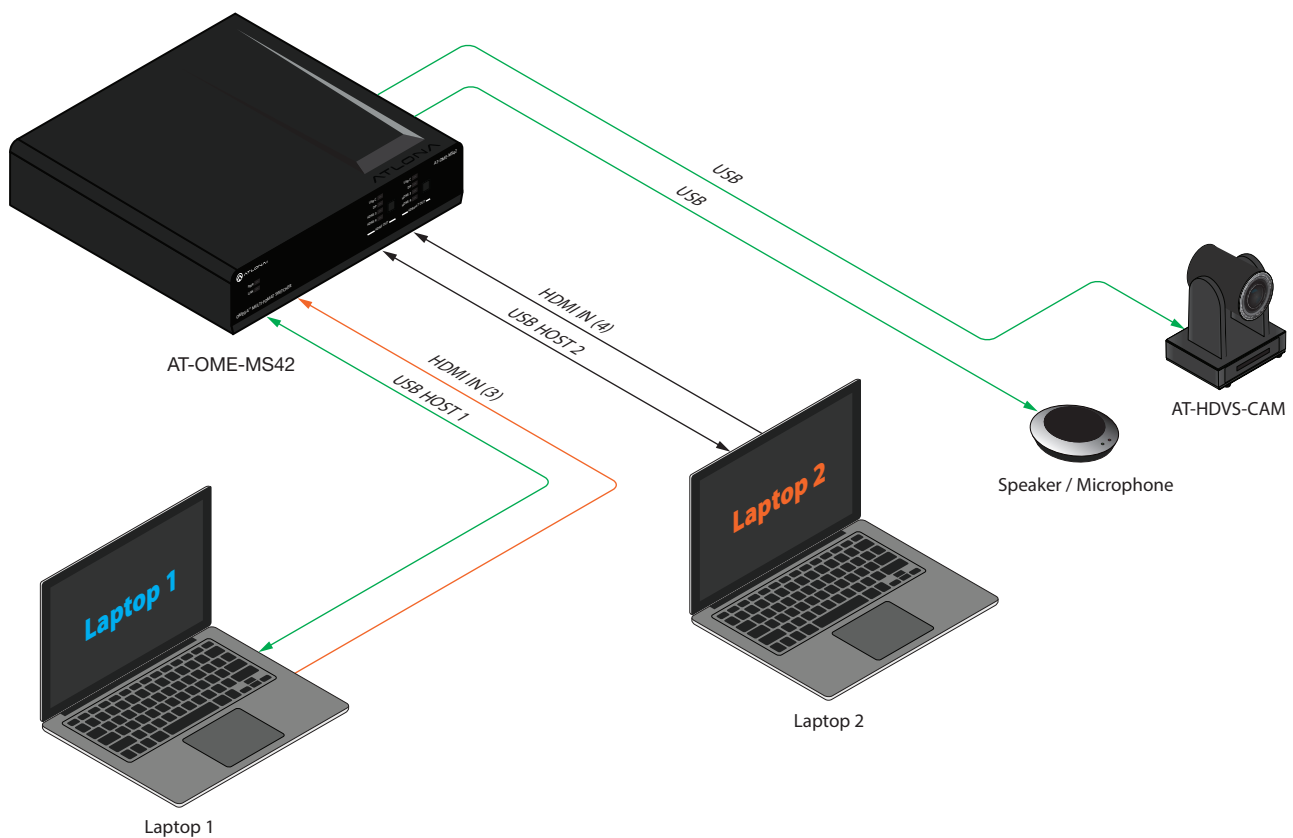
5. Click the drop-down list, next to the input, to assign the desired USB host port to the input. In the example below, HDMI IN (3) is being assigned to USB 1. HDMI IN (4) will be assigned to USB 2.



6. Press the **HDMI OUT** input selection button on the front panel and select **HDMI 3**.



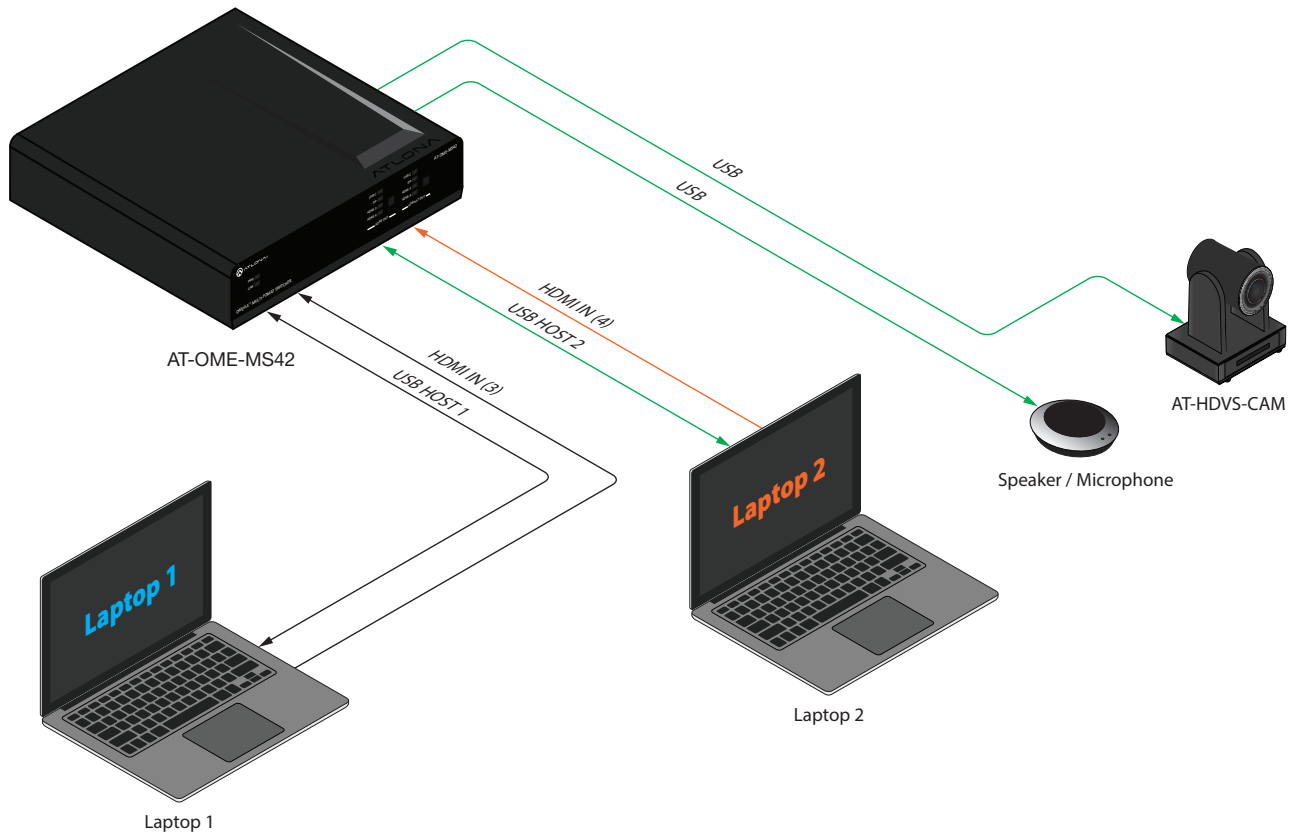
Figure 1.1 - HDMI 3 is selected as the active video input and Laptop 1 has access to the speaker/mic and the AT-HDVS-CAM. Black signal lines indicate that the AT-OME-MS42 is not switched to that input.





7. Press the **HDMI OUT** input selection button on the front panel and select **HDMI 4**.

*Figure 1.2 - In step 5, HDMI 4 was assigned to USB host port 2. HDMI 4 is now the active video input and Laptop 2 has access to the speaker/mic and the AT-HDVS-CAM. Black signal lines indicate that the AT-OME-MS42 is not switched to that input.*

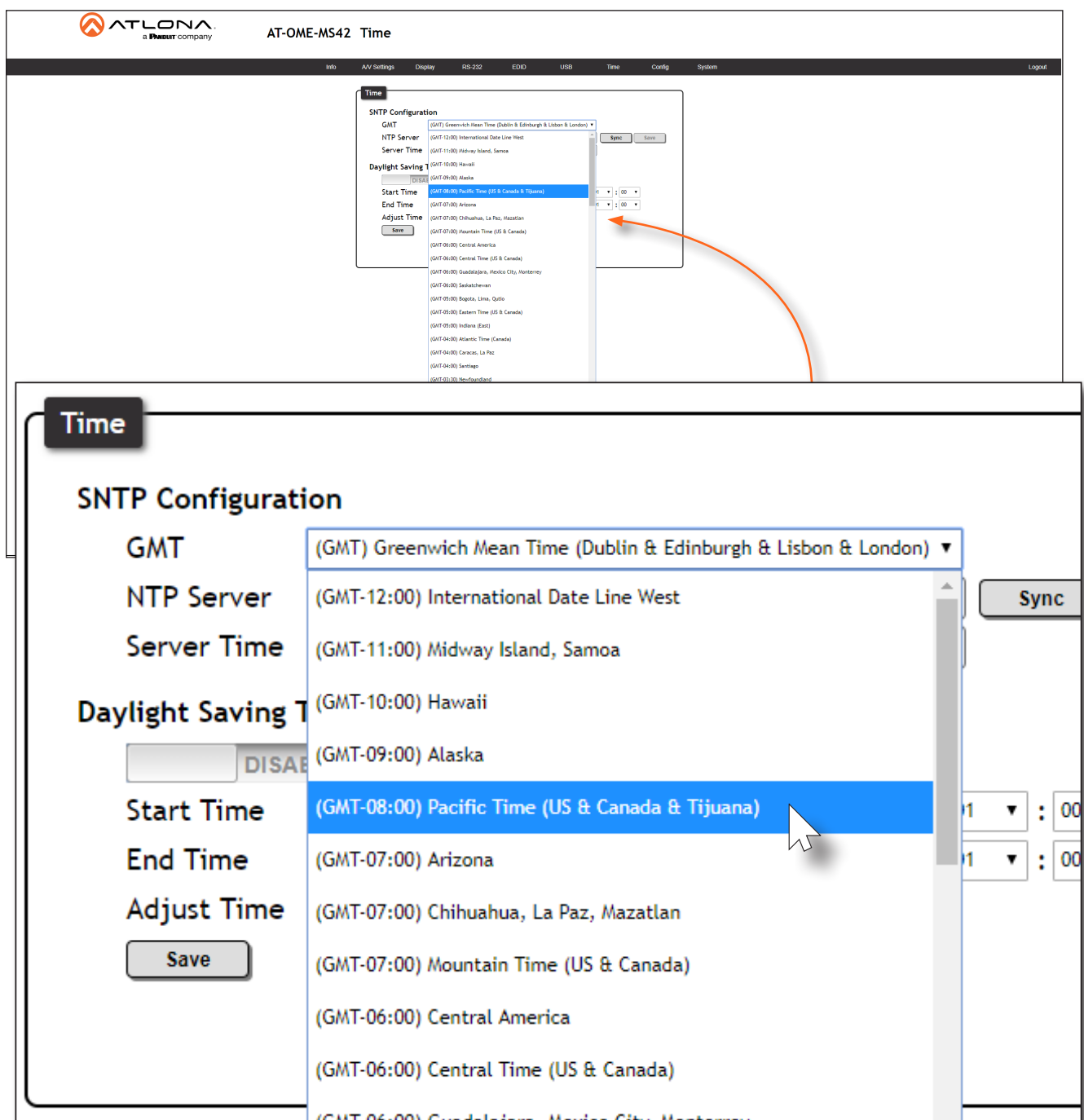


## Setting the System Date and Time

The AT-OME-MS42 uses the internal clock to store the current date and time. Time can be set using either local time or by assigning a Network Time Protocol (NTP) server.

### Setting Local Time

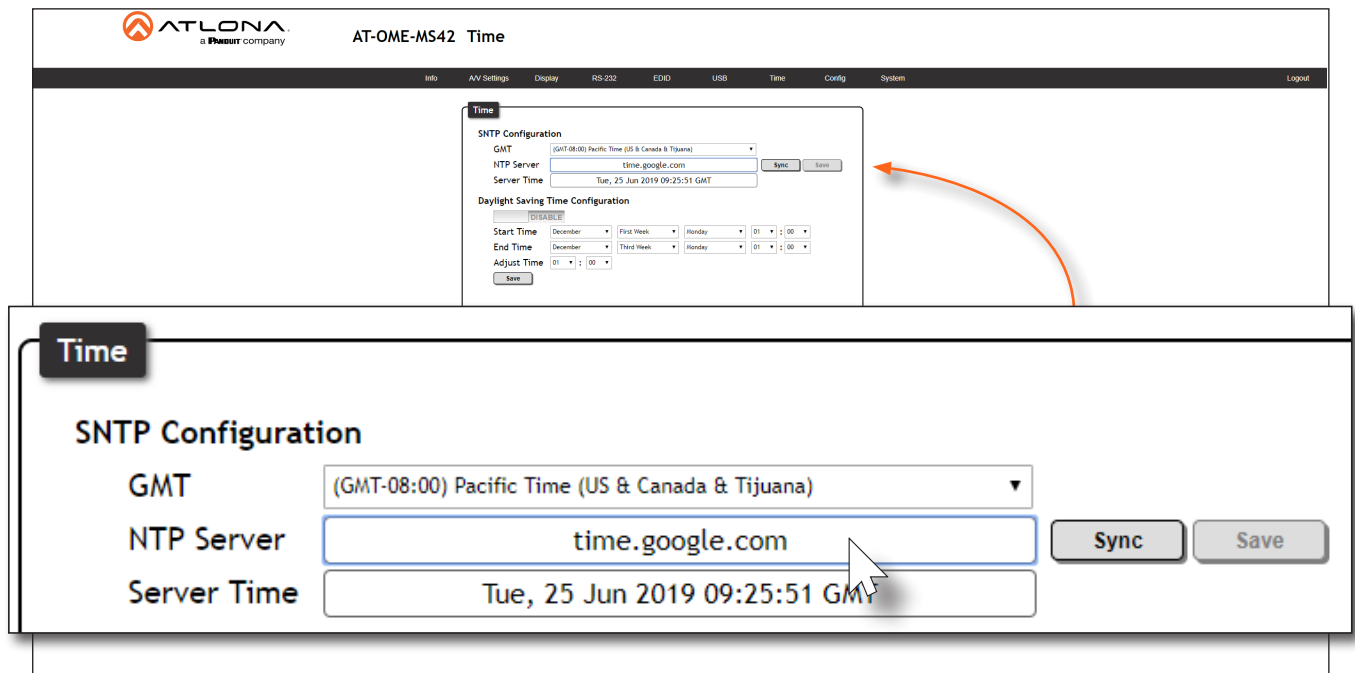
1. Login to the web server. Refer to [Introduction to the Web Server](#) (page 51).
2. Click **Time** in the menu bar.
3. Click the **GMT** drop-down list and select the time for the current region.



The screenshot displays the AT-OME-MS42 web interface, specifically the 'Time' configuration page. The top navigation bar includes 'Info', 'AV Settings', 'Display', 'RS-232', 'EDID', 'USB', 'Time', 'Config', and 'System'. The 'Time' page features a 'Time' dropdown menu with options for 'GMT', 'NTP Server', 'Server Time', and 'Daylight Saving Time'. The 'GMT' dropdown is expanded, showing a list of time zones. A red arrow points to the 'GMT' dropdown, and a blue highlight is on the '(GMT-08:00) Pacific Time (US & Canada & Tijuana)' option. A mouse cursor is hovering over this option. The 'Sync' button is visible next to the dropdown. Below the dropdown, there are fields for 'Start Time', 'End Time', and 'Adjust Time', each with a 'Save' button. The 'Daylight Saving Time' section is currently disabled, indicated by a 'DISABLED' button.

### Using an NTP Server

1. Login to the web server. Refer to [Introduction to the Web Server \(page 51\)](#).
2. Click **Time** in the menu bar.
3. Click the **NTP Server** field. The default NTP server is set to time.google.com.
4. Delete the contents of this field and enter the desired NTP server.
5. Click the **Sync** button to synchronize the AT-OME-MS42 clock with the NTP server time.
6. Click the **Save** button to commit changes.



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AT-OME-MS42 Time

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

**Time**

**SNTP Configuration**

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

NTP Server time.google.com

Server Time Tue, 25 Jun 2019 09:25:51 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

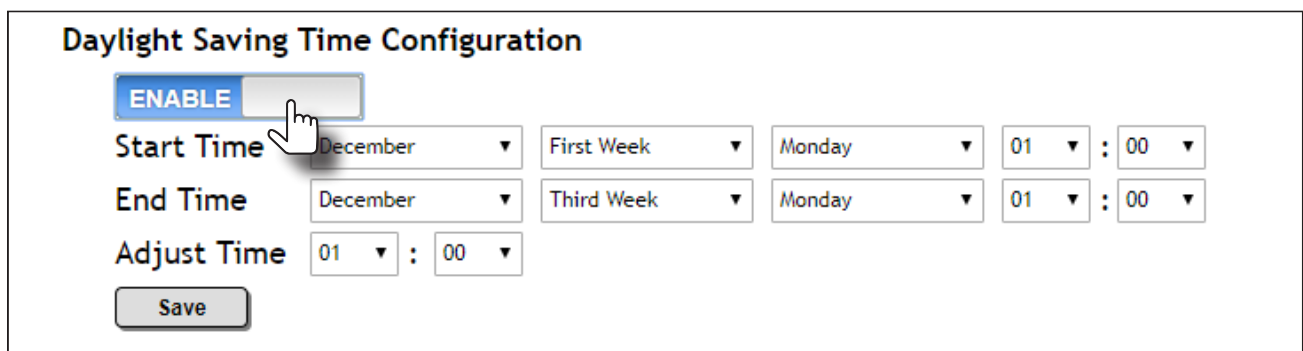
Save

Sync Save

### Daylight Saving Time (DST)

The AT-OME-MS42 provides the option to adjust the internal clock to compensate for Daylight Saving Time, depending on the region. Daylight Saving Time is disabled, by default.

1. Login to the web server. Refer to [Introduction to the Web Server \(page 51\)](#).
2. Click **Time** in the menu bar.
3. Under **Daylight Saving Time Configuration**, click the toggle switch to the **ENABLE** position.



**Daylight Saving Time Configuration**

**ENABLE**

Start Time December First Week Monday 01 : 00

End Time December Third Week Monday 01 : 00

Adjust Time 01 : 00

Save

4. In the **Start Time** row, set the DST starting time by clicking the drop-down lists for month, week, day, hour, and minute.
5. Repeat the same procedure for the **End Time** row.
6. In the **Adjust Time** row, set the offset time. This time is the number of hours which Daylight Saving Time affects the local time.
7. Click the **Save** button to commit changes.

### Daylight Saving Time Configuration

ENABLE

Start Time

March ▼

Third Week ▼

Sunday ▼

02 ▼

:

00 ▼

End Time

November ▼

First Week ▼

Sunday ▼

00 ▼

:

00 ▼

Adjust Time

01 ▼

:

00 ▼

Save

Sunday

Monday

Tuesday

Wednesday

Thursday

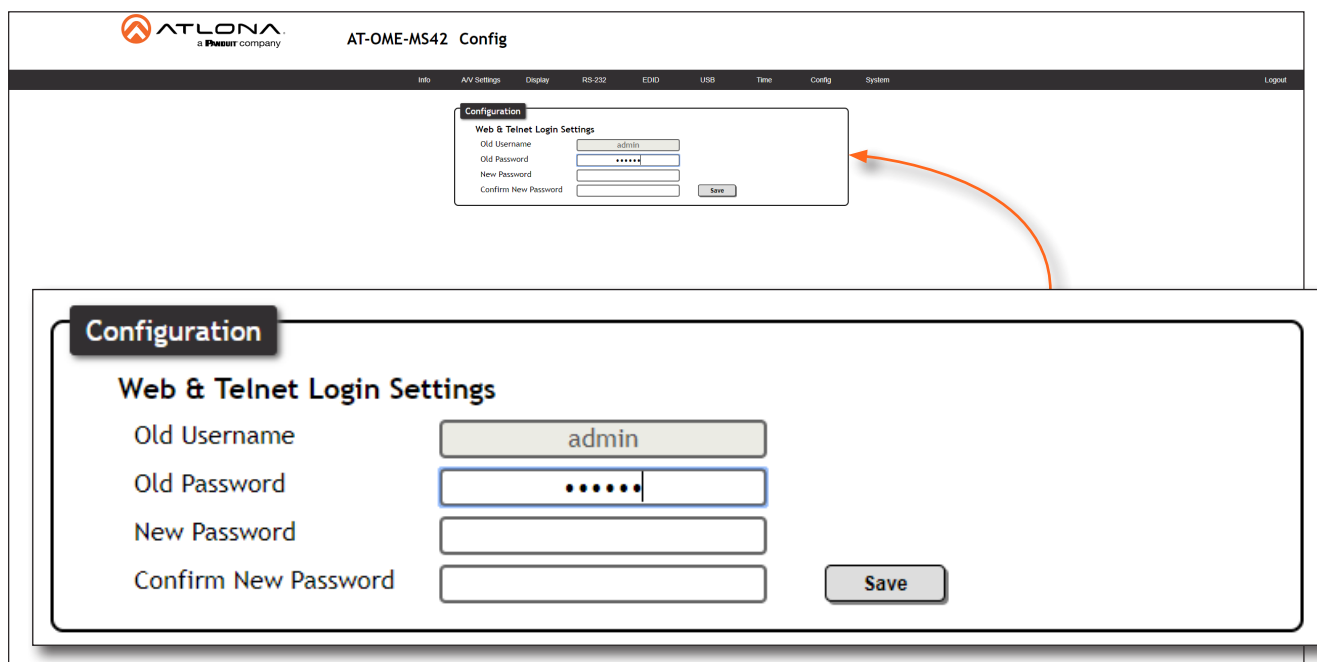
Friday

Saturday

## Password Management

The AT-OME-MS42 allows the administrator password to be changed. The password applies to both the web server and Telnet sessions. Note that the Username cannot be changed.

1. Login to the web server. Refer to [Introduction to the Web Server \(page 51\)](#).
2. Click **Config** in the menu bar.
3. Click the **Old Password** field and enter the current password.

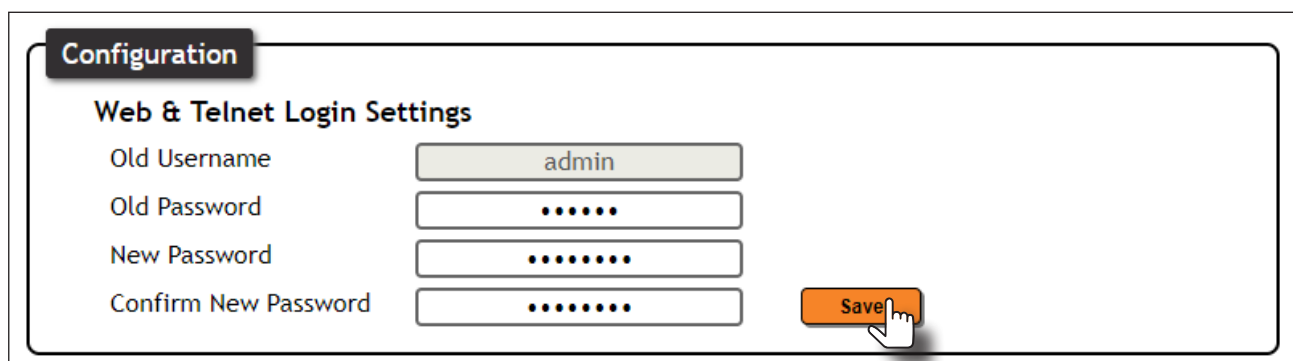


The screenshot shows the AT-OME-MS42 Config page. The top navigation bar includes links for Info, AV Settings, Display, RS-232, EDID, USB, Time, Config, and System. The main content area is titled "Configuration" and contains a section for "Web & Telnet Login Settings". This section has four input fields: "Old Username" (pre-filled with "admin"), "Old Password" (masked with dots), "New Password", and "Confirm New Password". A "Save" button is located to the right of the "Confirm New Password" field. A red arrow points to the "Old Password" field.

4. Enter the new password in the **New Password** field.
5. Retype the new password in the **Confirm New Password** field.
6. 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 new password on the **Login** page.



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



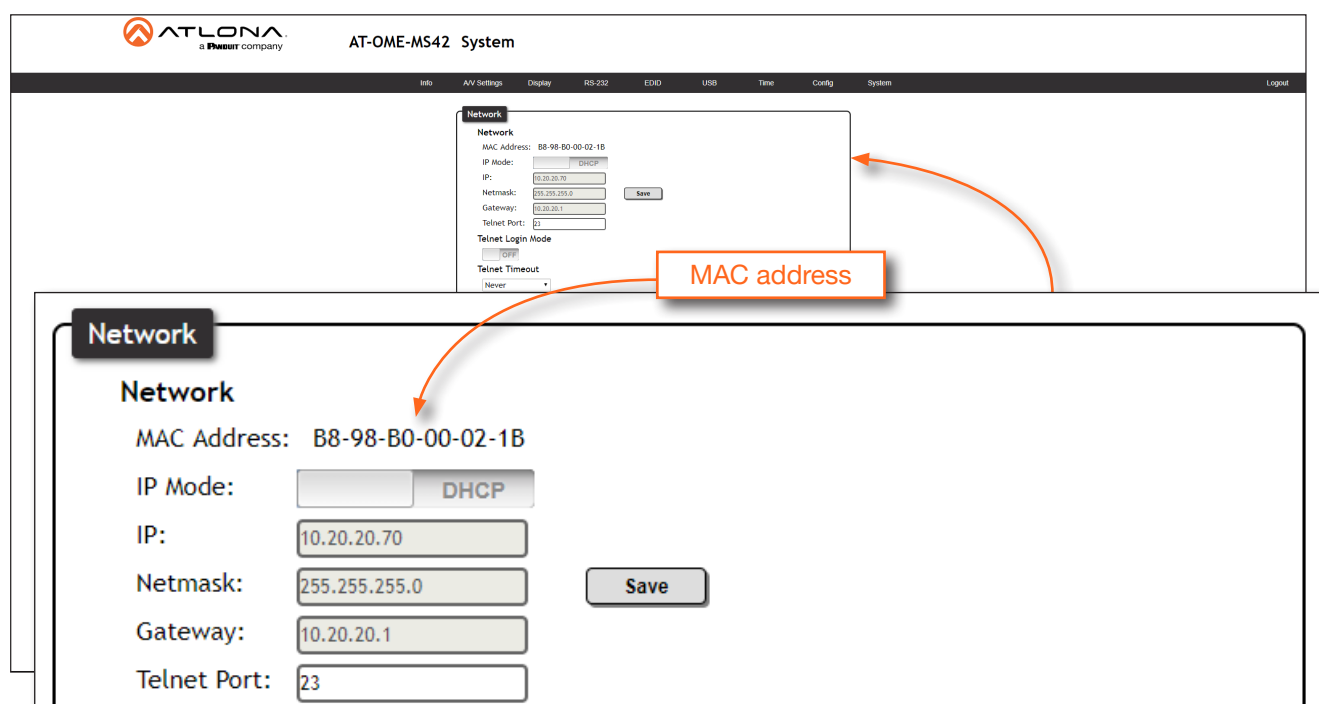
This screenshot is similar to the previous one, showing the "Web & Telnet Login Settings" section. In this view, the "New Password" and "Confirm New Password" fields are also masked with dots. A hand cursor is pointing at the "Save" button, which is highlighted in orange.

## System Configuration

The AT-OME-MS42 provides easy access to system configuration through the built-in web server, and is the recommended method to adjust network settings.

### Getting the MAC Address

1. Login to the web server. Refer to [Introduction to the Web Server \(page 51\)](#).
2. Click **System** in the menu bar.
3. Locate the MAC address field, as shown below. This is the hardware address of the AT-OME-MS42.



The screenshot shows the AT-OME-MS42 System web interface. The top navigation bar includes links for Info, AV Settings, Display, RS-232, EDD, USB, Time, Config, and System. The main content area displays the Network configuration page. The MAC Address field is highlighted with an orange box and labeled "MAC address". The MAC Address is B8-98-B0-00-02-1B. Other fields include IP Mode (DHCP), IP (10.20.20.70), Netmask (255.255.255.0), Gateway (10.20.20.1), and Telnet Port (23). A Save button is visible.

### Changing the Network IP Mode

By default, the AT-OME-MS42 is set to DHCP mode. Once connected to a network, and if a DHCP server is found (or available), the AT-OME-MS42 will be assigned an IP address on the network, and no further network configuration is required. However, if the AT-OME-MS42 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. The instructions below will focus on setting the AT-OME-MS42 to static IP mode.



**IMPORTANT:** Before assigning a static IP address to the AT-OME-MS42, it is recommended to consult with the network or system administrator and obtain a available IP address. If the AT-OME-MS42 is assigned an IP address which is already in use by another device, it may cause either network issues and/or the AT-OME-MS42 will be not accessible.

1. Login to the web server. Refer to [Introduction to the Web Server \(page 51\)](#).
2. Click **System** in the menu bar.

3. Locate the **IP Mode** toggle switch. The default setting of this toggle switch is **DHCP**.
4. Click this toggle switch to set it to **STATIC IP**.
5. Enter the desired IP address for the AT-OME-MS42 in the **IP** field.
6. Enter the subnet mask and gateway address in the **Netmask** and **Gateway** fields, respectively.
7. Click the **Save** button to commit changes. Changes will take effect immediately.

### Network

MAC Address: B8-98-B0-00-02-1B

IP Mode: **STATIC IP**

IP: 10.20.20.70

Netmask: 255.255.255.0

Gateway: 10.20.20.1

**Save**

### Changing the Telnet Port

Typically, the Telnet service is assigned to TCP port 23. This is the default setting for the AT-OME-MS42. However, depending upon the network environment, the default Telnet port can be changed.

1. Login to the web server. Refer to [Introduction to the Web Server \(page 51\)](#).
2. Click **System** in the menu bar.
3. Locate the **Telnet Port** field and enter the desired port in the field.
4. Click **Save** to commit changes.

### Network

MAC Address: B8-98-B0-00-02-1B

IP Mode: **DHCP**

IP: 10.20.20.70

Netmask: 255.255.255.0

Gateway: 10.20.20.1

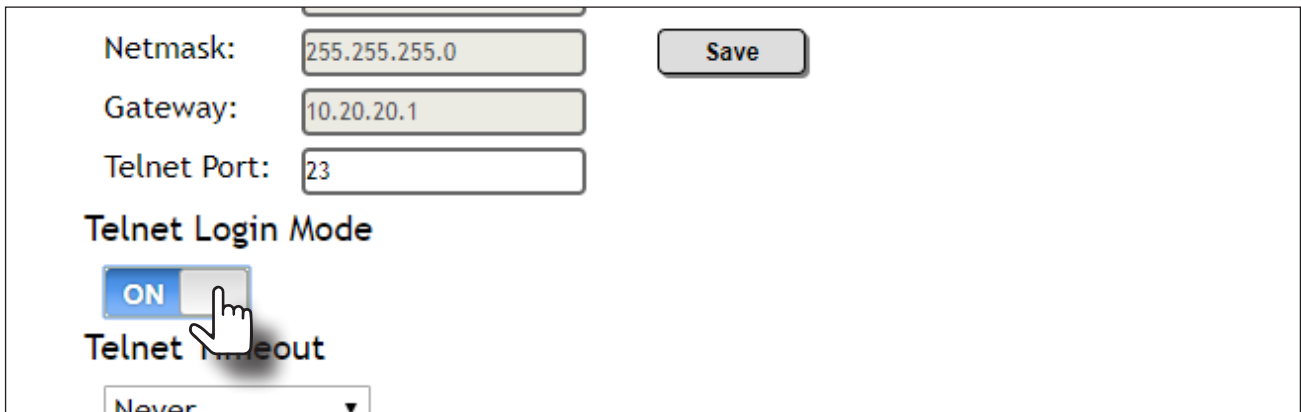
Telnet Port: 23

**Save**

### Telnet Login Mode

When a Telnet session is request, the AT-OME-MS42 provides the option to prompt for user credentials or bypass authentication before the Telnet session begins. This credentials prompt option can enabled or disabled. When prompting for user credentials, use the same login information required by the built-in web server.

1. Login to the web server. Refer to [Introduction to the Web Server \(page 51\)](#).
2. Click **System** in the menu bar.
3. Click the **Telnet Login Mode** toggle switch.
  - Set this toggle switch to **ON** to prompt for user credentials.
  - Set this toggle switch to **OFF** to bypass user credentials request.
4. Click **Save** to commit changes.



Netmask: 255.255.255.0

Gateway: 10.20.20.1

Telnet Port: 23

**Telnet Login Mode**

ON

**Telnet Timeout**

Never



### Adjusting Telnet Timeout

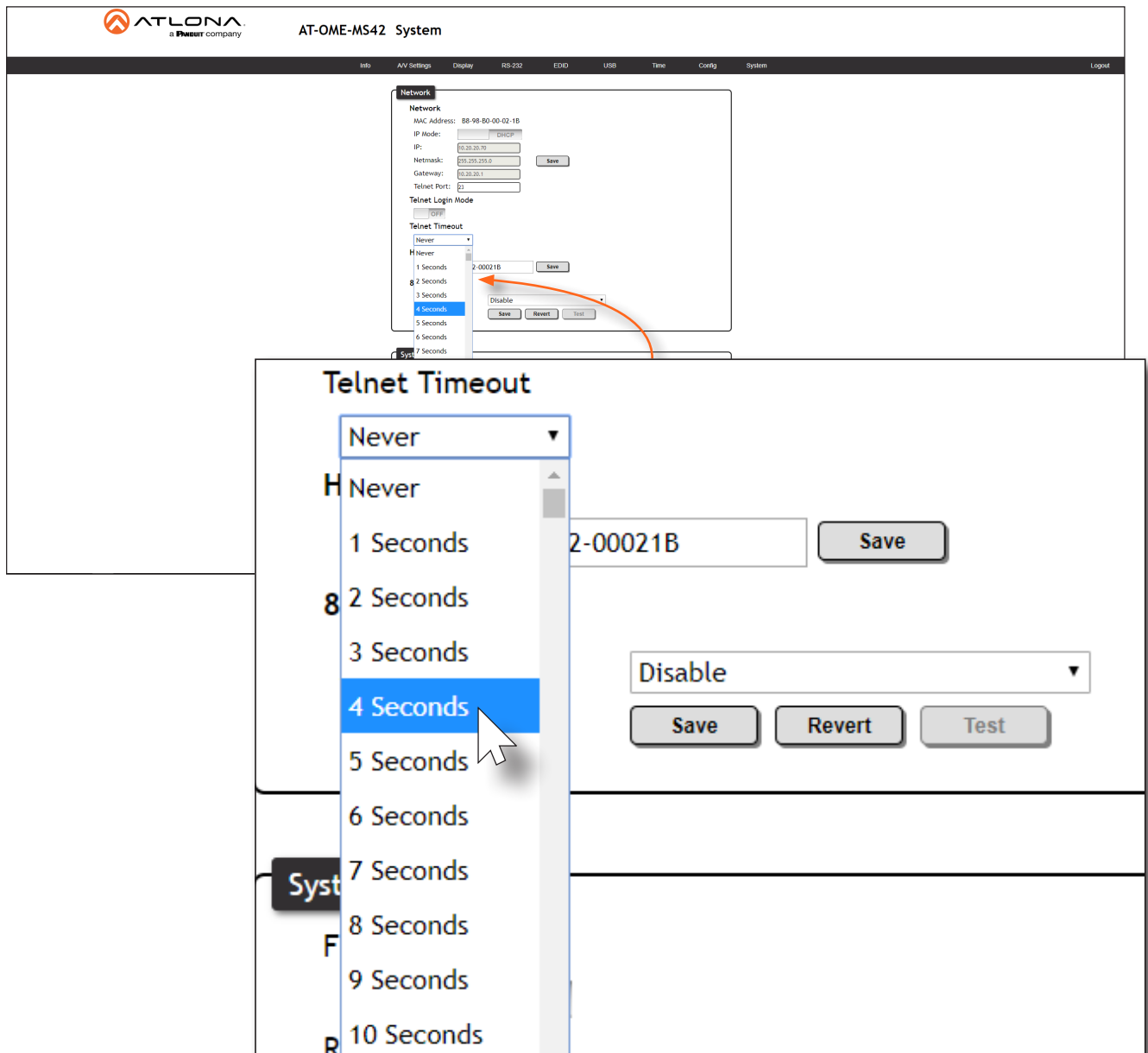
When a Telnet session is active, the AT-OME-MS42 can be set to monitor Telnet activity. If there is no activity within the specified time interval, the Telnet session will automatically be terminated, adding a measure of security.

1. Login to the web server. Refer to [Introduction to the Web Server \(page 51\)](#).
2. Click **System** in the menu bar.
3. Click the **Telnet Timeout** drop-down list and select the desired time-out interval. Values from 1 to 10000 seconds (~166 minutes / 2.76 hours) can be selected.



**IMPORTANT:** If **Never** is selected, then the Telnet port will stay open until the Telnet session is manually terminated.

4. Click **Save** to commit changes.



The screenshot shows the AT-OME-MS42 System web interface. The top navigation bar includes links for Info, All Settings, Display, RS-232, EDD, USB, Time, Config, System, and Logout. The main content area is titled "Network" and contains fields for MAC Address (BB-98-80-00-02-1B), IP Mode (DHCP), IP, Netmask (192.168.1.0), Gateway (192.168.1.1), and Telnet Port (23). Below these fields is the "Telnet Login Mode" section with a "Telnet Timeout" dropdown menu. The dropdown menu is open, showing options: Never, 1 Seconds, 2 Seconds, 3 Seconds, 4 Seconds (highlighted), 5 Seconds, 6 Seconds, 7 Seconds, 8 Seconds, 9 Seconds, and 10 Seconds. A red arrow points from the dropdown menu to the "Save" button. The background shows the "System" menu item is selected.

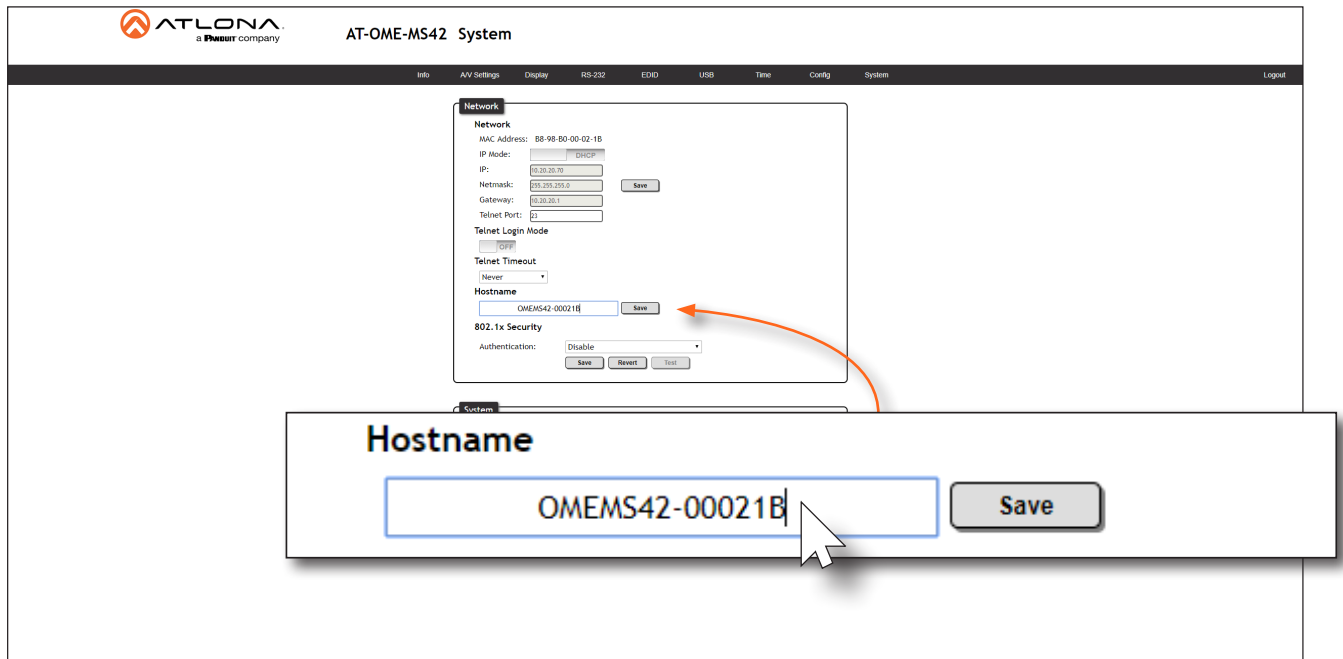
### Setting the Host Name

By default, the AT-OME-MS42 is assigned a hostname, which is constructed as follows:

OMEMS42-[last six digits of MAC address]

For example, a default hostname might look like this: OMEMS42-00021B. This value can be changed to easily identify the AT-OME-MS42 within the Atlona Management System (AMS) or a network. If using a custom hostname, it must meet the hostname standards, defined here: <https://tools.ietf.org/html/rfc1123>

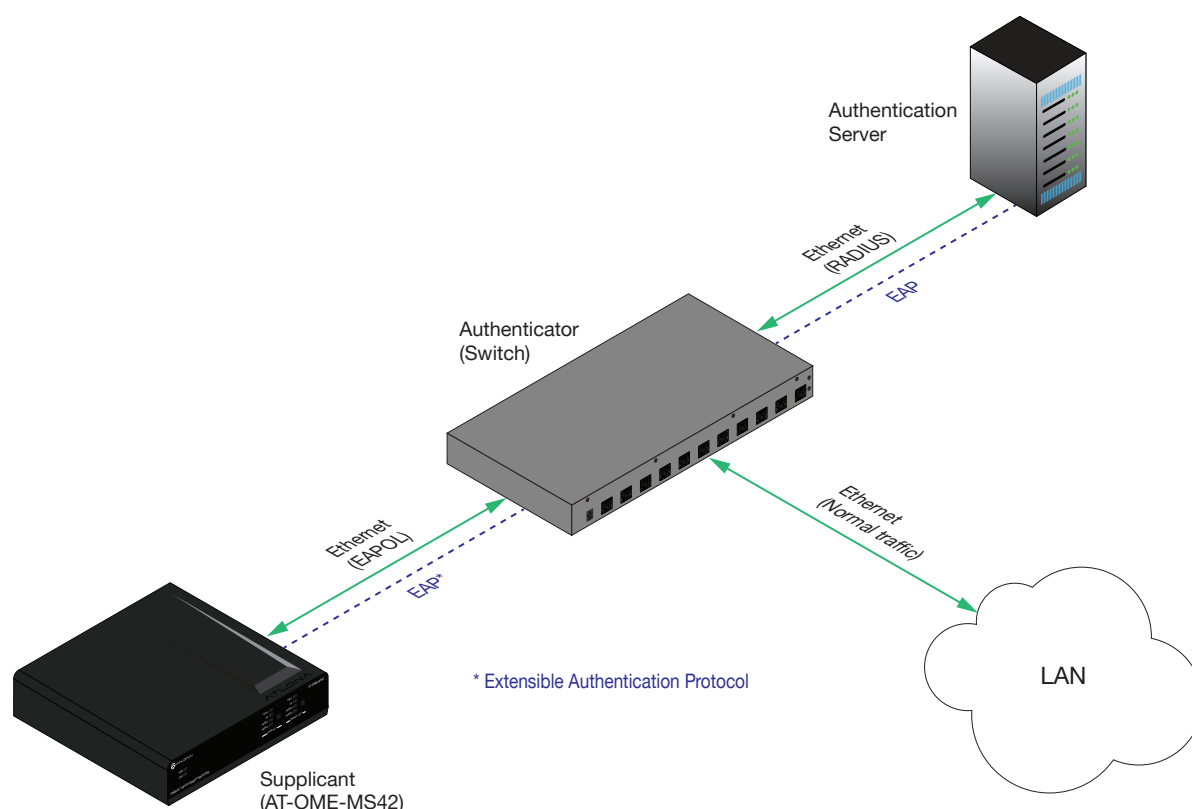
1. Login to the web server. Refer to [Introduction to the Web Server \(page 51\)](#).
2. Click **System** in the menu bar.
3. Click the **Hostname** field and enter the desired name.
4. Click **Save** to commit changes.



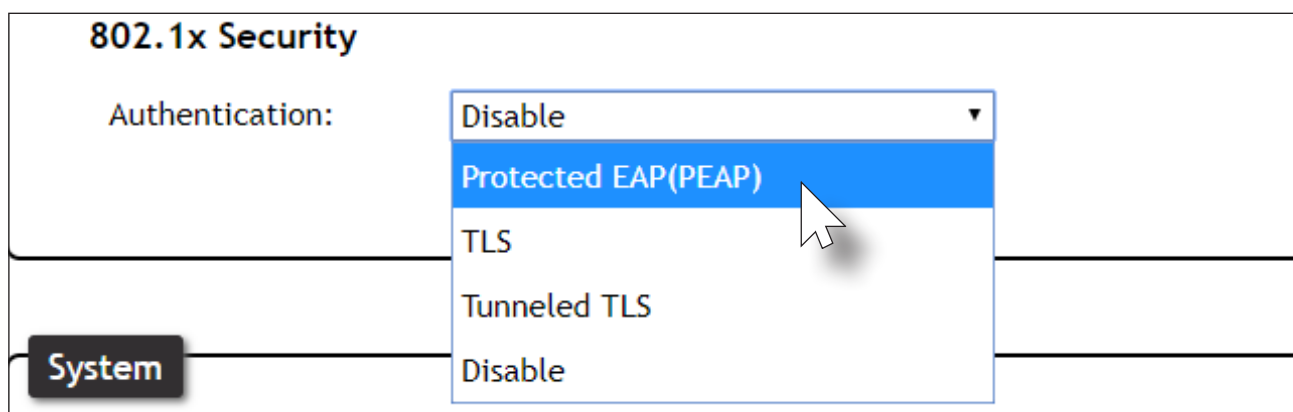
The screenshot shows the AT-OME-MS42 System web interface. The top navigation bar includes links for Info, AV Settings, Display, RS-232, EDID, USB, Time, Config, and System. The main content area displays the Network configuration page. The Hostname field is highlighted with a red arrow pointing to a modal dialog box titled "Hostname". The modal box contains the text "OMEMS42-00021B" and a "Save" button.

### 802.1X Security

802.1X is a server-based port authentication protocol which restricts unauthorized (rogue) clients from connecting to a Local Area Network through a public port. In its simplest form, 802.1X usually involves three parties: supplicant (client device), authenticator (Ethernet switch), and an authentication server. Before the device is permitted on the network, port communication is restricted to Extensible Authentication Protocol over LAN (EAPOL) traffic. If the device passes the authentication process, then the authentication server notifies the switch, allowing the client to access the LAN. A full explanation of the 802.1X protocol is beyond the scope of this manual. However, the illustration below shows the basic architecture.



1. Login to the web server. Refer to [Introduction to the Web Server \(page 51\)](#).
2. Click **System** in the menu bar.
3. Under **802.x1 Security**, click the **Authentication** drop-down list and select the desired authentication method. In the example below, **Protected EAP (PEAP)** is selected.



4. Once a method is selected, the required fields for that method will be displayed. Enter the required information in each field. For the Protected EAP (PEAP) option, the fields are described as follows:

- **Anonymous identity**  
Enter the identity of the authentication server in this field. EAP uses this field to identify the correct authentication server which will process the credentials. For example, if foo@authserv.com is entered, then this identifies AUTHSERV as the RADIUS (authentication) server.
- **CA certificate**  
Click the **Browse...** button to select the certification authority (CA) certificate. To remove a certificate, click the **Remove** button.
- **Username**  
Enter the username in this field
- **Password**  
Enter the password in this field.

### 802.1x Security

Authentication:

Protected EAP(PEAP) ▼

Anonymous identity:

CA certificate:

(None)

Browse...

Remove

Username:

Password:

Save

Revert

Test

5. Click **Save** to commit changes. Click **Test** to verify the authentication process with the RADIUS server.
6. Refer to the table below for a list of available authentication methods. An orange dot indicates that this field will be displayed as part of the method.

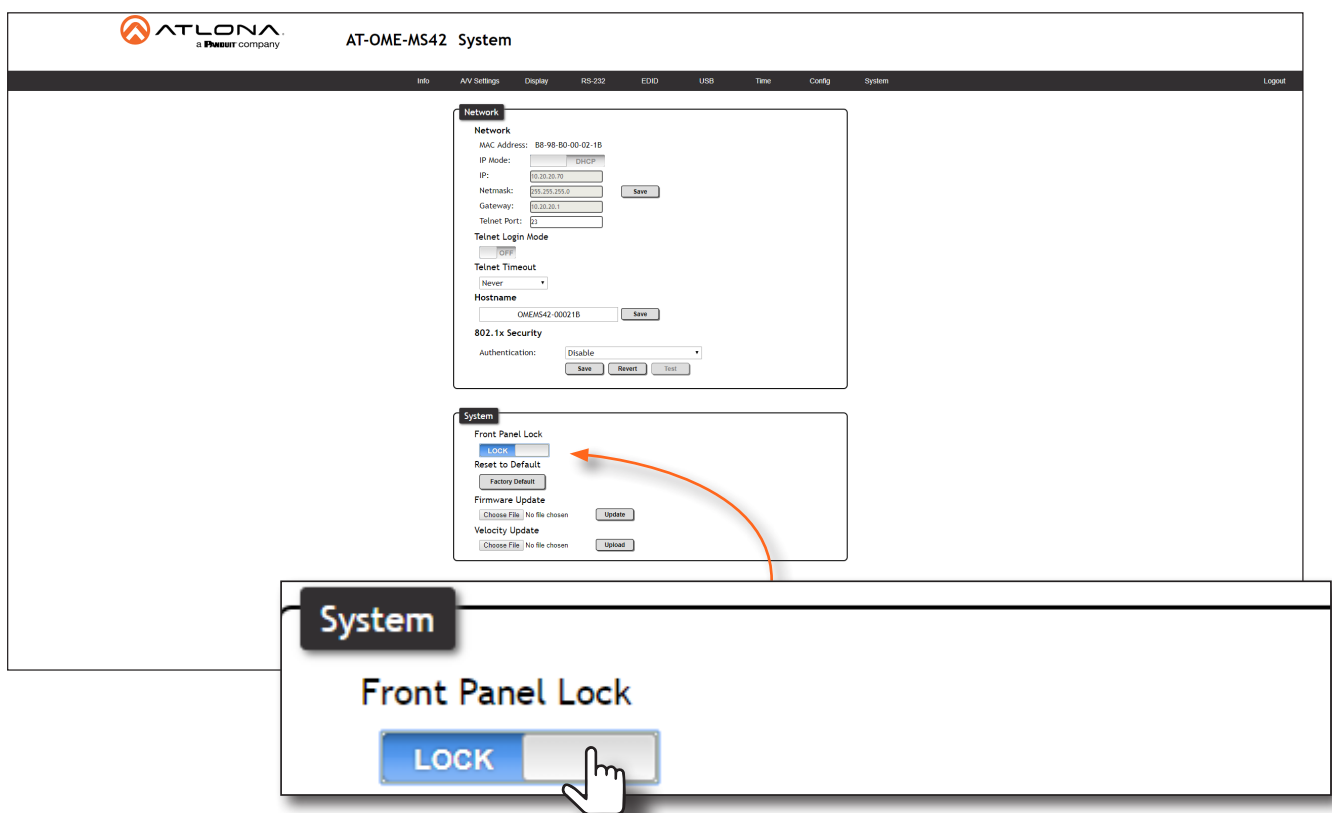
Auth. Method	Identity	User Certificate	Anonymous Identity	CA Certificate	Username	Password	Private Key	Private Password
Protected EAP (PEAP)			●	●	●	●		
TLS	●	●		●			●	●
Tunneled TLS			●	●	●	●		

7. To disable 802.1x authentication, click the **Authentication** drop-down list and select **Disable**.

### Locking / Unlocking the Front Panel

To prevent accidental pressing of the front panel buttons, the front panel buttons can be locked. This may be desirable if, for example, the AT-OME-MS42 is installed in a rack environment. By default, the front panel buttons are unlocked.

1. Login to the web server. Refer to [Introduction to the Web Server \(page 51\)](#).
2. Click **System** in the menu bar.
3. Click the **Front Panel Lock** toggle switch to lock the buttons on the front panel. When the front panel is locked, the toggle switch will display the **LOCK** setting.

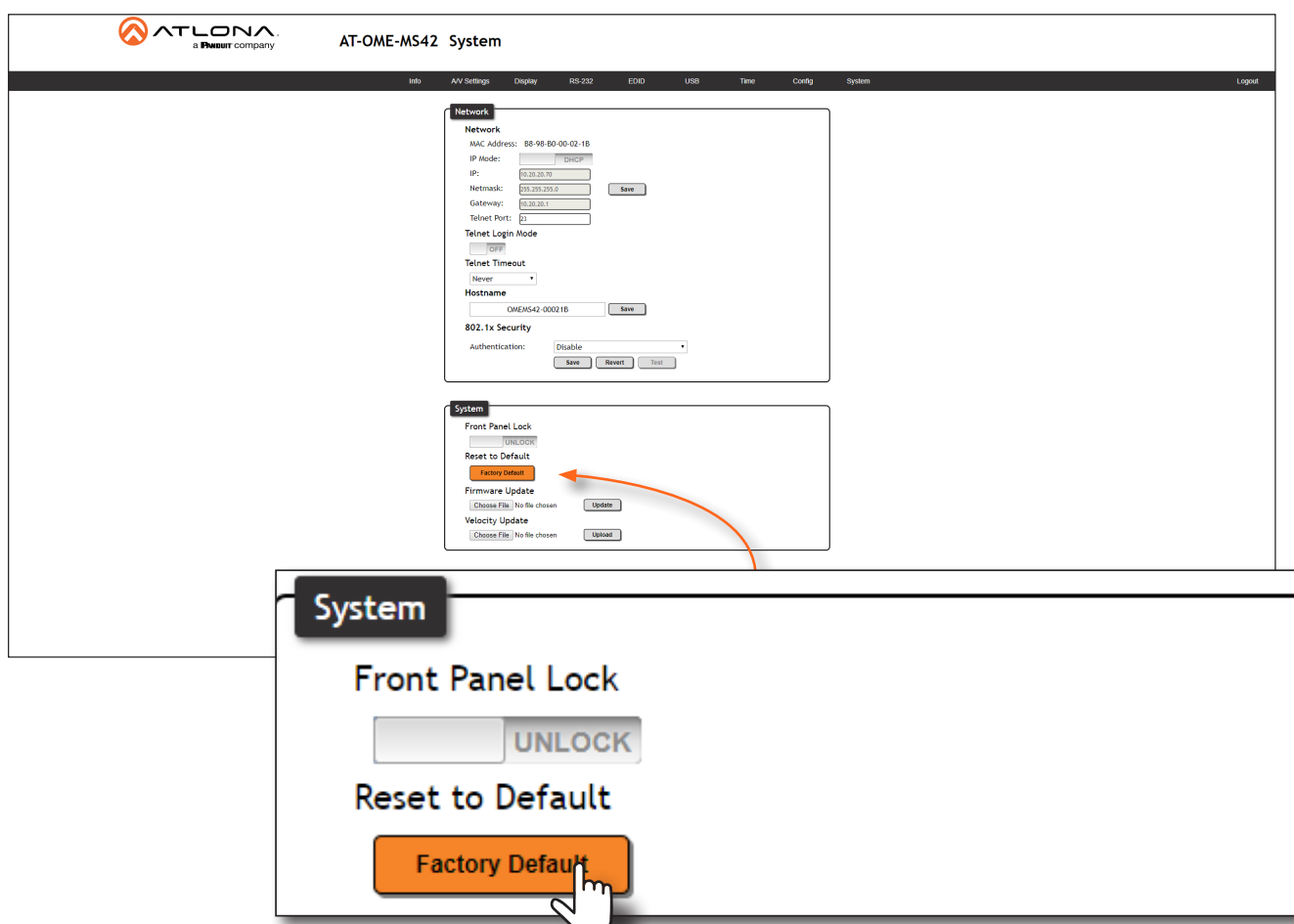


4. To unlock the front panel, click the **Front Panel Lock** toggle switch again to set it to **UNLOCK**.

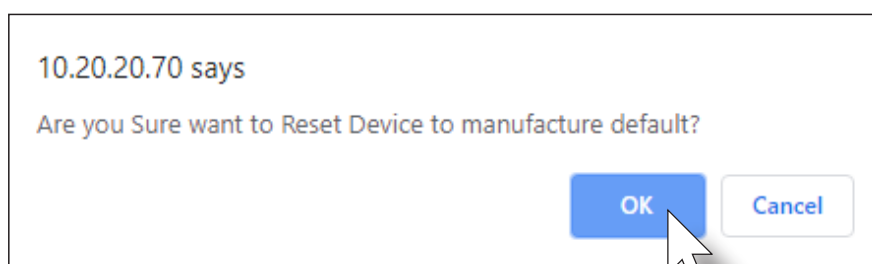
### Resetting to Factory-Default Settings

The following procedure will reset the AT-OME-MS42 to factory-default settings. The network IP mode will be set to DHCP mode.

1. Login to the web server. Refer to [Introduction to the Web Server \(page 51\)](#).
2. Click **System** in the menu bar.
3. Click the **Factory Default** button.



4. The following message will be displayed at the top of the screen. Click **OK** to continue with the factory-default reset procedure. Click **Cancel** to abort the process.



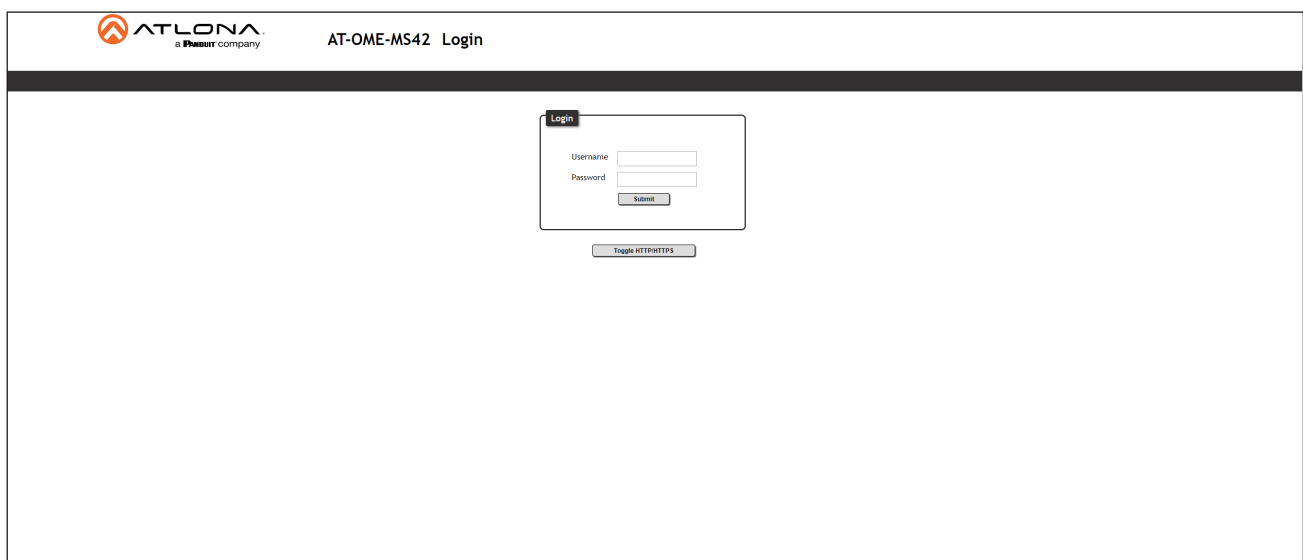
5. Once the factory-default process is complete, the web server **Login** screen will be displayed.
6. The reset process is complete.

# Configuration and Management Interfaces

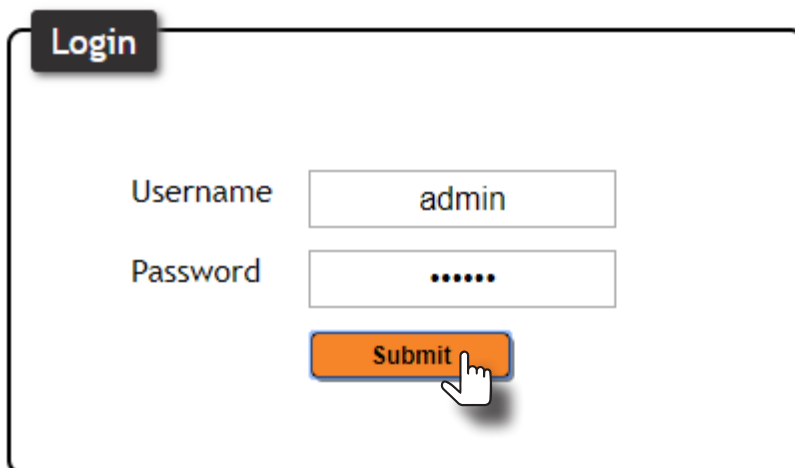
## Introduction to the Web Server

The AT-OME-MS42 includes a built-in web server. Atlona recommends that the web server be used to set up the AT-OME-MS42, 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-MS42 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-MS42 **Login** page will be displayed.



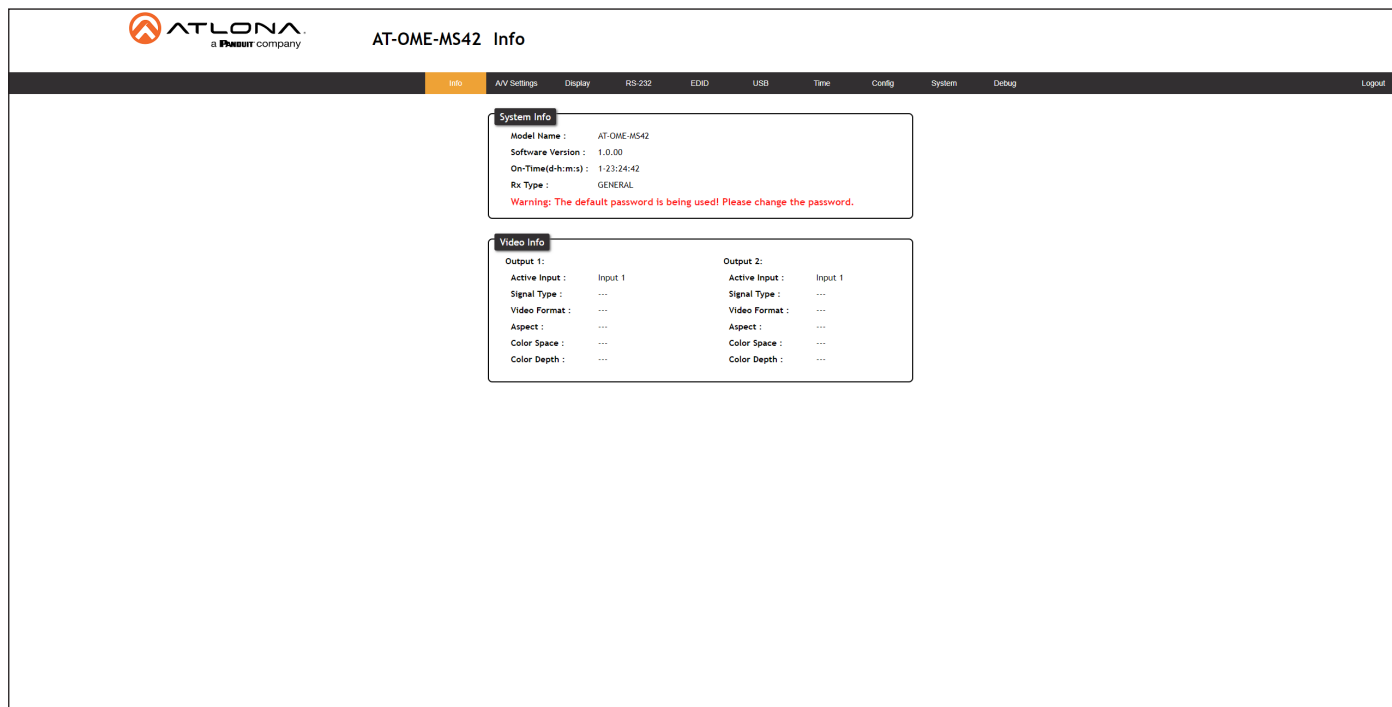
4. Type admin, using lower-case characters, in the **Username** field.
5. Type Atlona in the **Password** field. This is the default password. The password field is case-sensitive. When the password is entered, it will be masked.
6. Click the **Submit** button or press the ENTER key on the keyboard.



## Configuration and Management Interfaces

### Info Page

The **Info** page provides various information about the AT-OME-MS42, including software version and video information.



The screenshot shows the AT-OME-MS42 Info page. The header includes the Atlona logo and the title 'AT-OME-MS42 Info'. Below the header is a navigation bar with tabs: Info, AV Settings, Display, RS-232, EDID, USB, Time, Config, System, and Debug. The 'Info' tab is selected. The main content area displays two sections: 'System Info' and 'Video Info'.

**System Info**

Model Name :	AT-OME-MS42
Software Version :	1.0.00
On-Time(d-h:m:s) :	1-23:24:42
Rx Type :	GENERAL

Warning: The default password is being used! Please change the password.

**Video Info**

Output 1:		Output 2:	
Active Input :	Input 1	Active Input :	Input 1
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-MS42 is running. Always make sure to check the AT-OME-MS42 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.

#### Rx Type

If a receiver is connected to the AT-OME-MS42, 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

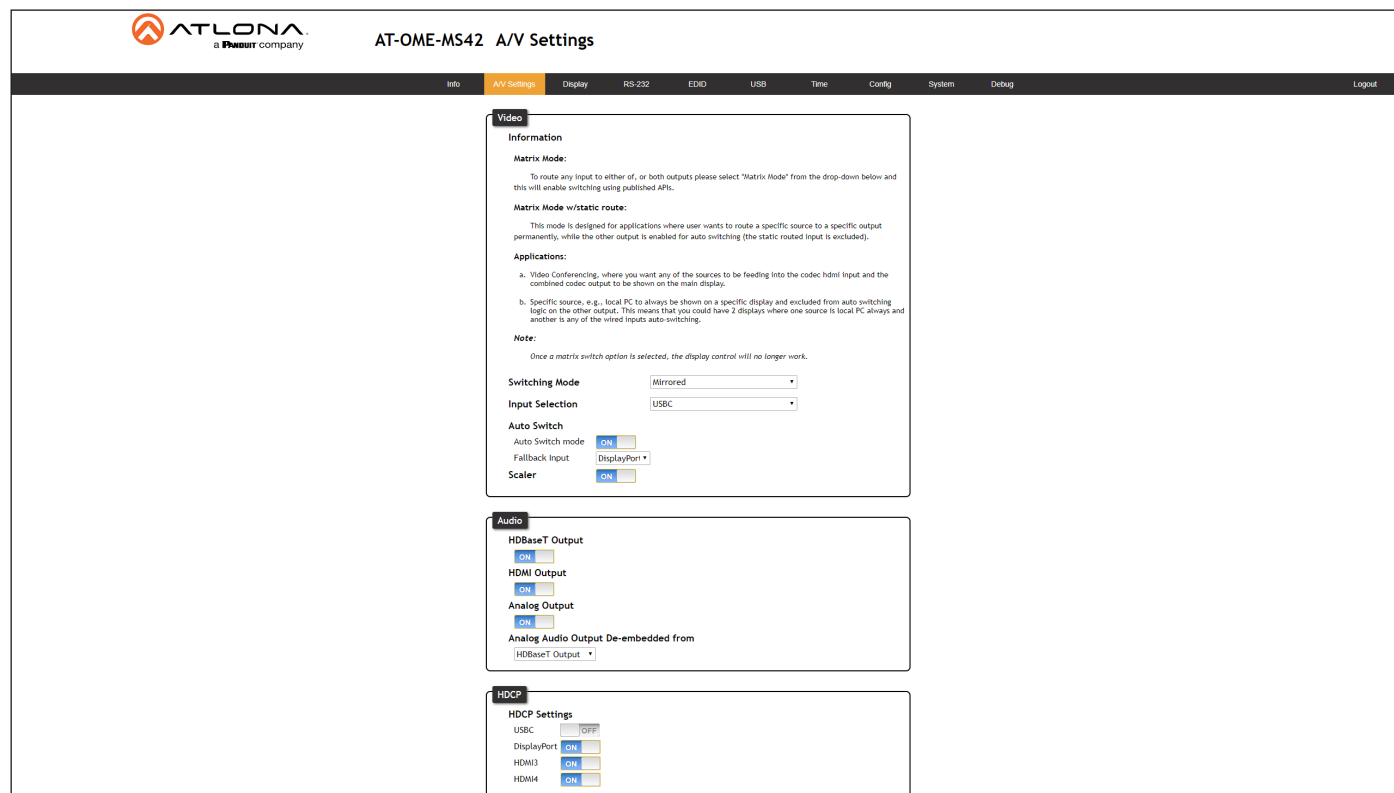
The color depth of the input signal.



## 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 provides controls for switching modes and input selection. The **Audio** section provides options to control the output audio volume and de-embedding. The **HDCP** section controls whether or not HDCP content is allowed to pass.



### Switching Mode

Click this drop-down list to manually select the switching mode. Refer to [Switching Modes \(page 17\)](#) for more information.

Modes	Description
Mirrored	This is the default switching mode. Once video is detected on any of the input ports, the output signal will be displayed on <i>both</i> the <b>HDMI OUT</b> and <b>HDBaseT OUT</b> ports.
Matrix Mode	This mode allows the AT-OME-MS42 to independently switch between any input to any output.
Matrix Mode w/ Static Route	Use this mode when integrating the AT-OME-MS42 with a video conference system.

### Input Selection

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

Input	Description
USBC	Sets <b>USBC</b> as the active input.
DisplayPort	Sets <b>DP IN</b> as the active input.
HDMI3	Sets <b>HDMI IN 4</b> as the active input.
HDMI4	Sets <b>HDMI IN 4</b> as the active input.

## Configuration and Management Interfaces

### Auto Switch

Three controls are available under the **Auto Switch** feature.



**NOTE:** Auto-switching is only available when the **Switching Mode** is set to **Mirrored** or **Matrix Mode w/ static route**. The **Fallback Input** option is only available when the **Switching Mode** is set to **Mirrored** or **Matrix Mode w/ static route**.

- **Auto Switch**

Click this toggle switch to enable or disable auto-switching. When enabled, the AT-OME-MS42 will automatically switch to the another input, 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. The default fallback port is **Previous**.

- **Fallback Input**

Click this drop-down list to select the fallback input. If the source is disconnected from the active input, then the switcher can be configured to automatically switch to the desired port.

Input	Description
Previous	Automatically switches to the input that was connected last.
USBC	Switches to <b>USB-C IN</b> .
DisplayPort	Switches to <b>DP IN</b> .
HDMI3	Switches to <b>HDMI IN 3</b> .
HDMI4	Switches to <b>HDMI IN 4</b> .

### Scaler

Click this toggle switch to enable or disable the scaler pass-through feature. When set to the **ON** position, 4K content will be down-scaled to 1080p. When set to the **OFF** position, the output resolution / timing will be the same as the input source. The default setting is **ON**.

### 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 analog on the **AUDIO OUT** port. The default settings is **ON**.

- **Analog Audio Output De-embedded from**

Click this drop-down list to select the output from which audio will be de-embedded and output to the **AUDIO OUT** port. Available options are **HDMI Output** or **HDBaseT Output**. The default setting is **HDBaseT Output**.

## Configuration and Management Interfaces

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### 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 have the ability to transmit HDCP content to the AT-OME-MS42.
- **OFF**  
When set to **OFF**, non-HDCP content will be transmitted (if possible) to the AT-OME-MS42.

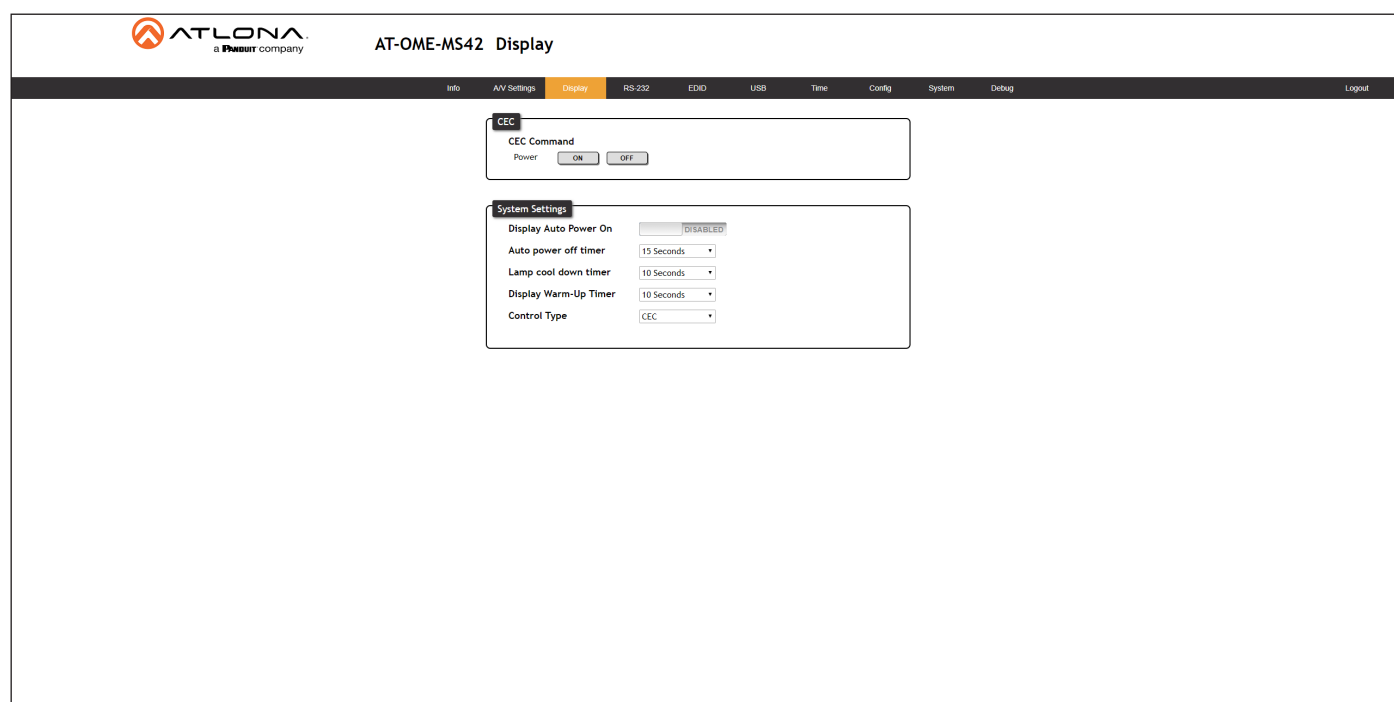
## Configuration and Management Interfaces

### Display Page

This page provides controls for CEC, device timers, and configuration for controlling external devices.



**NOTE:** This page is not available when **Switching Mode** is set to **Matrix Mode**. Display control is disabled when matrix mode is active.



### 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-MS42 to send the power-on command to the display when an A/V signal is detected. When the AV signal is no longer present, the AT-OME-MS42 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

Sets the time interval before the command to power-off the display is sent, when an A/V signal is no longer present. The default value is 15 seconds. Available values are 15 seconds to 15 minutes.

### Lamp cool down timer

Sets the projector lamp cool-down timer, in seconds. This value specifies the time interval that must elapse, after the display control “off” command is sent, before the display “power on” command can be sent. This feature is used to prevent the projector from missing a “power on” command while the lamps are cooling. Available values are 10 seconds to 15 minutes. The default setting is 10 seconds.

## Configuration and Management Interfaces

---

### Display Warm-Up Timer

Sets the projector lamp warm-up timer, in seconds. During the warm-up interval, the AT-OME-MS42 will not start the auto power-off timer. This value specifies the time interval that must elapse, after the display control “on” command is sent, before the display “power off” command can be sent. This feature is used to prevent a “power off” command from being sent while the lamps are warming up. Available values are 10 seconds to 300 seconds. The default value is 10 seconds.

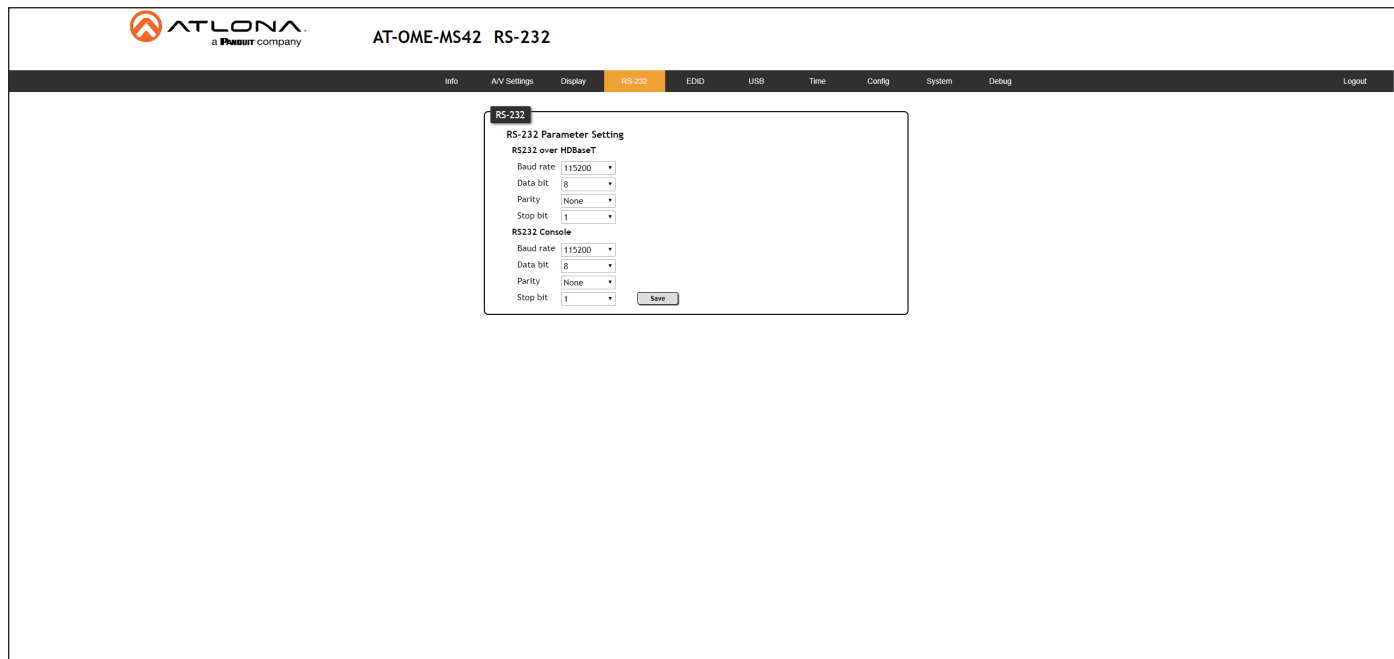
### Control Type

Sets the control protocol for the connected display. Click this drop-down to select the control type. Available settings are **CEC**, **IP**, and **RS-232**. By default, CEC is selected for control of the display. IP and RS-232 can also be selected. When IP or RS-232 are selected, more fields are available. Refer to [Solution Setup and Configuration Guide \(page 65\)](#) for more information.

## Configuration and Management Interfaces

### RS-232 Page

This page provides settings for both local and HDBaseT RS-232 control.



### RS-232 Parameter Setting

RS-232 settings for local or HDBaseT RS-232 control.

- **RS232 over HDBaseT**

If the AT-OME-MS42 is connected to a device such as the AT-OME-EX-RX, the drop-down list boxes will be disabled and the HDBaseT baud rate will be locked at 115200. If the AT-OME-MS42 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 \(page 65\)](#) for more information.

- **RS232 Console**

Sets the RS-232 port settings used for local control by a third-party control system.

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.

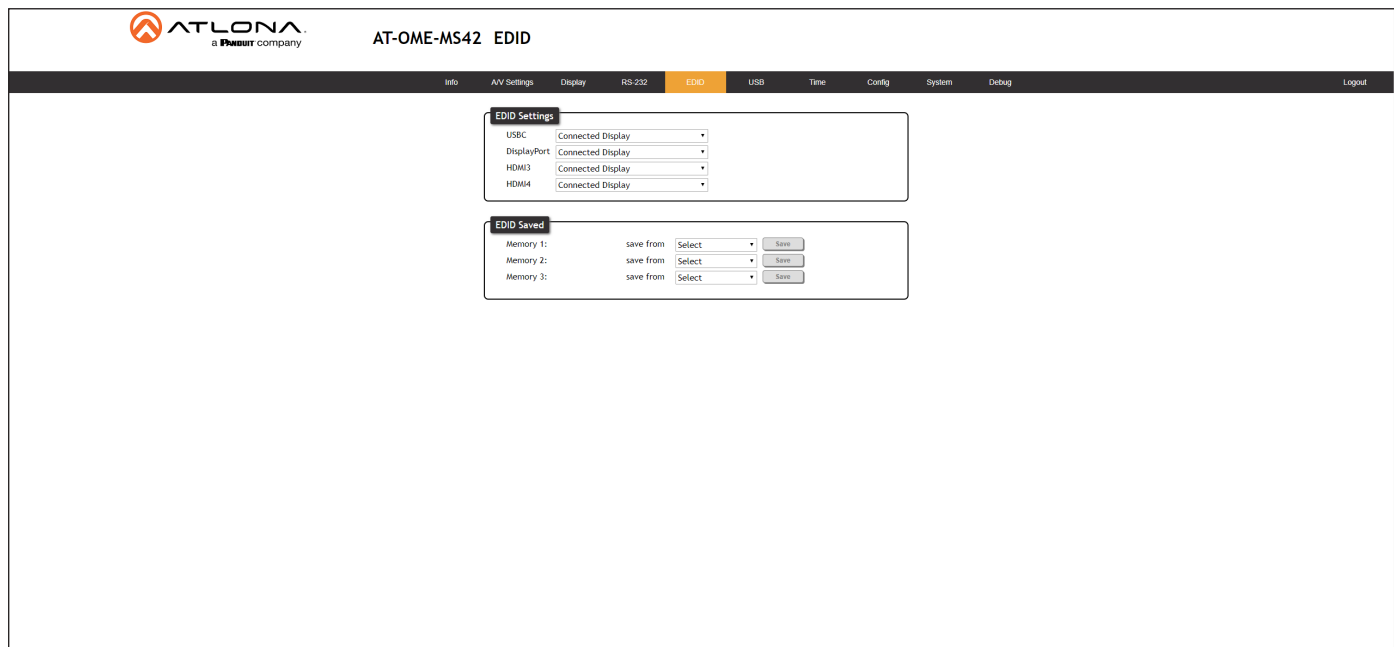
- **Save**

Click this button to commit all changes.

## Configuration and Management Interfaces

### EDID Page

This page provides controls for selecting and storing EDID data. Refer to [EDID Management \(page 28\)](#) for more information.



### 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. If an EDID is stored in a memory location, it will also be added to the list available EDID selections.

EDID listing	
Connected Display	1280x800 2CH
3840x2160 2CH - NO HDR Support	1024x768 2CH
1920x1200 2CH	Memory_1
1920x1080 2CH	Memory_2
1366x768 2CH	Memory_3

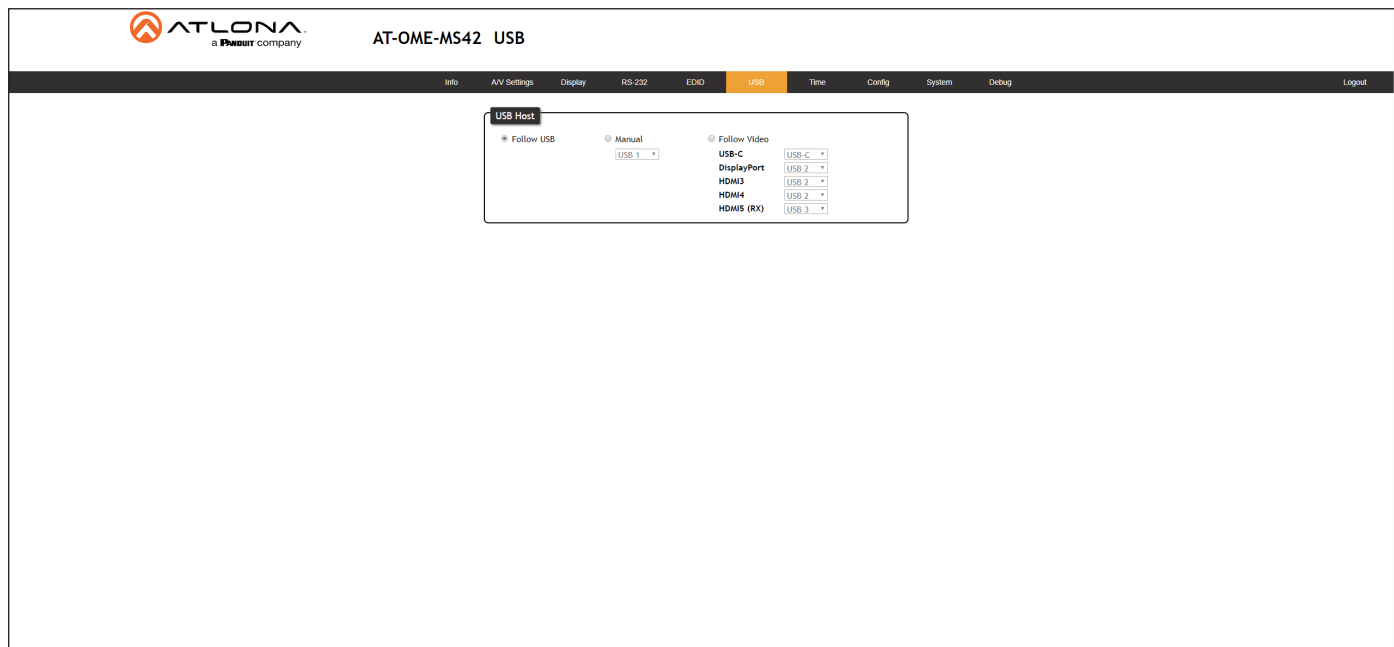
### EDID Saved

The AT-OME-MS42 provides three memory locations used for storing captured EDID data. Click these drop-down lists to select and store the external EDID.

## Configuration and Management Interfaces

### USB Page

This page provides controls for setting the behavior of USB host switching. Refer to [USB Modes \(page 33\)](#) for more information.



#### Follow USB

This is the default mode and functions similar to auto-switching for video. In this mode, the AT-OME-MS42 will detect which USB ports are connected to a host device. If both USB host ports are connected to host devices, then the AT-OME-MS42 will set the last-connected USB host device as the “active” USB host.

#### Manual

This mode provides manual selection of the USB host port to be used.

#### Follow Video

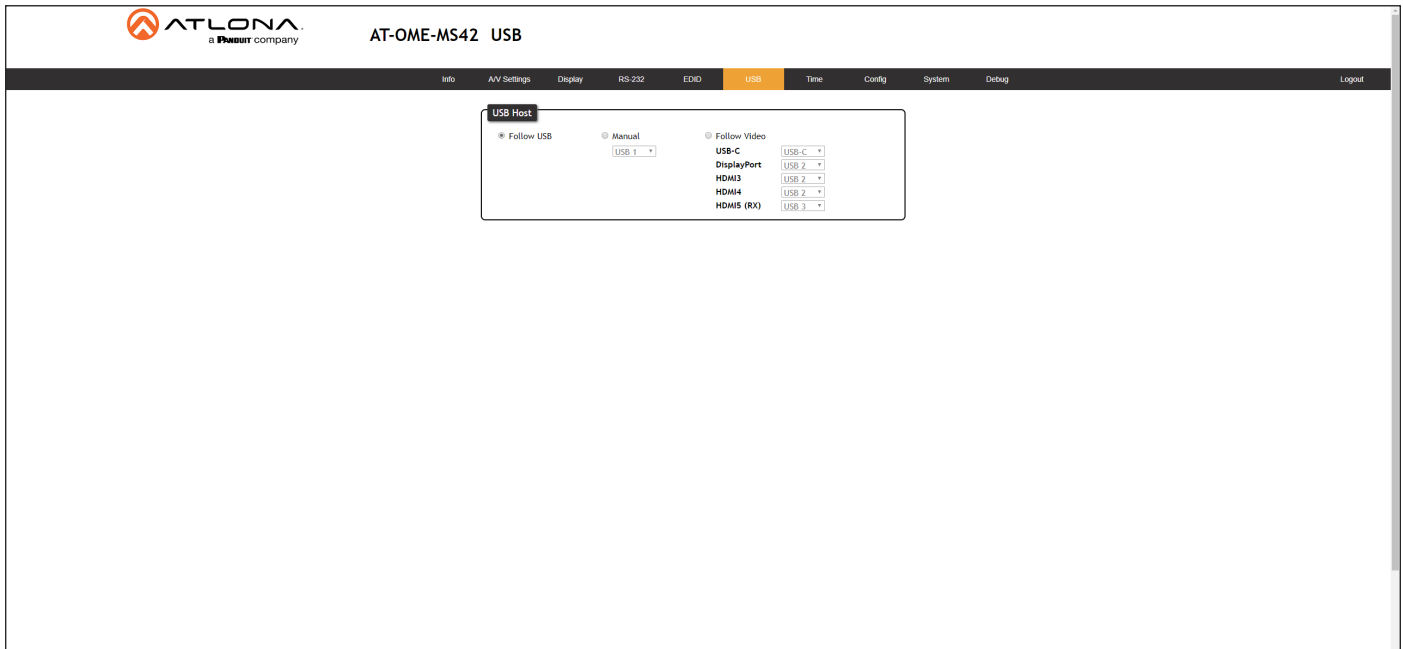
In this mode, each video input can be assigned to either **USB 1** or **USB 2** host ports. This mode locks the USB host device to the desired video input. Each host device will have access to the same USB devices, when video switching occurs.



## Configuration and Management Interfaces

### Time Page

This page provides controls for setting the internal clock of the AT-OME-MS42. Refer to [Setting the System Date and Time \(page 38\)](#) for more information.



### 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

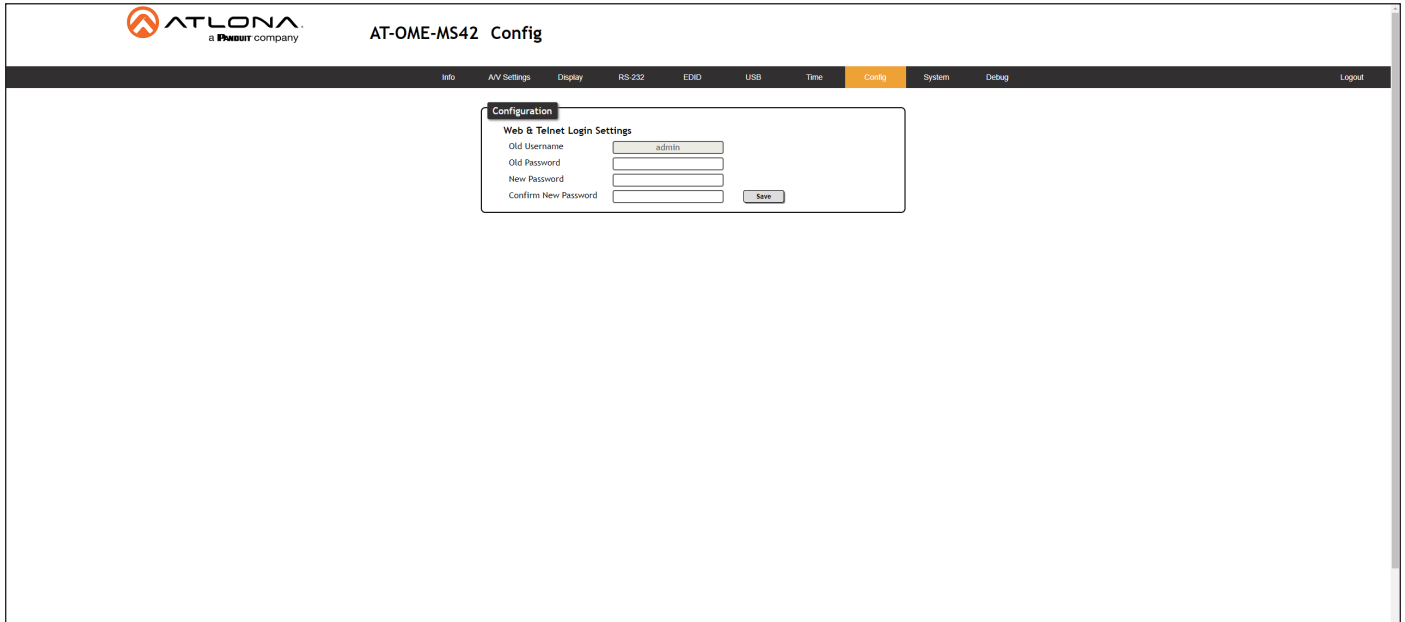
Click the toggle switch button to **ENABLE** or **DISABLE** Daylight Saving Time (DST). This feature is disabled by default.

- **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. Refer to [Password Management \(page 41\)](#) for more information.



The screenshot shows the AT-OME-MS42 Config page. The top navigation bar includes links for Info, A/V Settings, Display, RS-232, EDID, USB, Time, Config (highlighted), System, Debug, and Logout. The main content area is titled 'Configuration' and contains a 'Web & Telnet Login Settings' section. 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.

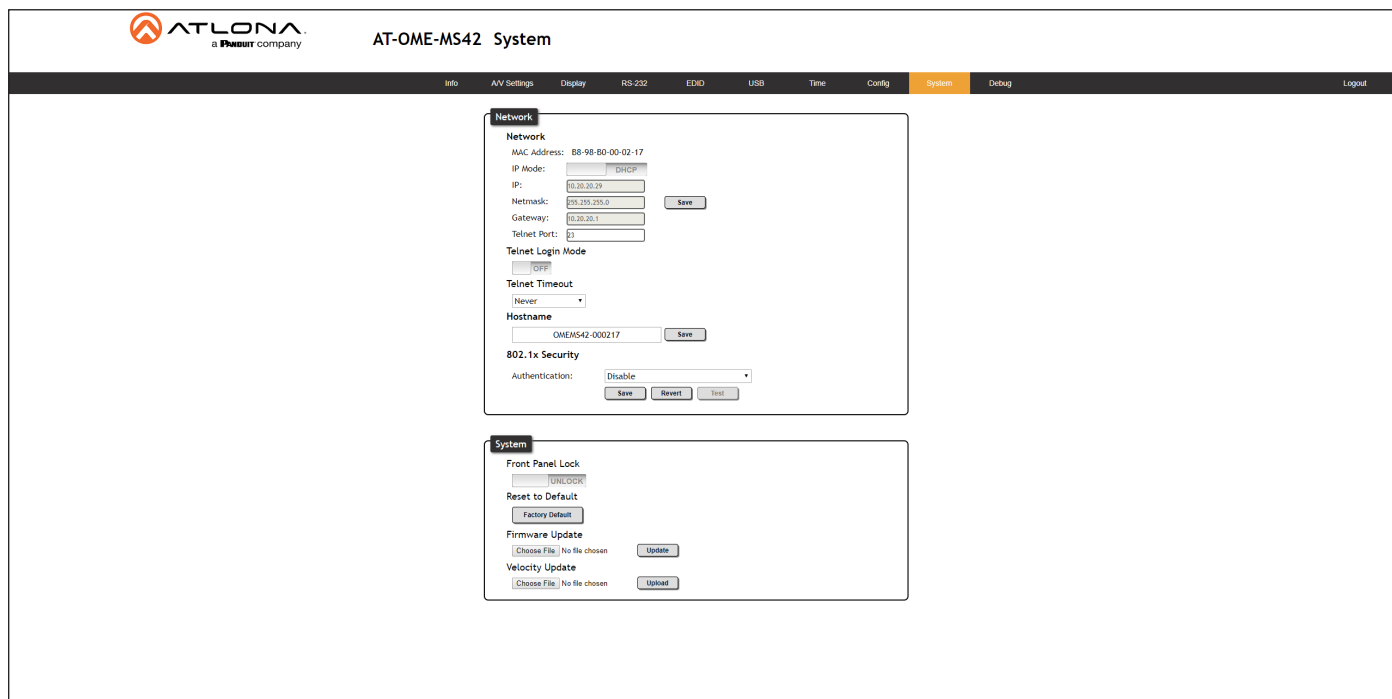
#### Save

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-MS42. The **System** section provides controls for resetting the AT-OME-MS42 to factory-default settings and updating the firmware.



### MAC Address

This field displays the MAC address of the AT-OME-MS42.

### IP Mode

Click this toggle switch to set the AT-OME-MS42 to **DHCP** or **STATIC IP** mode. The default setting is **DHCP** mode. Refer to [Changing the Network IP Mode \(page 42\)](#) for more information.

- **IP**  
Enter the IP address of the AT-OME-MS42 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-MS42 is 192.168.1.254.
- **Netmask**  
Enter the subnet mask of the AT-OME-MS42 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. Refer to [Changing the Telnet Port \(page 43\)](#) for more information.

## Configuration and Management Interfaces

---

### 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.

### Telnet Timeout

Click this drop-down list to select the timeout interval, in seconds. Range is: 1 to 10000 seconds, or Never. Refer to [Adjusting Telnet Timeout \(page 45\)](#) for more information.

### Hostname

Displays the hostname of the AT-OME-MS42, as it would appear on a network. To change the hostname, type the new hostname in this field and click the **Save** button. Refer to [Setting the Host Name \(page 46\)](#) for more information.

### Authentication

Click this drop-down list to select the authentication method when using the 802.1x security protocol. Refer to [802.1X Security \(page 47\)](#) for more information.

### Front Panel Lock

Click this toggle switch to **LOCK** or **UNLOCK** the AT-OME-MS42. Refer to [Locking / Unlocking the Front Panel \(page 49\)](#) for more information.

### Reset to Default

Click the **Factory Default** button to reset the AT-OME-MS42 to factory-default settings. Refer to [Resetting to Factory-Default Settings \(page 50\)](#) for more information.

### Firmware Update

Click the **Choose File** button to begin the firmware update procedure. Refer to [Updating the Firmware \(page 78\)](#) for more information.

### Velocity Update

Click the **Choose File** button to upgrade the Velocity database in the AT-OME-MS42.

# Solution Setup and Configuration Guide

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

- Display Control
- Control Mode

## Display Control

The AT-OME-MS42 provides various methods for display control: CEC, IP, and RS-232. No external control system is required. Each of these methods will be covered in this section.



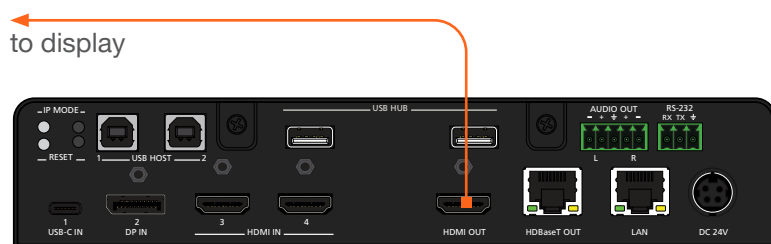
**IMPORTANT:** The AT-OME-MS42 **Switching Mode** must be set to either **Mirrored** or **Matrix Mode w/ static route**. Display control is not supported under **Matrix Mode**. Refer to [Switching Modes \(page 17\)](#) for more information.

### CEC Control

Consumer Electronics Control (CEC) is the simplest method when working with a display. The **DISPLAY** button, on the front panel of the AT-OME-MS42, can be programmed to toggle power on the display, allowing for convenient remote control of the display device. Note that the display must have CEC enabled to receive CEC messages.

*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.*

1. Connect an HDMI cable from the **HDMI OUT** port on the AT-OME-MS42 to an HDMI input on the display device.

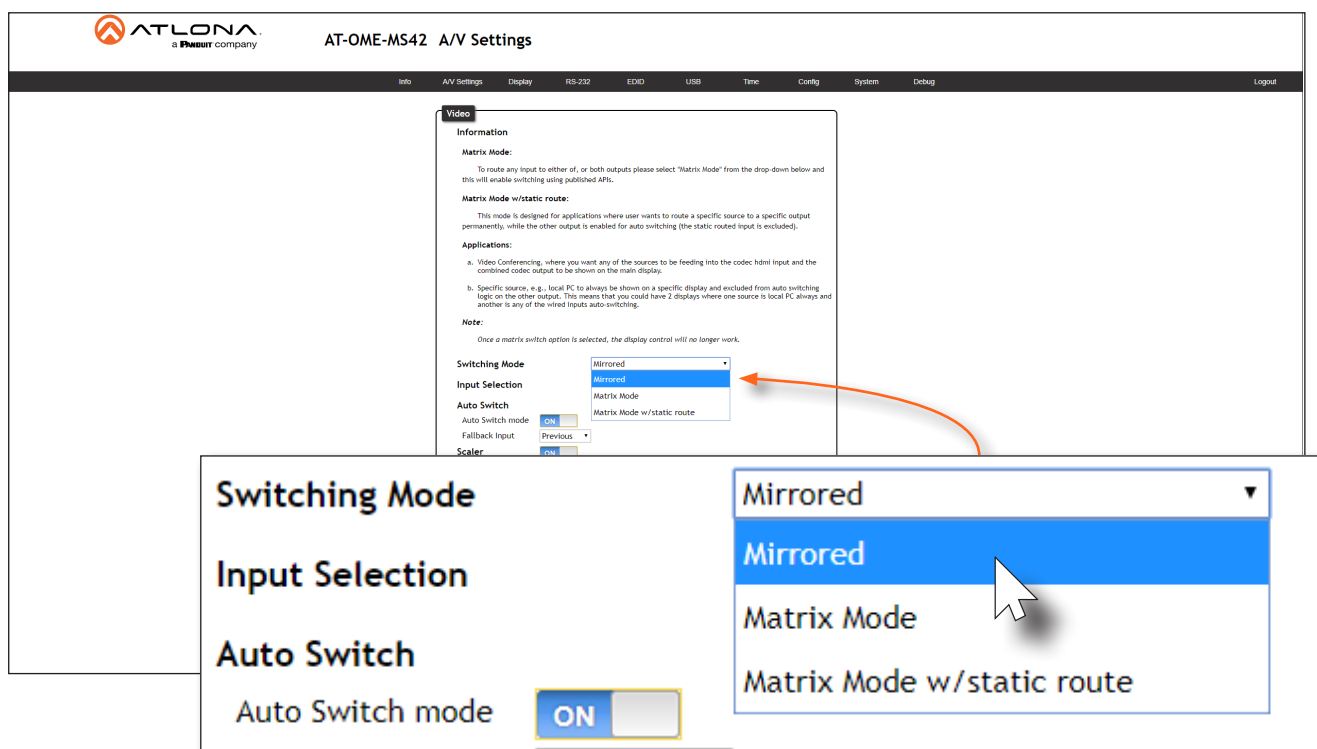


2. Enable CEC on the display device. Refer to the documentation for the display device. It should be noted that different manufacturers will identify CEC with their own brand name. Refer to the table below.

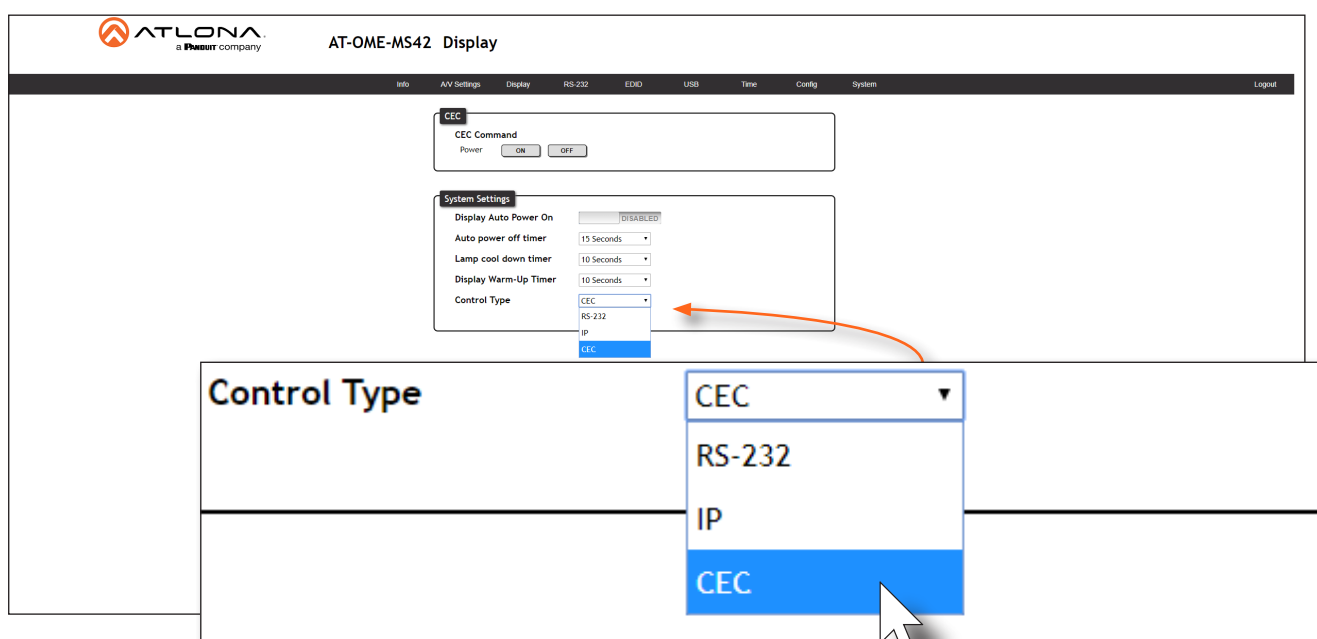
Manufacturer	CEC Designation
Hitachi	HDMI-CEC
LG	SIMPLINK
Philips	EasyLink
Samsung	AnyNet+
Sony	BRAVIA Sync
Toshiba	CE Link / REGZA Link
Visio	HDMI-CEC

## Solution Setup and Configuration Guide

3. Login to the web server. Refer to [Introduction to the Web Server \(page 51\)](#).
4. Click **A/V Settings** in the menu bar.
5. Verify that the **Switching Mode** is set to **Mirrored**. Display control is *not* supported under **Matrix Mode**.

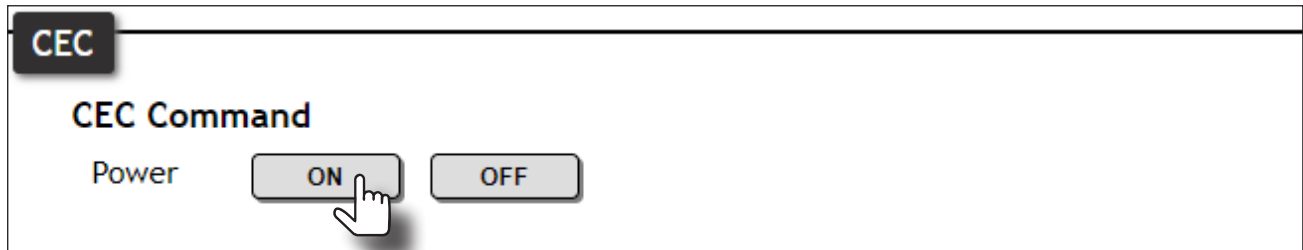


6. Click **Display** in the menu bar.
7. Under **System Settings**, click the **Control Type** drop-down list and select **CEC**. This is the default control method.



## Solution Setup and Configuration Guide

8. Under the **CEC** section, near the top of the page, test the power-on and power-off commands by clicking the **ON** and **OFF** buttons, respectively. The display should power-on and power-off when clicking these buttons.



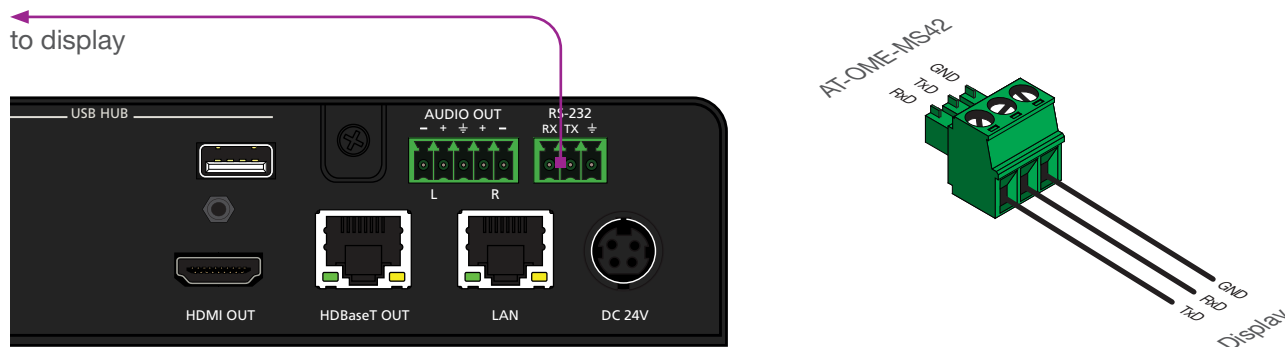
If the display does not respond, check the following:

- Verify that CEC is enabled on the display device.
- Verify the integrity of the HDMI cable. Try connecting a different HDMI cable between the AT-OME-MS42 and the display device.
- Try connecting the HDMI cable to a different HDMI input on the display device.

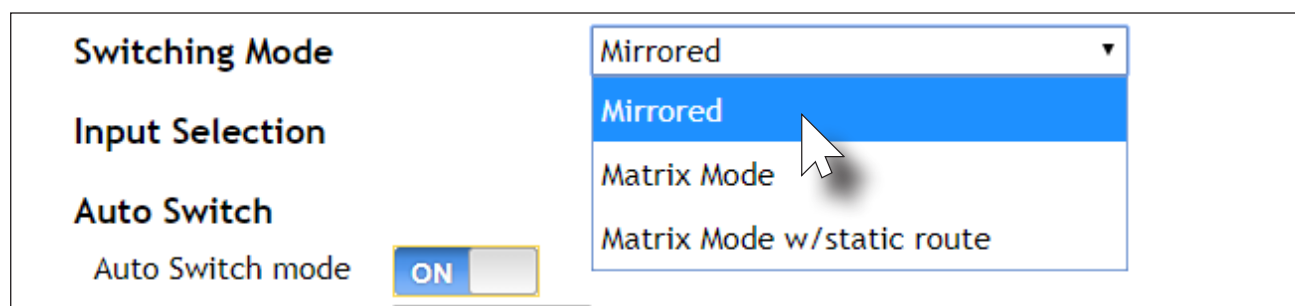
## Solution Setup and Configuration Guide

### Using RS-232

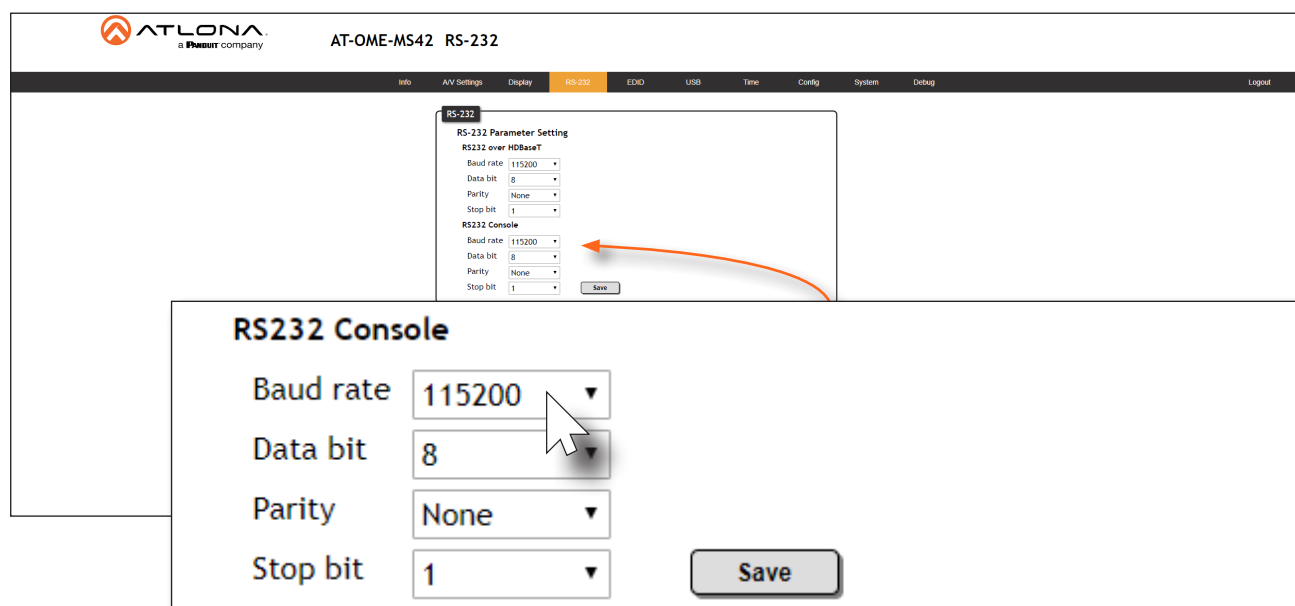
1. Connect a serial cable from the **RS-232** port on the AT-OME-MS42, to the RS-232 port on the display. The included 3-pin captive screw connector should be wired as shown.



2. Login to the web server. Refer to [Introduction to the Web Server](#) (page 51).
3. Click **A/V Settings** in the menu bar.
4. Verify that the **Switching Mode** is set to **Mirrored**. Display control is *not* supported under **Matrix Mode**.



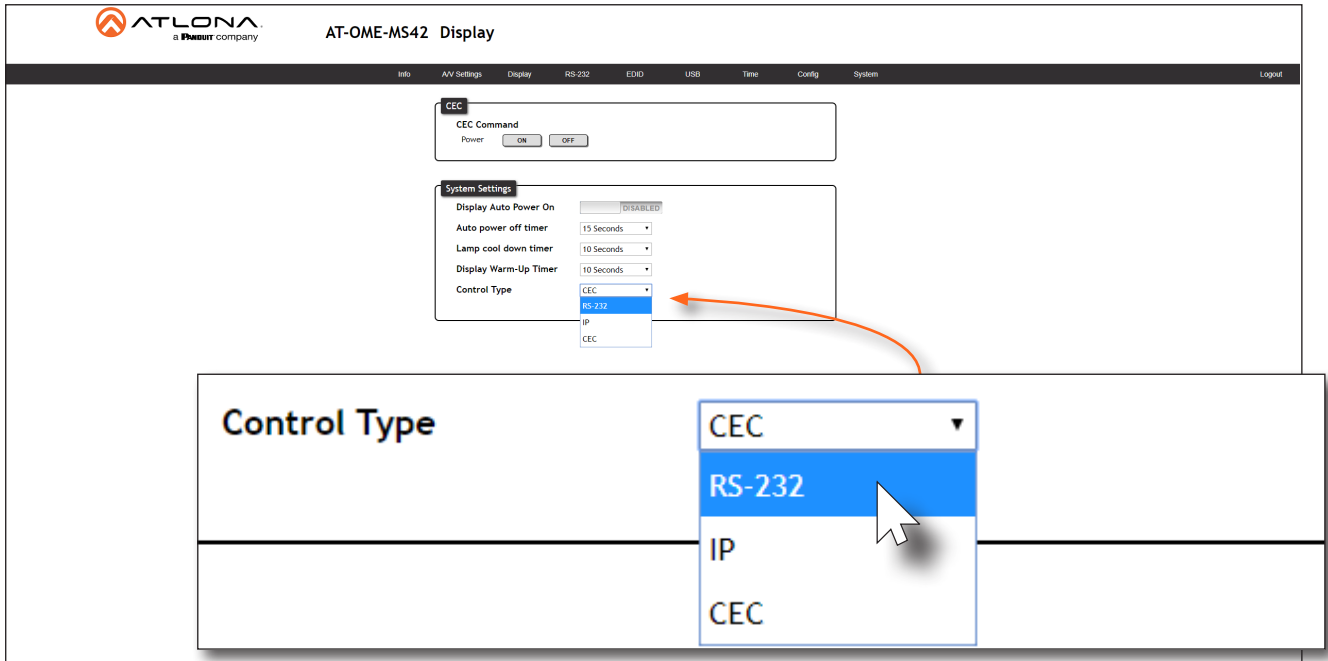
5. Click **RS-232** in the menu bar.
6. Set the RS-232 settings for the display (sink) device, under the **RS232 Console** section. These settings must match the device settings for the display. Refer to the User Manual of the display device for more information.



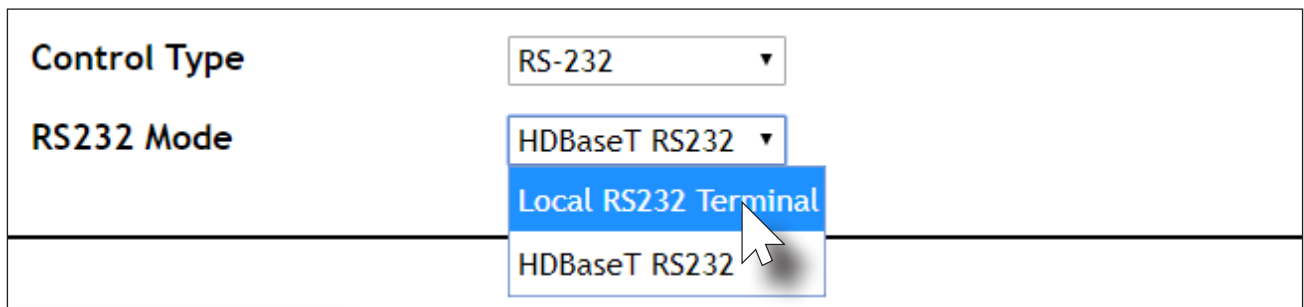


## Solution Setup and Configuration Guide

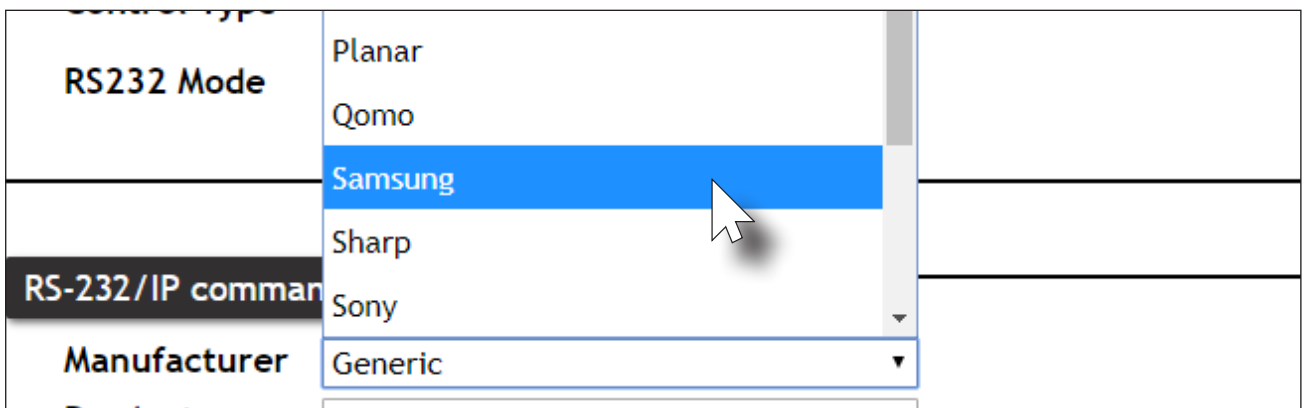
7. Click **Display** in the menu bar.
8. Click the **Control Type** drop-down list and select **RS-232**.



9. Click the **RS232 Mode** drop-down list and select **Local RS232 Terminal**.



10. Scroll down to the bottom of the page and locate the **RS-232 / IP commands** section.
11. Click the **Manufacturer** drop-down list and select the manufacturer of the device that is being controlled. In the example below, **Samsung** is selected.

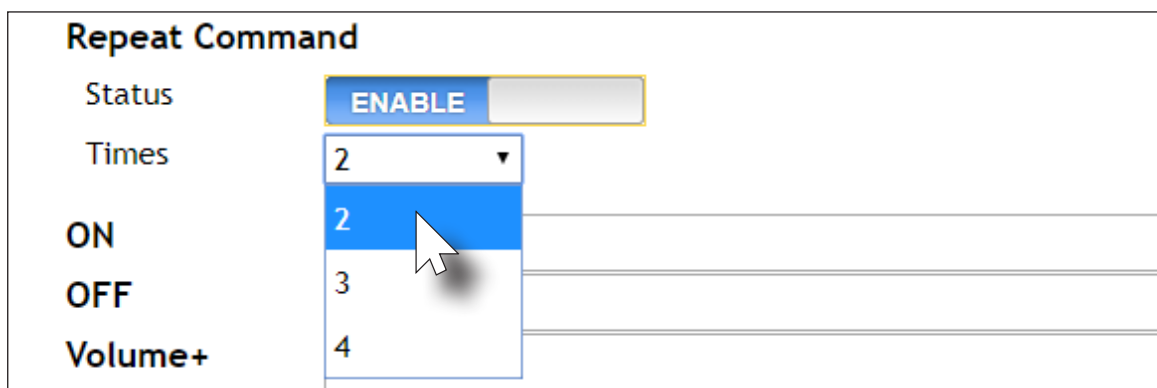


## Solution Setup and Configuration Guide



**NOTE:** If the manufacturer is not listed in the drop-down list, then select **Generic**. When Generic is selected, the **Products** and **Model** drop-down lists will only list **Generic**.

12. 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-MS42 will populate the command fields with the proper values, based on the selected device.
13. Some devices may require that the command be sent multiple times before an acknowledge message is sent back to the AT-OME-MS42. Refer to the User Manual for the display device for more information. If the command must be repeated, continue with the following steps. Otherwise, skip to step 14.
  - a. Under **Repeat Command**, click the **Status** toggle switch to the **ENABLE** position.
  - b. Click the **Times** drop-down list and select the number of times which the command must be sent to the device, before an acknowledge message is returned. The available values are 2, 3, and 4.



**Repeat Command**

Status: **ENABLE**

Times: **2**

ON

OFF

Volume+

14. If **Generic** was selected as the manufacturer, in step 11, then manually enter the required strings for each operation. Refer to the following for information on formatting command strings.

### 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
```

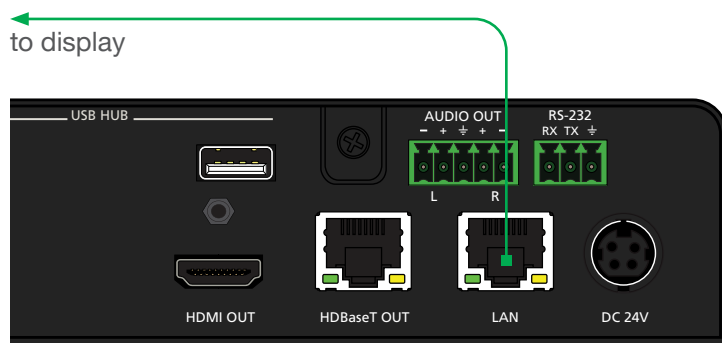
This command would be entered under the **Set command** field, under **ON**. Consult the documentation for the display for the correct command strings.

15. Click the **Send** button to verify that each command works properly. If not, check the values entered for each command.
16. Click the **Save** button to commit all changes.

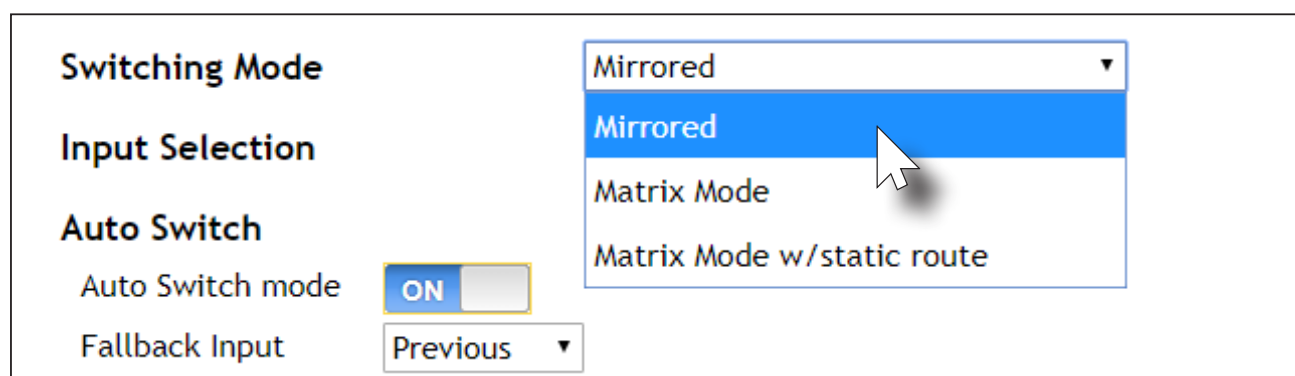
### Using IP

Instead of using a serial cable to send commands, this method uses an Ethernet cable to send commands from the AT-OME-MS42 to the display device over IP network.

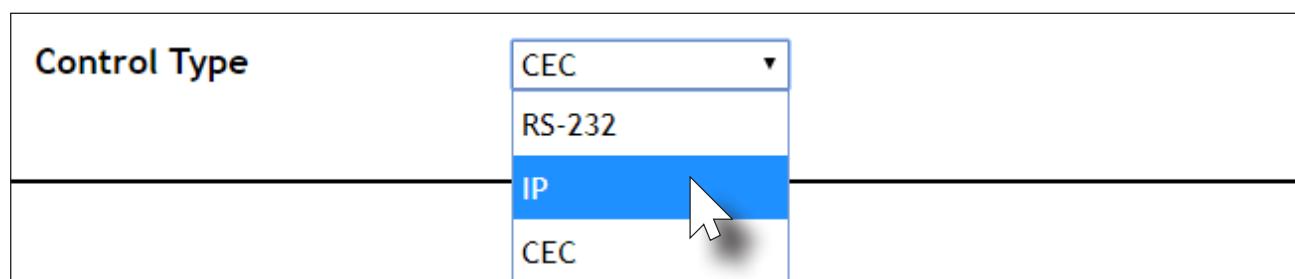
1. Connect an Ethernet cable from the **LAN** port on the AT-OME-MS42, to the LAN port on the display.



2. Login to the web server. Refer to [Introduction to the Web Server \(page 51\)](#).
3. Click **A/V Settings** in the menu bar.
4. Verify that the **Switching Mode** is set to **Mirrored**. Display control is *not* supported under **Matrix Mode**.

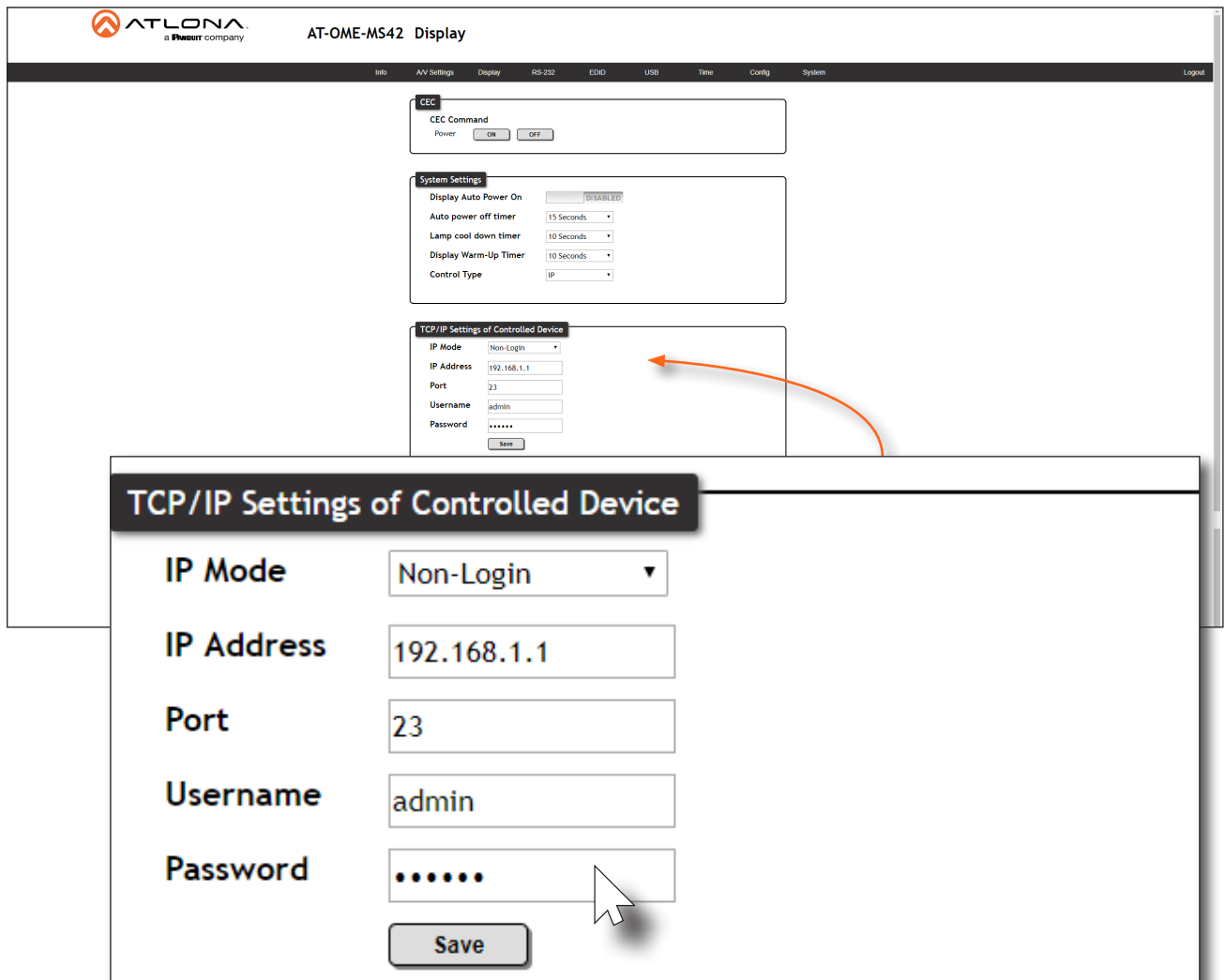


5. Click **Display** in the menu bar.
6. Under **System Settings**, click the **Control Type** drop-down list and select **IP**.



## Solution Setup and Configuration Guide

7. Click the **IP Mode** drop-down list to select the login mode for the display device.
  - If set to **Login**, then a username and password will be required to access the Telnet session.
  - If set to **Non-Login**, then no credentials will be required for the Telnet session.
8. Locate the **TCP/IP Settings of Controlled Device** section and enter the following information:
  - a. **IP Address**  
Enter the IP address of the device to be controlled.
  - b. **Port**  
Enter the port in this field.
  - c. **Username**  
This field is only required if **IP Mode** is set to **Login**. Enter the username in this field.
  - d. **Password**  
This field is only required if **IP Mode** is set to **Login**. Enter the required password in this field.

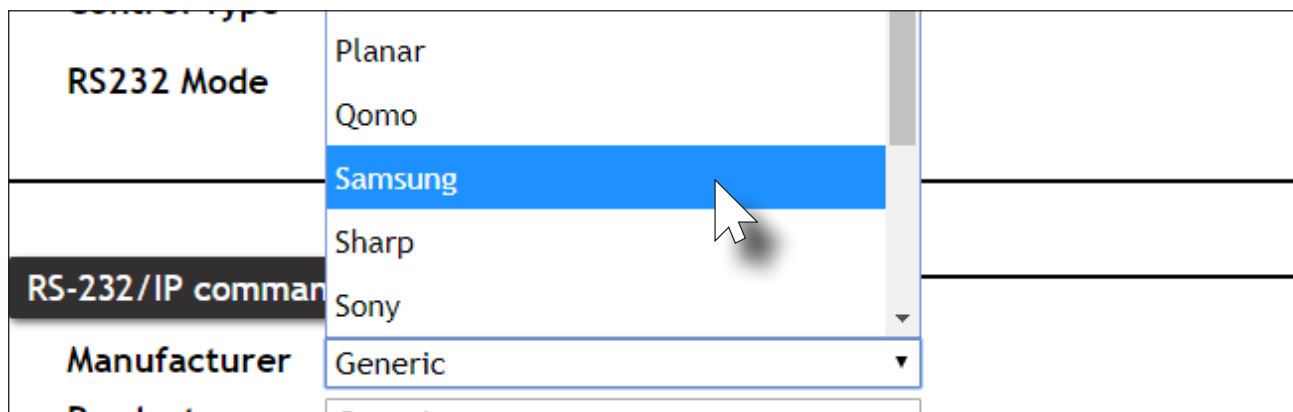


The screenshot shows the ATLONA AT-OME-MS42 Display configuration interface. The top navigation bar includes links for Info, AV Settings, Display, RS-232, EDID, USB, Time, Config, System, and Logout. The main content area is divided into three sections: CEC, System Settings, and TCP/IP Settings of Controlled Device. The TCP/IP Settings section is highlighted with a red arrow. Below this section, a modal window titled "TCP/IP Settings of Controlled Device" is displayed, showing the following fields:

TCP/IP Settings of Controlled Device	
IP Mode	Non-Login
IP Address	192.168.1.1
Port	23
Username	admin
Password	.....
Save	

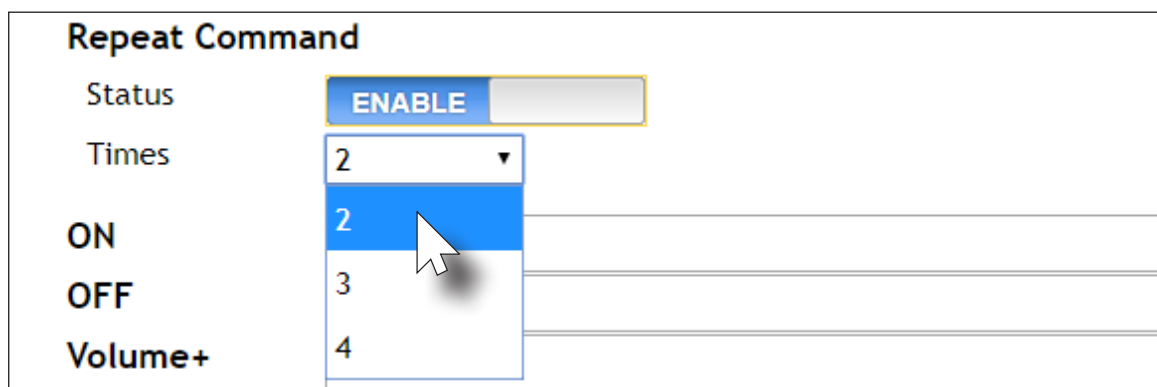
## Solution Setup and Configuration Guide

9. Scroll down to the bottom of the page and locate the **RS-232 / IP commands** section.
10. Click the **Manufacturer** drop-down list and select the manufacturer of the device that is being controlled. In the example below, **Samsung** is selected.




**NOTE:** If the manufacturer is not listed in the drop-down list, then select **Generic**. When Generic is selected, the **Products** and **Model** drop-down lists will only list **Generic**.

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-MS42 will populate the command fields with the proper values, based on the selected device.
12. Some devices may require that the command be sent multiple times before an acknowledge message is sent back to the AT-OME-MS42. Refer to the User Manual for the display device for more information. If the command must be repeated, continue with the following steps. Otherwise, skip to step 13.
  - a. Under **Repeat Command**, click the **Status** toggle switch to the **ENABLE** position.
  - b. Click the **Times** drop-down list and select the number of times which the command must be sent to the device, before an acknowledge message is returned. The available values are 2, 3, and 4.



13. If **Generic** was selected as the manufacture, in step 10, then manually enter the required strings for each operation. Refer to the following for information on formatting command strings on the next page.

## Solution Setup and Configuration Guide

---

### 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.

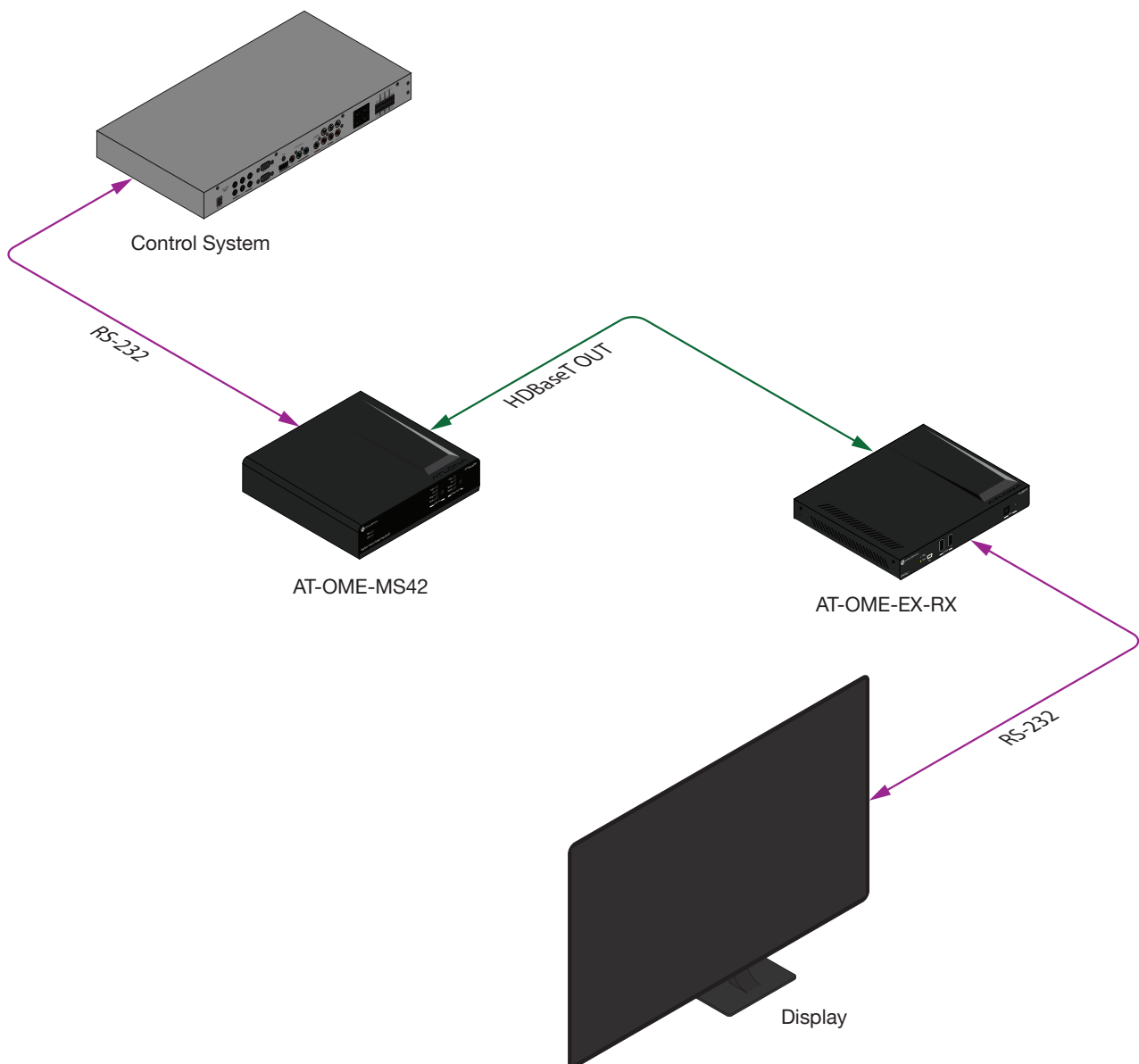
14. Click the **Send** button to verify that each command works properly. If not, check the values entered for each command.
15. Click the **Save** button to commit all changes.

## Solution Setup and Configuration Guide

### Pass-through mode

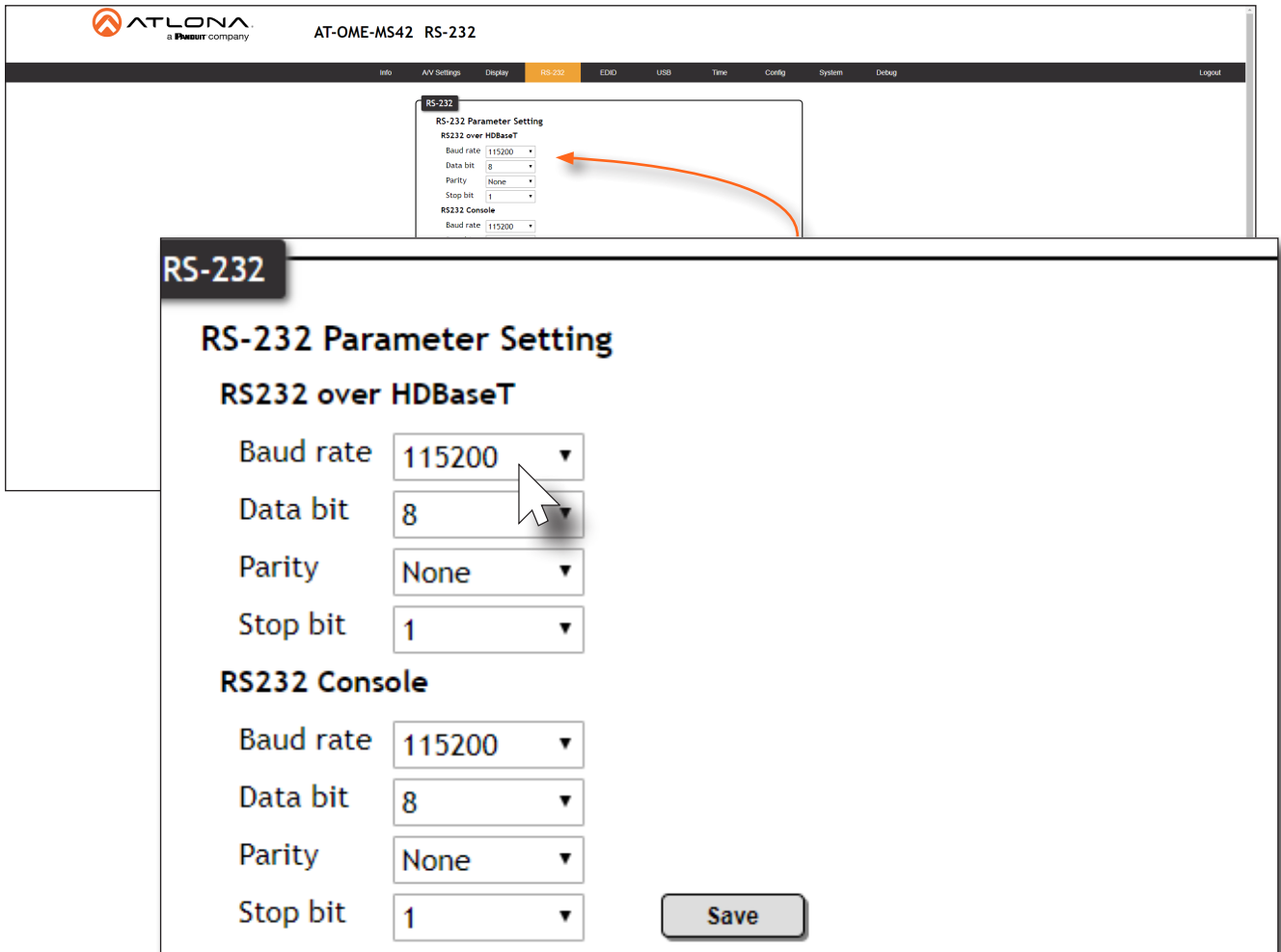
In pass-through mode, RS-232 commands are sent to the AT-OME-MS42 from a control system, transmitted over HDBaseT to the receiver unit, and then to the display (sink) device.

1. Connect the RS-232 cable between the control system and the AT-OME-MS42.
2. Connect an Ethernet cable from the **HDBaseT OUT** port to a receiver.
3. Connect an RS-232 cable between the display (sink) and the receiver.
4. Refer to the *AT-OME-MS42 Applications Programming Interface* for a list of available commands.



## Solution Setup and Configuration Guide

5. Login to the web server. Refer to [Introduction to the Web Server \(page 51\)](#).
6. Click **RS-232** in the menu bar.
7. Set the RS-232 settings for the display (sink) device, under the **RS232 over HDBaseT** section. These settings must match the device settings for the display. Refer to the User Manual of the display device for more information.



AT-OME-MS42 RS-232

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

**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**

8. Click the **Save** button to commit changes.
9. RS-232 pass-through configuration is complete. The control system can now be used to send commands to the connected display device. Use the following API command to send a command to the display (sink) device, where display\_command is the command data to send:

```
RS232Zone[display_command\x0d]
```

\x0d (carriage return) should only be added to end of the string if the sink device is expecting this character.



## Solution Setup and Configuration Guide

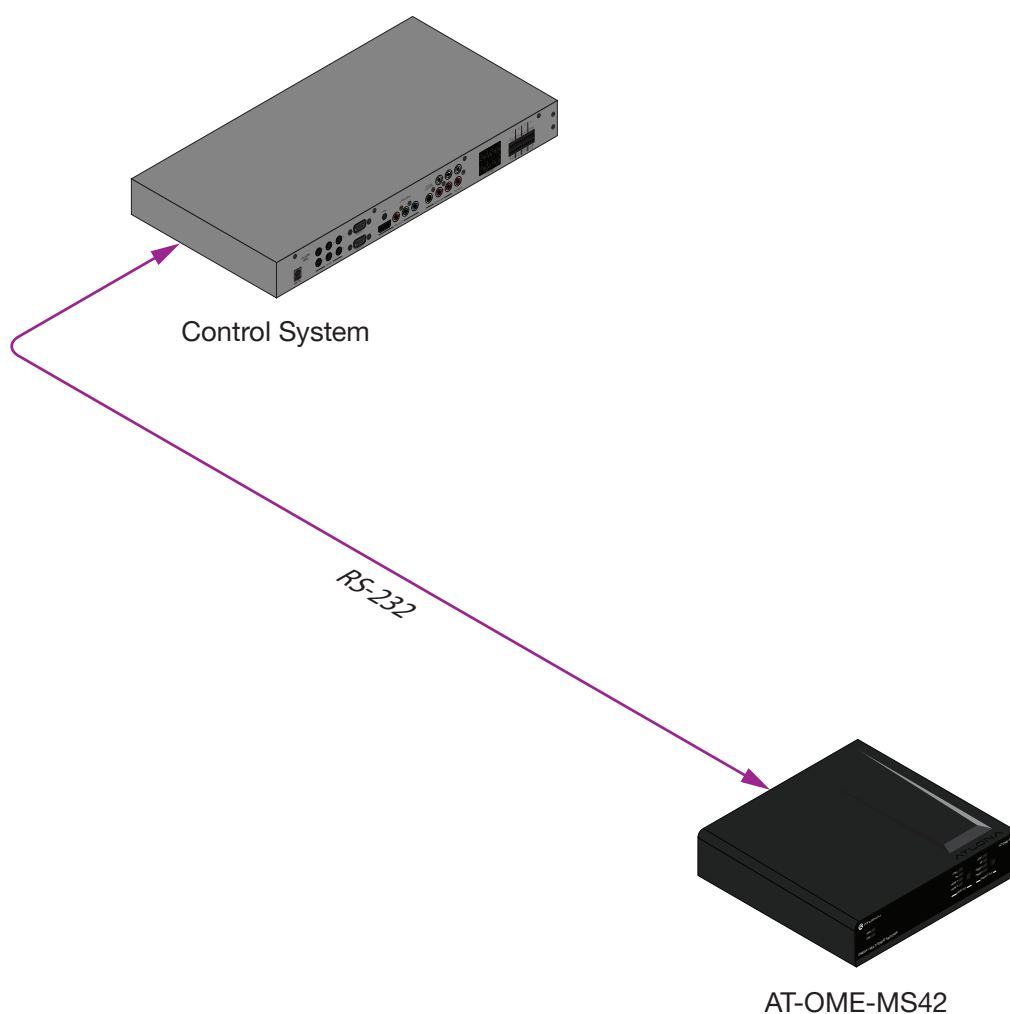
### Control mode

In control mode, RS-232 commands are sent from a computer or control system (DTE) to the AT-OME-MS42 (DCE). This method allows direct control of the switch for routing, IP configuration, powering-on / powering-off and other functions.



**IMPORTANT:** Both the **RS-232** port on the AT-OME-MS42 and on the control system must be set to the same baud rate, in order to communicate properly.

1. Connect the RS-232 cable between the control system and the AT-OME-MS42.
2. Set the baud rate of the computer/control system to the same baud rate. If the AT-OME-MS42 and the control system are not set to the same baud rate, then the AT-OME-MS42 will not respond to RS-232 commands.
3. Refer to the *AT-OME-MS42 Applications Programming Interface* for a list of available commands.



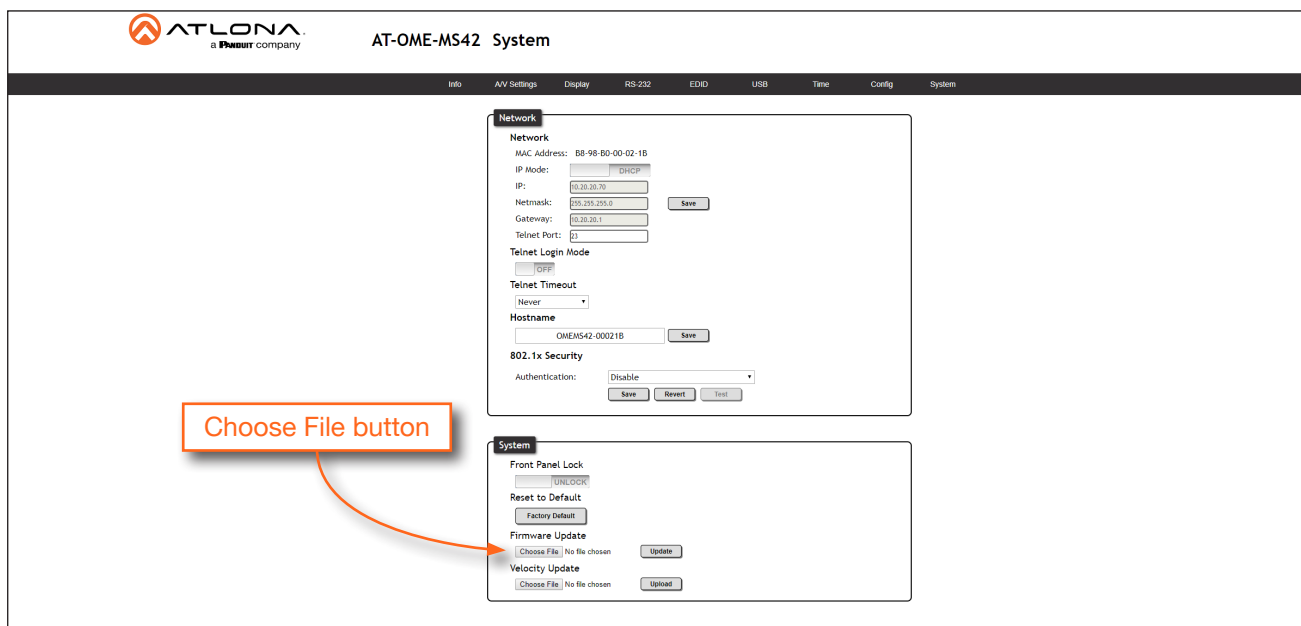
## Appendix

### Updating the Firmware

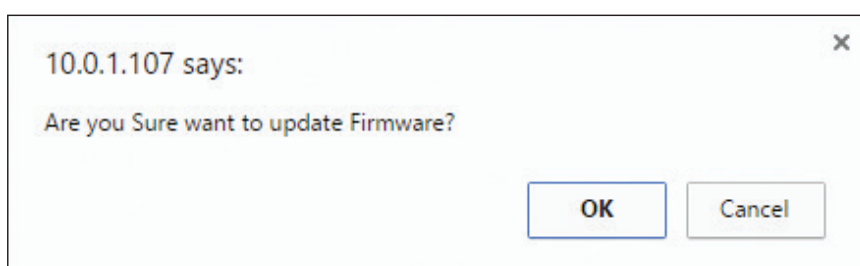
Updating the firmware is performed using the built-in web server.

Requirements:

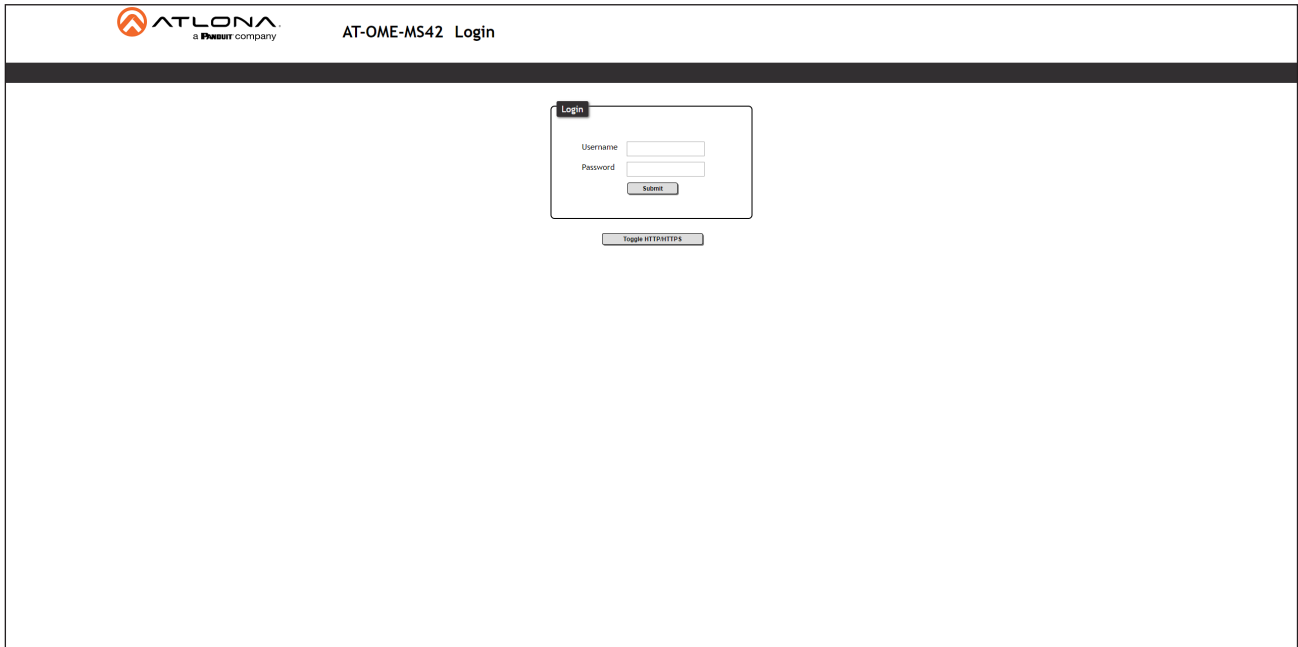
- AT-OME-MS42
  - Firmware file
  - Computer on the same network as the AT-OME-MS42
1. Download the firmware file from [atlona.com](http://atlona.com) and extract the contents of the .zip file to a folder on the computer desktop.
  2. Connect an Ethernet cable from the computer, containing the firmware, to the same network where the AT-OME-MS42 is connected.
  3. Login to the web server. Refer to [Introduction to the Web Server \(page 51\)](#).
  4. Click **System** in the menu bar.



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



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



The screenshot shows the login interface for the ATLONA AT-OME-MS42 device. The header bar contains the ATLONA logo and the text "AT-OME-MS42 Login". The main content area features a "Login" dialog box with fields for "Username" and "Password", and a "Submit" button. Below the dialog box is a "Toggle HTTP/HTTPS" button.

## Mounting Instructions

The AT-OME-MS42 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.

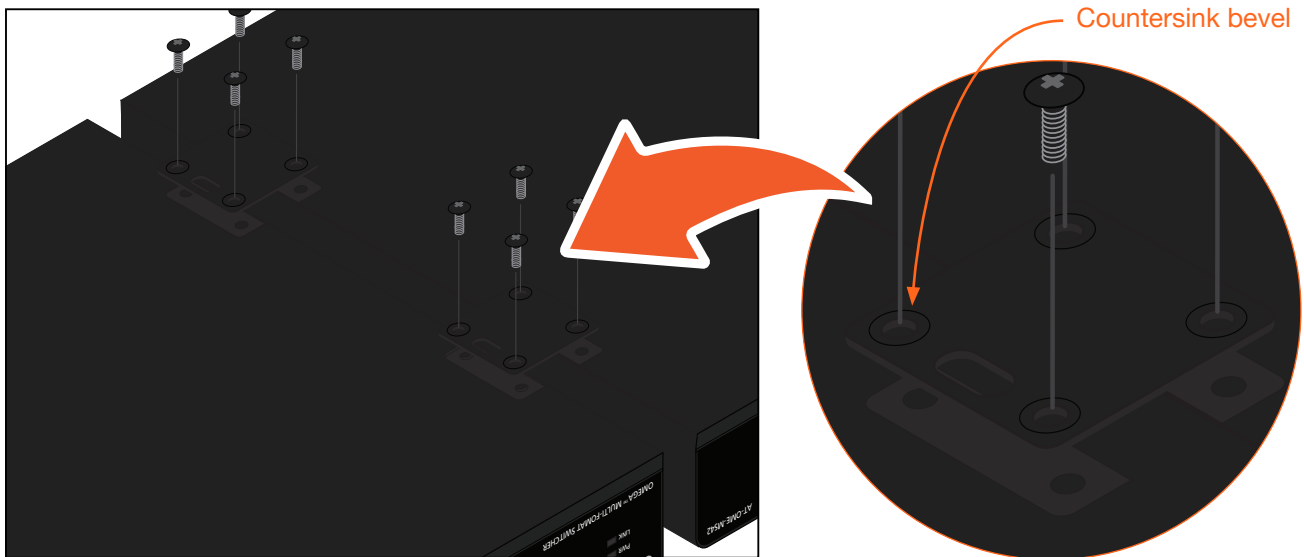
## Single Unit Rack Installation

1. Attach the included small rack ear to one side of the AT-OME-MS42, using the included screws.
2. Attach the included longer rack ear to the opposite side of the AT-OME-MS42 using the included screws.



### Dual Unit Rack Installation

1. Turn both units upside-down on a flat surface, next to each other, as shown.
2. Position the included mounting plate over the pre-drilled holes on the bottom of the enclosure. When attaching the mounting plate, the countersink bevels on the mounting plate should face upward.

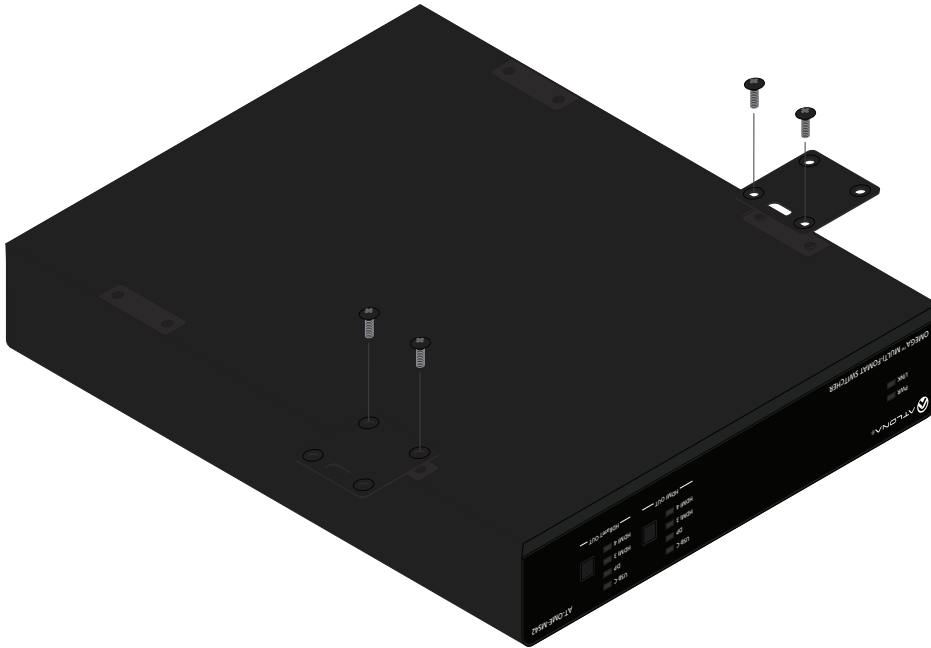


3. Turn the attached units over and install the rack ears (sold separately) to one side of each enclosure using the included screws.

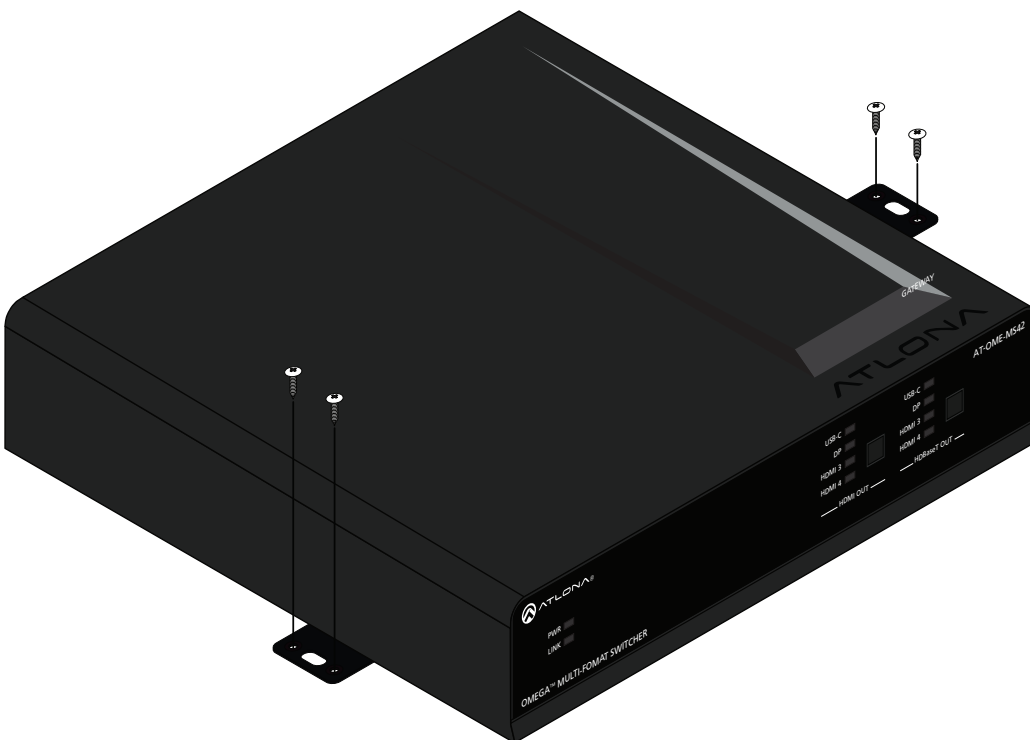


### Flat Surface

1. Turn the unit upside down, on a flat surface.
2. Position the included mounting plates over the pre-drilled holes on the bottom of the enclosure. When attaching mounting plates, the countersink bevels on the mounting plates should face upward.



3. Mount the unit using the circular holes, on each mounting plate. If using a drywall surface, a #6 drywall screw is recommended. Mounting screws are not included.



**NOTE:** The unit can also be mounted under a flat surface, such as a table, by turning the unit upside down.

## Specifications

Video		
HDMI	2.0 (1.4 when downscaled)	
HDCP	2.2 (will downscale reporting to match connected devices – does not downscale HDCP signal)	
UHD/HD	4096×2160 @ 60 <sup>(1)</sup> /50/30/25/24 Hz 3840×2160 @ 60 <sup>(1)</sup> /50/30/25/24 Hz 1920×1080p @ 60/59.9/50/30/29.97/25/24/23.98 Hz 1920×1080i @ 30/29.97/25Hz 1280×720p @ 60/59.94/50Hz	
VESA	2560×1600 @ 60 Hz 2048×1536 @ 60 Hz 1920×1200 @ 60 Hz 1680×1050 @ 60 Hz 1600×1200 @ 60 Hz 1440×900 @ 60 Hz 1400×1050 @ 60 Hz 1280×1024 @ 60 Hz	
Scaler <sup>(2)</sup>	IN	OUT
	4K @ 24 Hz 4K @ 30 Hz 4K @ 60 Hz, 4:2:0	1080p @ 24 Hz 1080p @ 30 Hz 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 <sup>(3)</sup>	HDR10, Hybrid-Log Gamma (HLG), and Dolby® Vision™ @ 60Hz	

Audio			
HDMI / HDBaseT Pass-Through Formats	LPCM 2.0 LPCM 5.1 LPCM 7.1	Dolby Digital, Dolby Digital Plus™ Dolby TrueHD Dolby Atmos®	DTS® Digital Surround™ DTS-HD Master Audio™ DTS:X®
Bit Rate	24 Mbits/s max		
Analog Audio			
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		
Sample Rate	32 kHz, 44.1 kHz, 48 kHz, 88.2 kHz, 96 kHz, 176.4 kHz, 192 kHz		

Protocols	
Addressing	DHCP, static
Management	HTTPS, HTTP, Telnet, SSH, mDNS
Authentication	IEEE 802.1x: PEAP/MSCHAPv2 or EAP-TLS

USB	
Signal	2.0
Maximum Data Rate	120 Mbps
USB-C	Supports Audio, Video, device and host data, and up to 60W power charging

Control	
RS-232	Device control and configuration Bidirectional pass-through from control system over HDBaseT Supported baud rates: 2400, 4800, 9600, 19200, 38400, 57600, 115200
IP	Protocols: HTTP, HTTPS, Telnet, SSH Modes: DHCP, Static – selectable through front panel and webGUI
CEC	Yes

Resolution / Distance	4K/UHD - Feet / Meters		1080p - Feet / Meters	
HDMI IN/OUT	15	5	30	10
CAT5e/6	295	90	330	100
CAT6a/7	330	100	330	100

Connectors, Controls, and Indicators	
HDMI IN	2 – Type A, 19-pin female
DP IN	1 – DisplayPort, female
USB-C IN	1 – USB Type-C v3.1, 24-pin female, AV input (Alternate Mode)
HDMI OUT	1 – RJ45, female
HDBaseT OUT	2 – USB Type B, 4-pin, female
USB HUB 2	2 – Type A, 4-pin female
USB HOST	2 – Type B, female
AUDIO OUT	1 – 5-pin captive screw, balanced / unbalanced 2-channel
RS-232	1 – 3-pin captive screw (bidirectional)
LAN	1 – RJ45, 100Base-T
PWR	1 – 4-pin DIN, locking
<b>Control Buttons:</b> HDMI OUT, HDBaseT OUT, DISPLAY IP MODE, RESET	3 – momentary, tact-type 2 – momentary, recessed
<b>Function Indicators:</b> INPUT PWR, LINK, IP MODE, RESET	8 – LED, blue 4 – LED, blue

Temperature	Fahrenheit	Celsius
Operating	32 to 113	0 to 45
Storage Temperature	-4 to 140	-20 to 60
Operating Humidity (RH)	20% to 90%, non-condensing	

Power	
Consumption	Unit only: 8.6 W Full load: 104 W (while powering USB-C device up to 60 W, HDBaseT PoE devices up to 30 W each, and USB type A devices up to 2.5 W each)
External Power Supply	100 - 240 V AC, 50/60 Hz Output: 24 V / 5 A DC

Dimensions	Inches	Millimeters
Device (H x W x D)	1.73 x 8.64 x 10	44 x 219.5 x 254

Weight	Pounds	Kilograms
Device	3.46	1.57

(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.

(3) HDR support is restricted to HDMI, USB-C, and DisplayPort. HDBaseT does not support HDR formats.



