ATLONA
a PANDUIT company

OMEGA™

4K / UHD
4x2 Matrix Switcher
with HDMI and HDBaseT Input

AT-OME-MS42-HDBT | Atlona Manuals
Switchers

Version Information

Version	Release Date	Notes
2	Oct 2024	Correction to RS-232 over HDBaseT OUT operation on RS-232 Page (page 81).

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Operating Notes

IMPORTANT: Visit https://atlona.com/product/at-ome-ms42-hdbt/ for the latest firmware updates and User Manual.

Warranty

To view the product warranty, use the following link or QR code:

https://atlona.com/warranty/

Safety and Certification

CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN

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

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

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

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

FCC Compliance

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

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Introduction

The Atlona **AT-OME-MS42-HDBT** is a 4×2 matrix switcher with USB-C, HDBaseT, and HDMI inputs, plus HDMI and HDBaseT outputs. Part of the Omega™ Series of integration products for modern AV communications and collaboration, the OME-MS42-HDBT 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). The local HDMI and USB-C inputs, and HDMI output support 4K HDR and 4K/60 4:4:4 at 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-HDBT features switching for up to four host PCs through USB 2.0 type B and USB-C ports, and remotely over HDBaseT. A built-in USB 2.0 hub provides connectivity for two peripheral devices such as a camera, microphone, speakerphone, or keyboard and mouse.

Features

- 4×2 AV matrix switcher
- USB-C input for AV, data, and device charging(1)
- HDBaseT and HDMI outputs with selectable AV switching modes
- Video, audio, power, and USB data, control, and Ethernet over category cable utilizing HDBaseT technology
- USB 2.0 interfacing and extension(2) over HDBaseT
- Switch between multiple USB host sources
- 4K/UHD capability @ 60 Hz with 4:4:4 chroma sampling on local ports (HDMI and USB-C), plus support for HDR formats
- Local powering, or remote powering over HDBaseT(3)

Package Contents

1 x AT-OME-MS42-HDBT
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

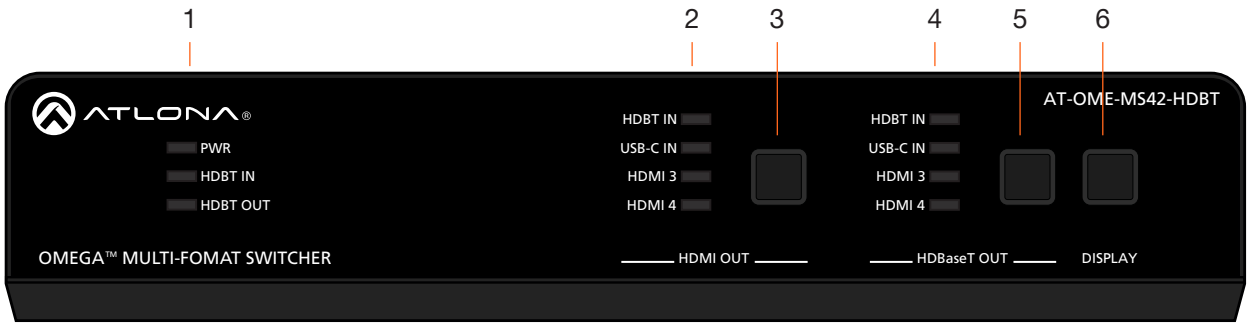
(1) Device charging available when used with included AT-PS-245-D4 power supply.

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

(3) When being powered remotely, there's no USB-C charging and no power being sent to the HDBT input.

Panel Description

Front Panel



1 **PWR**
The LED indicator glows solid green when the unit is powered.

HDBT IN
This LED indicator glows solid green when a compatible HDBaseT transmitter is connected to the **HDBaseT IN** port.

HDBT OUT
This LED indicator glows solid green when a compatible HDBaseT receiver is connected to the **HDBaseT OUT** port.

2 **HDMI OUT: Input LED Indicators**
These LED indicators display which input is routed to the **HDMI OUT** port. A solid green indicator represents the active input being used.

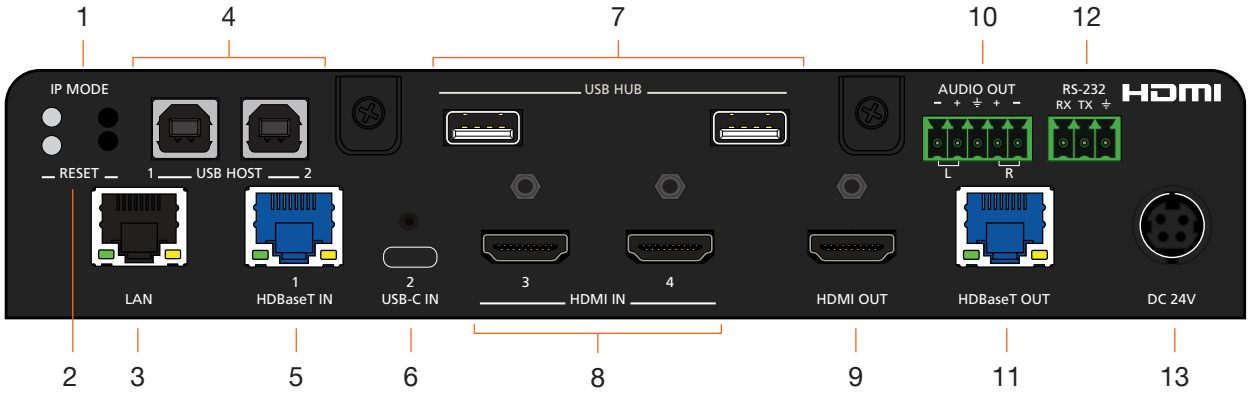
3 **HDMI OUT: Input Selection**
Press and release this button to change the input.

4 **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.

5 **HDBaseT OUT: Input Selection**
Press and release this button to change the input.

6 **DISPLAY**
Press this button to toggle the power state of the desired display. Refer to Display Control (page 29) for more information.

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 12) 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 73) for more information.

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

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

5 HDBaseT IN
Connect a compatible HDBaseT transmitter to this port.

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

7 USB HUB
Connect USB devices to these USB ports.

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

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

10 AUDIO OUT
Connect an audio output device to this port using the included captive screw block.

11 HDBaseT OUT
Connect a category cable from this port to a compatible receiver unit. Recommended receiver is the AT-OME-EX-RX.

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

Connection Instructions

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

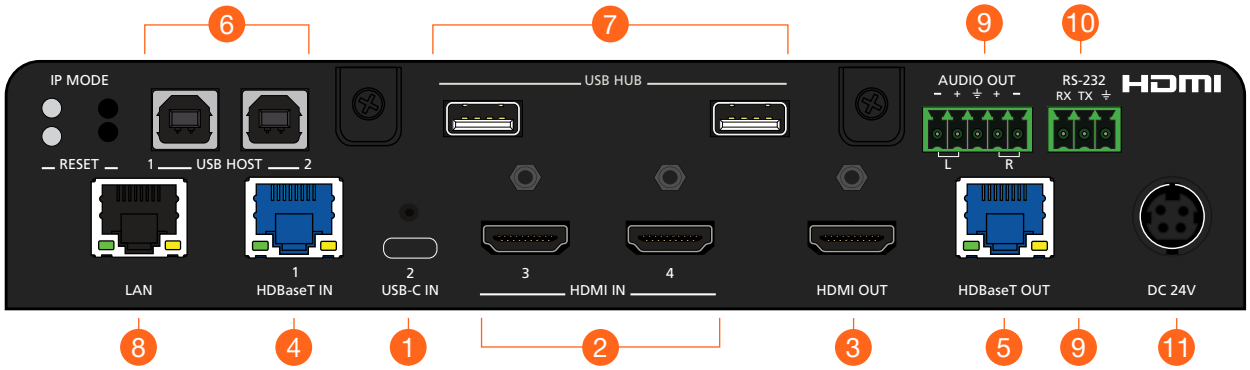
   Refer to the tables below for recommended cabling when using Altona products with HDBaseT technology. The orange bars indicate the signal quality when using each type of cable. Higher-quality signals are represented by more bars. *These tables are for guidance, only. Performance may vary, based on environmental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

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

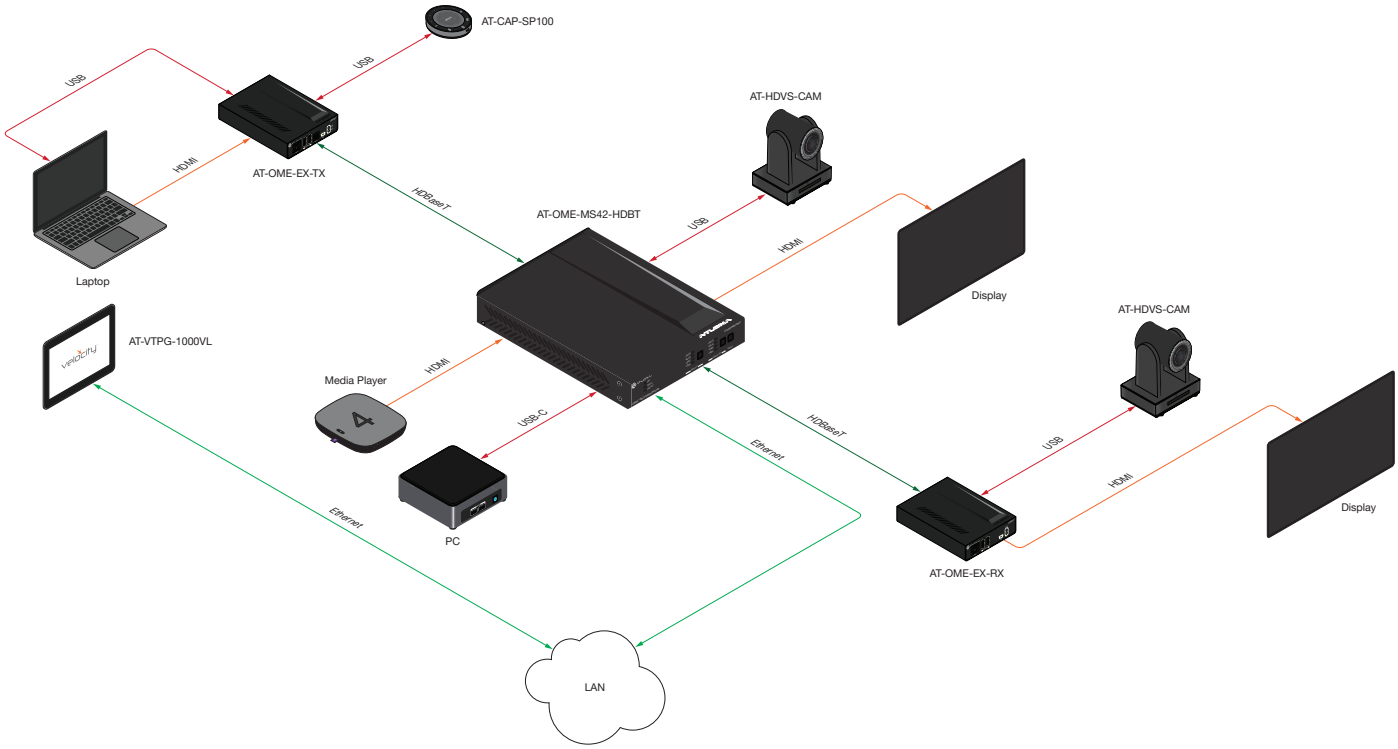
Cable	Max. Distance @ 4K	Max. Distance @ 1080p
CAT5e	295 feet (90 meters)	330 feet (100 meters)
CAT6a / CAT6a / CAT7	330 feet (100 meters)	330 feet (100 meters)

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

6. Connect up to two USB host devices to the **USB HOST** ports.
7. Connect USB devices to the **USB HUB** ports.
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 10) 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-HDBT 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-HDBT 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/16`. If this occurs, refer to Automatic Private IP Addressing (APIPA) Mode (page 14).

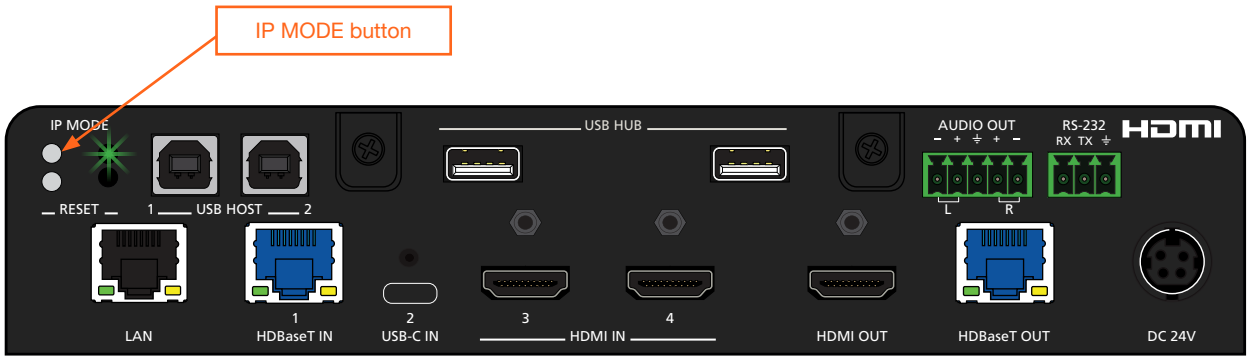
Use an IP scanner, along with the MAC address on the bottom of the unit, to identify the unit on the network. If a static IP address is desired, the unit can be switched to static IP mode.

NOTE: When switching from DHCP to static IP mode, the AT-OME-MS42-HDBT will retain the last assigned IP address, until it is changed manually (static IP mode) or assigned a new IP address by the DHCP server.

Using the Front Panel

1. Make sure the AT-OME-MS42-HDBT is powered.
2. Connect an Ethernet cable between the **LAN** port of the AT-OME-MS42-HDBT and the Local Area Network (LAN).
3. Press and hold the **IP MODE** button, on the rear of the unit.
4. Release the button once the IP MODE LED indicator begins to flash green. The number of flashes will indicate the currently selected IP mode.

POWER Button flashes	Description	Settings
Two	Static IP mode	IP address: `192.168.1.254` Subnet mask: `255.255.0.0` Gateway: `192.168.1.1`
Four	DHCP mode	DHCP server assigned



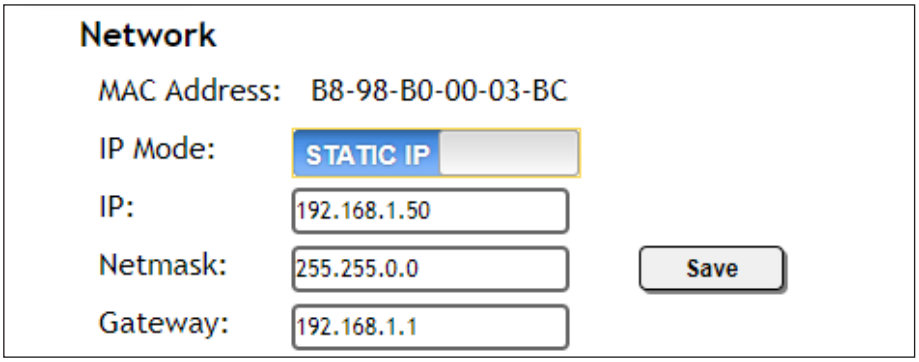
Displaying the IP Address

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

Using the Web Server

The IP mode of the AT-OME-MS42-HDBT can also be set using the built-in web server. In order to access the web server, the IP address of the AT-OME-MS42-HDBT must be known.

1. Open the desired web browser and enter the IP address of the AT-OME-MS42-HDBT.
2. Log in using the required credentials.
3. Click **System** in the menu bar.
4. Click the **IP Mode** toggle to switch between the `DHCP` and `STATIC IP` setting. When set to `STATIC IP`, the **IP**, **Netmask**, and **Gateway** fields can be modified.
5. Click the **Save** button to save the changes.



Setting the IP Address Using Commands

Use the `IPStatic` and `IPDHCP` commands to switch between DHCP and IP mode through RS-232 or Telnet. Refer to API documentation for more information.

IMPORTANT: When switching between DHCP and static modes, within a Telnet session, the connection will be terminated once the `IPDHCP` command is executed.

- **Setting static IP mode**
  1. Connect to the AT-OME-MS42-HDBT using RS-232 or Telnet.
  2. Execute the `IPStatic` command. This command requires three arguments: the desired IP address of the AT-OME-MS42-HDBT, the subnet mask, and the gateway address. All arguments must be entered in dot-decimal notation. The following is an example:

```
IPStatic 192.168.1.112 255.255.255.0 192.168.1.1
         IP address    Subnet mask   Gateway
```

- **Setting DHCP mode**

  1. Connect to the AT-OME-MS42-HDBT using RS-232 or Telnet.
  2. At the command line, execute the `IPDHCP` command using the `on` argument, as shown.

     ```
     IPDHCP on
     ```

     Once DHCP is enabled, the unit will be assigned an IP address by the DHCP server (if present).

Automatic Private IP Addressing (APIPA) Mode

If the AT-OME-MS42-HDBT is unable to detect a DHCP server within 15 seconds, when set to DHCP mode, then Automatic Private IP Addressing (APIPA) will be used to assign the an address within the IPv4 address block `169.254.xxx.xxx/16`. If a DHCP server is detected while in APIPA mode, then the AT-OME-MS42-HDBT will be assigned an address from the DHCP server pool. To manually adjust the IP address, connect an Ethernet cable directly from the **LAN** port of the AT-OME-MS42-HDBT to the LAN port of a computer, then do the following:

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

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

5. Enter the desired static IP address or the IP address provided by the network administrator. If the computer does not require Internet access or if a statically-assigned IP address is being used, then an address within the IPv4 address block `169.254.xxx.xxx/16` can be entered.
6. Set the subnet mask to `255.255.0.0`.
7. Click the **OK** button then close all **Control Panel** windows.

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-HDBT.

LED		Description
PWR	Solid green	• Unit is powered using the included 24 V DC power supply.
	Off	• Unit is not powered.
HDBT IN HDBT OUT	Solid amber	• Indicates a compatible HDBaseT transmitter or receiver is connected.
	Off	• No compatible transmitter/receiver connected.
USB-C IN HDMI 3 HDMI 4	Solid green	• The input is the currently selected (active) input.
	Off	• The input is not active.
IP MODE	Flash green (4x)	• Flashes four times to indicate that the unit is being set to DHCP mode. Refer to IP Configuration (page 12) for more information.
	Flash green (2x)	• 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`.
	Off	• Normal operating mode.
RESET	Flash green (3x)	• Unit is being set to factory-default settings. Refer to Resetting to Factory-Default Settings (page 73) for more information.
	Off	• Normal operating mode.

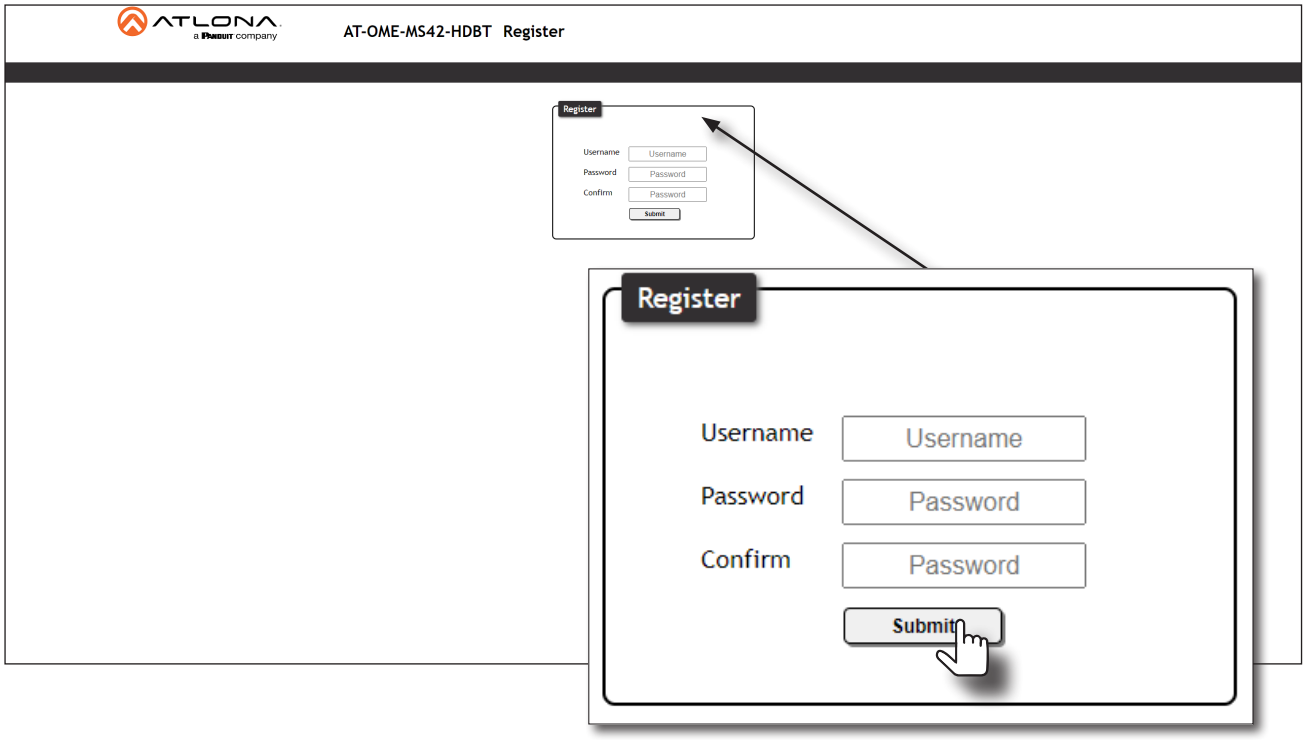
Logging in to the Web Server

Most of the AT-OME-MS42-HDBT operation is handled through the built-in web server. In order to access the web server, the IP address of the unit must be known. Refer to IP Configuration (page 12) for more information.

Login Registration

Before the built-in web server can be accessed, a username and password must be created.

1. Launch a web browser and enter the IP address of the unit.
2. The AT-OME-MS42-HDBT **Register** page will be displayed.



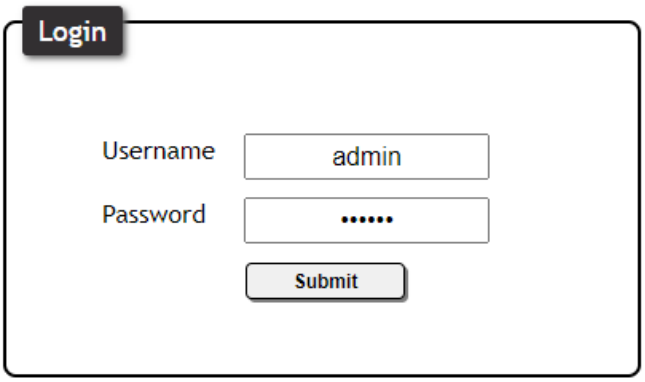
3. Enter the desired username in the **Username** field. In the example above, the username `admin` is used.
4. Enter the desired password in the **Password** field.

> **IMPORTANT:** The password must contain a minimum of 8 characters, including one uppercase character, one lowercase character, and one number. Special characters are not permitted. Note that the **Password** and **Confirm** fields will be masked when entering the password.

5. Verify the password by entering it in the **Confirm** field.
6. Click the **Submit** button.
7. The **Login** screen will be displayed.

Logging in after Registration

1. Launch the desired web browser and enter the IP address of the AT-OME-MS42-HDBT in the address bar.
2. Enter the correct username and password in the respective fields.
3. Click the **Submit** button.



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

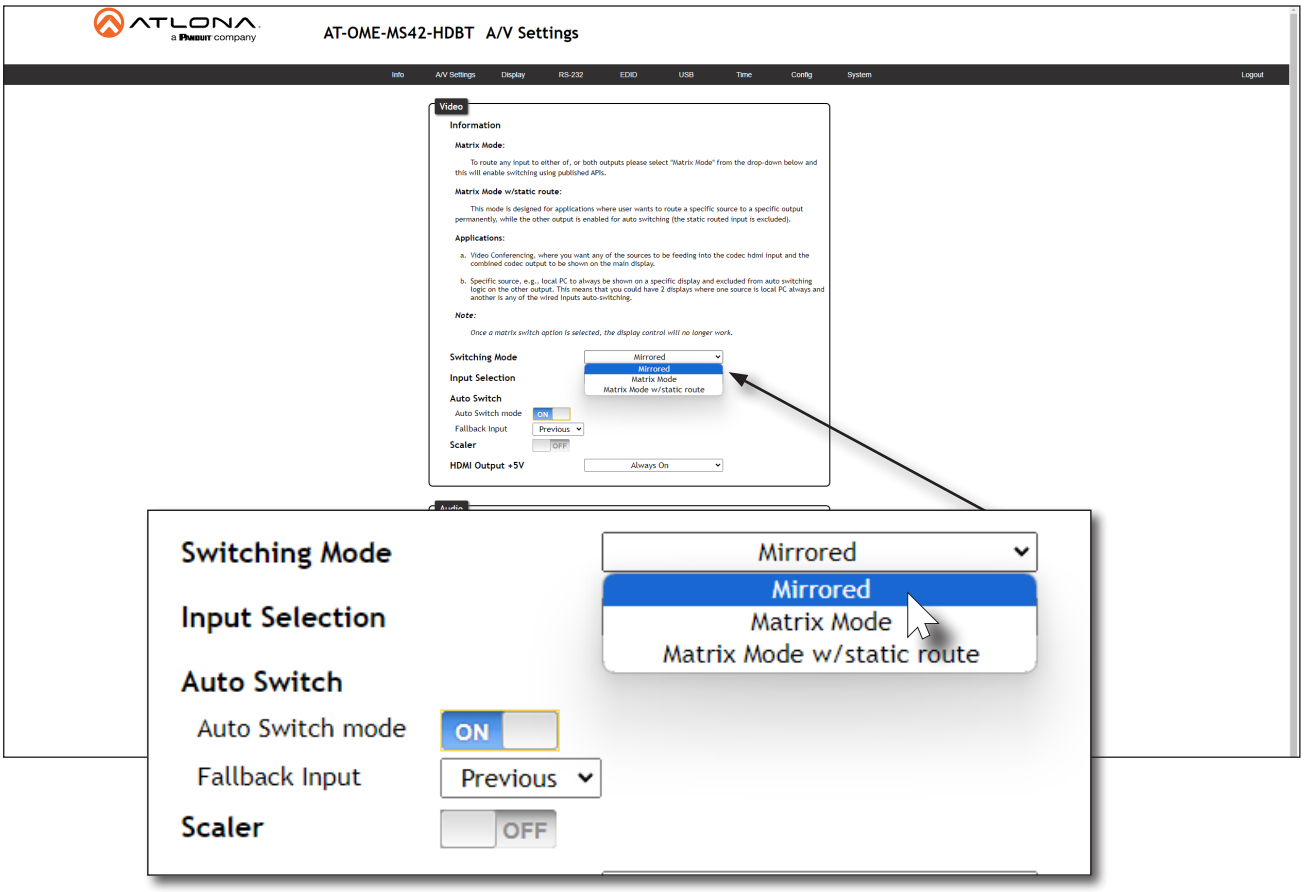
Switching Modes

The AT-OME-MS42-HDBT 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 23) can also be enabled, if desired, to allow the AT-OME-MS42-HDBT to automatically switch between inputs, if a new source is connected or an existing source is disconnected.

1. Login to the web server.
2. Click **A/V Settings** in the menu bar.
3. Click the **Switching Mode** drop-down list and select **Mirrored**.

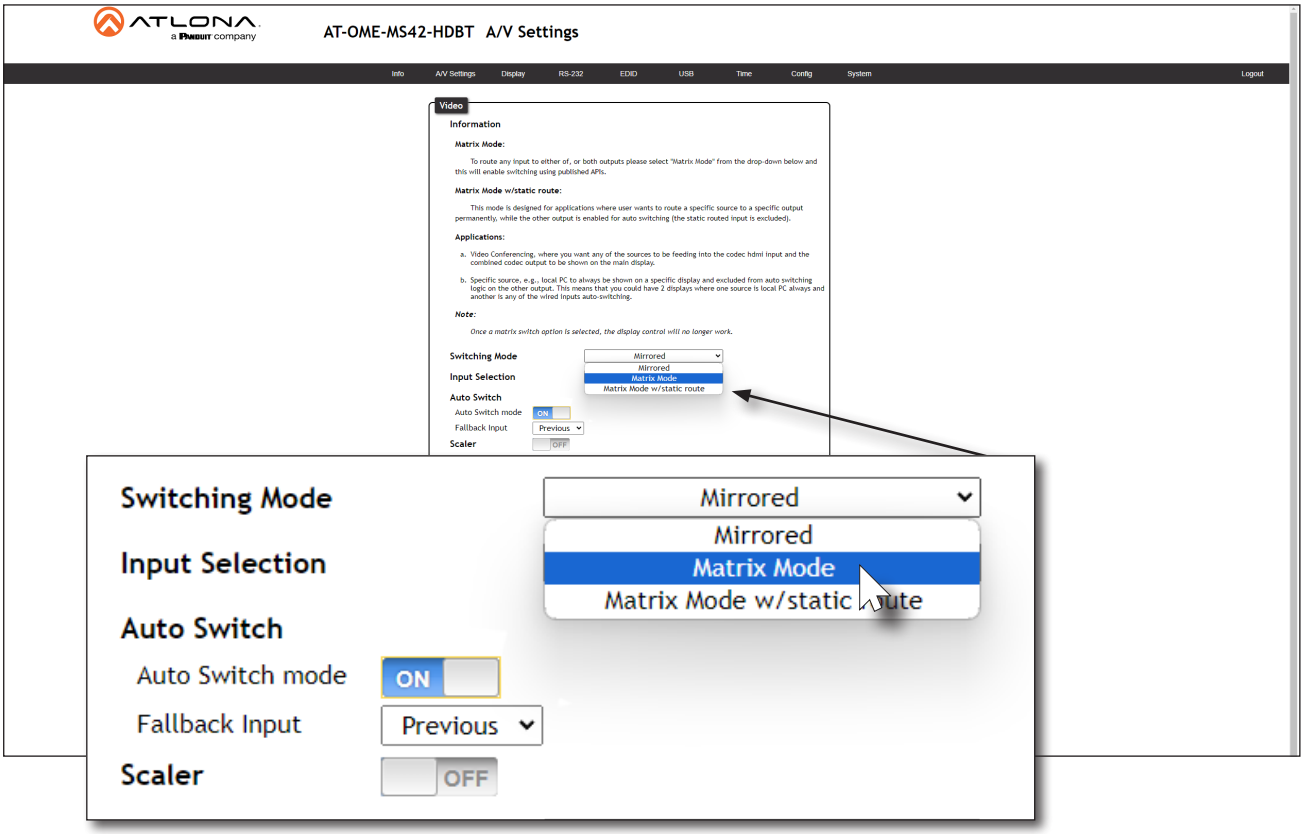


Matrix Mode

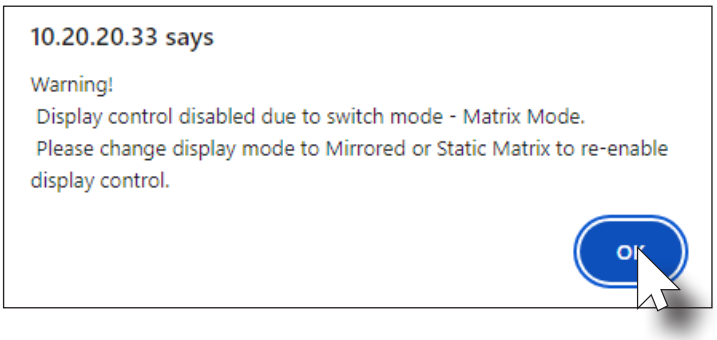
This mode allows the AT-OME-MS42-HDBT to independently switch between any input to any output. Auto-switching is disabled in Matrix Mode.

1. Login to the web server.
2. Click **A/V Settings** in the menu bar.
3. Click the **Switching Mode** drop-down list and select `Matrix Mode`.

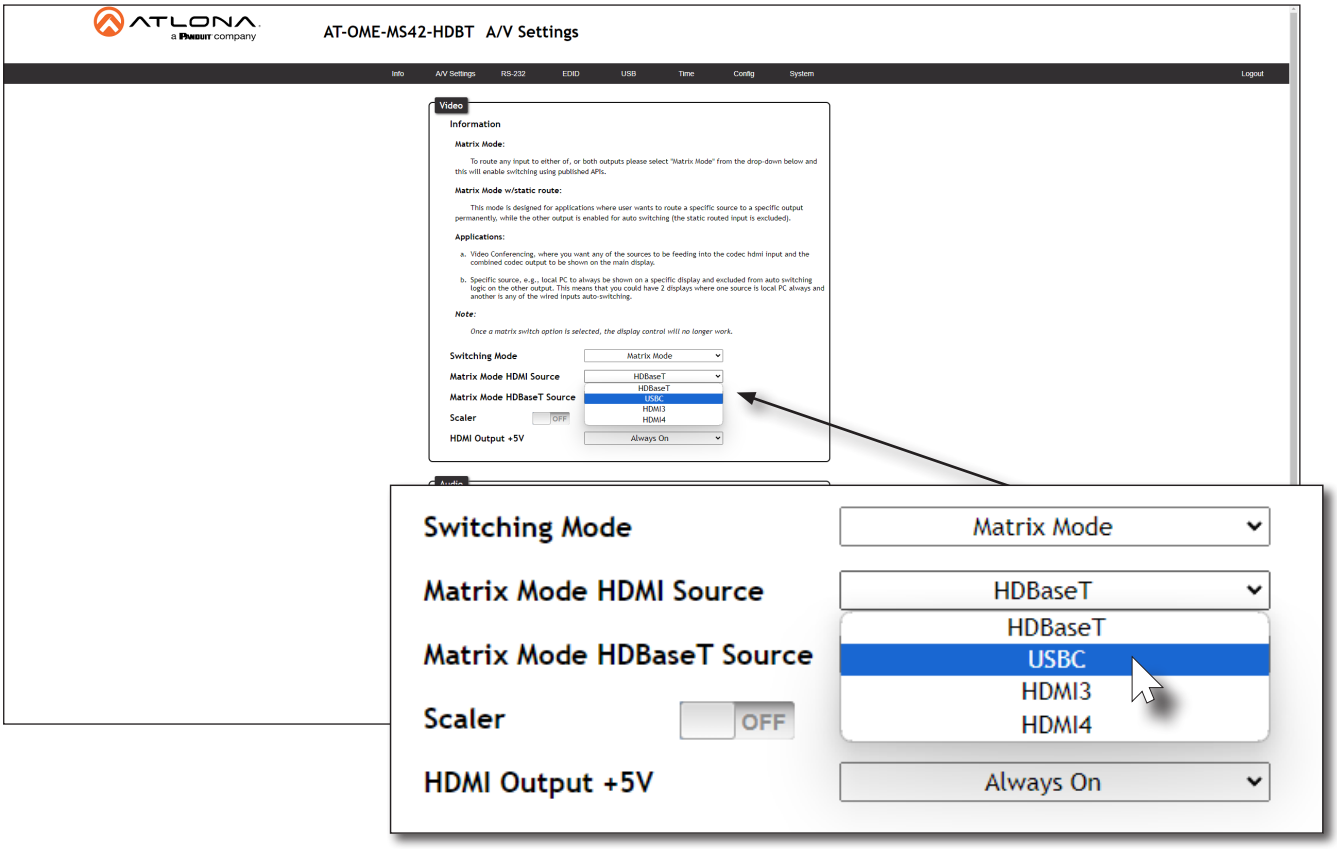
> **IMPORTANT:** When the AT-OME-MS42-HDBT is set to Matrix Mode, both auto-switching and display control will be disabled.



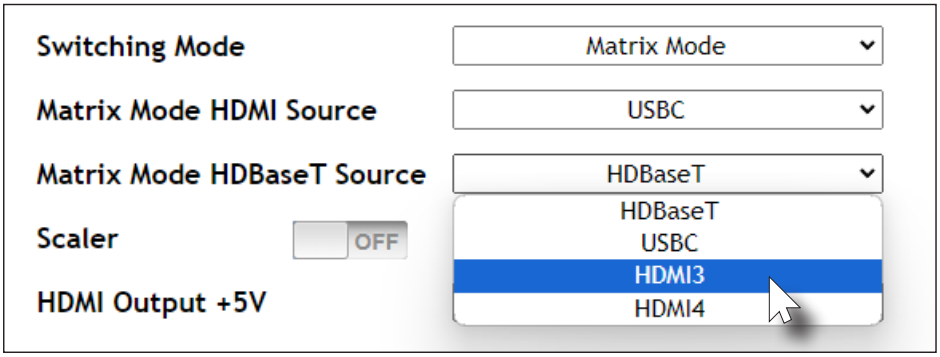
4. The following message will appear near the top of the screen. Click the **OK** button to dismiss the message.



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



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

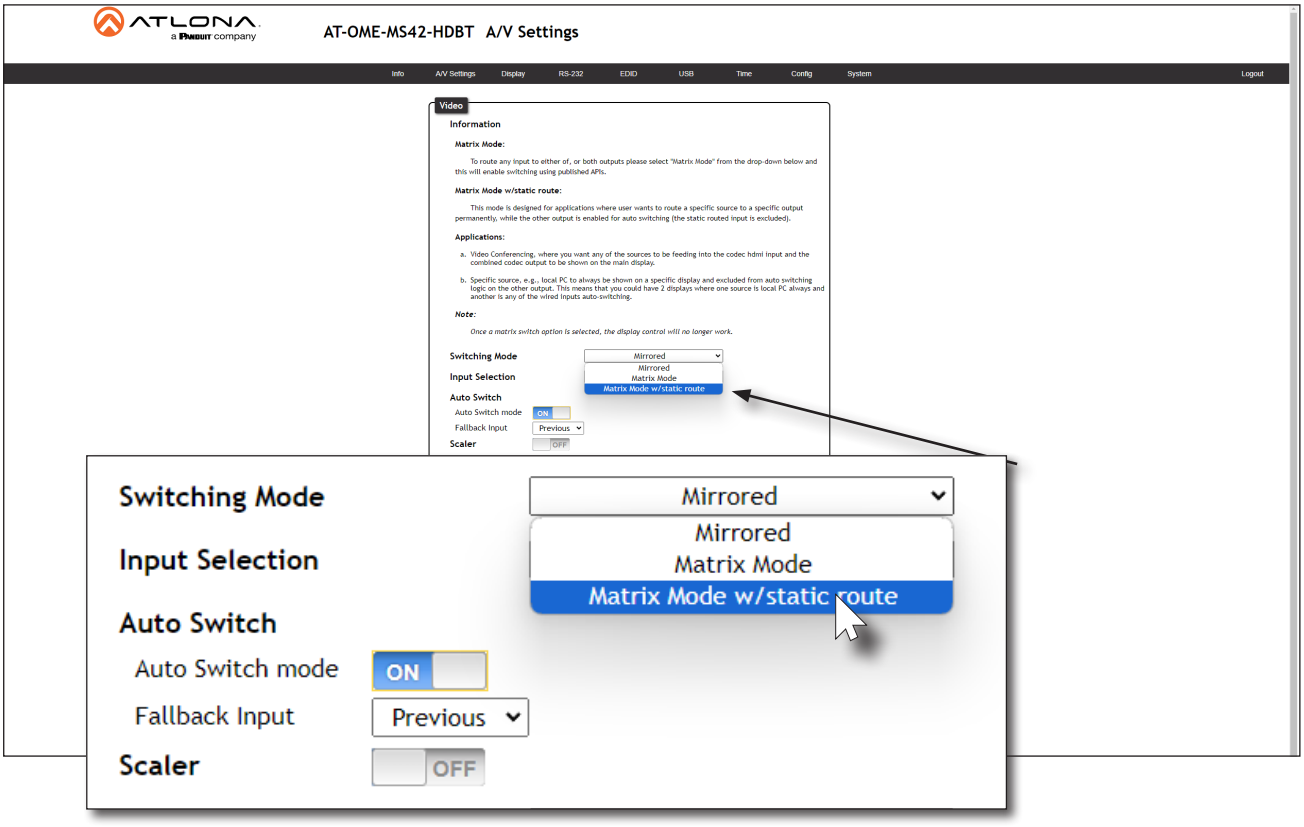


NOTE: If the input (source) for the HDBaseT output is not selected, then the input that was selected for the **Matrix Mode HDMI Source** will be also output on the **HDBaseT OUT** port.

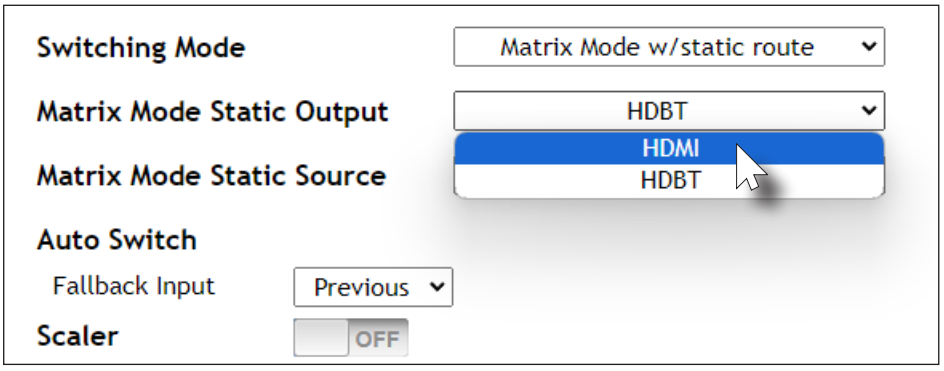
Matrix Mode w/ Static Route

This mode is desirable when integrating the AT-OME-MS42-HDBT with a video conference system. In this mode, both static input and output routing are specified. Auto-Switching (page 23) 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.
2. Click **A/V Settings** in the menu bar.
3. Click the **Switching Mode** drop-down list and select `Matrix Mode w/ static route`.

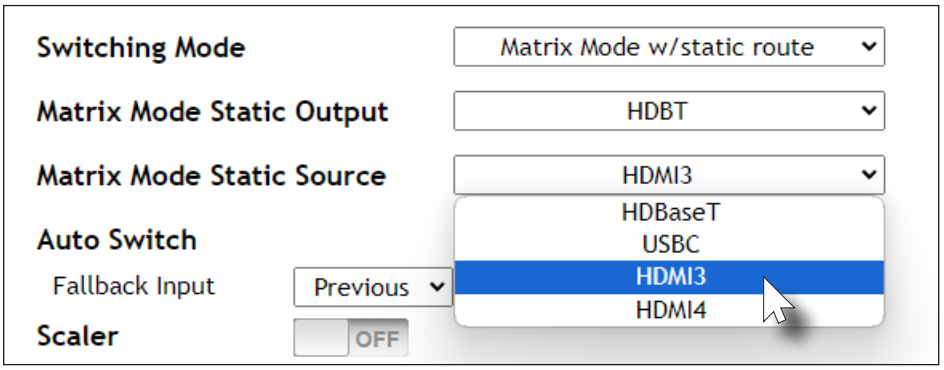


4. Click the **Matrix Mode Static Output** drop-down list and select the output that will be "static". This is the output that will not change.



5. 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 **HDMI IN 3**, will be output to the **HDBaseT OUT** port. The **HDMI IN 3** port is the static source and the **HDBaseT 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.



Auto-Switching

The AT-OME-MS42-HDBT 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-HDBT will initiate a five-minute countdown timer. If no activity takes place within this time interval, the unit will automatically power-off.

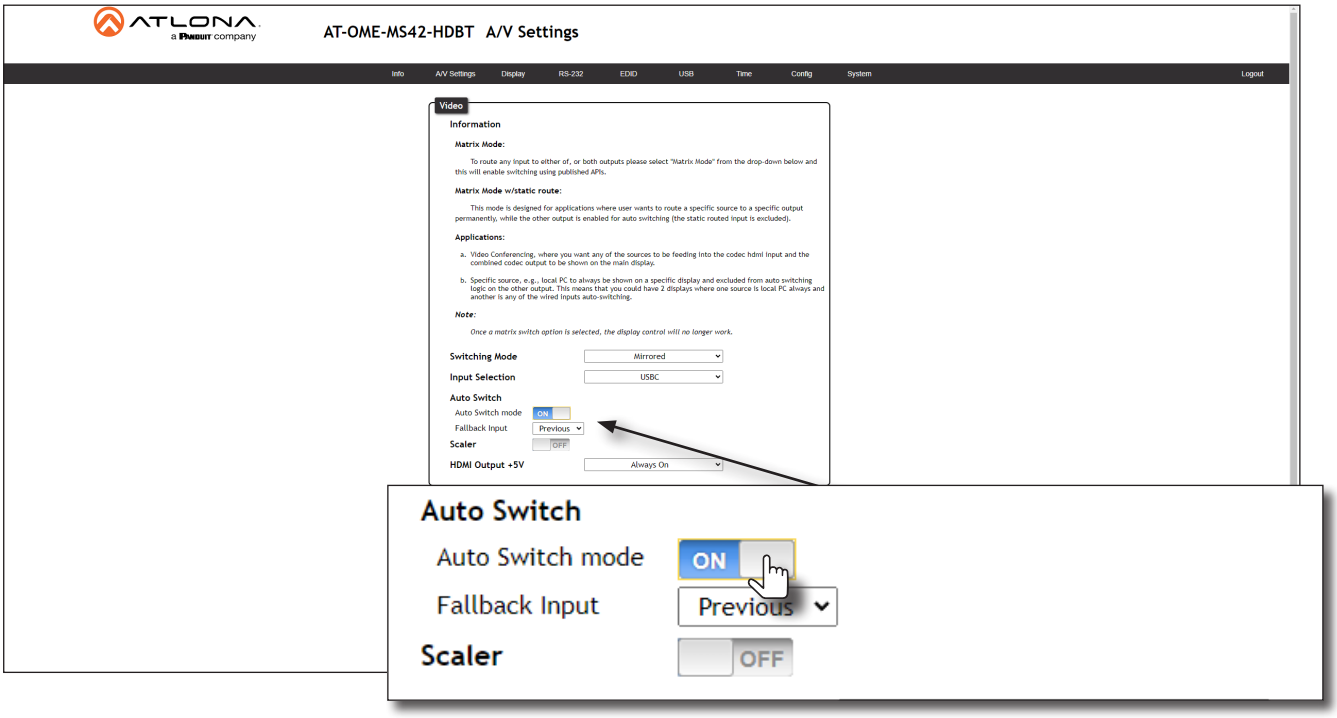
IMPORTANT: The auto-switching feature is only available when the **Switching Mode** is set to either `Mirrored` or `Matrix Mode w/ static route`. Refer to Switching Modes (page 18) for more information.

Enabling / Disabling Auto Switching

By default, auto-switching is enabled on the AT-OME-MS42-HDBT, 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.
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-HDBT 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.



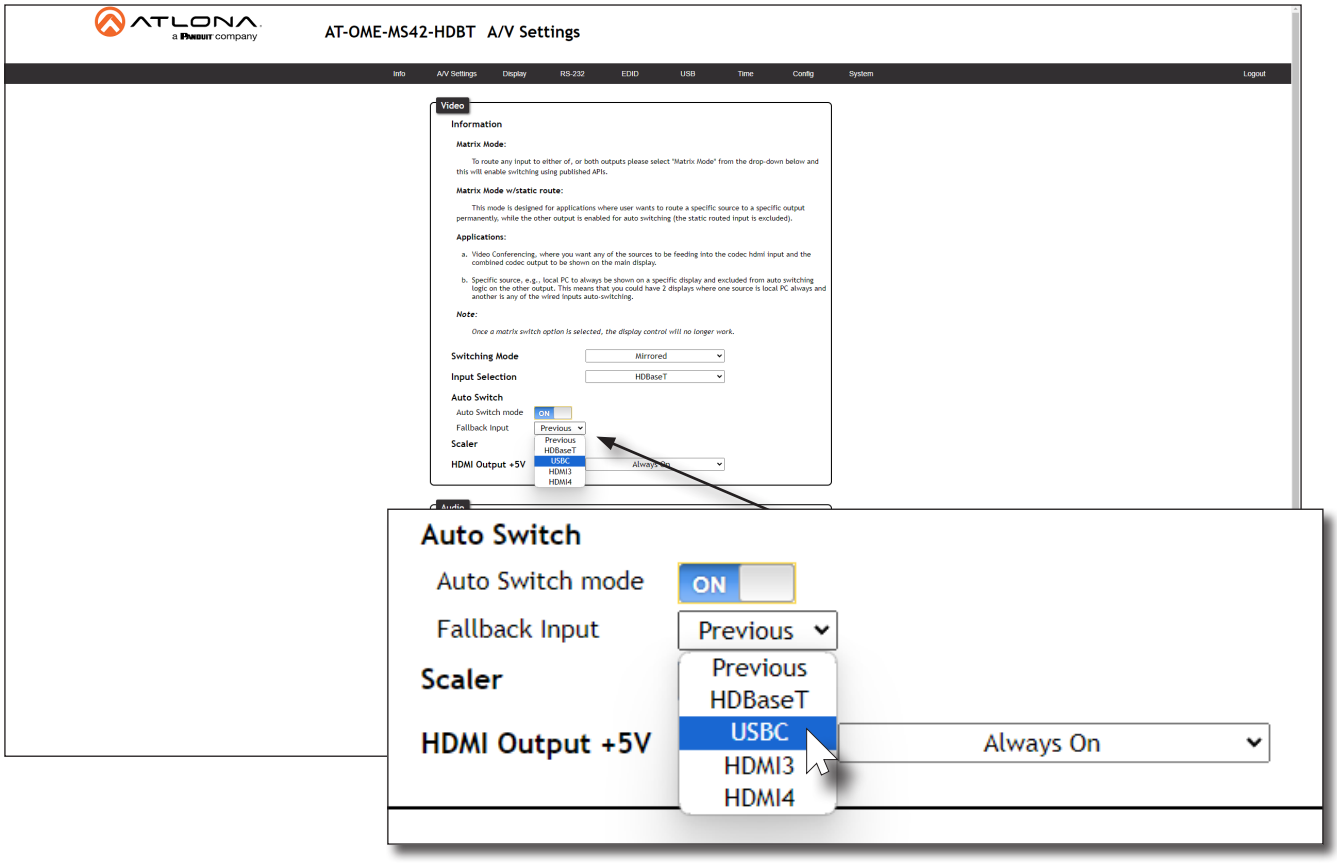
Setting the Fallback Input

The default fallback port is set to `Previous`. This means if multiple sources are connected, then disconnected, the AT-OME-MS42-HDBT 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 18) for more information.

1. Login to the web server.
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.

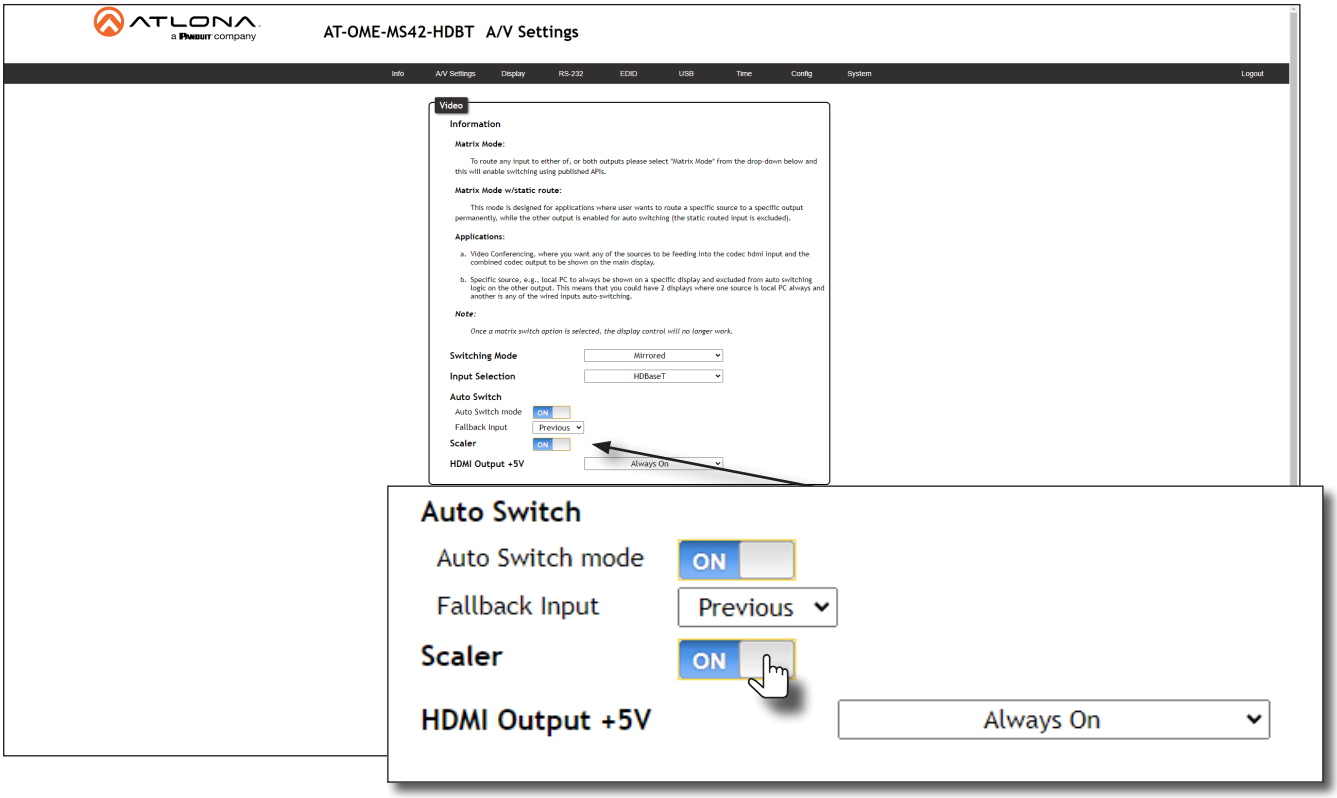


Scaler Pass-Through

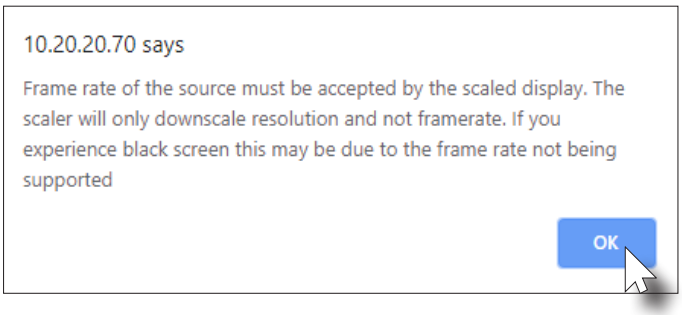
Click this toggle switch to enable or disable the scaler pass-through feature. When set to the **ON** position, 4K content will be down-scaled to 1080p. When set to the **OFF** position, the output resolution / timing will be the same as the input source. The default setting is **ON**.

> **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.
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 OFF (default) position.

Notes on Scaling

The following section provides important information about how the AT-OME-MS42-HDBT 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

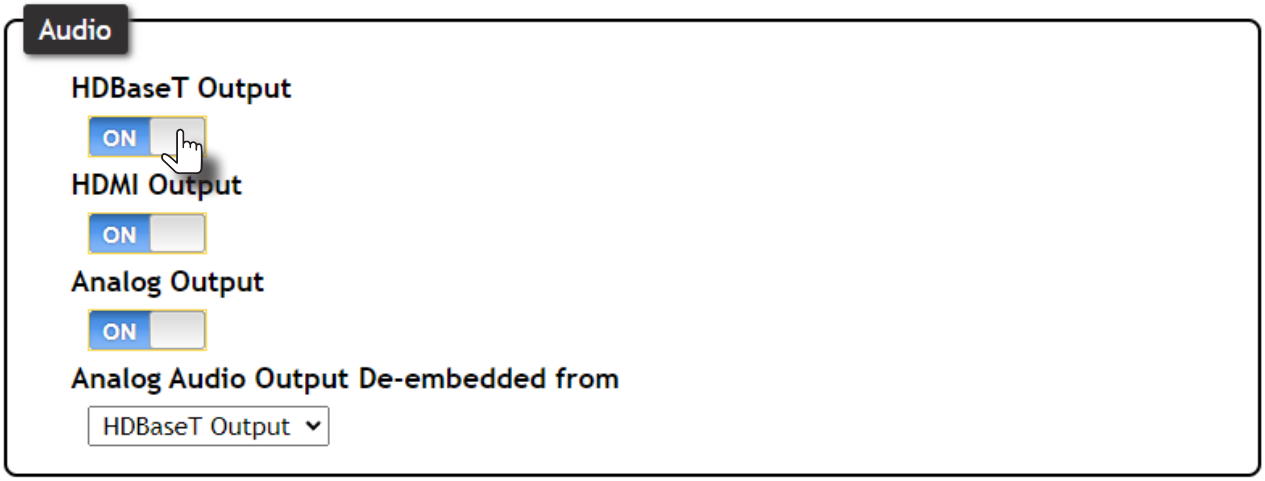
- HDR / Dolby Vision / HLG formats cannot be down-scaled to 1080p.
- The internal scaler will be bypassed if the connected display supports the resolution and timing information from the source device.
- The HDBaseT **OUTPUT** port supports up to 4K @ 60 Hz. However, HDR is only supported at lower resolutions.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

Audio Output Muting

1. Login to the web server.
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 Audio

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 PCM two-channel audio. Lossy and lossless audio formats such as Dolby Digital, Dolby True HD, DTS, and DTS-HD Master Audio formats cannot be de-embedded.

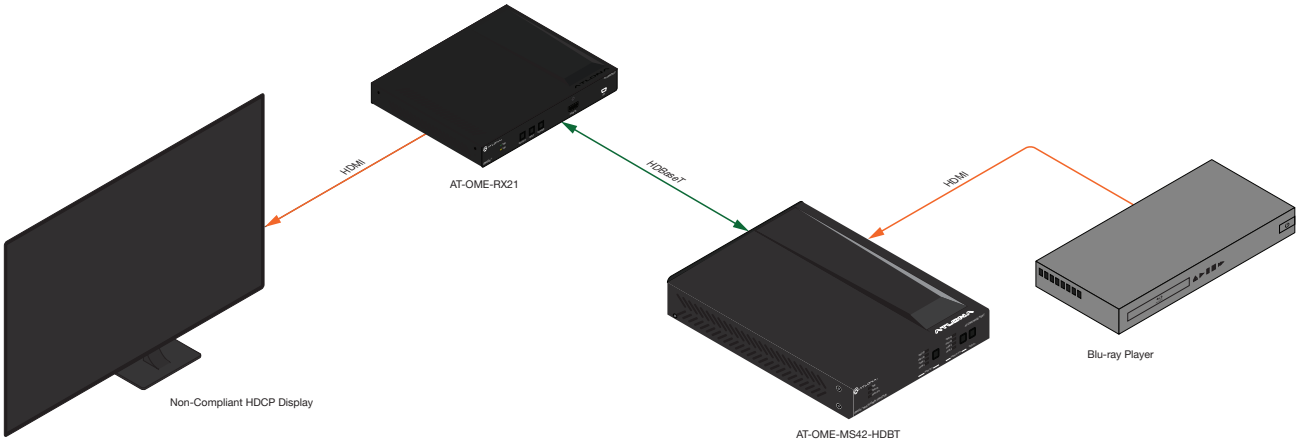
1. Login to the web server.
2. Click **A/V Settings** in the menu bar.
3. Locate the **Audio** section.
4. Click the **Analog Audio Output De-embedded from** drop-down list to select the desired output.

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

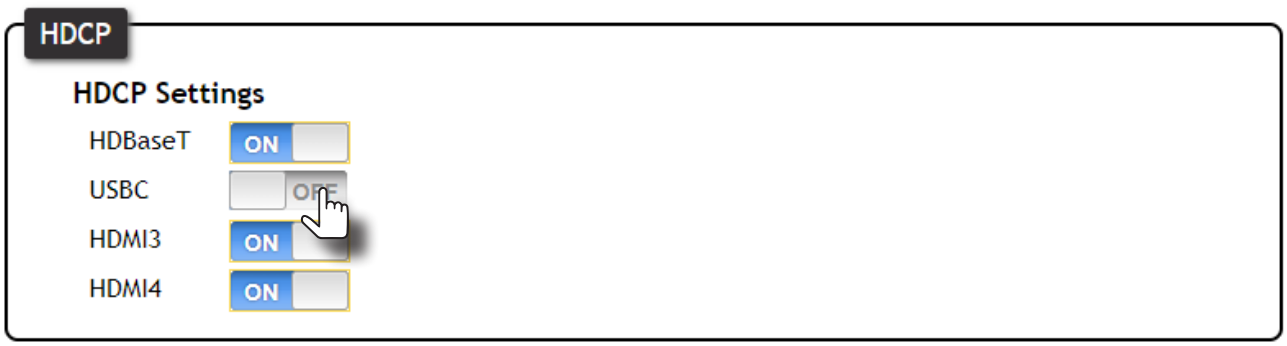
IMPORTANT: Not all source devices are capable of transmitting non-HDCP content. For example, Sony PlayStation® gaming consoles and Mac® computers always transmit HDCP-encrypted content.



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.
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



Display Control

The AT-OME-MS42-HDBT 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.

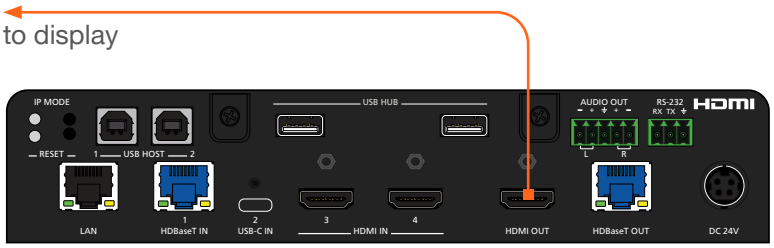
> **IMPORTANT:** The AT-OME-MS42-HDBT **Switching Mode** must be set to either **Mirrored** or **Matrix Mode w/ static route**. Display control is not supported under **Matrix Mode**. Refer to Switching Modes (page 18) for more information.

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-HDBT, 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.

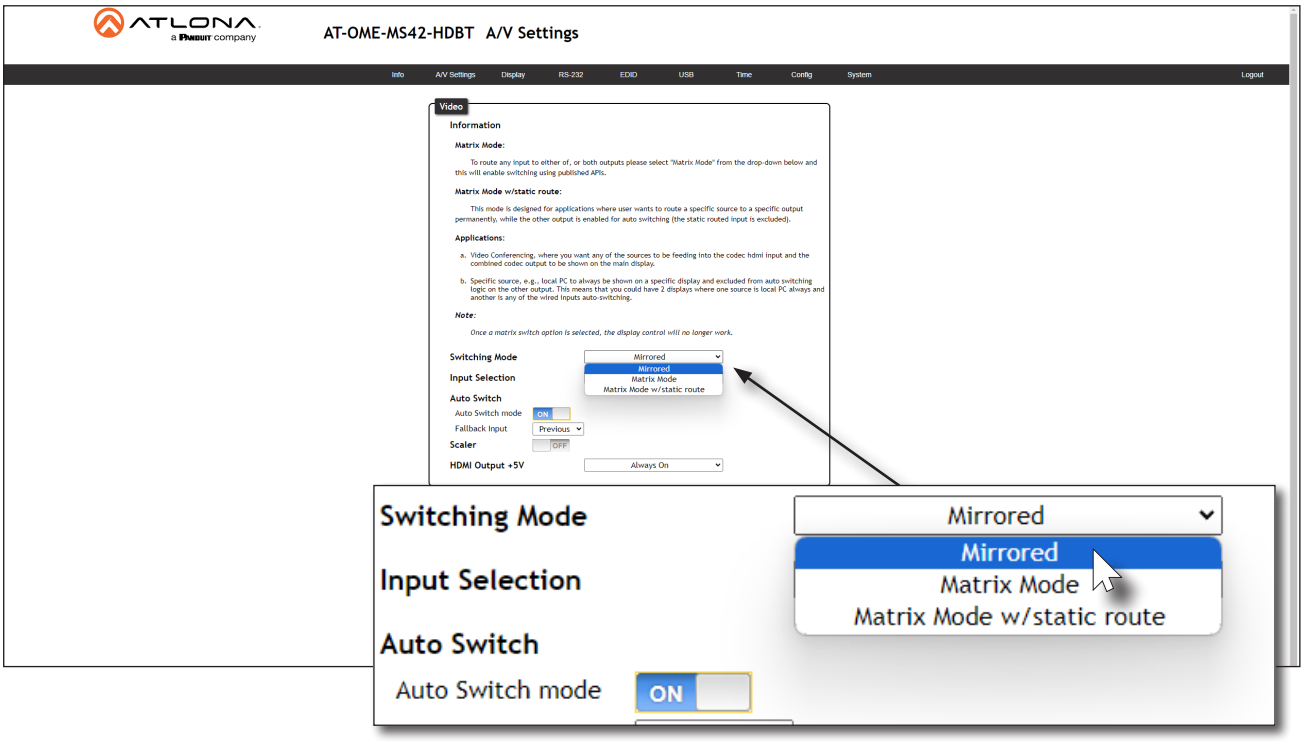
1. Connect an HDMI cable from the **HDMI OUT** port on the AT-OME-MS42-HDBT to an HDMI input on the display device.



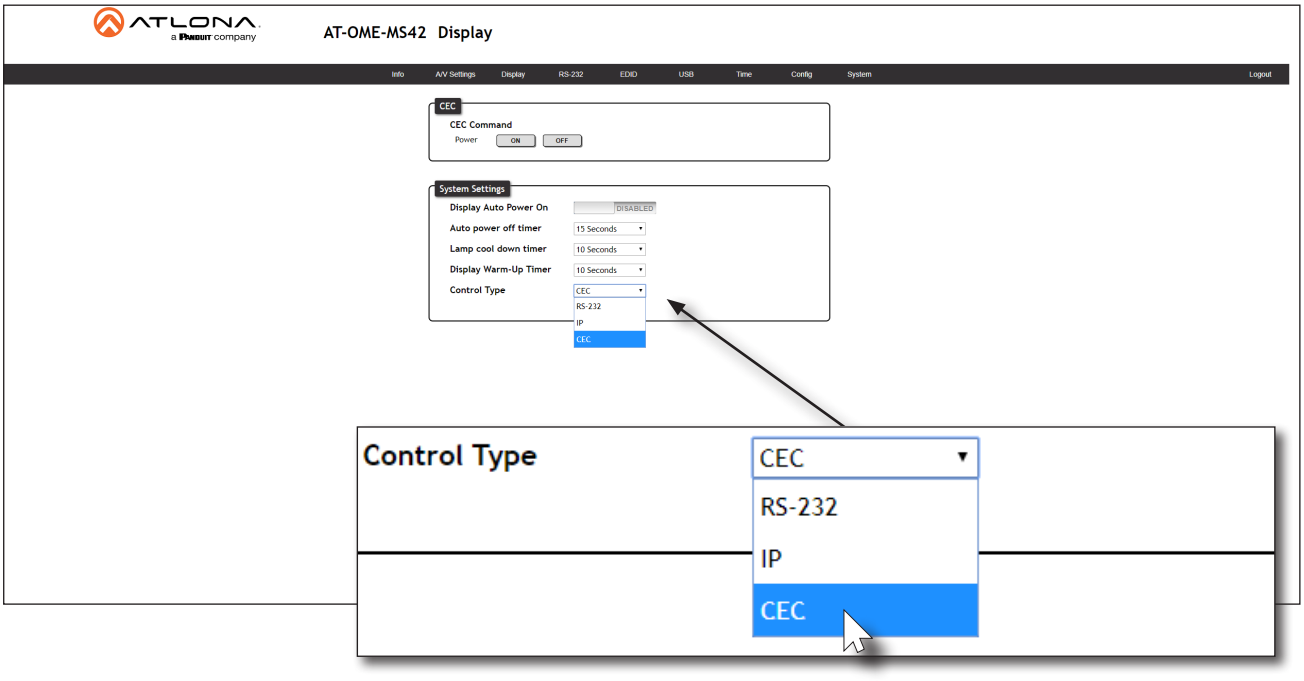
2. Enable CEC on the display device. Refer to the documentation for the display device. It should be noted that different manufacturers will identify CEC with their own brand name. Refer to the table below.

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

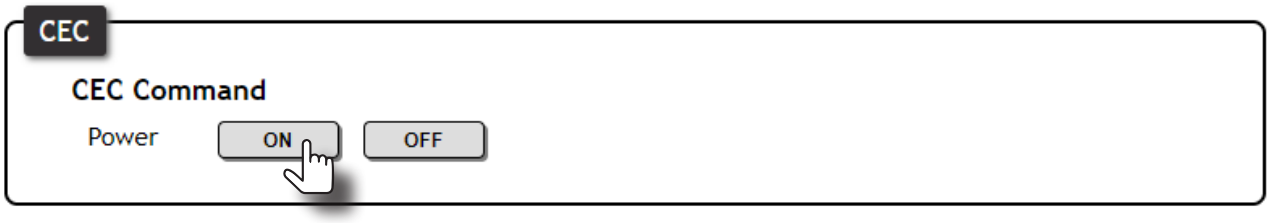
3. Login to the web server.
4. Click **A/V Settings** in the menu bar.
5. Verify that the **Switching Mode** is set to **Mirrored**. Display control is *not* supported under **Matrix Mode**.



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.



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.

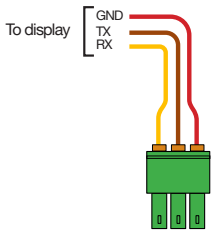


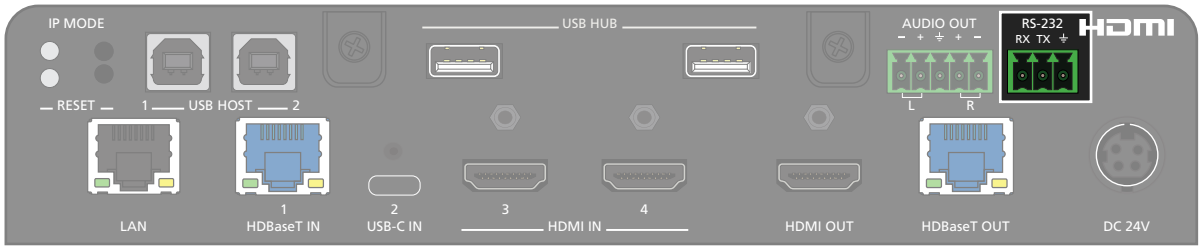
If the display does not respond, check the following:

- 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-HDBT and the display device.
- Try connecting the HDMI cable to a different HDMI input on the display device.

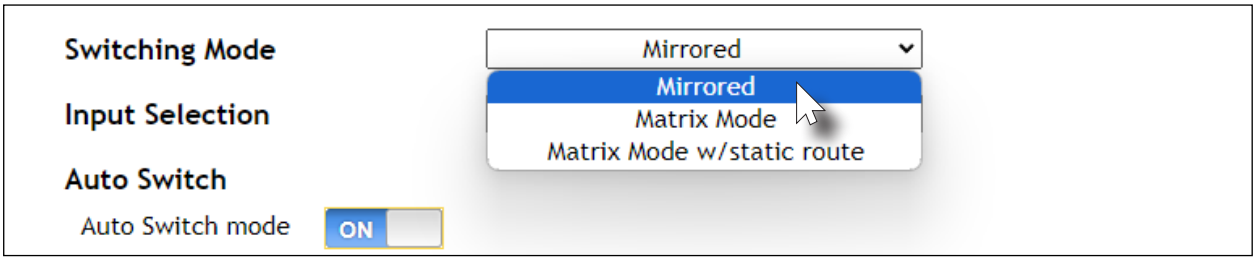
Using RS-232

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

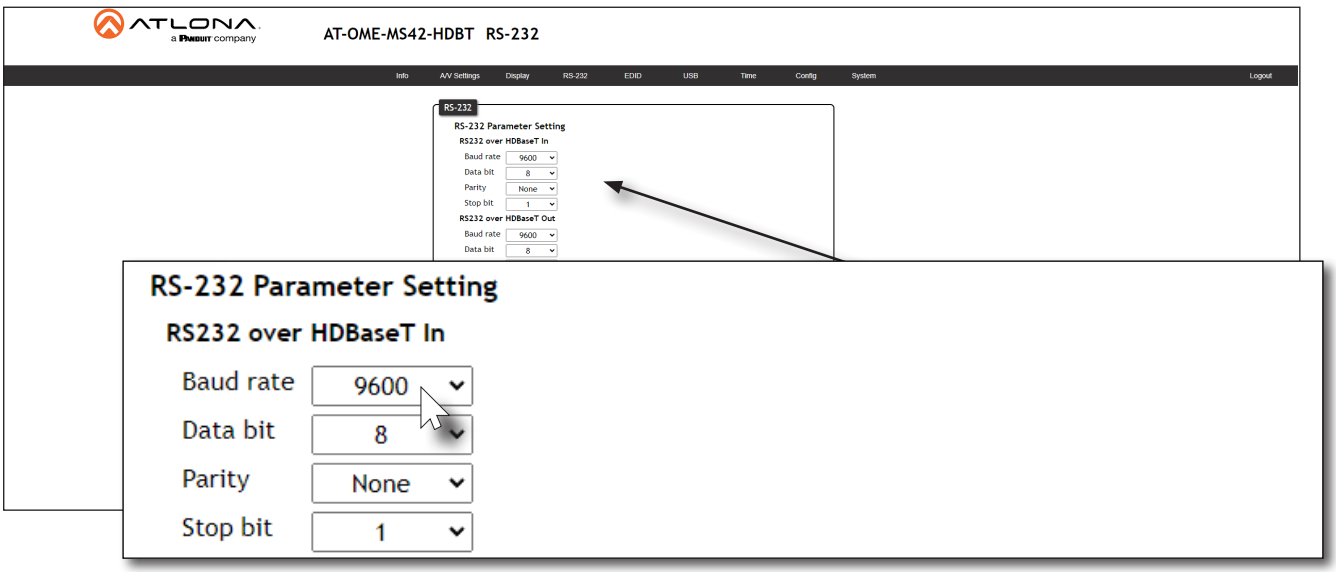




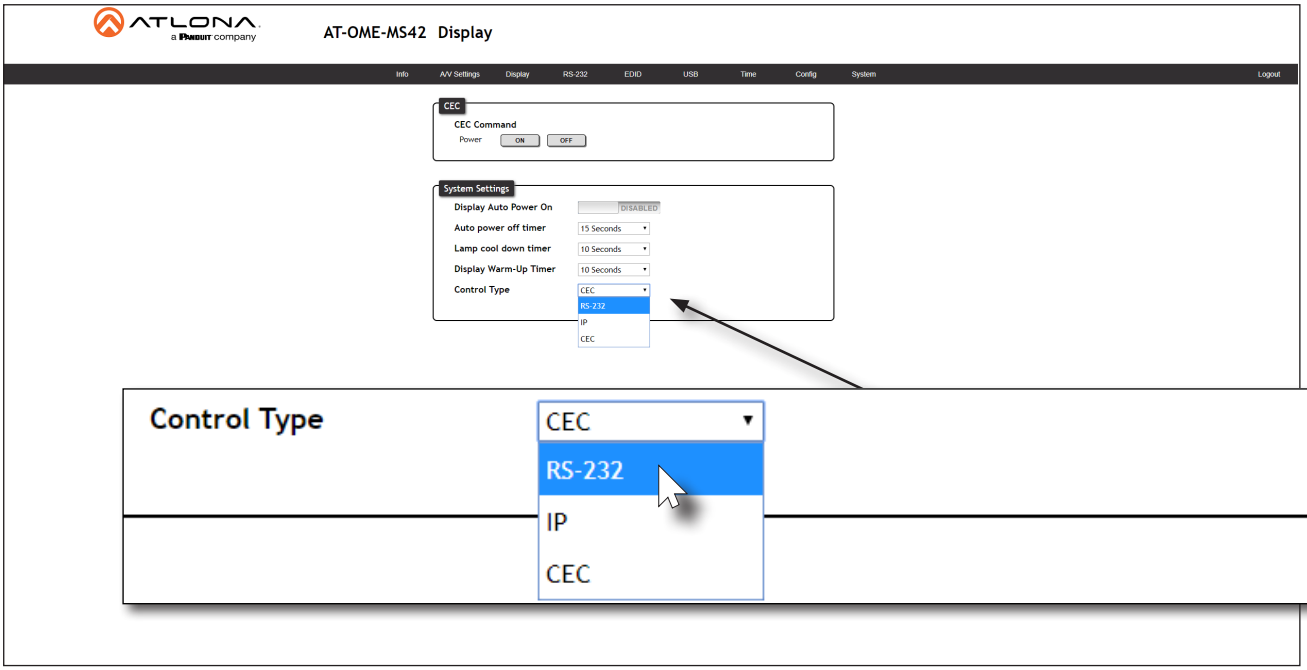
2. Login to the web server.
3. Click **A/V Settings** in the menu bar.
4. Verify that the **Switching Mode** is set to **Mirrored**. Display control is *not* supported under **Matrix Mode**.



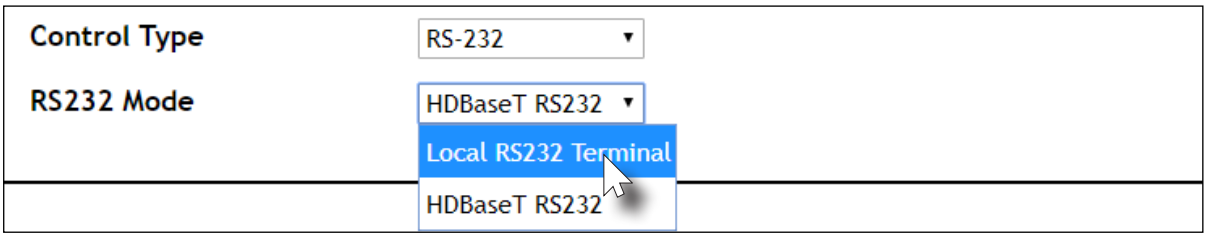
5. Click **RS-232** in the menu bar.
6. Set the RS-232 settings for the display (sink) device, under the **RS232 Console** section. These settings must match the device settings for the display. Refer to the User Manual of the display device for more information.



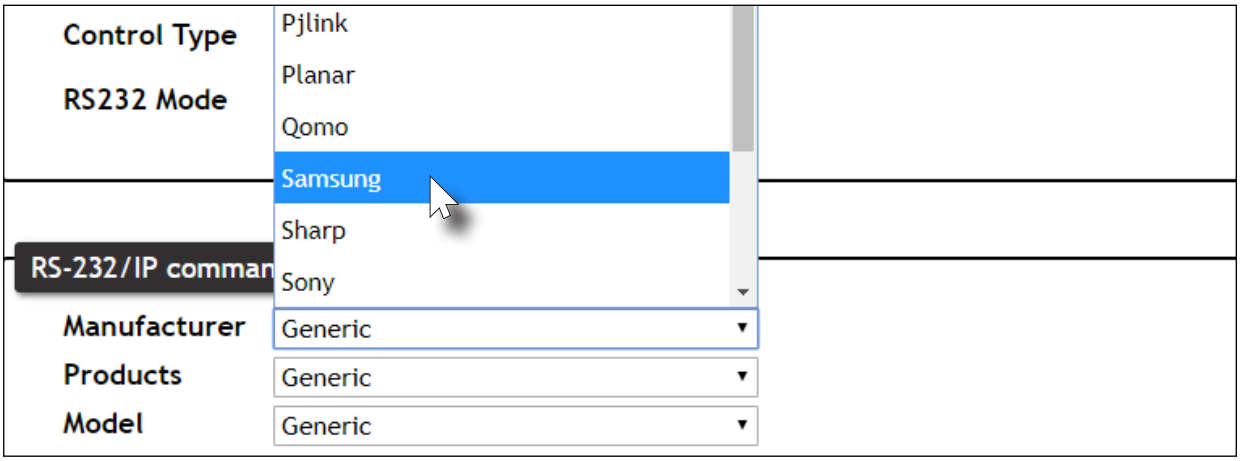
7. Click **Display** in the menu bar.
8. Click the **Control Type** drop-down list and select **RS-232**.



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.



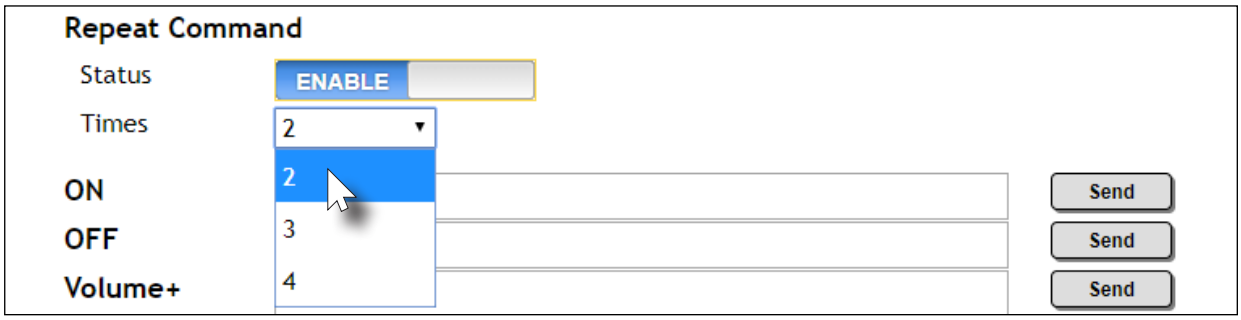
NOTE: If the manufacturer is not listed in the drop-down list, then select **Generic**. When Generic is selected, the **Products** and **Model** drop-down lists will only list **Generic**.

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-HDBT 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-HDBT. 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.



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 is 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 is 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.

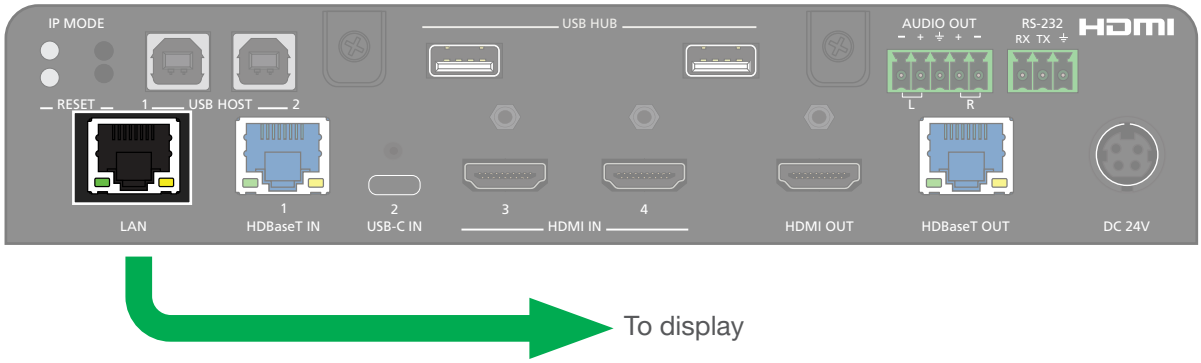
15. Click the **Send** button to verify that each command works properly. If not, check the values entered for each command.

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

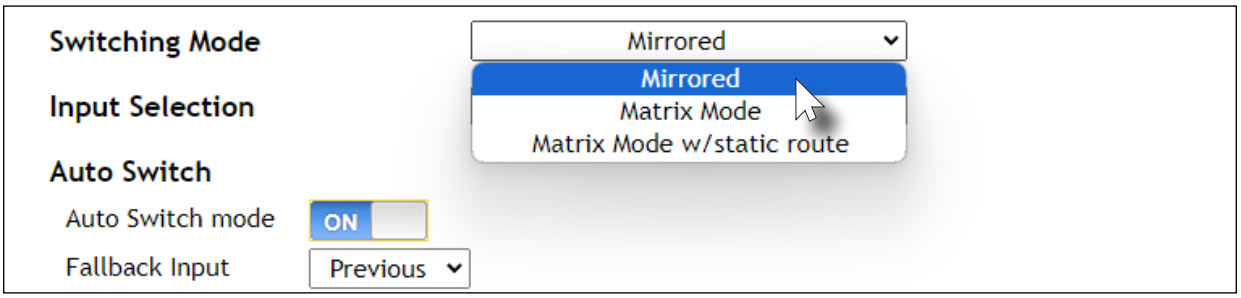
Using IP

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

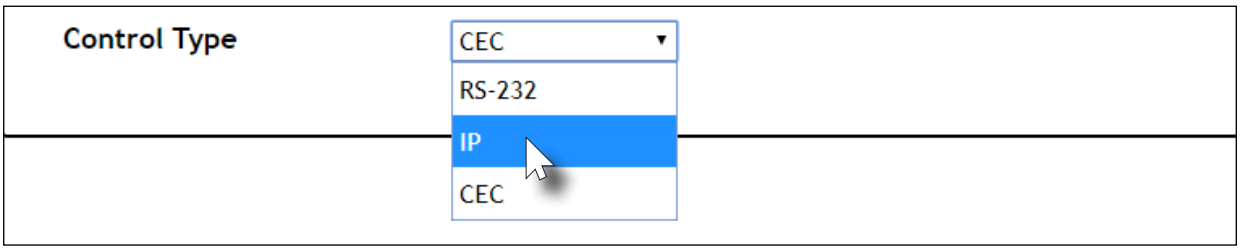
1. Connect an Ethernet cable from the **LAN** port on the AT-OME-MS42-HDBT, to the LAN port on the display.



2. Login to the web server.
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**.



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:

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.

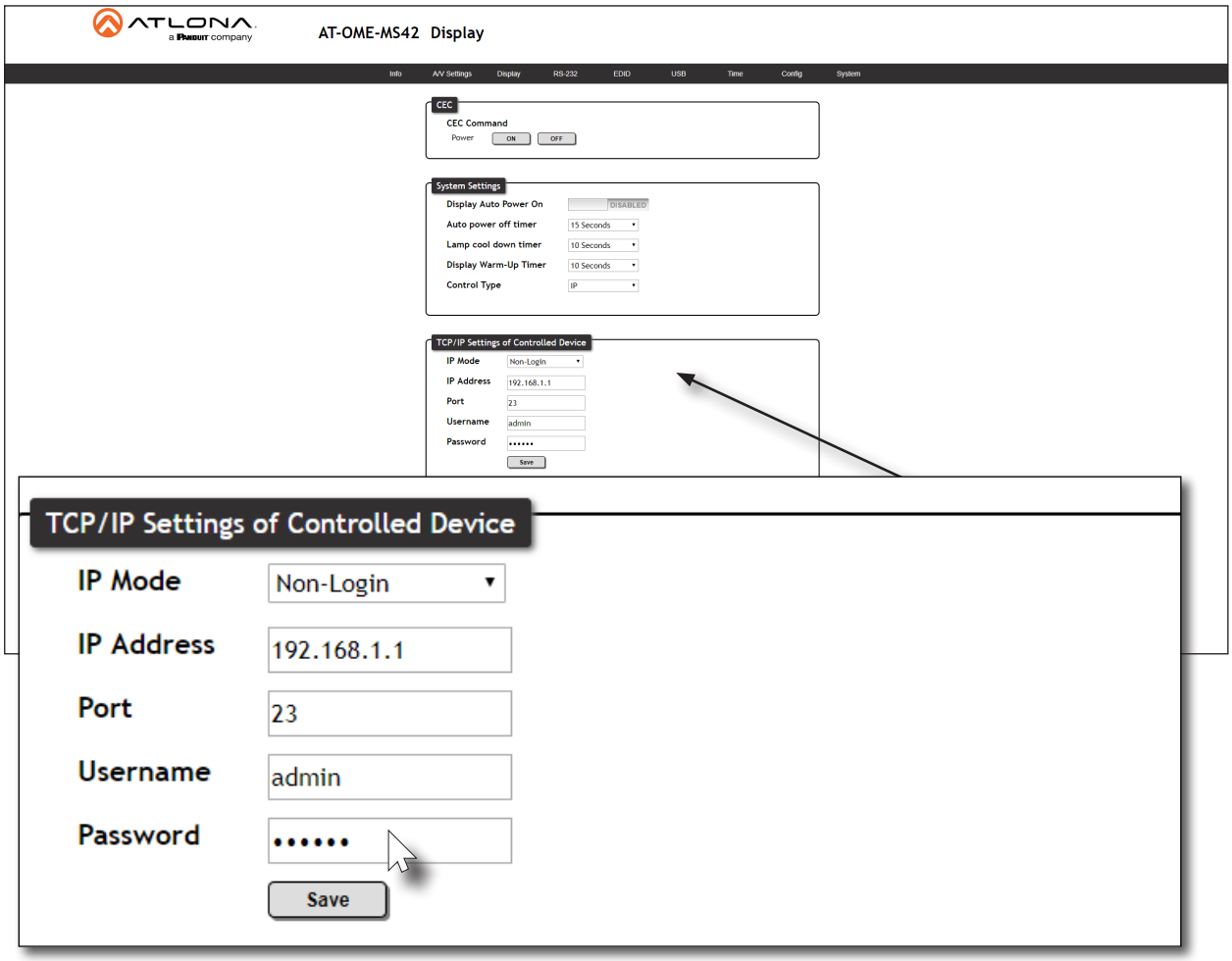
11. Continue fine-tuning the device selection by clicking the **Products** and **Model** drop-down lists. Once all fields

    a. **IP Address**
    Enter the IP address of the device to be controlled.

    b. **Port**
    Enter the port in this field.

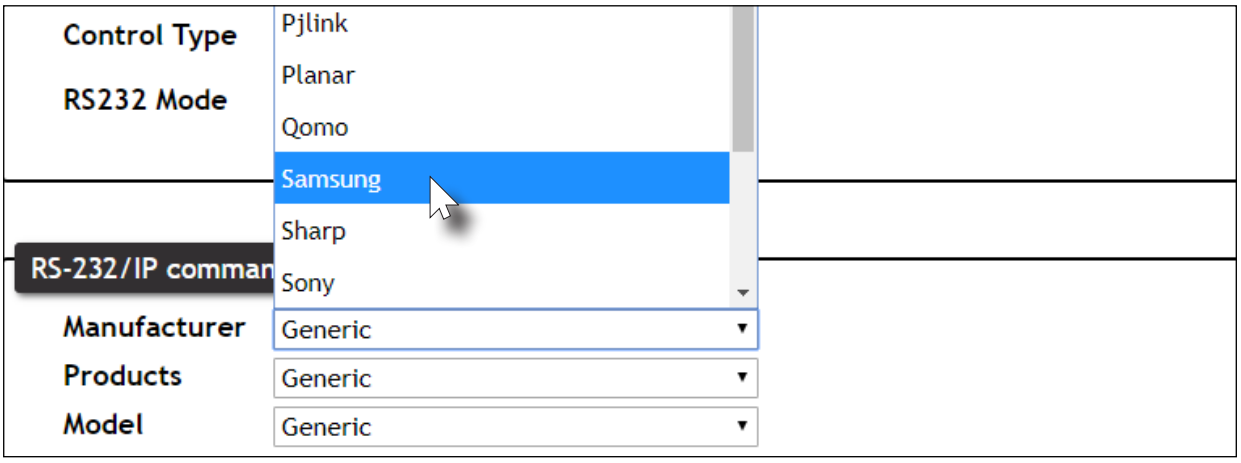
    c. **Username**
    This field is only required if **IP Mode** is set to **Login**. Enter the username in this field.

    d. **Password**
    This field is only required if **IP Mode** is set to **Login**. Enter the required password in this field.



have been set to the proper values, the AT-OME-MS42-HDBT 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-HDBT. 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.



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**.

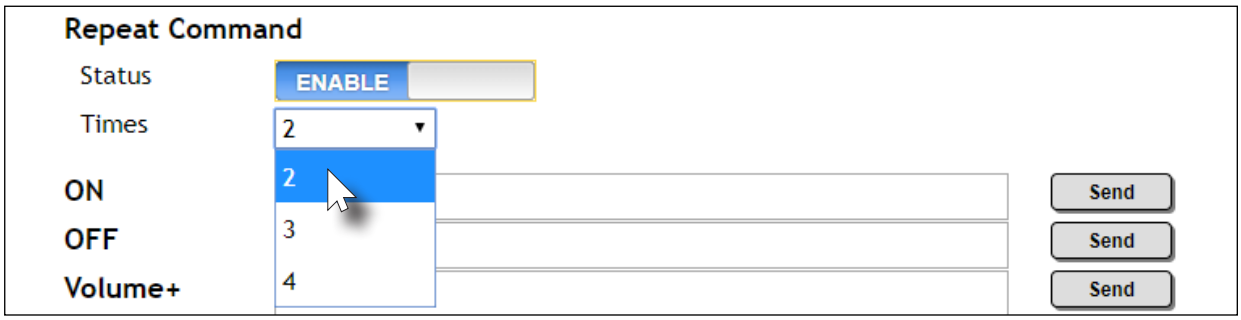
13. If **Generic** was selected as the manufacture, in step 10, then manually enter the required strings for each operation. Refer to the following for information on formatting command strings on the next page.

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.

    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.



HEX Command Strings

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

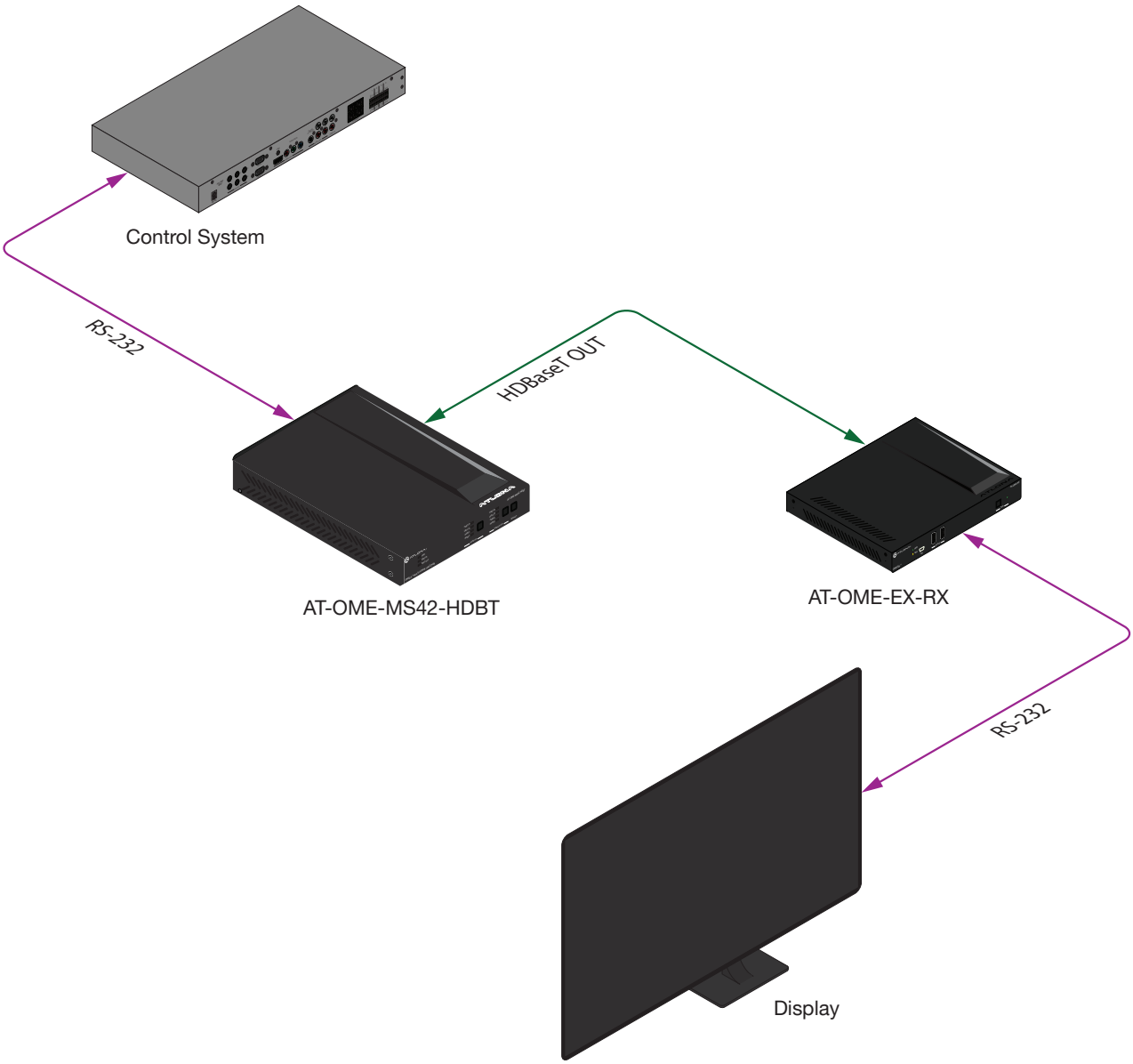
```
PWON
```

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

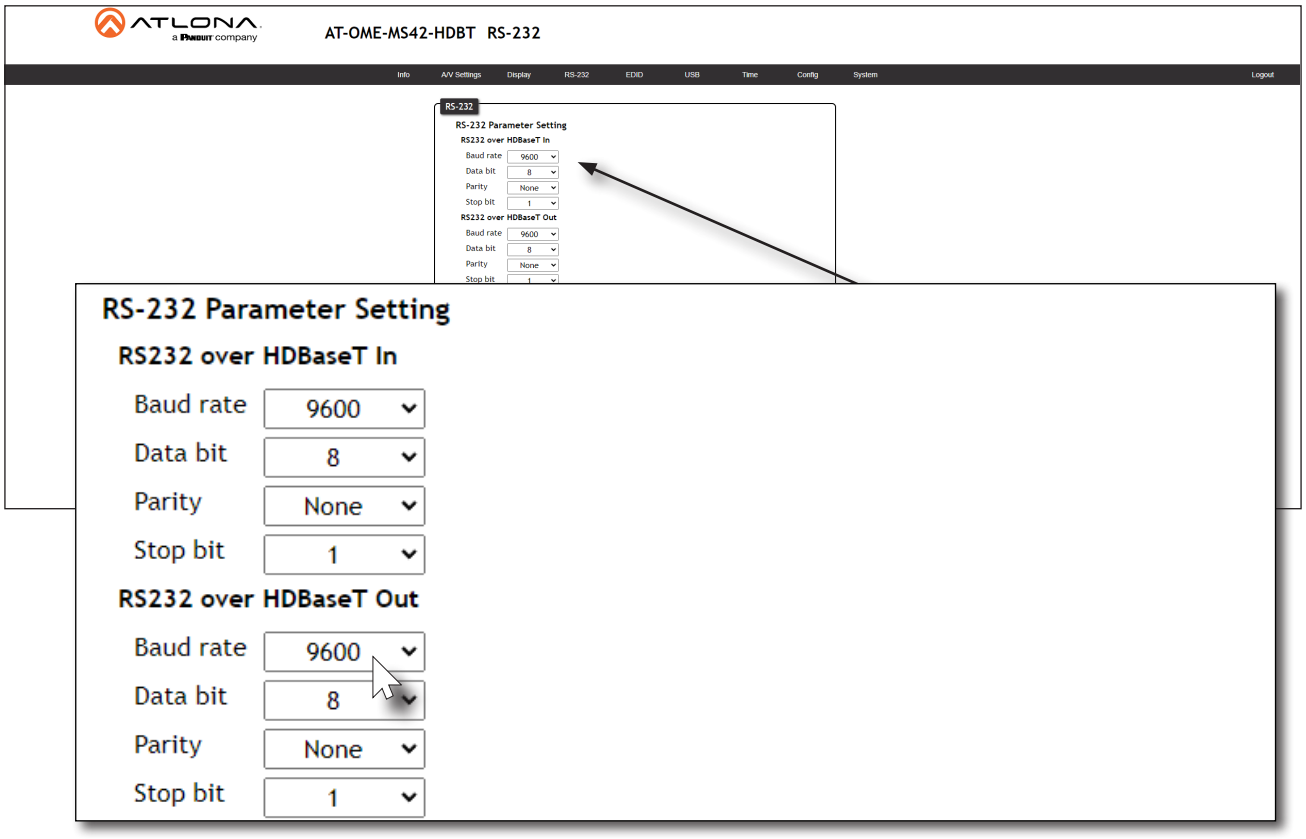
Pass-through mode

In pass-through mode, RS-232 commands are sent to the AT-OME-MS42-HDBT 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-HDBT.
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-HDBT Applications Programming Interface* for a list of available commands.



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



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]`

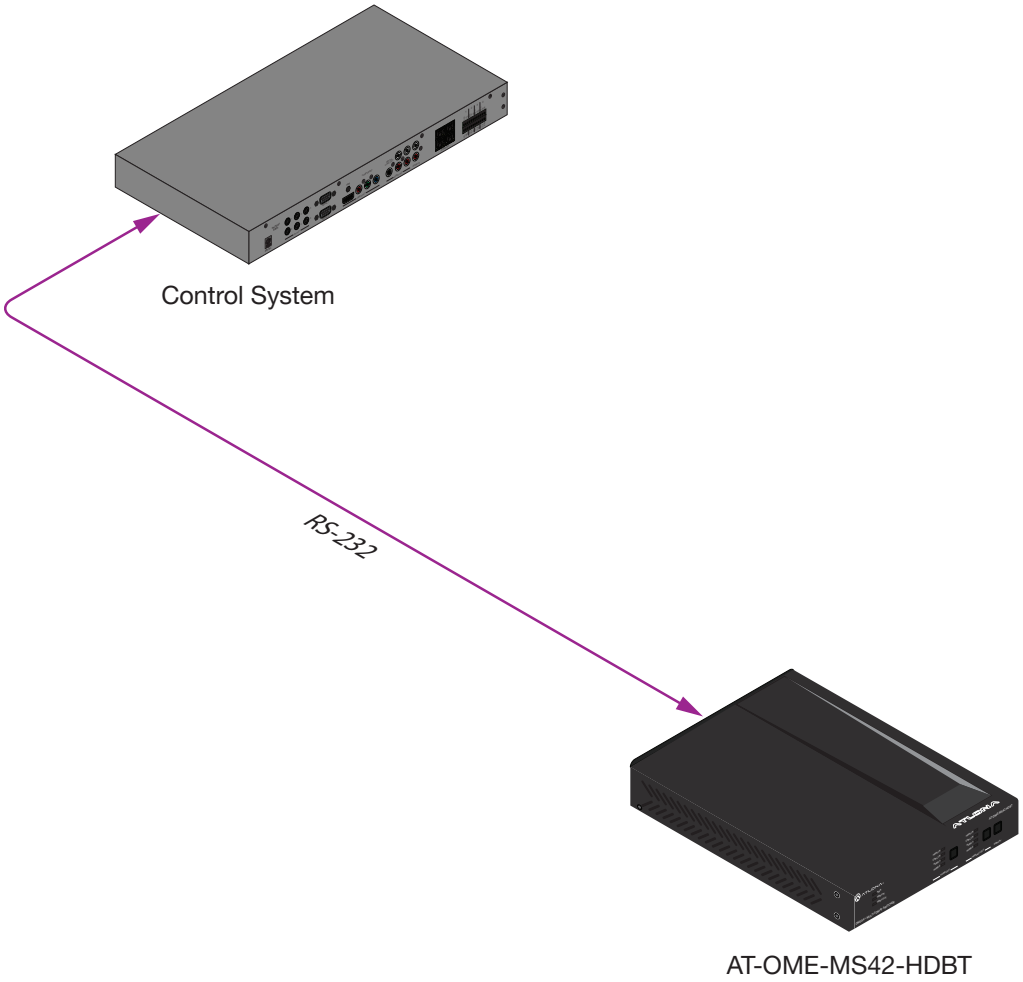
   \x0d (carriage return) should only be added to end of the string if the sink device is expecting this character.

Control mode

In control mode, RS-232 commands are sent from a computer or control system (DTE) to the AT-OME-MS42-HDBT (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-HDBT 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-HDBT.
2. Set the baud rate of the computer/control system to the same baud rate. If the AT-OME-MS42-HDBT and the control system are not set to the same baud rate, then the AT-OME-MS42-HDBT will not respond to RS-232 commands.
3. Refer to the *AT-OME-MS42-HDBT Applications Programming Interface* for a list of available commands.



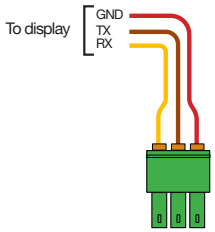
RS-232 Control

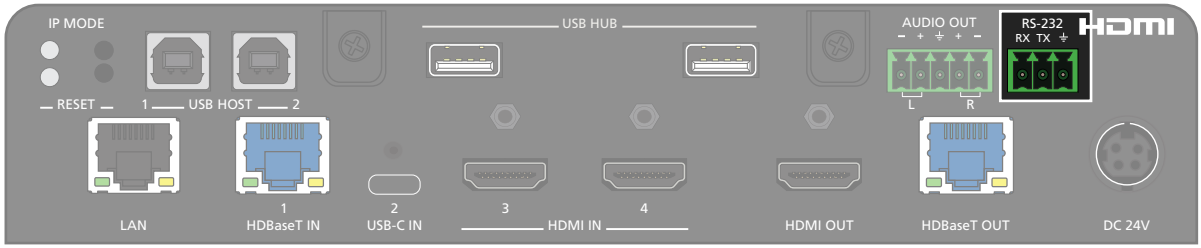
The **RS-232** port is used to directly control the AT-OME-MS42-HDBT using a control system (Console Mode) or can be used to send commands to the AT-OME-MS42-HDBT, from a control system, to the display/sink device over HDBaseT (Pass-Through Mode).

Console Mode

1. Connect the RS-232 cable between the control system and the **RS-232** port on the AT-OME-MS42-HDBT. The included 3-pin captive screw should be wired as shown.

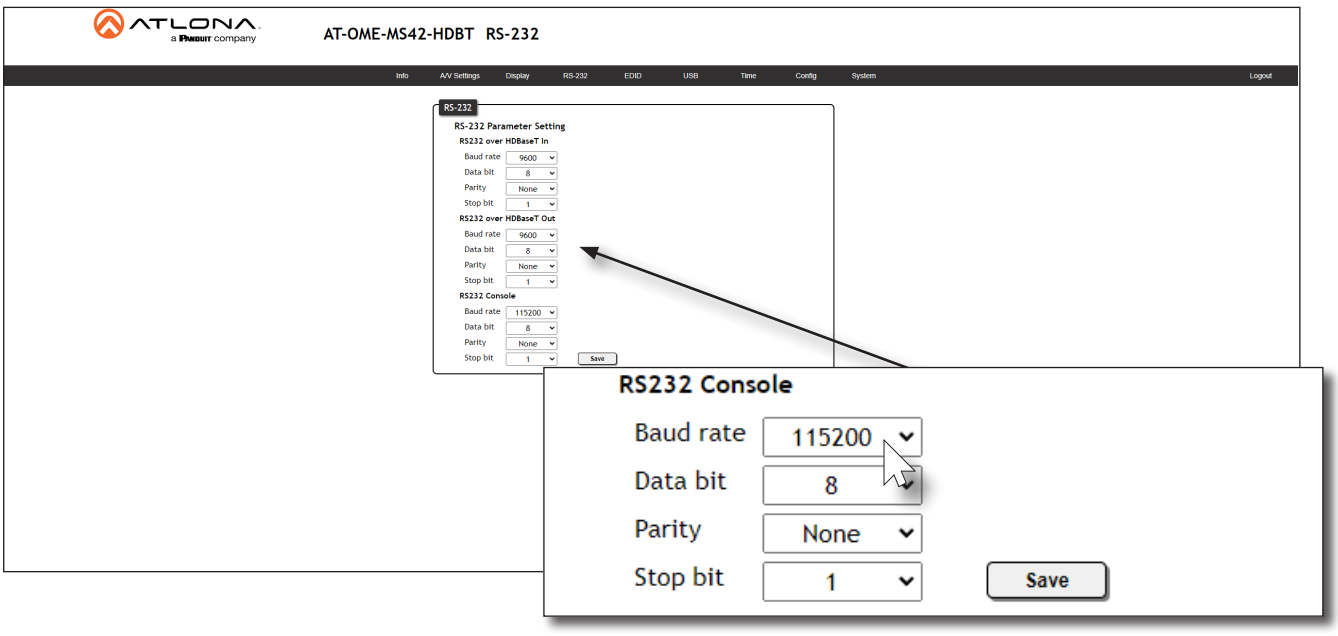
2. Log in to the web server.





3. Click **RS-232** in the menu bar.

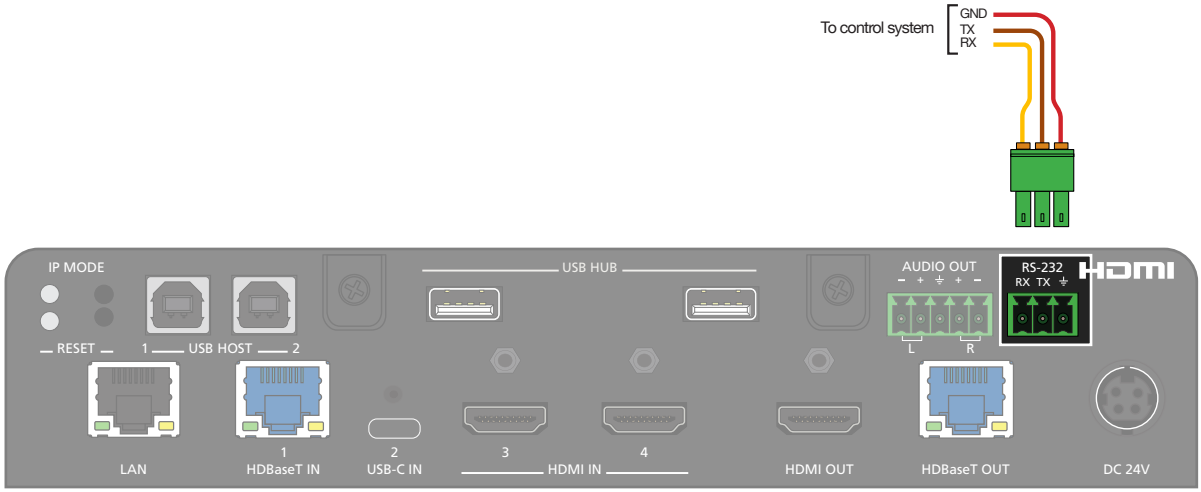
4. Under the **RS232 Console** section, select the proper baud rate, data bit, parity, and stop bit settings. These settings must correspond with the control system RS-232 settings.



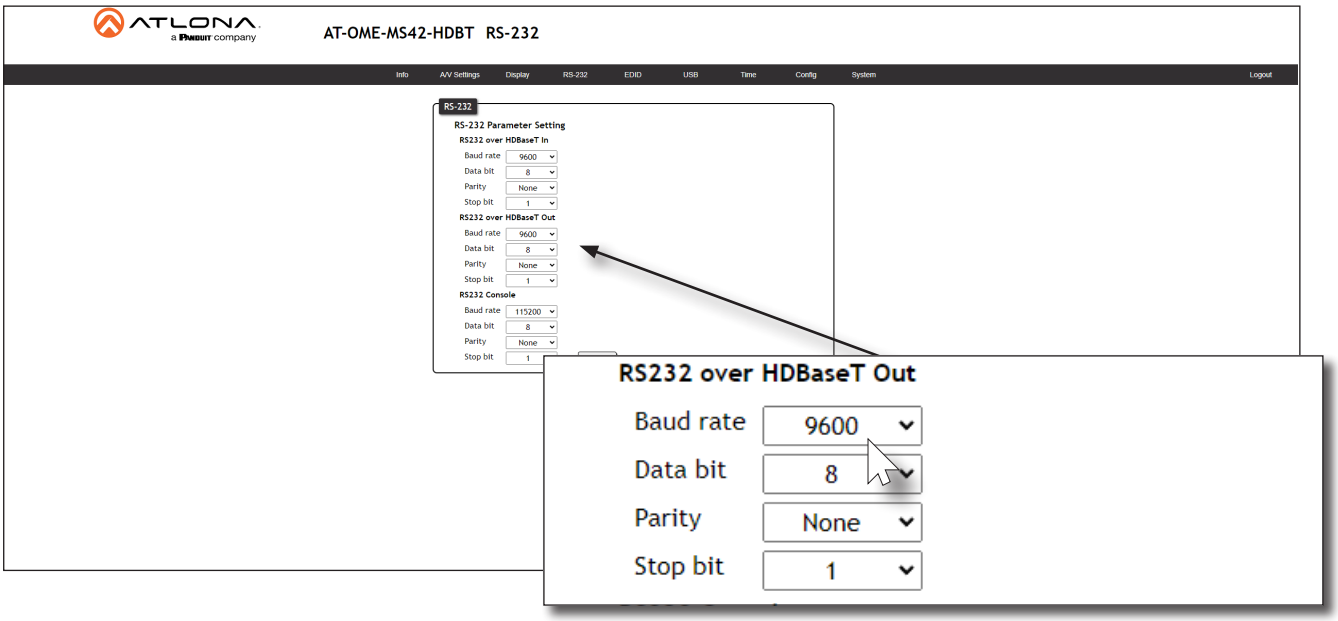
5. Click the **Save** button to commit changes.

Pass-Through Mode

1. Connect the RS-232 cable between the control system and the **RS-232** port on the AT-OME-MS42-HDBT. The included 3-pin captive screw should be wired as shown.
2. Connect a category cable from the **HDBaseT OUT** port to a receiver (AT-OME-EX-RX).
3. Connect an RS-232 cable between the display (sink) and the receiver.



4. Log in to the web server.
5. Under the **RS232 over HDBaseT Out** section, select the proper baud rate, data bit, parity, and stop bit settings. These settings must correspond with the control system RS-232 settings.



Display Control

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

IMPORTANT: The AT-OME-MS42-HDBT **Switching Mode** must be set to `Mirrored`. Display control is not supported under `Matrix Mode` or `Matrix Mode w/ static route`. Refer to Switching Modes (page 18) for more information.

Using CEC

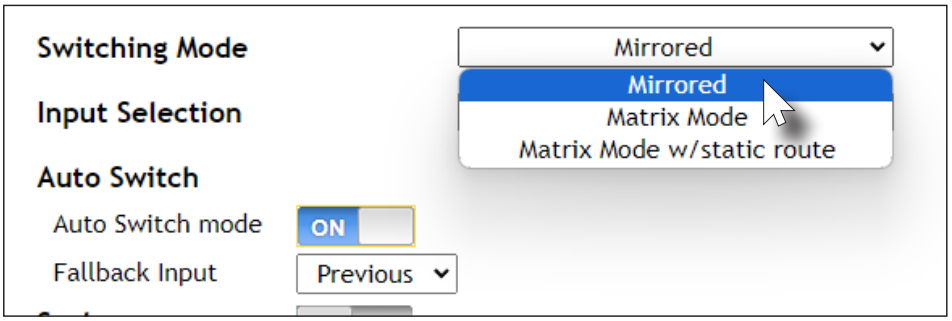
Consumer Electronics Control* (CEC) is the simplest method of control when working with a display. The **POWER** button, on the front panel of the AT-OME-MS42-HDBT, can be programmed to toggle power on the display, allowing for convenient remote control of the display device. Note that the display must have CEC enabled to receive CEC messages. Both the **HDMI OUT** and **HDBaseT OUT** ports can be used for CEC control. If using CEC control over HDBaseT, connect the HDMI cable from the receiver to the display.

**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.*

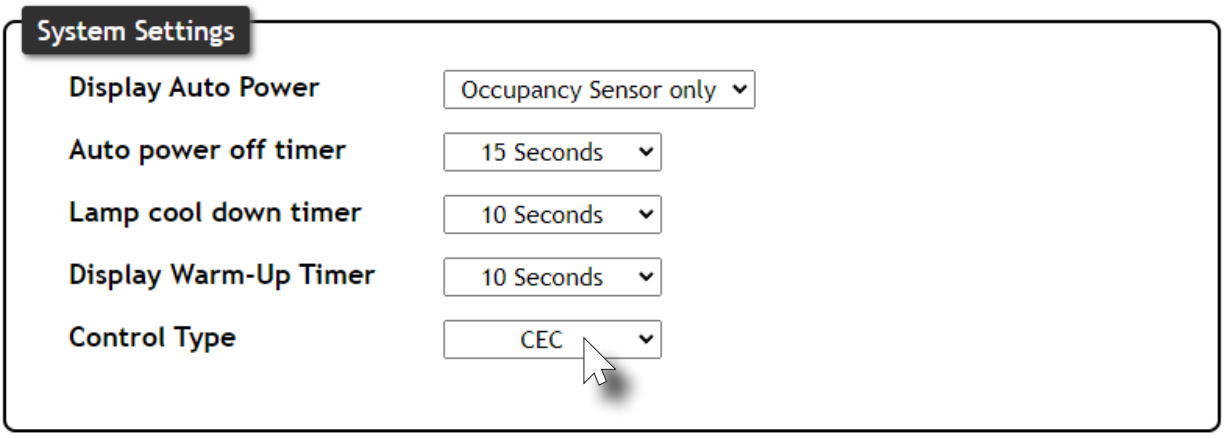
1. Connect an HDMI cable from the **HDMI OUT** port on the AT-OME-MS42-HDBT (or receiver) to the HDMI input on the display device.
2. Enable CEC on the display device. Refer to the documentation for the display device. It should be noted that different manufacturers will identify CEC with their own brand 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

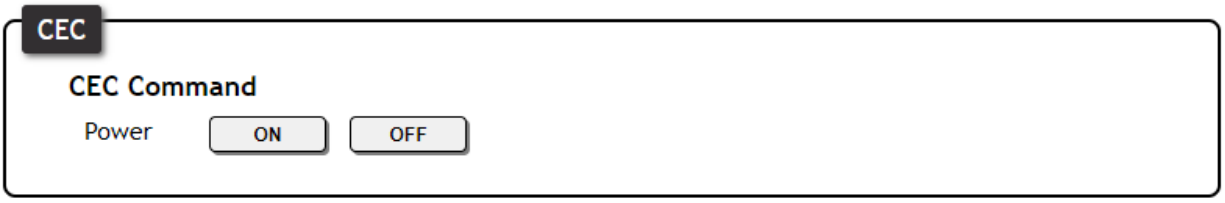
3. Log in to the web server.
4. Click **A/V Settings** in the menu bar.
5. Verify that the **Switching Mode** is set to `Mirrored`. Display control is *not supported* under `Matrix Mode` or `Matrix Mode w/ static route`.



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.



8. Under the **CEC** section, near the top of the page, test the CEC commands for power by clicking the associated buttons. The display should respond correctly to each of these commands.

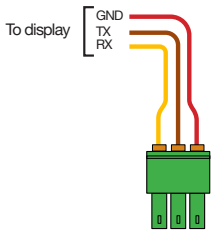


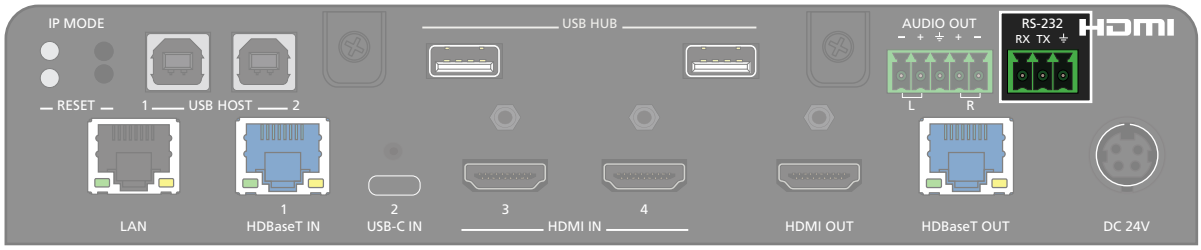
If the display does not respond, check the following:

- Verify that CEC is enabled on the display device.
- Verify the integrity of the HDMI cable. Try connecting a different cable between the AT-OME-MS42-HDBT and the display device.
- If the display is connected to a receiver, such as the AT-OME-EX-RX, check both the HDMI cable from the receiver and the category cable between the **HDBaseT OUT** port on the AT-OME-MS42-HDBT and the HDBaseT IN port on the receiver.
- Try connecting the HDMI cable to a different HDMI input on the display device.

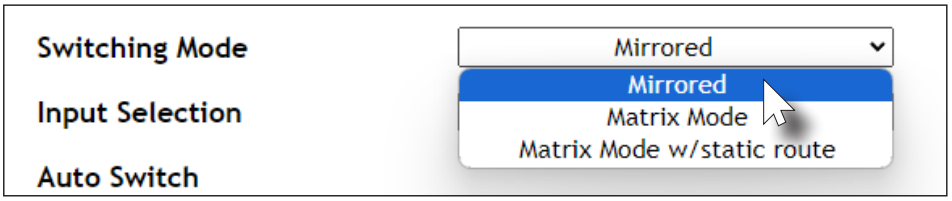
RS-232 Configuration

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

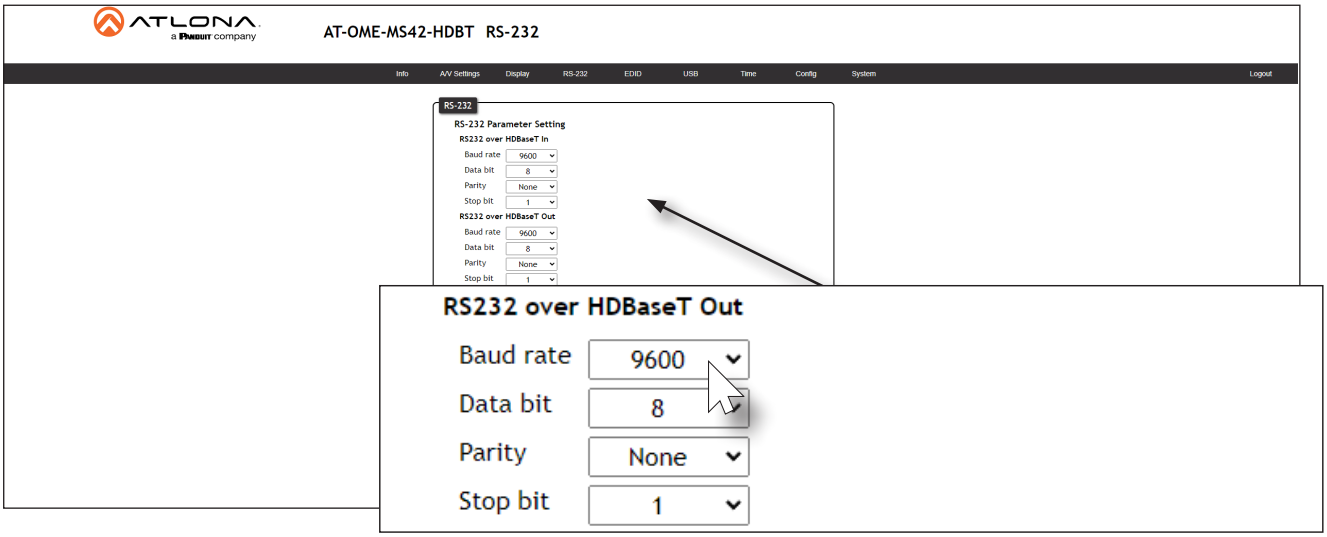




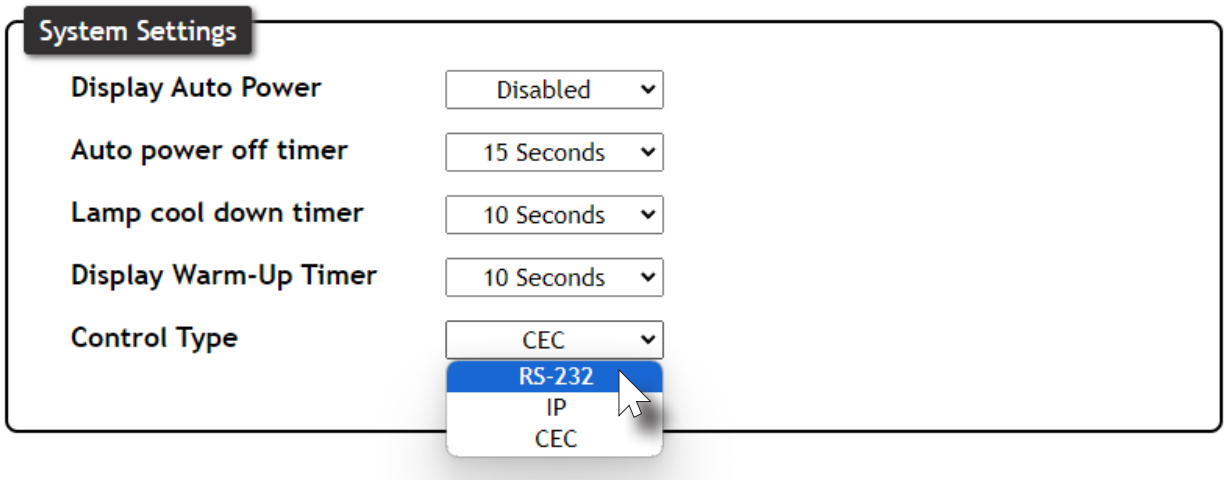
2. Log in to the web server.
3. Click **A/V Settings** in the menu bar.
4. Set the **Switching Mode** to `Mirrored`. Display control is *not supported* under `Matrix Mode` or `Matrix Mode w/ static route`.



5. Click **RS-232** in the menu bar.
6. 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.



7. Click **Display** in the menu bar.
8. Under **System Settings**, click the **Control Type** drop-down list and select `RS-232`.



EDID Management

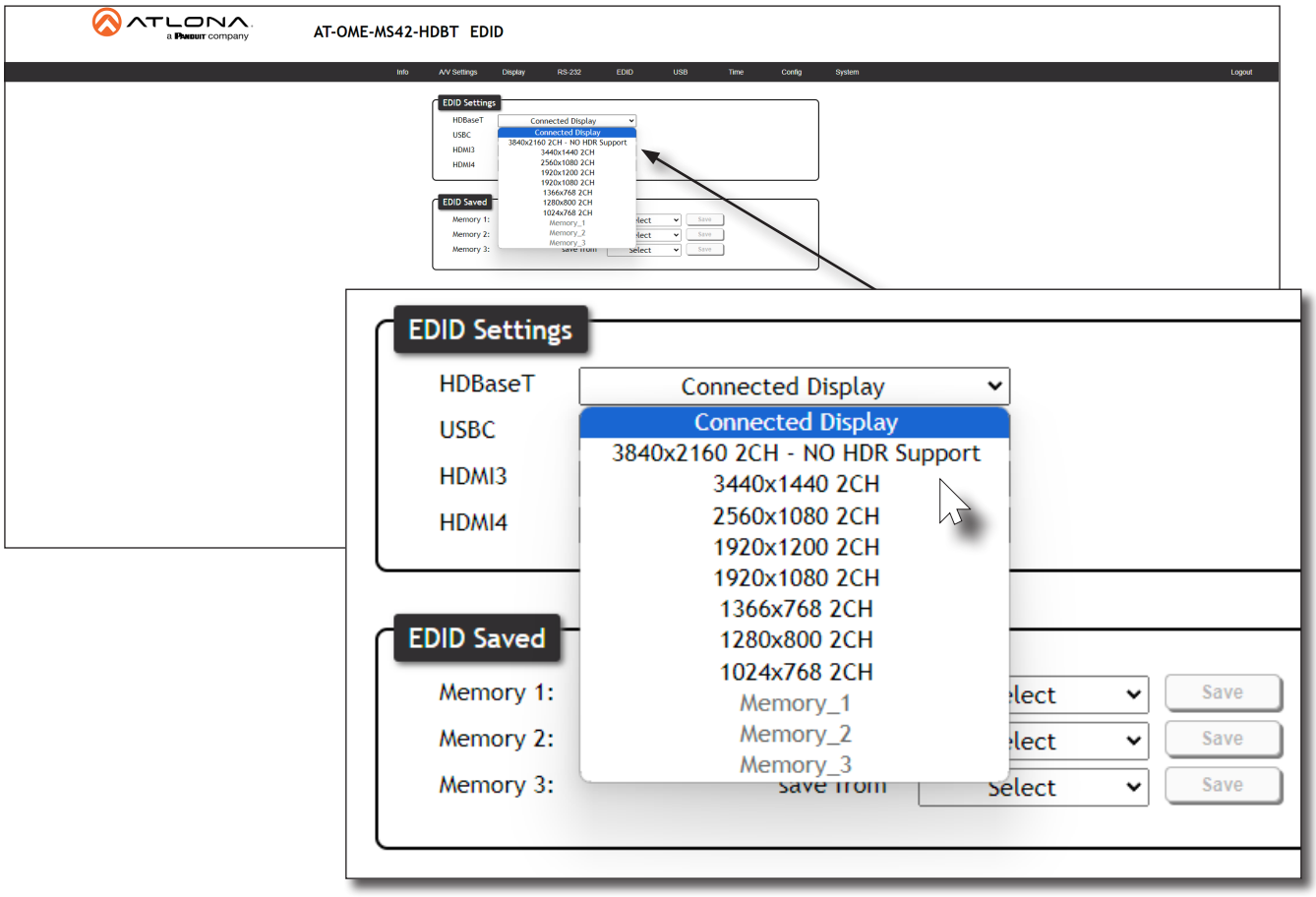
Before a source can send picture and sound to a display device, the source reads the EDID (Extended Display Identification Data) stored in the display. The EDID contains information about what type of video and audio formats are supported by the display. The AT-OME-MS42-HDBT can use either the downstream 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-HDBT 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.
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 **USB-C** port is connected to a display, click the **USBC** drop-down list.



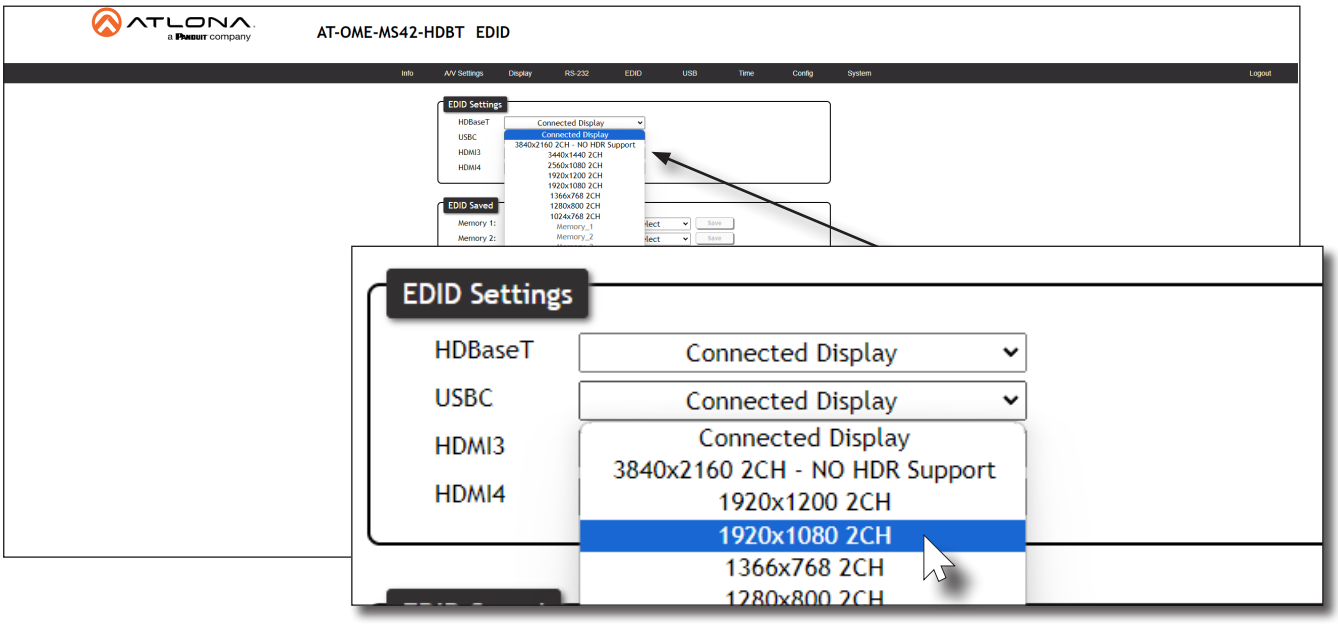
EDID Presets

The AT-OME-MS42-HDBT provides the option of selecting a preset EDID. For information on Memory_1, Memory_2, and Memory_3 settings, refer to Storing EDID Data (page 50).

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.
3440x1400 2CH	3440 x 1440 @ 60 Hz with two-channel audio support.
2560x1080 2CH	2560 x 1080 @ 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.

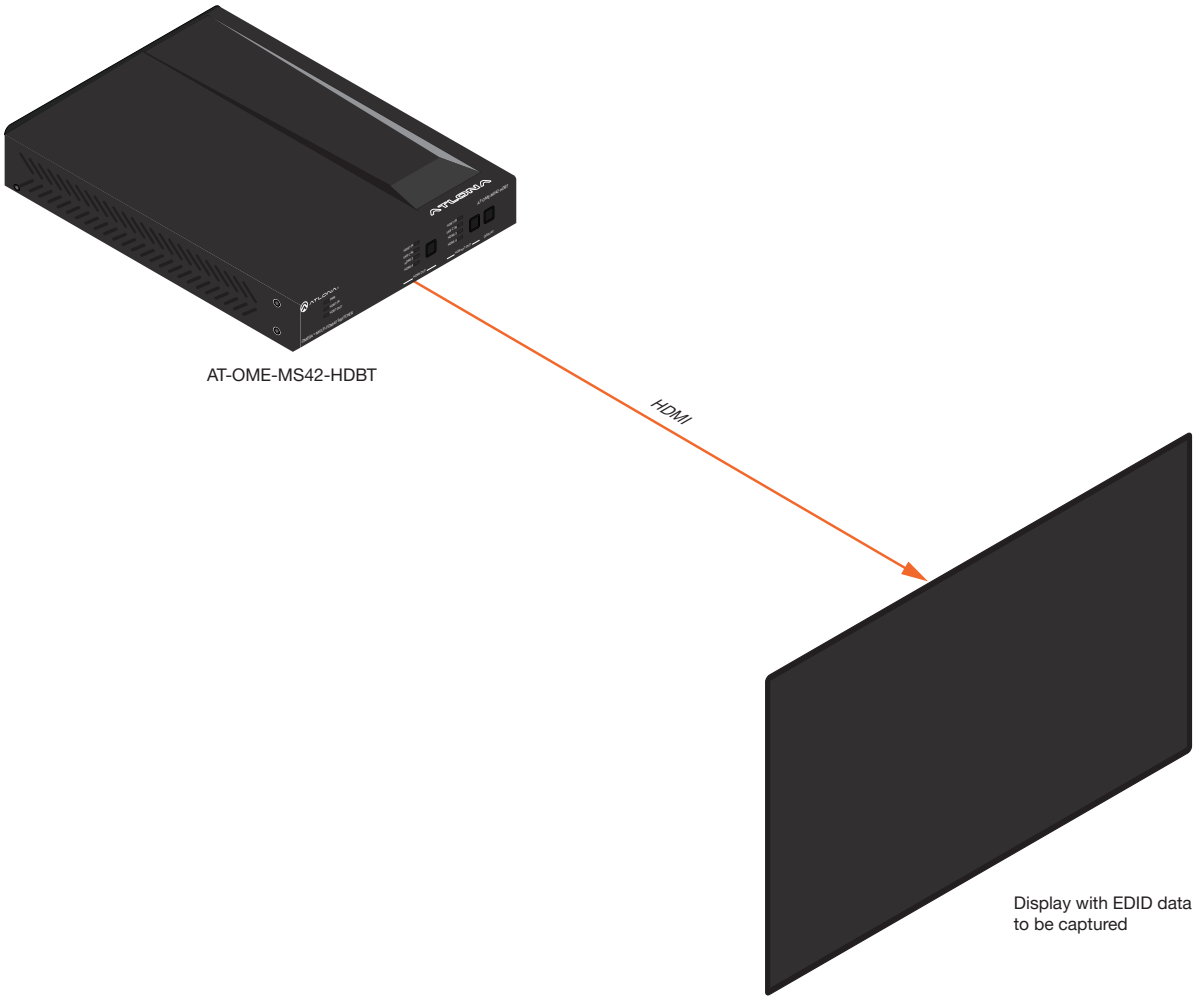
1. Login to the web server.
2. Click **EDID** in the menu bar.
3. Locate the **EDID Settings** section.
4. Click the drop-down list, next to the port that is connected to the display device, and select the desired EDID preset. For example, if the **USB-C** port is connected to a display, click the **USBC** drop-down list.



Storing EDID Data

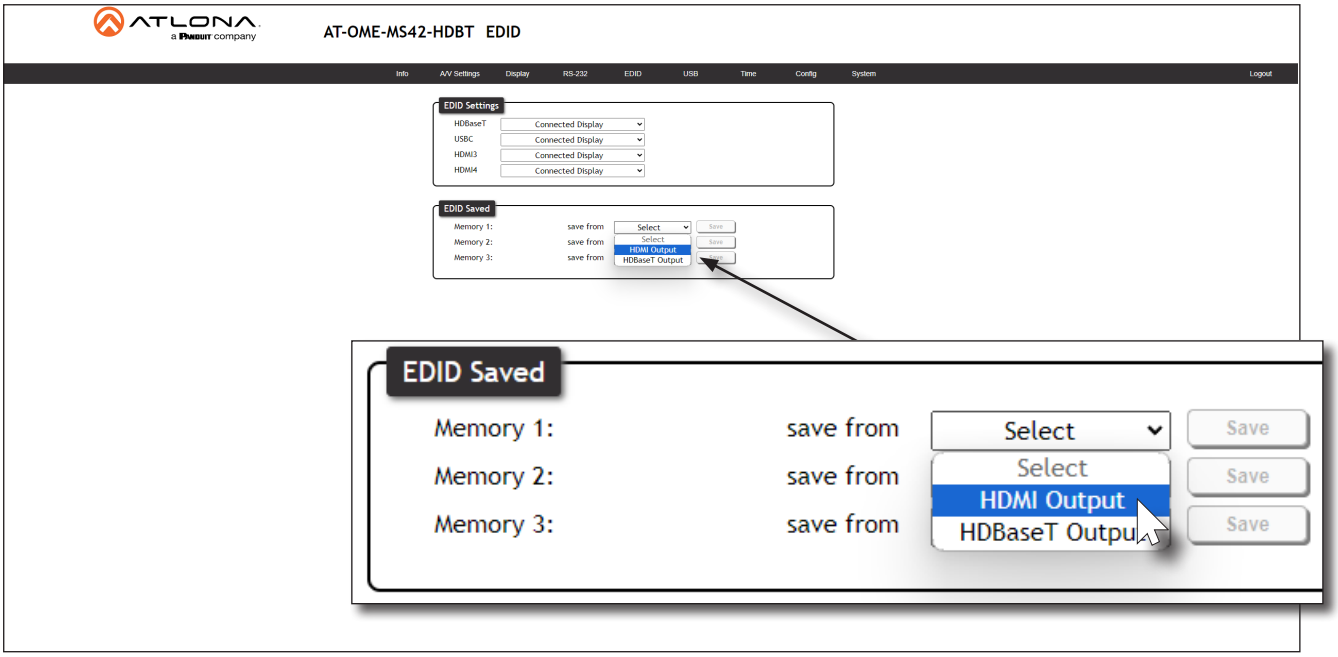
The AT-OME-MS42-HDBT provide three memory locations which can be used to store EDID data. Any downstream EDID can be captured and stored in these locations. Each memory location is non-volatile and captured EDID data is stored after power is disconnected from the unit.

1. Connect an HDMI cable from the **HDMI OUT** port on the AT-OME-MS42-HDBT to the HDMI input on the display, containing the EDID to be stored.
2. Login to the web server.

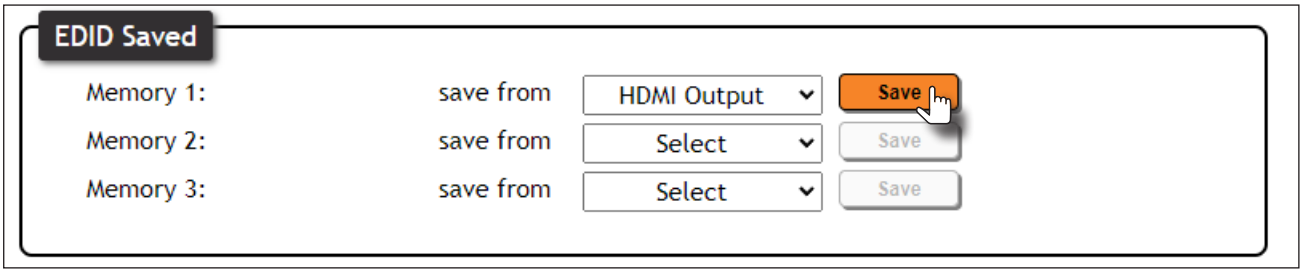


3. Click **EDID** in the menu bar.
4. Locate the **EDID Saved** section.
5. Click the drop-down list, next to the memory location to be used, and select the output which will be used to fetch the EDID. Refer to the next page for more information.

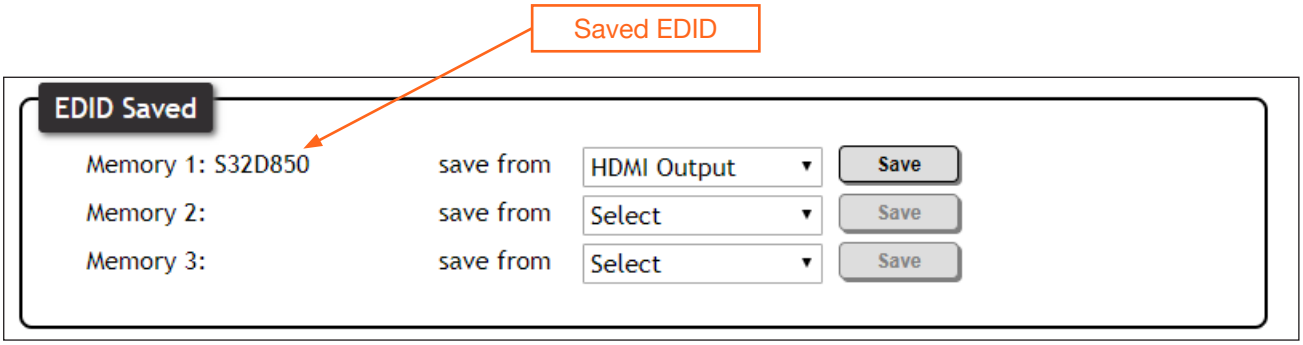
In this example, since the display is connected to the **HDMI OUT** port on the AT-OME-MS42-HDBT, the **HDMI Output** option is selected. Here, the EDID will be stored to **Memory 1**.



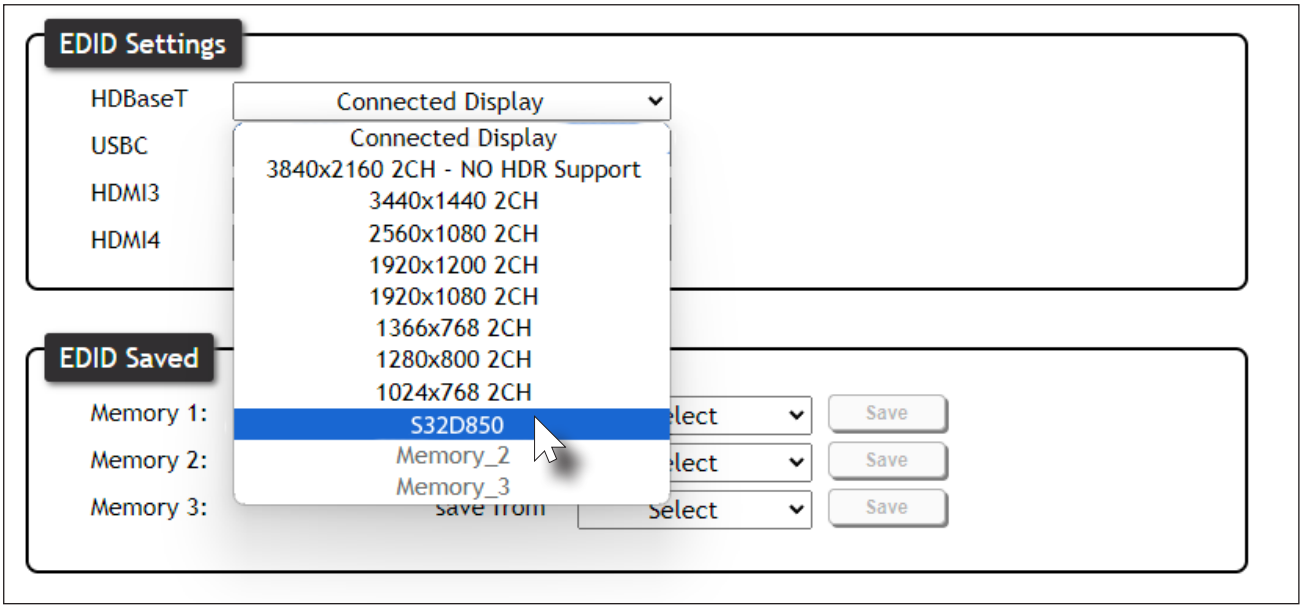
6. Click the **Save** button next to the drop-down list for the memory location.



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



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-HDBT.



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.

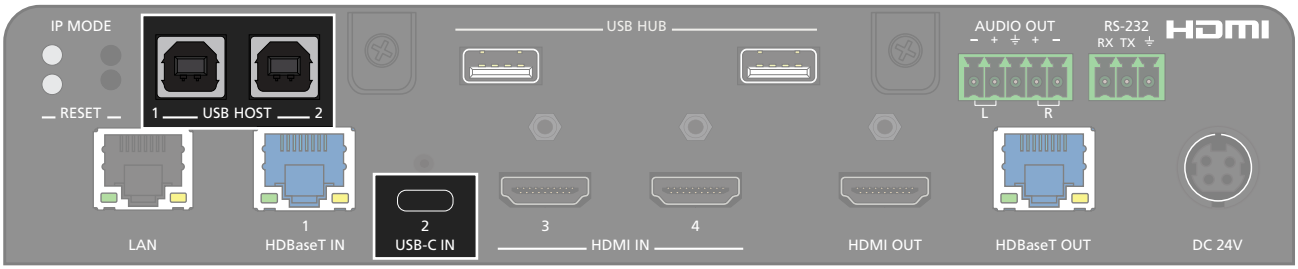
USB Modes

The AT-OME-MS42-HDBT 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.

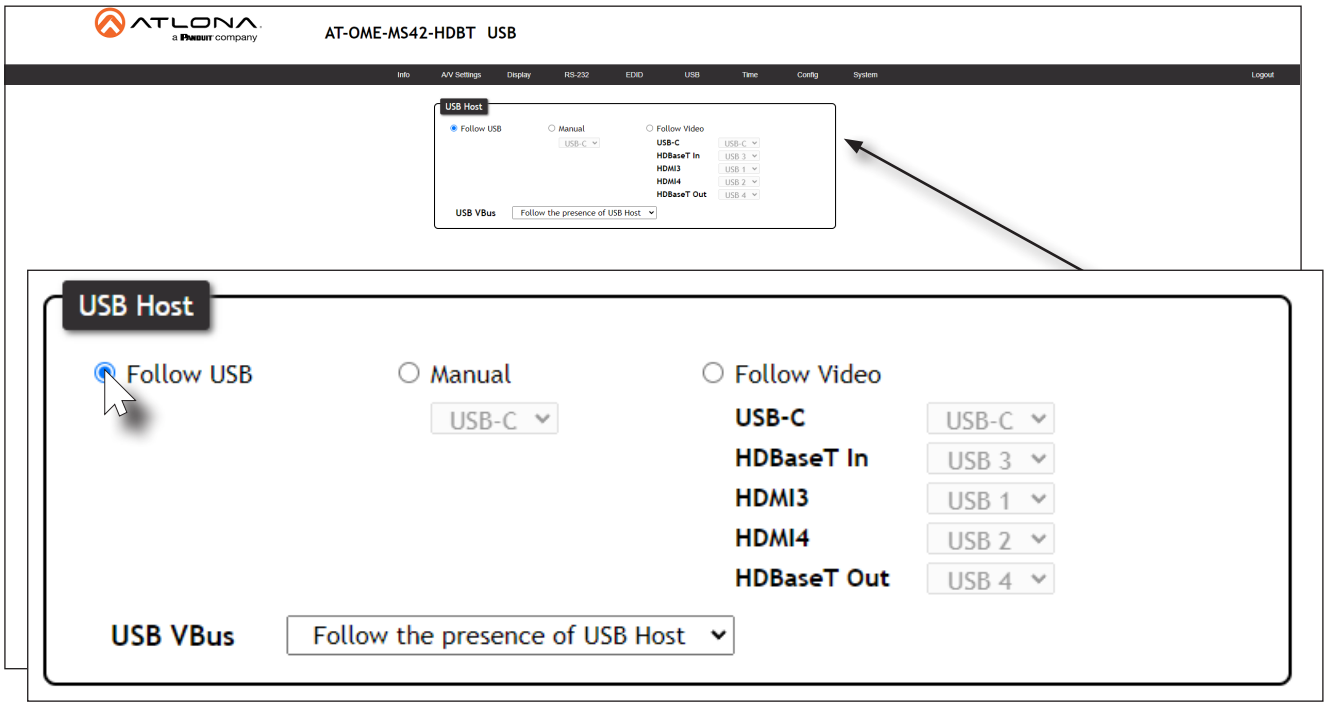
Follow USB

This is the default mode and functions similar to auto-switching for video. In this mode, the AT-OME-MS42-HDBT 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-HDBT 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. Note that it is not required that both USB host ports be connected to host devices.



2. Login to the web server.
3. Click **USB** in the menu bar.
4. Click the **Follow USB** radio button to enable Follow USB mode.



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

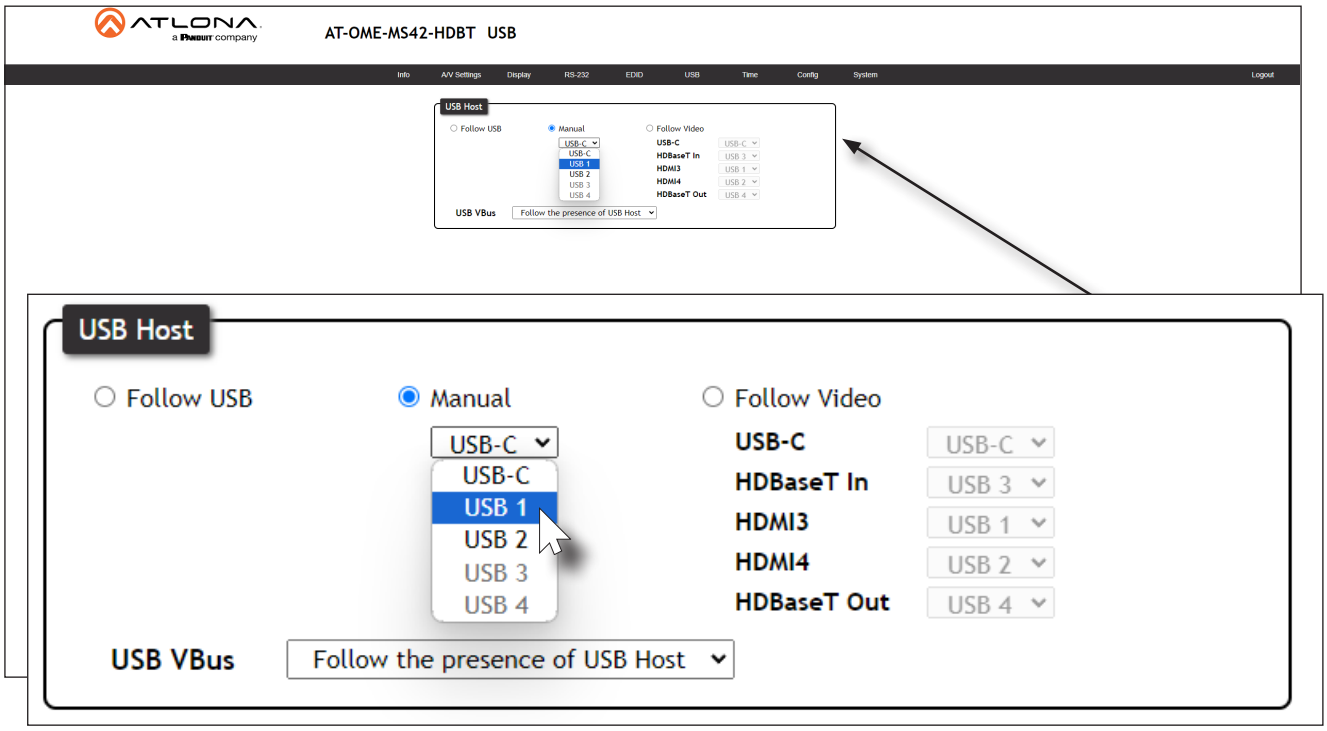
- If only one USB host port is connected, then the AT-OME-MS42-HDBT will use the USB host device connected to that port.
- If an another USB host device is connected to the vacant USB host port, then the AT-OME-MS42-HDBT will automatically switch to that USB host device.
- If *both* **USB 1** and **USB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

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.
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.

NOTE: If no transmitter is connected to USB3, then the **USB 3** option will be disabled (grayed out). If no receiver (such as the SR21) is connected to USB4, then the **USB 4** option will be disabled (grayed out).



Follow Video

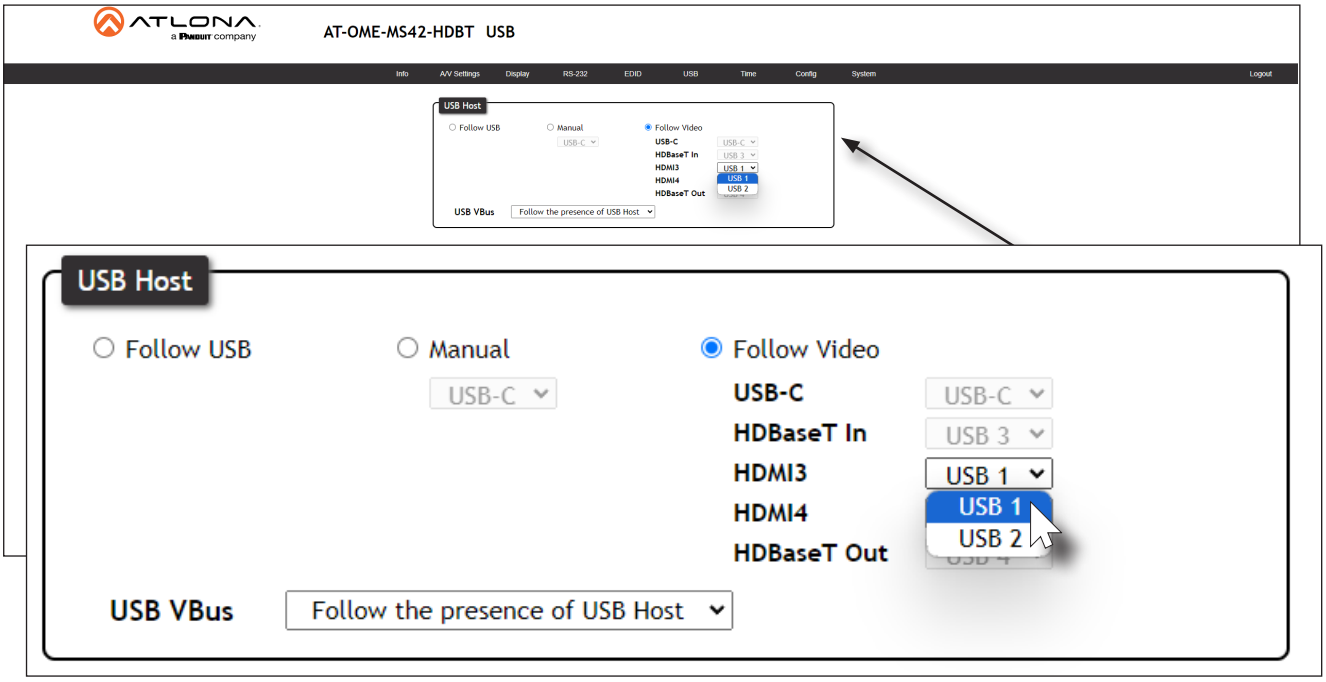
In this mode, each video input can be assigned to either **USB 1** or **USB 2** host ports. This mode locks the USB host device to the desired video input. Each host device will have access to the same USB devices, when video switching occurs.

> **IMPORTANT:** Follow Video mode is not available when the AT-OME-MS42-HDBT is set to either Matrix Mode or Matrix Mode w/ Static Route. Refer to Matrix Mode (page 19) or Matrix Mode w/ Static Route (page 21) for more information.

1. Connect the host computers to the USB host ports. It is not required that both USB host ports be connected to host devices.
2. Login to the web server.
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-HDBT 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**.

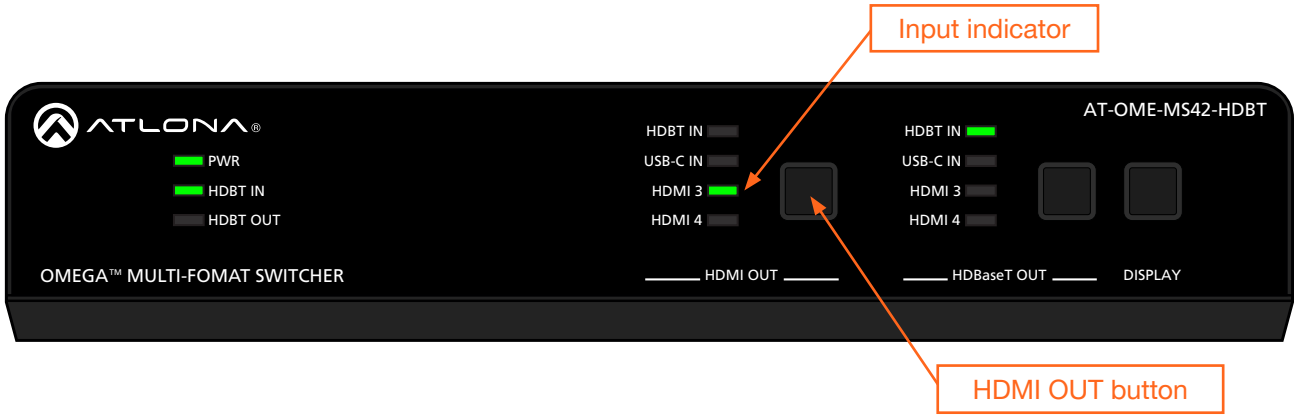
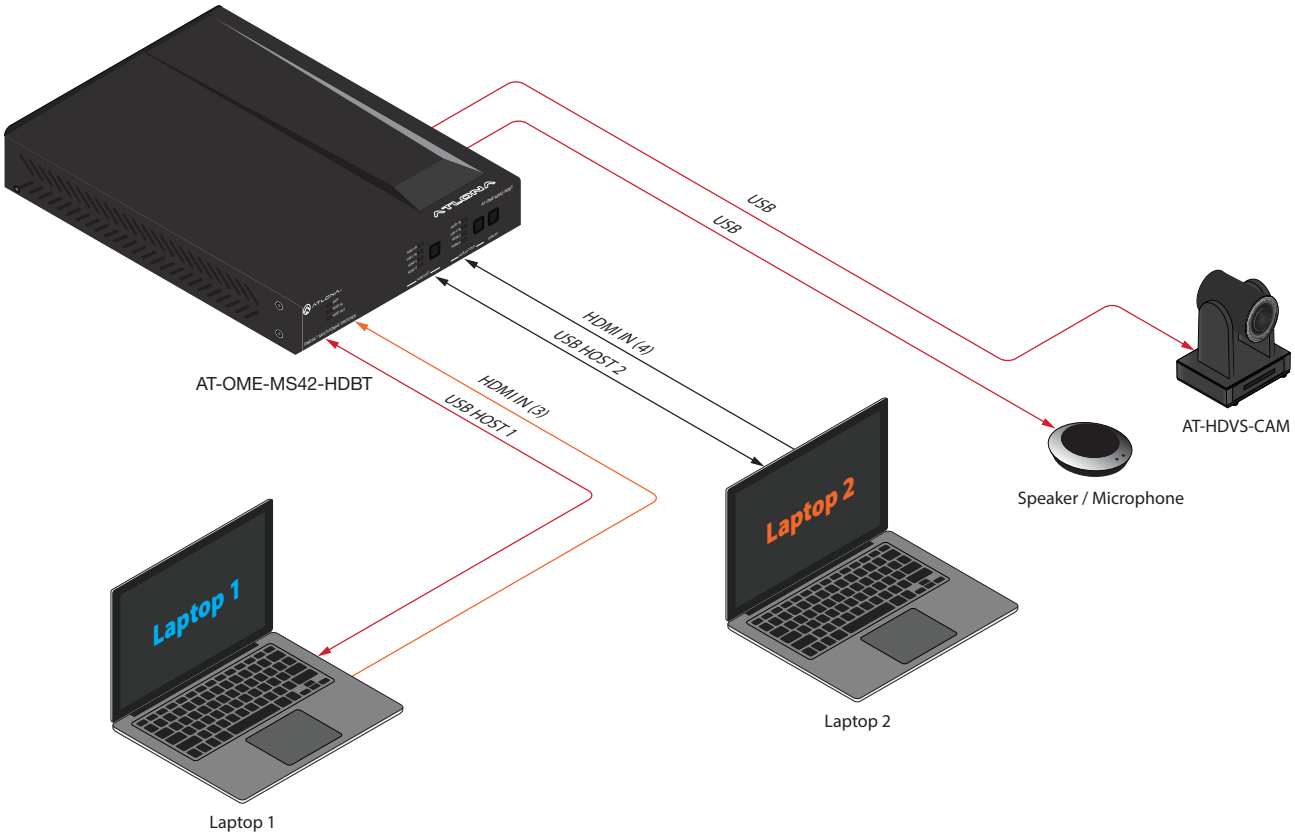
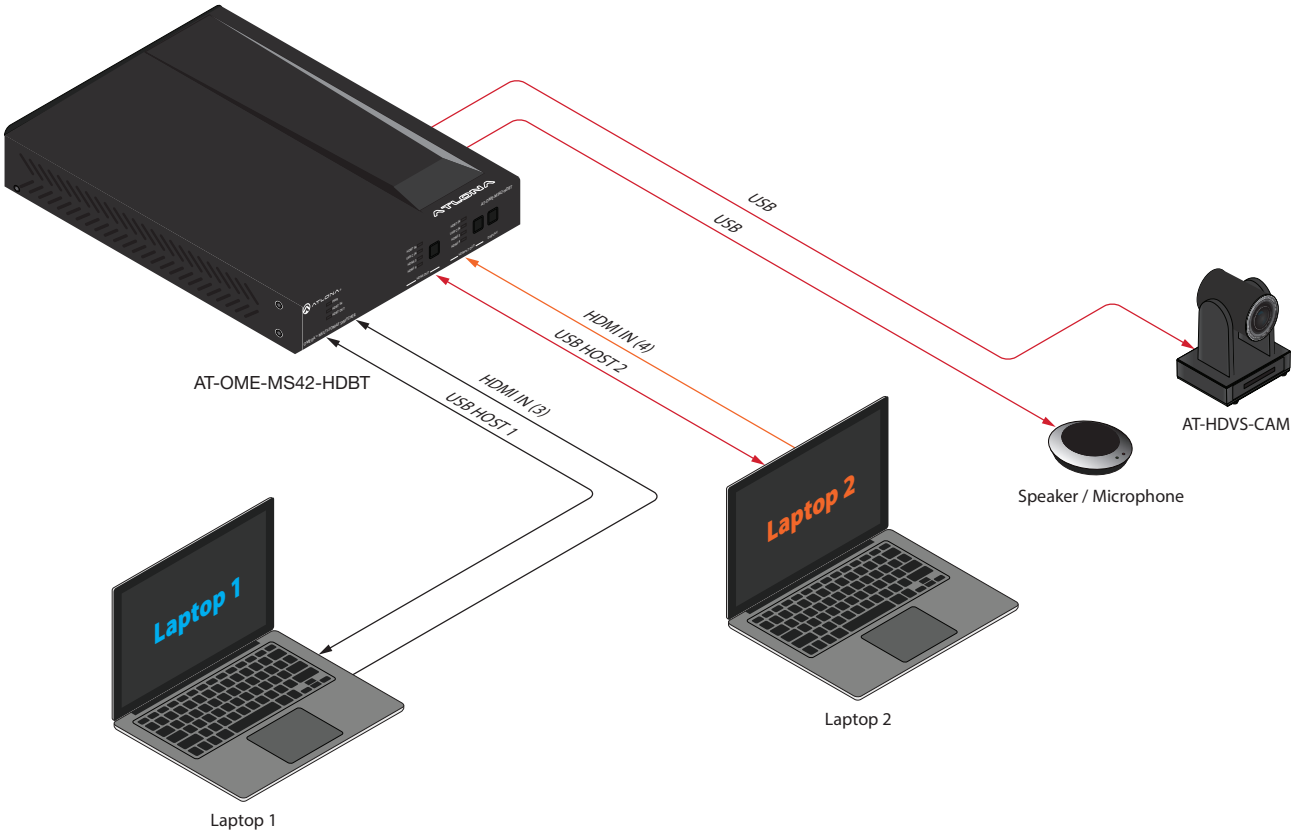


Figure 1.1 - HDMI 3 is selected as the active video input and Laptop 1 has access to the speaker/mic and the AT-HDVS-CAM. Black signal lines indicate that the AT-OME-MS42-HDBT is not switched to that input.



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-HDBT is not switched to that input.

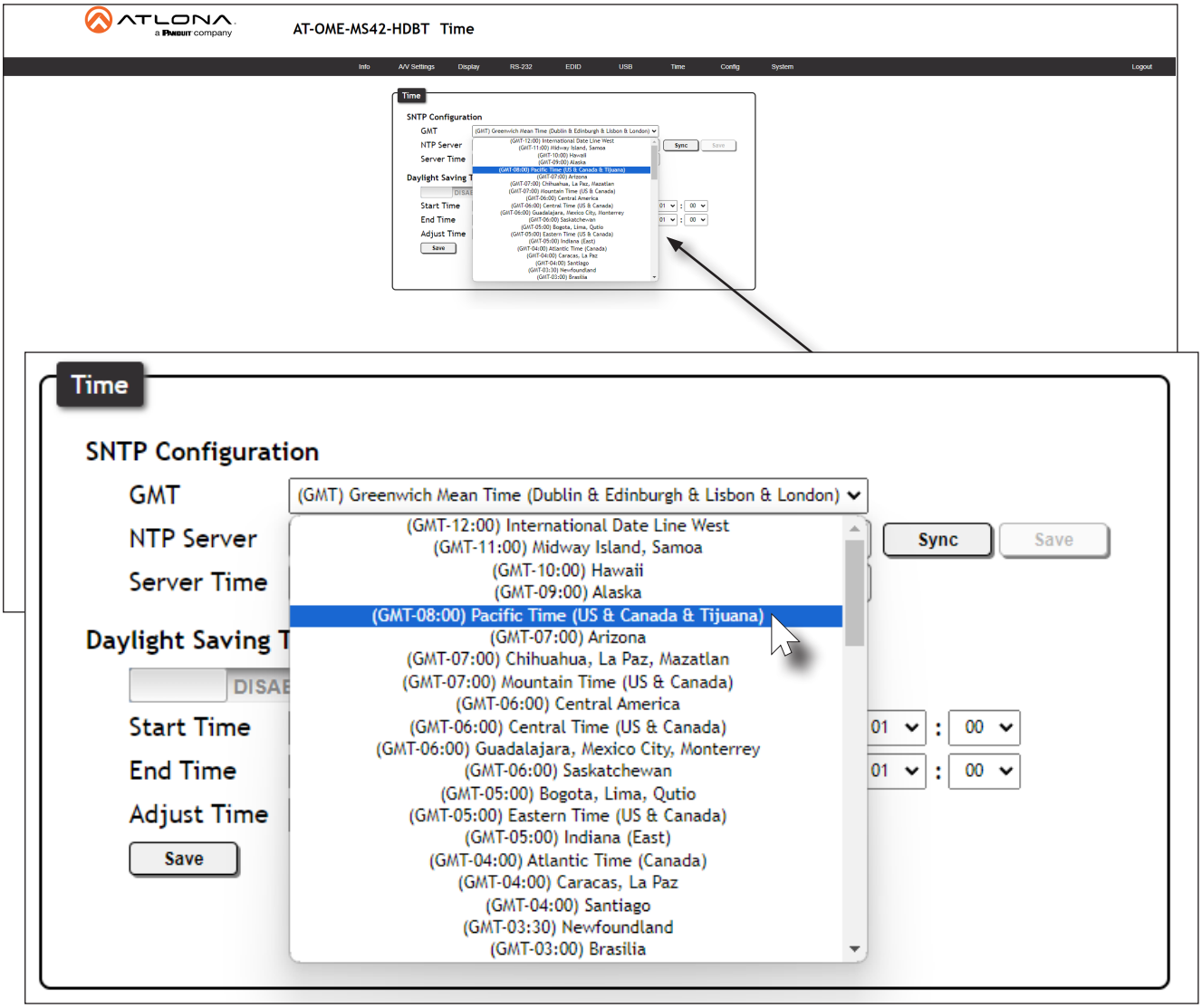


Setting the System Date and Time

The AT-OME-MS42-HDBT 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.

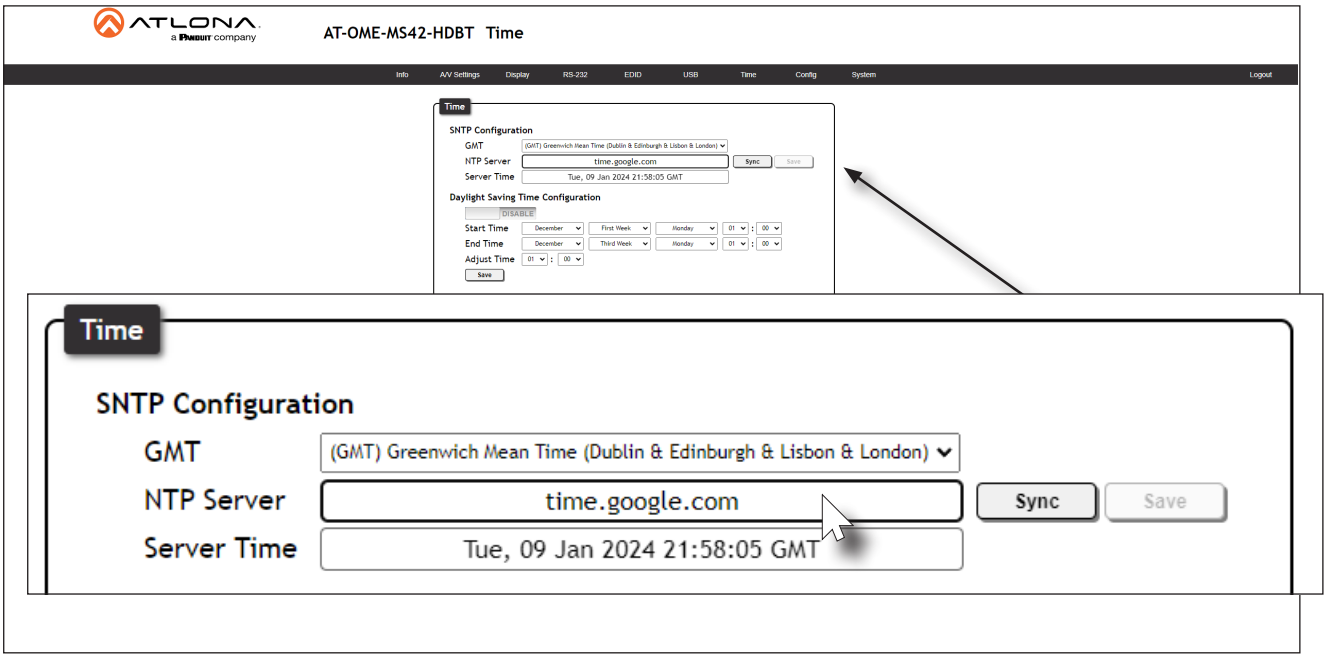
Setting Local Time

1. Login to the web server.
2. Click **Time** in the menu bar.
3. Click the **GMT** drop-down list and select the time for the current region.



Using an NTP Server

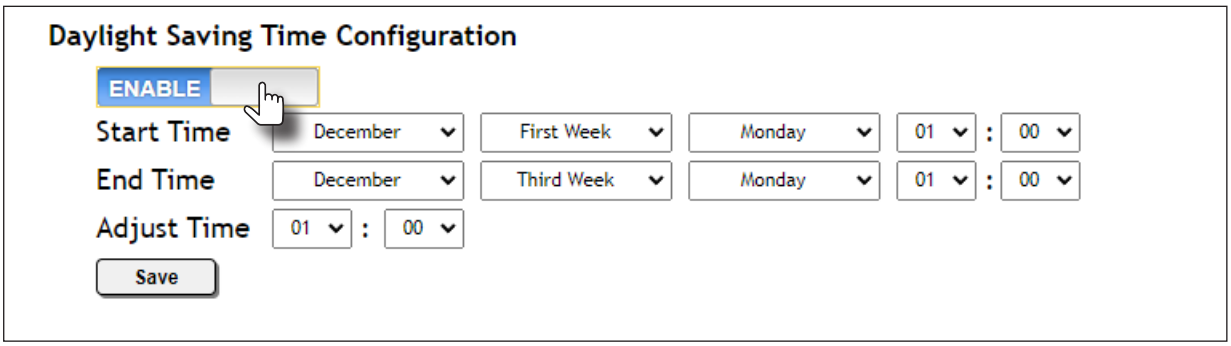
1. Login to the web server.
2. Click **Time** in the menu bar.
3. Click the **NTP Server** field. The default NTP server is set to time.google.com.
4. Delete the contents of this field and enter the desired NTP server.
5. Click the **Sync** button to synchronize the AT-OME-MS42-HDBT clock with the NTP server time.
6. Click the **Save** button to commit changes.



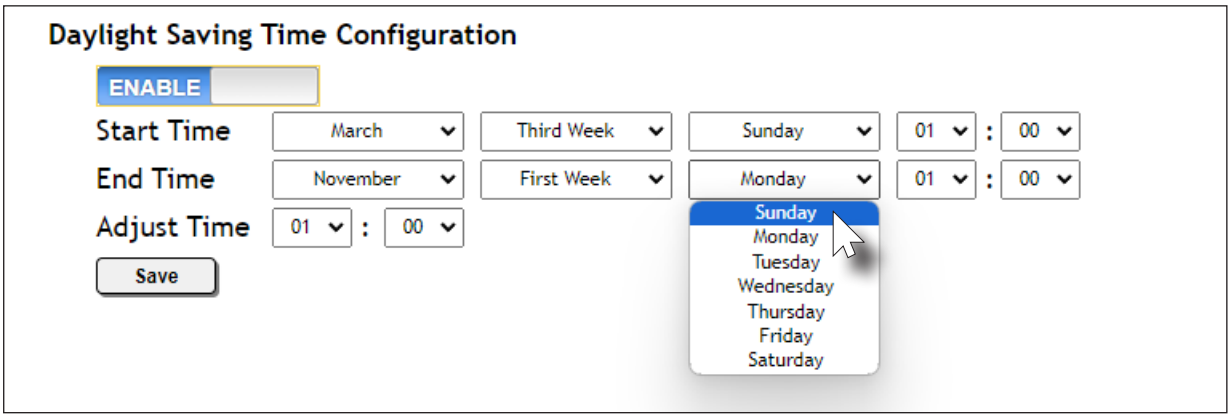
Daylight Saving Time (DST)

The AT-OME-MS42-HDBT 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.
2. Click **Time** in the menu bar.
3. Under **Daylight Saving Time Configuration**, click the toggle switch to the `ENABLE` position.



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.

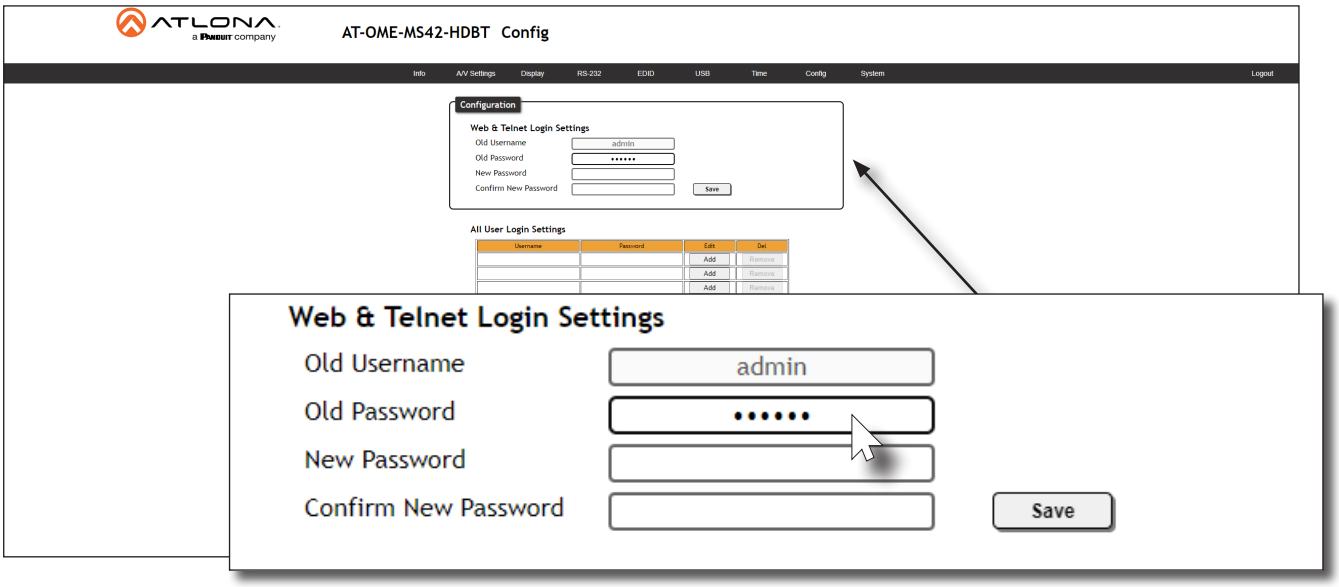


User Management

The AT-OME-MS42-HDBT allows the administrator password to be changed, as well as the ability to create and remove user accounts. Passwords apply to both the web server and Telnet sessions. All users have the same level of access to control the AT-OME-MS42-HDBT. However, only the administrator-level user is allowed to manage other users. Up to three additional users can be created.

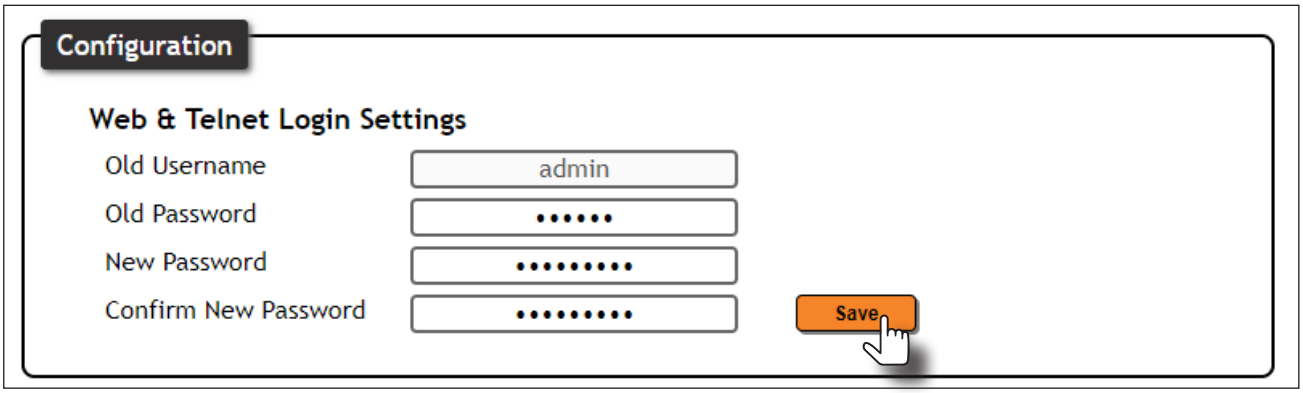
Changing the Administrator Password

1. Login to the web server.
2. Click **Config** in the menu bar.
3. Click the **Old Password** field and enter the current password.



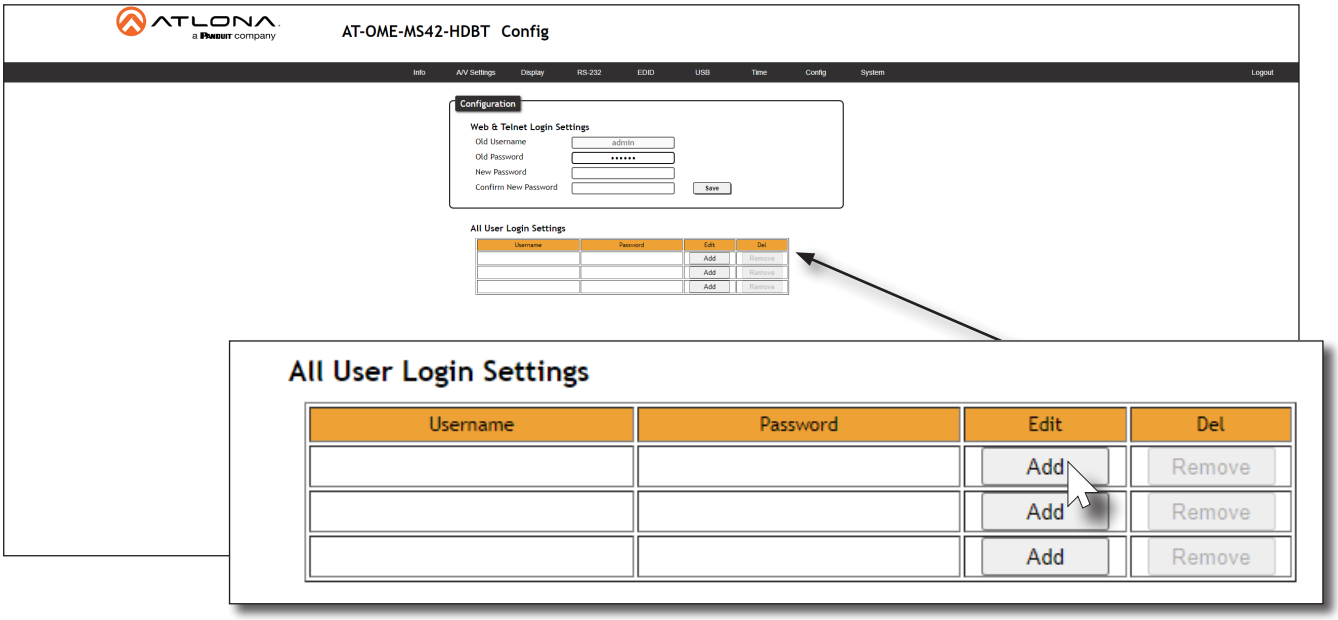
4. Enter the new password in the **New Password** field.
5. Retype the new password in the **Confirm New Password** field.
6. Click the **Save** button to commit changes. To login with the new username, click **Logout** in the upper-right corner of the screen, then enter the new password on the **Login** page.

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

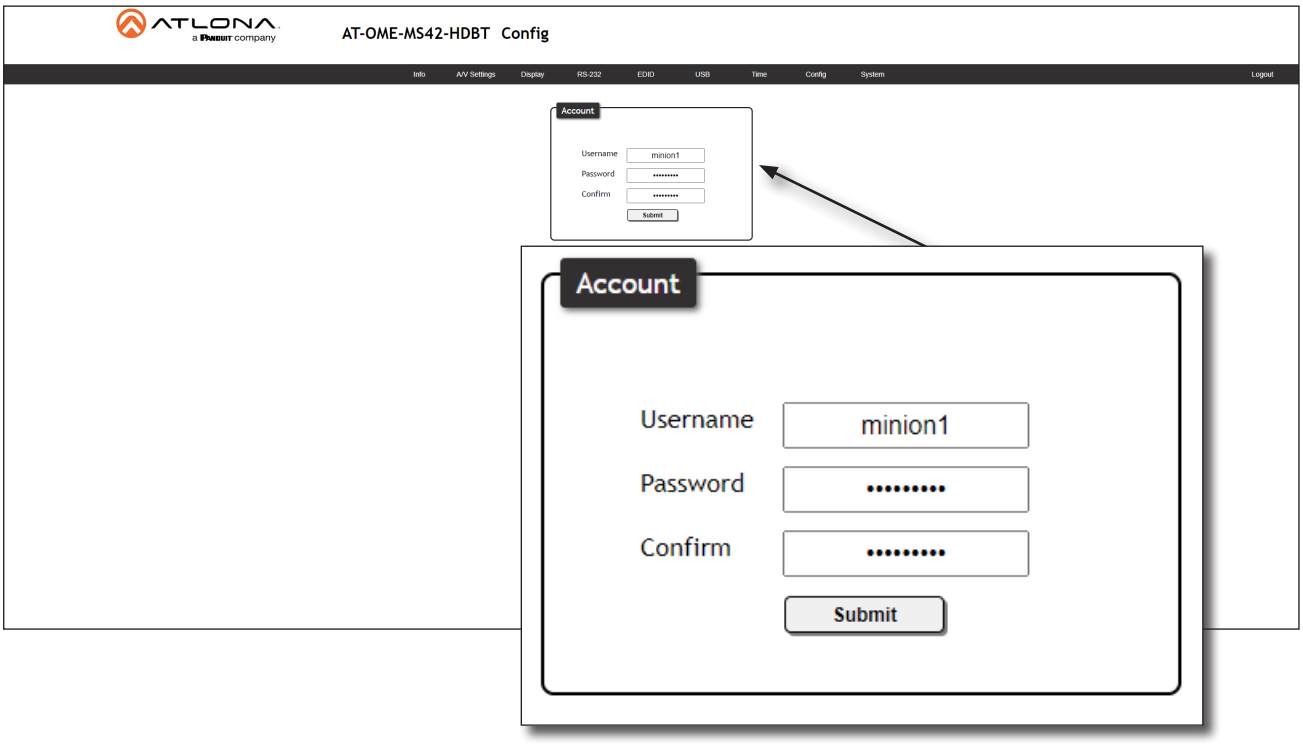


Adding Users

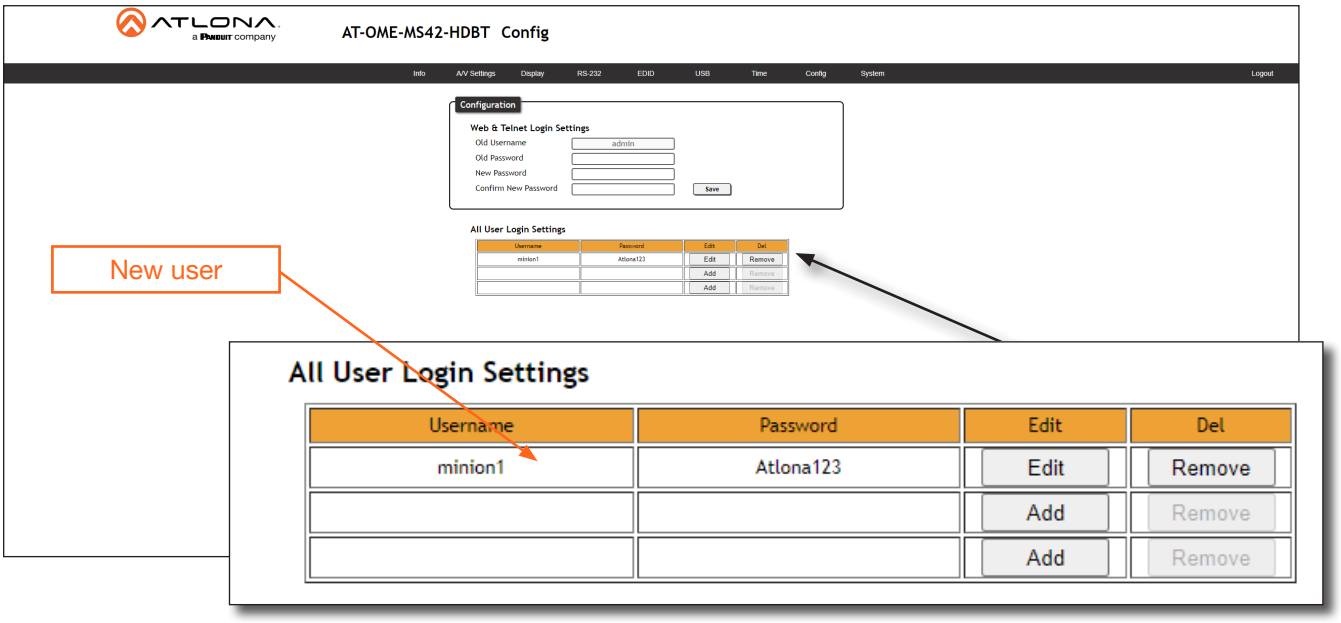
1. Open the desired web browser and enter the IP address of the AT-OME-MS42-HDBT.
2. Login with the required credentials.
3. Click the **Config** tab.
4. Click the **Add** button, under the **Edit** column.



5. Enter the desired username and password in the **Username** and **Password** fields, respectively.



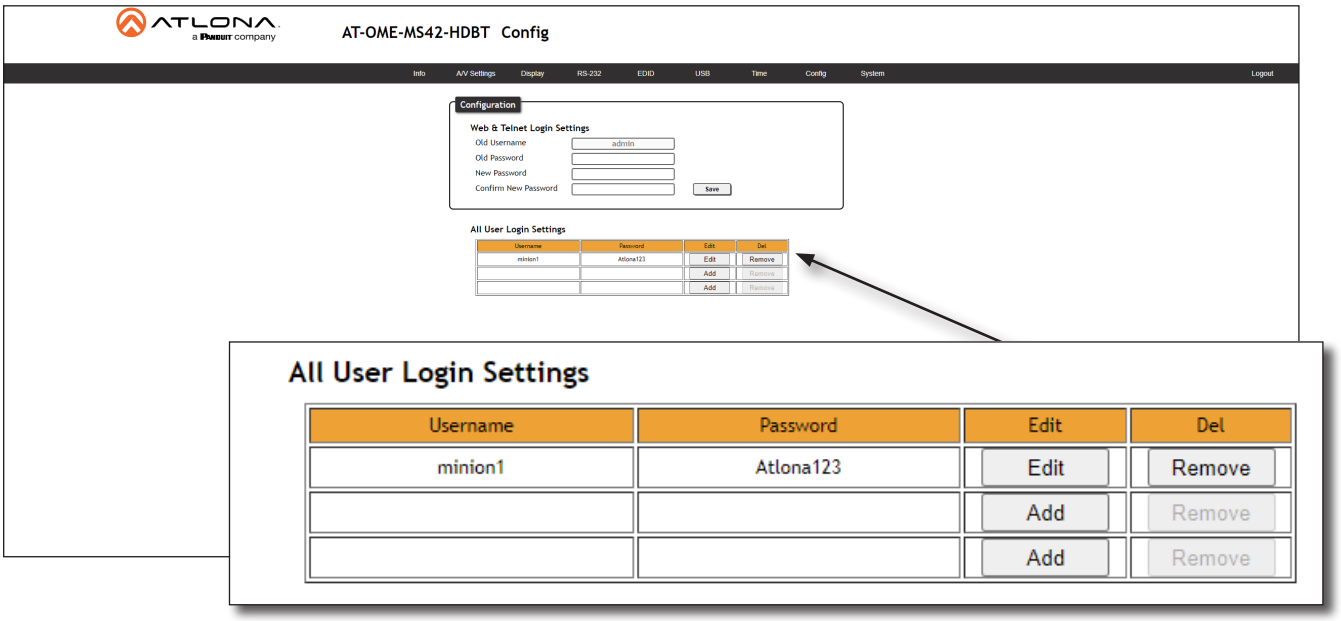
6. Click the **Submit** button to commit changes. Once created, the new user and the associated password will appear under the **All User Login Settings** section. Refer to the next page.



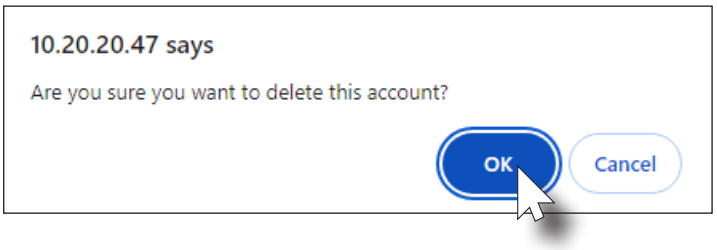
7. To login as the new user, click **Logout**, in the top right-hand corner of the screen, then login with the new user credentials.

Deleting Users

1. Open the desired web browser and enter the IP address of the AT-OME-MS42-HDBT.
2. Login with the administrator credentials.
3. Click the **Remove** button, next to the user to be deleted.



4. The following message box will be displayed. Click **OK** to confirm the deletion of the user account. Click **Cancel** to abort the procedure and return to the **Config** page.

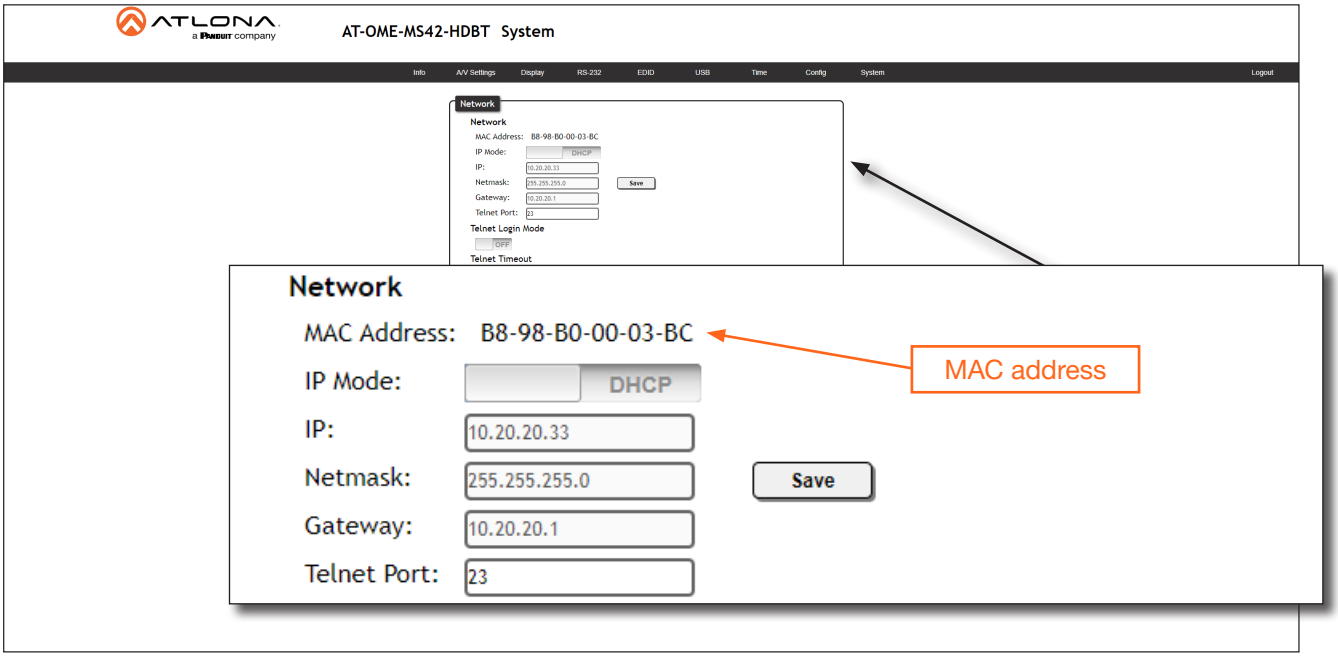


System Configuration

The AT-OME-MS42-HDBT 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.
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-HDBT.



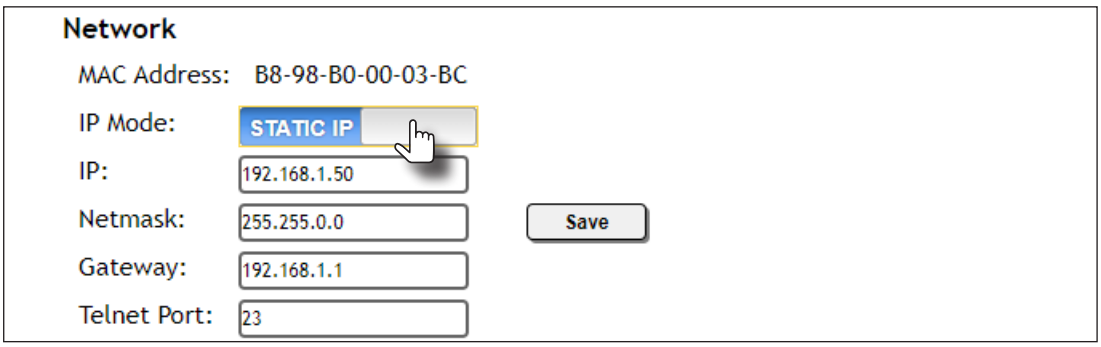
Changing the Network IP Mode

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

IMPORTANT: Before assigning a static IP address to the AT-OME-MS42-HDBT, it is recommended to consult with the network or system administrator and obtain a available IP address. If the AT-OME-MS42-HDBT 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-HDBT will be not accessible.

1. Login to the web server.
2. Click **System** in the menu bar.

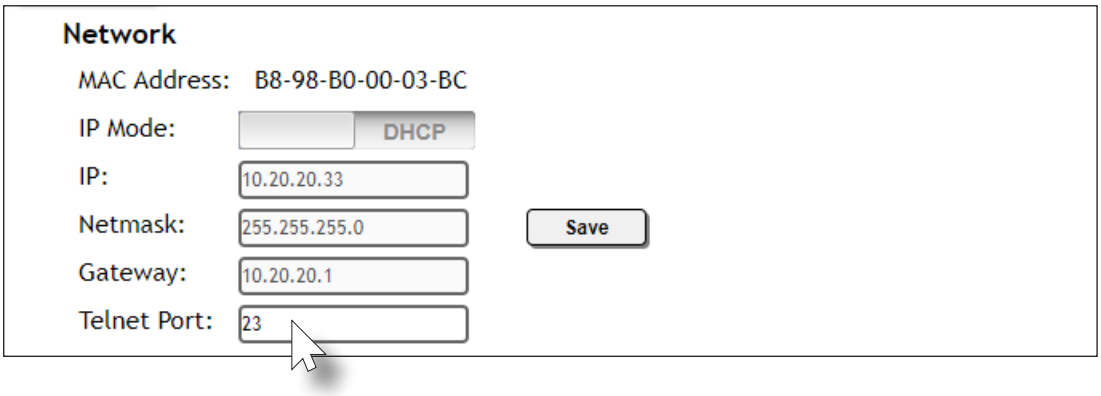
3. Locate the **IP Mode** toggle switch. The default setting of this toggle switch is **DHCP**.
4. Click this toggle switch to set it to **STATIC IP**.
5. Enter the desired IP address for the AT-OME-MS42-HDBT in the **IP** field.
6. Enter the subnet mask and gateway address in the **Netmask** and **Gateway**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



Changing the Telnet Port

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

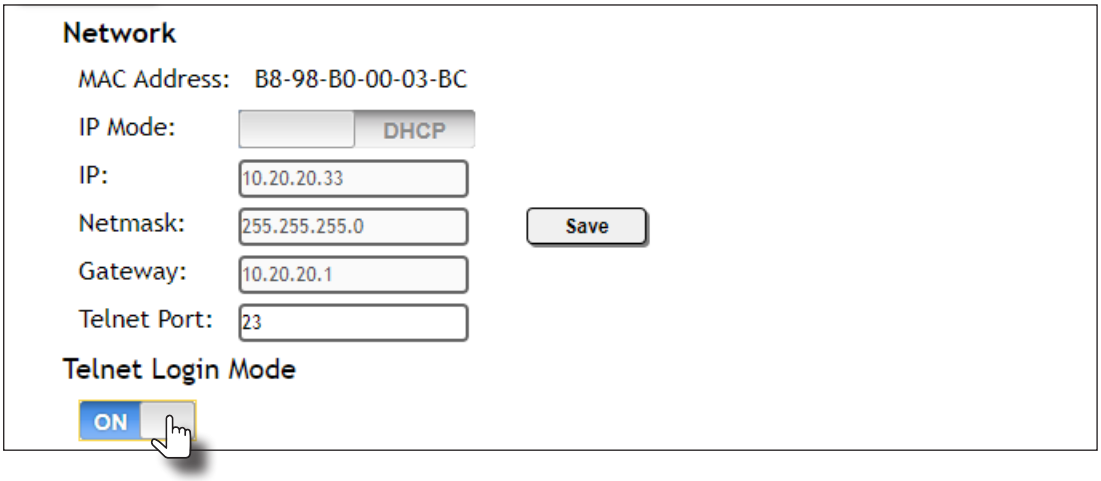
1. Login to the web server.
2. Click **System** in the menu bar.
3. Locate the **Telnet Port** field and enter the desired port in the field.
4. Click **Save** to commit changes.



Telnet Login Mode

When a Telnet session is request, the AT-OME-MS42-HDBT 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.
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.



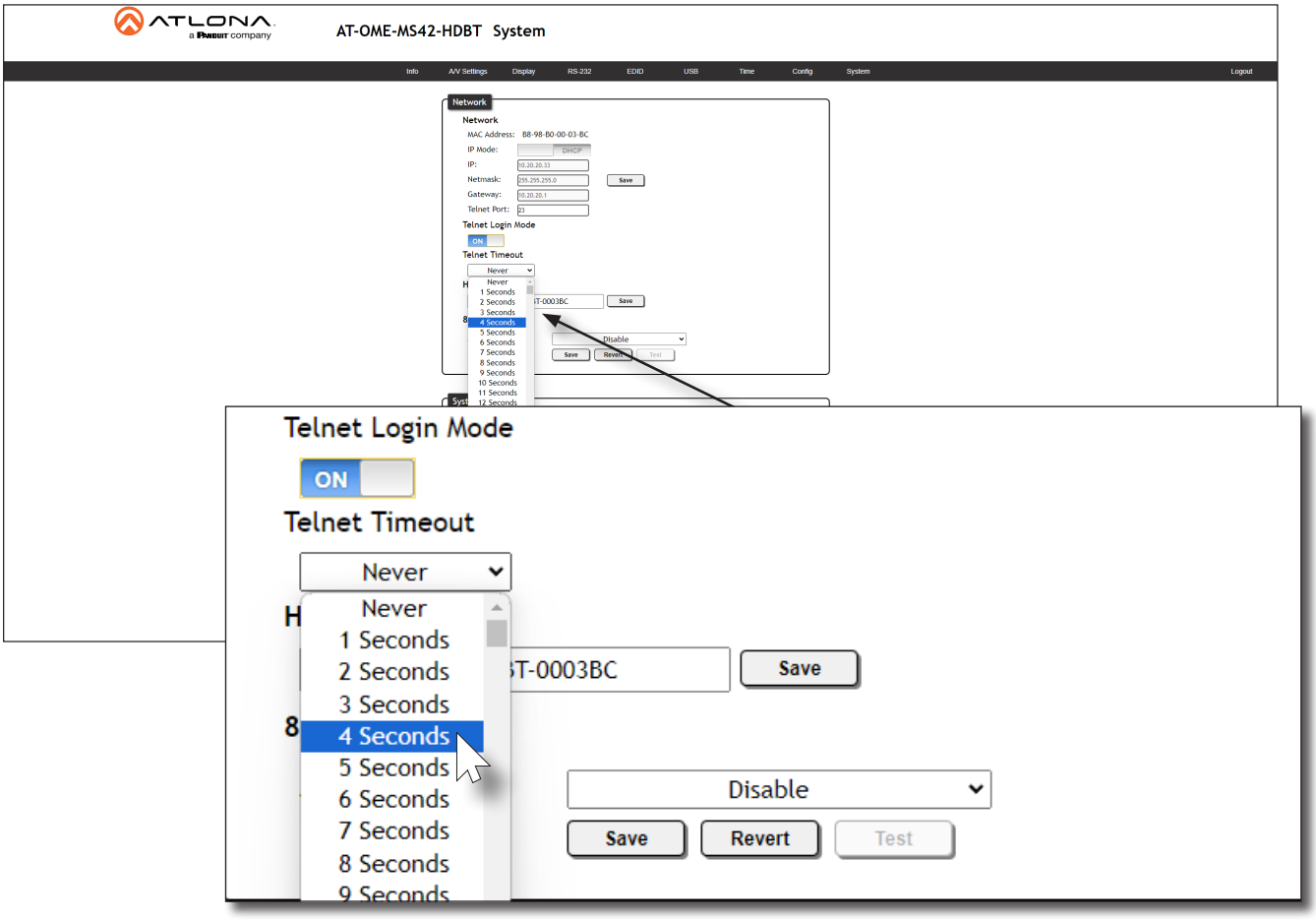
Adjusting Telnet Timeout

When a Telnet session is active, the AT-OME-MS42-HDBT 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.
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.



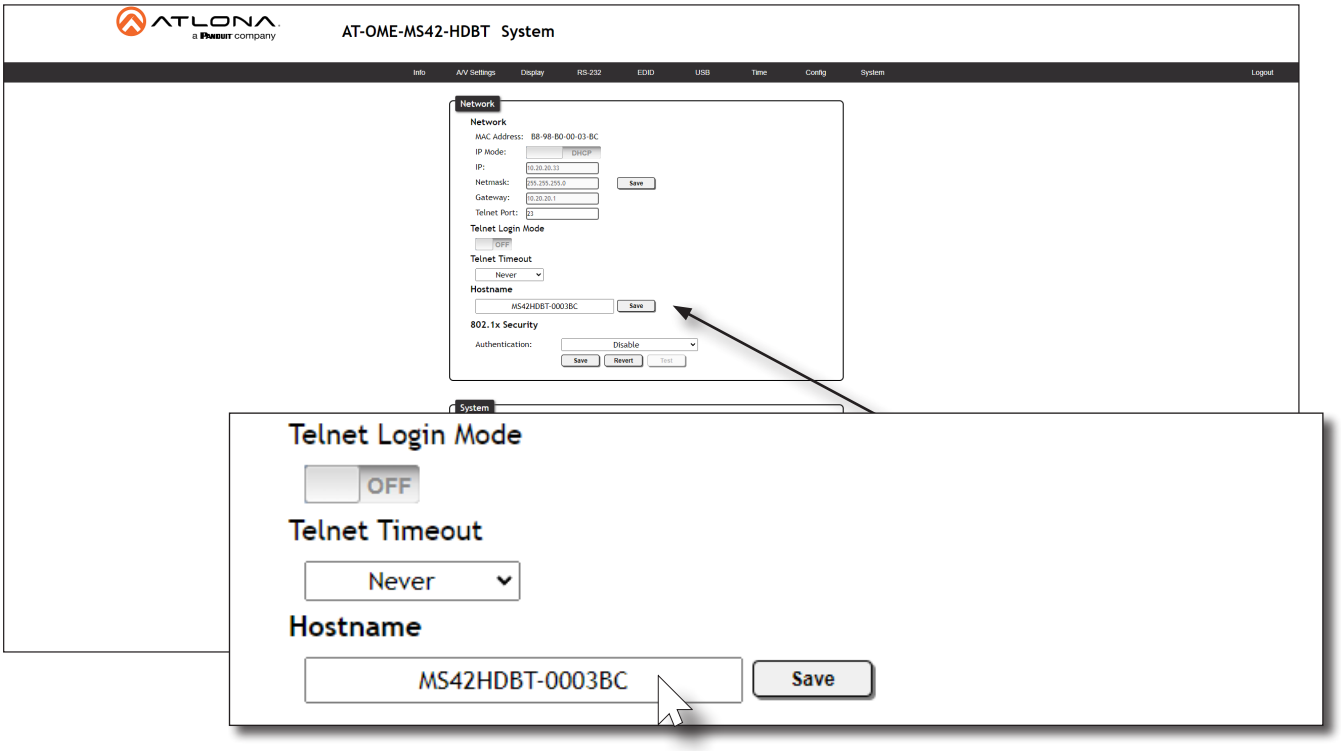
Setting the Host Name

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

`MS42HDBT-[last six digits of MAC address]`

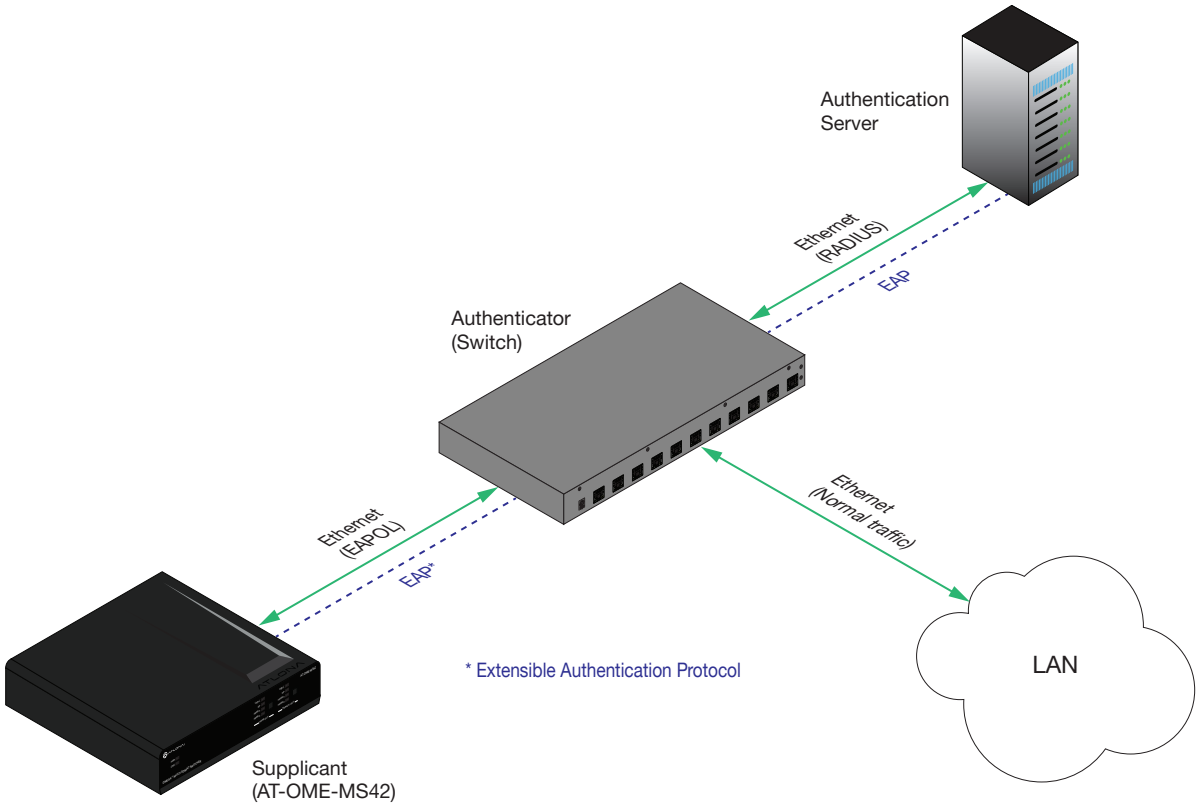
For example, a default hostname might look like this: `MS42HDBT-0003BC`. This value can be changed to easily identify the AT-OME-MS42-HDBT within Velocity with Integrated AMS or on a network. If using a custom hostname, it must meet the hostname standards, defined here: https://tools.ietf.org/html/rfc1123

1. Login to the web server.
2. Click **System** in the menu bar.
3. Click the **Hostname** field and enter the desired name.
4. Click **Save** to commit changes.

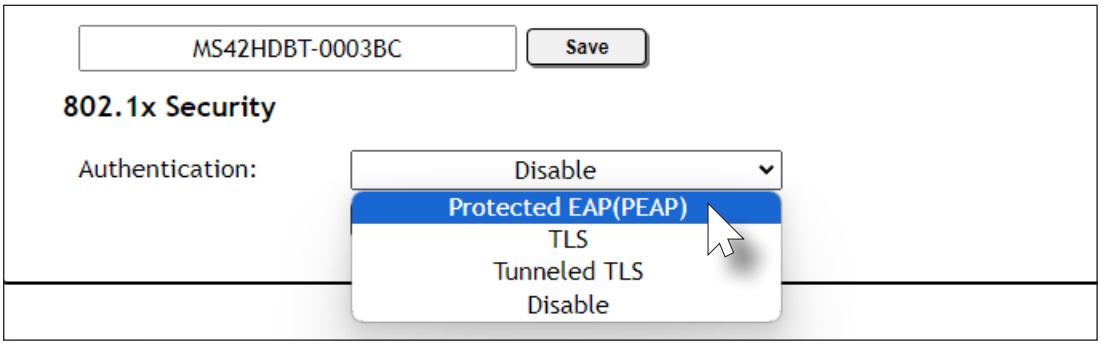


802.1X Security

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.

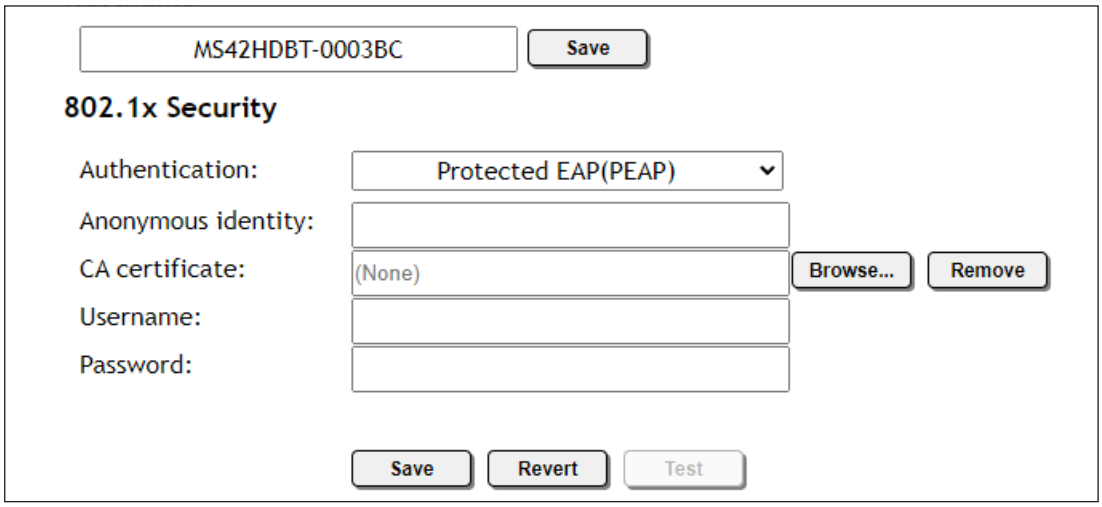


1. Login to the web server.
2. Click **System** in the menu bar.
3. Under **802.x1 Security**, click the **Authentication** drop-down list and select the desired authentication method. In the example below, **Protected EAP (PEAP)** is selected.



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.



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.

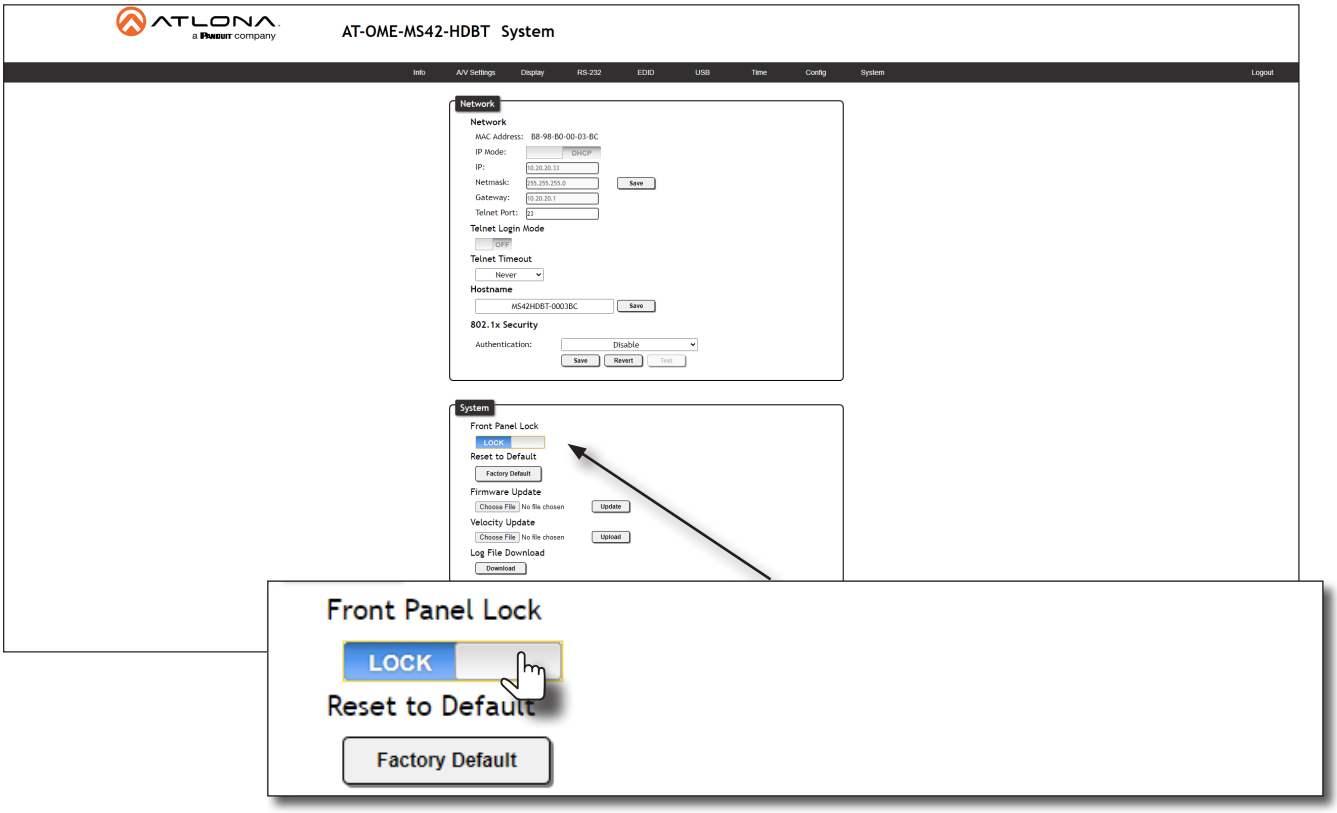
Auth. Method	Identity	User Certificate	Anonymous Identity	CA Certificate	Username	Password	Private Key	Private Password
Protected EAP (PEAP)			●	●	●	●		
TLS	●	●		●			●	●
Tunneled TLS			●	●	●	●		

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-HDBT is installed in a rack environment. By default, the front panel buttons are unlocked.

1. Login to the web server.
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.

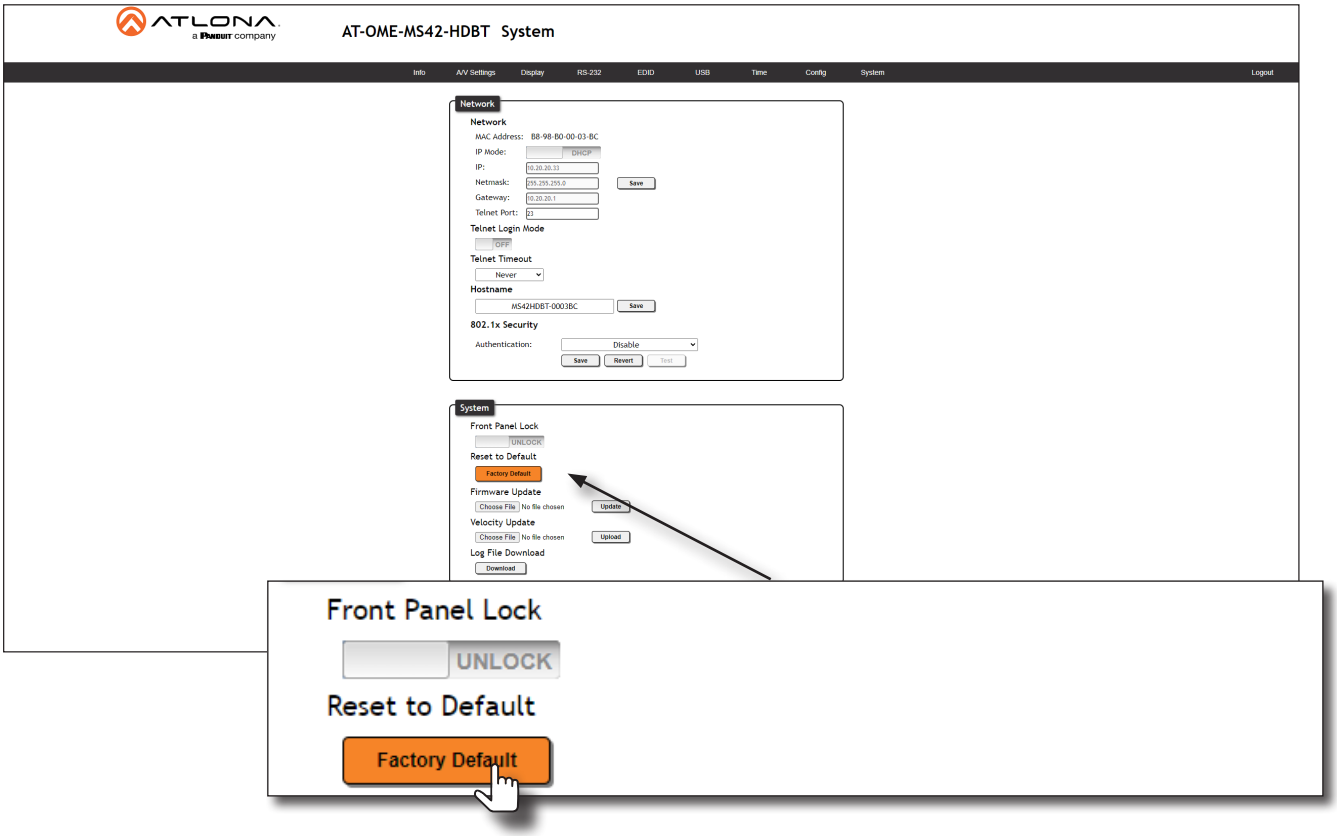


4. To unlock the front panel, click the **Front Panel Lock** toggle switch again to set it to `UNLOCK`.

Resetting to Factory-Default Settings

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

1. Login to the web server.
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

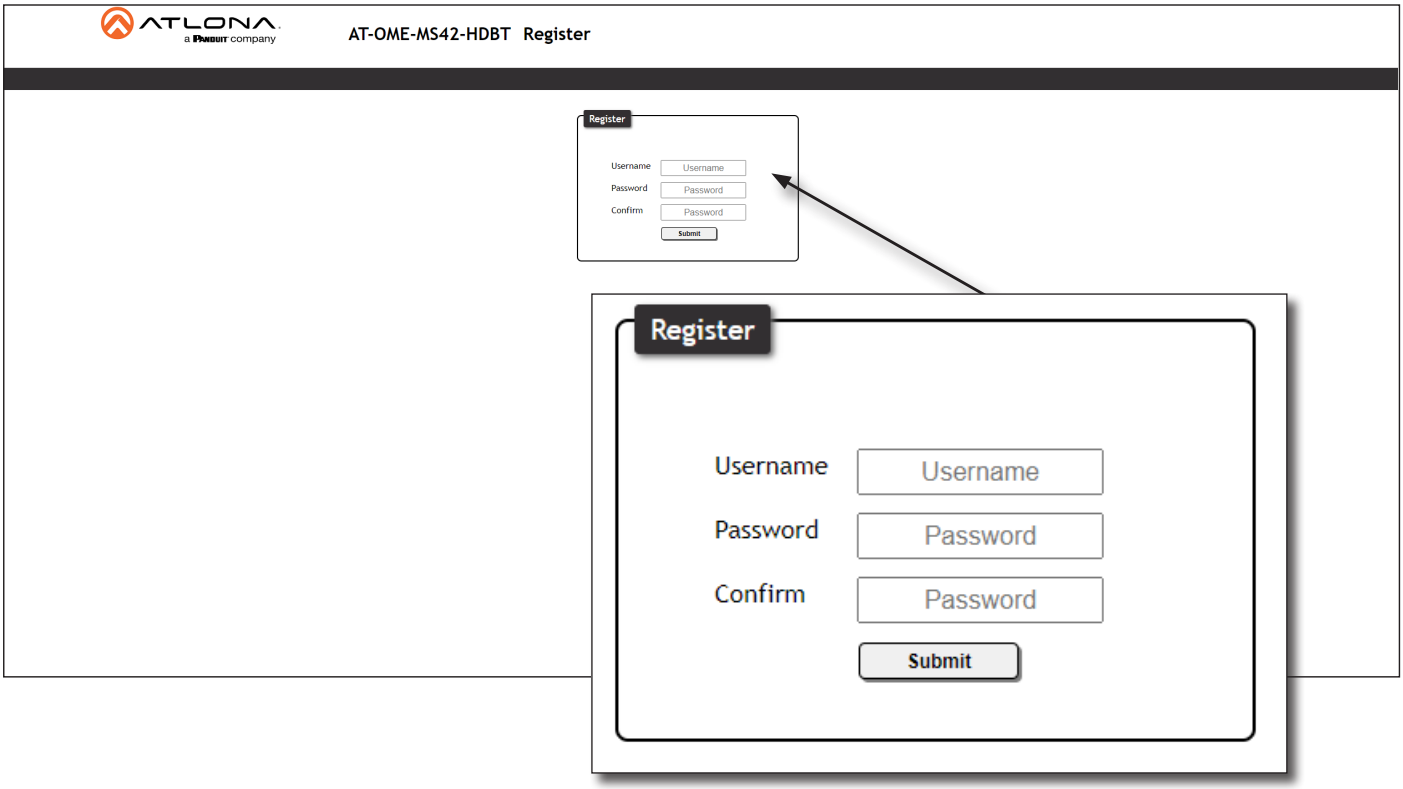
Web Server

The AT-OME-MS42-HDBT includes a built-in web server. Atlona recommends that the web server be used to set up the AT-OME-MS42-HDBT, as it provides intuitive management of all features. Refer to Logging in after Registration (page 17) for more information.

The AT-OME-MS42-HDBT is shipped with DHCP enabled. Once connected to a network, the DHCP server will automatically assign an IP address to the unit. Use an IP scanner to determine the IP address of the AT-OME-MS42-HDBT. If a DHCP server cannot be located within 15 seconds, the AT-OME-MS42-HDBT will be placed in Automatic Private IP Addressing (APIPA) Mode (page 14). If a static IP address is desired, refer to IP Configuration (page 12).

Register page

This page is displayed when the AT-OME-MS42-HDBT web server is launched for the first time.



Username
Enter the desired username in this field.

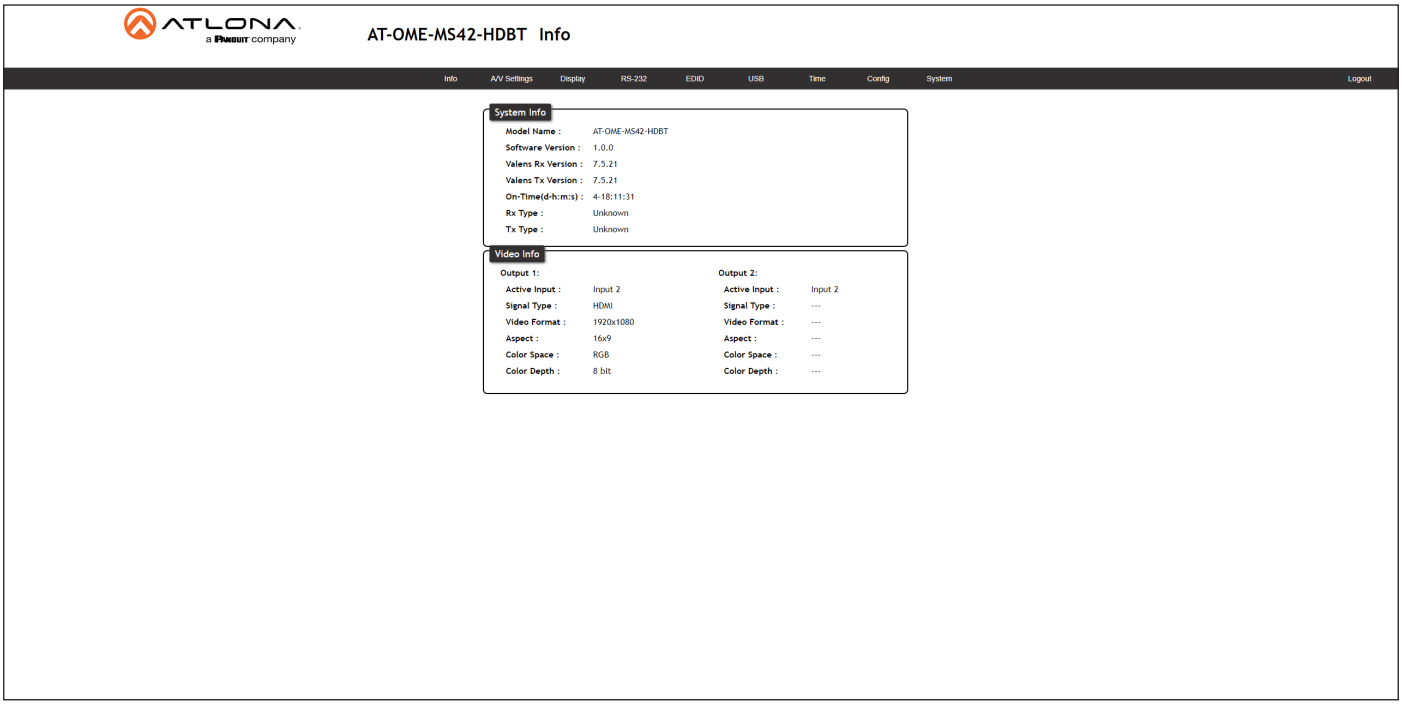
Password
Enter the desired password in this field.

Confirm
Re-enter the desired password in this field.

Submit
Click this button to register the username and password with the AT-OME-MS42-HDBT.

Info Page

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



System Info

Model Name
The model SKU of this product.

Software Version
The version of firmware that the AT-OME-MS42-HDBT is running. Always make sure to check the AT-OME-MS42-HDBT product page, on the Atlona web site, for the latest version of firmware.

Valens Version
The version of firmware used by the Valens chipset. Always make sure to check the AT-OME-MS42-HDBT 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-HDBT, then it will be displayed in this field. Otherwise, "Unknown" will be displayed if no receiver is connected.

Video Info

Active Input
The currently selected (active) input.

Signal Type
The type of input signal.

Video Format
The input resolution of the source device.

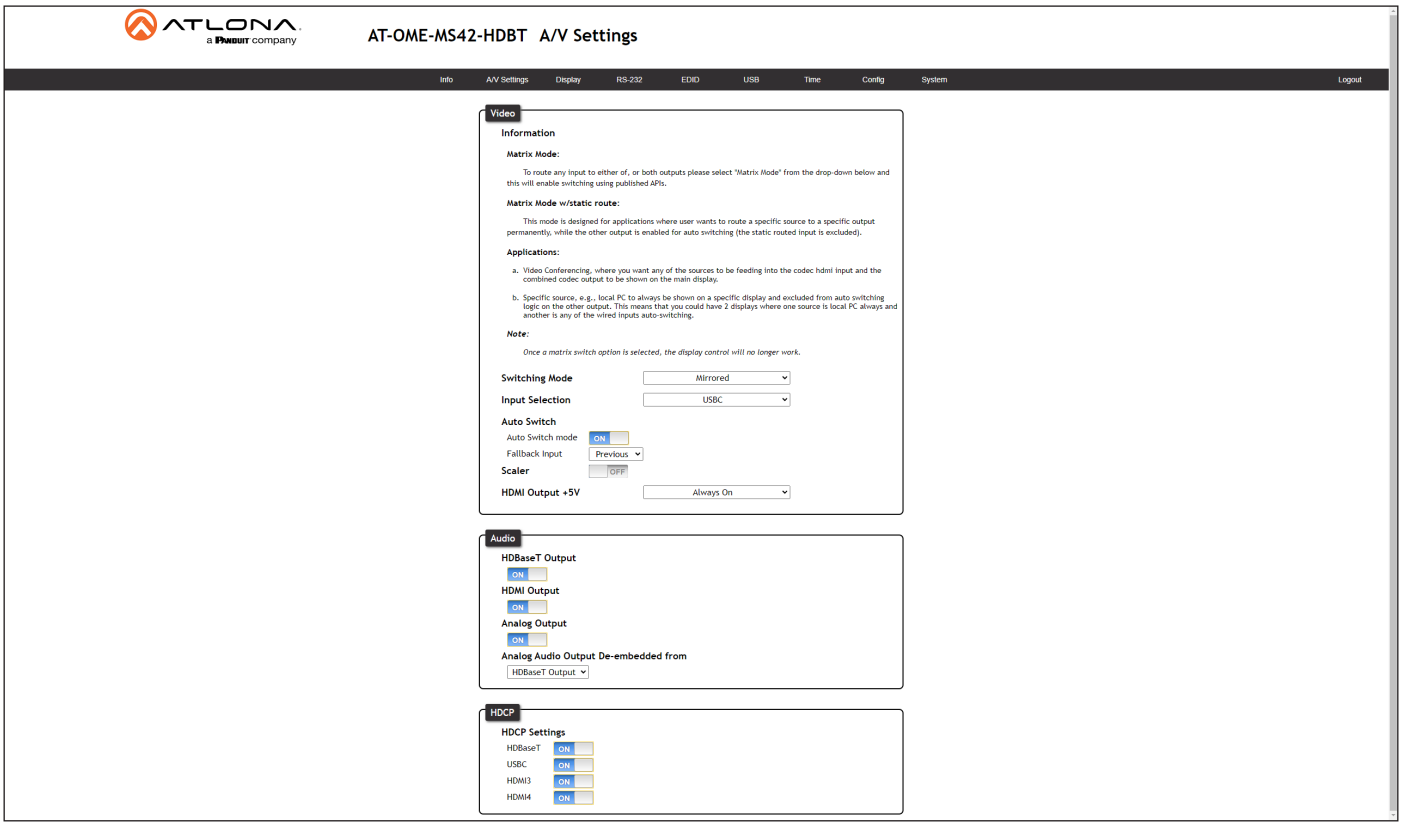
Aspect
Aspect ratio of the input signal.

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

Color Depth
The color depth of the input signal.

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.



Video

Switching Mode

Click this drop-down list to manually select the switching mode. Refer to Switching Modes (page 18) 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 *both* the **HDMI OUT** and **HDBaseT OUT** ports.
Matrix Mode	This mode allows the AT-OME-MS42-HDBT to independently switch between any input to any output.
Matrix Mode w/ static route	Use this mode when integrating the AT-OME-MS42-HDBT with a video conference system.

Input Selection

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

Input	Description
HDBaseT	Sets **HDBaseT IN** as the active input.
USBC	Sets **USB-C IN 2** as the active input.
HDMI3	Sets **HDMI IN 4** as the active input.
HDMI4	Sets **HDMI IN 4** as the active input.

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-HDBT 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.
HDBaseT	Switches to **HDBaseT IN.**
USBC	Switches to **USB-C IN**.
HDMI3	Switches to **HDMI IN 3**.
HDMI4	Switches to **HDMI IN 4**.

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**.

HDMI Output +5V

Sets the +5V pin on the HDMI connector to the desired setting.

Setting	Description
`Always On`	Forces the +5V pin on the HDMI output to “high” (always on).
`On When Signal Present`	Allows the +5V pin on the HDMI output to toggle, based on the presence of an input video signal.

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**.

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

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

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.

System Settings

Display Auto Power
Click this drop-down list to select the method of display control. The following options are available.

Modes	Description
Active Video Presence*	The AT-OME-MS42-HDBT will power-off the display if no active source is detected on the input. Conversely, the display will power-on when an active source is detected. This applies to either physical source connections or casting. The **Auto power off timer** interval must expire before the power-off command is sent.
Active Video Presence w/Occupancy Sensor*	Similar to the Active Video Presence mode, except that an occupancy sensor can also be used to determine when the power-off or power-on command is sent.
Occupancy Sensor only	The AT-OME-MS42-HDBT will power-on/power-off the display based on the state of the occupancy sensor. The occupancy sensor must be wired to the AT-OME-MS42-HDBT.
Disabled	No display control

*Auto Switching must be enabled to use these control methods.

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 300 seconds. The default setting is 10 seconds.

Display Warm-Up Timer
Sets the projector lamp warm-up timer, in seconds. During the warm-up interval, the AT-OME-MS42-HDBT 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.

Occupancy Sensor Control

The AT-OME-MS42-HDBT supports the AT-OCS-900N occupancy sensor. This feature is supported on firmware version 1.1.2 and greater. Refer to Integration with the AT-OCS-900N (page 88) for instructions on connecting to the occupancy sensor.

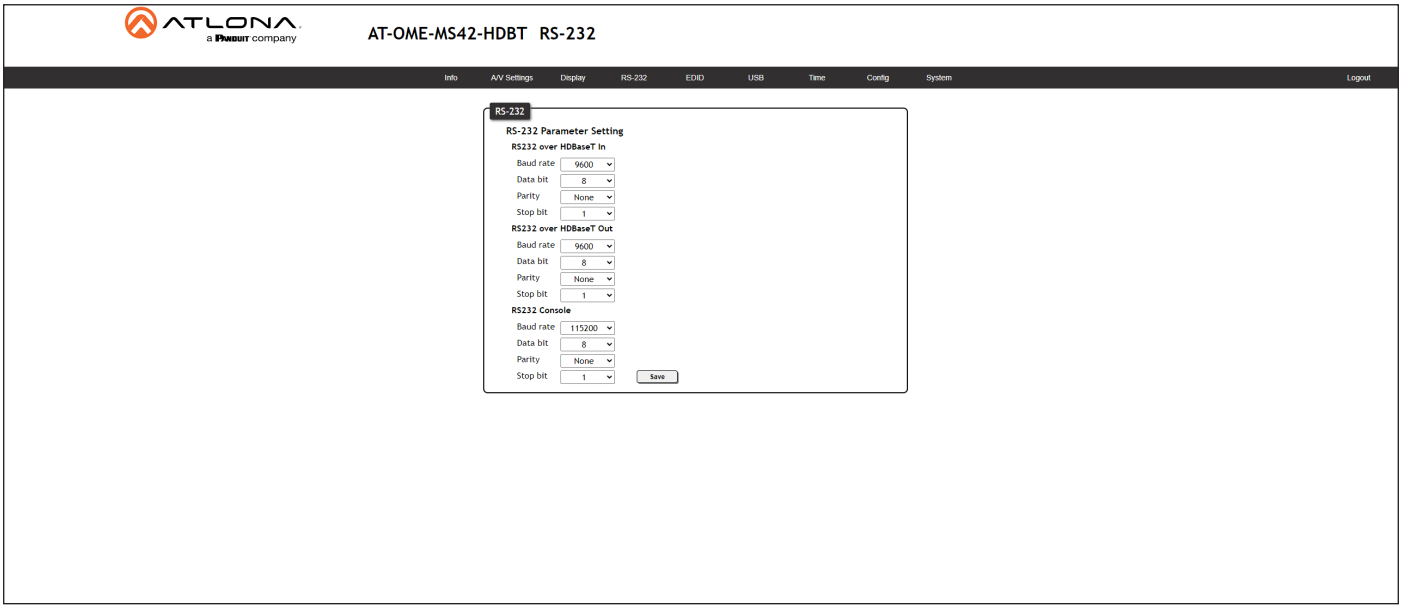
IP Address
Enter the IP address of the AT-OCS-900N in this field.

Port
The port number used to communicate with the AT-OCS-900N.

Add
Click this button to add the AT-OCS-900N to the AT-OME-MS42-HDBT. Up to three occupancy sensors are supported.

RS-232 Page

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



RS-232

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

- **RS232 over HDBaseT In**
  If the AT-OME-MS42-HDBT is connected to a device such as the AT-OME-EX-TX, the drop-down list boxes will be disabled and the HDBaseT baud rate will be locked at 115200.

- **RS232 over HDBaseT Out**
  If the AT-OME-MS42-HDBT is connected to a device such as the AT-OME-EX-RX, then the baud rate can be changed. If the AT-OME-MS42-HDBT is connected to another device that can perform display control, such as the AT-OME-SR21, AT-OME-RX21, AT-OME-RX31, AT-OME-PS62, etc., then these fields will then be disabled. Display control will need to be set up on the downstream device.

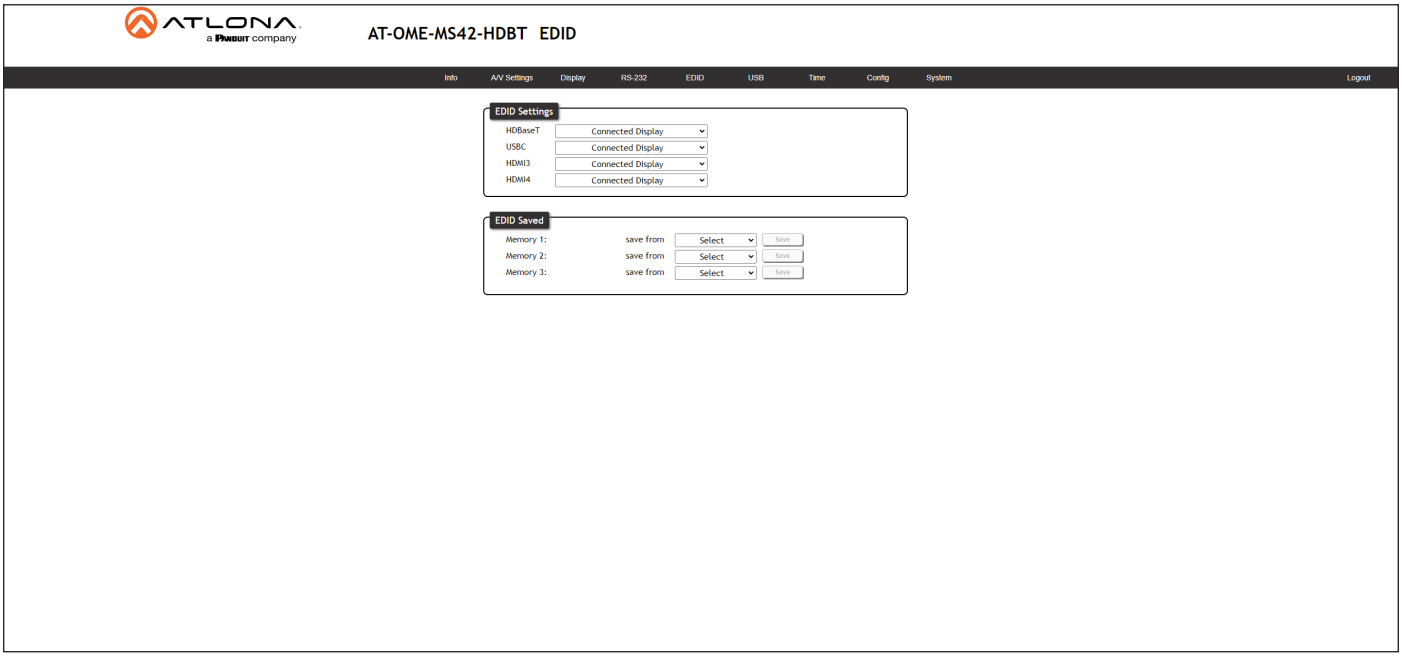
- **RS232 Console**
  Sets the RS-232 port settings used for local control by a third-party control system.

Setting	Description
Baud rate	Sets the baud rate. The following options are available: 2400, 4600, 9600, 19200, 38400, 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.

EDID Page

This page provides controls for selecting and storing EDID data. Refer to EDID Management (page 48) 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.

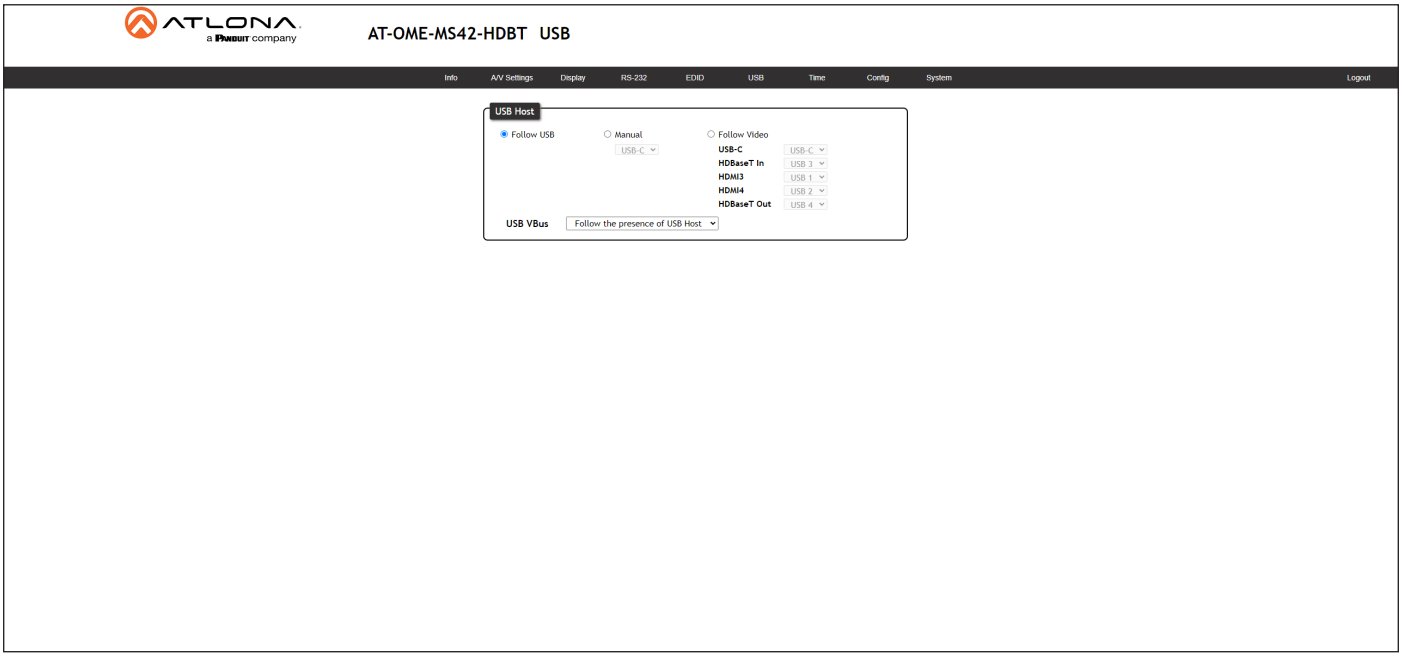
EDID listing	
Connected Display	1366x768 2CH
3840x2160 2CH - NO HDR Support	1280x800 2CH
3440x1400 2CH	1024x768 2CH
2560x1080 2CH	Memory_1
1920x1200 2CH	Memory_2
1920x1080 2CH	Memory_3

EDID Saved

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

USB Page

This page provides controls for setting the behavior of USB host switching. Refer to USB Modes (page 53) for more information.



USB Host

Follow USB
This is the default mode and functions similar to auto-switching for video. In this mode, the AT-OME-MS42-HDBT 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-HDBT 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.

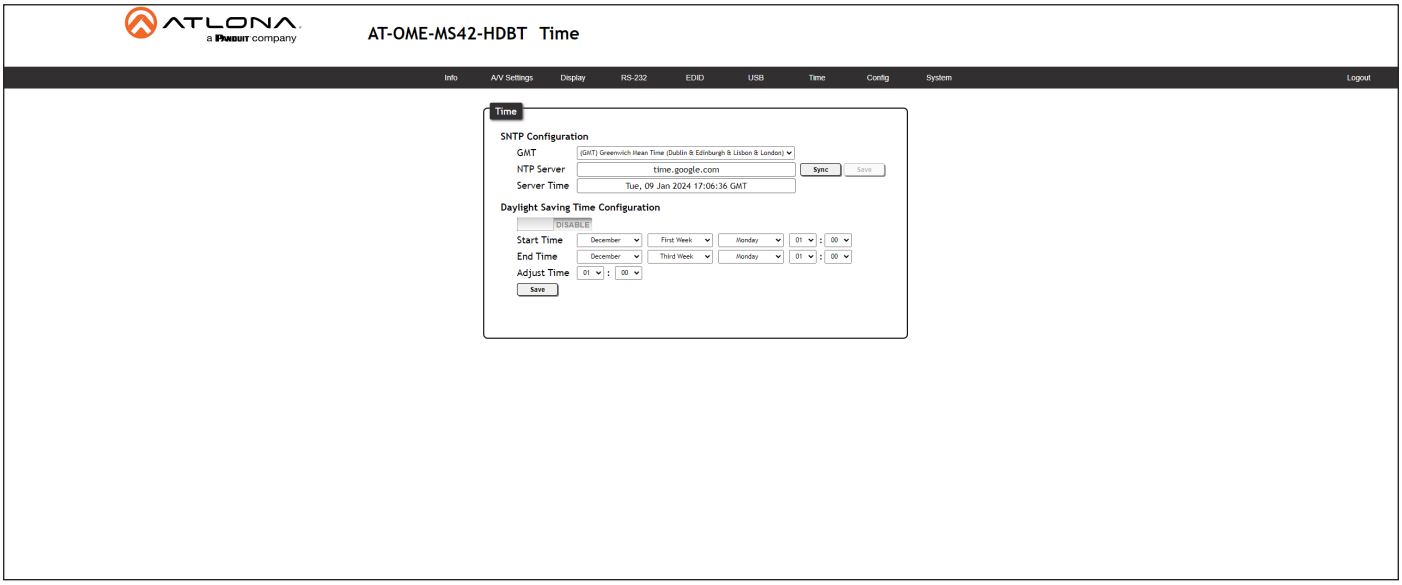
Follow Video
In this mode, each video input can be assigned to either **USB 1** or **USB 2** host ports. This mode locks the USB host device to the desired video input. Each host device will have access to the same USB devices, when video switching occurs.

USB VBus
Adjusts the power function of the USB hub ports.

Setting	Description
`Follow the presence of USB Host`	Allows the USB hub ports to toggle on and off based on the presence of a USB host.
`Always High`	Keeps the USB power on the hub ports always on. For example, connecting the AT-CAP-SP100 to the AT-OME-MS42-HDBT, when no host is connected, would allow the speakerphone to charge, continuously.

Time Page

This page provides controls for setting the internal clock of the AT-OME-MS42-HDBT. Refer to Setting the System Date and Time (page 58) for more information.



Time

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.

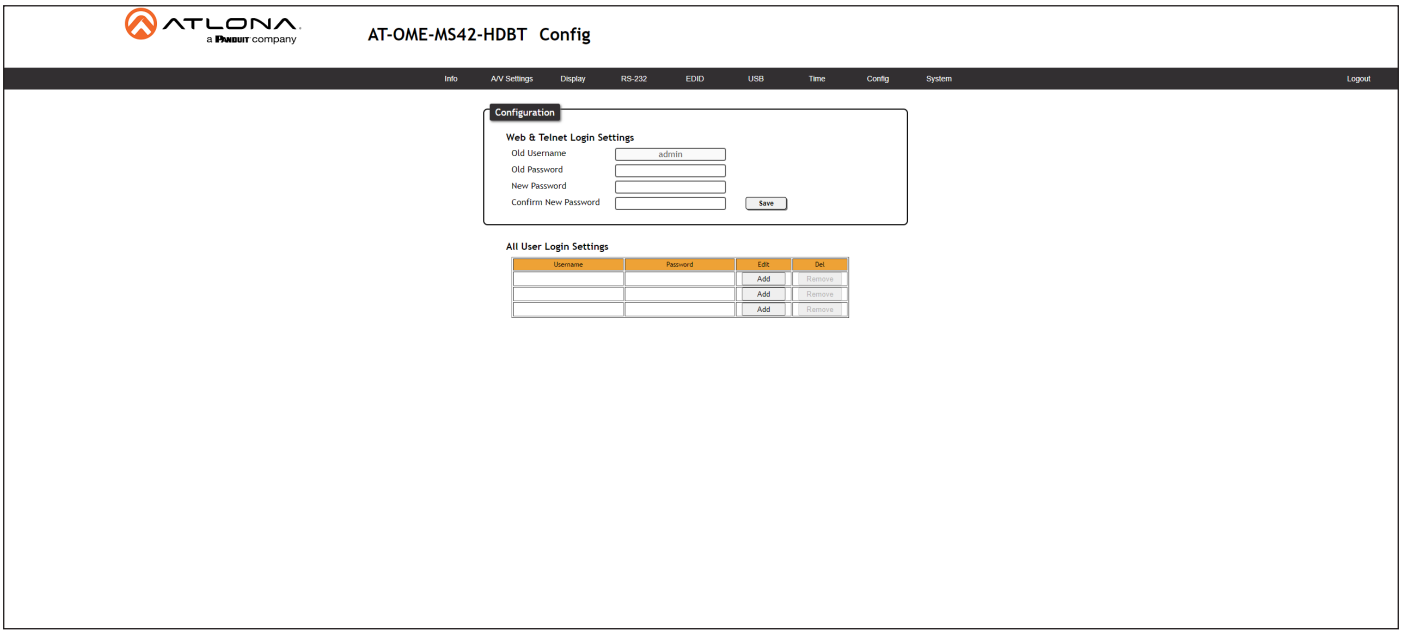
- **GMT**
  Click this drop-down list to select the Greenwich Mean Time (GMT) for the current location.
- **NTP Server**
  Enter the desired NTP server address in this field. After entering the NTP server address, click the **Sync** button.
- **Sync button**
  Click this button to sync with the server, 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.

Config Page

The **Config** page provides management of the administrator password. The administrator username ("admin") cannot be changed. Refer to User Management (page 61) for more information.



Configuration

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.

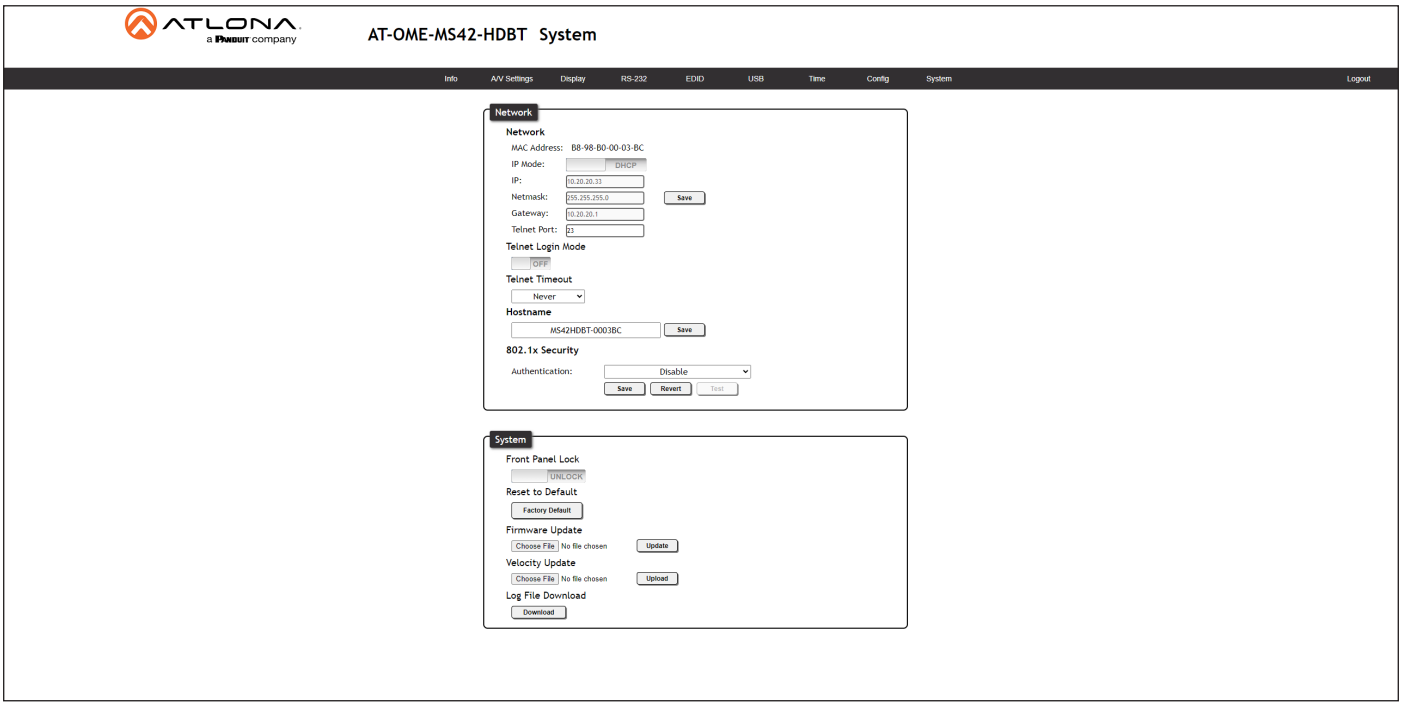
Save
Click this button to commit all changes.

All User Login Settings
Refer to User Management (page 61) for more information on creating, editing, and deleting users.

- **Username**
  Displays the username.
- **Password**
  Displays the password for the associated username.
- **Edit**
  Click the **Add** button, in this column, to add a user to the AT-OME-MS42-HDBT.
- **Del**
  Click the **Remove** button to delete the user in the row. This button will only be available if both a username and password have been created.

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



Network

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

IP Mode
Click this toggle switch to set the AT-OME-MS42-HDBT to **DHCP** or **STATIC IP** mode. The default setting is **DHCP** mode. Refer to Changing the Network IP Mode (page 65) for more information.

- **IP**
  Enter the IP address of the AT-OME-MS42-HDBT 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-HDBT is `192.168.1.254`.

- **Netmask**
  Enter the subnet mask of the AT-OME-MS42-HDBT 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 66) for more information.

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 68) for more information.

Hostname
Displays the hostname of the AT-OME-MS42-HDBT, 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 69) 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 70) for more information.

System

Front Panel Lock
Click this toggle switch to **LOCK** or **UNLOCK** the AT-OME-MS42-HDBT. Refer to Locking / Unlocking the Front Panel (page 72) for more information.

Reset to Default
Click the **Factory Default** button to reset the AT-OME-MS42-HDBT to factory-default settings. Refer to Resetting to Factory-Default Settings (page 73) for more information.

Firmware Update
Click the **Choose File** button to begin the firmware update procedure. Refer to Updating the Firmware (page 90) for more information.

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

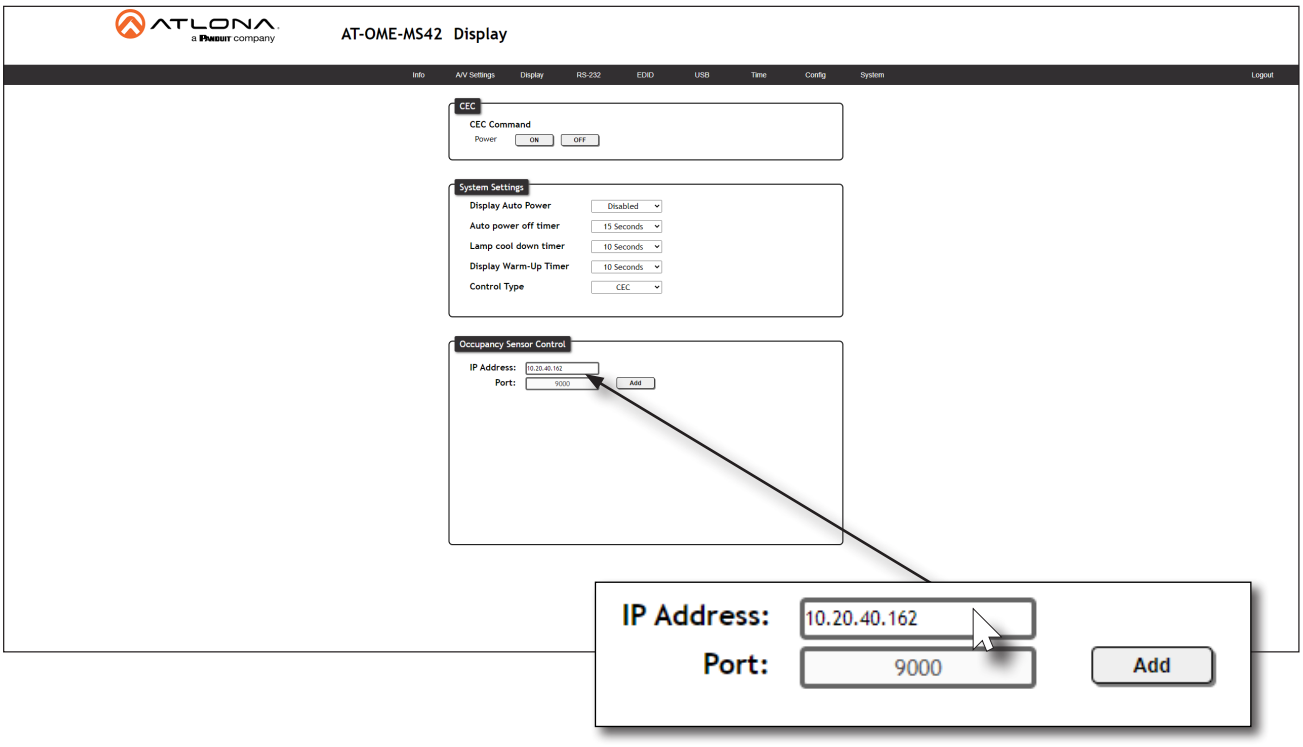
Log File Download
Click the Download button to download the log to the local computer. This log can be used by technical support engineers to assist in troubleshooting any issues.

Integration with the AT-OCS-900N

The following provides instructions on adding the AT-OCS-900N occupancy sensor as a device. The **AutoSwitch** feature on the AT-OME-MS42-HDBT does not need to be enabled for this to work.

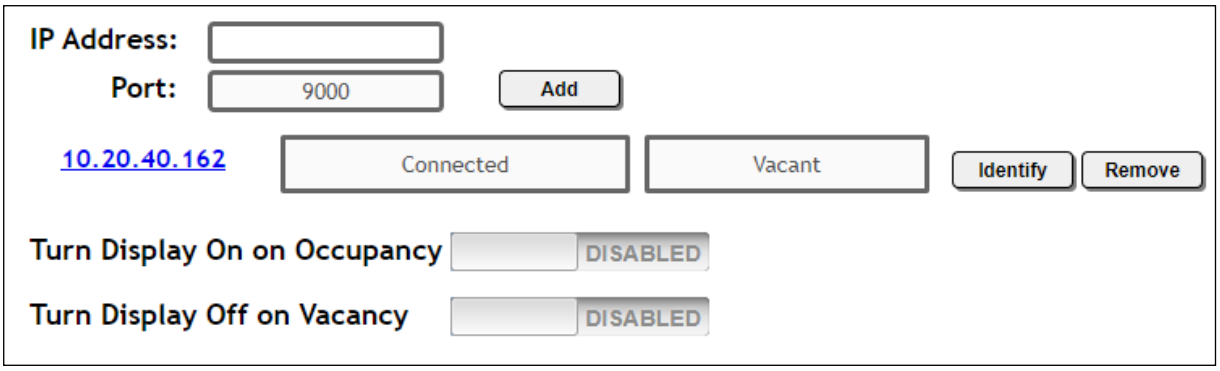
IMPORTANT: A username and password must be configured on the AT-OCS-900N before using the device with the AT-OME-MS42-HDBT.

1. Connect the AT-OCS-900N to the same network as the AT-OME-MS42-HDBT. Refer to the AT-OCS-900N User Manual for more information.
2. Login to the web server of the AT-OME-MS42-HDBT.
3. Click **Display** in the top menu bar.
4. Under the **Occupancy Sensor Control** section, enter the IP address of the AT-OCS-900N in the **IP Address** field.



5. Click the **Add** button. If the correct IP address was entered and the AT-OCS-900N is found, additional information will be displayed under the Occupancy Sensor Control section, as shown on the next page.

NOTE: The AT-OME-MS42-HDBT supports a maximum of three AT-OCS-900N devices.



6. Click the **Turn Display On on Occupancy** toggle to enable or disable this feature. When enabled, the toggle switch will display as **ENABLED** and the occupancy sensor will power-on the display when the room is occupied.
7. Click the **Turn Display Off on Vacancy** toggle to enable or disable this feature. When enabled, the toggle will display as **ENABLED** and the occupancy sensor will power-off the display when the room is no longer occupied.
8. Click the **Identify** button to identify the occupancy sensor. This feature is useful when multiple sensors are connected.

> **IMPORTANT:** When adding an occupancy sensor, it is recommended that a static IP address is assigned to the occupancy sensor. DHCP is not recommended.

9. Click the **Remove** button to delete a sensor from the **Sensors** list.
10. Setup is complete.

Notes on Performing a Factory Reset on the AT-OCS-900N

If a factory reset must be performed on the AT-OCS-900N, then follow these steps:

1. Click the **Remove** button to remove the AT-OCS-900N from the AT-OME-MS42-HDBT.
2. Perform the factory reset on the AT-OCS-900N.
3. Reconnect the AT-OCS-900N to the AT-OME-MS42-HDBT using the instructions, above.

Appendix

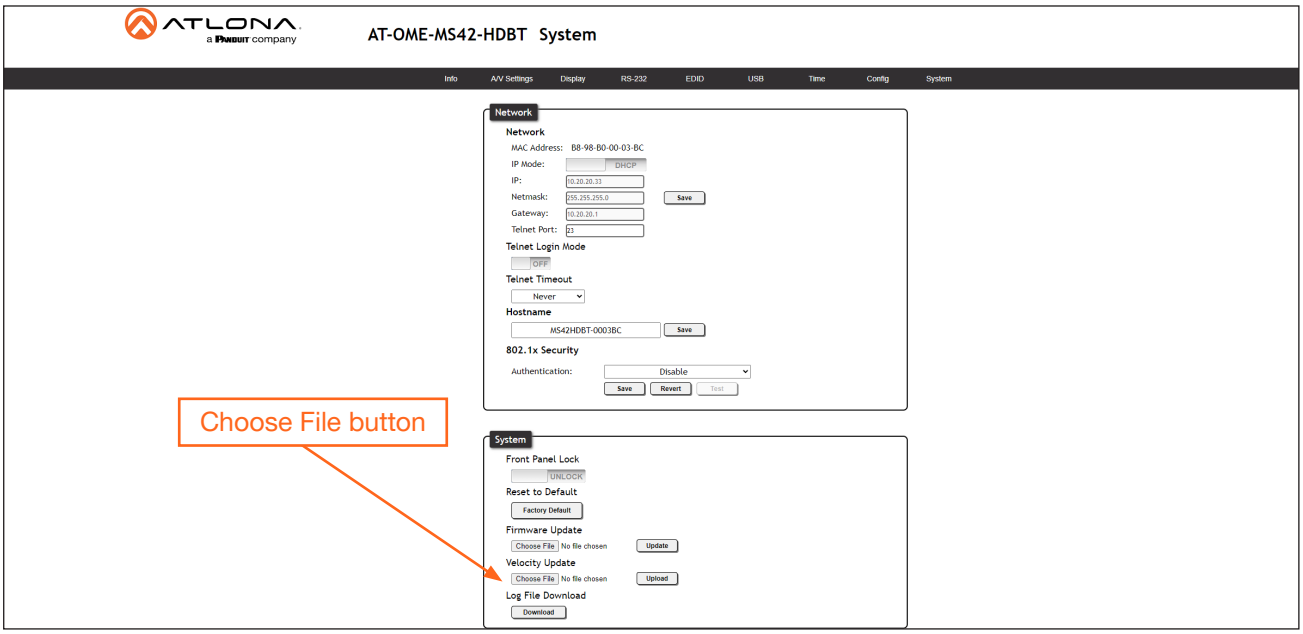
Updating the Firmware

Using the Web Server

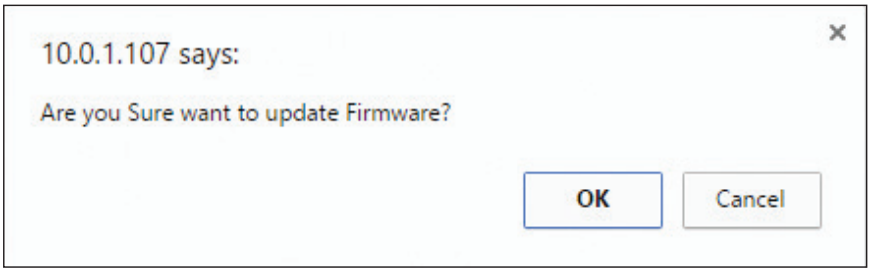
Requirements:

- AT-OME-MS42-HDBT
- Firmware file
- Computer on the same network as the AT-OME-MS42-HDBT

1. Download the firmware file from 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-HDBT is connected.
3. Login to the web server.
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.



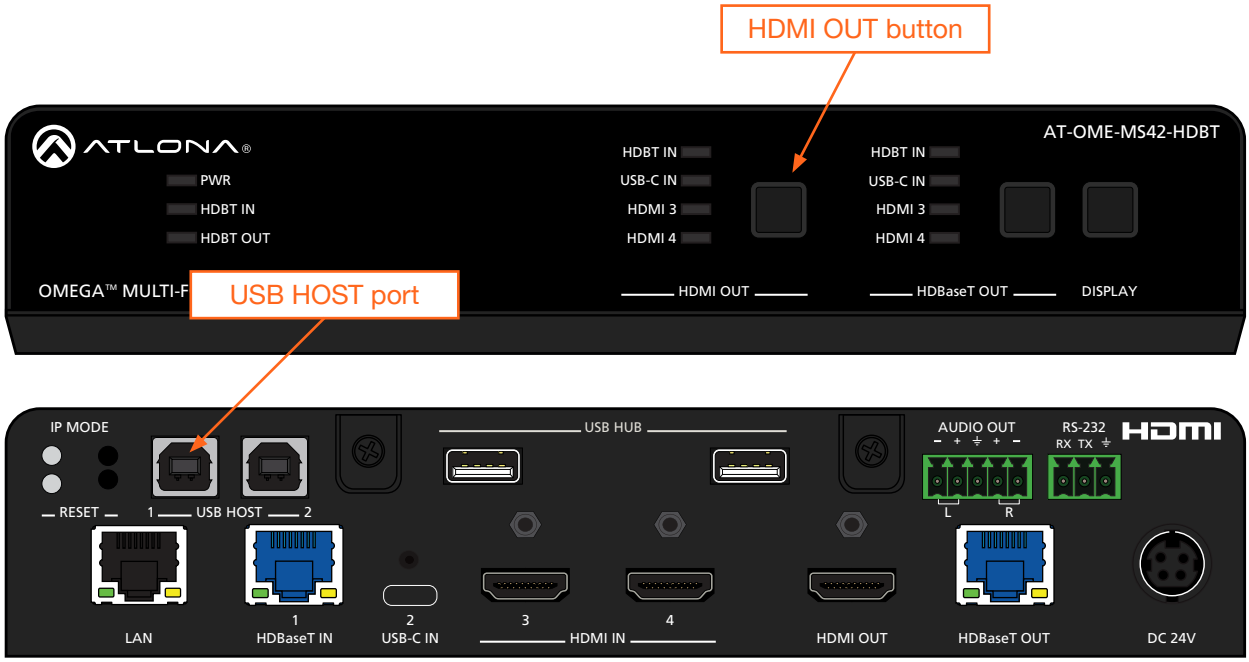
8. Click the **OK** button to begin the firmware update process. Click the **Cancel** button to cancel the process.
9. After the firmware update process is complete, the **Login** screen will be displayed.

Using USB

Requirements:

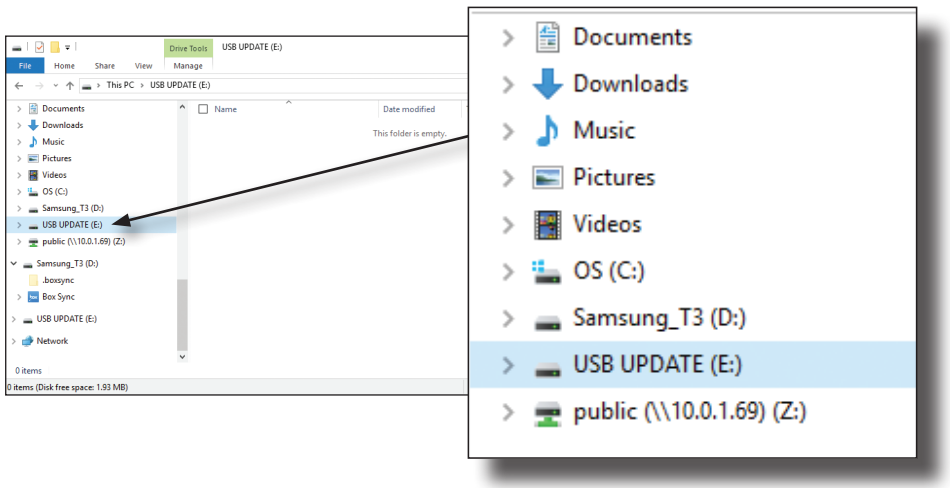
- AT-OME-MS42-HDBT
- Firmware file
- USB-A to USB-B cable

1. Download the firmware file from atlona.com and extract the contents of the .zip file to a folder on the computer desktop.
2. Power on the AT-OME-MS42-HDBT.
3. Connect a USB-A to USB-B cable to the PC that contains the firmware file.
4. Press and hold the **HDMI OUT** button while connecting the USB cable from the PC, to a **USB HOST** port on the AT-OME-MS42-HDBT.

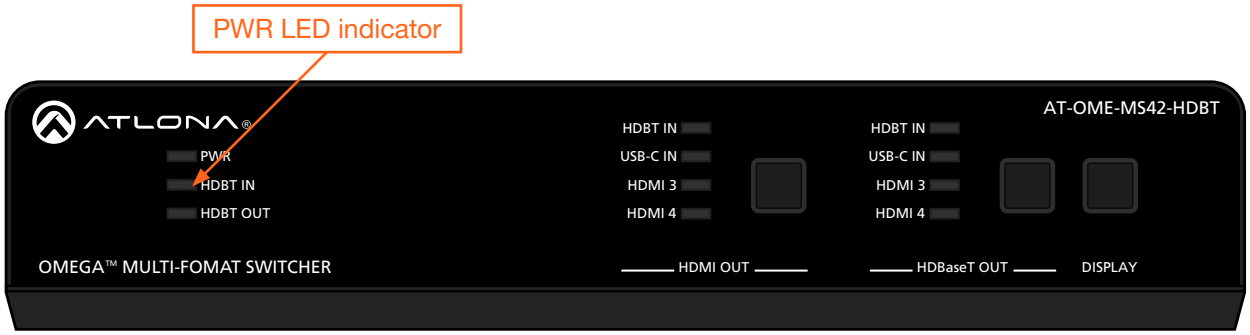


5. Release the **HDMI OUT** button when the USB UPDATE folder is displayed on the PC.

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



6. Delete all files from the USB UPDATE drive, if any are present, then drag-and-drop the firmware file to the drive. During the firmware update process, the **PWR** LED indicator on the front panel of the AT-OME-MS42-HDBT will flash green.



7. Once the firmware update process has completed, the AT-OME-MS42-HDBT will automatically reboot.

Mounting Instructions

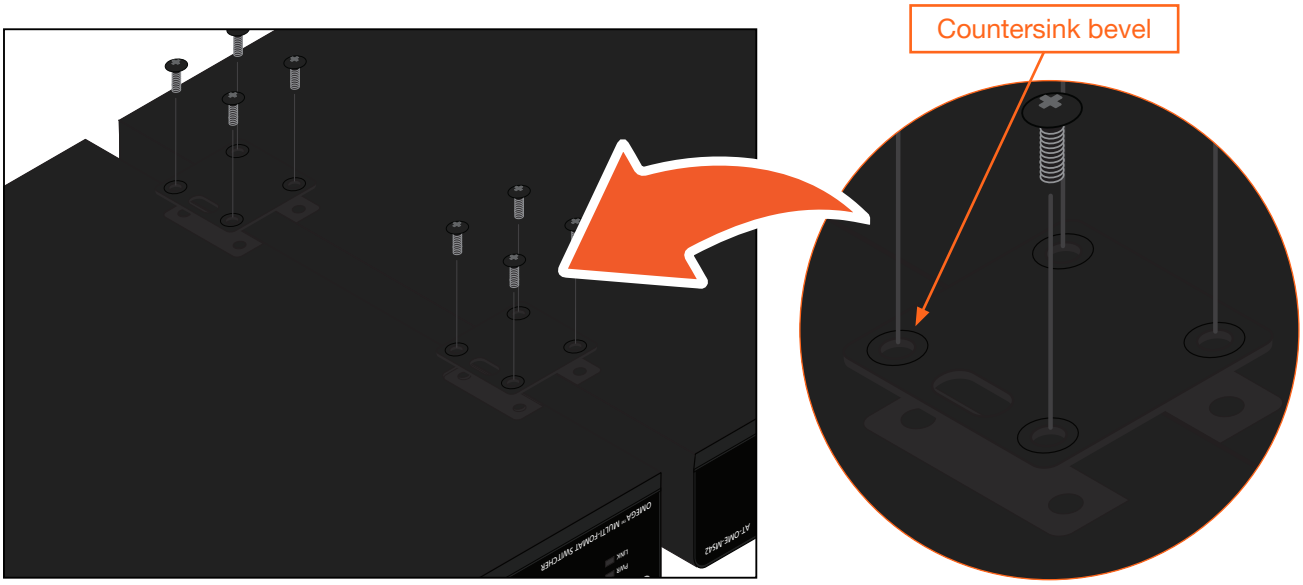
The AT-OME-MS42-HDBT includes two mounting brackets, which can be used to attach the unit to any flat surface. Use the two enclosure screws, on the sides of the unit to attach the mounting brackets.

Single Unit Rack Installation

1. Attach the included small rack ear to one side of the AT-OME-MS42-HDBT, using the included screws.
2. Attach the included longer rack ear to the opposite side of the AT-OME-MS42-HDBT 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		
Signal	Input - HDMI, USB-C, HDBaseT Output - HDMI, HDBaseT	
Copy Protection	1.4 / 2.2	
Pixel Clock	300 MHz	
UHD/HD/SD	4096x2160@60[(3)]/50/30/25/24 Hz 3840×2160@60[(3)]/50/30/25/24 Hz 1080p@60/59.9/50/30/29.97/25/ 24/23.98 Hz 1080i@30/29.97/25 Hz	720p@60/59.94/50 Hz 576p@50 Hz 576i@25 Hz 480p@60/59.96 Hz 480i@30 Hz
VESA	2560×1600 2048×1536 1920×1200 1680×1050 1600×1200 1440×900 1400×1050 1280×1024	1280×800 1366×768 1360×768 1152×864 1024×768 800×600 640×480
VESA 21:9	2560x1080 @ 30 Hz 4:4:4 2560x1080 @ 60 Hz 4:4:4 3440x1440 @ 30 Hz 4:4:4	3440x1440 @ 50 Hz 4:4:4 3840x1600 @ 30 Hz 4:4:4
USB-C	Up to 4K/UHD @ 60 Hz	
Color Space	YUV, RGB	
Chroma Subsampling	4:4:4, 4:2:2, 4:2:0	
Color Depth	8-bit, 10-bit, 12-bit	
HDR	HDR10, Hybrid-Log Gamma (HLG), and Dolby® Vision™ @ up to 60 Hz; HDMI and USB-C inputs only	

Audio			
HDMI / HDBaseT Pass-Through Formats	PCM 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 Depth	Up to 24 bits		
Analog Audio			
Format	Stereo 2-Channel		
Balanced Output	+4 dBu nominal gain, +20 dB headroom		
Frequency Response	20 Hz to 20 kHz, ± 0.5 dB		
THD+N	< 0.004% at 20 Hz to 20 kHz		
SNR	> 105 dB at 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		

USB	
Signal	2.0
Maximum Data Rate	Local = 480 Mbps; HDBaseT = 120 Mbps
USB-C	Supports Audio, Video, device and host data, and up to 60W power charging
Internal Hubs	1 USB hub when connected to USB type B host port, 2 cascaded USB hubs when connected to USB-C port

Appendix

Resolution / Distance	4K/UHD - Feet / Meters		1080p - Feet / Meters	
HDMI IN/OUT	15	5	30	10
CAT5e	295	90	330	100
CAT6/6a/7	330	100	330	100

Ethernet				
Port	1 x RJ45			
Standards and Protocols	HTTPS, Telnet, mDNS			
Speeds	10/100/1000 Mbps			
Addressing	DHCP, Static – selectable through rear panel, IP & RS-232 commands, and built-in web server			

RS-232				
Port	1 x 3-pin captive screw; TX, RX, GND			
Use	Device control and configuration Bidirectional pass-through from control system over HDBaseT			
Baud Rates	2400, 4800, 9600, 19200, 38400, 57600, 115200			
Data flow	Bidirectional			

CEC				
Port	HDMI, **Type A, 19-pin female**			
Triggering	Through IP, RS-232, and built-in web server			

Buttons and Indicators	
Buttons: HDMI OUT, HDBaseT OUT IP MODE, RESET	 2 x momentary, tact-type 2 x momentary, recessed
Indicators: PWR, HDBT IN, HDBT OUT HDMI OUT HDBT IN, USB-C IN, HDMI 3, HDMI 4 HDBaseT OUT HDBT IN, USB-C IN, HDMI 3, HDMI 4 DISPLAY	 3 x LED, green 1 x LED, red 4 x LED, green 1 x LED, red 4 x LED, green 1 x LED, blue/red

Appendix

Connectors	
HDMI IN	2 x Type A, 19-pin female
HDBaseT IN[4]	1 x RJ45, female
USB-C IN	1 x USB Type-C, 24-pin female, AV input (DisplayPort Alt Mode)
HDMI OUT	1 x Type A, 19-pin female
HDBaseT OUT[4]	1 x RJ45, female
USB HUB	2 x Type A, 4-pin female
USB HOST	2 x Type B, female
AUDIO OUT	1 x 5-pin captive screw, balanced / unbalanced 2-channel
RS-232	1 x 3-pin captive screw (bidirectional)
LAN	1 x RJ45, 1000Base-T
DC 24V	1 x 4-pin, barrel

Environmental	Fahrenheit	Celsius
Operating Temperature	+32 to +122	0 to +50
Storage Temperature	-4 to +140	-20 to +60
Operating Humidity (RH)	20% to 90%, non-condensing	
Maximum Operating Altitude	2000 meters	

Power		
Consumption	**Unit only**: 8.6 W **Full load**: 104 W (while powering USB-C device up to 60W, HDBaseT PoE devices up 15W each, and USB type A devices up to 2.5W each)	
BTU/h	**Unit only**: 29.3 **Full load**: 354.8	
External Power Supply	Input: 100 - 240 V AC, 50/60 Hz Output: 24 V / 6.25 A DC	

Dimensions (H x W x D)	Inches	Millimeters
Unit	1.73 x 8.64 x 10	44 x 219.5 x 254
Power Supply (AT-PS-24625-D4)	1.60 x 2.60 x 6.20	40 x 66 x 157

Weight	Pounds	Kilograms
Device	3.46	1.57

Certification		
Device	CE, FCC	
Power Supply	CE, FCC, cULus, RoHS	

Compliance	
NDAA-889	Yes
TAA	Yes

Warranty	
3 years	View the full warranty information here: https://atlona.com/warranty

Footnotes

(1) A maximum 120 Mbps data rate is supported over HDBaseT, due to specific USB bandwidth limitations over HDBaseT. The built-in USB hub supports USB 2.0 data rates up to 480 Mbps.

(2) HDBaseT device powering and USB-C device charging are not available when the OME-MS42-HDBT is remotely powered.

(3) UHDp60 only supports 4:2:0 over HDBaseT.

(4) Maximum limit of 6 USB hubs when traversing an HDBaseT link.

Accessories

Compatible Transmitters		
AT-OME-EX-TX	Omega HDMI Over HDBaseT Receiver with USB	
AT-OME-EX-TX-WP	Wallplate HDBaseT Transmitter for HDMI with USB	
AT-OME-EX-TX-WPC	Wallplate HDBaseT Transmitter for USB-C	
AT-OME-EX-TX-WP-E	EU/UK Wallplate HDBaseT Transmitter for HDMI with USB	

Compatible Receivers		
AT-OME-EX-RX	Omega HDMI Over HDBaseT Receiver with USB	

Compatible Cables		
AT-LC-H2H-1M	LinkConnect HDMI to HDMI 1 Meter Cable	
AT-LC-H2H-2M	LinkConnect HDMI to HDMI 2 Meter Cable	
AT-LC-H2H-3M	LinkConnect HDMI to HDMI 3 Meter Cable	
AT-LC-UC2UC-2M	LinkConnect USB-C to USB-C 2 Meter Cable	